National Minimum Wage

Low Pay Commission

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Low Pay Commission Report Autumn 2016

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Presented to Parliament
by the Secretary of State for
Business, Energy and Industrial Strategy
by Command of Her Majesty

November 2016

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Introduction

This is the 18th Low Pay Commission (LPC) report, and our second of 2016. It responds to a request by the Government for us to recommend in October of this year the level of all the UK's minimum wage rates to apply from April 2017.

It comes against the backdrop of a period of major change for the UK economy, labour markets, minimum wage policy and indeed the LPC itself.

The first change is the introduction of the National Living Wage (NLW), the UK's new higher minimum wage rate for workers aged 25 and over, introduced by the Government to 'move away from a low wage, high tax, high welfare society and encourage a model of higher pay and higher productivity' (BIS, 2016b).

The second change is the UK's vote to leave the European Union (EU) – with uncertain implications in the short-term for consumer and business confidence, investment and growth, and in the longer-term for growth, trade and migration.

Considering the NLW first, its age structure means there are now five minimum wage rates in total – the rate for workers aged 25 and over effectively also created a new age rate for 21-24 year olds, in addition to the longer-standing youth rates (the 18-20 Year Old Rate and the 16-17 Year Old Rate) and the Apprentice Rate.

The NLW is different from the other rates in that it is subject to a target for its future level. The 'ambition… is that it should continue to increase to reach 60 per cent of median earnings by 2020'. The Government's 'objective is to have a National Living Wage of over £9 by 2020' (BIS, 2016b).

We showed in our Spring 2016 Report that this goal will deliver substantial gains in pay for workers, and is a stretching one for business and the labour market. With a relative value of 60 per cent of average earnings for workers aged 25 and over, the 2020 target is closer to 62 per cent when accounting for workers aged under 25 (whose 'bite' is over 70 per cent). It means that measured on a like-for-like basis, the UK will have one of the highest minimum wages in the world. Based on the pay forecasts then available, we estimated increases in nominal annual pay for typical workers of £680 in 2016, rising to over £3,000 by 2020, with up to one in six private sector jobs paid at a minimum wage rate by 2020 – almost three times the proportion in 2015. The pace of increase in relative pay for minimum wage workers aged 25 and over will be the same 2015-2020 as for the period 1999-2015 – a rate of growth three times faster than previously seen.

As Table 1 shows, the NLW is fundamentally different from the UK Living Wage and the London Living Wage. It differs first in that the NLW is a legally binding minimum standard for all employers in the UK. The other living wages are voluntary standards that employers can sign up to if they wish. It differs too in that it is based on a target relationship with average earnings. By contrast, the UK

and London Living Wages are based on need, with more limited emphasis on what employers can afford, so they are set at higher levels.

Table 1: The National Living Wage, National Minimum Wage and the UK Living Wage, October 2016

Name	National Minimum Wage and National Living Wage		UK Living Wage and London Living Wage
Rates	16-17 Year Old, 18-20 Year Old, 21-24 Year Old and Apprentice Rates	National Living Wage (25+)	18+
Basis	Based on affordability: rates negotiated to 'help as many low-paid workers as possible without damaging their employment prospects'.	Partly based on affordability: rate agreed to meet ambition of 60 per cent of median earnings by 2020, 'subject to sustained economic growth'.	Based on need: calculation made according to the cost of living, averaged for household type.
Legal status	Legally binding, enforced by HMRC.		Voluntary, not enforced.
Level	£4.00, £5.55, £6.95 and £3.40 (October 2016 to March 2017).	£7.20 (to March 2017).	UK rate: £8.45; London rate: £9.75.
Set by	Government, on advice from the Low Pay Commission		Resolution Foundation overseen by the Living Wage Commission

The 2020 target means a different role for the LPC in relation to the NLW than the other rates: one where we recommend a profile for increases to meet the goal, rather than set the rate with no presumption about the trajectory. There is also an adjustment in the underlying basis of recommendations, with the pay floor for workers aged 25 and over subject to a different trade-off between higher pay and employment effects from the one that applies for younger workers and apprentices. Where the LPC has traditionally made recommendations on the level of the minimum wage with a view to avoiding any reduction in jobs or hours, the Government introduced the NLW with a greater tolerance of some risk to employment. Analysis by the Office for Budget Responsibility (OBR, 2015b) in July 2015 estimated that as a consequence of the NLW's introduction, there would be 20,000-110,000 fewer jobs by 2020 than there otherwise would have been, albeit set against wider employment growth of 1.1 million jobs in the period 2015-2021.

The LPC's remit for this report reflects these differences. For the NLW, we are asked to recommend the level to apply from April 2017, and provide an indicative rate for April 2018. Recommendations for 'the pace of the increase' are 'subject to sustained economic growth'. For the other rates, we are asked to 'monitor, evaluate and review the levels… and make recommendations' for April 2017. Recommendations here are required to 'help as many low-paid workers as possible without damaging their employment prospects'. For all our decisions, the LPC is also asked to take into account the state of the economy, labour market, and relevant policy changes.

The key challenges in executing this remit are timing and uncertainty. The NLW policy took effect in April. We are required to make recommendations in October on the future rates. But there will inevitably be a significant lag in the evidence because the policy will take time to have effects in the real world, and for effects to be recorded in pay and employment data. So, there was already going to be a period of limited information when the LPC would be making judgements on the path of the NLW ahead of full evidence being available on its impacts.

The UK's decision to leave the EU amplifies these challenges. The introduction of the NLW would, in any event, have been a substantial change for business and the labour market. The Referendum result means the policy is now taking effect against the backdrop of a dramatic economic and political change, with limited hard evidence on the performance of the economy and labour market.

This constraint is exacerbated by the timing of the new annual calendar for the minimum wage, under which upratings will in future occur in April, aligned with the tax year, rather than in October. This means earlier reporting requirements for the LPC and less complete data in relation to the economic and pay outlook. The most recent OBR analysis for this and future rates recommendations – its authoritative biannual Economic and Fiscal Outlook – will be seven months old rather than three under our previous cycle, and in this case predates the Referendum decision.

Incomplete evidence on the performance of the economy and labour market, and likely greater volatility in economic performance, make a high quality decision for this remit harder – with any recommendation likely to carry more risk than usual.

The LPC set out in 2014 the conditions that would enable sustainable increases in the minimum wage (LPC, 2014). These included GDP growth, employment growth and growth in pay and productivity. The effect of leaving the EU on the level of the pay floor will depend on how it affects these factors. Should it weaken these variables – for example through changes in confidence and investment – the sustainable pay floor is likely to be lower than it would have been. Should it strengthen them, the converse will be the case. Other factors with a bearing include the sharp currency depreciation from July and any effect of that on inflation and pay forecasts. In the medium-term changes to immigration may affect labour supply, demand and productivity with further consequences for pay and economic performance.

We have considered how to take account of the uncertain position of the UK economy in executing our remit where, for the NLW, the presumption of an increase implicit in the 2020 target is balanced by flexibilities in its design that enable it to be adjusted to reflect economic circumstances.

The first is the relative nature of the goal for the NLW to reach 60 per cent of median earnings by 2020. As our last report explained, this dynamic target is a more prudent way of raising the pay floor than a fixed cash target, because its level is linked to pay levels in the economy. These should adjust up or down to reflect the broader economic circumstances.

The second area of potential flexibility is the profile of increases in the NLW. In our last report we thought it likely that we would recommend a straight line 'bite' path to 60 per cent of average earnings, going one quarter of the way in the first year of four, half in the second and so on – in the absence of economic shocks or decisive data, there would be little basis for doing anything else.

The third is that, our remit states that increases in the NLW are subject to 'sustained economic growth', with scope for the LPC to recommend a delay in achieving the 2020 goal should this condition not be met, although there is no formal definition of the phrase. We said in the spring that in interpreting its meaning we would bear in mind the policy assumptions that the Government had in mind when it introduced the NLW. The OBR predicted modest job losses resulting from the NLW, against significant employment gain and solid GDP growth across the economy by 2020. Two other measures that have a bearing are the official definition of a recession – negative GDP growth for two quarters – and the rules set out in the Government's fiscal framework. Under its Charter for Budget Responsibility, the Government's targets cease to apply in the event of the OBR assessing, as part of its economic and fiscal forecast, that there is a 'significant negative shock to the UK'. This is defined as 'real GDP growth of less than one per cent on a rolling 4 quarter-on-4 quarter basis' (HM Treasury, 2015b). Following the EU Referendum result the Government said it would no longer pursue its surplus target – before the OBR's assessment in the autumn.

As in previous years, our guide in making recommendations is our commitment to evidence.

The traditional basis for our recommendations has been four kinds of information:

- formal written and oral consultation with employers, workers and unions;
- in-house economic analysis looking both backwards at trends in growth, employment and pay, and forwards at leading indicators of economic and labour market performance;
- commissioned independent research from Universities, thinktanks and research bodies;
- and – very importantly to understand the real world effects of the policy – front-line visits to organisations and workers around the country.

We have relied on these sources once again for this report, but with more limited independent research and data for in-house analysis. In particular, econometric analysis of the impacts of the minimum wage requires several quarters of data. We have used surveys carried out by stakeholders and case studies which, while offering important insights, can only provide part of the picture.

For our in-house analysis, we could draw on data available up to 27 October 2016. This included ONS labour market data, August's pay forecasts from the Bank of England and forecasts from the Treasury's independent panel, but (as noted above) not the autumn forecasts of the OBR, which are largely produced and published after the date we are required to deliver our findings to the Government. The first (provisional) GDP data for the third quarter of 2016, covering the post-referendum period, came out on 27 October.

As well as the NLW, the question of available data also has a bearing on our recommendations for the other rates, where it will take time for evidence to accumulate on how younger workers' employment and pay are affected by a higher pay floor for older workers. As we set out at length in our last report, recommendations here need to balance risks. On the one hand, younger workers have higher unemployment, lower average pay and face a minimum wage which already has a much higher bite than for older workers, suggesting caution in setting the pay floor. Too high a level could price workers out, amplifying any reduction in demand for younger staff if employers respond to the NLW by replacing workers with machinery or 'designing out' jobs. On the other hand, higher pay for older workers lowers the relative cost of younger workers. The shelter provided by the NLW might mean that pay for those aged under 25 could be higher than it otherwise might be and, in any event, we need to take account of risks that, were pay for younger workers to fall substantially behind, employers could be encouraged to substitute younger workers for older ones, and avoid hiring or replacing those near the threshold.

We concluded that there were genuine differences in labour market performance that meant that the pay floor for younger workers could not be set at the same levels as the NLW without risk to employment levels. In the absence of changes in relative performance we thought the pay floor for younger workers could increase less rapidly than that of workers aged 25 and over towards 2020. Equally, there were countervailing concerns about too large a gap, and risks of substitution. We said we would balance these considerations in future recommendations.

Economic change following the vote to leave the EU bears on this equation to the extent that younger workers are more exposed to any slowdown, were it to emerge, than older workers.

Limited data also has relevance for a final concern of this report in relation to our recommendations for workers aged under 25 and apprentices: adjusting the levels in view of the changing NLW calendar. Our last recommendations, published in March 2016, took effect in October 2016. The recommendations of this report, if accepted, will take effect in April 2017, reflecting the Government's decision to align the other rates with the cycle of the NLW. That means a second increase in six months, rather than in the twelve months we would otherwise have expected. We said in our last report that, should this be the case, our next recommendations would likely be somewhat lower than they otherwise would have been in order to accommodate two increases in six months.

This report

This report is slightly shorter than in previous years, reflecting the fact that we have already published extensive analysis of the NLW and our approach in our Spring 2016 Report. The structure is as follows:

- Chapter 1 sets out the evidence on the economy looking back over 2016.
- Chapter 2 evaluates the NLW, providing a preliminary assessment of its impacts in 2016.
- Chapter 3 analyses the labour market position and earnings of workers aged 16-24 with a view to informing our recommendations on the 16-17 Year Old Rate, the 18-20 Year Old Rate and the 21-24 Year Old Rate.
- Chapter 4 analyses the labour market position and earnings of apprentices with a view to informing our recommendation on the Apprentice Rate.
- Chapter 5 provides our recommendations for all the rates for the year from April 2017, which depends on our analysis of the economy looking ahead. It also gives our view on a 2018 indicative rate for the NLW.

Unlike in our past reports we have not included a chapter on compliance and enforcement of the minimum wage. Our Spring 2016 Report included a full analysis of the overall government and HMRC strategy and specific challenges related to particular affected groups. There is limited new information on government strategy and HMRC since. We may publish a standalone report on this topic in 2017, reflecting that higher coverage of the rates is set to make it increasingly important as an issue, and more evidence will be available. We have however included analysis of early data related to non-compliance following the introduction of the NLW and increases in the other rates in the relevant chapters. Chapter 5 summarises stakeholder views on the issue.

Evidence

The conclusions of this document reflect work for our Spring 2016 Report and additional evidence gathering since.

Once again we are very grateful to organisations and individuals that have provided evidence. We received more than 80 responses to our consultation. 15 organisations presented at our regular Commission meetings between March and September and 35 representatives of various organisations came to our oral evidence sessions. Our Secretariat had more than 25 meetings with stakeholders. Appendix 1 records those who responded to our call for evidence and who agreed to be listed.

We also visited employers, workers and others affected by the minimum wage. Four visits took place over the course of our work for this report, on top of the eight which were held before our Spring 2016 Report. We visited: Derry/Londonderry in Northern Ireland, Sunderland and Newcastle in the North East, Worcester and Hereford in the west of England, and Dundee in Scotland. We would like to record our gratitude to everyone who gave their time to meet with us.

A number of commissioned external research projects informed this report. On the NLW, we received results from a large scale before-and-after survey of social care providers, a detailed assessment of pay settlements from retailers and other firms, and a survey of how firms are adapting in specific affected sectors. On the minimum wage more broadly, we also received results from a meta-analysis of all past UK minimum wage studies, and the findings of a partly qualitative study of the Apprentice Rate. The findings are used to supplement other evidence throughout this report and a summary is reported in Appendix 2. In addition, we commissioned a number of new projects whose results will inform future reports.

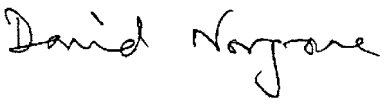
We have met formally as the Low Pay Commission five times since our previous report, including two days to take oral evidence from representative organisations, and an all-day meeting in October to take presentations from the Government and a number of expert stakeholders on economic and labour market issues. In addition, we met in late October for two days to review and assess the evidence relevant to our remit, and to agree all the recommendations contained in this report.

Conclusion

We have aimed to produce a report which explains fully the reasons for our conclusions and recommendations, including the inevitable uncertainties at a time of economic change. Our conclusions and recommendations represent the unanimous views of all Commissioners.

The Commissioners

Sir David Norgrove (Chair)
Chair, Family Justice Board and Council member, Oxford University



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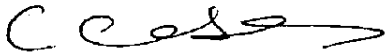
Professor of Economics, University of Sheffield

Clare Chapman
Non Executive Director, Kingfisher Plc and Heidrick and Struggles

Kay Carberry
Trades Union Congress



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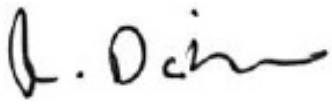
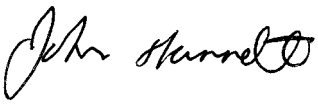
Director, People & Skills, CBI

Professor Richard Dickens
Professor of Economics, University of Sussex

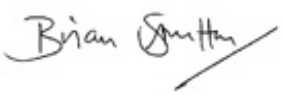


Peter Donaldson
Director, d5 Consulting Limited and Chairman, Downland Marketing Limited

John Hannett
General Secretary, Usdaw



Brian Strutton
General Secretary, BALPA



The Secretariat

Simon Blake, Secretary
Nicola Allison
Jay Arjan
Tim Butcher
Helen Connolly
Joe Cooper
Chloe Evenson
David Massey
Sumit Rahman (summer 2016)
Amrita Rose (summer 2016)
Kevin Wrake (from August 2016)
Yi Zhang (to June 2016)

Executive summary

1. This is the 18th Low Pay Commission (LPC) report, and our second of 2016. It is published against the backdrop of the introduction of the National Living Wage (NLW), the UK's new higher minimum wage rate for workers aged 25 and over, and amid the seismic change likely to follow from the UK's vote to leave the EU.

2. The Government's aim is to 'move away from a low wage, high tax, high welfare society and encourage a model of higher pay and higher productivity'. For the NLW, a target applies: the 'ambition' is that it should increase from its introductory level of £7.20 'to reach 60 per cent of median earnings by 2020… subject to sustained economic growth'. We are asked to recommend the rate to apply from April 2017 and to provide an indicative rate for April 2018. For the other rates, which cover 21-24 year olds, 18-20 year olds, 16-17 year olds and apprentices, we are asked to 'monitor, evaluate and review the levels… and make recommendations' for April 2017 that 'help as many low-paid workers as possible without damaging their employment prospects'.

3. We showed in our Spring 2016 Report that the NLW will deliver substantial gains in pay for workers. But it means that the UK will have among the highest minimum wages in the world by 2020 measured relative to average earnings. So it is a stretching goal for business and the labour market.

4. The 2020 target means a different role for the LPC in relation to the NLW than to the rates for workers aged under 25 and apprentices: one where (provided economic growth is 'sustained') we recommend a profile for increases to meet the goal, rather than propose the rate with no presumption about the trajectory. Where the LPC has traditionally made recommendations that seek to avoid any reduction in jobs or hours, the Government introduced the NLW with a greater tolerance of some risk to employment. Analysis by the Office for Budget Responsibility (OBR) in July 2015 estimated that its introduction would mean 20,000-110,000 fewer jobs by 2020 than would otherwise be the case, albeit set against wider net employment growth of 1.1 million jobs in the period 2015-2021.

5. The LPC has previously said that sustainable increases in the minimum wage depend on growth in GDP, employment, pay and productivity. The effect of leaving the EU on the level of the different rates will depend on how it affects these factors.

6. In considering how to take account of the uncertain position of the UK economy in executing our remit, the presumption of an increase implicit in the 2020 target is balanced by some flexibilities in the NLW's design in order to ensure that it is sensitive to economic circumstances. These include: the relative nature of the goal for the NLW (its level should adjust up or down reflecting the economy in line with pay outcomes and forecasts); the path of increases in the NLW, where rises can in

principle be back-loaded or front-loaded; and that increases are subject to 'sustained economic growth'.

7. The key challenges in executing our remit concern timing. The NLW took effect in April and lags in the emergence of evidence meant there was already going to be a period when the LPC would be making judgements on the NLW profile ahead of data and research on its impacts. The EU Referendum result means the policy is now taking effect against the backdrop of a broader economic shock, with substantial uncertainty and limited hard evidence on its effects. The new annual calendar for the minimum wage means we have also had to reach judgements ahead of any recent economic assessment by the OBR, with its first Economic and Fiscal Outlook since the Referendum published after this report was submitted.

8. The question of available data also bears on our recommendations for younger workers. On the one hand, workers aged under 25 have higher unemployment and lower average pay than older workers, suggesting caution in setting the pay floor. On the other hand, the shelter provided by the NLW might mean that pay for younger workers could be higher than it otherwise might be, particularly bearing in mind risks of substitution if too large a gap emerged. There is inevitably limited evidence so far on how to balance these considerations. Economic change following the vote in June also bears acutely on the rates for under 25 year olds and apprentices: younger workers are more exposed than older workers to employment risks arising from any slowdown in economic performance.

Chapter 1: Economic context

9. In our Spring 2016 Report we recommended that from 1 October 2016, the 21-24 Year Old Rate increase by 3.7 per cent to £6.95 an hour, the 18-20 Year Old Rate by 4.7 per cent to £5.55 an hour, the 16-17 year Old Rate by 3.4 per cent to £4.00 an hour and the Apprentice Rate by 3.0 per cent to £3.40 an hour. We also estimated a future path of the NLW to reach 60 per cent of median hourly wages by 2020, based on forecasts available then and with an assumption of straight-line increases in the relative value of the rate. We projected rates of £7.64 in April 2017 and £9.16 in April 2020, though thought these likely to be on the high side given previous optimism in pay forecasts, and limited evidence of strong pay growth in other data.

10. Our recommendations were based on evidence that the UK economy had performed well in 2015 with fairly robust economic growth and continued strong employment growth, albeit with neither aspect as strong as in 2014. Unemployment had continued to fall. Nominal pay growth in the private sector had picked up and was above 3 per cent for much of 2015, albeit slowing towards the end of the year to just above 2 per cent. With CPI inflation close to zero, this had enabled some recovery of the long decline in real earnings though productivity remained weak. The forecasts available at the time of our last report suggested that economic growth would be sustained and employment growth would be solid, with some fall in unemployment. Productivity was expected by many commentators finally to recover, leading to increases in average wage growth to 3.2-3.4 per cent. With inflation moving slowly back towards target, the outlook was for a significant further improvement in real wages.

11. In data up to the end of the second quarter of 2016, the economy broadly performed in line with our expectations, though there was some softening even ahead of the vote to leave the EU. GDP growth in 2016 is likely to be about 2.0 per cent – a little below forecast, and below its pre-recession pace. Consumer spending was the main driver of economic growth in the first half of 2016, with retail and hospitality – the two largest low-paying sectors – growing strongly as a result. Investment spending also helped boost growth, but trade acted as a drag on the economy with increased imports more than offsetting any growth in exports. Meanwhile, government spending was flat. Data suggested company profits (measured via surpluses) had increased in the services sector since the recession, though weakened in the two quarters to June 2016.

12. Employment growth was stronger than expectations, with an increase in workforce jobs of 1.5 per cent between 2015 and 2016, which was above forecasts (including those of the OBR when the NLW was announced in July 2015). Vacancies continued to be much higher than in the pre-recession period. Total employment, total hours worked, and working age employment rates reached record highs. As a consequence, unemployment continued to fall. However, since April 2016, redundancies have increased slightly, the claimant count has risen and growth in permanent and full-time employees has slowed.

13. Productivity only returned to its pre-recession levels at the end of 2015 – whether measured using output per worker, output per job or output per hour. Economic growth in the first half of 2016 was slightly higher than the proportionate increase in the number of workers and the number of jobs, leading to a small increase in productivity. A smaller increase in hours led to stronger productivity growth measured on an output per hour basis. Productivity on all measures has been sluggish since the end of the recession, though with stronger performance in retail in the past two or three years, and an uptick in hospitality since the middle of 2015.

14. Despite the growth in employment, wage pressures once again remained subdued. Pay settlements were again stuck at around 2.0-2.5 per cent in the private sector – a position unchanged for at least three years – with little sign of any movement, including evidence of any NLW effect. Against forecasters' consensus that average wage growth would pick up to 3.3-3.4 per cent in 2016, weekly earnings grew by only 2.2 per cent on an annual basis to August 2016. However, growth in hourly pay to April 2016, using the Annual Survey of Hours and Earnings (ASHE), suggested stronger wage growth of 3.1 per cent at the median for those aged 25 and over, though even this measure still underperformed forecasts when taken over two years. Weaker actual and expected performance was reflected in the outlook for the value of the NLW, with projected rates falling over the course of 2016. However, with inflation remaining lower than forecast, real wage growth was positive, restoring some of the value lost since 2008.

15. Overall, our recommendations for the October 2016 upratings in the youth rates and the Apprentice Rate were made when the general economic picture was broadly encouraging, with expectation of sustained recovery also the backdrop to the announcement and introduction of the NLW. Solid GDP growth and employment performance was in line with expectations for the first half of 2016, but weaker pay and productivity growth bore down on the likely cash value of the NLW before the summer. The outlook has weakened since then, with a fall in sterling between June and October, uncertainty about the UK's future trading arrangements, and revisions to forecast GDP, employment and pay growth in the UK in 2017.

Chapter 2: The National Living Wage

16. The introduction of the NLW on 1 April 2016 was a significant intervention in the labour market. Employer and employee representatives who provided us with written and oral evidence generally welcomed the objective of higher pay, but disagreed on the effects of the introductory rate and the outlook for future increases. Employee representatives wanted a higher target, or closer links to the level of the voluntary Living Wage. Employer representatives divided between: supporters and those little affected; those concerned about the affordability of the introductory rate; and those concerned about the path to 2020. Affected firms reported a range of consequences for pay, employment and competitiveness, with the most vocal sectors including adult social care, horticulture, convenience stores, childcare and textiles.

17. Employee representatives argued that a wide range of workers had benefited from significantly higher pay following the introduction, with little evidence of an impact on jobs. They highlighted high profitability as an indication that the NLW could be afforded. A number reported that high profile cases in the media of reductions in pay and benefits to fund a higher NLW had been overstated, with pay consolidation a longer-term trend, and planned adjustments pre-dating the NLW.

18. Among employers, survey data suggested that between a third and a half of firms had seen higher wage bills, with the most common responses to the introductory rate being to reduce profits or raise prices. Other strategies included: raising productivity (the Chartered Institute of Personnel and Development found that a quarter of affected firms intended to raise it, though often with limited detail on what this meant in practice); compressing differentials; reductions in shift pay, overtime, premium pay or other benefits; reduced investment; and reduced employment. Less common were reports of greater use of the age rates – though some pubs, bars and restaurants were taking this approach. Neither employee nor employer representatives identified higher non-compliance as a common response.

19. A key area of ambiguity was the scale of employment effects. In surveys of employer responses, lower job growth, hours reductions and (especially) redundancies were relatively less popular than changes to pay and prices – but still potentially significant in absolute terms. The British Chambers of Commerce reported that one in four affected firms reduced recruitment. Three quarters of surveyed Association of Convenience Store members reported reduced working hours and two-thirds reduced staff numbers. In a survey by the National Farmers' Union, nearly one in five affected horticulture firms reduced the number of people employed. These data did not establish the number of jobs or hours involved. On our visits, some companies also reported reducing use of labour (usually hours), but the scale varied by sector.

20. Looking ahead to 2020, most organisations had not yet got to grips with how they would accommodate the NLW. Firms in a wider range of sectors, including retail and hospitality, highlighted challenges from cost increases and compressed pay distributions, including the effect on employee progression and motivation. Some thought pressures on employment would increase. Productivity increases were widely seen as desirable, with many sectors aspiring to them, including examples of plans to multi-skill staff, though others argued that productivity gains could mean reducing the use of labour, or reducing quality. Employee representatives emphasised that stronger employee involvement would help realise improvements. Higher wages had the potential to motivate harder

work, lower turnover, reduce costs of hiring and training, improve customer service and reduce absenteeism. A theme across convenience stores and hospitality was that the NLW might make 'middle tier' business models less viable, with providers dividing into high labour-use luxury services and lower labour-use budget services, with more automation and self-service.

21. Among the sectors that highlighted serious concerns about the introductory rate in our Spring 2016 Report, social care appears to have been helped by the Council Tax precept and research commissioned for this report found the NLW had raised pay without so far damaging employment, or having other negative effects. But, in written evidence, care providers reported to us that their medium-term sustainability remained at risk, with many facing losses and some reports of withdrawal from contracts. Data from the Association of Directors of Adult Social Services in England record that 32 councils had residential care contracts handed back in the six months to May 2016, rising to 59 councils for home care. The horticulture sector warned that high wage costs are a serious threat to the sector, with the NLW (on its March 2016 forecast path) risking profitability towards 2020. The childcare sector in England was concerned about the interaction of higher wage costs with increased free hours – a 'tipping point' which could squeeze margins, reduce quality and increase fees to parents.

22. Our analysis of the introductory rate broadly supports the view that the NLW is a substantial change for the labour market, business and workers, with large effects on pay and differentials, possible effects on prices, but (perhaps inevitably at this early stage) limited evidence so far of consequences for employment and hours in the available data.

23. At £7.20, the NLW equated to an annual increase in the main minimum wage rate of 10.8 per cent (from £6.50), the joint largest ever, and a 7.5 per cent increase in April (from £6.70). For comparison, the increase at the median for workers aged 25 and over in the same period was 3.1 per cent, so the rise in the NLW was up to three times the pay rise of the typical worker. Given low inflation, the increase is only slightly smaller measured in real terms. It means that the main minimum wage rate is now at its highest level both in cash terms and adjusted for inflation – having previously peaked in Consumer Prices Index (CPI) terms in 2007, and in Retail Prices Index (RPI) terms in 2009. For comparison, real median earnings are still 5-10 per cent (using CPI or RPI) below pre-recession levels. We calculate that typical (26 hours a week) minimum wage workers will gain increased pay of £680 a year in 2016, £590 adjusted for CPI inflation, or £390 against a counterfactual of average earnings growth.

24. The substantial increase is reflected in the fact that around 1.6 million workers – 6.7 per cent of those aged 25 and over – were covered by the NLW, rising to about 1.9 million workers of all ages (7.1 per cent of jobs). As in previous reports, we have considered the number of workers paid the minimum wage rate as a critical indicator of its impact – both in terms of gains for workers, and possible pressures for employers. In April 2016, coverage was higher for workers in the private sector (9 per cent) and for groups of workers, including 25-29 year olds, those aged 65 and over, workers without qualifications, disabled workers, women, ethnic minorities and migrants. Coverage was particularly high for part-time workers, with one in seven of those aged 25 and over on the NLW (15 per cent) compared with less than one in twenty five full-time workers (3.6 per cent). In sectors including cleaning, hairdressing and hospitality more than a quarter of the workforce aged 25 and over was paid at the NLW in April. In social care, the proportion was lower, but the change bigger,

with coverage more than doubling to 16 per cent. Looking ahead, NLW coverage is set to rise to 3 million or 12 per cent by 2020, with the same groups and sectors set to be affected.

25. Higher relative pay is reflected in changes in the earnings distribution. We estimate the bite of the NLW in 2016 will be 55.8 per cent, for workers aged 25 and over, at its mid-year point – up from 52.5 per cent for the adult rate of the minimum wage in 2015 and, because of lower than expected pay growth at the median, a larger relative increase than anticipated. The average bite disguises variation by region and sector, with the higher rate having more impact in lower-paid places and sectors. Four of England's nine regions – including the East Midlands, and Yorkshire and the Humber – and two of the UK's four nations – Wales and Northern Ireland – will have bites above 60 per cent in October 2016. The bite will be just over 70 per cent in micro firms, rising to around 90 per cent or higher in low-paying sectors such as cleaning, hospitality, food processing, hairdressing and retail. Looking ahead, increasing the bite to 60 per cent of median earnings in 2020 is an increase of over 7 percentage points in the five years from 2015 for workers aged 25 and over, a similar-sized increase to that seen for this group in the preceding 15 years of the adult rate of the National Minimum Wage.

26. Stakeholders agreed that the introductory rate had large ripple effects on the pay of workers above the minimum wage. Our analysis suggests these spillovers reached up to the 25th percentile of the hourly earnings distribution, or workers earning up to around £9 per hour. Pay for these workers grew very strongly by an average of almost 6 per cent, compared with growth of around 3 per cent for workers at the median and for the top quartile. Women and part-timers particularly benefited, with growth of over 6 per cent and 8 per cent respectively for the bottom quartile. Our analysis suggests that workers aged under 25 also gained from the NLW, with a similar proportion of 21-24 year olds paid at £7.20 as those aged 25 and over – almost one in twenty (4.5-4.7 per cent) – and similar too to the proportion of 21-24 year olds paid at the relevant age rate (£6.70). We estimate up to 7 per cent of all 16-24 year old employees were lifted above £7.20 in response to the introductory rate.

27. However, ripple effects have been accompanied with measures to manage higher costs. Our analysis suggests some squeezing of differentials, with the biggest differences in pay increases, between minimum wage workers and those slightly above, seen in office work and storage. Other sectors, such as hospitality, cleaning and childcare, tended to pass on more of the increases to slightly better-paid workers (likely reflecting that they already had very compressed pay). In line with stakeholder evidence, in some cases higher wage costs may have been offset by reductions in benefits and premium pay – though we find no significant change in the use or levels of shift premium pay and overtime pay in the aggregate data so far (which could be a timing issue, or a compositional effect).

28. Though not emphasised in stakeholder evidence, gains may also have been reduced by an increase in non-compliance, with recorded underpayment rising sharply, including in sectors such as social care, employment agencies, office work, hairdressing, food processing, and transport, and in micro firms. However, a lot of the increase is likely to arise from the NLW coming into force in the same month as the survey, exacerbated by employers moving pay reviews from October to April increases under the new minimum wage calendar. On our best estimate of underpayment, it has increased from 158,000 workers, aged 25 and over, being paid less than the applicable rate in April 2015 (0.7 per cent of the workforce aged 25 and over, or 15 per cent of coverage) to 306,000 in April

2016 (1.3 per cent of the workforce aged 25 and over, or 19 per cent of coverage). Our judgement is that much of this increase is likely to be temporary non-compliance – reflecting employers being slow to implement the minimum wage increase. Non-compliance may, in any event, become a bigger risk as the NLW increases. Demands on HMRC enforcement will increase further.

29. Contrasting with some stakeholder evidence, official data do not yet show clear evidence of NLW effects on employment or hours – though impacts need to be assessed over an extended period before strong conclusions can be drawn. Our analysis suggests that the groups of workers most likely to be paid at the NLW (women, ethnic minorities, migrants, disabled people, those with no qualifications, 25-29 year olds, 60-64 year olds) had a relatively strong performance in the labour market in the year to June 2016. Though some regions of the country saw falls in employment, we do not identify a clear link to the NLW at this stage: for example, the East Midlands was the area of the country with the highest bite in 2016, but also recorded one of the strongest increases in employment to June 2016.

30. Looking at the number of people in employment, few clear patterns are apparent. Low-paying sectors, defined by occupation, grew at the same pace as the rest of economy to June 2016, with employment increases in NLW-exposed sectors such as employment agencies, textiles and clothing, but employment falls in other exposed sectors: cleaning, food processing and social care. Agriculture, cleaning, hairdressing and social care saw a fall in hours. Looking at a different labour market measure, the number of employee jobs, low-paying sectors, defined by industry, grew more slowly than non low-paying ones in the year to June 2016. There were falls in the number of jobs in domiciliary care and childcare, hairdressing and agriculture. Conversely, growth was solid in hospitality and leisure, and strong in other NLW-exposed sectors, such as textiles, food processing and employment agencies. Employment and hours increased among most sizes of business, but employment fell in micro firms.

31. A number of stakeholders highlighted effects on competitiveness, although limited data are available. Our analysis shows that over the last year prices of some minimum wage goods and services have increased more rapidly than the main inflation indices, which could reflect higher wage costs, or other factors. We will continue to monitor these pressures.

Chapter 3: Young people

32. The broad picture for young people is of robust labour market performance looking backwards, especially for 18-24 year olds, with more uncertainty looking forwards. In the year to April 2016, earnings growth was very strong for 18-20 year olds and 21-24 year olds, building on the encouraging picture set out in our Spring 2016 Report of (long delayed) post-recession recovery. Hourly pay at the median grew by 5.9 per cent for 18-20 year olds over the year, up from 2.4 per cent the previous year. It grew by 5.3 per cent for 21-24 year olds, up from 3.0 per cent in 2015. By contrast, pay growth was weaker for 16-17 year olds at 3.7 per cent, although this was also an increase from 3.0 per cent in 2015, and a touch stronger than for 25-30 year olds, who saw 3.5 per cent growth.

33. The high pay growth for 18-20 year olds likely reflects the influence of the NLW, with median hourly pay rising from £6.80 in April 2015 to £7.20, the level of the introductory rate. The NLW had a

less direct effect on the median pay of other groups – with £7.20 falling around the 75th percentile of the earnings distribution for 16-17 year olds, but below the 25th percentile of the earnings distribution for 21-24 year olds.

34. Low inflation meant substantial real increases in hourly pay. Using data including apprentices, adjusted for CPI inflation, real hourly pay at the median grew by 6.4 per cent for 18-20 year olds, 4.9 per cent for 21-24 year olds and 3.0 per cent for 16-17 year olds. Adjusted for RPI inflation, growth in real pay was slightly lower at 5.4 per cent, 3.8 per cent and 2.0 per cent respectively.

35. The consequence of high earnings growth at the median has been a falling bite for all three groups of young workers. Over the year to April 2016, the bite for 21-24 year olds fell by 1.7 percentage points (to 77.2 per cent); the bite for 18-20 year olds fell by 1.8 percentage points (to 73.6 per cent): and the bite for 16-17 year olds fell by 1.1 percentage points (to 70.4 per cent).

36. However, the absolute level of the bite remains high for these groups relative to that of older workers. This reflects the fact that, notwithstanding fast pay growth, the level of pay remains much lower for younger than for older workers: 16-17 year olds earn half the level of 25-30 year olds at the median; for 18-20 year olds the proportion is about two-thirds; for 21-24 year olds three-quarters. The bite is particularly high for 21 and 22 year olds (85.4 per cent and 80.7 per cent respectively). In addition, the data do not yet reflect the October 2016 increases, which are likely to have increased the bite further for the youth rates.

37. Despite these pressures, there is little evidence of a problem with compliance on these data. The proportions of young workers paid below their age-applicable minimum wage were low and stable in April 2016, with less than 2 per cent of young workers paid below the applicable wage floor. The proportion of young workers paid at their applicable rate fell over the same period, with around one in twenty 16-24 year olds being paid at the NLW in April 2016, and a further one in twenty 16-20 year olds being paid at a higher NMW rate, above their age-applicable rate.

38. Labour market data in the year to June 2016 were also encouraging. Among 21-24 year olds the proportion solely in employment (63.9 per cent) rose over the year, while the proportion unemployed fell to 6.7 per cent. The proportion of 18-20 year olds combining work and study (18.2 per cent) also went up, alongside a small increase in the proportion solely in employment (31.9 per cent) and a fall in the proportion unemployed (to a low of 6.6 per cent). While the majority of 16-17 year olds were in full-time education, an increasing proportion combined their studies with part-time work (20.2 per cent), while the proportion unemployed (and not in full-time education) remained low (2.4 per cent).

39. Looking at young people not in full-time education, the trend was strongly positive for 18-24 year olds, but weaker for 16-17 year olds. Over the year to June 2016, the employment rate for 21-24 year olds not in full-time education increased by 2.1 percentage points (to 79.1 per cent, their highest level in over two decades) and the unemployment rate fell by 1.6 percentage points (to 9.5 per cent). The employment rate for 18-20 year olds increased by 1.4 percentage points (to 67.6 per cent), alongside a fall of 2.6 percentage points in their unemployment rate (to 17.2 per cent). By contrast, the employment rate of 16-17 year olds increased by just 0.4 percentage points over the year (to 46.7 per cent), while the unemployment rate remained flat (at 30.2 per cent) – although the numbers not in full-time education are small.

40. The main caveat to the overall picture of strong performance for 18-24 year olds, and a flatter performance for 16-17 year olds, is that potential employment effects arising from the introduction of the NLW in April, the increase in the minimum wage rates in October, or economic changes following the EU Referendum in June 2016, are not captured in these data. Sharp increases in unemployment and falls in employment from the onset of recession in 2008 and in its aftermath, suggest that younger workers are more likely to be affected by any slowdown in the economy, with other evidence suggesting that early spells out of the labour market are particularly damaging.

41. There is also tentative evidence of a slowing rate of labour market improvement: employment rates of those not in full-time education increased much more slowly over the year to June 2016 for 16-17 year olds than over the year to September 2015. Annual growth in employee jobs in the key sectors for young people – hospitality and retail – was positive in June 2016, but the weakest since 2013 for retail, and since 2010 for hospitality.

Chapter 4: Apprentices

42. Apprenticeships are subject to substantial policy change at the moment, including: a commitment by the UK Government to achieve 3 million starts over the course of the Parliament; the introduction of the Apprenticeship Levy for larger firms; and a requirement for co-investment for smaller firms in England from April 2017. There has also been significant change in requirements on pay, including the largest ever increase in the Apprentice Rate, the 57 pence uprating to £3.30 implemented in October 2015, and the introduction of the NLW, which delivered a sharp relative pay increase for apprentices aged 25 and over and in their second year.

43. There are two main sources of trends in apprentice pay – ASHE, and the source that we deem on balance to be the most authoritative, the Apprentice Pay Survey (APS). Looking across two years 2014-2016 (the APS was not undertaken in 2015), apprentice hourly wages grew by 7-8 per cent, faster than the 5 per cent increase in earnings for non-apprentices using ASHE, and with far higher growth at the lower end. Pay at the bottom decile increased by just under a quarter (22-23 per cent), driven by the increase in the Apprentice Rate. Pay grew faster for apprentices in their second year than in their first, likely reflecting the NLW being received by some younger apprentices, as well as those aged 25 and over. The October 2015 Apprentice Rate increase appears to have borne particularly on apprentice frameworks in low-paying sectors, with Hairdressing seeing a large percentage increase at the median. For other low-paying frameworks – Children's Learning and Development, and Business Administration – median pay was flat, which could suggest affordability pressures, since it implies little of the increase was passed up the wage distribution.

44. Higher pay has been reflected in trends in the bite. The overall level is lower than for other younger workers, but higher when broken down by age. For 16-18 year olds in their first year it is 85-88 per cent. For 19-24 year olds in their second year it is as high as 91 per cent. This suggests that the minimum wage is increasingly the going rate for these groups. Between 2014 and 2016, the bite rose by 4-8 percentage points for all those eligible for the Apprentice Rate, and by 4-14 percentage points for those aged 25 and over in their second year, and thus eligible for the NLW.

45. Despite the large increase in pay, there is limited clear evidence of a negative impact so far on aggregate volumes of apprenticeships, which grew by 1 per cent between the academic years

2014/15 and 2015/16 in England, with apprenticeships for 16-18 year olds up by 4 per cent, and in one low-paying framework – Childcare – up by 10 per cent. Total hours increased. However, there have been continued falls in Level Two starts in England, which are down 3 per cent, falls for 19-24 year olds, and further declines in Hairdressing, which fell 8 per cent.

46. The data suggest however that underpayment levels remain very high, ranging from 5 per cent (ASHE) to 18 per cent (APS) of apprentices receiving less than the rate to which they are entitled. The highest levels, based on the APS, appear to be found among 16-18 year old apprentices, those in their second year, and (perhaps reflecting the sharp change in the rate for apprentices becoming eligible for the NLW) apprentices aged 25 and over in their second year. The main affected apprenticeship frameworks include Hairdressing, Children's Learning and Development, Construction and Electrotechnical.

47. Data on the trend is contradictory but, on balance, suggest underpayment may have increased since 2014. While ASHE shows a fall between 2014 and 2016, using the subset of the APS where apprentices have a payslip that states their hours – our preferred evidence source – underpayment rose sharply over the period, from 6 to 15 per cent. The distribution of these cases suggests many of them were not near misses. This may suggest affordability pressures arising from the new rate.

48. Future increases are set to take place in the context of policy change. The Apprenticeship Levy has the potential to increase the supply of places, though also presents risks were employers to meet higher costs by reducing the quality and/or quantity of training. It may also increase the share of apprenticeships among larger employers. The NLW could strengthen incentives to hire more apprentices, and increase the share of longer duration apprenticeships undertaken by younger workers (given wage costs increase in the second year for older apprentices). Some stakeholders were concerned at potential abuse of apprenticeships purely to avoid NLW wage costs should the gap with the Apprentice Rate become too large. As with the rates for under 25 year olds, these data predate any economic change following the EU Referendum.

Chapter 5: The rates

49. Deliberations this year focused on the outlook for the economy and the labour market in the wider context of the UK's decision to leave the EU, particularly for 2017 and 2018, which is the horizon for the recommendations in this report.

50. The central debate in relation to the NLW was the degree to which automatic adjustment in the on-course rate, reflecting the effect of lower pay forecasts on the relative goal, was sufficient to manage any economic risks.

51. For the rates for younger workers, the central debate concerned what weight to put on strong performance in the labour market over the past year compared with possible softening in the economy, which would likely affect younger workers first (particularly 16-20 year olds).

52. In reaching our recommendations we bore in mind that:

- We have different remits for workers aged 25 and over, and those aged under 25. For the former, we recommend the pace of increases towards 60 per cent of median earnings

subject to 'sustained economic growth'. For younger workers and apprentices we are required to make recommendations that 'help as many low-paid workers as possible without damaging their employment prospects'.

- Early concerns about an immediate recession have not come to pass, and a number of economic indicators are better than feared. However, the consensus of forecasters remains that the UK faces lower growth – around 1 per cent in 2017 compared with a previous expectation of over 2 per cent – and higher unemployment (as weaker hiring and investment intentions fall short of continued working age population growth). We note that the Government announced in July that it is no longer pursuing its fiscal surplus target. Furthermore, a number of GDP forecasts suggest the definition of an economic shock set out in its fiscal framework could be met.

- Sterling is down around 15 per cent against the dollar, the euro, and a trade-weighted basket of currencies since June. The falling pound points in different directions, potentially boosting trade, but also likely leading to an increase in input and raw material prices from overseas, and a pick-up in consumer price inflation. With productivity flat, average wage growth is forecast to remain at around 2.0-2.5 per cent. So, if inflation rises, there is a risk of real wage reductions.

- There is limited evidence on the sensitivity of unemployment and employment to relative increases in the pay floor in periods of economic softening.

- Evidence on the impact of the NLW to date is necessarily inconclusive. Firms in exposed sectors have warned of employment risks, but there is limited clear evidence of this yet in the aggregate data.

- Ultimately, our remit has changed the burden of proof for the NLW, with a starting presumption of an increase in the rate and some tolerance of employment loss.

53. Employers generally urged caution in view of economic uncertainty, with some arguing for lower increases now, or moving away from the 2020 target altogether. This would, they argued: provide more time to see what happens to the economy; make it easier for firms to adapt to higher wage costs by investing in productivity-raising measures; and help to manage pressures in April 2017 arising from other increases in business costs, such as pensions automatic enrolment (extending to cover all small businesses) and the Apprenticeship Levy (affecting larger businesses).

54. By contrast, employee stakeholders urged ambition, pointing out continued strong labour market performance, limited hard evidence of economic harm post-Referendum, and survey data suggesting most employers had coped with the introductory rate of the NLW. They called for (at a minimum) a recommendation for an on-course rate, adjusted no more than to reflect the changed pay forecasts. Some employers also saw risk in lower increases now because these would, as a matter of simple arithmetic, mean sharper increases towards 2020.

55. We have weighed these considerations carefully. Overall, we recommend for April 2017 an increase in the National Living Wage of 30 pence or 4.2 per cent to £7.50 per hour. In line with our original intentions, this is the on-course rate using the median of available forecasts from the HM Treasury Panel of Independent Forecasts with the Bank of England added (we did not have access to the OBR's November 2016 forecasts, though in recent years the HM Treasury Panel median forecast

for average wage growth has come somewhat closer to the out-turn than either the OBR or the Bank of England).

56. The recommendation represents a finely-balanced decision in conditions of considerable uncertainty. On the one hand, it is a significant increase at a time of average pay growth of 2-3 per cent and would protect these low-paid workers from the higher inflation likely to result from the depreciation of sterling. On the other hand, as a consequence of the automatic adjustment designed into a moving target, it is substantially below the £7.64 we projected in our Spring 2016 Report, reflecting actual and forecast weaker pay growth.

57. Commissioners considered at length whether to recommend departing from the on-course rate bearing in mind the uncertainty of the economic prospects, with the real possibility of a significant downturn and consequent risks to employment. However, we judged that the limited evidence available at this early stage did not justify departing from the straight-line path, particularly given the downward adjustment in value.

58. For 2018, the HM Treasury Panel and Bank of England forecasts imply a NLW within an interquartile range of £7.80 to £7.91. A material worsening in economic performance and prospects would lead us next year to consider whether to recommend that the NLW should not increase relative to median earnings, moving below a straight-line path to 60 per cent in 2020, to safeguard employment.

59. Looking ahead, using the HM Treasury Panel forecasts alone, as the Bank of England's do not extend out this far, we estimate that 60 per cent of median earnings in 2020 will equate in cash terms to an NLW of £8.61, within an interquartile range of £8.50 to £8.73. This is down from £9.16 in our Spring 2016 Report and £9.35 when the policy was announced in July 2015. We estimate that more than half of the revision occurred before June, with slightly less than half of the revision afterwards.

60. Turning to the youth rates and the Apprentice Rate, we have, as in the spring, kept in mind that the Government designed the age structure on the basis that younger workers are more exposed than older workers to any employment risks of a higher pay floor. Our objective for younger workers is to recommend a rate that should not reduce employment (unlike for the NLW where our role is to advise the Government on a path where some consequence for jobs has been accepted).

61. We drew attention in our last report to the evidence for differences in labour market performance that mean the pay floor for younger workers, including 21-24 year olds, cannot currently be set at the same level as that for workers aged 25 and over without risk to employment. We also said we would balance the risks of pricing younger workers out of employment, were we to set the rate too high, against the risks of encouraging employers to substitute younger workers for older ones, were we to set the rate too low.

62. A new challenge is the change in the minimum wage calendar – with all rates aligned from April 2017 – which means that these recommendations, if accepted, will come into force six months after those we made in our Spring 2016 Report. In light of this we have adjusted the rates to ensure that neither workers nor employers are advantaged or disadvantaged. The rates are lower than they would be on a full-year basis to recognise that workers will, in effect, receive two increases for the period from October to April.

63. Our Spring 2016 Report made our first ever recommendations for 21-24 year olds as a distinct group, a cohort established as a new age band of the minimum wage by the introduction of the NLW. We recommended a significant increase in the rate, but less rapid than the increase that those aged 25 and over were set to receive under the NLW. This reflected that 21-24 year olds had strong pay growth and improving employment prospects, but unemployment rates for those not in full-time education almost double those of 25-30 year olds.

64. The labour market data since our last report suggest that 21-24 year olds' performance has strengthened further in 2016, with higher pay growth at the median than for 25-30 year olds. However, unemployment rates for 21-24 year olds remain higher than for 25-30 year olds, the level of pay rates remains lower (especially for 21 and 22 year olds) and the bite remains the highest of any age group – even before the October 2016 increase is seen in the data.

65. Balancing these considerations, we recommend that the 21-24 Year Old Rate should increase to £7.05 from 1 April 2017. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 5.2 per cent. It is equivalent to an increase at an annual rate of 3.2 per cent.

66. In recent years we have generally recommended smaller increases for workers aged under 21 than for older workers because their labour market position has been worse and the damaging consequences of unemployment more serious.

67. However, in our Spring 2016 Report, solid pay growth, sharply falling unemployment and the shelter provided by the NLW meant that we were able to recommend a significant increase in the pay floor of 18-20 year olds. For 16-17 year olds the recommended increase was more modest, reflecting positive but relatively weaker wage growth and employment performance.

68. In data since our last report, employment, unemployment and pay of 18-20 year olds has continued to improve strongly. Substantial pay growth meant that the bite fell sharply – likely reflecting some workers of this age receiving the NLW. The unemployment rate for those not in full-time education fell more strongly than for other age groups. However, its level remains three times higher than for 25-30 year olds and median pay a third lower, with the bite the second highest of any age group.

69. The improvement in the position of 16-17 year olds has been more limited. Pay growth for 16-17 year olds was similar to that of those aged 25 and over in the year to April 2016 – but below that of those aged 18-24. Both the employment rate and unemployment rate for those not in full-time education were flat over the year, with possible recent signs of performance slowing.

70. Critically, for both age groups the data predate any effects from the UK's decision to leave the EU, where any fall in employment or rise in unemployment would likely bear on younger workers first.

71. Balancing strong performance looking backwards against these groups' greater exposure to labour market risks looking forwards, we recommend an increase in the 18-20 Year Old Rate to £5.60 from 1 April 2017. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 5.7 per cent. It is equivalent to an increase at an annual rate of 3.1 per cent.

72. For 16-17 year olds, we recommend an increase to £4.05 from 1 April 2017. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 4.7 per cent, equivalent to an increase at an annual rate of 2.8 per cent.

73. In successive years we have sought to recommend a level for the Apprentice Rate that protects workers from exploitation while encouraging the supply of places overall (and particularly for younger workers, whose relative share has fallen over time). These goals have been reflected in recommendations set at a discount to the 16-17 Year Old Rate to recognise the costs to employers of providing training and supervision.

74. In our Spring 2016 Report, we recommended a moderate increase in the Apprentice Rate in view of limited new evidence, substantial policy change, and the Government's decision to implement a 21 per cent increase in October 2015, the impact of which it was premature to judge.

75. For this report, the new 2016 Apprentice Pay Survey and further data on starts show very strong pay growth without conclusive negative effects on apprenticeship supply. Starts have increased overall and for 16-18 year olds in particular, although they have fallen at Level 2 and for 19-24 year olds.

76. The main area of concern is that data suggest very high, and possibly worsening, levels of non-compliance. On our lower bound estimate, the level of underpayment is 5 per cent, rising to 15 per cent based on our preferred measure.

77. Balancing these considerations, we recommend an increase to £3.50. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 6.1 per cent. It represents an increase at an annual rate of 4.5 per cent.

78. We encourage the Government and HMRC to redouble enforcement efforts for apprentice pay, as well as monitoring quality in minimum wage apprenticeships, where little information is available.

79. We conducted a review of the accommodation offset in 2013. As a result we said that we would stage increases towards the (then) adult rate of the minimum wage when economic circumstances meant that its real value was tending to rise – with the aim of ensuring provision of higher quality accommodation by employers. In recognition that the value of the offset needs to increase significantly if timely progress is to be made towards the 21-24 Year Old Rate, we recommend a 40 pence increase in the offset to £6.40. This should both better reflect the costs of providing accommodation and help the horticulture sector in particular.

Recommendations

The National Living Wage and other minimum wage rates

We recommend that the National Living Wage should increase by 30 pence or 4.2 per cent to £7.50 per hour from 1 April 2017.

We recommend that the 21-24 Year Old Rate should increase to £7.05 from 1 April 2017. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 5.2 per cent. It is equivalent to an increase at an annual rate of 3.2 per cent.

We recommend that the 18-20 Year Old Rate should increase to £5.60 from 1 April 2017. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 5.7 per cent. It is equivalent to an increase at an annual rate of 3.1 per cent.

We recommend that the 16-17 Year Old Rate should increase to £4.05 from 1 April 2017. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 4.7 per cent. It is equivalent to an increase at an annual rate of 2.8 per cent.

We recommend that the Apprentice Rate should increase to £3.50 from 1 April 2017. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 6.1 per cent. It is equivalent to an increase at an annual rate of 4.5 per cent.

Accommodation offset

We recommend that the accommodation offset should be increased by 40 pence to £6.40 a day from 1 April 2017.

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Economic context

Introduction

1.1 In our Spring 2016 Report we recommended that the 21-24 Year Old Rate should increase by 3.7 per cent to £6.95 an hour from 1 October 2016, the 18-20 Year Old Rate by 4.7 per cent to £5.55 an hour, the 16-17 Year Old Rate by 3.4 per cent to £4.00 an hour, and the Apprentice Rate by 3.0 per cent to £3.40 an hour. Using the forecasts available, and assuming straight line increases in its relative value, we estimated future rates of the National Living Wage (NLW). We projected rates of £7.64 in April 2017 and £9.16 in April 2020, though thought these likely to be on the high side given previous optimism in pay forecasts, and limited evidence of strong pay growth in other data.

1.2 We start this report, our 18th, by considering how the economy has performed in the first part of 2016, and compare it with the forecasts available and our expectations when we agreed those recommendations and estimates. As well as forecasts, our analysis took account of the impact of the minimum wage to date, the state of the economy, international comparisons and developments, and the likely impact of government legislation. Our recommendations in this report again take account of the same considerations.

1.3 The state of the economy is relevant in different ways for our decisions on the NLW and the other rates of the minimum wage. On the NLW, our role is to recommend steps in a profile for the rate to reach 60 per cent of median earnings by 2020, with increases subject to 'sustained economic growth'. So we are particularly concerned with GDP growth and employment growth relative to the Government's expectations when the policy was developed, which included some tolerance of job losses, against anticipated strong gains in the wider economy. On the other rates, our role is to recommend rates as high as possible that don't damage employment or the economy. So we are particularly concerned with evidence on how the labour market has responded to past changes in the rates, in order to understand the scope to go further, or whether more caution is needed.

1.4 The common theme across all the rates is our interest in evidence on the conditions required for sustainable increases in the pay floor. In previous discussions of the future path of the National Minimum Wage (NMW), in our 2014 and 2015 reports, before the NLW was announced, we said that faster increases in the NMW were dependent on four factors: sustained economic recovery; continued employment growth (particularly within the low-paying sectors and among small firms); a return to real wage growth in the economy; and an improvement in productivity. We believe that these factors remain important, and will ultimately determine the affordability of the NLW and the speed at which the other rates of the NMW can increase.

1.5 The main change since our Spring 2016 Report arises, of course, from the Referendum on 23 June. The decision to leave the European Union (EU) is a seismic political and economic change, with opportunities and risks in both the long-term and the short-term. The key immediate implication is a period of adjustment, characterised by increased uncertainty. Political uncertainty relates to the UK's trading relationship with the EU and its trading arrangements with other economic partners, which could affect the structural prospects for the UK economy.

1.6 Wider macroeconomic uncertainty relates to a range of factors, including: business confidence; public sentiment; economic growth; employment and unemployment; business investment; company earnings; stock prices; the exchange rate; and so on. The impact of the EU Referendum for the economic outlook is mainly considered in Chapter 5. We focus here on the backwards-looking picture between the announcement of the NLW in July 2015 and change in the economy up to the middle of 2016, which reflects the data available to inform our most recent recommendations.

Economic context

1.7 The UK economy was performing reasonably well when the Low Pay Commission (LPC) met in the middle of January 2016 to consider its recommendations for the October 2016 NMW upratings to the youth rates and the Apprentice Rate, as well as to set out its initial views on the path of the NLW.

1.8 UK economic growth had been relatively robust, albeit slowing from 2.9 per cent in 2014 to about 2.1 per cent in 2015 (since revised upwards to 3.1 per cent and 2.2 per cent). Though performance reflected continued reliance on services and business investment rather than exports, growth had been broadly in line with our expectations. Looking ahead, we expected GDP growth to continue at a similar pace – below the pre-recession trend, but steady, and sustained by consumer spending, which in turn would be sustained by low inflation. There were also hopes for stronger business investment, including strengthening profitability in larger firms, easing of credit conditions, and low oil prices. As shown in Table 1.1, the OBR and (the median of the) HM Treasury Panel of Independent Forecasts forecast GDP growth in 2016 to be around 2.2-2.4 per cent.

1.9 Employment growth had continued to be strong, albeit weaker than the record levels recorded in 2014, including employment growth for workers aged above and below 25, permanent, and full-time employees. Unemployment and the claimant count had also fallen. The number of jobs was growing solidly, though, for the first year since the recovery, performance was weaker in low-paying sectors than in non low-paying sectors. The main areas of weakness were in retail, childcare and domiciliary care. Looking ahead, we expected more modest but solid jobs growth, reflecting fairly strong hiring intentions, including in hotels and restaurants. This more modest employment growth was, however, not expected to lower unemployment significantly.

1.10 Wage growth had picked up towards 3 per cent for much of 2015, but had slowed to just above 2 per cent by November. Inflation had been very low, enabling some reversal of the long decline in real wage growth that the UK had experienced since 2008. Looking ahead, inflation was expected to pick up, although the Consumer Prices Index (CPI) was still forecast to remain

somewhat under target while the Retail Prices Index (RPI) rose above 2.0 per cent. With productivity also picking up, average wage growth was forecast to increase to around 3.2-3.4 per cent.

Table 1.1: Forecast and out-turn data, UK, 2015-2016

Per cent	Actual data	Forecasts for 2016				Actual data
		OBR			HM Treasury Panel	
	2015	July 2015	November 2015 (Spring Report)	March 2016	January 2016 (Spring Report)	(Actual whole year or latest)
GDP growth (whole year)	**2.2**	**2.3**	**2.4**	**2.0**	**2.2**	2.0-2.1[a]
Average earnings AWE (whole year)	**2.3**	**3.6**	**3.4**	**2.6**	**3.3**	2.2[b]
Inflation RPI (Q4)	**1.0**	**2.4**	**2.3**	**1.9**	**2.4**	2.0[c]
Inflation CPI (Q4)	**0.1**	**1.3**	**1.4**	**1.0**	**1.3**	1.0[c]
Employment growthd (whole year)	**1.2**	**1.0**	**1.3**	**1.3**	**0.9**	**1.5**
ILO unemployment rate (Q4)	**5.1**	**5.1**	**5.1**	**4.9**	**5.1**	4.9[e]
Claimant count (millions) (Q4)	**0.78**	**0.73**	**0.77**	**0.74**	**0.78**	0.78[f]

Source: HM Treasury panel of independent forecasts (2016a), OBR (2015b, 2015c and 2016b) and LPC estimates based on ONS data: GDP growth (ABMI), total employment as measured by workforce jobs (DYDC) and claimant unemployment (BCJD), quarterly, and AWE total pay (KAB9), monthly, seasonally adjusted; RPI (CZBH) and CPI (D7G7), quarterly, not seasonally adjusted, UK (GB for AWE), 2014-16.

Notes:

a. Estimate of economic growth based on latest ONS data and LPC estimates that the fourth quarter out-turn in 2016 will range within 0.0-0.7 per cent.
b. Estimate of average earnings growth based on September 2015-August 2016 compared with the same period a year earlier.
c. Inflation data are for September 2016.
d. OBR forecasts employment levels rather than growth. Growth forecasts shown here reflect the percentage differences between these forecast levels.
e. The ILO unemployment rate is for the three months to August 2016.
f. The claimant count is for September 2016.

1.11 So far, the latest data (mostly up to the second quarter of 2016) suggest trends in the first part of the year were broadly in line with what we expected. GDP growth may have been slightly weaker. Employment growth was stronger, with the unemployment rate continuing to fall in 2016. The claimant count turned out similar to the forecasts. The main difference, relative to the data available in the spring, is that wage growth was once again weaker than forecast, but similar to that experienced in 2015 – around 2.2 per cent. CPI inflation, having been much lower than forecast in the first half of 2016, had picked up since June and was now close to those forecasts. The first part of 2016 showed continuity with the medium-term story for the UK economy since the 2008 recession: moderate growth, strong employment performance, but weak wage and productivity growth, albeit now with continued real wage increases due to low inflation.

The National Living Wage

1.12 As well as change in the economy relative to our expectations in January, we are also interested in change relative to the position when the NLW was announced, which reflected the Government's expectations for the policy. As Table 1.1 showed, in July 2015 the OBR forecast stronger wage and price inflation and weaker employment growth in 2016 than in the November forecast that we used in our deliberations in January. Nevertheless, they were similar to the (median) forecasts from the HM Treasury Panel of Independent Forecasts from January 2016 which were used in our Spring 2016 Report.

1.13 Employment and unemployment has performed into 2016 on the upside of the OBR's forecast when the NLW was announced. The main change since then has been lower earnings growth, which bears more directly on the NLW than the other rates because it affects the level of the 2020 target. In our Spring 2016 Report, the latest OBR earnings forecasts available (from November 2015) and the 2015 Annual Survey of Hours and Earnings (ASHE) implied a target rate of the NLW of £9.16. As shown in Table 1.2, this was 19 pence less than that estimated when the NLW policy was first announced in July 2015 (£9.35), which used OBR forecasts made in July 2015 and the 2014 ASHE data. In March 2016 (just after our Spring 2016 Report was published) the OBR updated its wage forecasts. This had the effect of further reducing the target – to £9.02. Thus, between the announcement of the policy in July 2015 and its implementation in April 2016, the expected 'target' rate had fallen by 3.4 per cent, or 33 pence an hour.

1.14 Forecasts by the Bank of England (2016d) and the HM Treasury Panel of Independent Forecasts (2016i) suggest that the target rate for 2020 has fallen further since then (no new OBR forecasts have been published since March – the next are due at the time of the Autumn Statement – after this report is submitted). The decline partly reflected the fact that wage growth had been more sluggish in the first half of 2016 than had been forecast. It also reflected downward revisions to wage forecasts out to 2020, partly predating and partly following the EU Referendum result. We consider these forecasts further in Chapter 5.

Table 1.2: Updated paths for the NLW, UK, 2015-2016

	LPC estimates using:								
ASHE	**2014**			**2015**					
OBR hourly earnings forecast	**July 2015**			**November 2015**			**March 2016**		
	Implied NLW	**Implied median**	**Implied bite**	**Implied NLW**	**Implied median**	**Implied bite**	**Implied NLW**	**Implied median**	**Implied bite**
	£	**£**	**%**	**£**	**£**	**%**	**£**	**£**	**%**
2016	**7.20**	13.13	54.8	**7.20**	13.06	55.1	**7.20**	12.98	55.5
2017	7.67	13.68	56.1	7.63	13.56	56.3	7.60	13.43	56.6
2018	8.19	14.26	57.4	8.11	14.10	57.5	8.05	13.95	57.7
2019	8.74	14.89	58.7	8.62	14.66	58.8	8.51	14.44	58.9
2020	**9.35**	15.59	60.0	**9.16**	15.27	60.0	**9.02**	15.03	60.0

Source: LPC estimates using ASHE, April 2014-15, standard weights, UK; and OBR forecasts for hourly earnings (OBR 2015b, 2015c and 2016b).

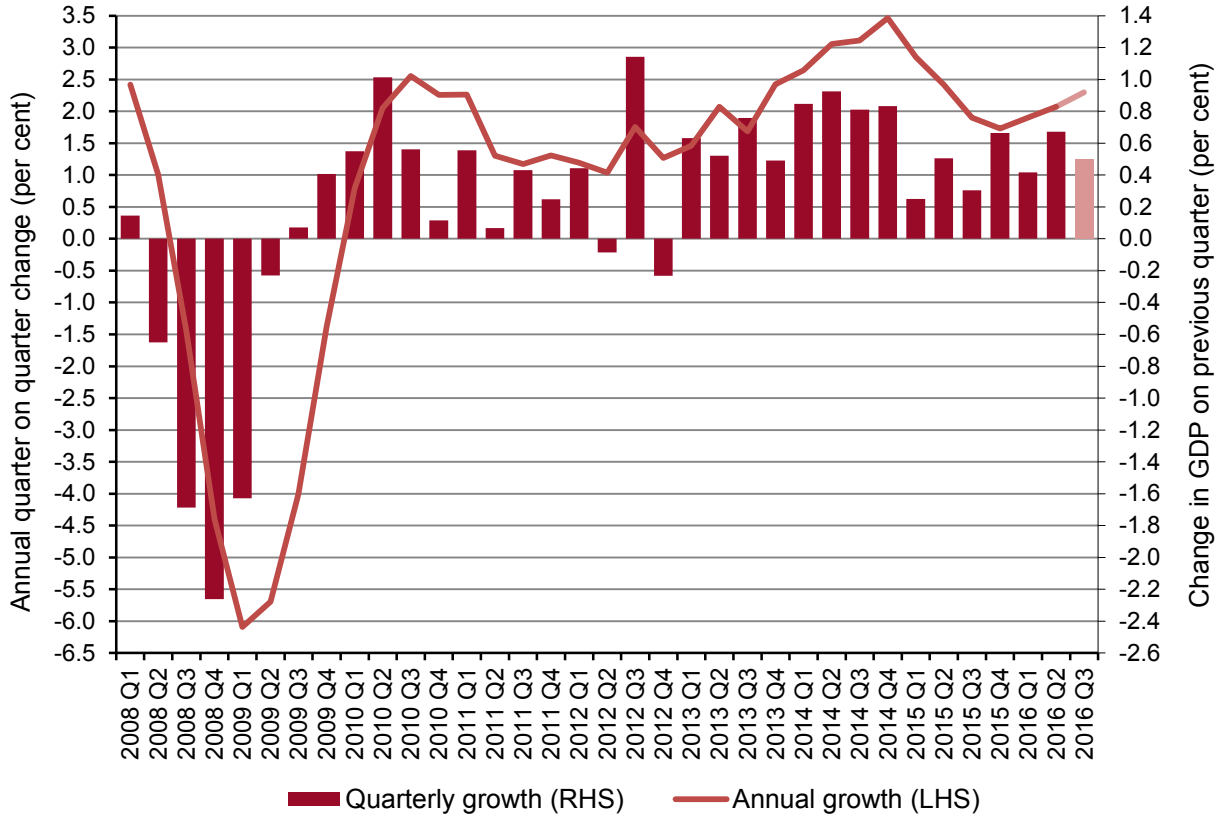
1.15 We now look at what has happened to the economy in 2016 in more detail.

GDP growth

1.16 When we met in January, the forecasts available to us suggested that the UK would have sustained economic growth over the next two years, with real GDP increasing by 2.2-2.4 per cent in 2016 and 2.3-2.5 per cent in 2017.

1.17 According to the available data for GDP when we met in mid-October, compared with the first quarter of 2016, the UK economy grew by 0.7 per cent in the second quarter of 2016.[1] On an annualised four-quarter basis, it grew by 2.1 per cent. Indeed, on that measure, the last time that UK growth dipped below 1 per cent was in the first quarter of 2010 as it recovered from the deepest and longest recession since the Second World War. There have been 14 consecutive quarters of growth since the first quarter of 2013.[2]

Figure 1.1: GDP growth, UK, 2008-2016



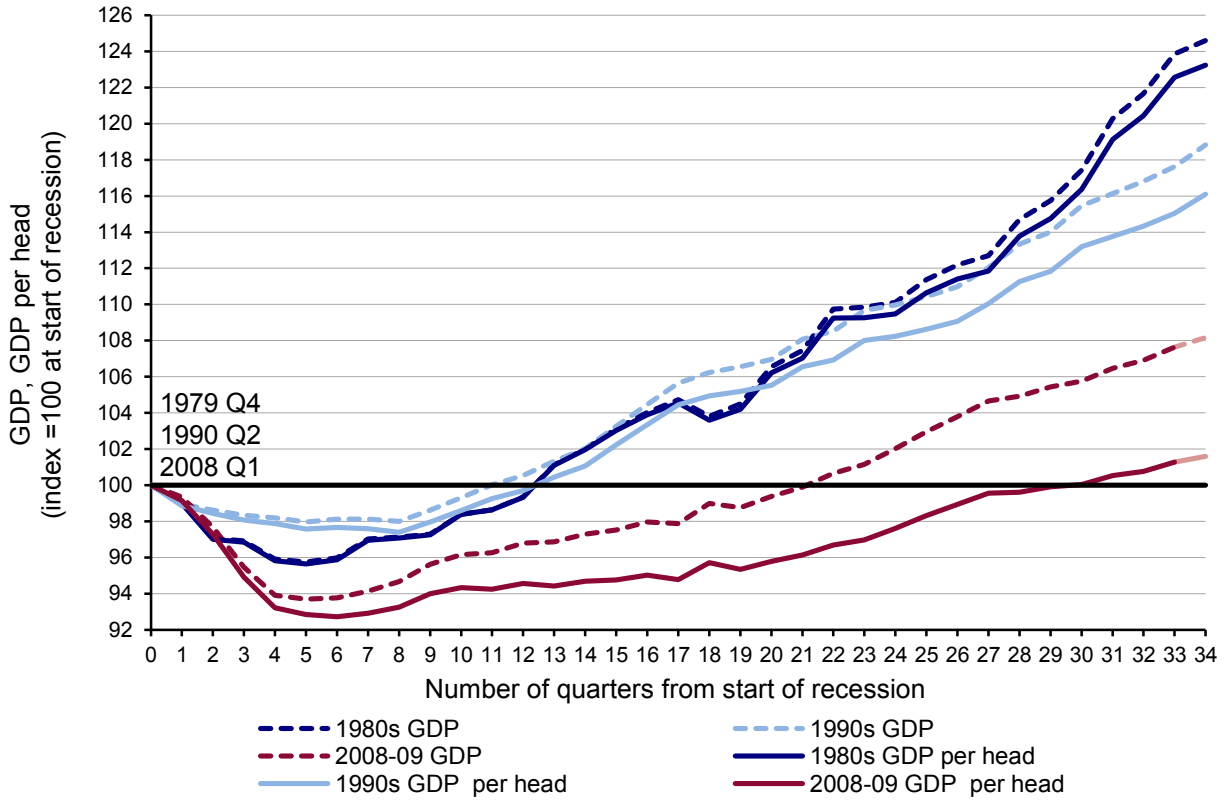
Source: ONS data: quarterly change in GDP (ABMI), quarterly, seasonally adjusted, UK, Q1 2008-Q3 2016.
Note: GDP data for the third quarter of 2016 was not available at the time of our deliberations.

1.18 However, it is the weakest peace-time recovery for at least a century and measured on a per head basis is even weaker. The UK economy, as shown in Figure 1.2, has grown by nearly 8 per cent in the 33 quarters since 2008, the start of the most recent recession. That compares with growth, at a similar point, of 24 per cent in the aftermath of the 1980s recession, and nearly 18 per cent following the 1990s recession. Furthermore, population increases have been larger in the most recent period. GDP per head recovered to reach its pre-recession levels only in the second quarter of 2015, seven years (29 quarters) after the start of the recession – compared with just over three years after the recessions of 1980s and 1990s. It was 1.3 per cent higher in the second quarter of

1 On 27 October, ONS released its preliminary estimate of GDP in the third quarter of 2016 – it was 0.5 per cent higher than in the second quarter and 2.3 per cent up on a year ago.
2 The third quarter of 2016 becomes the 15th consecutive quarter of economic growth.

2016 than it was in the first quarter of 2008. After 33 quarters of the recessions in the 1980s and 1990s, it was 22.6 per cent and 15.0 per cent higher respectively.

Figure 1.2: Recoveries from recessions compared, UK, 1979-2016



Source: LPC estimates using ONS data: GDP (ABMI) and GDP per head (IHXW), quarterly, seasonally adjusted, UK, Q3 1979-Q3 2016.

1.19 To get an understanding of how balanced any growth has been across the economy, we can look at expenditure, income and output – the three methods used by ONS to estimate the size of the economy. We start by looking at expenditure which has four main components: consumer spending; government spending; investment; and net trade. We can see from Table 1.3 that the economy grew by an average of 0.7 per cent between the introduction of the NMW and the onset of recession. It also grew as strongly in the second quarter of 2016 – so an encouraging picture in historical terms. That growth was supported by the consumer, with household spending growing by 0.9 per cent – again in line with its pre-recession growth. Meanwhile, investment grew by 1.6 per cent – having rebounded from the sluggishness observed in the previous three quarters. There was also an increase in inventories that boosted growth. However, there were also areas of weakness. Net trade acted as a significant drag on growth in the second quarter of 2016, having given a small boost to growth in the second half of 2015. Government spending had also weakened since the middle of 2015 and did not grow at all in the second quarter of 2016.

Table 1.3: Average quarterly growth for expenditure components of GDP, UK, 1998-2016

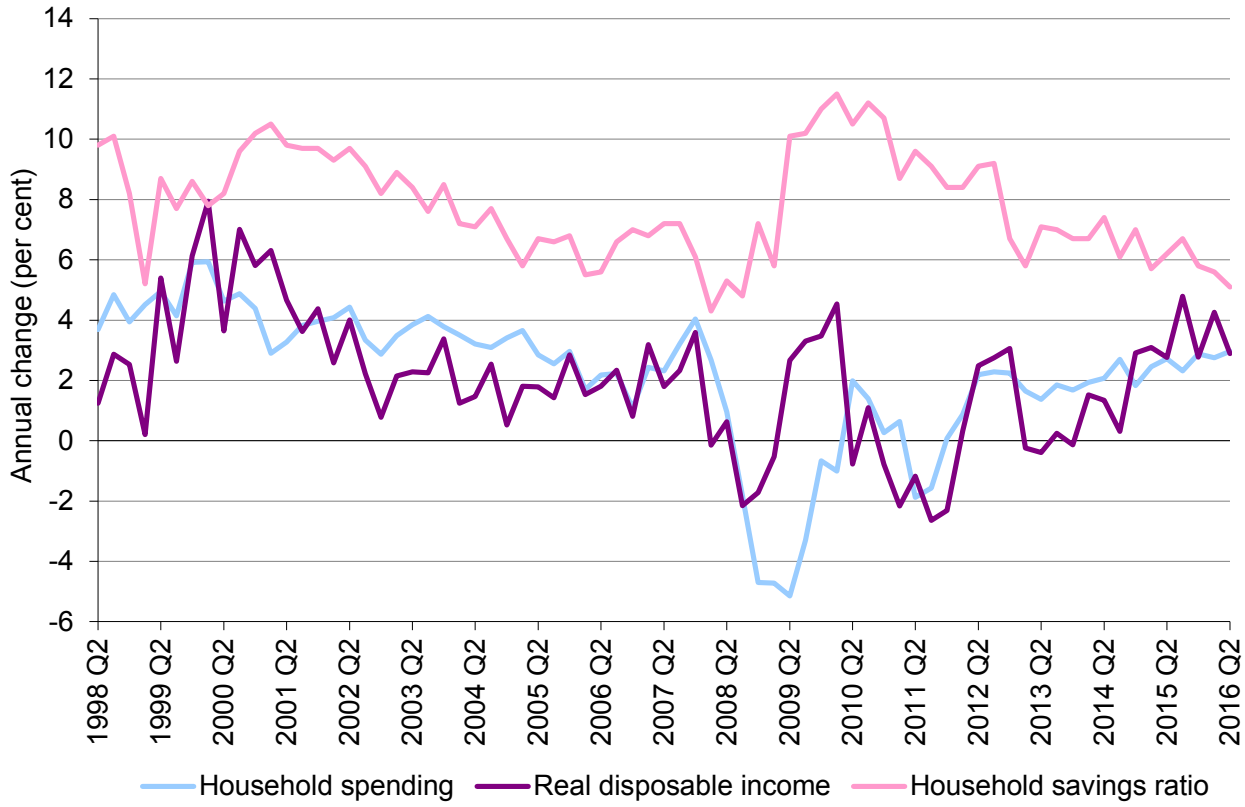
Percentage changes on a quarter earlier	Averages						
	1998-2007	2008-12	2013-14	2015 H1	2015 H2	2016 Q1	2016 Q2
Household consumption	0.9	-0.1	0.4	0.7	0.7	0.7	0.9
Investment	0.8	-0.7	1.1	1.3	-0.2	-0.1	1.6
Business investment	0.5	-0.1	0.7	1.2	-0.4	-1.1	1.0
Dwellings investment	0.1	-1.3	2.3	3.1	-0.5	1.6	0.8
Government consumption	0.7	0.3	0.3	0.7	0.3	0.4	0.0
Change in inventories	0.4	-0.6	1.3	1.6	1.2	0.5	1.2
Domestic demand	0.8	-0.1	0.8	0.4	0.4	0.1	1.4
Exports	1.1	0.0	0.7	0.5	2.0	0.1	-1.0
Imports	1.4	0.0	1.0	0.8	1.6	0.2	1.3
GDP	**0.7**	**-0.1**	**0.7**	**0.4**	**0.5**	**0.4**	**0.7**

Source: LPC estimates using ONS data: household consumption (ABJR); total investment (NPQT); business investment (NPEL); dwellings investment (DFEG); government consumption (NMRY); change in inventories (CAFU); domestic demand (YBIM); exports (IKBK); imports (IKBL); and GDP (ABMI), quarterly, seasonally adjusted, Q4 1997-Q2 2016.

1.20 Minimum wage workers are mainly employed in service industries, but some work in traded industries and others are dependent, to some extent, on state funding. So the strength in consumer spending in the early part of 2016 should have helped support those low-paying sectors such as retail, hospitality, leisure and hairdressing. By contrast, the weakness in government spending may have been a downward pressure on funding for childcare and social care. Weak net trade may also have affected low-paying manufacturing jobs – in particular, food processing, and textiles – and those in agriculture and horticulture.

1.21 Consumer spending is particularly important to the two largest low-paying sectors, retail and hospitality. As shown in Figure 1.3, it has been supported recently by an increase in real disposable household incomes, as wage growth has finally outstripped inflation while employment has continued to increase. More ambiguously for its future sustainability, consumer spending has also been supported by a falling savings ratio.

Figure 1.3: Consumer spending, real household disposable incomes and the savings ratio, UK, 1998-2016



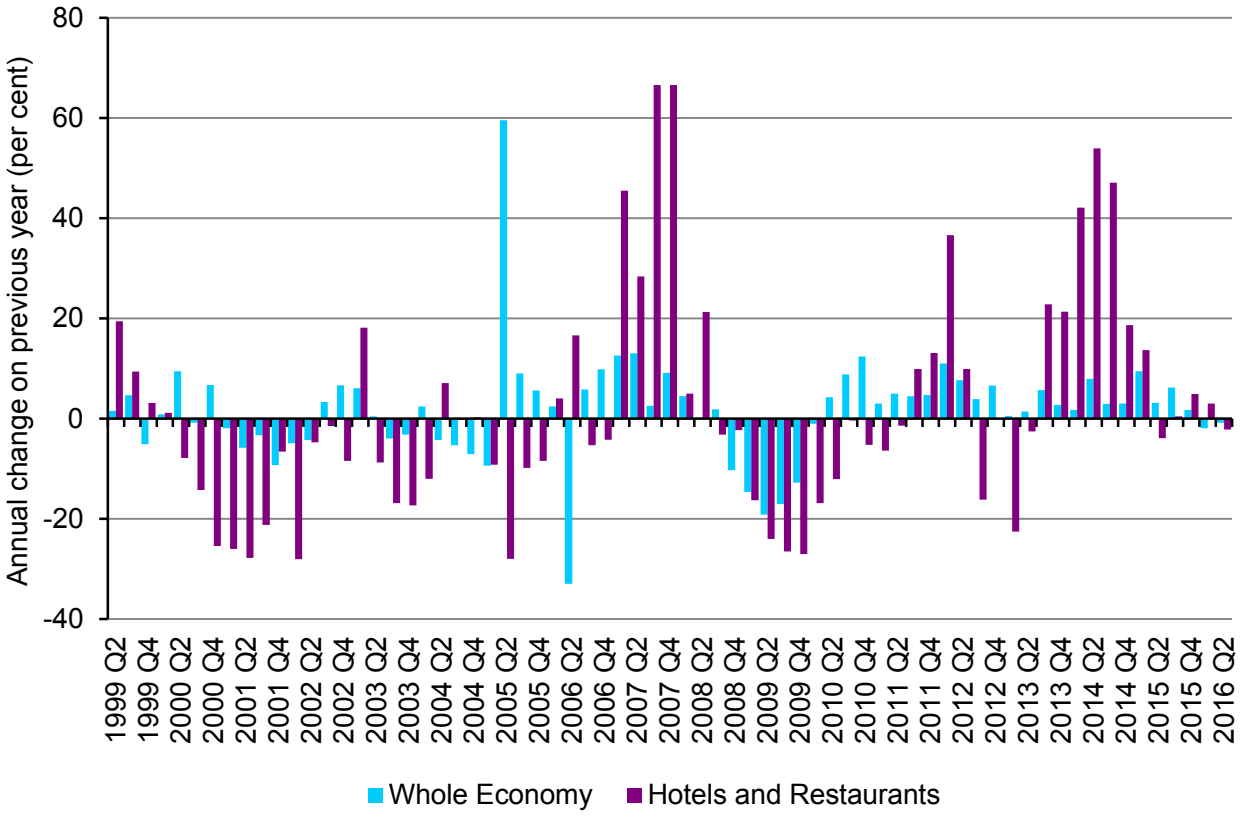
Source: LPC estimates based on ONS data: household spending (ABJR), real disposable income (NRJR), household saving ratio (NRJS), quarterly, seasonally adjusted, UK, Q2 1997-Q2 2016.

Investment

1.22 Whole economy investment in the second quarter of 2016 had almost recovered to its pre-recession level, with a moderate pick-up, increasing by 1.6 per cent. Having grown strongly by 6.7 per cent in 2014, total investment growth had noticeably slowed in 2015, increasing by 3.4 per cent. Indeed, total investment actually fell by 1.3 per cent in the fourth quarter of 2015 and remained weak in the first quarter of 2016 (falling 0.1 per cent). Improved performance in the second quarter reflected more business investment (up 1.0 per cent on the first quarter of 2016) and government investment (up 7.6 per cent) – particularly in transport equipment (up 14.9 per cent). Compared with the second quarter a year ago, total investment was up 1.0 per cent – driven by government investment (up 4.8 per cent) and investment in dwellings (up 1.4 per cent), but offset by a fall in business investment (down 0.8 per cent).

1.23 During the recession, business investment fell by over 18 per cent. From 2010, it began recovering and was 7 per cent above its pre-recession level in the second quarter of 2016. Figure 1.4 shows the broadly positive picture in recent years, followed by softening with two consecutive quarters of contraction before a slight increase in the most recent quarter. Business investment in hotels and restaurants had also recovered from the recession and a slowdown in 2012, with strong growth in 2014. However, it also slowed going into 2016.

Figure 1.4: Business investment, UK, 1999-2016



Source: LPC estimates using ONS data: business investment in whole economy (NPEL); and business investment in hotels and restaurants (DS86), quarterly, seasonally adjusted, UK, Q2 1998-Q2 2016.

Trade

1.24 UK exports accounted for around 30 per cent of total GDP in the second quarter of 2016, while imports were worth slightly more – around 33 per cent of GDP. Trade is therefore an important component of the overall size of the economy and net trade is a major factor in overall growth of the UK economy. In August 2016 – the latest data available – the UK's deficit on trade in goods and services was estimated to have been £4.7 billion, a widening of £2.5 billion from July 2016. Exports increased by £0.1 billion, with imports increasing by £2.6 billion. In the three months to August 2016 the total trade deficit for goods and services widened by £3.6 billion to £12.6 billion compared with the three months to May 2016. Trade has thus generally been a drag on the UK economy. Indeed, over the two years to the second quarter of 2016, net trade reduced GDP by an average of 0.2 percentage points a quarter.

Sectors

1.25 As we noted above, as well as expenditure, we can also look at output to understand recent economic performance, including the sectoral composition of growth. Along with other workers, most minimum wage workers in the UK work in services, with relatively few in construction, agriculture and production (including manufacturing). There has been little evidence of rebalancing the economy towards 'the makers' since the end of the recession. While the services sector has performed better than the whole economy since the first quarter of 2008 – with output around 12 per cent higher in the second quarter of 2016 compared with around 7.5 per cent – manufacturing

output was still 5 per cent lower in the second quarter of 2016 than in the first quarter of 2008. Agricultural output had grown at the same rate as the whole economy over the same period. Construction output has only just returned to its pre-recession level.

1.26 Recent trends into 2016 are broadly in line with this overall picture, but with an uptick in manufacturing. As shown in Table 1.4, manufacturing output increased strongly in the second quarter of 2016 after declining throughout 2015 and the first quarter of 2016. By contrast, output in construction has been more volatile, with weakness in construction in the second quarter of 2016 following strong growth in the first quarter. Agricultural output has been weak since the beginning of 2015.

1.27 The manufacturing growth was driven by a large increase in the output of transport equipment and pharmaceuticals. The two low-paying manufacturing sectors – manufacture of textiles, wearing apparel and leather products, and the manufacture of food products, beverages and tobacco – have had contrasting fortunes over the last year to the second quarter. While output in textile manufacture fell by nearly 9 per cent, it increased by 1.7 per cent in food processing. However, in the two months since then food processing output has stalled, while textile manufacture has improved.

Table 1.4: Average quarterly growth, by sector, UK, 1998-2016

Percentage changes on a quarter earlier

	Averages						
	1998-2007	2008-12	2013-14	2015 H1	2015 H2	2016 Q1	2016 Q2
Services	0.9	0.1	0.7	0.3	0.7	0.7	0.6
Manufacturing	0.1	-0.5	0.5	-0.2	-0.1	-0.4	1.7
Construction	0.5	-0.7	1.5	1.7	-0.1	0.8	-0.1
Agriculture	0.2	0.0	2.2	-0.9	0.2	-0.1	-1.0
Retail and hospitality	0.6	-0.1	0.9	0.9	1.3	1.0	1.3
Retail	0.5	-0.2	1.4	0.9	1.1	1.7	1.0
Hospitality	0.7	0.0	0.3	0.9	1.5	0.3	1.7
Whole economy	**0.7**	**-0.1**	**0.7**	**0.4**	**0.5**	**0.4**	**0.7**

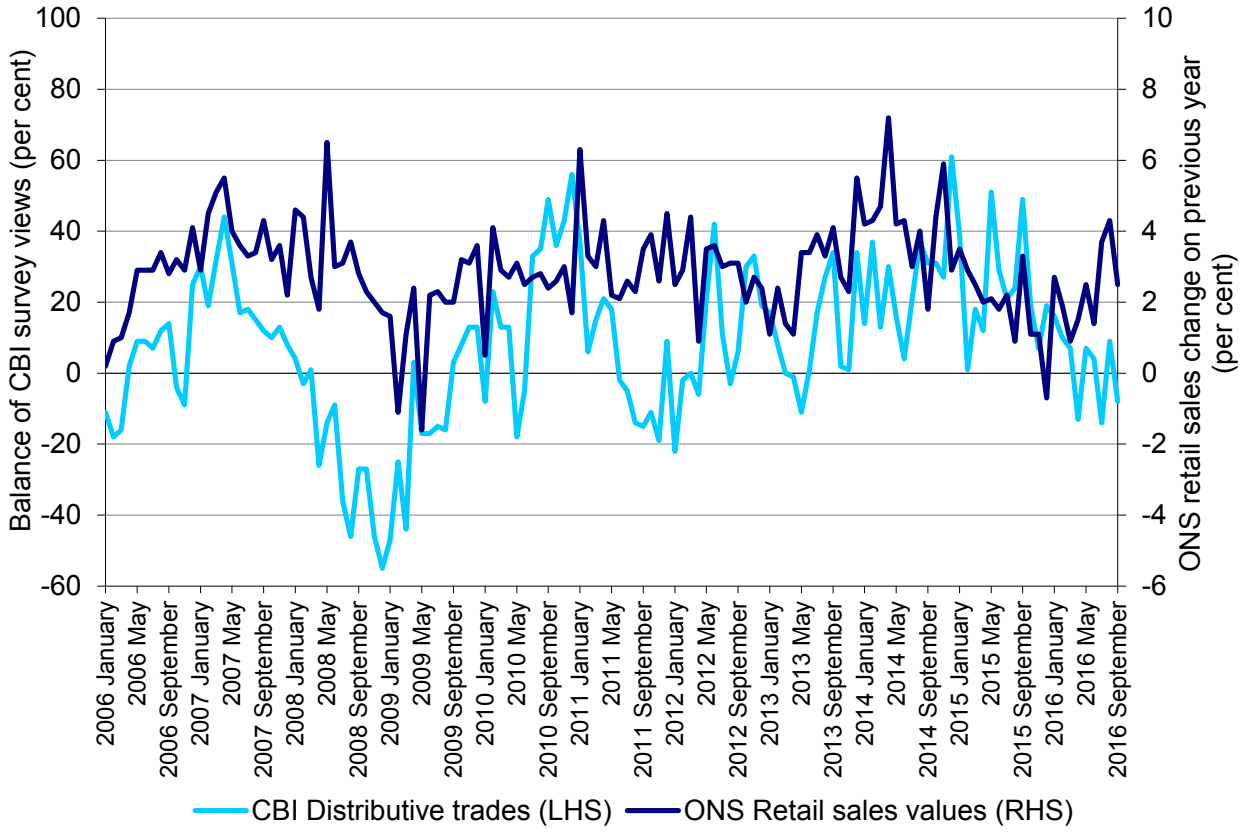
Source: LPC estimates based on ONS data: whole economy GDP (ABMI); services (L2NC) manufacturing (L2KX); construction (L2N8); agriculture, fishing & forestry (L2KL); distribution, hotels and restaurants (L2PZ); wholesale & retail trade; motors and repairs (L2NE); and hotels & restaurants (L2NQ), quarterly, seasonally adjusted, UK, Q4 1997-Q2 2016.

1.28 Services output, supported by increases in consumer spending, has grown strongly since the end of 2012. The two largest low-paying sectors – retail and hospitality – continue to perform strongly, with growth consistently around 1 per cent each quarter since the beginning of 2013. Retail grew more strongly than hospitality in the first quarter of 2016, but this reversed in the second quarter – hospitality growing by 1.7 per cent compared with retail growth of 1.0 per cent.

1.29 This strength in retail has been reflected in the value of retail sales, which have been relatively strong so far in 2016. Retail sales in September 2016 were 2.5 per cent higher than in September 2015. Food sales have been particularly strong across recent months, and have been supported by growth across the board in non-food stores, except in textile, clothing and footwear stores, which have experienced a fall in sales of around 5 per cent. Internet sales were up by 22 per

cent over the year. An alternative measure of the strength of the retail sector is captured by the CBI Distributive Trades Survey. Over time, as shown in Figure 1.5, it has generally closely tracked the official ONS series. However, in stark contrast to the official series, the business survey data has become less positive recently, with the balance of views from retailers on current sales becoming slightly negative in recent months. It might be that this is associated with size of the retailer – the official series showed falls in sales for retailers with fewer than 40 employees over the year to September 2016.

Figure 1.5: Retail sales, UK, 2006-2016



Source: LPC estimates using: ONS retail sale values – all retailing excluding fuel (J3MK); and CBI Distributive Trades Survey, monthly, UK, 2006-2016.

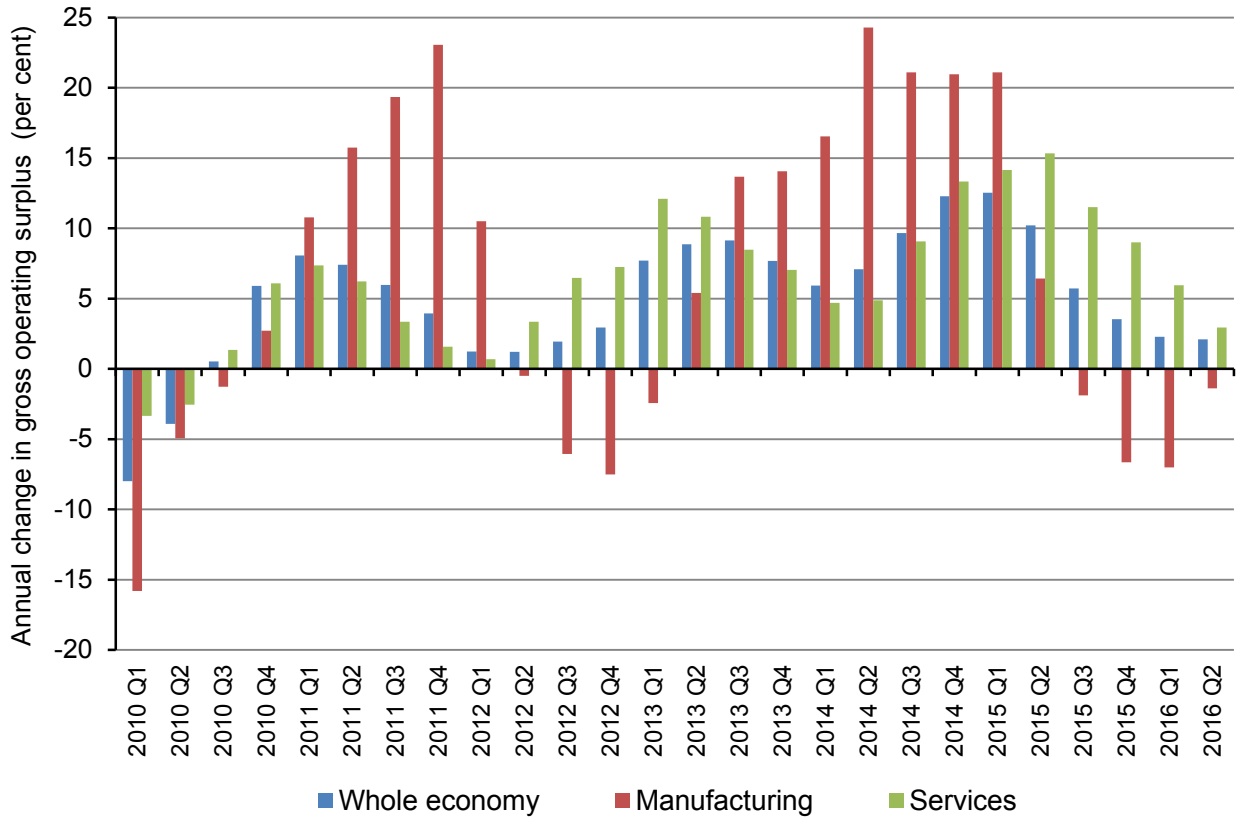
1.30 It should be also be noted that average store prices (including petrol stations) fell by 1.1 per cent in September 2016, compared with September 2015. This was the 23rd consecutive month of falling year-on-year prices.

1.31 Another way to measure changes in the size of the economy is total income (which consists of wages, profits, rents, and taxes and subsidies). We discuss compensation to employees (including wages and salaries, as well as employers' contributions to social insurance and pensions) when we consider pay later in this chapter. Here we look at various measures of profitability to get a sense of affordability in the economy, although the available data is limited in its detail.

Profits

1.32 Figure 1.6 looks at the annual change in gross operating surplus and shows how, after a period of strong growth from 2013 to 2014, profitability growth began to slow throughout 2015 and into 2016. We can disaggregate this broad measure by services and manufacturing. Whilst services have remained in profit since 2010, rates of growth have been steadily falling since peaking in the second quarter of 2015. Manufacturing profitability has fallen sharply in recent years, although the latest data from the second quarter of 2016 showed signs of improvement.

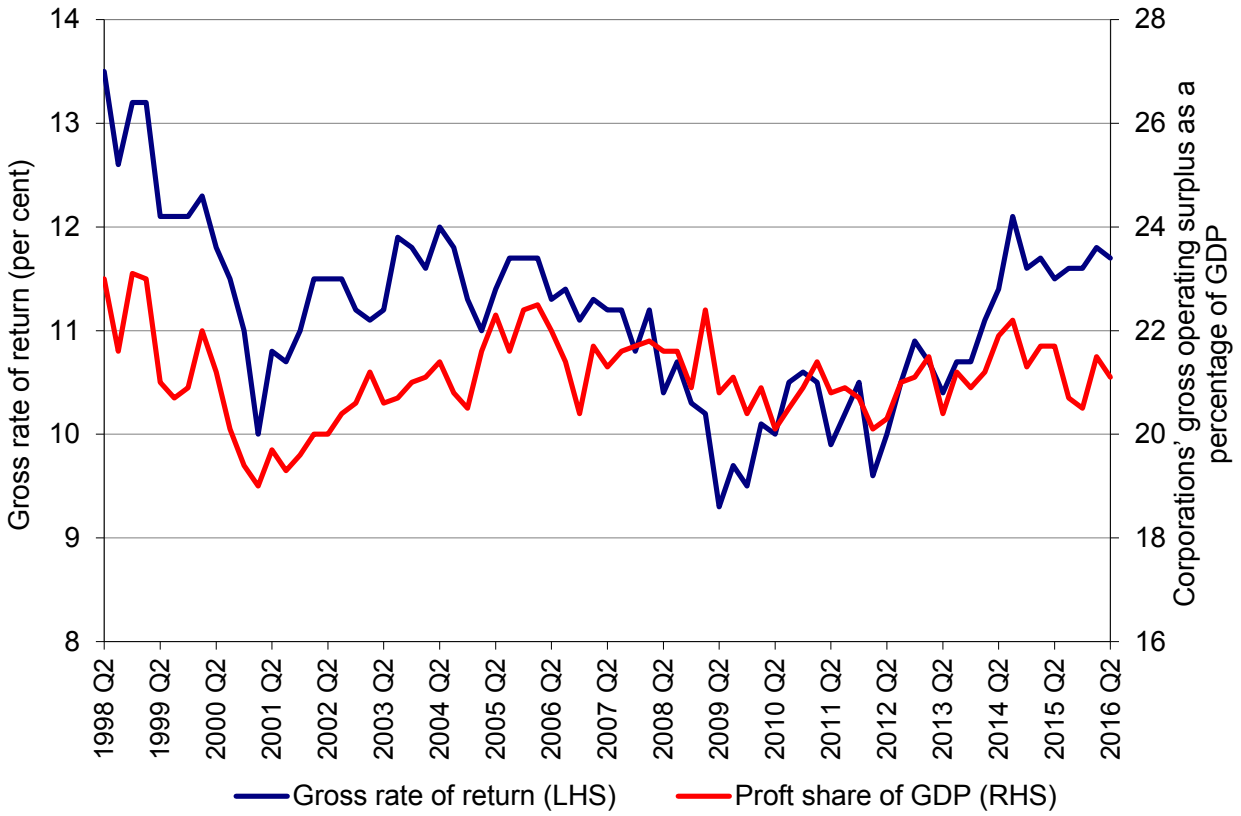
Figure 1.6: Gross operating surplus, UK, 2010-2016



Source: LPC estimates using ONS data: gross operating surplus for whole economy – non-oil and non-finance (LRXG); manufacturing (LRXR); and services (LRYF), four quarter rolling average, seasonally adjusted, UK, Q2 2009-Q2 2016.

1.33 We now consider two other measures of profit – profit share (gross operating surplus as a proportion of GDP) and the gross rate of return on capital employed. While subject to a degree of quarterly volatility, Figure 1.7 shows that the profit share has remained relatively stable over the last decade – fluctuating between 20 and 22 per cent. Since the middle of 2014, it has fallen from about 22 per cent to around 21 per cent. The gross rate of return on capital employed has followed a similar pattern. Profitability for firms on this measure has been around 11.5 per cent for the past two years, having increased steadily since the 2008 recession.

Figure 1.7: Rate of return and profit share, UK, 1998-2016



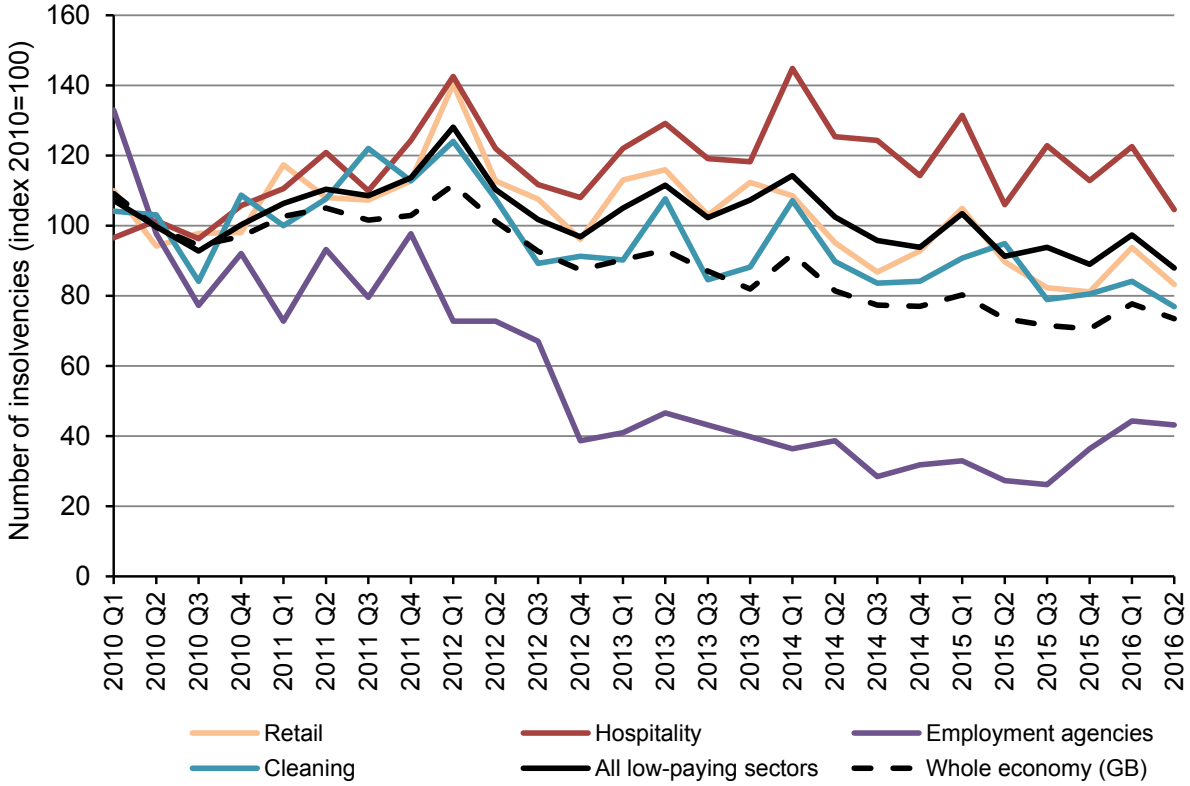
Source: ONS: gross rate of return (LRXO) and gross operating surplus as a percentage of GDP (IHXM), quarterly, UK, Q2 1998-Q2 2016.

Start-ups and failures

1.34 Another potential indicator of general affordability across the economy is the stock of firms – which takes account of the number of new firms created and the number of firms that have gone out of business. However, the official data (the number of VAT-registered businesses) only run up to 2014, which we considered in our Spring 2016 Report (the data for 2015 will be released in November). This data showed that the economic recovery in 2014 led to an increase of 4.1 per cent in the stock of firms across the whole economy, but that the increase in the low-paying sectors was much weaker at only 0.6 per cent. In our last report, we noted the contrast with the job growth data, which had shown stronger growth in the low-paying sectors.

1.35 There is more timely information available, however, on the death of firms – insolvencies. As shown in Figure 1.8, insolvencies have generally fallen across the whole economy since 2010. There was a small increase in the first quarter of 2016, but this reversed in the second quarter across all low-paying sectors.

Figure 1.8: Insolvencies of firms in low-paying sectors, GB, 2010-2016



Source: The Insolvency Service: insolvency statistics, Q1 2010-Q2 2016.

1.36 More recent data from insolvency firm, Begbies Traynor, has also found higher 'financial distress' in low-paying sectors exposed to the NLW, measured as businesses with minor country court judgements filed against them, or facing a sustained deterioration in working capital, retained profits or net worth. It reported a rise from 79,000 firms to almost 100,000 in distress in the six months after the introduction of the NLW – including around 33,800 retailers, 13,800 wholesalers, 13,000 transport and logistics companies and 10,800 bars and restaurants – though did not specify the overall number of firms it monitors (Financial Times, 2016).

Output summary

1.37 Overall, in the period from the announcement of the NLW in July 2015 to the end of the second quarter of 2016 (which included the implementation of the NLW in April 2016), the UK economy continued its recovery and was growing at around trend in the second quarter – though below its pre-recession pace, and only recently recovering its pre-recession level measured on a per worker basis.

1.38 Although the economy had not rebalanced away from services towards a greater share of manufacturing, investment had picked up in the second quarter of 2016 – particularly government investment. Consumer spending continued to be strong, aided by a strong labour market and real wage growth. However, trade and other government spending were weaker.

1.39 Data suggest company profits (measured via surpluses) were strongly up in the services sector following the recession, but growth rates have since declined (although remaining positive). Official data suggested that insolvencies in the low-paying sectors had fallen back in the second quarter of 2016. However, more recent private sector data had found increased signs of financial distress among firms affected by the introduction of the NLW.

1.40 This chapter now goes on to look at employment and pay in more detail.

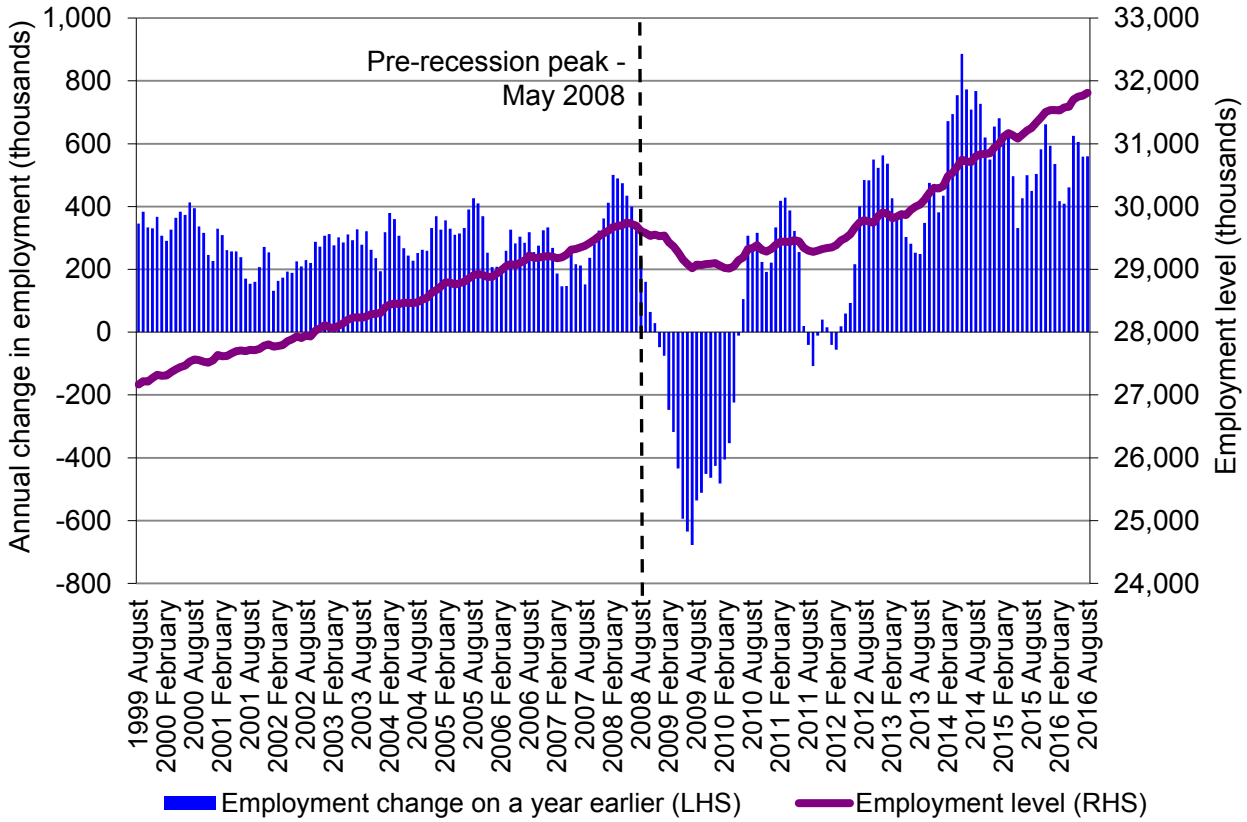
Labour market

1.41 Changes in employment are our key test of the impact of the minimum wage, reflecting the main risk in the policy – namely that wage floors set at the wrong level can price people out of jobs. In this section, we look at three ways of measuring the aggregate strength of employment with a view to understanding the impact and affordability of the NLW and the other rates: the number of people in employment; the number of jobs; and the number of hours (Chapter 2 considers more detailed break-downs). On all three measures, the UK labour market continued to perform strongly, with the numbers of people in employment; workforce jobs and total hours worked reaching record levels in 2016. However, there were also some possible signs of softening: the claimant count had increased since February, redundancies had started to pick up, and employee job growth in the low-paying sectors had slowed.

Employment and employee jobs

1.42 Beginning with the number of people in employment, Figure 1.9 shows large increases over time. The figure is over 4.5 million higher than when the NMW was introduced in April 1999, reflecting both population growth and a higher employment rate. It is around 2 million higher than before the onset of recession in 2008, reflecting the widely recognised 'jobs rich' recovery. After noticeable weakness in the labour market from mid 2011-12, the number of people employed increased strongly. This was particularly evident in 2014, when the number of people employed increased by around 700,000 (or 2 per cent) on average compared with the previous year.

Figure 1.9: Employment, UK, 1999-2016



Source: LPC estimates using ONS data: total employment (MGRZ), monthly, seasonally adjusted, UK, 1998-2016.

1.43 Looking at the more recent picture, employment growth slowed in 2015, but has picked up in 2016. In the three months to August 2016 there were 31.8 million people employed in the UK – an increase of 560,000 (or 1.8 per cent) since August 2015. This was stronger growth than had been forecast by the OBR in its July 2015 forecasts when the NLW was announced. Moreover, this trend has continued following the introduction of the policy. In the four months since April 2016 the number of people employed increased by 217,000 (or 0.7 per cent).

1.44 As well as considering the number of people in employment, we can also count the number of jobs in the economy. Looking at the whole workforce first, which includes self-employment, government-supported trainees and HM Forces personnel, there were 34.4 million workforce jobs in the UK in June 2016, an increase of 1.5 per cent or 515,000 on June 2015. This growth was, again, stronger than the median of the forecasts for employment growth from the HM Treasury Panel. The number of workforce jobs also increased by 0.6 per cent (or 194,000) in the three months from April 2016, so again shows growth following the introduction of the NLW.

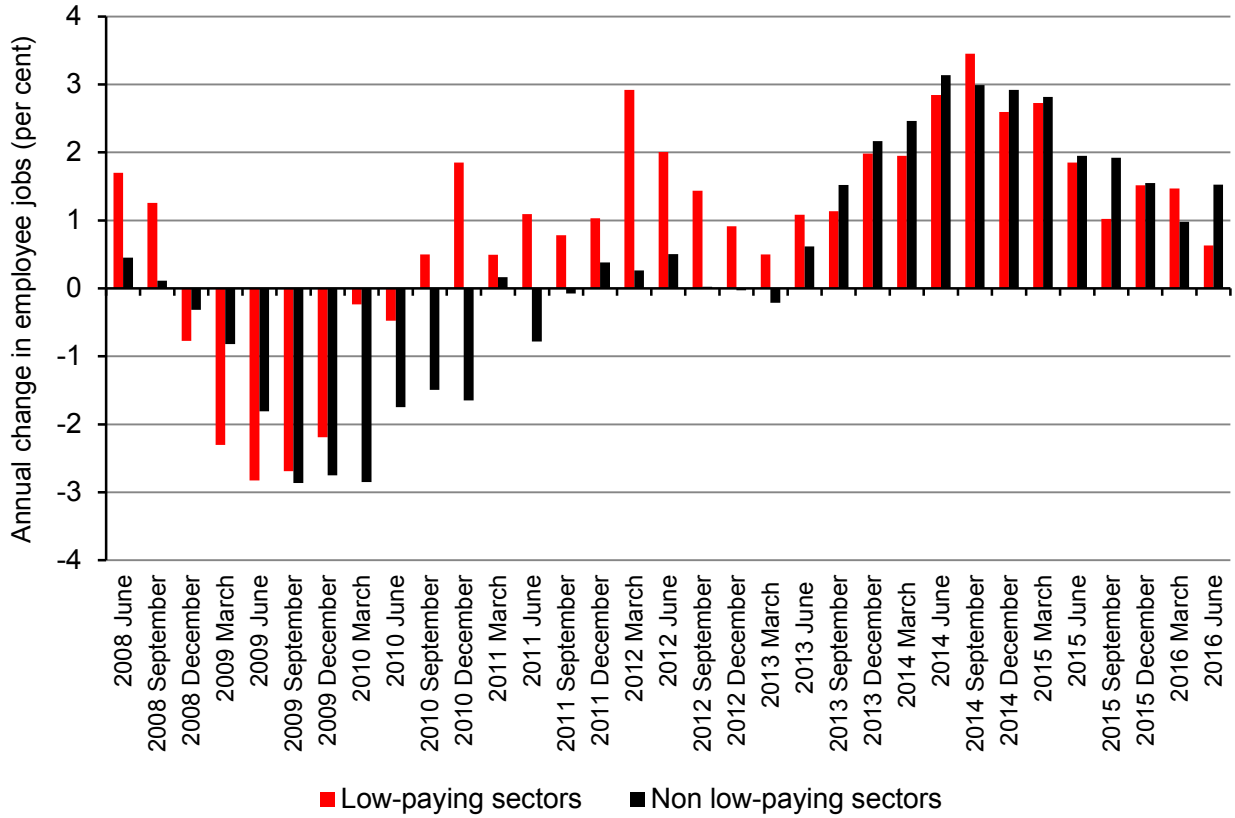
1.45 Turning to employee jobs, the growth in the number has been somewhat weaker. While there were 29.7 million in June 2016 – a record number – employee jobs increased by 366,000 (or 1.2 per cent) on June 2015, and 99,000 (0.3 per cent) since April 2016. By contrast, self-employed jobs have grown three times as fast, with a 3.5 per cent increase (151,000) in the year to June 2016, to 4.53 million (though the number of self-employed jobs remained just below the peak recorded in June 2014 of 4.55 million).

1.46 Minimum wage effects would, of course, be most likely to be seen at the sectoral rather than whole economy level – either within industries with high concentrations of minimum wage workers, or in the industries where most minimum wage workers are found, notably retail and hospitality. Workforce jobs data for the UK as a whole are available by broad industrial category. These show that the number of jobs in wholesale and retail increased by 51,000 (1.0 per cent) in the year to June 2016, with growth of 28,000 (or 0.6 per cent) since the introduction of the NLW in April 2016. The picture in hospitality (food and accommodation services) showed stronger growth, although the numbers were smaller – an increase of 26,000 (or 1.1 per cent) since April 2016 and 57,000 (or 2.5 per cent) since June 2015.

1.47 What about trends in employment growth in low-paying sectors as a whole? Data are only available at a more disaggregated level for Great Britain and not seasonally-adjusted, so need to be compared with the situation the previous year. In June 2016, on this measure, there were around 28.94 million employee jobs in Great Britain, with about 9.85 million in the low-paying sectors. That was an increase of 349,000 jobs over the year, of which 62,000 were in the low-paying sectors.

1.48 Figure 1.10 shows that employee job growth in the low-paying sectors going into the recession was stronger than job growth in the rest of the economy. However, job losses were worse in the low-paying sectors at the beginning of the recession, although they recovered much more quickly.

Figure 1.10: Annual change in employee jobs, by sector, GB, 2008-2016



Source: LPC estimates using ONS data: employee jobs series, every three months, not seasonally adjusted, GB, 2007-2016.

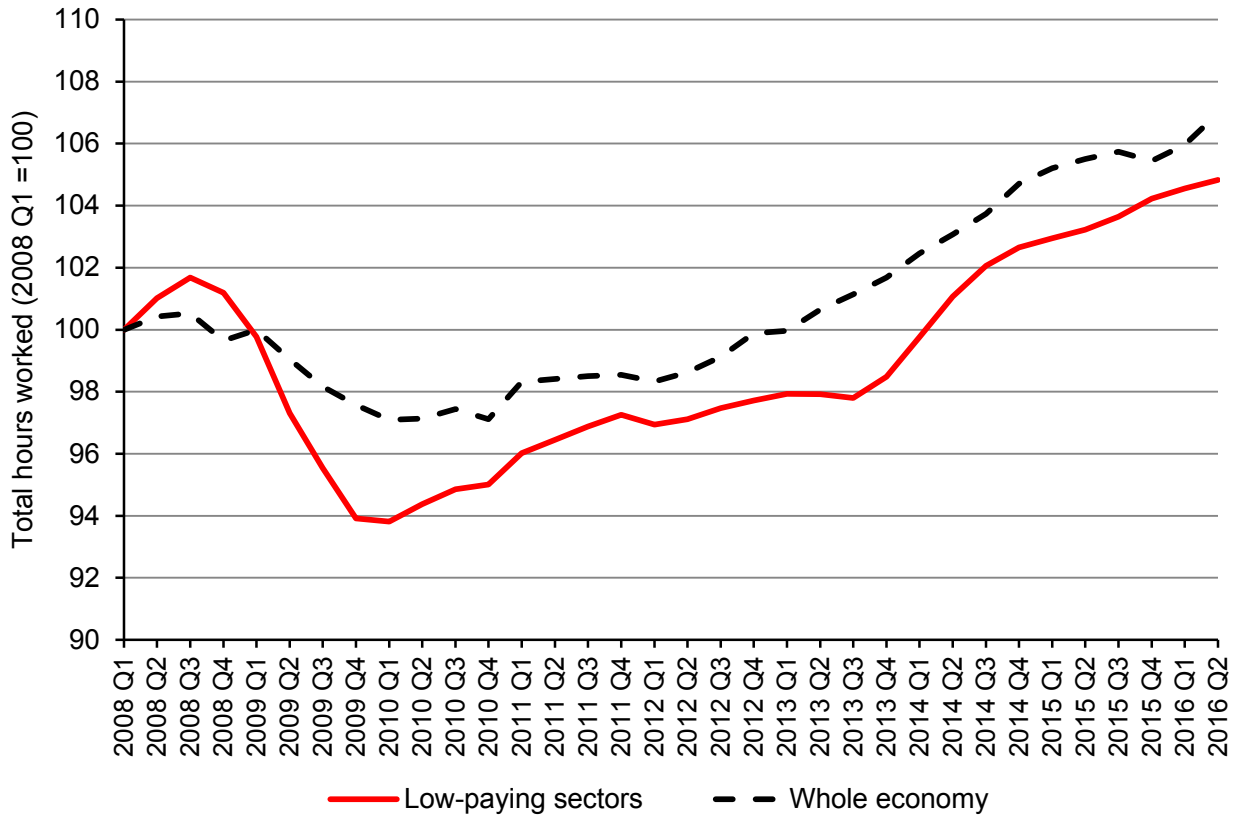
1.49 Since the end of the recession up to June 2016, job growth has, on average, been stronger in the low-paying sectors (1.6 per cent a year) than in the rest of the economy (1.4 per cent a year). This growth is stronger than that observed prior to the recession.

1.50 However, in the past two years employee jobs have grown more strongly in non low-paying sectors than in low-paying sectors. In addition, in the one quarter of data that is available for after the introduction of the NLW, annual employee job growth in the low-paying sectors slowed to 0.6 per cent, while in the rest of the economy it increased to 1.5 per cent.

Hours

1.51 Another measure of changing trends in employment is the total number of paid hours worked in the economy. Risks relating to the minimum wage would be higher in the event of fewer hours being worked. The whole economy picture shows that a record number of hours were worked in the UK in the three months to July 2016 – 1.02 billion hours a week. This was an increase of 2.0 per cent on the previous year. The numbers of hours worked in the three months to August 2016 was slightly lower than the record in July, but still 1.7 per cent higher than a year ago. Indeed, the number of hours worked in the economy has increased more slowly since April 2016 – by 0.2 per cent. This was weaker than the increases in the number of people employed, workforce jobs and number of employees, but in line with the increase in employee jobs.

Figure 1.11: Hours worked, by sector, UK, 2008-2016



Source: LPC estimates using ONS Labour Forced Survey (LFS) Microdata, quarterly, four-quarter moving average, UK, Q2 2007-Q2 2016.

1.52 The average number of hours worked has been flat since April 2016, falling by 0.1 hours to 32.0 hours a week in August 2016. This reflects that the average number of full-time hours fell from 37.6 in April 2016 to 37.4 in August 2016, with average hours worked by part-timers remaining at 16.1. There has also been a small increase in the average number of hours worked in second jobs over the same period.

1.53 By contrast, with employee jobs, hours worked in low-paying sectors fell much further than hours worked in the whole economy during the recession, and did not recover as quickly. However, in recent years, as shown in Figure 1.11, there has been sustained growth in hours worked in low-paying sectors. Despite that, growth in hours worked in low-paying sectors across the whole period since the onset of recession remain two percentage points below that in the whole economy.

Employment type

1.54 As noted above, the number of people in employment is at record levels, and has been growing strongly over the last two years and since April 2016. Table 1.5 shows that the number of employees has grown by 296,000 over the year, to reach 26.8 million in August 2016, with growth since April 2016 a little stronger. Similarly, the number of self-employed jobs has grown slightly more strongly since April 2016, and indeed in August 2016 there were 94,000 more self-employed jobs compared with 138,000 more employees. Self-employment has made a significant contribution to overall employment growth – compared with a year ago, it accounted for almost half of the growth, while only being 15 per cent of overall employment. Between April and August, this had weakened, but self-employment still accounted for 43 per cent of the growth in employment over the period.

1.55 Trends in employment by age are critical to understanding potential minimum wage impacts and scope to bear increases. Table 1.5 shows a resilient picture in general. Most groups experienced an increase in employment between April 2016 and August 2016, with the strongest growth among older workers. The 'baby boom' of the 1960s affects the numbers in employment for the middle age groups – boosting employment for 50-64 year olds and reducing it for 35-49 year olds as that cohort ages. The key exception is 16-17 year olds, who have seen a fall in employment since July 2015. Chapter 3 considers their position in more detail.

Table 1.5: Employment by status, age, hours and permanency, UK, 2014-2016

Thousands	Latest Data (Aug 2016)	Change on April 2016	Change on Aug 2015	Change on Aug 2014
Employment	**31,811**	**217**	**560**	**1,010**
Employees	26,830	138	296	812
Self-employed	4,792	94	273	260
Other	188	-16	-10	-64
Employment by Age				
16-17	347	-10	-19	25
18-24	3,581	-12	-1	66
25-34	7,272	44	167	303
35-49	10,791	52	40	-4
50-64	8,592	98	306	504
65+	1,228	45	67	117
Work Status				
Full-time Employees	19,743	60	121	574
Part-time Employees	7,088	79	176	239
Contract Type				
Permanent Employees	25,172	116	302	854
Temporary Employees	1,658	22	-6	-42

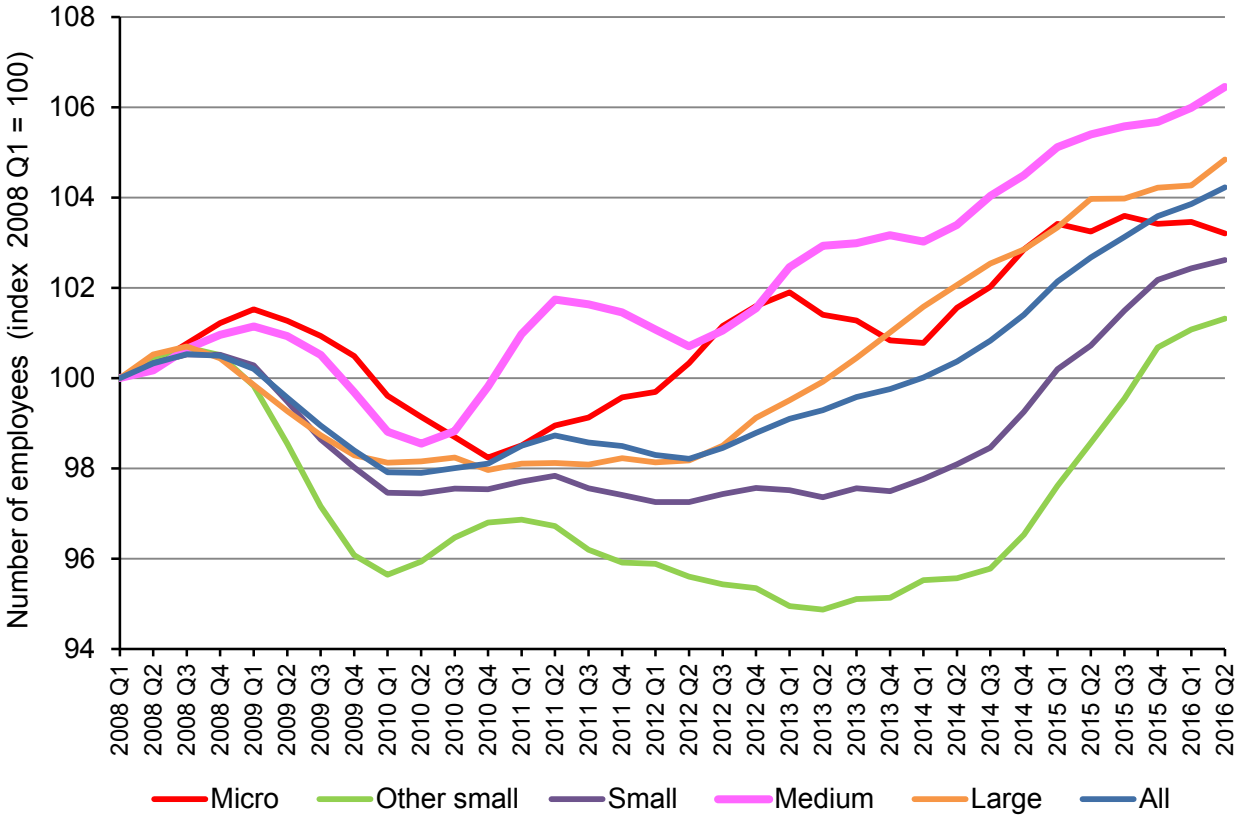
Source: LPC estimates using ONS data: employment (MGRZ); employees (MGRN); self-employment (MGRQ); other combines unpaid workers (MGRT) and government supported trainees (MGRW); full-time employees (YCBK); part-time employees (YCBN); permanent employees (MGRN-YCBZ); temporary employees (YCBZ); employment by age groups: 16-17 (YBTO); 18-24 (YBTR); 25-34(YBTU); 34-49 (YBTX); 50-64 (LF26); and 65 and over (LFK4), monthly, three month average, seasonally adjusted, UK, 2014-2016.

1.56 Other breakdowns present a fairly inconclusive picture on the kinds of jobs being created by the labour market. The number of employees, both in part-time and in full-time jobs, have grown strongly over the last two years. However, since April 2016, growth in the number of full-time employees has slowed, while the growth in the number of part-time employees has picked up.

1.57 Similarly, growth in the number of permanent employees has been strong over the last two years, while the number of temporary employees has fallen. However, the picture changed in the four months from April 2016, with growth in the number of permanent employees slowing slightly over that period, while the numbers of those in temporary jobs picked up.

1.58 The rate at which employment levels changed following the 2008 recession, and in more recent times, has also varied by size of workplace. The smallest (micro – those with fewer than ten employees) workplaces held onto staff for the longest during the recession and were among the first to recover employment to their pre-recession levels. However, growth in employment appears to have stagnated for these smallest workplaces since the end of 2014, while continuing to grow in all other sized workplaces.

Figure 1.12: Change in employment, by workplace size, UK, 2008-2016



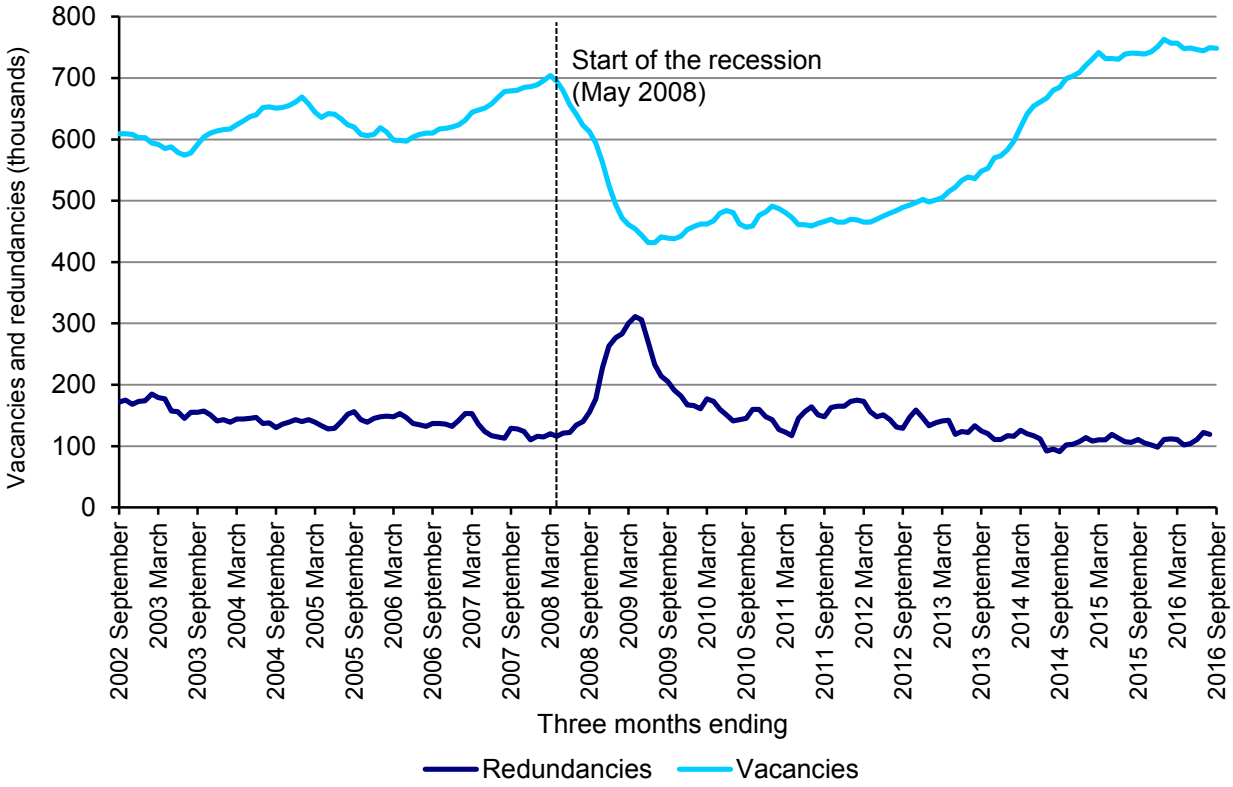
Source: LPC estimates using LFS Microdata, quarterly, four quarter moving average, not seasonally adjusted, UK, Q2 2007-Q2 2016.
Note: Micro is defined as 1-9 employees, other small is 10-49 employees, small is 1-49 employees, medium is 50-249 employees and large is 250 or more.

Vacancies and redundancies

1.59 The number of vacancies and the number of redundancies can also be used to assess the strength of the labour market, with growth and reductions respectively indicating a stronger employment performance. As shown in Figure 1.13, the number of vacancies in the UK fell from around 700,000 just before the onset of recession to below 450,000 in the middle of 2009, but has since picked up and surpassed its pre-recession level – reaching around 750,000 in early 2015. Since then it has remained at around this level. The number of vacancies reached 749,000 in the three months to September 2016 – similar to the number of vacancies in the three months to April 2016 (748,000) and a year ago (739,000), but considerably higher than in September 2014 (685,000).

1.60 The vacancy data are also available by size of firm. In September 2016, around 17.2 per cent of vacancies were in micro firms (those with 1-9 employees), the group most exposed to changes in employment costs. This was an increase from 16.9 per cent in April 2016 and 16.2 per cent in September 2015. The share of vacancies for the largest firms (those with 2,500 or more employees) remained roughly the same across the year – at 36.1 per cent in September 2015 and 36.2 per cent in September 2016. Consequently, given that total vacancies have remained about the same at 750,000, the share of vacancies in middle-sized firms (those with 10-2,500 employees) has fallen.

Figure 1.13: Vacancies and redundancies, UK, 2002-2016



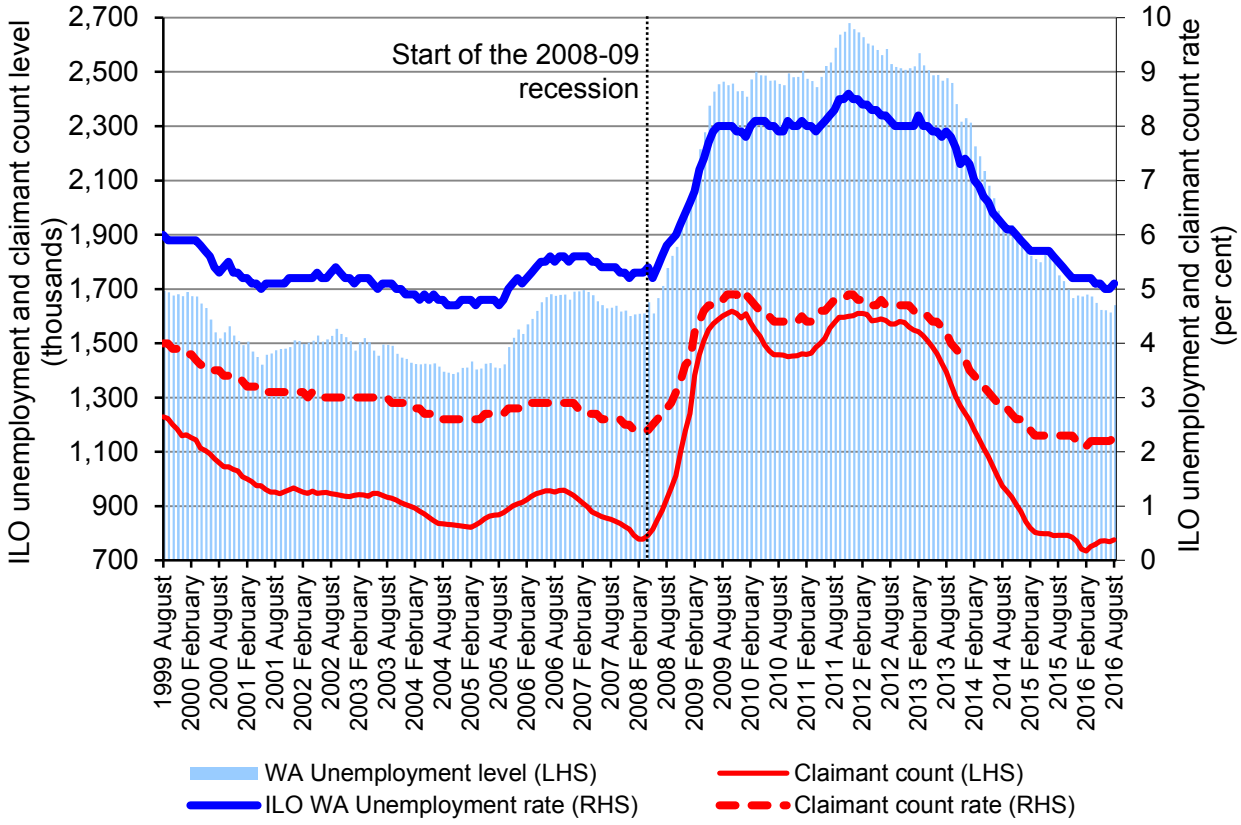
Source: ONS data: vacancies (AP2Y) and redundancies (BEAO), monthly, seasonally adjusted, UK, 2002-2016.

1.61 Figure 1.13 also shows that the level of redundancies peaked at around 300,000 at the height of the recession, before falling to around 100,000 by the end of 2015. However, they have increased in recent months, rising from 102,000 in the three months to April 2016 to 119,000 in the three months to August 2016. The data by industry do not show any particular pattern, although the three months data to June 2016 suggest a small fall in redundancies in wholesale and retail compared with a year ago.

Unemployment

1.62 A final measure of the strength of the labour market is the numbers who are unemployed. There are two ways of looking at unemployment in the UK: ILO unemployment (those looking for work in the last month and available to start within two weeks); and the claimant count (benefit claimants who are seeking work). Between July 2015 (when the NLW was announced) and July 2016, working age ILO unemployment fell by 110,000 (or 10.3 per cent) to 1.64 million – its lowest level since 2008. Since the introduction of the NLW in April, it has fallen by 36,000. The working age ILO unemployment rate was 5.0 per cent, which is lower than it has been since 2005. The headline ILO unemployment rate for all those aged 16 and over has fallen to 4.9 per cent.

Figure 1.14: ILO unemployment and claimant count, UK, 1999-2016



Source: ONS data: 16-64 unemployment levels (LF2I); 16-64 unemployment rates (LF2Q); claimant count levels (BCJD); and claimant count rates (BCJE), monthly, seasonally adjusted, UK, 1999-2016.

1.63 By contrast with the ILO measure, the claimant count data shows some increase in 2016.[3] The numbers on JSA continue to fall, but these are now supplemented by an increase in out of work claimants to UC as that scheme is rolled out. In June 2015, there were 748,100 JSA claimants and 44,900 out of work UC claimants – a total of 793,000 claimants. The new claimant count series continued to fall until February 2016 when it reached 734,600 (608,600 on JSA and 126,000 on UC). By April 2016, when the NLW was introduced, the number on JSA had fallen to 596,900, while the number of out of work UC claimants had risen to 162,700 – a total of 759,600. Since then, the total measure has continued to increase, albeit only slowly, reaching 771,000 in August (557,900 JSA claimants and 213,100 out of work UC claimants) – an increase of 11,400 (or 1.5 per cent).

Summary of the labour market

1.64 The UK labour market has continued to perform strongly, with record numbers of jobs, people in employment, and total hours worked. Although growth on all of these measures has slowed since 2014, it continues to be robust. The workforce in wholesale, retail and hospitality has increased year-on-year and rapidly since the introduction of the NLW. In the three months to August 2016, the 16-64 year old employment rate was at a record high, the headline unemployment rate remained at its lowest since September 2005, and the number of employees rose 121,000 on the quarter and 296,000 on the year.

3 The claimant count data includes those on Job Seeker's Allowance (JSA) and out of work claimants on Universal Credit (UC) – this figure may include claimants who are not required to seek work (as they are sick or disabled) but it is not possible to remove them from the claimant count data at this point. These data are considered experimental by ONS and thus are not considered to be National Statistics. ILO unemployment is a National Statistic.

1.65 However, there are also some signs of softening. Redundancies have increased since April 2016 and the claimant count has increased since February. Growth in total hours worked and the growth in permanent employment have slowed over the summer. Employee jobs in low-paying sectors have also grown more slowly than jobs in non low-paying sectors for the past two years – with the gap increasing in the four months since April 2016. Wider trends in the labour market include a faster recent rate of growth in self-employment than in employee jobs.

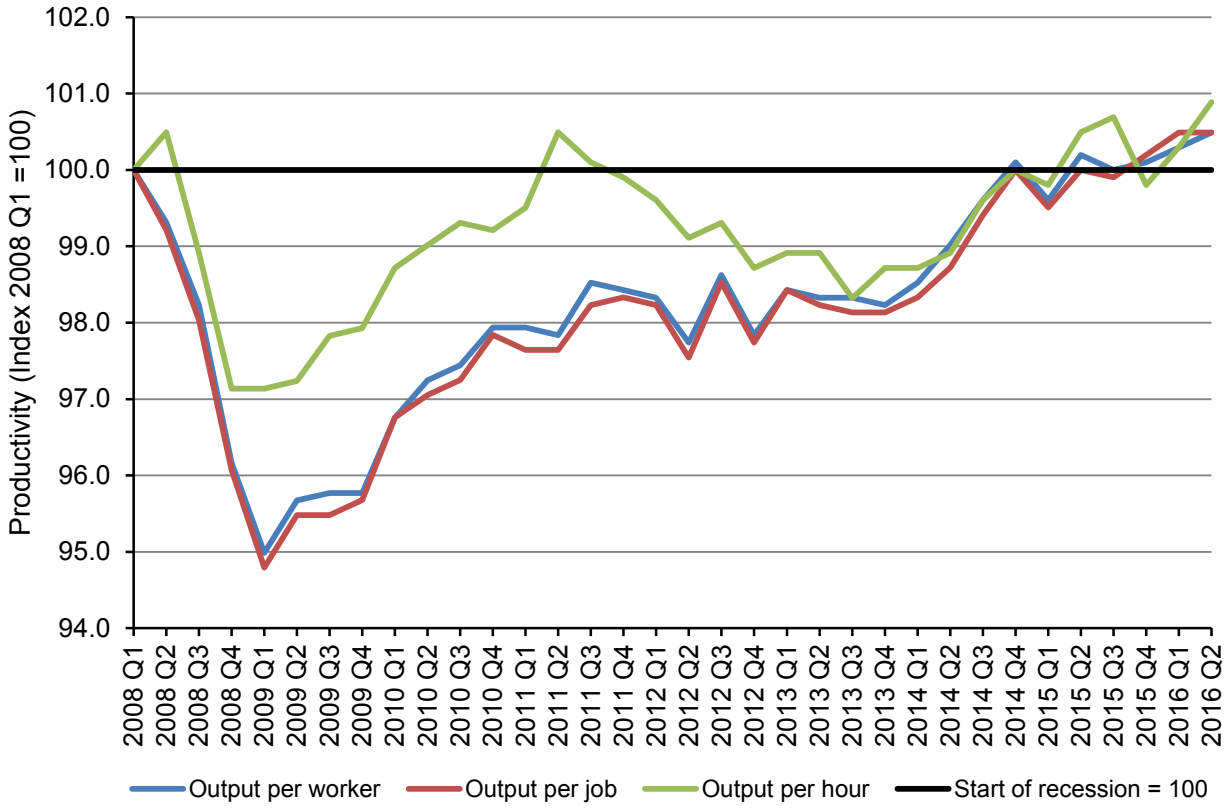
1.66 Having considered two of the four factors that we had thought necessary for future increases in the minimum wage: sustained economic recovery and job growth (especially that in the low-paying sectors), we now turn to a third one – productivity, before going on to consider the fourth – pay.

Productivity

1.67 As discussed above, the UK labour market has shown a remarkable degree of resilience in recent years. Even during the recession, job losses were not as high as expected, and that contrasted starkly with the recessions in the 1980s and 1990s. In those recessions, job losses had been twice as large as the output losses measured in percentage terms. In the recent recession, job loss was less than half of the output loss. This has implications for productivity growth that we discuss in this section.

1.68 Figure 1.15 shows that it has taken a long time for productivity to recover, whether measured by output per worker, output per job or output per hour. Indeed productivity on all of those measures was still less than 1 per cent higher in the second quarter of 2016 than it was in the first quarter of 2008. In the year to the second quarter of 2016, productivity growth on all three measures averaged around 0.1 per cent a quarter. This compares with an average of around 0.5 per cent, between 1971 and 2007, for quarterly productivity growth when measured against jobs or workers, and 0.6 per cent if measured against hours. Thus, productivity performance has been very weak. It remains around 17 per cent below what it would have been had it grown in line with its long-term pre-recession trend.

Figure 1.15: Productivity (output per worker, hour and job), UK, 2008-2016

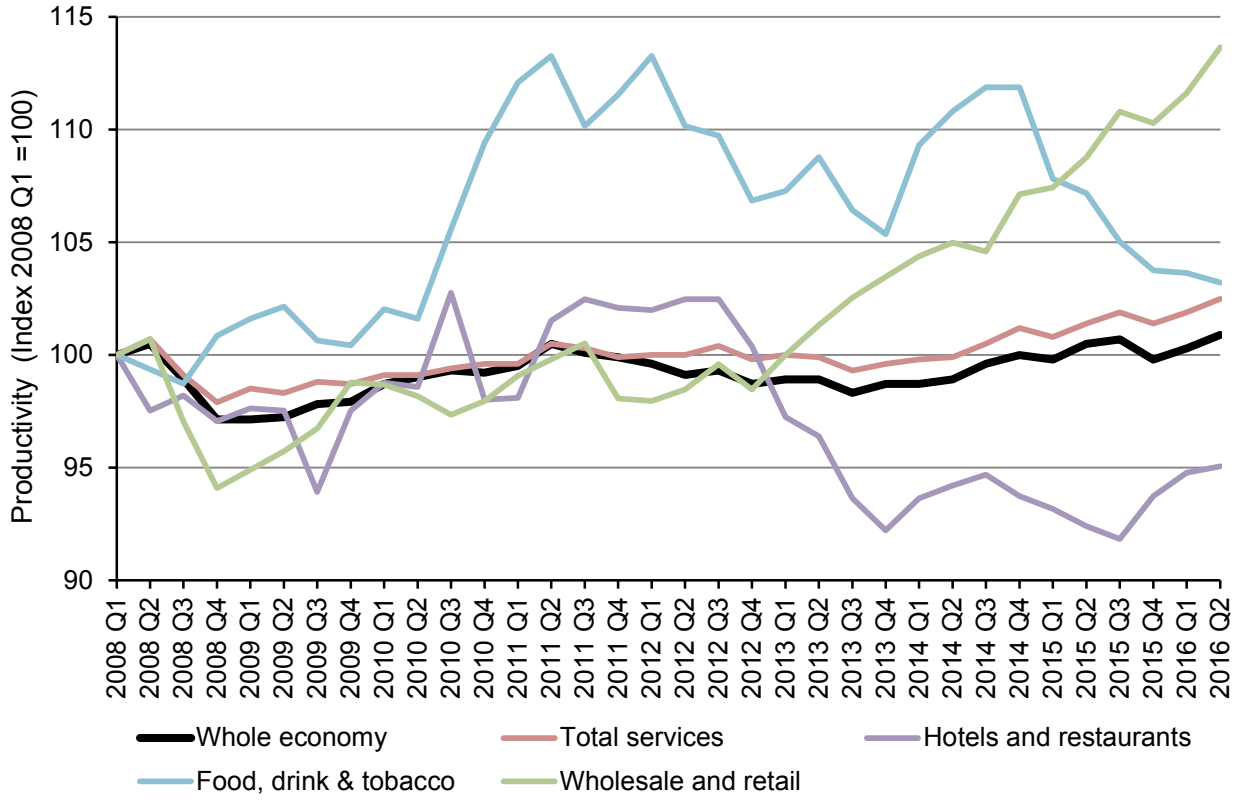


Source: LPC estimates using ONS data: output per worker (A4YM), output per job (LNNN), output per hour (LZVB), quarterly, seasonally adjusted, UK, Q1 2008-Q2 2016.

1.69 However, in the most recent quarter there has been a recovery in productivity measured in terms of output per hour. This reflects the fact that GDP rose by 0.7 per cent in the second quarter of 2016, at the same time as the number of workers increased by 0.5 per cent and the number of jobs by 0.6 per cent. In contrast, the total number of hours only grew by 0.1 per cent as average hours worked fell. This meant that output per hour picked up to 0.6 per cent – in line with the long-run trend. Productivity measured per worker (an increase of 0.2 per cent) and per job (unchanged) remained sluggish.

1.70 Looking at productivity by sector using output per hour, Figure 1.16 shows that total services (which covers the industries most exposed to changes in the level of the minimum wage) have performed slightly better than the whole economy since 2008 – output per hour in services in the second quarter of 2016 was 2.5 per cent higher, compared with only 0.9 per cent for the whole economy. Looking at the sectors accounting for most minimum wage workers, retail and hospitality, they generally followed the productivity path of services and the whole economy between 2008 and the end of 2012, but have had markedly different productivity performances since then. Output per hour has improved notably strongly in retail, increasing by over 15 per cent, while it has fallen by over 5 per cent in hospitality. This likely reflects major structural change in the retail sector, including the move online, fierce price competition and greater automation.

Figure 1.16: Productivity for whole economy, retail and hospitality, UK, 2008-2016



Source: LPC estimates using ONS data (output per hour): whole economy (LZVB), total services (DJP9), hotels and restaurants (DJQ4), food, drinks and tobacco DJK9) and wholesale and retails (DJR2), quarterly, seasonally adjusted, UK, Q1 2008-Q2 2016.

1.71 In the most recent period, since the introduction of the NLW was announced, there has been a different pattern, though likely to be attributable to many different factors. In line with stronger growth overall, output per hour has also grown in hospitality and retail, but more strongly in the former than in the latter. In the three quarters since the third quarter of 2015, output per hour grew by 3.5 per cent in hospitality and 2.6 per cent in retail. Meanwhile, since the introduction of the NLW – comparing the second quarter of 2016 with the first quarter of 2016 – output per hour grew by 0.3 per cent in hospitality, but by 1.8 per cent in retail.

1.72 Productivity in the manufacture of food, drink and tobacco was 3.2 per cent higher in the second quarter of 2016 than in the first quarter of 2008. However, the path to that overall performance is very different to the other sectors considered. There was a large increase in productivity in 2010, but then it fell by around 6 per cent to the end of 2013 before rebounding. It has fallen by around 8 per cent since the end of 2014, and fell by 0.4 per cent in the second quarter of 2016. A similar picture across sectors is found using output per job.

1.73 Overall, the sluggish productivity data help explain why wage growth has also been subdued. There was limited clear evidence to June 2016 of any productivity recovery, though it has risen in the key minimum wage sector of retail and, since the middle of 2015, for hospitality. It is possible that higher employment costs will help drive increases in future. We now go on to look in more detail at prices, pay and earnings, in order to consider the fourth and final factor that we thought enabled future minimum wage increases – sustained real earnings growth.

Inflation, pay and earnings

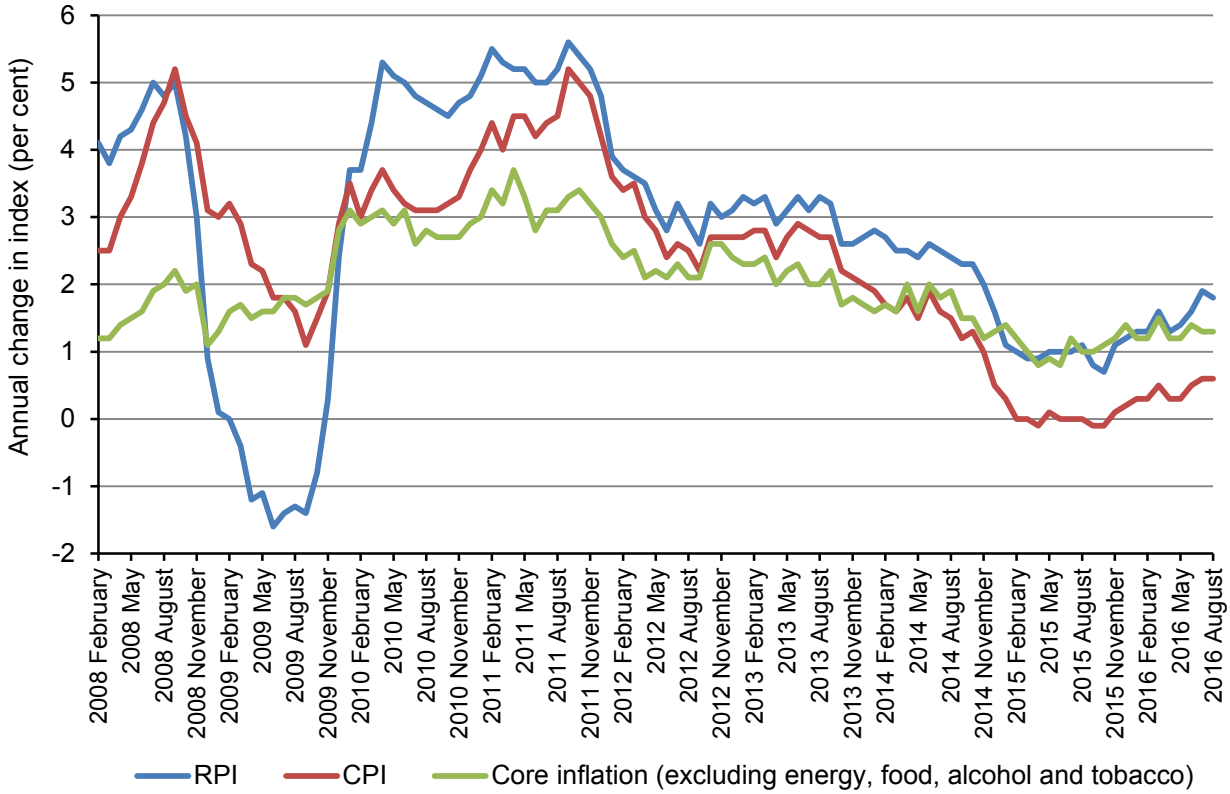
1.74 As noted above, the broad story on pay is that – despite some pick-up in inflation, and alongside employment and unemployment data that might have been expected to exert upwards pressure on wages – there has been limited change from the picture, set out in our Spring 2016 Report, of slow recovery.

Inflation

1.75 Beginning with inflation, the CPI rate has risen gradually during 2016 from a low point in the autumn of 2015, when CPI inflation was -0.1 per cent, to 1.0 per cent in September 2016, as shown in Figure 1.17. RPI inflation has increased from a low of 0.7 per cent in October 2015 to 2.0 per cent in September 2016.

1.76 At the time of our Spring 2016 Report, the latest official forecasts we had were from November 2015. At that time, the increase from the inflation low point was expected to be a little quicker, as the food and oil price falls of the previous year fell out of the twelve-month index, with the forecasts suggesting a CPI inflation rate of 1.3-1.4 per cent in the fourth quarter of this year, and an RPI rate of 2.3-2.4 per cent.

Figure 1.17: Inflation, UK, 2008-2016

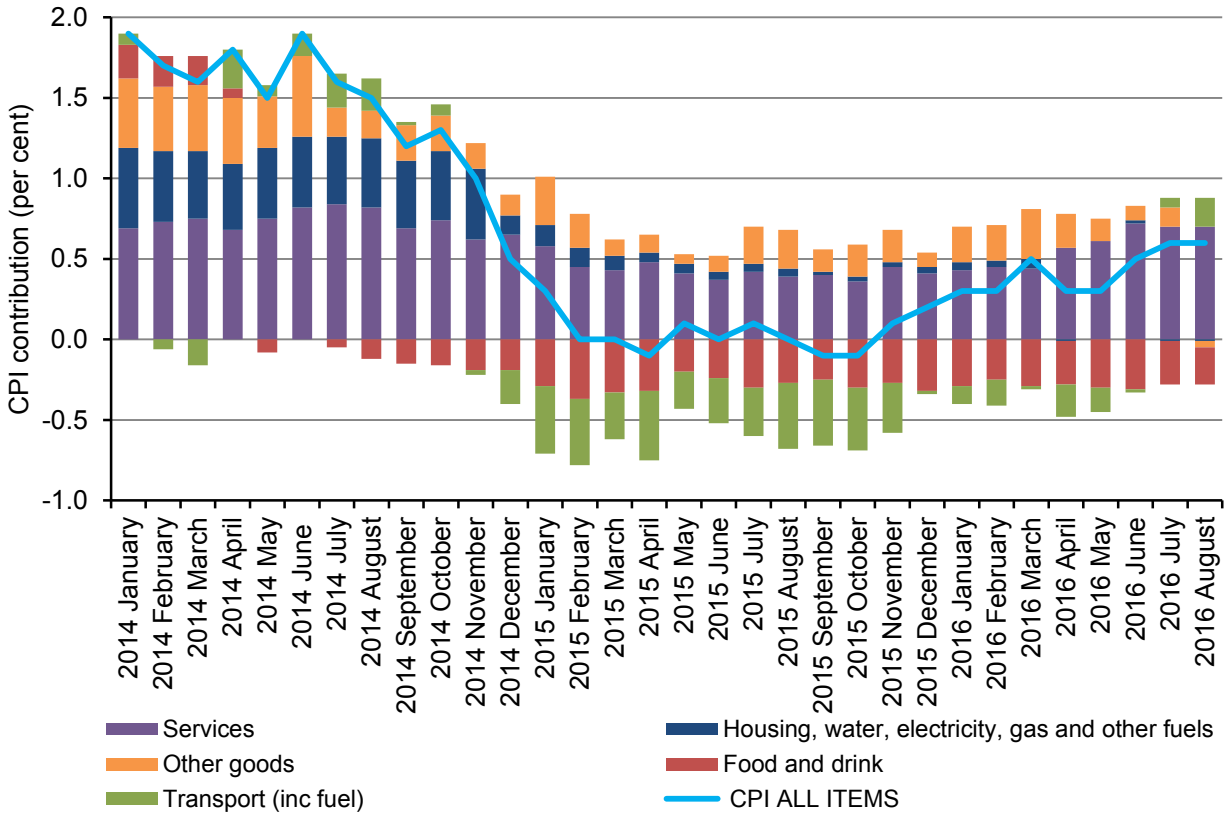


Source: LPC estimates using ONS data: CPI (D7G7), RPI (CZBH), and core inflation (DKO8) monthly, not seasonally adjusted, UK, 2008-2016.

1.77 Inflation has been kept low during 2016 by falling food prices and low fuel prices, as shown in Figure 1.18. Petrol made its first upward contribution to inflation for two years in the latest data – September – while food prices continue to fall. Gas prices also continue to show year-on-year falls.

1.78 Price inflation has increased in some of the lower-paying service sectors, to 4.8 per cent in September 2016, for example, for recreational and cultural services, up from 2.6 per cent a year earlier, and to 2.4 per cent for catering services, up from 1.4 per cent a year earlier.

Figure 1.18: Contributions to CPI inflation, UK, 2014-2016

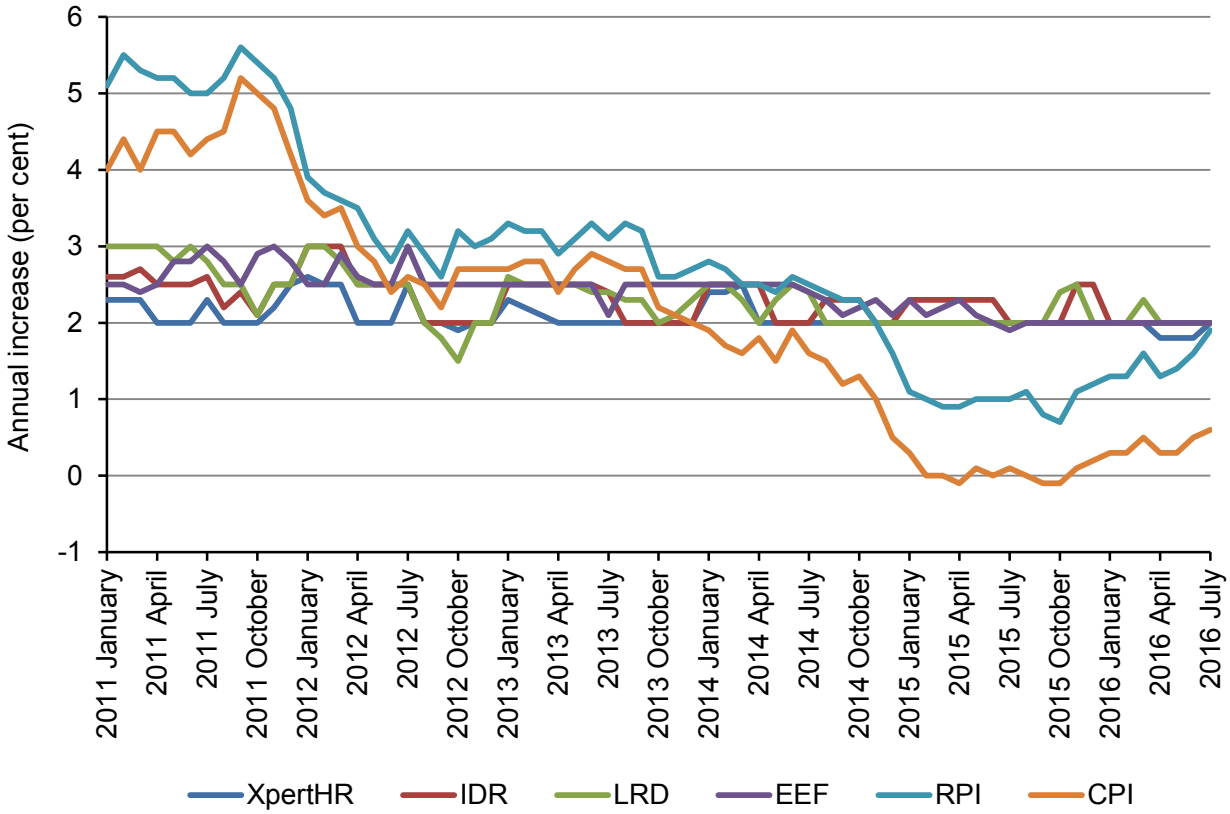


Source: LPC estimates using ONS data: CPI (D7G7), monthly, not seasonally adjusted, UK, 2014-2016.

Pay settlements

1.79 Lower than expected inflation might be anticipated to limit upwards pressure on pay settlements. In point of fact, while it is true that pay settlement medians have not seen upwards movement, they have shown stability in the face of both falling and rising inflation for an extended period, as shown in Figure 1.19. Indeed, pay settlement medians have been broadly stable at 2 per cent through 2016, similar to the previous three years. The XpertHR median has only dropped below 2 per cent over the last three months – with a high proportion of public sector reviews, but the private sector median has stayed consistently at 2 per cent – while the EEF, the manufacturers' organisation, has reported weaker pay bargaining, reflecting a poorer economic outlook, in recent months.

Figure 1.19: Pay settlements, UK, 2011-2016

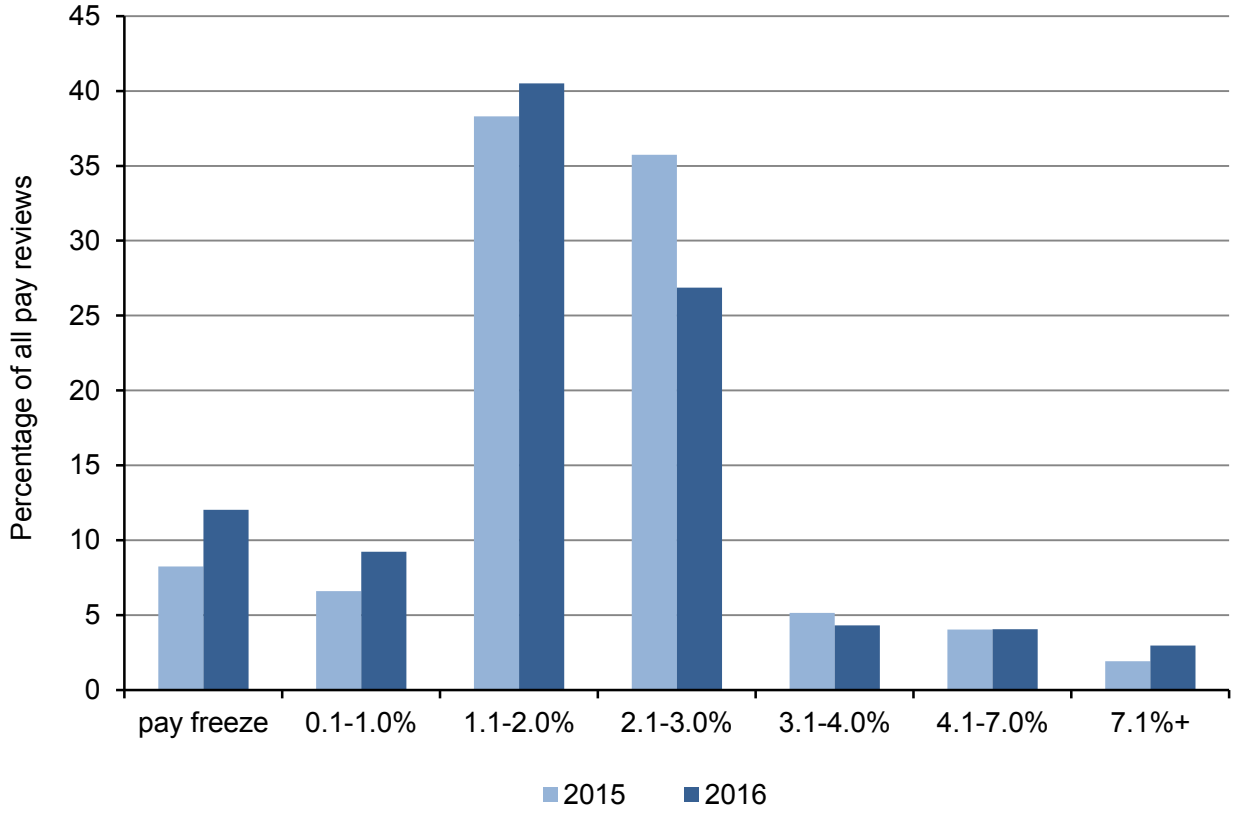


Source: LPC estimates using: XpertHR; Incomes Data Research (IDS/IDR); Labour Research Department (LRD); and EEF, pay databank records, three-month medians, UK, 2011-2016.

1.80 The stability in the median disguises a small downward shift in the distribution of pay settlements. XpertHR data shows an interquartile range of 1.25-2.5 per cent for all pay reviews in 2016; a quarter point shift downwards on the 2015 interquartile range of 1.5-2.75 per cent. This can be seen in Figure 1.20, which shows private sector pay reviews only. The proportion of pay reviews at 1.0 per cent or below has increased from 15 per cent in 2015 to 21 per cent in 2016. Conversely, 47 per cent of all pay reviews monitored by XpertHR were at 2.1 per cent or above in 2015, compared with 38 per cent of all reviews in 2016.

1.81 Where then is the impact of the NLW, which took effect over this period? The XpertHR data do show a slight increase in the proportion of pay reviews worth more than 7 per cent, rising from 2 per cent in 2015 to 3 per cent in 2016, which may reflect the policy.

Figure 1.20: Distribution of private sector pay settlements, UK, 2015-2016



Source: LPC estimates using XpertHR data, UK, 2015-2016.

1.82 Looking by sector, pay reviews, as shown in Table 1.6, have demonstrated only minimal variation, again with no clear NLW effect. The public sector continues to show the lowest pay settlement median, at 1.5 per cent, held down by the public sector pay policy, while the not-for-profit sector, which has pay which is often closely aligned to public sector funding, was the only other sector with a pay review median below 2 per cent. One possible exception is the retail sector this year, with the median increasing slightly more strongly, from 2.0 to 2.5 per cent.

Table 1.6: Pay settlements, by sector, UK, 2016

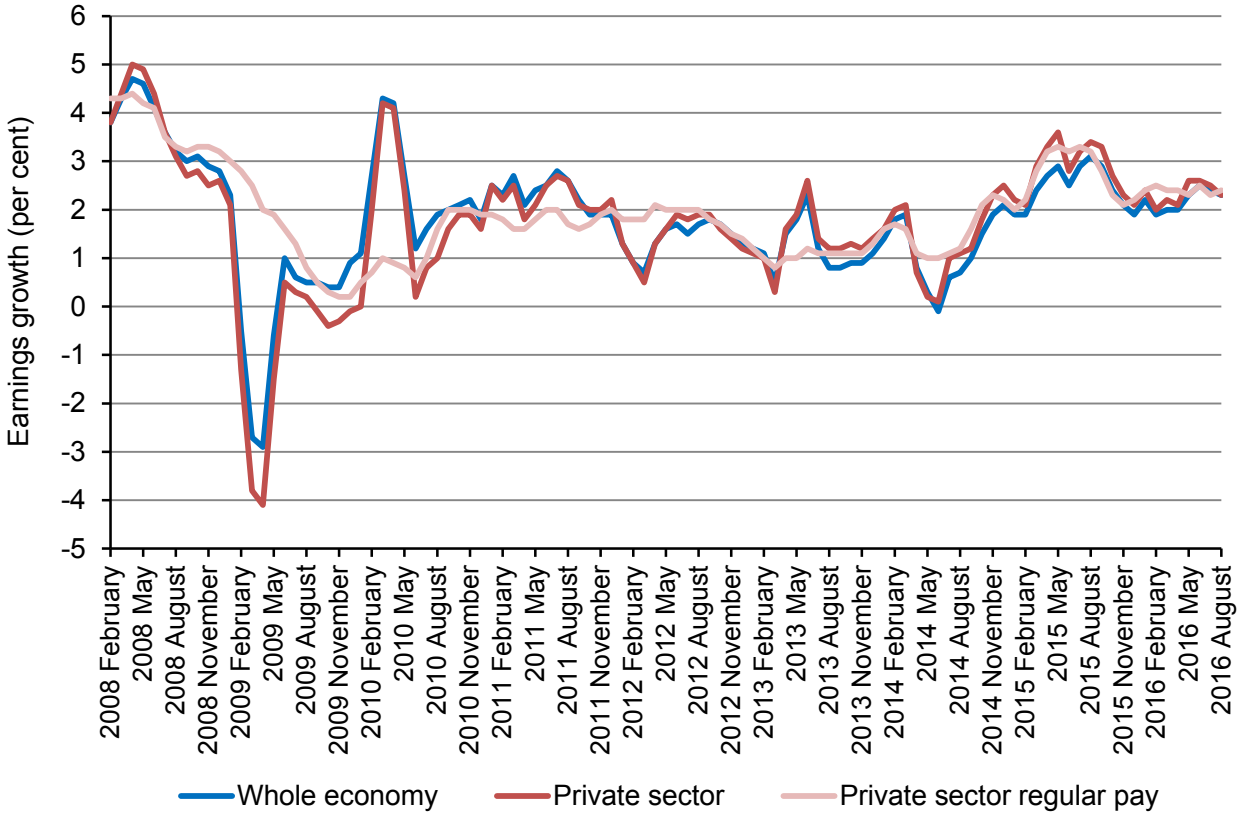
Sector	Number of settlements	Lower quartile %	Median %	Upper quartile %
All	1256	1.25	2.0	2.5
Public	76	1.0	1.0	1.5
Private	1180	1.5	2.0	2.5
Manufacturing	463	1.5	2.0	2.5
Private services	717	1.4	2.0	2.7
Facilities, security and support services	12	1.5	2.0	2.5
Finance	56	2.0	2.3	3.0
Hotels, catering & leisure	118	1.5	2.0	2.5
Information & communication	107	1.3	2.3	3.0
Not for profit	129	0.9	1.0	2.0
Professional & business services	154	1.5	2.0	3.0
Retail & wholesale	83	2.0	2.5	3.4
Transport & storage	58	1.7	2.0	2.2

Source: LPC estimates using XpertHR data, UK, 2016.

Earnings growth

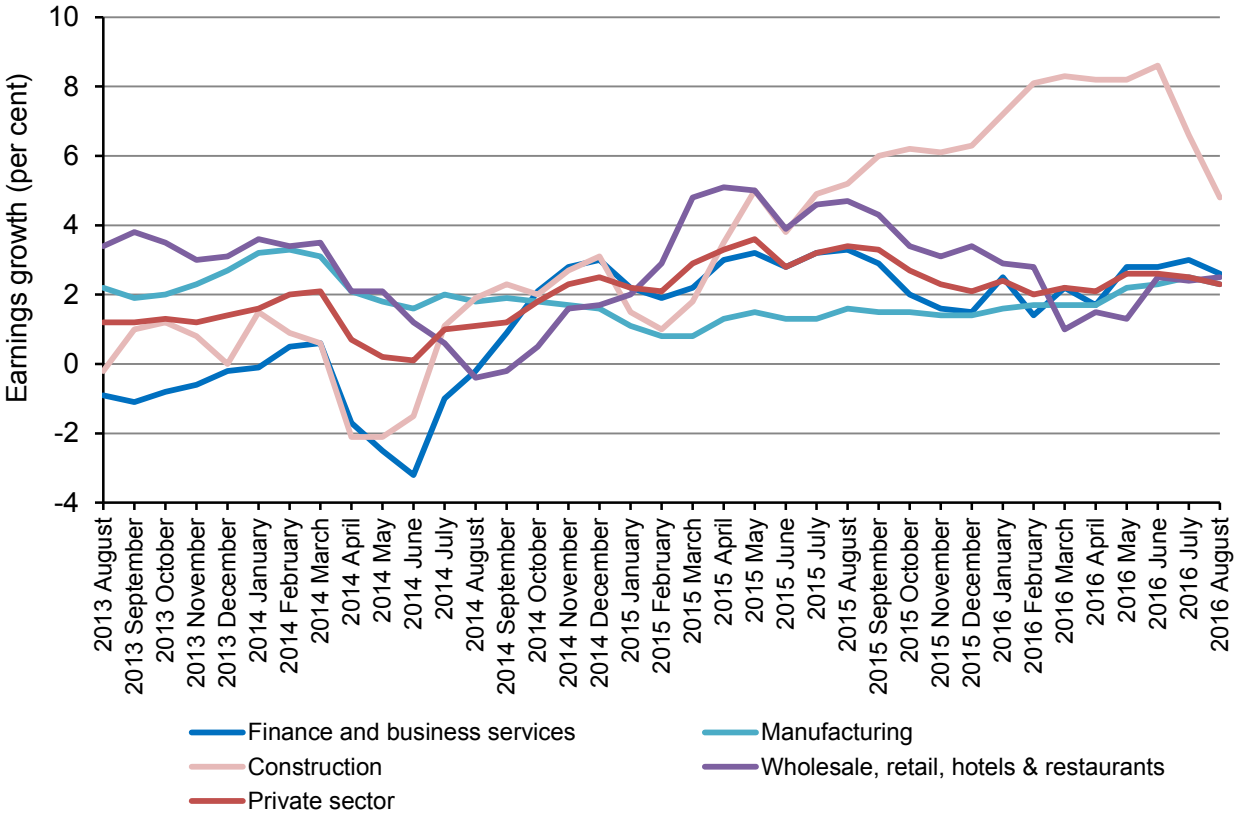
1.83 The picture of weak upwards pressure conveyed in inflation data and in pay settlements data is also reflected in average earnings growth. Whole economy average earnings growth, as shown in Figure 1.21, averaged 2.2 per cent so far in 2016 (in the year to August), with the private sector (at 2.4 per cent) ahead of the public sector (at 1.8 per cent, excluding financial services). The only sector which has shown significant earnings growth was construction, as shown in Figure 1.22, where earnings growth has averaged 7.2 per cent in 2016 so far, albeit with a much lower rate in the latest figures available. Surprisingly, given the introduction of the NLW and a slight increase in pay settlements for the retail sector, earnings growth in the lower-paying wholesale, retail, hotels and restaurants sector has been significantly lower in 2016 than 2015, at around 2 per cent rather than 4 per cent.

Figure 1.21: Average weekly earnings growth, GB, 2008-2016



Source: ONS data: AWE total pay (KAC3), private sector (KAC6), private sector regular pay (KAJ4), annual three-month average change for the whole economy, monthly, seasonally adjusted, GB, 2008-2016.

Figure 1.22: Average weekly earnings growth, by sector, GB, 2013-2016



Source: ONS data: AWE private sector (KAC6), wholesaling, retailing, hotels and restaurants (K5CI), construction (K5CF), manufacturing (K5CC), finance and business services (K5C6), annual three-month average change, monthly, seasonally adjusted, GB, 2013-2016.

1.84 Measures of average earnings growth for the whole economy for the year to April 2016 vary markedly, from 1.6 per cent (using wages per worker in the National Accounts) to 4.4 per cent (using the mean of ASHE gross hourly earnings excluding overtime), as shown in Table 1.7. These different measures vary in their coverage, composition and timing. Over the medium term, however, these short-term differences tend to even out, so that estimates of average earnings growth over the four years to April 2016 range from 6.2 per cent (compensation per employee in the National Accounts) to 8.0 per cent (the median of gross hourly earnings excluding overtime in ASHE). The ASHE, AWE and LFS surveys show a reasonable degree of consistency over the four year period, with estimates of wage growth across the various measures ranging from 6.8 to 8.0 per cent. This suggests that we should not pay too much attention to short-term differences in the alternative measures of earnings growth.

1.85 Earnings growth for those aged 25 and over, as measured by ASHE, was 3.1 per cent in the 12 months to April 2016 – an increase on the 1.4 per cent recorded in the previous year – reflecting to some extent the large increase in the minimum wage for this age group from £6.50 in the 2015 ASHE to £7.20 in the 2016 ASHE. However, the increase was lower than for all employees (3.3 per cent) – those aged under 25 also appear to have benefitted from the introduction of the NLW. Over the four years to 2016, hourly earnings grew by 7.3 per cent for those aged 25 and over, compared with 8.0 per cent for all ages – reflecting the pay catch-up among younger workers.

Table 1.7: Alternative measures of wage growth, UK, 2012-2016

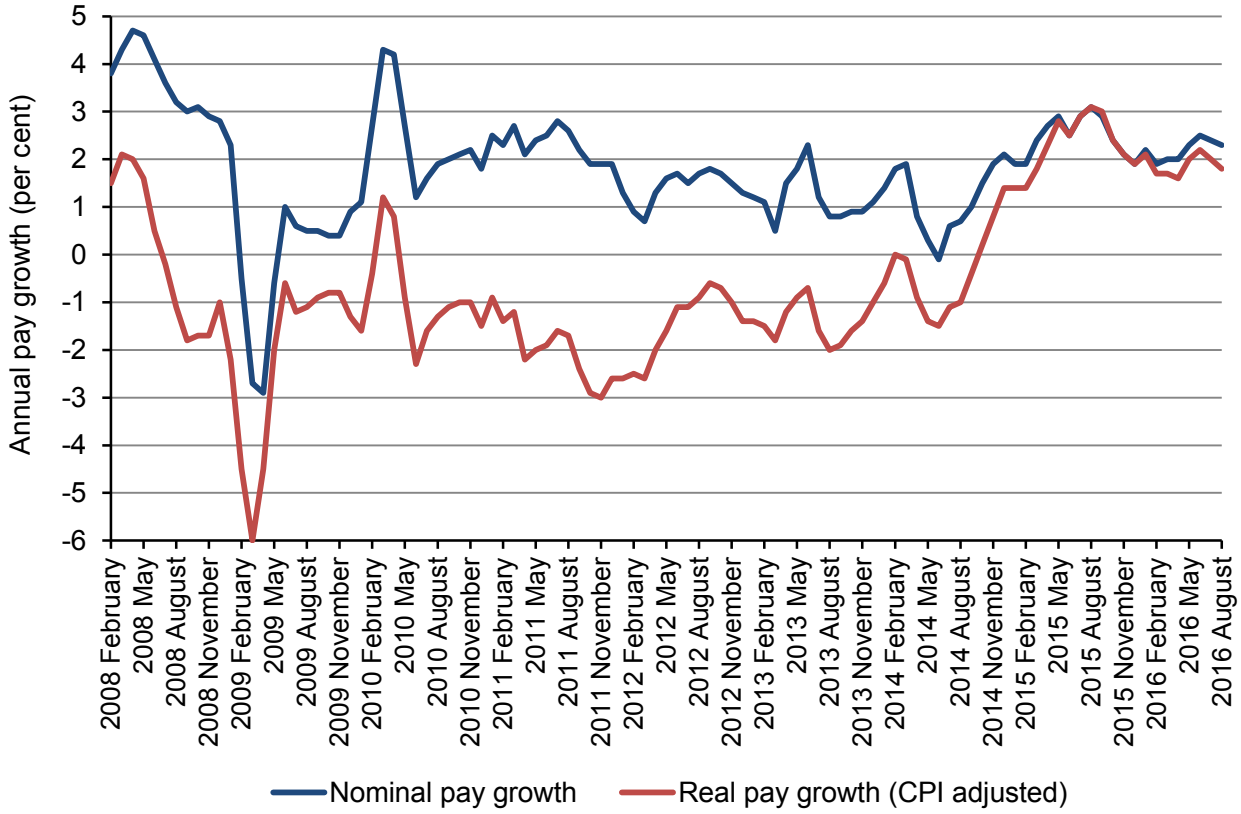
Earnings measure (period including April)		Earnings growth (%)						
		2012-13	2013-14	2014-15	2015-16	2012-16	2013-16	2014-16
Annual Survey of Hours and Earnings (ASHE)	Median gross hourly	2.6	0.1	1.8	3.3	8.0	5.2	5.1
	Mean gross hourly	2.1	0.2	0.8	4.4	7.6	5.3	5.2
	Mean gross weekly	2.0	0.0	1.1	3.4	6.8	4.6	4.6
Average Weekly Earnings (AWE)	Regular pay	1.1	0.7	2.7	2.2	6.8	5.6	4.9
	Total pay	1.7	0.6	2.5	2.2	7.3	5.5	4.8
Labour Force Survey (LFS)	Mean full-time weekly	3.1	-0.5	2.5	2.4	7.6	4.3	4.9
	Mean hourly	2.2	-0.1	3.1	2.2	7.7	5.4	5.4
National Accounts	Wages per employee job	3.4	-0.6	1.8	2.3	7.0	3.5	4.1
	Wages per worker	3.2	-0.3	2.3	1.6	7.0	3.7	4.0
	Compensation per employee job	4.0	-2.0	1.6	2.5	6.2	2.1	4.2
	Compensation per employee	3.6	-0.6	1.5	2.5	7.0	3.3	3.9

Source: LPC estimates using ONS data: average weekly earnings in total pay for the whole economy (KAB9); in basic pay (KAI7), monthly, seasonally adjusted, GB;total compensation per employee (DTWM) divided by total number of employees (MGRN); total compensation per employee job (DTWM) divided by total number of employee jobs (BCAJ); wage per worker (ROYJ) divided by total employment (MGRZ); wage per employee job (ROYJ) divided by total number of employee jobs (BCAJ); quarterly, seasonally adjusted, UK, 2012-2016; Labour Force Survey, average hourly earnings, quarterly, seasonally adjusted, annual growth rate; ASHE mean gross hourly pay excluding overtime and median gross weekly pay, April 2012-2016, standard weights, UK.
Note: ASHE is conducted in April each year. The AWE data is for the three-month period to May. The LFS data and National Accounts are for the second quarter.

1.86 From these sources the story on pay into 2016 was one of continued moderate nominal growth, with no strong recovery, or clear sector-wide or economy-wide upwards pressure from the NLW. But the combination of low inflation and moderate pay growth did mean the continuation of the trend noted in our Spring 2016 Report: growth in the real value of pay (average earnings growth adjusted for inflation).

1.87 Figure 1.23 shows that real pay growth has been positive for 23 consecutive months – the first sustained period since the recession.

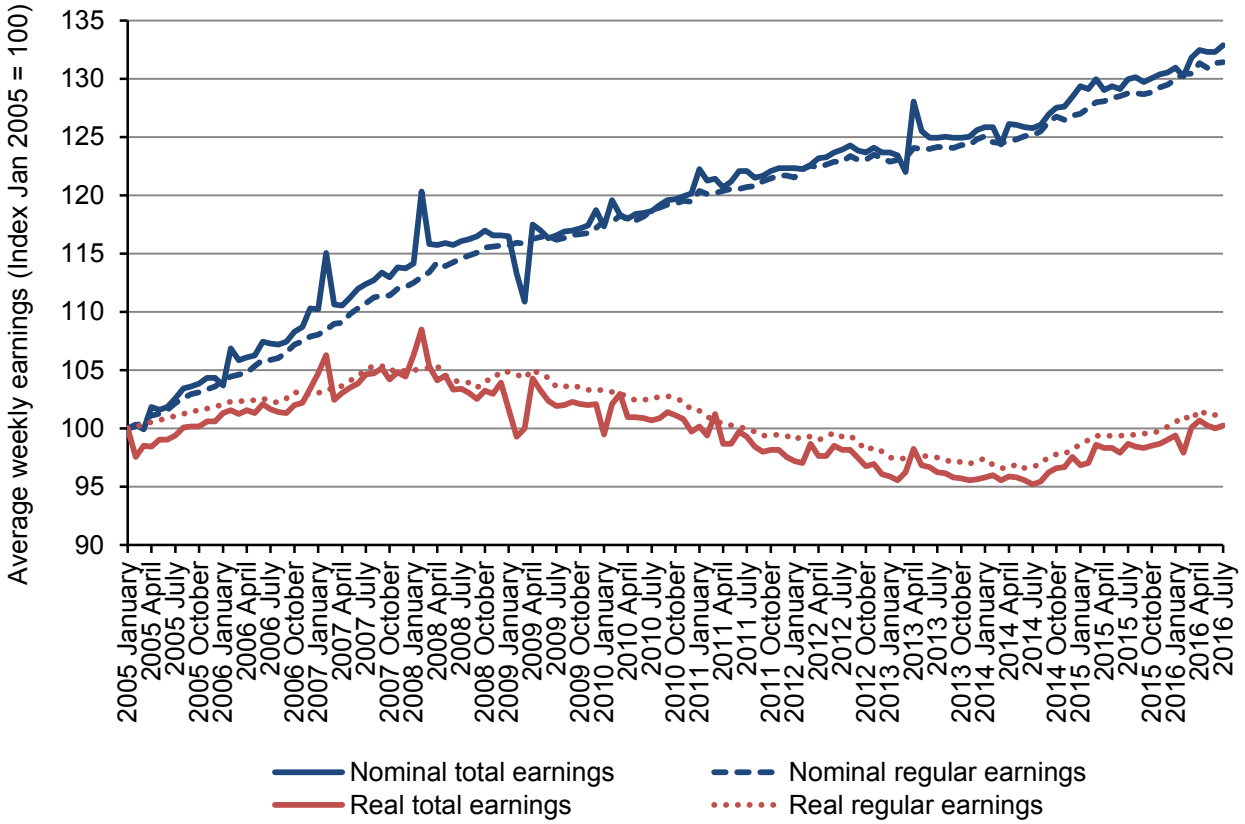
Figure 1.23: AWE total, real and nominal pay annual growth rates, GB, 2008-2016



Source: ONS data: AWE whole economy total pay growth (KAC3), real earnings growth (A3WW), monthly, seasonally adjusted, GB, 2008-2016.

1.88 However, the level of average real earnings, as shown in Figure 1.24, has not yet regained its pre-recession level, with real total pay 8.0 per cent lower than its bonus-enhanced peak in February 2008, and real regular (excluding bonuses) pay still 3.9 per cent below its 2007/08 peak.

Figure 1.24: Real and nominal average weekly earnings (total and regular pay), GB, 2005-2016



Source: LPC estimates using ONS data: real total average weekly earnings index (A2FD), nominal total average weekly earnings index (K54U), real regular average weekly earnings (A2F8), nominal regular average weekly earnings (K54L), monthly, seasonally adjusted, GB, 2005-2016.
Note: Real and nominal AWE total pay index set at 2005=100.

1.89 Overall, the picture is one of moderate and stable earnings growth in nominal terms but, coupled with low inflation, a two year period of sustained real earnings growth. This has enabled real average earnings finally to gain ground on its pre-recession level. Pay bargaining and pay pressures, however, remain remarkably subdued in the face of the strong labour market performance.

Conclusion

1.90 This chapter has shown that since the announcement of the NLW in July 2015, the economy broadly performed in line with our expectations, though there was some softening even ahead of the vote to leave the EU. The UK has continued its recovery, albeit with growth slightly weaker than forecast and below its pre-recession pace – GDP growth in 2016 is likely to be about 2.0 per cent. Consumer spending was the main driver of economic growth in the first half of 2016, with retail and hospitality – the two largest low-paying sectors – growing strongly as a result. Investment spending also helped boost growth, but trade acted as a drag on the economy with increased imports more than offsetting any growth in exports. Meanwhile, government spending was flat. Data suggested that company profits (measured via surpluses) had increased in the services sector since the recession, though notably weakened in the two quarters to June 2016.

1.91 The labour market continued to be strong, with record numbers of jobs, people in employment and total hours worked. Vacancies continued to be much higher than in the pre-recession period. As a consequence, unemployment continued to fall, with the headline unemployment rate down to 4.9 per cent, although the claimant count started rising in February. Both unemployment and employment have performed better than forecast in January and in July 2015. However, since April 2016, redundancies have slightly increased, the claimant count has risen, the growth in hours worked has stalled and the growth in permanent and full-time employees has slowed. Employee jobs in low-paying sectors have also grown more slowly than jobs in non low-paying sectors, especially in the three months since April 2016.

1.92 Despite the growth in employment, wage pressures once again remained subdued. Pay settlements were again stuck at around 2.0-2.5 per cent in the private sector – a position unchanged for at least three years – with little sign of any movement or evidence of any NLW effect. Against expectations that average wage growth would pick up to 3.3-3.4 per cent in 2016, weekly earnings grew by around only 2.2 per cent on an annual basis to August 2016. However, growth in hourly pay to April 2016, using ASHE, suggested stronger wage growth of 3.1 per cent at the median for those aged 25 and over, though even this measure still underperformed forecasts when taken over two years. Weaker actual and expected performance was reflected in the outlook for the value of the NLW, with projected rates falling over the course of 2016. Nonetheless real wages have continued to grow as inflation has remained low and below forecasts, restoring some of the value lost since 2008.

1.93 Productivity growth on all measures has been sluggish since the end of the recession. Productivity only returned to its pre-recession levels at the end of 2015 – whether measured using output per worker, output per job or output per hour. However, there has been a stronger performance in retail in the past two or three years, and an uptick in hospitality since the middle of 2015.

1.94 This chapter has considered data that generally only covered the period before the Referendum on the UK's membership of the EU. It shows that our recommendations for the October 2016 upratings in the youth rates and the Apprentice Rate were made when the general economic picture was broadly encouraging. The NLW was also introduced at a time of solid GDP growth and employment performance, which were in line with expectations for the first half of 2016. However, weaker pay and productivity growth bore down on the likely cash value of the NLW before the summer. The economic outlook has weakened since then, with a fall in sterling between June and October amid uncertainty about the UK's future trading arrangements. One consequence has been that nearly all of the major economic forecasters in the UK and many international bodies have revised down growth for the UK in 2017 and 2018. We consider the economic outlook in Chapter 5, when we review the path of the NLW, and the future rates for young people and apprentices.

1.95 We next, however, look in more detail at the impact of the introduction of the NLW in April 2016, and its potential impact in 2020.

Chapter 2
The impact of the National Living Wage

Introduction

2.1 The introduction of the National Living Wage (NLW) on 1 April 2016 was a significant intervention in the labour market. The £7.20 introductory rate for workers aged 25 and over was a 7.5 per cent overnight increase, and a 10.8 per cent annual increase in the main rate of the minimum wage – the joint largest ever – at a time when median earnings for the same age group increased by 3.1 per cent, and inflation was low. Partly as a consequence, the main rate of the minimum wage is now at its highest level ever measured in real terms, and also at its highest relative value.

2.2 The higher value is reflected in the number of workers on the rate. In April 2016, there were 1.6 million workers aged 25 and over, 6.7 per cent of the workforce, covered by the NLW, compared with around 750,000 workers aged 22 and over, or 3.4 per cent, when the National Minimum Wage (NMW) was introduced in 1999. Looking ahead, there is an ambition for the NLW to rise to 60 per cent of median earnings by 2020, subject to 'sustained economic growth'. This will make it among the highest minimum wage rates in the world in relative terms, and could cover almost 3 million workers, 12.4 per cent of workers aged 25 and over, in 2020.

2.3 This chapter sets out our initial assessment of the impact so far on pay levels, employment and competitiveness, including an update of the forecast impact of the 2020 level of the NLW. It draws on a range of sources of information – our visits programme across the UK, the evidence we receive through our written and oral consultation, in-house analysis of labour market and pay data, and commissioned research projects.

2.4 Given that this analysis of the impact of the NLW follows the introduction of the £7.20 rate by just six months, these are inevitably initial findings only. There is only limited data available from the period after 1 April 2016. While the available information can offer insight into the broad feel of the early impacts, particularly using qualitative evidence, it has significant limitations. For instance, stakeholder evidence of challenges for some employers does not necessarily establish employment or competitiveness effects at a sector-wide or economy-wide level. Conversely, the absence of aggregate effects in available data does not mean that we can rule them out, particularly given the expectation of future increases in the rate. We will continue to monitor and report on the impact of the NLW as more evidence becomes available.

2.5 The analysis covers the impact on earnings and pay, to establish whether (as expected) it has indeed increased pay, and by how much and for whom, including possible rates of non-compliance. We then consider early evidence on whether the NLW has affected employment or hours in the economy, notwithstanding limited hard data. A third brief area of focus is the impact on competitiveness – including profits, prices, investment, and business failure, albeit this area is characterised by even less hard data than employment effects.

2.6 We begin, however, with evidence from stakeholders, surveys of firms and commissioned research on the initial reaction to the introduction of the NLW – covering the scale of the impact, the sectors most affected, responses by firms and views about the future increases.

Stakeholder views and survey evidence of the introductory rate

2.7 In our Spring 2016 Report most businesses and employees alike welcomed higher pay as an important objective, but divided into supporters of the NLW (who thought it comfortably affordable), organisations concerned about the introductory rate, and those worried about the path to 60 per cent of median hourly earnings in 2020.

2.8 A key uncertainty was how firms would adjust to higher labour costs. Evidence highlighted a range of possible approaches including: raising productivity by work reorganisation, training or investment in technology; reducing hours or jobs (or foregoing growth); compressing pay scales and squeezing differentials; reducing premium pay or parts of the wider reward package; reducing profits; raising prices; outsourcing more work; and making greater use of youth rates, including the new 21-24 Year Old Rate.

2.9 The main sectors worried about the short-term effect comprised: social care providers, who warned of 'serious risk of catastrophic failure' if the NLW was not fully funded; convenience stores; small firms in general; some food manufacturers; and horticulture and other labour-intensive traded sectors, such as textiles. A broader group was worried about the longer-term, including larger retailers, and bars and restaurants – though with differing views on the degree to which the NLW was a risk. For some it would mean adjusting pay systems; for others major structural change. It would also begin to touch some new sectors, including local government and call centres.

2.10 Most respondents had yet to work out how they would accommodate the NLW through to 2020, but planned short-term responses tended to involve pay consolidation, higher prices or reduced profits, with firms reportedly avoiding job losses, or introducing lower pay for younger workers, where they had not previously used the existing youth rates of the minimum wage. Survey evidence suggested many employers were interested in raising productivity, though with few specifics given.

2.11 For this report we have carried out a further consultation and round of visits, with the key difference that employer and employee representatives are now able to offer insights, to a lesser or greater degree, on how firms actually responded to the introductory rate. We consider, in turn, the main themes and then discuss views by sector. Many of the messages echoed the earlier consultation, including the broad three-way division between supporters of the NLW, those who found the introductory rate a challenge, and those concerned about the future path.

Cross-cutting views and research evidence

2.12 The CBI thought that the introductory rate was 'a real stretch' and 'out of step with pay growth in the lower-paying industries and the economy as a whole'. Key sectors affected included small retail, care, food, textiles and horticulture: 'generally labour-intensive, low-margin and price-taking sectors where the challenge of paying higher wages is compounded by little room to pass on

increases in costs to customers and limited scope to boost productivity in the near-term'. In affected firms, immediate actions had been 'focused on reducing costs', including changes to reward schemes, use of shift pay and overtime, and reductions in hours. While there had not been large employment reductions to date, it highlighted cases of retailers reducing their use of labour to mitigate costs. This has included 'cutting back on the number of hours they offered to staff, or reducing their employee headcount'. It also noted a 'tempering of investment intentions'. It cited a small retailer: 'the April 2016 uprating cost us one third of our annual profit'.

2.13 The British Chambers of Commerce (BCC) thought that the introductory rate had raised wage bills directly and indirectly, via its impact further up the wage scale, with a third (34 per cent) of respondents in a survey of over 1,600 employers affected. Of these firms, a third (34 per cent) had absorbed increases by increasing prices, a quarter had reduced recruitment (25 per cent) and one in five (18 per cent) had reduced hours. While there might have been some gains in productivity, members thought these were likely to be finite.

2.14 The Chartered Institute of Personnel and Development (CIPD) reported that one in seven employers (13 per cent) in its survey of 1,050 employers said that the NLW had a large impact, and 17 per cent said it had some impact on the wage bill. Out of the employers that reported at least some impact, the most common responses had been to: reduce profits (36 per cent); improve efficiency and productivity (24 per cent); and reduce overtime and bonuses (14 per cent). Around 12 per cent had reduced employment and 10 per cent basic hours. It noted that there was a change in the pattern of response compared with a previous survey (D'Arcy and Davies, 2016) conducted ahead of the introduction of the NLW, which showed a higher proportion of firms intending to raise productivity or efficiency, and a smaller proportion intending to reduce profits. It also highlighted differing responses by company size: large firms were more likely to report a wage bill impact, but small and medium-sized enterprises (SMEs) were more likely to adjust by absorbing the increase and less likely to report improving efficiency. It thought that 'while firms have coped relatively well with the initial increase in April 2016, many have responded in ways which will be difficult to sustain such as taking a hit on profits and costs… rather than becoming more efficient'.

2.15 Among smaller firms, 51 per cent of respondents to a Federation of Small Businesses (FSB) survey of 641 employers reported that the NLW had increased their wage bill – 19 per cent 'to a large extent'. Of those affected, three-fifths (59 per cent) had reduced profits or absorbed costs, a third (35 per cent) had increased prices, a quarter (24 per cent) had reduced staff hours, and a similar proportion (23 per cent) had reduced investment. Around one in six (16 per cent) had recruited fewer workers, with similar proportions reducing pay for other workers (15 per cent), or overtime and bonuses (14 per cent). One in eight (13 per cent) had sought to improve efficiency or raise productivity.

2.16 By contrast, EEF – the manufacturers' organisation – reported that the introduction of the NLW had 'not been overly onerous on manufacturers'. Local government representatives also reported councils had been little affected for their directly employed workforce by the introductory rate. In hairdressing, the National Hairdressers' Federation (NHF) thought many employers had not been affected by the £7.20 rate as stylists aged over 25 tended to earn this amount already, and those younger than 25 were often paid nearer one of the youth rates. The British Retail Consortium (BRC) said that retailers recognised that there was a high and rising incidence of low pay in the industry, so welcomed both the NLW and the NMW, though also flagged 'considerable' costs.

2.17 Employee representatives were very positive about the impact of the NLW, but – as in our Spring 2016 Report – critical that it was not a 'real' living wage and doubtful that gains would compensate for cuts in benefits and tax credits. They suggested that it has proved affordable so far, with no obvious negative employment effect. The Communication Workers Union (CWU) said that the new rate was set to help workers in low-paying jobs such as cleaning and catering, particularly in the private sector and in 'more affordable' areas, but was too low to make much difference to workers in London. Unite said it has seen little evidence of job losses – contrary to concerns, employment in low-paying sectors had increased, with exposed demographic groups continuing to perform strongly in the labour market. GMB agreed: 'we remember the scaremongering when the NMW was first introduced… but thousands of low-paid workers benefited'.

2.18 A key focus of employee representative evidence was the high profile debate about pay consolidation, with cases of employers part-funding the introduction of the NLW by: reducing premium pay; reducing use of overtime or the overtime rate; reducing Sunday and bank holiday rates; or reductions in terms and conditions such as annual leave, sick pay, and pension benefits. Some trade unions reported that pay consolidation was a minority response to a higher pay floor and not a new one given past adaptations to the minimum wage. Consolidation of reward into base pay had been a long-term pattern in sectors such as retail and tended to leave workers better off overall. Their concern was not this broader trend per se, but particular businesses that they felt were using the NLW as an excuse to reduce costs opportunistically.

Case study: Food manufacturer and retailer

A food manufacturer and retailer told us that it saw challenges in the NLW, but broadly welcomed it as a prompt to improve the business. Labour costs account for about 40 per cent of total costs and, in a tight margin industry, it felt vulnerable to unpredictable wage increases. But it was also confident that it would manage to cope on the basis that the new rate was also being borne by competitors.

The firm has always aspired to pay above the minimum and the introduction was an opportunity to look again at the business to identify efficiencies. The firm has a long-standing challenge of a gap in pay between its manufacturing staff and its retail staff, and the introductory rate helped it to make the case for raising the pay of the latter group.

It funded the introductory rate in the first instance by bottom-loading the annual pay round, with higher-paid workers receiving a smaller increase: staff at the bottom received at least 5 per cent; those at the top 2.8 per cent. The margin paid to staff over the minimum decreased relative to previous years. This had helped reduce gender differences in pay.

It was also looking at efficiencies. It saw significant opportunities to increase output in the manufacturing part of its business, whereas its retail operations had high fixed costs and savings would be likely to damage the customer experience.

The firm had sought to avoid price rises, though had not ruled them out in future: viability depended on what its competitors did. However, it had ruled out different pay levels for 21-24 year old staff, which it felt unjustifiable.

2.19 Unite reported that most affected firms had not made offsetting changes to pay and conditions. However, it had come across examples where employers were looking to 'offset or potentially profit from the NLW' by reducing terms and conditions, including overtime rates, annual leave, sick pay and pension benefits, as well as encouraging more 'bogus self-employment'. GMB had seen similar trends with cases of reductions in paid breaks, overtime, and free food for staff. It also highlighted firms removing staff from salary sacrifice arrangements, where contributions would take a worker below the NLW (and a number of employer representatives including the EEF, the Food and Drink Federation (FDF) and the Chartered Institute of Payroll Professionals (CIPP) also warned of cases of reduced availability of salary sacrifice-based benefits in view of the NLW).

2.20 The TUC highlighted survey evidence that 10 per cent of employers had reduced benefits following the large increase in the minimum wage in 2001, with 6 per cent reducing overtime – so pay consolidation was nothing new. The Union of Shop, Distributive and Allied Workers (Usdaw) pointed out cases of retailers criticised in the press for reducing premium pay but who had begun developing their plans before the NLW was announced. These employers were, alongside some reductions in parts of the pay package, extending a large increase in basic hourly rates to workers aged under 25, and protecting total reward via 'parachute payments'. In the vast majority of cases workers had been made better off.

2.21 Alongside the evidence from stakeholder surveys, we commissioned two research projects surveying firms in low-paying sectors on the scale of the impact, and reactions to the introduction of the NLW rate.

2.22 D'Arcy (2016) analysed data from a phone survey of 800 employers across low-paying sectors: wholesale and retail, accommodation and food service, cleaning and landscaping, food manufacturing and processing. Similar to the scale of impact reported by stakeholders, 47 per cent of employers had seen their wage bills increase as a result of the NLW (19 per cent a lot, 28 per cent a little). However, in contrast to stakeholder evidence, small firms were less likely to report that their wage bills had increased than medium-sized and large organisations.

2.23 Around 30 per cent of affected firms reported raising prices either a 'great deal' or a 'fair amount' in response to the NLW – 61 per cent of affected firms within the cleaning sector reported raising prices. Some affected firms reported changes to employment, with 27 per cent using either fewer or different kinds of staff. Of these, 27 per cent said they had done this 'a lot', 43 per cent a 'moderate amount' and 30 per cent 'a little'. Within these firms the most popular adjustment to staffing was hiring fewer staff than they otherwise would have, offering fewer hours, and making more use of casual or zero-hours contract workers, but redundancies were very rare.

2.24 Responses also included making changes to pay and benefits (28 per cent of affected firms). Of the former firms, the most popular changes included reduced pay rises for staff earning above the NLW, with changes to bank holiday pay, overtime pay, Sunday pay, paid breaks and pension contributions less common.

2.25 Of all the firms surveyed, 45 per cent had sought to increase productivity. This increased to two-thirds of firms who reported the NLW had increased their wage bill – suggesting it was a likely prompt. The most popular actions taken were to invest in training to improve staff skills, making greater use of skilled staff, and asking staff to do more.

2.26 Incomes Data Research (2016) also conducted a survey of firms – surveying 119 employers across a range of low-paying sectors, many of which were large employers. Most firms had implemented the NLW without trouble. However, just over a third of respondents (35 per cent) felt that implementing the NLW had been either difficult or very difficult – this was particularly pronounced in the childcare sector. The average increase in the pay bill from implementing the NLW was 6 per cent.

2.27 As with other sources, responses varied on the impact across competitiveness and pay. Half of respondents anticipated an effect on profits, and this response was more common in the childcare and hospitality sectors. A majority of respondents were also looking to improve productivity – albeit 65 per cent reported they would have undertaken these steps anyway – with the others citing the NLW as a contributing or closely-linked factor. In line with D'Arcy (2016), 33 per cent of respondents thought price rises were likely following the NLW. This response was more common in childcare (78 per cent) and hospitality (60 per cent) – but much lower in retail (20 per cent).

2.28 On pay, changes to grading structures and reducing unsocial hours premiums were more popular than changes to working hours. The research highlighted the example of a non-food retailer employing over 22,000 staff that moved from 22 grades with small pay differentials between each to just three grades with much wider gaps. It also cited a large retailer employing 90,000 staff that had squeezed differentials between staff on the NLW and those on higher rates: the lowest-paid staff received an increase of 8.5 per cent, whereas supervisors received 2.2 per cent. The retailer also removed premiums for Sundays, bank holidays and overtime for new starters – though pay consolidation was a longer-term trend. Contrary to other stakeholder evidence, which generally identified it as an unpopular response, a third of respondents thought the age profile of their workforce would change following the introduction of the NLW.

Bank of England Agent evidence

In oral evidence to the Commission, one of the Bank of England's Agents shared her insights on the impact of the introduction of the NLW and wider trends in the labour market, based on regular discussions between the Agency network and employers from a range of sectors and company sizes across the UK.

- On average, employers were reporting moderate growth in labour costs. The impact of the NLW on aggregate labour cost growth had been modest, although it was having a more sizeable impact for those employers with a high proportion of low-paid staff.
- The NLW was most commonly cited as a factor raising labour costs in the services sector, particularly among consumer services firms. A minority of manufacturing firms also reported upwards pressure from the NLW.
- Measures taken to ameliorate the impact of the NLW on margins had varied. For example, some employers were reviewing wage differentials and bonus and commission payments to limit the potential impact on total labour costs. There was thought to be less scope for further such adjustments in future years. But in some cases, the NLW had been extended to employees under the age of 25 who were not legally required to be paid the higher rate.
- In an Agents' survey earlier in the year, staff costs had been cited as a factor weighing on recruitment plans. The NLW had been cited by some of those concerned by staff costs – mainly consumer services and manufacturing respondents.

Particularly affected sectors

2.29 The most critical responses regarding the introductory rate came from the sectors which had expressed concern in our Spring 2016 Report, including small retail, horticulture and social care.

2.30 The Association of Convenience Stores (ACS) said that the rise to £7.20 had a major impact in its sector. In a survey of 97 employers, covering just over 5,000 stores, three clear responses since April 2016 were detected: reductions in paid working hours (74 per cent), reductions in the number of staff employed (67 per cent), and employers increasing their own working hours in the business (65 per cent). Two-fifths of firms (43 per cent) said they delayed investment decisions or expansion plans, although the ACS also said that investment remained strong in the sector. A similar proportion (44 per cent) said they were reducing staff benefits such as premium pay for anti-social hours, overtime and discounts. There had also been a move to more lone working. Around a third of affected businesses reported responding by raising prices. The National Federation of Retail Newsagents (NFRN) reported a similar picture for other small retail businesses. The higher NLW was one of three pressures – with sick pay and pension costs – that had meant jobs and working hours for employees had been reduced, while retail employers themselves were working longer hours. The CBI warned of smaller shops such as convenience stores 'reducing opening hours or shutting altogether'.

Case study: Chain of convenience stores in Northern Ireland

The owner of three stores – two SPAR and one EUROSPAR – with 160 mostly part-time staff in Northern Ireland told us that the NLW had adversely affected his business, and that he expected this to worsen towards 2020.

The overall cost to the business of the NLW at £7.20 was £41,500, but a rise to £9 would cost an estimated £200,000.

The NLW had affected growth plans. The company was planning to acquire another store and refurbish its existing stores with new tills and freezers. However, the refurbishment would have cost £65,000, so had been postponed.

The firm was looking at other ways of improving efficiency, such as LED lighting and grouping all stores onto one insurance policy, but the savings were marginal. It had made some savings in reducing duplication of effort by staff, using two supervisors for a shift where previously there were three, for example, and by using the age-related rates for workers aged under 25.

It felt that price increases were not an option as prices were set by suppliers.

2.31 By contrast, employee representatives were more sceptical of arguments about these pressures. They pointed out that there had been strong continued growth in store numbers in the convenience sector, fuelled by changing consumer demand. In any event, the NLW was just one of several broader factors driving structural change in food retail, including the rise of the internet, the advent of discounters, and price competition.

2.32 Alongside the convenience sector, horticulture representatives had highlighted concerns about the impact of the NLW ahead of its introduction. In its follow-up evidence, the National Farmers' Union (NFU) and multiple submissions from individual farms argued that the introduction of the NLW had indeed adversely affected them – influencing pay, employment and competitiveness. In a survey of 451 NFU members, nearly half (47 per cent) of horticulture businesses reported an impact on profits, a third (32 per cent) on investment decisions, one in seven (14 per cent) on production levels, and one in five (17 per cent) had reduced staff. The direct wage costs had been increased by the need to protect differentials.

2.33 In submissions from individual farms, respondents cited impacts on pay. For example, a horticulture business in Ross-on-Wye said it had reduced differentials and ended perks such as free bus trips. An arable farmer said the NLW had led it to reduce the overtime premium to time and a quarter from time and a half, and to reduce fringe benefits including payment of Council Tax and water rates. Farmers also cited examples of effects on employment. A UK-wide soft fruit grower said that the introductory rate had increased labour costs by £1.7m, with the prospect of further increases leading it to stop increasing its UK workforce (it was also withdrawing from some products and moving some production to Southern Europe). A soft fruit grower in East Anglia said it had restricted hours to employees. Employment effects were often linked to broader consequences for competitiveness, with several submissions highlighting reduced profitability. A strawberry business said investment decisions had been put on hold as a consequence of the NLW – not just because of its introduction, but also the prospect of future increases. Another farm said it had reviewed its business and stopped growing cane fruit due to labour costs, in light of the NLW.

Case study: Farm in Herefordshire

A farm in Herefordshire employing 22 permanent staff and 1,000 seasonal workers told us that the NLW had affected the differential in pay between skilled and supervisory staff. 70 per cent of its production cost is labour so the business is sensitive to changes in wage rates.

In 2015 the differential was 11 per cent, but a 9 per cent increase in labour costs for NLW workers since October last year, once increased National Insurance payments, holiday pay and pension contributions were taken into account, meant that it had had to reduce the maximum differential to 5.5 per cent.

It had also reviewed jobs and downgraded some to lower pay scales. Some benefits had been reduced, for example the number of free bus trips available to staff.

2.34 A third sector that had highlighted challenges in accommodating the introductory rate in the spring, and one that has featured regularly in previous LPC analysis, was social care. Submissions from sector representatives in England for this report supported the NLW in principle, but were worried about affordability. They highlighted consequences for pay, quality and sustainability – though with less emphasis on employment effects than other concerned sectors.

2.35 Considering pay first, the UK Homecare Association (UKHCA) thought that the NLW was inadequately funded for the lowest paid, and had made it harder for providers to reward more experienced workers, exacerbating pre-existing retention problems and adding to churn. A higher pay floor meant slower wage growth for higher paid staff. The YOU Trust, a social care charity in Portsmouth, agreed that a higher minimum wage had eroded differentials, making recruitment harder: where care workers used to be paid above the minimum wage, they were now paid at the floor.

2.36 Gardiner (2016), using pay data from adult social care providers in England, found no evidence that hours had been reduced to offset NLW costs. Social care providers had overwhelmingly passed benefits onto staff aged under 25, with spillovers up the distribution. They had invested twice as much in raising pay than if they had only satisfied NLW requirements. But the analysis also noted bunching of pay, with one third of the workforce paid at £7.20, up from one fifth on the adult rate of the NMW previously. The research was not able to explore employment levels or non-compliance. Nor could it consider organisations going out of business or withdrawing from contracts.

2.37 Giupponi, Lindner, Manning and Machin (2016) undertook a survey of care homes in England to investigate the impact on pay, employment, prices and productivity of the introduction of the NLW (effectively repeating previous work undertaken looking at the impact of the NMW). They found a positive picture: before April 2016, over two in five of care homes surveyed thought the level of the NLW was about right (43 per cent), with a similar proportion (38 per cent) saying it was too high. However, after April, only one in five (21 per cent) thought the level was too high, with a similar proportion (22 per cent) saying it was too low. The study found that the introductory rate of the NLW had increased the pay of many care assistants – the percentage paid below £7.20 went from 59 per cent to 4 per cent – with significant increases in hourly and weekly earnings following the

introduction of the NLW. Many care assistants aged under 25 had also benefited from the NLW, with only a quarter paid below £7.20 after April.

2.38 Despite the large pay increases, they found no significant impact on the employment of care assistants, nor on the share of employment of those aged under 25. Neither did they find any significant effect on prices or productivity (measured as residents per worker, so unable to capture quality). However, the research noted that scope to adjust employment, productivity or prices was constrained by minimum staffing regulations and local authority commissioning of services. It should be noted that these findings were based on the early stages of data collection and will be supplemented over time as the research reaches completion.

2.39 The research investigated whether organisations had gone out of business between the before-NLW and after-NLW survey. However, they found that only a very small proportion of firms which responded to the pre-NLW survey had closed down by the time of the next survey. Further, these firms had a low proportion of workers paid below the NLW before April 2016, possibly indicating other causes of the closure.

Case study: Social care in Southend

In our Spring 2016 Report, we described the anticipated impact of the NLW in the social care sector in Southend-on-Sea. Providers were worried that funding would not be sufficient to meet rising costs. Three companies had already withdrawn from their block contracts with the local authority as they had become financially unviable and others were considering doing so.

Speaking again to one of the home care providers following the introduction of the NLW, it advised us that the Council Tax precept had enabled a 9 per cent increase in the hourly rate for the final year of the Council contract. This had helped the care provider to manage the introduction of the NLW. However, financial pressures remained.

Salary costs (gross pay plus holiday pay, National Insurance and rising pension contributions) as a proportion of turnover had increased over the last four years, now amounting to 92.5 per cent of its turnover, compared with 88 per cent in 2011/12. The firm had sought to reduce its overheads to cope with this change.

Despite increasing hourly pay for carers, the company was struggling to recruit staff. Where previously it had attracted staff by paying a rate above the minimum, it was now at the level of the pay floor. To attract and retain staff the company had focused on other benefits, including a contact allowance and unsocial hours enhancements. The Council had proposed a recruitment support initiative to help the situation.

Looking ahead, the business saw limited scope to reduce use of labour as it was already at a minimum. Instead, it is exploring moving into more complex private care, with longer visits and less travel time. The firm will shortly be deciding whether to bid for the new block contract and other Council contracts, but is concerned that the hourly rates will be insufficient to keep the business viable. In this event, their service is likely to be taken up by a larger operator, one providing a lower quality of service, or the sector will shrink as firms go out of business.

2.40 Other evidence drew attention to the broader effects on competitiveness and sustainability. The Association of Directors of Adult Social Services (ADASS) Budget Survey reported that 93 per cent of councils in England had used the full 2 per cent Council Tax precept (although, 40 per cent did not raise base Council Tax rates by the full amount permitted). Around 85 per cent of Directors of Adult Social Services in England believed that social care would receive the funds raised by the precept, indicating that local authorities had used the precept to raise fees. However, representative bodies continued to argue that hourly fees were still too low, and had not adjusted systemically. UKHCA argued that 'local authorities have generally failed to recognise providers' increasing staff costs'. It warned of 'social care providers in Lancashire, Durham and Yorkshire [reporting] to us considerable duress because of the impact of the NLW at a time of reductions in local authority funding of care services. This has been seen not so much a concern at reduced margins, or even diminished profitability, but rather as a genuine threat to care services'. Care England also warned about the risks to the care home market of the combination of the NLW with underfunding. GMB also emphasised that, while it welcomes any minimum wage increase, lack of funding 'may push social care to breaking point'.

2.41 Other evidence supported this picture of risks to market sustainability, though with multiple causes. In its 'State of Care' report, the Care Quality Commission (CQC, 2016) warned that 81 per cent of local authorities in England had reduced their real-term spending on social care for older people over the last five years. With staff costs on average making up about 60 per cent of total cost in care homes and about 80 per cent in home care, the CQC warned that 'the cost challenge will… get harder to manage with the impact of the NLW'.

2.42 It highlighted severe financial strain faced by local authority funded providers, now beginning to affect the supply of services. Since April 2015, at a national level, the growth in nursing home beds has stalled, while the number of nursing homes has fallen by 1.6 per cent, from 4,698 to 4,623. It cited data from ADASS that 32 councils had residential or nursing care contracts handed back to them in the six months up to May 2016, affecting around 700 residents. Also, 59 councils had home care contracts handed back, which affected 3,700 people. One large provider of home care, Mears, was quoted as stating that the 'contracts we have exited are those where simple mathematics shows that the charge rate a council wants to pay will result in a provider either not meeting the requirements of the NLW for care staff, or not delivering the service needed by the user'.

2.43 Although we received limited specific evidence on social care in Scotland, Wales and Northern Ireland, we heard on visits that home care providers and residential care providers alike are facing similar issues to England. However, the Scottish Government has a commitment to pay the voluntary Living Wage, which includes all care workers in Scotland. It has allocated an additional £250 million transfer to health and social care partnerships to enable employers to deliver its commitments for the sector, benefiting an estimated 40,000 workers. The Welsh Government told us that, while it welcomes any increase in wage for the lowest earners, the NLW was 'one of a number of financial pressures impacting upon social care, creating stress and uncertainty about the stability of the sector'. It said that if support was not available to enable providers to pay staff the higher wage, it could result in higher prices for consumers, job cuts or impact on the quality of service. It urged us to make representations to the UK Government on funding for the sector.

Other sectors

2.44 EEF reported that most manufacturers had not been directly affected by the NLW and supported a higher wage floor. The introductory rate mainly bore on some commoditised parts of the sector, and parts of food manufacturing. The Food and Drink Federation (FDF) provided more detailed evidence suggesting the introductory rate had been broadly manageable, though highlighted specific challenges on pay. The NLW had mainly affected smaller companies, with differentials between skilled and unskilled workers being reduced. Larger companies were having to take some people out of salary sacrifice schemes. It called for shift pay to be included in the minimum wage calculation.

2.45 In hairdressing, the NHF thought that many firms had not been affected by the introductory rate. However, while 39 per cent of the 500 respondents to its survey reported no impact, 53 per cent reported reduced profits, 13 per cent had reduced hours, 12 per cent had reduced the number of employees and 9 per cent reported higher prices. On a visit to Dundee, the Commission met a salon owner who had coped with the introductory rate by increasing prices. He was concerned about the growth of the informal hairdressing sector and competition from those not bound by the minimum wage – particularly among the self-employed, mobile hairdressers and those operating for cash-in-hand. A salon owner we met from Cheltenham was more relaxed: the NLW might affect provision of training, but higher prices were viable in his market.

2.46 The UK Fashion and Textiles Association (UKFT) said that as a consequence of the NLW 'examples abound of… removing pay for breaks; removing or reducing attendance bonuses; cutting overtime… and reducing employer pension contributions'. UKFT told us that employment had been cut by 10 per cent, combined with a 'dead stop' in recruitment. The need to retain differentials had affected competitiveness 'and some level of redundancies has resulted'.

2.47 Looking at the two biggest low-paying sectors, retail and hospitality, most respondents suggested that the introductory rate had generally been manageable, but had led to some changes in pay and employment.

Case study: Hotel and leisure company in Cumbria

The NLW has affected Cumbria Chamber of Commerce members, including a hotel and leisure company. The firm, which operates from two sites, had seen its pay structure affected. It previously had a lowest pay level of £6.90 per hour for staff members over 21 years old, which it had now increased to £7.20 for staff over 25 only. The firm increased the rates of more senior staff by 30 pence an hour as well, even though they had been earning over the NLW. A supervisor earning £7.80 an hour before the introduction of the NLW saw an increase to £8.10 to maintain the same differential. The firm has also decided not to change staff benefits.

The company has managed the costs by absorbing them, with price rises unrealistic in its market.

2.48 Based on a survey of retailers covering 1.3 million employees, the BRC reported that almost half of its surveyed members (47 per cent) anticipated taking action to reduce labour costs following the introduction of the NLW, including reducing differentials, higher targets for bonuses, reduced premium pay, removal from salary sacrifice schemes, and reductions in paid breaks, pension contributions and holiday entitlements. Members of the Federation of Wholesale Distributors (FWD) also reported that there had been a reduction in employment benefits and changes to pay structures.

2.49 We also received some evidence of retailers using different rates for younger staff, though this tended to be firms that had already been making use of the youth rates. A number of large firms have been reported in the press as paying rates to 21-24 year olds below the NLW, including Next, Halfords, Mothercare and Poundland. At a roundtable of payroll managers organised by the CIPP for the Commission, a high street retailer told us it was paying new staff aged under 25 less than the NLW for their probationary period. Another high street retailer was introducing its own 18-20 year old pay rate.

2.50 In contrast to changes in pay, price rises to accommodate the NLW appear to have been a less popular response among retailers than in other sectors – reported by around 11 per cent of surveyed BRC members compared with, for example, a third of businesses surveyed by the BCC. The BRC told us this likely reflected price deflation in retail, an extremely competitive sector – with clear geographical and sectoral divergences in pricing behaviour.

2.51 A similarly varied picture was presented in submissions from representatives of hospitality, with employers emphasising effects on wage bills and challenges for pay structures in the first instance. The Association of Licensed Multiple Retailers (ALMR) said 'large majorities [of respondents to their survey] reported pay increases for experienced and higher paid staff to maintain differentials'. A major hospitality firm reported that it had implemented a 'pay for progression model putting into practice our belief that increased skills should be reflected in the rate of pay received'. It broadly supported the NLW, but highlighted concerns at the risk of 'paying a premium rate for entry level skills'. It said that the reforms had resulted in 'more compressed pay scales and fewer progression levels as we have sought to absorb the scale of the increase and age related rates', with risks to progression and motivation.

2.52 Respondents suggested that, to a greater degree than in retail, some firms in the hospitality sector had adapted by using the 21-24 Year Old Rate. The ALMR said that the 21-24 Year Old Rate is widely used within the sector and was often the standard rate of pay even for 18-20 year olds 'although this appears to be shifting somewhat… as companies seek to cut costs'. The British Beer & Pub Association (BBPA) thought many businesses used the full NLW for younger workers, but that this was often in London and the South East, whereas businesses in less prosperous areas sometimes paid lower rates.

2.53 A minority of representatives highlighted effects on employment and hours. In the ALMR's survey, just over half of those affected (55 per cent) had reduced hours. The British Hospitality Association (BHA) advised 'inevitably, there has been some effect on employment and hours worked in businesses operating at a marginal level of profitability. Some businesses in Wales have reported a cut of 8 per cent in employment levels'.

2.54 Evidence was also provided of effects on competiveness. The BHA said that, where market conditions have tolerated it, prices have increased. Other costs have been cut and, in many instances, margins have been eroded. The BBPA cited members struggling to raise prices. 'In the current economic climate prices cannot be increased by enough to cover the extra staff costs… Reduced profit is therefore inevitable'. Others were taking steps to raise productivity – whether through capital investment like touch-screen check-in facilities in hotels, or through redesigning services like moving from cooked to continental breakfasts. The NLW had not caused but was accelerating moves in these directions. Given that technological change takes time, the early responses in the hotel and pub sector had been more about job redesign.

2.55 By contrast, Unite argued that the sector was performing strongly, citing data that 32 of the top 50 employers in the hospitality sector had reported an improved financial position compared with the previous year, and that the sector was expecting growth from key markets.

2.56 A final sector highlighting effects from the introductory rate was childcare. The National Day Nurseries Association (NDNA) was concerned about the interaction of higher wage costs with increased free hours in England – a 'tipping point' that could squeeze margins, reduce the quality of childcare and increase fees to parents. It reported that members had increased payrolls by 10 per cent over the past year, in part due to the NLW, with staff wages the top business concern in its annual survey. It supported higher pay, but was concerned that the NLW had the effect of flattening pay structures, reducing nurseries' discretion to reward performance and achievement of qualifications. Given regulation in the sector, there was little scope for providers to reduce staffing. It cited examples of nurseries moving to statutory ratios from more generous ones, and reductions in staff discounts on fees.

Future trajectory

2.57 Looking ahead, evidence echoed submissions received for our Spring 2016 Report – in the sense that employers in a wider range of sectors were more worried about the affordability of the NLW by 2020 than its introductory rate. However, other sectors and employee representatives were more sanguine, or thought it would have business benefits. As in the spring, there was a lot of uncertainty and many employers had yet to commit to particular responses. These responses were almost all based on a 2020 NLW rate using wage forecasts from spring 2016, which give a higher cash figure than the latest forecasts, although unchanged in relative terms.

2.58 The CBI highlighted the 'scale and pace of the cumulative increases, with associated on-costs'. It thought the horticulture sector 'faces a fight for survival', with risks to the care sector and to regions where the economic recovery has been fragile. The CIPD said firms 'have responded in ways which will be difficult to sustain such as taking a hit on profits and costs… The responses may change for the better over time… But it is just as possible that more organisations will start to cut hours and reduce investment in training'. In a letter to us and the Government in July, 21 trade associations warned that 'labour intensive businesses will be negatively impacted by the proposed wage increases'.

2.59 Some employer representatives reported likely changes to pay structures and progression, with substantial compression of differentials and concerns about motivating and incentivising staff. The Local Government Association (LGA) thought 11,000 employees would be affected by 2020, raising the pay bill by 0.8 per cent without adjustments for preserving differentials. Preserving relative reward of employees higher up might require a review of the pay spine. A major hospitality firm was similarly concerned that its approach to reward would need substantial change.

2.60 A range of employer stakeholders thought employment risks would increase significantly towards 2020. A third of affected firms in the BCC's survey (around 10 per cent of all surveyed firms) reported that they would reduce recruitment were the NLW to reach the 2020 target of £9, and a quarter predicted reduced hours (25 per cent). The letter from 21 trade associations calling for more flexibility on the 2020 target warned that, over time, 'members are having to revise their growth, investment and employment plans as wage rates increase'. The ACS warned of 'structural change in staffing levels… by 2020'. A NFU report, which assumed a straight line NLW path to £9.02 in 2020, warned that horticulture and poultry providers would become unprofitable around 2020. In social care, UKHCA feared that small and medium-sized care providers would not be in a position to maintain their presence in the market once the NLW hit a rate of approximately £7.80.

2.61 By contrast, employee representatives told us that increases towards 2020 were affordable. UNISON argued that insufficient importance was being given to the benefits for employers resulting from higher demand in the economy. It said rate increases should be based on analysis that took account of businesses' operating surpluses, which had grown sharply. Unite thought higher increases would be 'distributionally progressive, would improve the public finances and have the potential to create jobs'.

2.62 In its survey, the BRC also found that a substantial majority of firms thought the future trajectory set out for the NLW was 'about right', though most firms with fewer than 10,000 staff warned it was too high, and risked store closures and job losses.

2.63 D'Arcy (2016) also asked employers in low-paying sectors about their plans to accommodate the increases in the NLW towards 2020. Only 20 per cent of firms said they had no plans to take action, indicating that the future increases will affect a larger number of employers than the introductory rate. The popularity of planned responses were similar to the ones reported following the introductory rate this year, with over half (54 per cent) planning to increase prices, and 45 per cent absorbing the increased costs through lower profits. Productivity enhancing changes were also popular, with 38 per cent investing more in staff training and 33 per cent investing more in technology. However, changes to staffing were also relatively common, with 32 per cent planning to use fewer workers, fewer hours, or to slow or reduce recruitment, and 26 per cent planning to hire more staff under the age of 25.

Case study: Baker in Essex

In our Spring 2016 Report, the owner of a small family-owned bakery in Essex told us that the NLW was a threat to the viability of his business. The business was made up of three bread and cake shops employing 23 workers, including 18 shop staff (all but one of whom were paid the minimum wage), 2 bakers and a delivery driver. Under pressure from large chains competing locally and with an artisanal product range that is expensive to produce, the firm had generally been under financial pressure.

The owner had predicted a 9.2 per cent rise in labour costs as a combined result of the October 2015 NMW uprating and the NLW, and an additional 7.2 per cent each year until 2020. Returning to the business following the implementation of the NLW, the owner told us that he was now going to close a bakery and a retail shop from which the firm had traded since 1952. This will mean that 6 of its 23 staff will be made redundant, including one of its two skilled bakers.

The closures will centralise production to one site and reduce the company's overheads, but the anticipated £23,000 cost of the redundancies will damage its position to the extent that the rest of the business is in the balance. Commodity prices have risen recently, having been falling in recent years, adding to pressures on the firm.

To mitigate these costs the owner estimates that prices will have to rise by at least 3 per cent or 6 per cent to maintain its profit margin. The owner does not consider this sustainable beyond the short term and anticipates the closure of the business in approximately 4 years.

2.64 For some of the industries expressing concern, the evidence did not establish the degree to which possible employment losses were simply changes in the structure of sectors rather than net job loss. For example, despite many respondents to their surveys saying that they would look to reduce employment and may even go out of business, the ACS reported that the sector was forecast to grow by 3.5 per cent a year for the next five years, albeit this was a slowdown from previous growth rates.

2.65 One theme running through employer responses warning of competitiveness and employment risks was that some low-paying sectors would lose the middle tier and polarise into a high 'labour use' luxury services tier and a lower labour use 'budget' tier, with more automation and self-service. For example, some hoteliers thought that three star hotels would struggle, leaving high end boutique hotels, and budget hotels that have minimal staff, no restaurant or bar, and utilise technology such as swipe card entry.

2.66 A related theme was polarisation in company size. In convenience retail for example, businesses thought that the sector could split into larger multiples and small independent retailers that rely on family members to work more hours. In social care and childcare representatives warned that rising costs from a range of sources meant that some individual nurseries and care homes wouldn't be viable due to their size. The sector could shift towards larger providers.

2.67 Firms that could do so would seek productivity increases. The CBI quoted a retailer saying 'we do not want to simply reduce our headcount to afford the NLW. So we are planning changes to our operating model'. It also referred to seeing examples of expansion of job roles through more

stretching objectives. Employee representatives emphasised employee involvement could help secure gains, with the CWU arguing that higher wages would motivate harder work, lower staff turnover, reduce cost of hiring and training new workers, enhance customer service, and reduce disciplinary problems and absenteeism. The CIPD emphasised investment in technology and redesign of jobs. In the BRC survey, almost three quarters of firms reducing benefits highlighted increasing targets for bonuses to raise productivity.

2.68 Some respondents were more sceptical about the scope for improving productivity. For example, hoteliers in Scotland told us that they employed touch-screen check-in facilities in some hotels, but customers were not keen. Others said that while technological solutions were a possibility in many cases the technology 'just isn't there yet' – for example with soft fruit harvesting.

Summary of stakeholder and survey evidence on the National Living Wage

2.69 Overall, stakeholder evidence on the impact of the introduction of the NLW suggested a range of costs and benefits for employers and workers. There was broad agreement from employers and trade unions that the NLW had increased pay levels significantly for minimum wage workers, but also (via ripple effects up the distribution) for workers paid just above the minimum. In many sectors, the NLW was reported to have also benefited those aged under 25. A key challenge of lifting the pay floor was the squeezing of differentials, and how to preserve incentives for staff to take on supervisory roles and make progress in their careers. There might also be effects on job mobility that would need close attention.

2.70 Stakeholders also largely agreed on the broad shape of early responses to the NLW, with a range of surveys cited by both employers and employee representatives reporting that reduced profits or higher prices were the most common approaches to managing higher costs (with some important sectoral exceptions). The FSB, CIPD and BCC surveys all identified price and profit changes, with productivity close behind, albeit the balance varied. Increasing prices was the most popular response to the introductory rate among BCC members and SMEs at around a third of respondents. It was rather lower for retailers, falling to 11 per cent of BRC members. Social care and childcare thought that employers in the sector were limited in scope to pass on costs in this way, though we heard some examples of fees being increased because of the precept for social care.

2.71 Many stakeholders recognised that gains in productivity remain at the heart of the long-term sustainability of the NLW, with evidence from employee representatives and some employers arguing that changes to job design, worker tasking and effort, and technology and capital investment could help fund higher wage costs. The CIPD found that a quarter of affected firms in its survey had improved productivity and efficiency. However, again as noted in our Spring 2016 Report, few firms provided concrete examples of approaches or changes they had implemented so far.

2.72 Other areas of broad consensus among stakeholder evidence included that gains to workers had, in some cases, been offset by pay consolidation. On the other hand, most employers had chosen not to differentiate pay by age where they did not do so already – often on grounds of fairness and harmonious employment relations, but with a significant minority paying a lower rate, and some restructuring of use of youth rates more broadly.

2.73 A final area of agreement was non-compliance, with many stakeholders discussing challenges in enforcement, but little evidence provided of any changes in the level of underpayment following the introduction of the NLW.

2.74 If those were broad areas of agreement in stakeholder evidence, there were also some areas of less consensus or certainty in the evidence, including views on the NLW's impact on jobs and hours. For businesses with wage bills unaffected by the introductory rate of the NLW, there was little reported impact on employment so far. In more exposed sectors, employer representatives reported cases of reduced hours, employment growth and (less frequently) redundancies, warning that these were set to grow as the rate increased over time, with the biggest reported effects in convenience and traded sectors such as horticulture. Overall, the scale of the effects seen so far is not clear from this evidence. Surveys generally recorded the proportion of firms that used these responses, not how many jobs or hours were reduced relative to the size of the workforce, total working time or previous intended employment growth. While less popular than other responses, some of them were potentially significant in absolute terms.

Quantitative evidence of the impact of the National Living Wage

2.75 Against the backdrop of stakeholder views and commissioned research evidence, the second part of this chapter turns to our quantitative analysis of the NLW. It looks first at the overall impact of the rate on coverage and its value relative to average earnings, before a more detailed consideration of its effects on the pay distribution, earnings, employment and competitiveness. It demonstrates that the introductory rate has had a substantial impact on pay with (as forecast in our Spring 2016 Report) certain groups of workers particularly benefiting, and the main challenges found for employers in particular regions and sectors. Its detailed consideration of effects on pay and employment partly supports and partly nuances stakeholder evidence. In particular, it suggests there have been large spillovers arising from the NLW, but also compression of differentials – conclusions aligned with stakeholder views. The limited evidence on the effects on prices is consistent with stakeholder evidence reporting price increases as a response to the increase in the minimum wage.

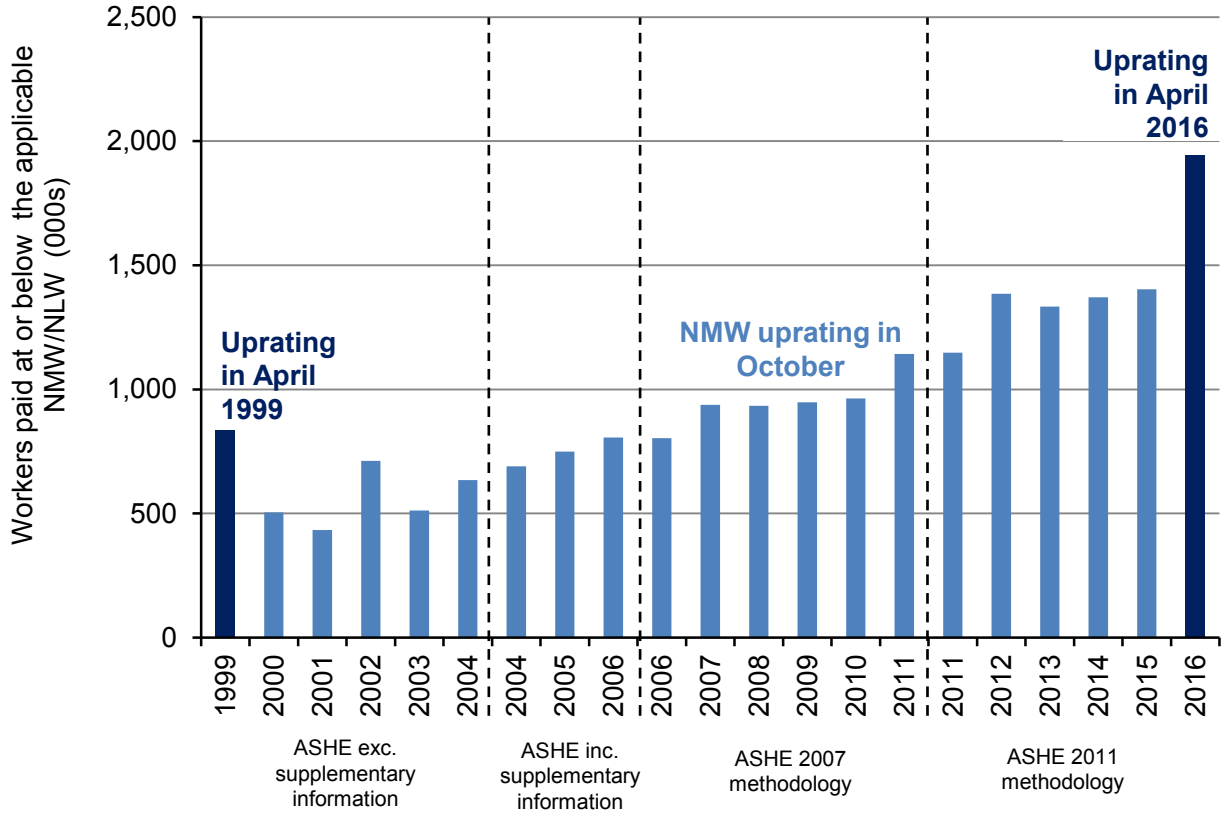
2.76 The main points of departure concern pay consolidation, underpayment and employment effects. On pay effects, available data identify limited quantitative evidence of reduced use of shift premia or overtime, though this may be a timing, compositional or measurement issue. Our analysis does, however, identify increased underpayment at the beginning of the NLW year, compared with the middle of the NMW year (comparing April 2016 with April 2015). This may be an indicator of NLW non-compliance, although we do not know yet how much is due to the change in the NLW cycle.

2.77 The broader conclusions of the analysis concern hours and jobs reduction, where available data only cover the first quarter after the introduction of the rate, but do not yet appear to show clear NLW effects.

Minimum wage workers across the economy

2.78 In April 2016, around 1.9 million jobs were held by workers paid at or below their age-related (or apprenticeship status applicable) minimum wage rate. This was 7.1 per cent of employee jobs in the economy. (To correct for measurement error and capture those fractionally above the specific rate, whose pay is nonetheless determined by the minimum wage, we define coverage as being paid within five pence of the rate or below.) Figure 2.1 shows this was a very substantial increase. In April 1999 well under a million workers (3.4 per cent) were covered by the minimum wage, with the level gradually increasing over time as the NMW rate rose in value. Over the last year, increases in the minimum wage rates in October 2015 and the introduction of the NLW in April 2016 have led to an increase in the number of workers covered by more than a third (with higher coverage for workers aged 25 and over offset slightly by falls in coverage for those aged under 25 and apprentices), though caution is needed in making exact comparisons because part of the increase reflects a change in the timing of the measurement of numbers on the rate as the minimum wage calendar has changed.

Figure 2.1: Coverage of minimum wages for those aged 16 and over, UK, 1999-2016



Source: LPC estimates using ONS data: ASHE without supplementary information, April 1999-2004; ASHE with supplementary information, April 2004-06; ASHE 2007 methodology, April 2006-11; and ASHE 2010 methodology, April 2011-16, low pay weights; UK.

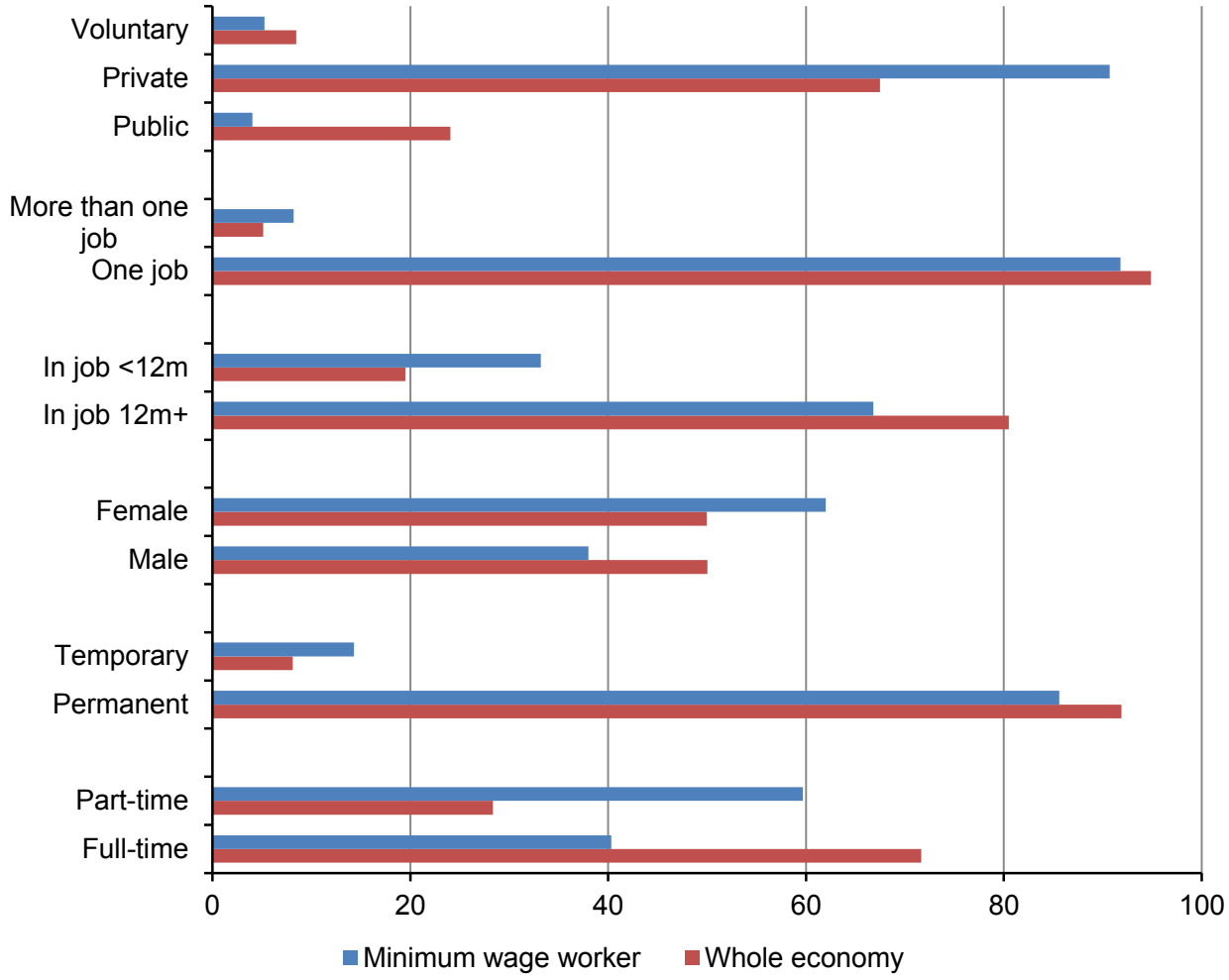
Notes:

a. Data include apprentices as they cannot be identified prior to 2013.
b. Data for 2015 and 2016 are for different points in the minimum wage year, so cannot be directly compared.

2.79 Figure 2.2 shows that, as previous reports have set out in detail, workers paid the minimum wage have different characteristics to the average worker in the labour force, tending to be from groups with lower employment rates. Over 60 per cent of minimum wage workers in 2016 were female (compared with 50 per cent in the whole economy). Over 90 per cent worked in the private sector, with just 5 per cent in the voluntary sector, and 4 per cent in the public sector – this

compares with 68 per cent, 8 per cent, and 24 per cent respectively in the whole economy. Around 14 per cent had a temporary job compared with 8 per cent across the whole economy, and 8 per cent of minimum wage workers had multiple jobs, compared with 5 per cent of workers across the whole economy. So (as we see below) many of these groups have benefited from the recent increase.

Figure 2.2: Characteristics of minimum wage workers and jobs for those aged 16 and over, UK, April 2016



Source: LPC estimates using: April 2016, low pay weights, including those not on adult rates of pay, UK.
Note: <12m refers to less than 12 months in a job, 12m+ refers to 12 months or more in a job.

The impact of the National Living Wage on earnings and pay

2.80 The sharp increase in overall minimum wage coverage over the past year, seen in Figure 2.1, reflects the introduction of the NLW. At £7.20, the NLW equated to an annual increase in the main rate of the minimum wage of 10.8 per cent (from £6.50), the joint largest ever, and a 7.5 per cent increase in April (from £6.70). For comparison, median hourly earnings for all workers aged 25 and over grew by 3.1 per cent in the same period, so the rise in the NLW was up to three times the pay rise of the typical worker. Hourly earnings at the 10th percentile increased by 5.6 per cent, and by 3.5 per cent at the 25th percentile. Given low inflation, the real increase is similar to the nominal increase.

Table 2.1: Growth in the NMW/NLW at different points in the earnings distribution for workers aged 25 and over, UK, 2015-2016

	April 2015	April 2016	Growth
Minimum wage for those aged 25 and over	£6.50	£7.20	**10.8%**
Median hourly earnings (excluding overtime)	£12.38	£12.77	**3.1%**
Mean hourly earnings (excluding overtime)	£15.52	£16.16	4.1%
10th percentile of hourly earnings (excluding overtime)	£7.10	£7.50	5.6%
25th percentile of hourly earnings (excluding overtime)	£8.74	£9.04	3.5%

Source: LPC estimates using: April 2015 and 2016, standard weights, excluding first year apprentices, UK.
Note: Hourly earnings estimates exclude overtime.

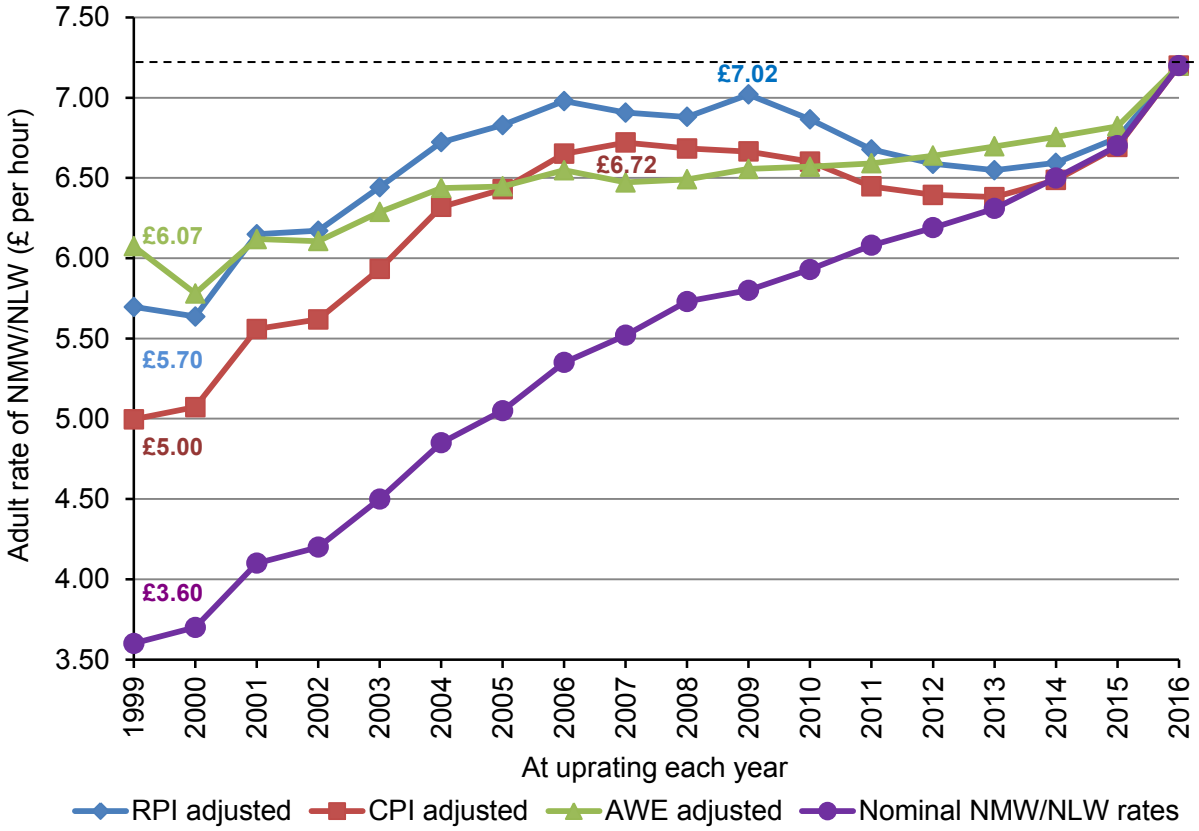
2.81 Part of the explanation for the size of the rise measured on an annual basis was that the introduction of the NLW also changed the uprating month for the minimum wage. The minimum wage rates have in the past increased each October, whereas the NLW was introduced in April 2016, essentially compressing a second wage increase into 18 months rather than the 24 months that would otherwise have applied. In October 2015 the adult rate of the NMW rose to £6.70, so the overnight increase in April (from £6.70 to £7.20) was 7.5 per cent. The 50 pence increase was nevertheless the biggest ever cash increase in the main minimum wage rate. From 2017, all the minimum wage rates will change each April.

2.82 The change in cycle of the minimum wage also complicates the analysis of the impact of the NLW, particularly in making comparisons between the NLW and its predecessor – the NMW. The main source of data on earnings is the Annual Survey of Hours and Earnings (ASHE). This is a survey of employees from employer PAYE records conducted each April which, after 1999, had coincided with the mid-year point of the NMW year. However, the April survey date now falls at the beginning of the NLW year, just after its introduction. Estimates of the main indicators of the impact of minimum wage – its relative value (or bite) and coverage – are likely to be higher immediately after an increase than at the mid-year point. This is because, over the year, some minimum wage workers will receive pay increases that mean they are no longer covered by the rate. Similarly, over the year people across the wider economy will receive pay rises, which increases the median hourly wage, while the minimum wage stays the same. So the bite of the minimum wage will fall throughout the year – being highest in April and lowest the following March. For our analysis, and to maintain consistency with previous years, we have used forecasts of earnings growth between April and October to estimate the bite in October 2016, and compare that with previous mid-year points (in Aprils). However, our estimates of coverage can only be made for April 2016: so the difference in coverage between the NMW and the NLW will be slightly overstated in these comparisons. Nonetheless, given the significant increase in the rate of the NLW, it is certain that coverage has increased substantially, even if the exact scale of the increase should be treated with caution.

2.83 The nominal increase in the minimum wage, of course, is only a rough guide to scale. For a full picture, the real and relative value also matter, which depend on wider trends in pay and inflation. Figure 2.3 plots the main minimum wage rate in 2016 prices and shows that, in April 2016, the real value of the main minimum wage rate was at its highest ever level, whether measured against the Consumer Prices Index (CPI) or the Retail Prices Index (RPI).

2.84 Looking across its lifetime, the first nine years of the adult rate of the NMW were characterised by significant rises in its real value (in 2016 prices), reaching a peak value in 2007 adjusted for CPI (£6.72), and 2009 adjusted for RPI (£7.02). Over the same period, there was a gradual increase in its relative value, as its level rose faster than that of median earnings. But there was a significant change over the course of the recession. While the level of the minimum wage continued to go up faster than other workers' pay, it rose more slowly than inflation in response to LPC recommendations that sought to avoid pricing workers out of employment during the downturn. In recent years there have been further increases in its relative value driving up coverage, but also a substantial recovery in the real value of the minimum wage as increases outpaced inflation, with the NMW almost restored to its pre-recession peak in CPI terms in 2015 (£6.69). The introduction of the NLW sharply accelerated this trend. The main minimum wage rate has never been worth more than it was in April 2016 and it is set to increase further in each year to 2020. For comparison, median real wages are still 5 per cent (CPI) or 10 per cent (RPI) below their pre-recession peaks.

Figure 2.3: Real and relative value of the NMW/NLW, UK, 1999-2016



Source: LPC estimates based on ONS data: AEI including bonuses (LNMQ) 1999-2000, AWE total pay (KA89) 1999-2016, CPI (D7BT) 1999-2016, and RPI (CHAW) 1999-2016, quarterly, seasonally adjusted (AEI and AWE only), UK (GB for AEI and AWE).
Note: The AWE series began in January 2000 and the AEI series ended in July 2010. Our earnings series is estimated using AEI (including bonuses) from April 1999-January 2000 and AWE (total pay) from January 2000-April 2016.

2.85 The increase in the minimum wage has meant significant increases in pay for affected workers. In cash terms, the 50 pence increase in April means a typical minimum wage worker (working 26 hours per week) saw an increase of around £680 in gross annual earnings, £590 when adjusted for CPI inflation, or £490 when adjusted for RPI inflation. However, workers might reasonably have expected a pay increase in the absence of any change in the UK's pay floor, so these figures overstate the gains. Taking annual median wage growth as a proxy for the wage increase that workers would have got in the absence of a minimum wage, the pay of a typical minimum wage worker increased additionally by £390 a year, slightly up on expectations in our Spring 2016 Report.

2.86 Critically, of course, these estimates are for gross earnings, and do not reflect the impact of the NLW on household net income. This will depend on the composition of the household, including the number of workers on the NLW, the number and age of dependent children, the earnings of others in the household, unearned income, and the tax and benefit system, where previous research has suggested a complex picture, but with high marginal withdrawal rates for some households. For example, increases to the personal allowance have meant that NLW workers on £7.20 working less than 29 hours pay no income tax, although National Insurance contributions are payable from about 22.5 hours. NLW workers claiming Housing Benefit would lose 65 pence of every extra pound earned, with some receiving support for Council Tax losing a further 20 pence. There have also been changes to in-work benefits from April 2016, which will affect NLW households. These estimates are also for those workers earning the adult rate of the NMW in 2015 and then the NLW in 2016, so will be smaller for NLW workers previously earning more than £6.70. Nonetheless, these are still substantial increases that can be expected to have benefited many households relative to a counterfactual of lower increases in the minimum wage rate.

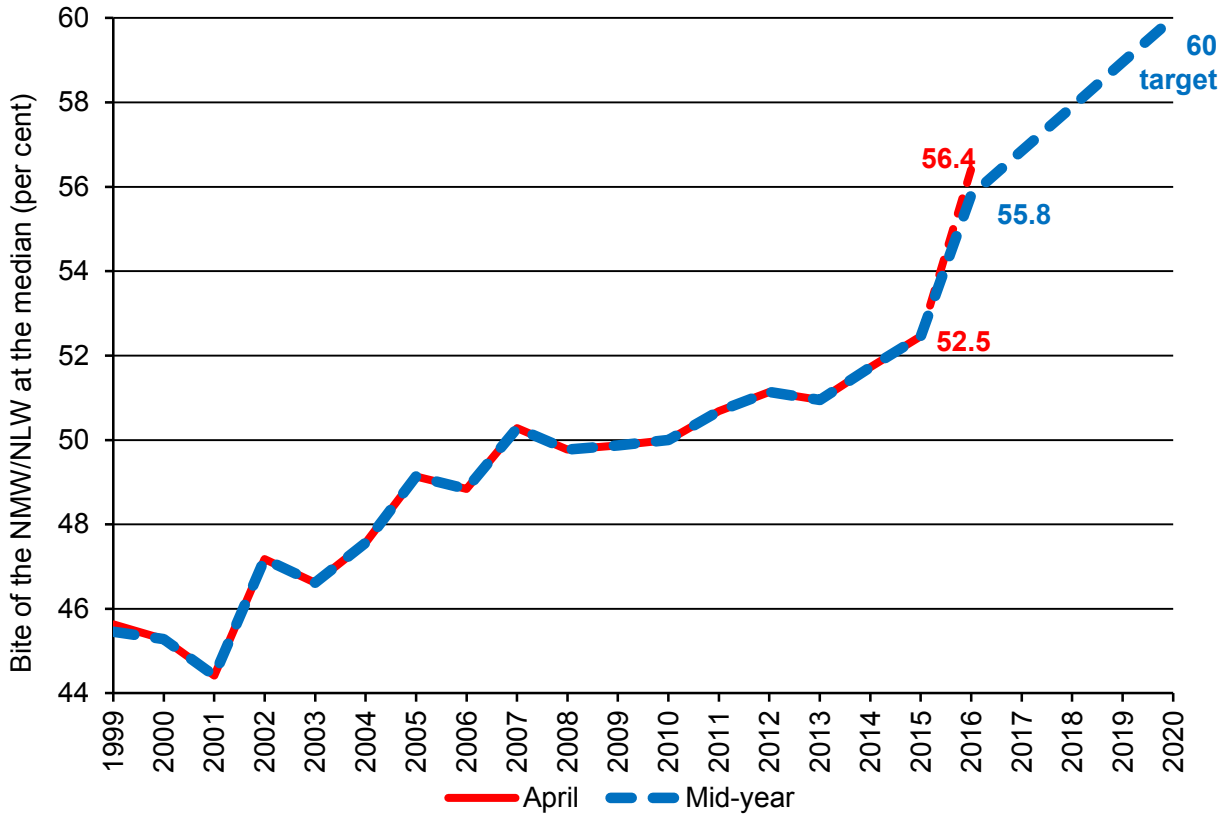
2.87 The value of the NLW also has implications for the LPC's traditional measures of the impact of a minimum wage: the bite and coverage.

The bite of the National Living Wage

2.88 In the economic literature, a common indicator of the relative level of the minimum wage is its 'toughness' or bite – that is, how high it is relative to some point on the earnings distribution. The LPC has traditionally measured the bite of the NMW at the median and used it as an indicator of stress in the economy. A high bite indicates that the minimum wage is closer to the median wage in the particular area of the labour market, which may indicate differentials are being squeezed and that employers find it more difficult to pay an hourly rate above the wage floor.

2.89 The bite of the NLW at the median is also the basis of the 60 per cent target for the NLW rate in October 2020. The bite was 52.5 per cent in April 2015, when the NMW was £6.50 an hour. This implies that an increase of over 7 percentage points was required across the five years to meet the target. For comparison, the NMW was introduced in April 1999 at £3.60 an hour (for those aged 22 and over), around 45.6 per cent of median hourly earnings for those aged 25 and over – so implementing the NLW requires a similar relative increase, but in a third of the time.

Figure 2.4: Bite of the NMW/NLW for workers aged 25 and over, UK, 1999-2020



Source: LPC estimates using adjusted earnings data based on ONS data: ASHE without supplementary information, April 1999-2004; ASHE with supplementary information, April 2004-06; ASHE 2007 methodology, April 2006-11; and ASHE 2010 methodology, April 2011-16, standard weights, UK; and earnings forecasts from HMT panel of independent forecasts, October 2016, and Bank of England average earnings forecasts August 2016.
Notes:

a. Bites from mid-year 2016 are based on earnings forecasts and may change when out-turn data is available.
b. Based on a straight-line bite path to 2020 which may change depending on LPC deliberations and Government decisions.
c. Data include all apprentices as they cannot be identified prior to 2013.

Table 2.2: Bite of the NMW and NLW, UK, 2015-2016

		Median	Rate	Bite	Point in year
		£	£	%	
NMW	**April 2015**	12.38	6.50	52.5	Mid-year
	October 2015	12.57	6.70	53.3	At uprating
NLW	**April 2016**	12.77	7.20	56.4	At uprating
	October 2016	12.91	7.20	55.8	Mid-year

Source: LPC estimates using: ASHE April 2015-16, standard weights, UK; earnings forecasts from HMT panel of independent forecasts, October 2016, and Bank of England average earnings forecasts August 2016.
Note: Data exclude first year apprentices.

2.90 When announced, the introductory rate of the NLW was expected to deliver a substantial increase in the relative value of the rate for workers aged 25 and over. In the event, the jump in the bite has been even greater than expected. This reflects the fact that, as Chapter 1 discussed, forecasts for wage growth had slowed and actual wage growth up to April 2016 had been weaker than forecast, as shown in Table 2.3.

Table 2.3: Estimated bite of the NLW for workers aged 25 and over, UK, July 2015-October 2016

	NLW announced – July 2015	Autumn Statement – November 2015	Consultation launched – March 2016	Latest (October 2016)	
Estimate for 2016	October	October	October	April	October
The data	ASHE 2014, OBR July 2015	ASHE 2015, OBR Nov 2015	ASHE 2015, OBR March 2016	ASHE 2016	ASHE 2016, HMT and BoE forecasts
Bite of £7.20 (per cent)	54.8	55.1	55.5	56.4	55.8
Estimated median	£13.13	£13.06	£12.98	£12.77	£12.91

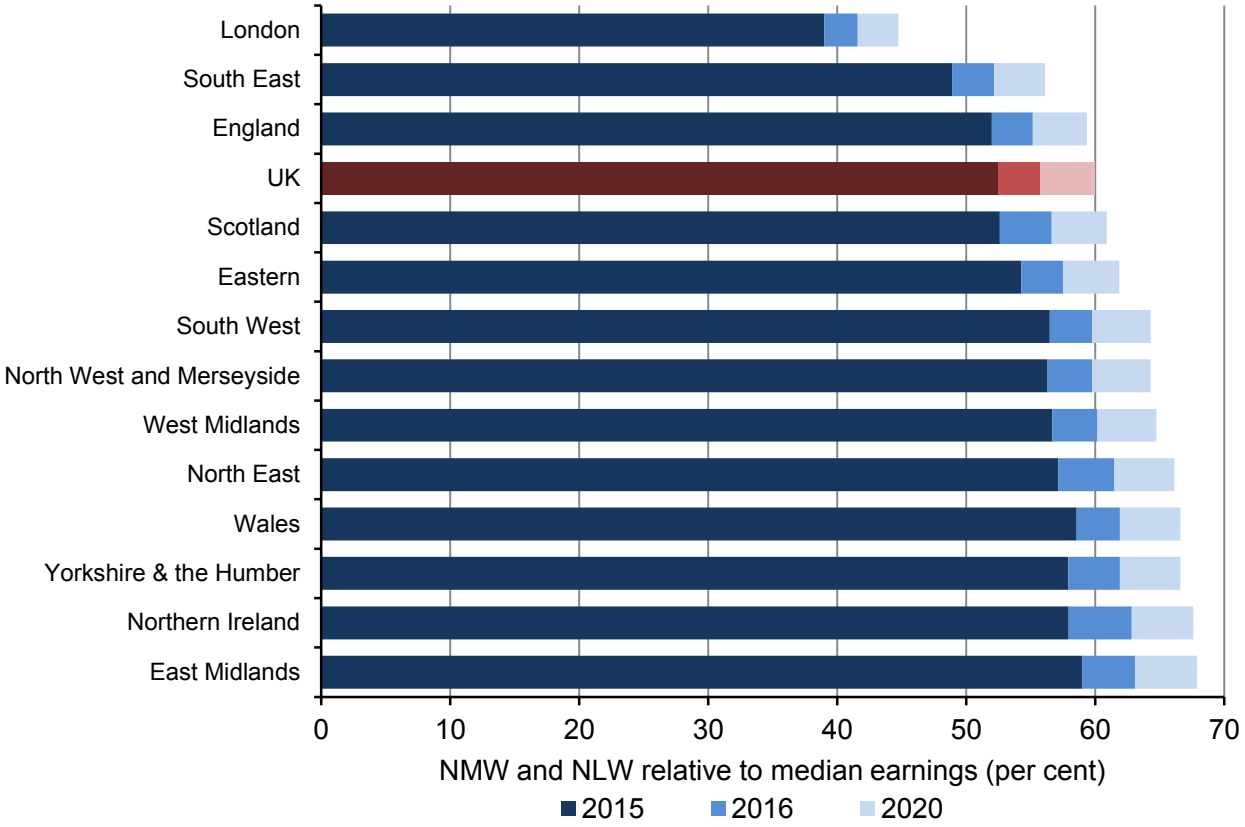
Source: LPC estimates using: ASHE April 2014-16, standard weights, UK; earnings forecasts from HMT panel of independent forecasts, October 2016, and Bank of England average earnings forecasts August 2016.
Note: Data exclude first year apprentices.

2.91 We estimate the bite of the NLW for workers aged 25 and over was 56.4 per cent in April 2016 and project it to be 55.8 per cent in October (the mid-point in the year and the point at which the 2020 target is measured). But its average level disguises marked variation across different parts of the economy. We noted in our Spring 2016 Report that it would be higher for some types of worker, business and regions than others. Below we replicate this analysis by geography, size of firm and occupation.[4]

2.92 Figure 2.5 shows the significant difference in bite that already existed in 2015 across the different regions and nations of the UK, with the bite in the East Midlands, Yorkshire and Humber, Northern Ireland and Wales almost twenty percentage points higher than in London, reflecting much lower median wages outside of London. The introduction of the NLW broadly preserves the same pattern, but significantly increases the level. Indeed, in October 2016, four of the nine regions and two of the four nations are already expected to have a bite of over 60 per cent. In 2020 if the UK-wide bite reaches 60 per cent, all English regions apart from London and the South East, and all countries apart from England, will have bites higher than this, and it could be as high as 68 per cent in the East Midlands and Northern Ireland. It is therefore likely that the NLW will have different effects in different areas of the country, with both relative benefits to workers and pressures on businesses increasing towards 2020.

4 We use data from April (after the introduction of the NLW) and forecasts of wage growth to estimate the bite in October 2016 – the mid-year point. This is comparable with the bite target for 2020 and more comparable with previous mid-year estimates of the bite of the NMW. The use of the forecasts affects the absolute level of the bite (the bite is lower in October than April) but the relativities between the different areas of the labour market are based on actual data post-NLW implementation.

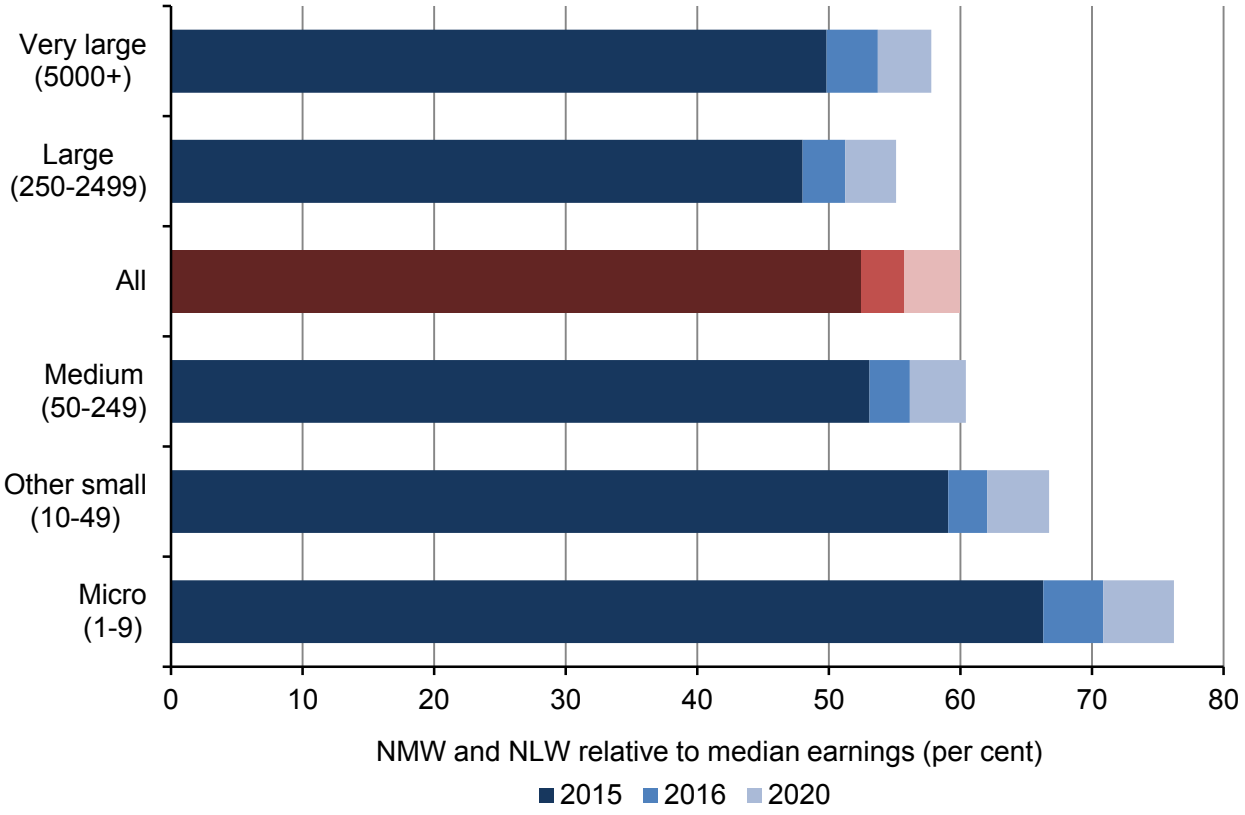
Figure 2.5: Bite of the NMW/NLW for workers aged 25 and over, by country and region, UK, April 2015, October 2016 and October 2020



Source: LPC estimates using: ASHE April 2015-16, standard weights, UK; earnings forecasts from HMT panel of independent forecasts, October 2016, and Bank of England average earnings forecasts August 2016.
Note: Data exclude first year apprentices.

2.93 Figure 2.6 shows the different level of bite by size of firm, with it increasing across all sizes of business as the NLW progresses towards its 2020 target. As successive LPC reports have set out, the smallest firms generally have the lowest median wages, so have always experienced higher bites. In 2015, the bite for workers aged 25 and over was already above 60 per cent in micro firms, compared with less than 50 per cent in large firms. The introduction of the NLW has raised the bite to over 70 per cent in micro firms and just over 50 per cent in large firms. If this pattern continues to 2020, all but the largest firms will have a bite of over 60 per cent.

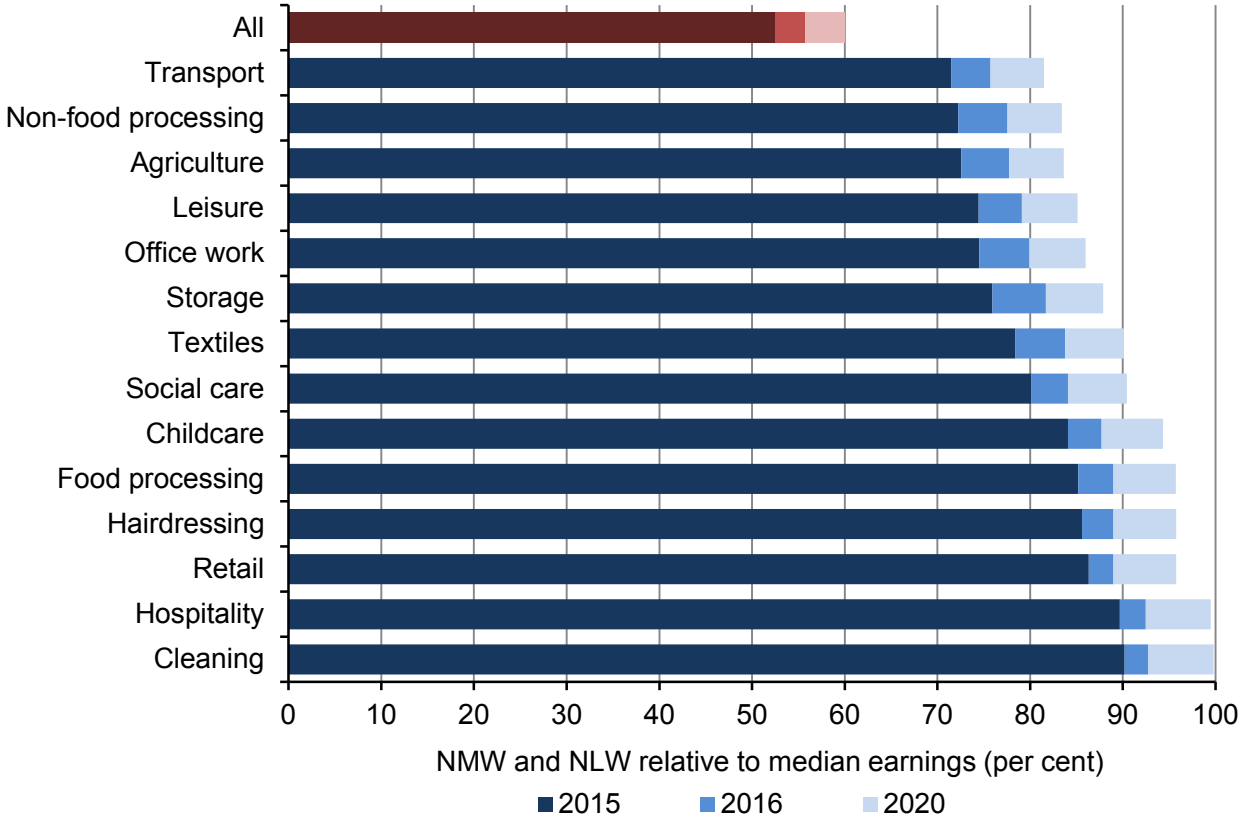
Figure 2.6: Bite of the NMW/NLW for workers aged 25 and over, by firm size, UK, April 2015, October 2016 and October 2020



Source: LPC estimates using: ASHE April 2015-16, standard weights, UK; earnings forecasts from HMT panel of independent forecasts, October 2016, and Bank of England average earnings forecasts August 2016.
Note: Data exclude first year apprentices.

2.94 Figure 2.7 shows the variation in the bite across low-paying sectors. In October 2016, all of the low-paying sectors had a bite of over 70 per cent, with cleaning and hospitality having bites of over 90 per cent. This suggests that the NLW is increasingly the going rate in these occupations. The percentage point increase in bite across all low-paying sectors was generally greater than across the whole economy. There was, however, some variation within the low-paying sectors, with storage, textiles and office work seeing the greatest increase. With a minimum wage set at 60 per cent of median earnings, the bite will approach 100 per cent in cleaning and hospitality, and could be well over 90 per cent in childcare, food processing, hairdressing and retail.

Figure 2.7: Bite of the NMW/NLW for workers aged 25 and over, by low-paying occupation, UK, April 2015, October 2016 and October 2020

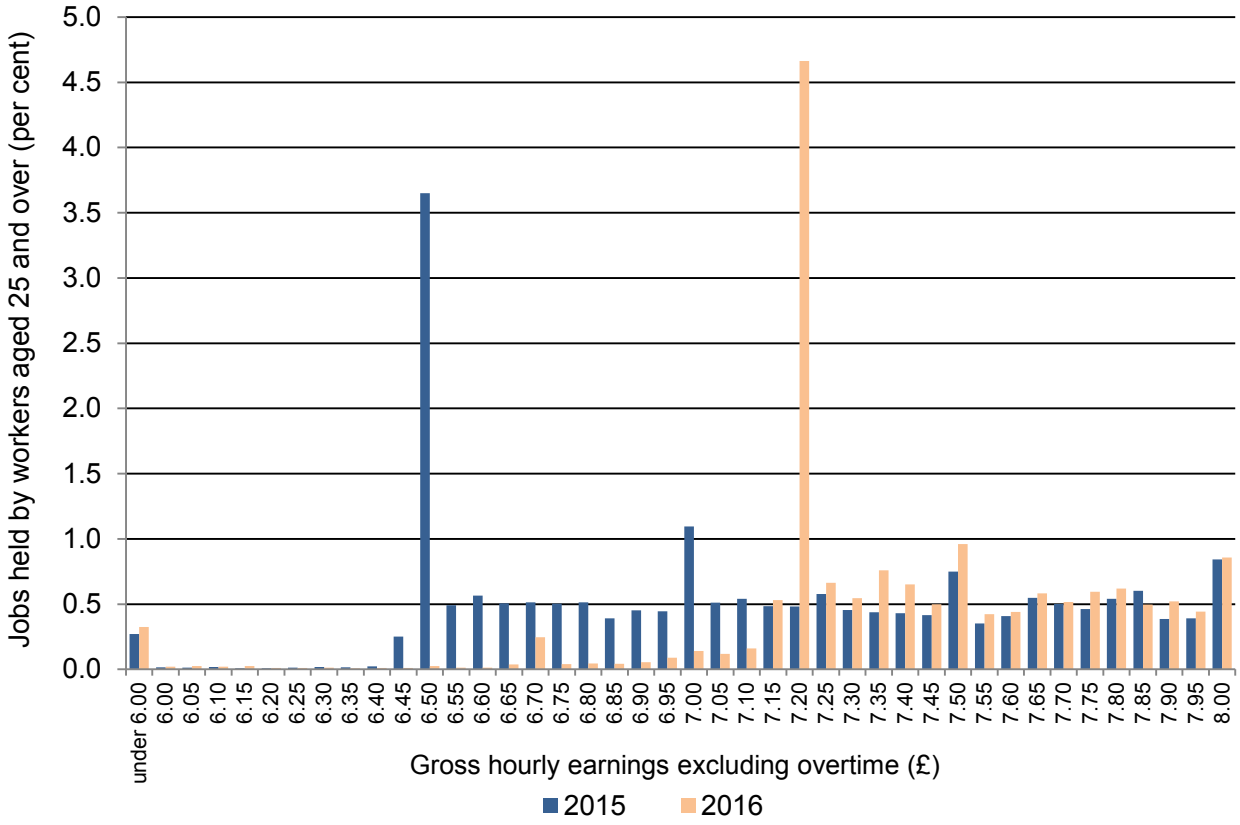


Source: LPC estimates using: ASHE April 2015-16, standard weights, UK; and earnings forecasts from HMT panel of independent forecasts, October 2016, and Bank of England average earnings forecasts August 2016.
Note: Data exclude first year apprentices.

Coverage of the National Living Wage

2.95 A higher bite has implications for the wage distribution, and the number and type of workers who benefit from the minimum wage. Figure 2.8 shows the change in the hourly wage distribution between 2015 and 2016. The impact of the NLW can clearly be seen in the spike in the distribution at £7.20 an hour, with 1.1 million jobs (4.7 per cent) paid at this rate, the highest on record. This was a substantial increase from the spike last year when 880,000 jobs (3.6 per cent) for those aged 25 and over were paid at £6.50, the minimum wage rate in April 2015, though the comparison is subject to the caveat discussed above (it contrasts the spike at the peak impact of the NLW, with the spike at the mid-point of the NMW).

Figure 2.8: Hourly wage distribution for workers aged 25 and over, UK, 2015-2016



Source: LPC estimates using: ASHE April 2015-16, low pay weights, UK.

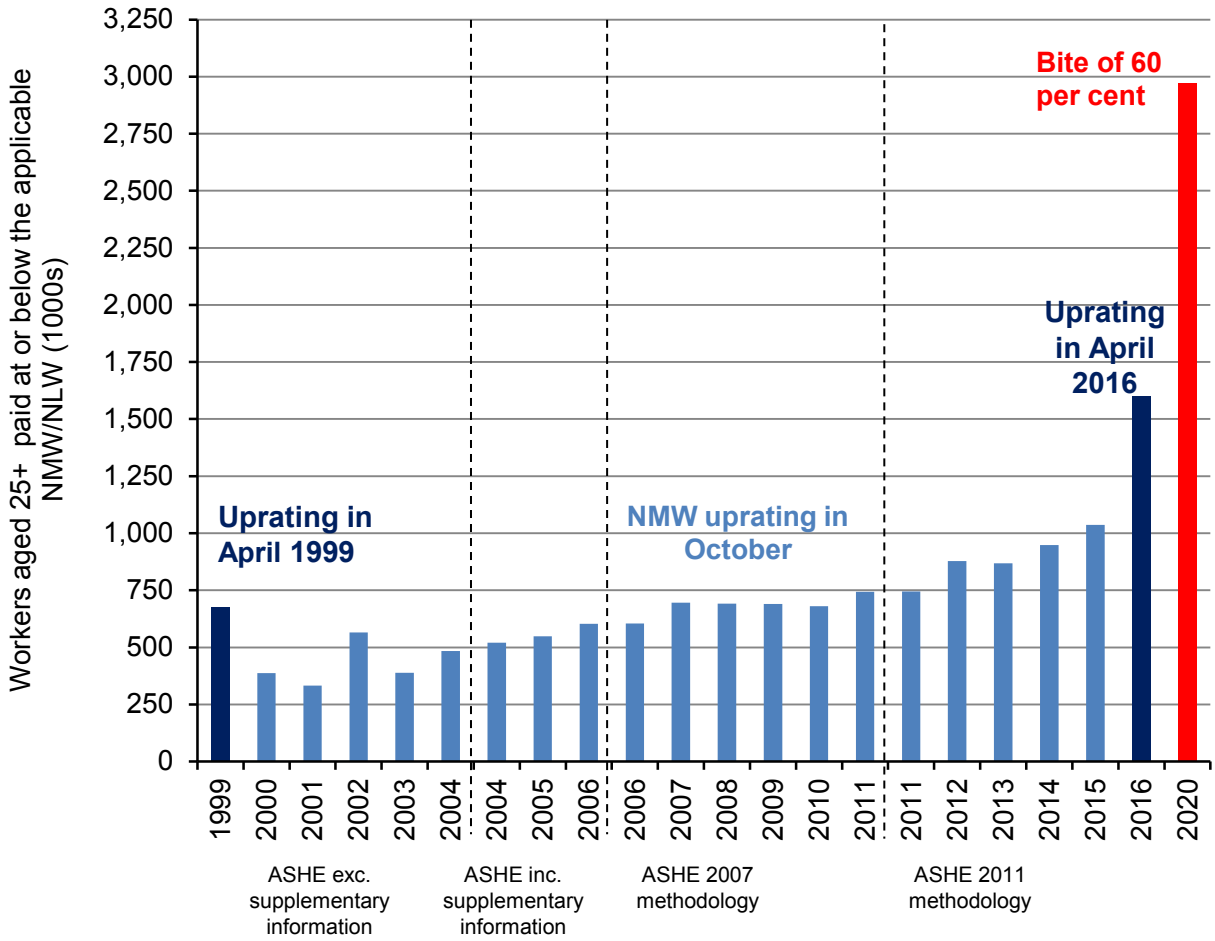
Notes:

a. Data for 2015 and 2016 are for different points in the minimum wage year, so cannot be directly compared.
b. Data exclude first year apprentices.
c. No low pay flag has been applied to this data to adjust for measurement errors of workers paid below £7.20 in April 2016.

2.96 Figure 2.8 highlights another important change: an increase in the proportions paid below the applicable minimum rate. In both 2015 and 2016 there were a similar proportion of jobs paid below £6.00. However, in April 2016, there were a significant proportion of jobs that appeared to be paid between £6.70 and £7.20, including a smaller spike at £6.70 – the minimum wage rate from October 2015 to April 2016 for those aged 25 and over. We discuss this further below.

2.97 The change in the hourly pay distribution indicated that coverage of the NLW rate had also significantly increased. In April 2016, 1.6 million jobs held by those aged 25 and over were paid at or below the NLW. This was 6.7 per cent of jobs held by workers aged 25 and over. As a rough benchmark for comparison, in April 2015, one million jobs held by those aged 25 and over were paid at or below the adult rate of the NMW, accounting for 4.3 per cent of jobs held by workers aged 25 and over. We estimate that a minimum wage set at 60 per cent of median earnings would have coverage of almost 3 million, or 12.4 per cent of jobs among workers aged 25 and over – coverage of the main rate of the minimum wage could almost triple between 2015 and 2020, with around 6 million workers benefiting in total through spillovers up the earnings distribution.

Figure 2.9: Coverage of the NMW/NLW for workers aged 25 and over, UK, 1999-2020



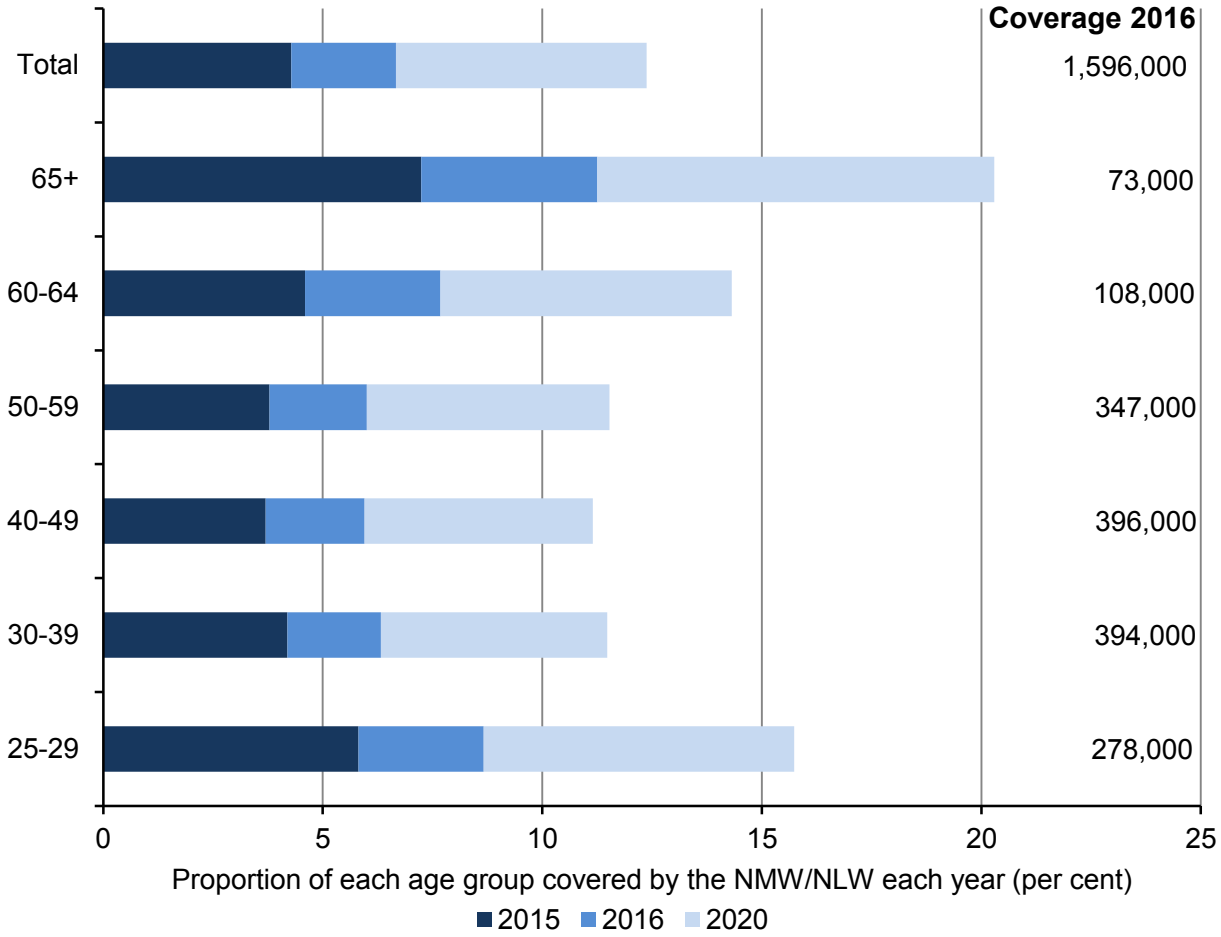
Source: LPC estimates using ONS data: ASHE without supplementary information, April 1999-2004; ASHE with supplementary information, April 2004-06; ASHE 2007 methodology, April 2006-11; and ASHE 2010 methodology, April 2011-16, low pay weights, UK.
Notes:

a. Data exclude apprentices as they cannot be identified prior to 2013.
b. The change between 2015 and 2016 overstates the increase in coverage between the NMW and the NLW, as the estimates are for different points in the minimum wage year.

2.98 In our 2016 Spring Report we highlighted the differences in coverage across different areas of the labour market. As with the assessment of the bite, the analysis in this section builds on this previous work, but uses actual data on the impact of the £7.20 rate on coverage, rather than forecasts of its impact.

2.99 Figure 2.10 shows how coverage varies across different age groups. There is a similar u-shape pattern in 2015, 2016 and in 2020, with coverage rates for older workers and younger workers higher than for workers in the middle. Those aged 65 and over have the highest rate of coverage, though the actual numbers are relatively small (73,000 in 2016) given that most of this age cohort has already retired. The next highest rates are for those of workers aged 25-29, and then those aged 60-64. Across the groups aged between 30-59, the coverage rate is lower than for the rest of the workforce. However, workers of these ages make up the bulk of minimum wage workers – over 70 per cent of those on the NLW. All age groups saw a similar proportional increase in those benefiting from the introductory rate of the NLW, and will see a similar proportional increase with a minimum wage of 60 per cent of median earnings.

Figure 2.10: Coverage of the NLW/NMW for workers aged 25 and over, by age, UK, 2015-2020

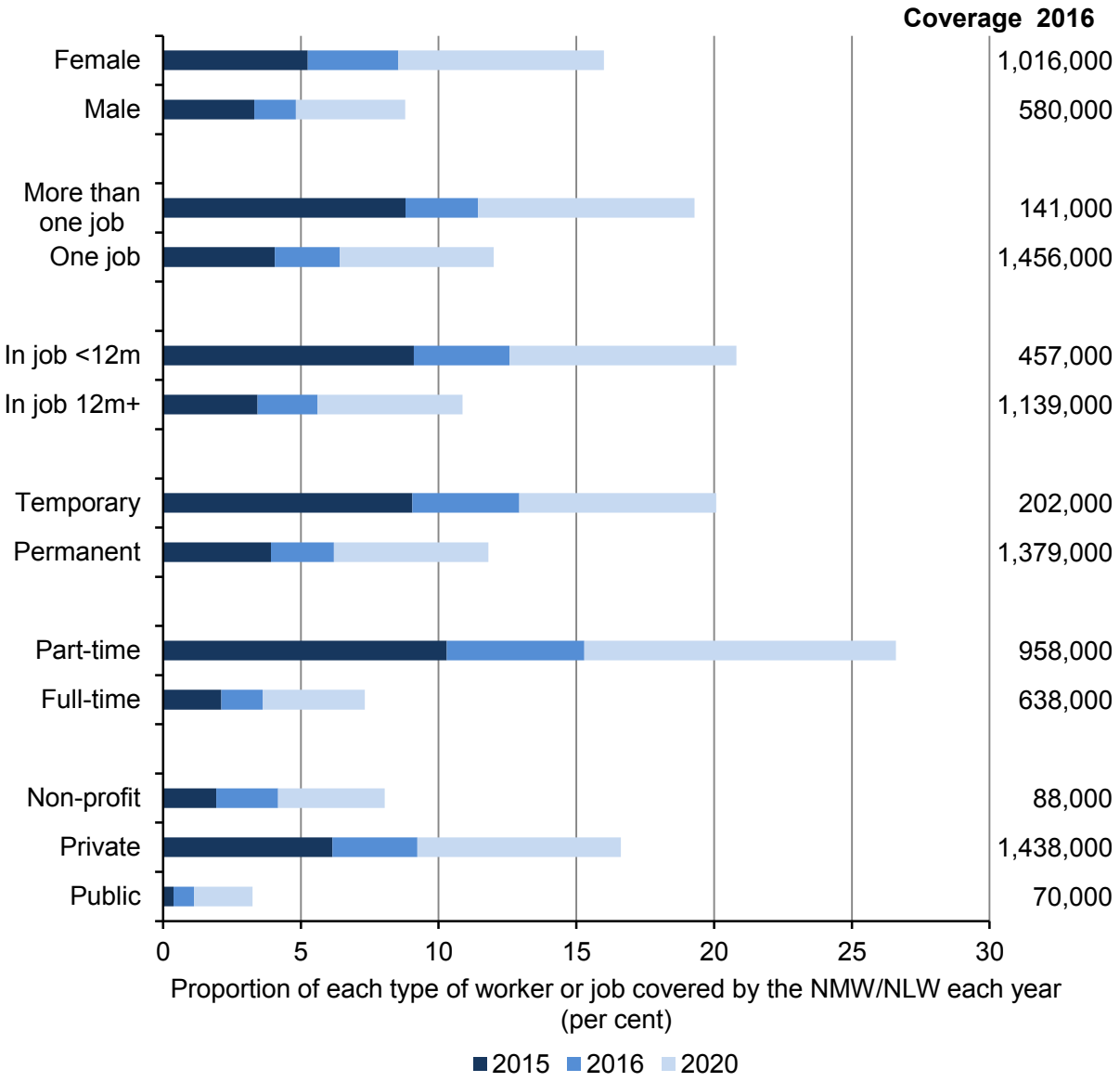


Source: LPC estimates using: ASHE April 2015-16, low pay weights, UK.
Notes:

a. The change between 2015 and 2016 overstates the increase in coverage between the NMW and the NLW, as the estimates are for different points in the minimum wage year.
b. Data exclude first year apprentices.

2.100 Coverage of the NLW also varies across different job characteristics. Workers in the private sector are most likely to benefit from the NLW, with over 9 per cent of workers covered in April 2016, compared with just over 4 per cent in the voluntary sector, and 1 per cent, in the public sector. Women are also more likely to be on the NLW, and saw an increase in coverage from 5.3 per cent to 8.5 per cent in 2016. More broadly, workers in jobs with weaker attachment to the labour market are more likely to be earning the NLW – as demonstrated by the higher coverage rates in temporary jobs, for workers with more than one job, and those who had a different job last year, although the numbers of workers with these types of jobs is relatively low.

Figure 2.11: Coverage of the NLW/NMW for workers aged 25 and over, by worker and job characteristics, UK, 2015-2020



Source: LPC estimates using: ASHE April 2015-16, low pay weights, UK.
Notes:

a. The change between 2015 and 2016 overstates the increase in coverage between the NMW and the NLW, as the estimates are for different points in the minimum wage year.
b. Data exclude first year apprentices.
c. <12m refers to less than 12 months in a job, 12m+ refers to 12 months or more in a job.

2.101 There is also a striking difference in coverage between part-time and full-time jobs. In April 2016, over 15 per cent of part-time jobs were paid at or below the NLW, compared with just 3.6 per cent of full-time jobs. Indeed, looking at the level of coverage, there were more part-time NLW workers in 2016 (958,000) than full-time NLW workers (638,000). By 2020, we estimate that more than one in four part-time jobs could be covered by the NLW. Table 2.4 also shows coverage split by full-time and part-time, and by gender. Coverage rates were actually highest amongst males working part-time (19 per cent), a relatively small group in the labour market, but a growing one. However, in terms of numbers there are more male workers working full-time on the NLW (322,000 compared with 258,000). The converse is the case for female workers, with twice as many female part-time workers on the NLW than female full-time workers (700,000 compared with 316,000).

Table 2.4: Coverage of the NLW for workers aged 25 and over, by sex and hours, UK, 2016

	%			000s		
	Full-time	**Part-time**	**Total**	**Full-time**	**Part-time**	**Total**
Male	3.0	19.0	4.8	322	258	579
Female	4.5	14.2	8.5	316	700	1,017
Total	3.6	15.3	6.7	638	958	1,596

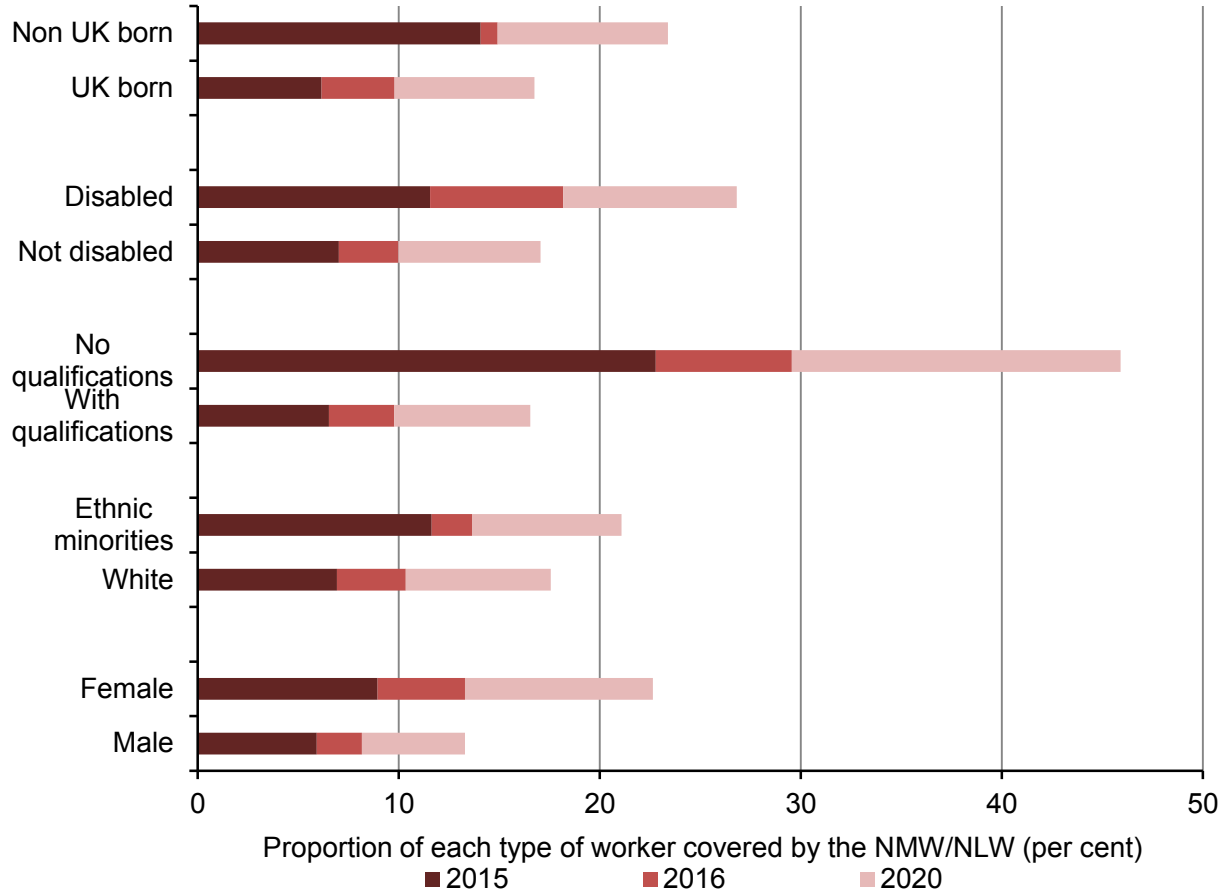
Source: LPC estimates using: ASHE April 2016, low pay weights, UK.
Note: Data exclude first year apprentices.

2.102 Turning to different demographic groups, we again find that groups with weaker labour market outcomes are more likely to be on the NLW, and have seen significant increases in coverage following the introductory rate. Analysis here uses the Labour Force Survey (LFS) rather than the ASHE because it uses demographic information that is not available in the latter source. However, it is subject to the drawback that analysis using the LFS tends to overestimate minimum wage coverage, because its data are based on self-reported wages and hours information.[5] Nonetheless, it remains the best available measure of patterns of coverage across different workers, even if not for absolute levels.

2.103 Figure 2.12 shows that coverage amongst workers with no qualifications is around three times higher than amongst those workers who hold some qualifications. Those not born in the UK, disabled workers and ethnic minority workers, also have higher coverage rates of the NLW than their direct counterparts – UK-born workers, non-disabled workers, and White workers. The increase in the rate of coverage varied across the groups with no clear trend for NLW-exposed workers. For example, non UK-born workers have seen a small increase in coverage, whereas the increase for disabled people has been relatively large.

5 For example, in ASHE we estimate that around 8 per cent of women, and just under 5 per cent of men were covered by the NLW in April 2016. The same estimates in the LFS are 13 per cent and 8 per cent respectively.

Figure 2.12: Coverage of the NMW/NLW for workers aged 25 and over, by worker characteristic, UK, 2015-2020

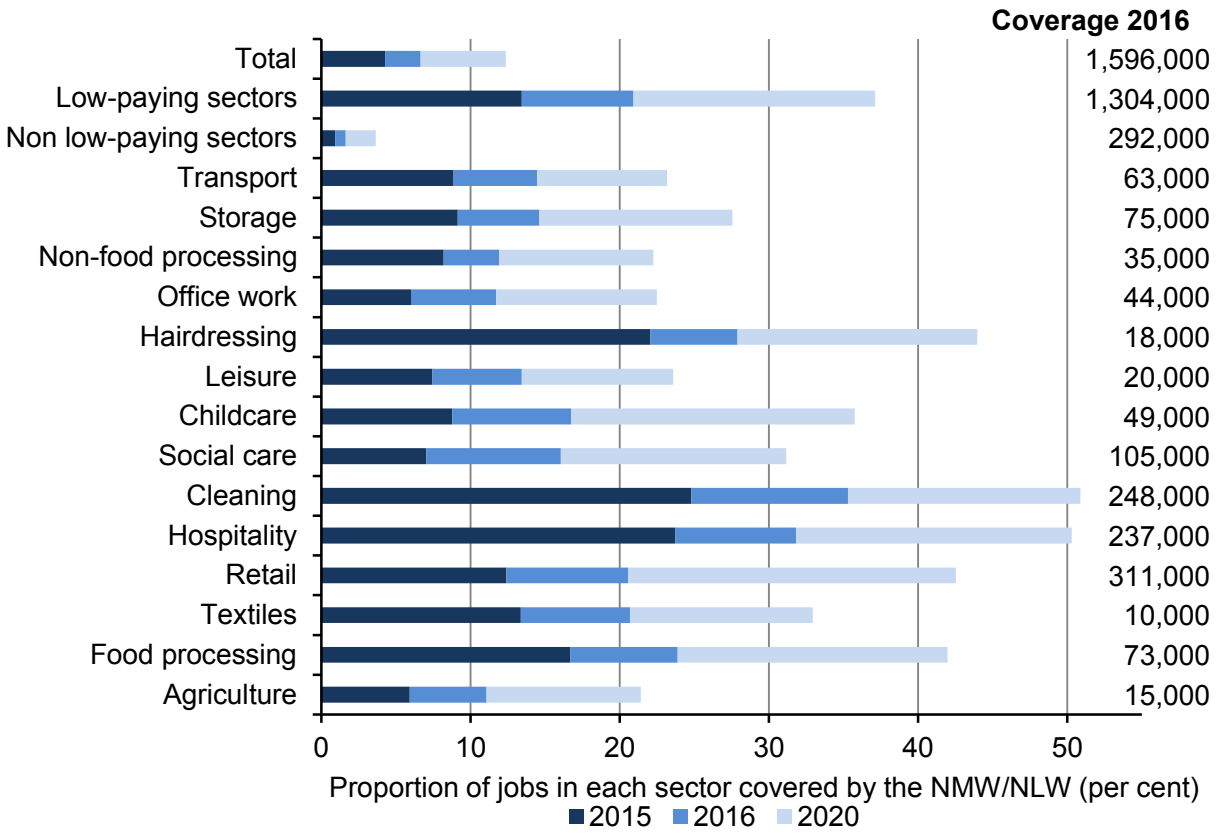


Source: LPC estimates using: LFS Microdata, income weights, quarterly, not seasonally adjusted, Q2 2015 and Q2 2016, UK.

2.104 Coverage of the NLW also varies by sector.[6] Figure 2.13 shows that in 2015, low-paying occupations in the hairdressing, cleaning and hospitality sectors had more than one in five workers aged 25 and over paid at the adult rate of the minimum wage. The introduction of the NLW in 2016 sharply increased coverage across the low-paying sectors as a whole, from 13.4 per cent to 20.9 per cent, with more than a quarter of the workforce in cleaning, hospitality and hairdressing paid at or below the rate. Some of the proportional changes were also striking. Although social care had a relatively low coverage rate compared with some other low-paying sectors, it more than doubled between 2015 and 2016 – the greatest percentage increase of any sector. Other sectors with large percentage increases in coverage included office work, childcare and agriculture. In terms of numbers, the vast majority of NLW workers work in retail, hospitality and cleaning roles, with these occupations accounting for half of all NLW jobs. The smallest numbers of NLW workers were found in low-paying textiles (10,000), agriculture (15,000) and hairdressing (18,000) jobs.

6 This analysis uses the occupation of workers to define the low-paying sectors – defined by the type of work done by an employee. Sectors can also be defined on an industry basis – a definition based on what the employee's employer does. For example, a cleaner working in financial services would be defined as working in a cleaning occupation, but in a financial services industry. Considering coverage of the minimum wage by a worker's occupation gives the best sense of what jobs minimum wage workers are doing. Considering coverage on an industry basis can show which industries will see the greatest impact on their wage bills following an increase in the minimum wage. The main difference is that coverage levels by industry tend to be a little lower, as it includes managerial and supervisory employees, who tend to be in jobs that pay more than the minimum wage. Coverage across low-paying sectors on an industry basis was estimated to be 19.4 per cent in 2016, increasing from 12.8 per cent in 2015. That compares with 20.9 per cent in 2016 and 13.4 per cent in 2015 by occupation.

Figure 2.13: Coverage of the NLW/NMW for workers aged 25 and over, by occupation, UK, 2015-2020



Source: LPC estimates using: ASHE April 2015-16, low pay weights, UK.
Notes:

a. The change between 2015 and 2016 overstates the increase in coverage between the NMW and the NLW, as the estimates are for different points in the minimum wage year.
b. Data exclude first year apprentices.

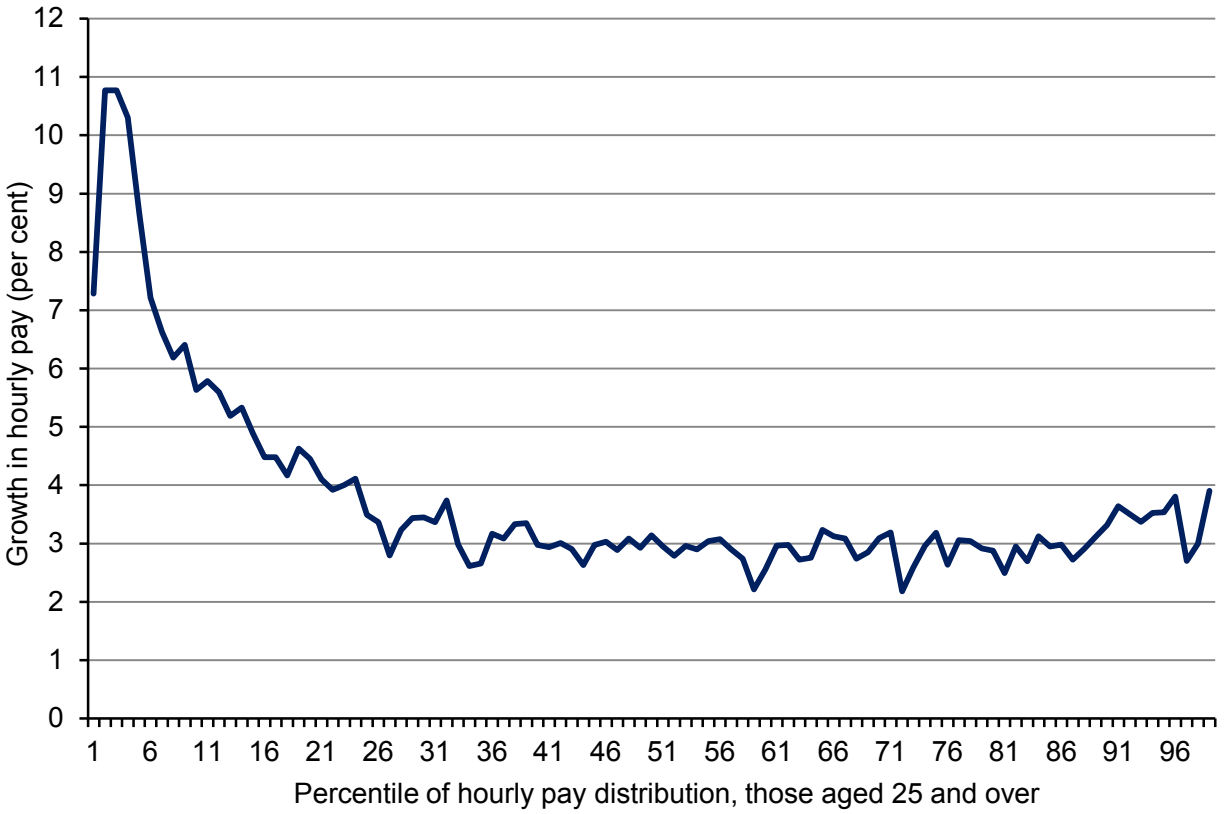
2.105 Overall, the NLW is a step change from the adult rate of the NMW in terms of its level, its coverage and its bite. There was a large increase in the number of workers covered by the higher minimum wage rate in 2016, particularly women and part-time workers, with more gains expected as the NLW increases to 60 per cent of median earnings. The main beneficiaries were workers who were paid at or close to the NMW in 2015, as they received substantial increases in their hourly pay, with real term increases in annual gross pay for a typical NLW worker of over £500. The key pressures in terms of affordability are in the sectors where these workers tend to work. As we heard from stakeholders, the majority of NLW workers are in the retail and hospitality sectors. On the other hand, there are sectors employing a lower number of minimum wage workers who also face pressures from the NLW – with stakeholders reporting challenges in the care sector, horticulture and convenience stores.

2.106 We turn now to the effects on pay of the introductory rate of the NLW, looking at specifically: the change in the hourly pay distribution; spillover effects for workers paid above the NLW, and those aged under 25; the use of shift premium pay and overtime payments; and measured underpayment of the NLW.

The earnings distribution

2.107 Figure 2.14 shows that growth across the hourly pay distribution between 2015 and 2016 has been greatest at its bottom end – a clear effect of the NLW.[7] Hourly wages in the bottom quarter of the distribution increased by at least 3 per cent, with average growth of almost 6 per cent. By contrast, growth in hourly pay across the rest of the distribution was reasonably flat – at around 3 per cent, so much more in line with weekly earnings and pay settlements data considered in Chapter 1, which generally suggested moderate pay growth at best.

Figure 2.14: Percentage growth in the hourly wage distribution for workers aged 25 and over, UK, 2015-2016



Source: LPC estimates using: ASHE April 2015-2016, standard weights, UK.
Note: Data exclude first year apprentices.

2.108 There are striking differences in the change in the hourly wage distribution for different types of workers. As discussed above, coverage levels are high amongst women and part-time workers, and so we might expect the impact of the NLW on their hourly wage distribution to be more significant. Table 2.5 shows changes at selected points of the earnings distribution for these different groups. Hourly pay growth for females was stronger than for males across the bottom of the distribution, with average growth across the bottom quartile of 6.3 per cent compared with 4.9 per cent. Part-time workers' hourly earnings increased significantly more than for full-time workers – with average growth across the bottom quartile of the distribution of 8.0 per cent, compared with 4.3 per cent for full-time workers.

7 The analysis in this section compares the hourly wage distribution in 2015 to the distribution in 2016. It does not look at the growth in hourly pay a specific worker received – a worker's position in the distribution can change between years.

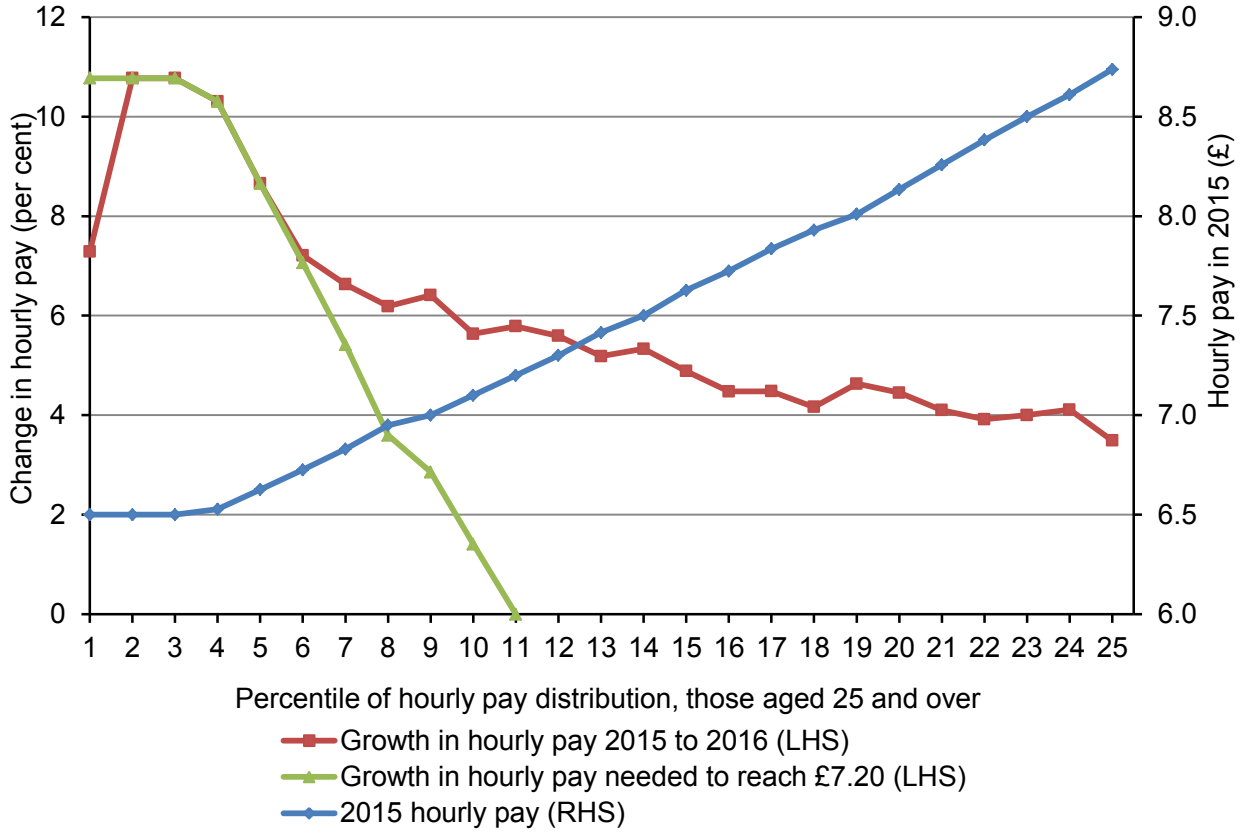
Table 2.5: Growth in hourly earnings at different points in the distribution for workers aged 25 and over, by gender and hours, UK, 2015-2016

	Growth at the (per cent)			
	Median	**25th percentile**	**10th percentile**	**Average across bottom quartile**
Female	3.4	4.6	6.4	6.3
Male	2.5	3.7	5.3	4.9
Part-time	3.8	6.3	10.1	8.0
Full-time	2.0	2.2	3.8	4.3

Source: LPC estimates using: ASHE April 2015-2016, standard weights, UK.
Note: Data excludes first year apprentices.

2.109 Figure 2.15 presents wage growth across the bottom quartile of the hourly wage distribution for all workers aged 25 and over in more detail, plotted against the level of hourly pay in 2015. The blue line shows that just under 11 per cent of hourly paid workers aged 25 and over earned less than £7.20 in 2015. The green line shows the increase in hourly pay rates needed to comply with the new minimum. The red line shows the actual increase in pay rates received by workers across the bottom of the distribution. It is noticeable that those on the NMW of £6.50 in 2015 needed (and received) substantial increases of over 10 per cent to reach £7.20 in 2016, though (in line with the evidence of underpayment discussed briefly above) some at the very bottom did not receive this much. Equally striking are the substantial increases in the hourly wage rate for those paid just above £6.50 in 2015, with wages increasing by more than the minimum required to reach the new level of £7.20. For example, hourly wages of £7.00 in 2015 (at the ninth percentile), required an increase of 2.9 per cent to reach £7.20. These hourly wages actually increased by 6.4 per cent between April 2015 and April 2016, to reach £7.45.

Figure 2.15: Hourly pay growth, hourly pay rates in 2015, and growth needed to reach £7.20 for workers aged 25 and over, UK, 2015-2016



Source: LPC estimates using: ASHE April 2015-2016, standard weights, UK.
Note: Data excludes first year apprentices.

2.110 Figure 2.15 indicates that – in line with the views of stakeholders – the introduction of the NLW has had significant spillover effects up the distribution. This means both that more workers than just those paid at the NLW have benefited from its introduction, and that adjusting has likely cost employers more than just raising the floor to comply with the NLW. On this basis, the earlier estimates of coverage will underestimate the number of workers who have benefited from the introduction of the NLW (indeed, we noted this probability in our Spring 2016 Report and above: while coverage is set to be just over 3 million by 2020, the NLW could affect the pay of up to 6 million workers).

2.111 Previous research (Butcher, Dickens and Manning, 2012) suggested that the spillover effect of minimum wage increases reached up to the 25th percentile in the hourly wage distribution. As shown in Figure 2.14 the change in hourly pay distribution from 2015 to 2016 indicates a similar reach arising from the introduction of the NLW. The size of the increase in wages is also comparable to that found in previous research. On top of average wage growth, wages across the bottom quarter of the distribution increase, on average, by an extra 20 per cent of the additional hike in the minimum wage. Hourly wage growth between the 7th and 25th percentile was on average 4.9 per cent, close to 4.6 per cent, the rule of thumb that the previous research had suggested. The magnitude of the hourly wage growth is greater lower down the distribution, with average growth between the 7th and 19th percentile of 5.3 per cent, compared with 4 per cent between the 20th and 25th percentile.

2.112 Unless wage increases are passed on in full up the distribution, spillover effects will be accompanied by wage compression. Figure 2.15 also shows that alongside ripples lifting pay rates for workers higher up the distribution, there has also been a squeezing of differentials between workers on the minimum wage and those above them. This is evident because only hourly pay rates below the 5th percentile increased by 10.8 per cent, with hourly rates above this increasing by less. Thus, the gap between minimum wage workers and slightly better-paid workers has narrowed.

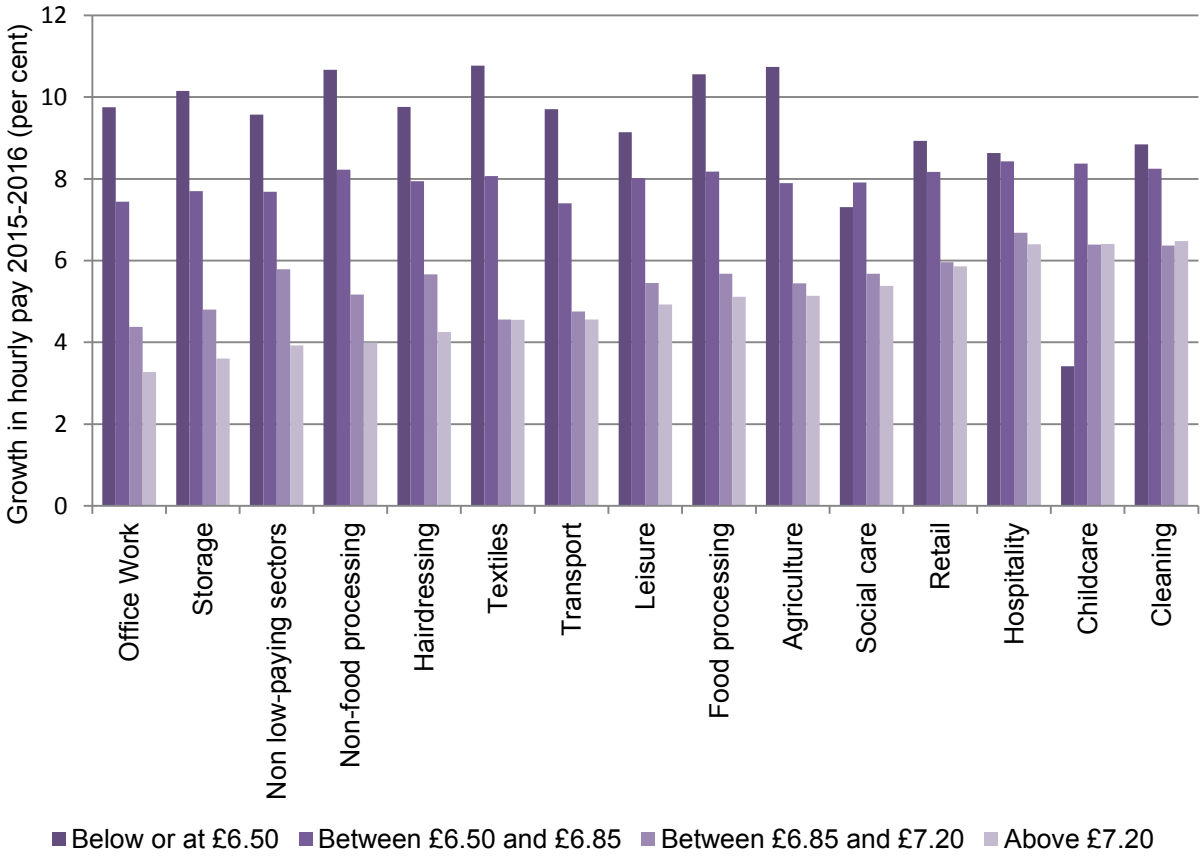
2.113 Figure 2.16 shows that the squeezing in differentials has been greater in some sectors than in others. The bars represent the percentage increase in hourly pay over the last year. The different shades of bar represent the different levels of hourly pay in 2015, ranging from £6.50 (the minimum wage in April 2015), to hourly pay rates of just above £7.20.

2.114 The bigger the gap between the first and fourth bars in each sector, the more differentials have narrowed following the introductory rate of the NLW, with the sectors on the left those where this effect had been most pronounced. For example, in office work and storage hourly pay, between 2015 and 2016, increased by less than 4 per cent for hourly rates just above £7.20 in 2015. Increases were only a touch higher in sectors including non-food processing, hairdressing, textiles and transport. However, in sectors such as cleaning and childcare wage growth was over 6 per cent at this level, and nearly 6 per cent in retail.[8]

2.115 An important caveat however is that these data present the year-on-year change. Many of the sectors most sensitive to the minimum wage could have previously reduced differentials and so may have more limited further scope to avoid passing on increases further up the pay scales.

8 It should also be noted that some sectors appear to have increased hourly pay at the bottom by less than the 10.8 per cent required to reach £7.20. This reflects the increase in measured underpayment observed in the data this year. We discuss this more below.

Figure 2.16: Growth in hourly pay for workers aged 25 and over, by sector, UK, 2015-2016



Source: LPC estimates using: ASHE April 2015-2016, standard weights, UK.
Note: Data excludes first year apprentices.

Spillovers to workers aged under 25

2.116 As well as some higher-paid workers gaining from the introduction of the NLW, stakeholders advised that many workers aged under 25 have also been beneficiaries. To estimate numbers, we need to make an assumption about what the earnings of those aged under 25 would have been in the absence of the NLW (the counterfactual). We use counterfactual wage growth of the increase in the relevant age-related minimum wage rate (2.1 per cent for 16-17 year olds, 3.3 per cent for 18-20 year olds, and 3.1 per cent for 21-24 year olds) to calculate a 'NLW-level' in 2015, that is £7.20 downrated to 2015 terms. Table 2.6 shows the proportions paid above the NLW level each year. On this basis, we estimate that up to an additional 7 per cent of workers aged 16-24 were paid above the NLW level in 2016 than in 2015 (although it will overstate gains if the counterfactual wage assumptions were too low). Similarly, workers aged under 25 may have benefited from the NLW through pay increases, although they are not receiving a wage at or above the NLW in 2016. Chapter 3 investigates the pay of 16-24 year olds further.

Table 2.6: Proportions of 16-24 year olds paid at or above the NLW level, UK, 2015-2016

	Paid at or above NLW-level in 2015	Paid at or above NLW in 2016	Increase between 2015 and 2016
	(per cent)	(per cent)	(percentage point)
16-17	16	25	9
18-20	46	52	7
21-24	76	84	8
16-24	62	69	7

Source: LPC estimates based using: ASHE April 2015-16, low pay weights.

2.117 Overall, the evidence above shows large increases in hourly pay across the bottom of the distribution and down the age spectrum to younger workers. Many workers have seen an increase in their hourly pay following the introduction of the NLW, likely above what they would have received without the 10.8 per cent increase in the minimum wage for those aged 25 and over. However, these increases in pay are coupled with some squeezing of differentials between workers on the minimum wage and those workers on higher rates of pay.

2.118 The evidence suggests that the NLW has raised hourly pay substantially, with benefits for workers and costs to employers. We turn now to wider changes that could potentially be used to offset the increases: pay consolidation and non-compliance.

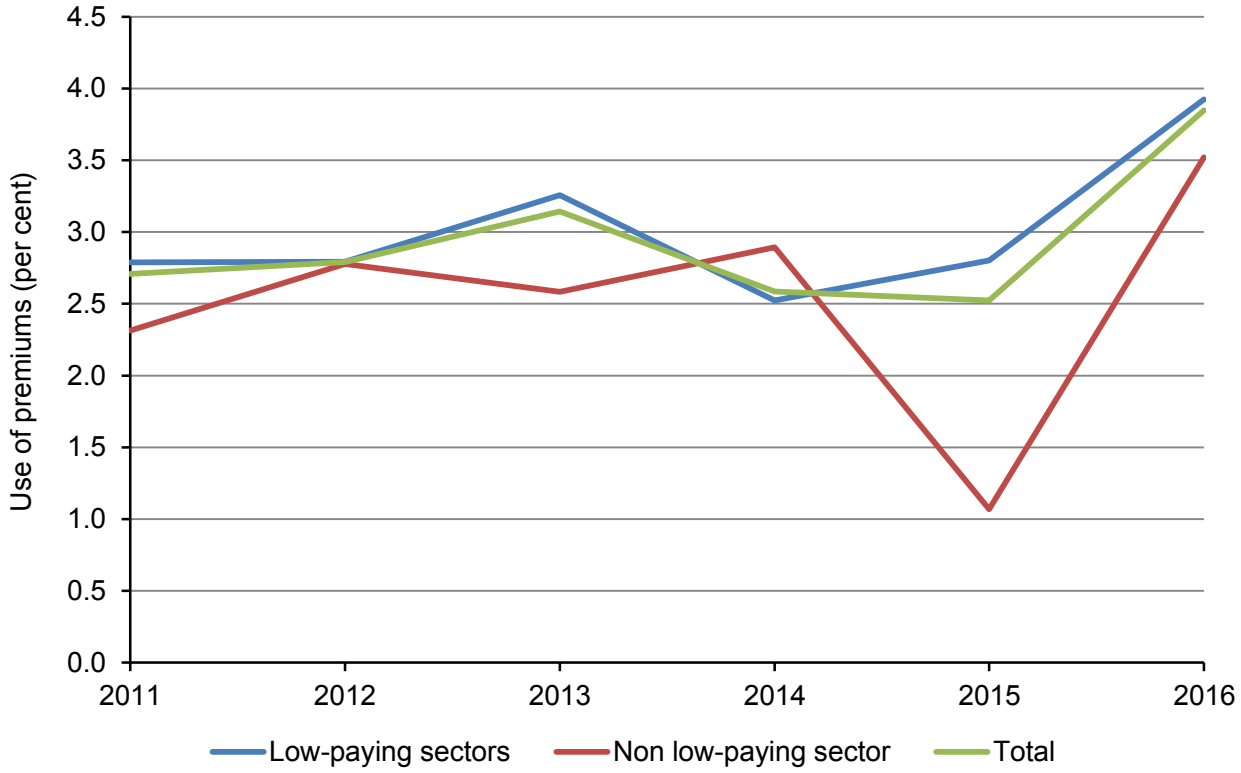
Pay consolidation

2.119 Since the announcement of the NLW, and as noted in the stakeholder evidence, there has been significant public attention on some firms changing the overall reward and benefits package for employees to help fund the cost of pay increases arising from the NLW. Changes to the pay offer could include: changes in shift premium pay, overtime pay and incentive pay; removal of paid breaks; removal of free food; reducing annual leave entitlement; reducing employer pension contributions; or the removal of salary sacrifice schemes. Depending on the scale and distribution of these effects, this could, at an extreme, mean that some workers have not actually seen an increase in their take-home pay post NLW introduction.

2.120 The data available to investigate these issues are limited. However, ASHE covers the use of shift premium pay and overtime payment. Using data for April 2016, just after the introduction of the NLW, we find no quantitative evidence that there has been a significant reduction in the use of these payments – though this analysis is preliminary, with limitations on the strength of conclusions that can be drawn from it.

2.121 Figure 2.17 shows that use of shift premium payments is relatively uncommon amongst minimum wage workers aged 25 and over – with under 4 per cent of workers receiving such a payment in April 2016. That was, however, an increase on the 3 per cent that was recorded between 2011 and 2015. It also did not differ much between minimum wage workers in low-paying sectors and those not.

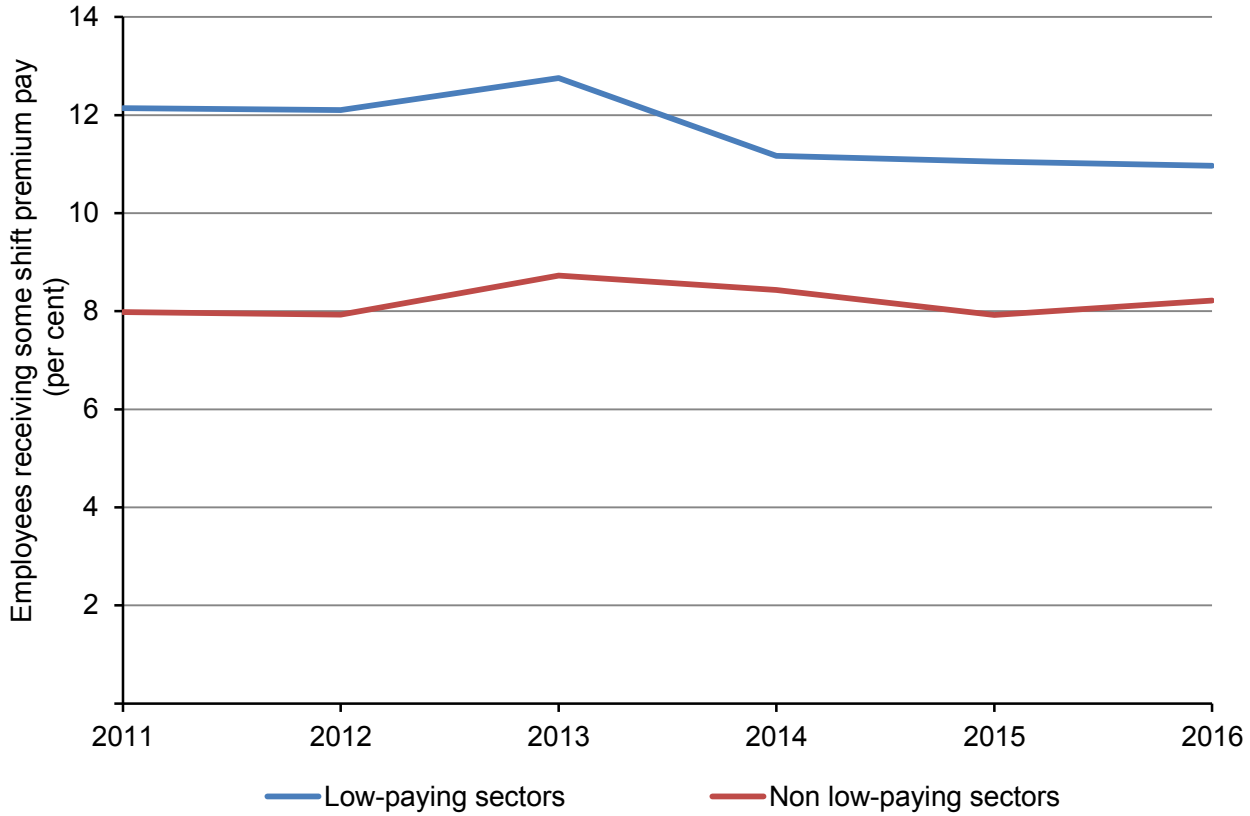
Figure 2.17: Use of shift premium pay for workers aged 25 and over, paid at or below the main rate of the minimum wage, UK, 2011-2016



Source: LPC estimates using: ASHE 2010 methodology, April 2011-16, low pay weights, UK.

2.122 Figure 2.18 takes a broader approach, looking at all workers in low-paying sectors compared with non low-paying sectors. The use of shift premium pay is higher (10 per cent) in low-paying sectors compared with non low-paying sectors (8 per cent) and these had changed little over the year. The average value of shift premium payments was also fairly flat over the period.

Figure 2.18: Use of shift premium pay, low-paying and non low-paying sectors, UK, 2011-2016



Source: LPC estimates using: ASHE 2010 methodology, April 2011-16, low pay weights, UK

2.123 The same analysis looking at the use and level of overtime payments also shows small increases over the past year – in 2015, 13 per cent of minimum wage workers aged 25 and over received a payment for overtime, rising to 15 per cent in 2016. Similar trends were also apparent when comparing all workers in low-paying sectors with those in the rest of the economy.

2.124 Overall, this analysis would suggest that there has not been a sharp decline in the use of shift premium payments, or overtime since the introduction of the NLW for minimum wage workers, or in low-paying sectors as a whole. However, these findings are tentative for a number of reasons. First, coverage of minimum wage workers significantly increased over this year, so changes in Figure 2.17 may reflect a compositional change. Second, changes to benefits packages that have been announced may not yet have been fully implemented, so will not yet be observable in the data. Third, other parts of the pay and benefits package have not been considered here – for example, paid breaks or annual leave entitlements, and adjustments may be being borne here. We will continue to monitor these trends as more data become available.

Measured underpayment and non-compliance

2.125 The data suggest that the NLW has raised pay at the bottom, for some higher-paid workers, and for some younger workers. However, there is also evidence from the hourly pay distributions of another effect: significant proportions of workers aged 25 and over not receiving £7.20 in April 2016.

2.126 Looking at the raw data, around 480,000 workers aged 25 and over did not receive £7.20 in April 2016 – 30 per cent of workers of that age covered by the rate, or about 2 per cent of workers overall. However, much of this apparent underpayment is likely to be a measurement effect arising from the timing of the survey, which now takes place at the same time as the uprating occurs. The 2016 ASHE survey collected information using a pay reference period of 13 April 2016, just two weeks after the introduction of the NLW. Where employees had a pay reference period starting before 1 April (for example, if they were paid monthly or four-weekly), employers were not legally required to increase their pay from the old NMW to the new NLW until the first full pay period after the introduction of the NLW. The ONS identified around 175,000 individuals who might fall into this category.[9]

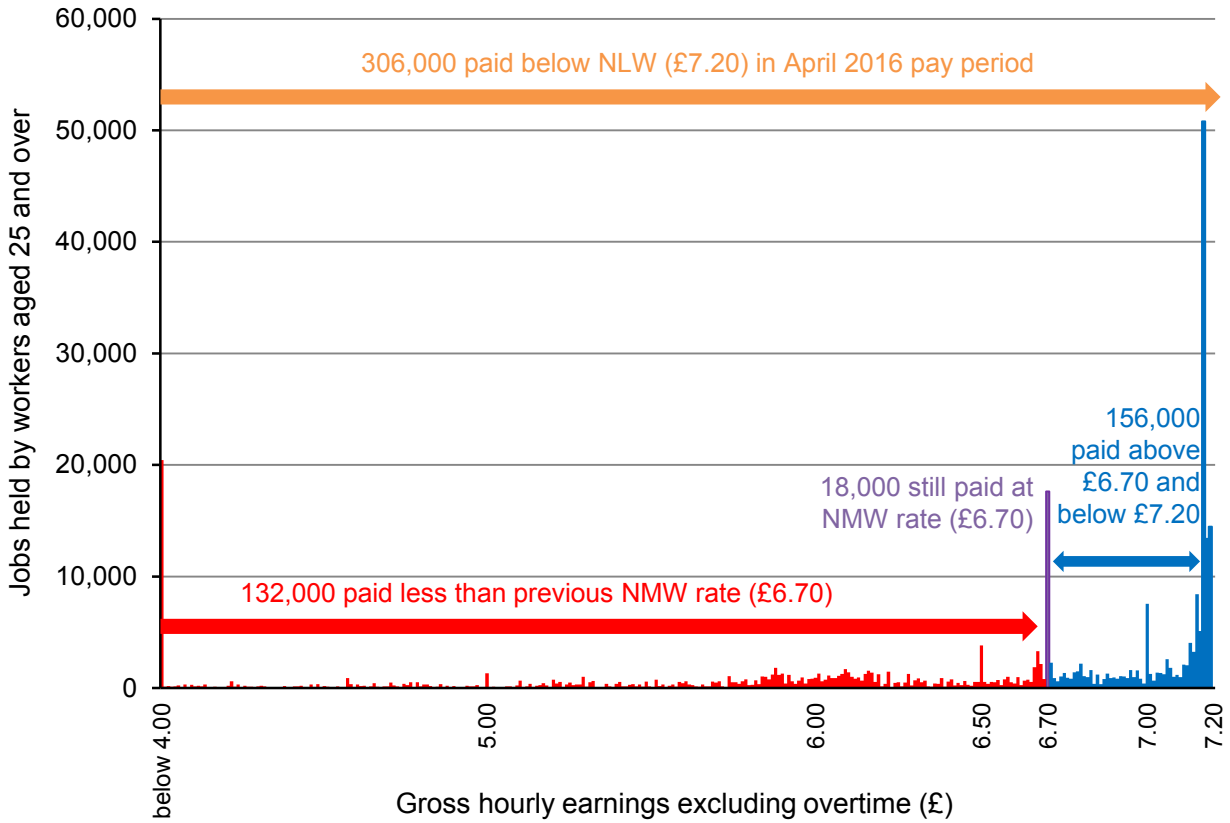
2.127 Excluding these 175,000 cases, ASHE shows that over 300,000 or 19 per cent of workers covered by the NLW were paid below £7.20 in April 2016 (1.3 per cent of employees aged 25 or over). For comparison, about 160,000 workers aged 25 and over, or 15 per cent of NMW coverage for the cohort (0.7 per cent of those workers aged 25 and over) were paid below the applicable NMW rate of £6.50 in April 2015. As our past reports have argued, data on underpayment is not itself evidence of non-compliance: there are legitimate reasons why some workers can receive less than the minimum rate, including use of the accommodation offset, apprenticeship status, use of piece rates, or adjustments across pay reference periods accounting for previous pay advances and factors like commission. But these factors clearly cannot explain the step change in the level between 2015 and 2016. It is more likely that some of the increase reflects temporary underpayment. The change in the timing of the NLW cycle means that these data relate to underpayment at the introduction of the NLW, whereas those in April 2015 related to the mid-year point of the NMW. Temporary non-compliance is a problem that would not previously have been identified in the data (other than at the introduction of the NMW in 1999, which was also in April). It could also help explain why non-compliance did not feature strongly in stakeholder evidence.

2.128 Previous research (Ormerod and Ritchie, 2007) provides some support for this hypothesis. It looked at the impact of the timing on low pay estimates, focusing particularly where the survey period and changes in the NMW did not coincide. Using the LFS to analyse low pay estimates across the year, it found that non-compliance rates were highest in the quarter immediately after the uprating – this reflected both underpayment and some measurement error. Falling non-compliance rates throughout the year until the following uprating suggested employers were taking time to respond to the new rate and that measurement error immediately after the uprating was not the sole issue. Data relating to the introduction of the minimum wage in April 1999 present a similar story. Underpayment was estimated to affect 2.1 per cent of workers, comparable in scale to the position in 2016. Following the move to an October uprating in 2000, underpayment fell to 0.9 per cent and has remained fairly constant since then, at just below 1 per cent.

9 These were cases which had a pay reference period spanning 1 April 2016 and 13 April 2016, and had an hourly rate of £6.70-£7.20.

2.129 Figure 2.19 shows the distribution of hourly pay for those receiving less than £7.20 and uses the same methodology as ONS. It highlights specific hourly rates of pay where we see large volumes of workers – that is £6.70 and £7.00, as well as those who fall just below the NLW. Cases between £6.70 and £7.20 are possibly cases of temporary non-compliance. In contrast, cases below £6.70 cannot be explained as temporary non-compliance in adjusting to the new rate – these are more likely to be cases of persistent non-compliance.

Figure 2.19: Hourly earnings distribution below NLW, for employees aged 25 and over, UK, 2016

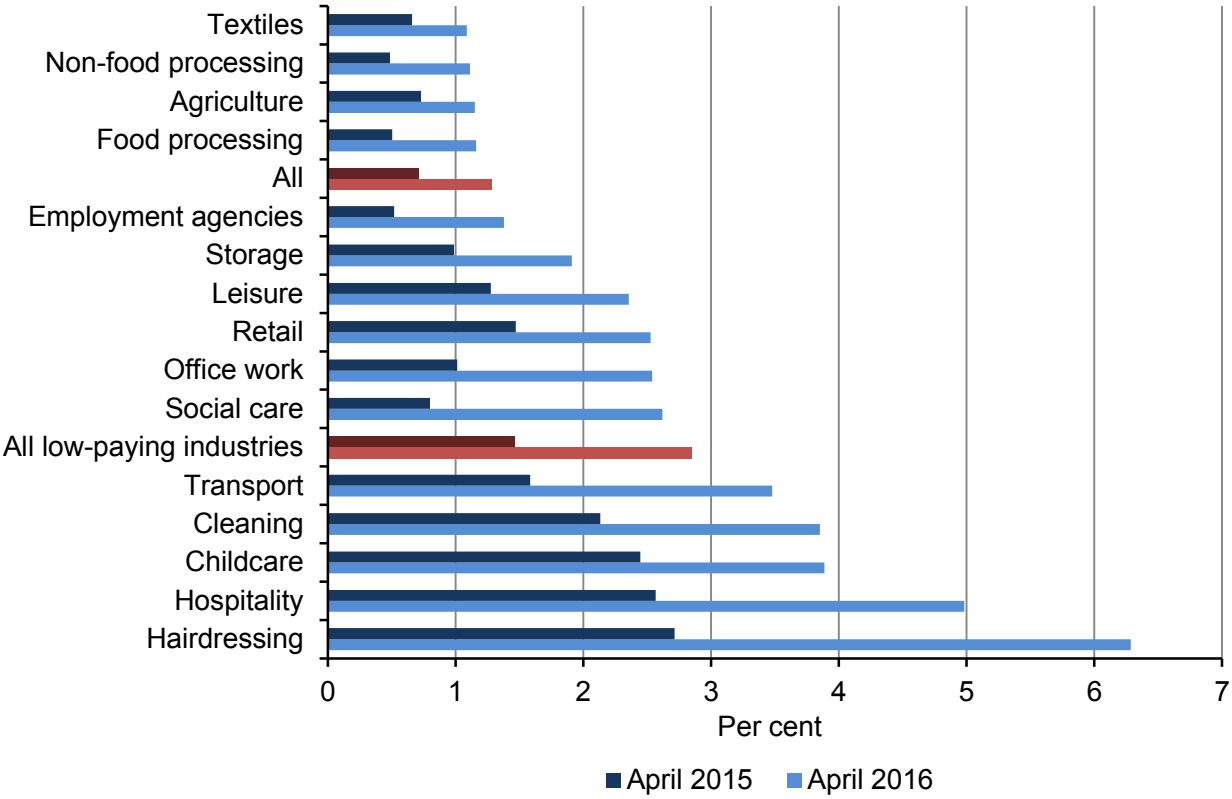


Source: LPC estimates using: ASHE April 2016, low pay weights and low pay flag applied, UK.

2.130 Nonetheless, even if non-compliance is only temporary it is still illegal, disadvantageous to workers and (on these data) large-scale, affecting up to a fifth of workers covered by the NLW. Nor can we rule out an increase in longer-term non-compliance in response to the higher wage floor. Indeed we noted such a possibility in our Spring 2016 Report. The NLW is a new rate introduced at a new time of year to previous minimum wage upratings. The higher value of the NLW has resulted in increased coverage of workers paid at the minimum. Many employers and some sectors not previously affected by the NMW will have been covered for the first time. The average figures may also disguise significant differences by sector.

2.131 Figure 2.20 illustrates the apparent increase in measured underpayment across all sectors in 2016 compared with 2015. Whilst low-paying sectors as a whole increased from 1.5 per cent to 2.8 per cent, the largest rates of non-compliance were found in hairdressing, hospitality, childcare and cleaning. There were also large sectoral increases for social care and transport.

Figure 2.20: Proportion of employees paid below the NLW, for employees aged 25 and over, by sector, UK, 2015-2016

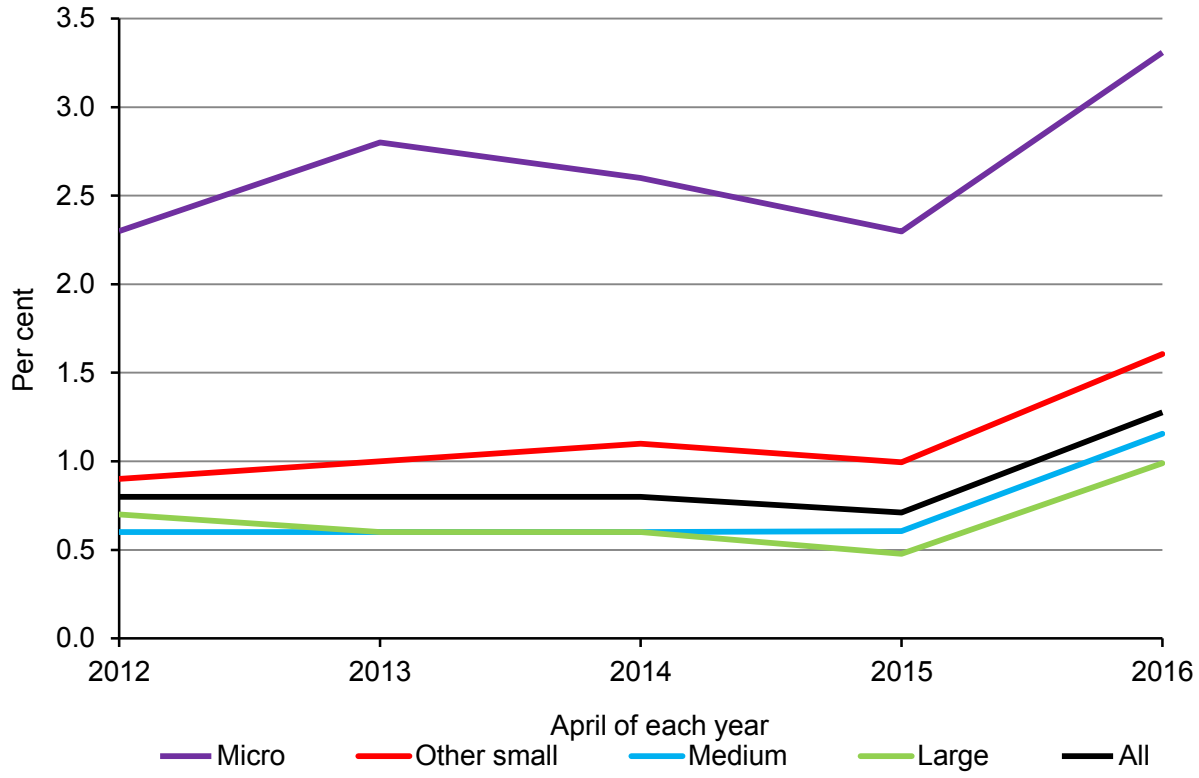


Source: LPC estimates using: ASHE April 2015-16, low pay weights, UK.
Notes:

a. Data exclude first year apprentices.
b. ONS' lowpay flag has been applied to this data to remove cases of workers paid £6.70-£7.20 with a pay reference period which begins before 1 April.

2.132 Looking at the data by firm size, underpayment has long been higher in smaller firms – reflecting perhaps that larger firms have dedicated human resources teams which generally tend to have better awareness of, and are able to react more quickly to implement legislative changes. The picture for 2016 shows a pattern of higher SME underpayment continuing, with recorded underpayment increasing for all sizes of firm in 2016, but most sharply for micro businesses.

Figure 2.21: Proportion of employees paid below the NLW, for employees aged 25 and over, by firm size, UK, 2012-2016



Source: LPC estimates using: ASHE April 2015-16, low pay weights, UK.
Notes:

a. Data exclude first year apprentices.
b. ONS' lowpay flag has been applied to this data to remove cases of workers paid £6.70-£7.20 with a pay reference period which begins before 1 April.

2.133 We will continue to look at this issue for our 2017 Report when data will enable us to make year-on-year comparisons on a like-for-like basis. The evidence highlights the need for follow-up research to check the extent of underpayment levels over time as well as the importance of continued strong enforcement from HMRC and regular communication to workers and employers.

Impact on employment and hours

2.134 Having established that the NLW has had a significant effect on the bottom of the earnings distribution, we turn to how firms have coped with the higher wage costs that have resulted. In the face of increased costs, employers have a number of options to limit the increase in the wage bill. We have already considered attempts to absorb these costs by changes to pay structures, wider aspects of the remuneration package, and non-compliance with the NLW. Firms can also alter employment by adjusting the number of workers employed or the number of hours worked.

2.135 We have previously concluded from the research over the last 15 years that the increases in the minimum wage in the UK have not had significant effects on employment or hours, at an aggregate level. That view was based on our judgement of the research findings. An alternative approach to summarising the evidence was carried out by RAND Europe (2016) which conducted a meta-analysis (a study of studies) of the existing UK literature on the effect of the NMW on employment, hours and job retention rates. It found no evidence of a publication bias in the UK

literature, and, in line with our previous assessments of the impact of the NMW, found no evidence of a genuine adverse employment effect when looking at the impact of minimum wages on overall employment, hours or employment retention rates. It did, however, find that part-time employees were more adversely affected by increases in the NMW than full-time employees, especially when looking at employment retention rates. These effects were stronger at the point of introduction, during the phase of large NMW increases prior to the recession, as well as through the period after the recession. However, no such effects were found during the recession, when the NMW was falling in real terms. In contrast, it provided evidence that the employment retention of young employees was more adversely affected during the recession, although there was no evidence of adverse employment or hours effects on young workers outside this period. Looking at hours, the study actually found some weak evidence of a positive effect for part-time employees, in contrast with previous research, which identified stronger effects on hours than employment.

2.136 The previous research considered in the meta-analysis related to increases in the minimum wage generally at a lower level than those forecast for the NLW. While there were fast gains in the adult rate of the minimum wage in the early 2000s, these were increases on a lower absolute level, with a lower real value and at a lower relative value. Economic theory suggests that at some point minimum wages have the potential to damage employment by raising the cost of labour above the value it generates for employers. The history of the minimum wage in the UK is that moderate increases are consistent with gains for workers that do not reduce jobs or hours significantly. There is more limited research evidence on the impact of much faster and sustained increases. As we argued in our Spring 2016 Report, the NLW is, from an economic point of view, effectively a natural experiment, but one which will take time to assess. Econometric analysis takes time to properly assess the impact, requiring at least several quarters of employment data after a rate increase has been implemented. Cumulative increases need testing over a longer economic cycle to get a full sense of their affordability, benefits and costs.

Labour market data

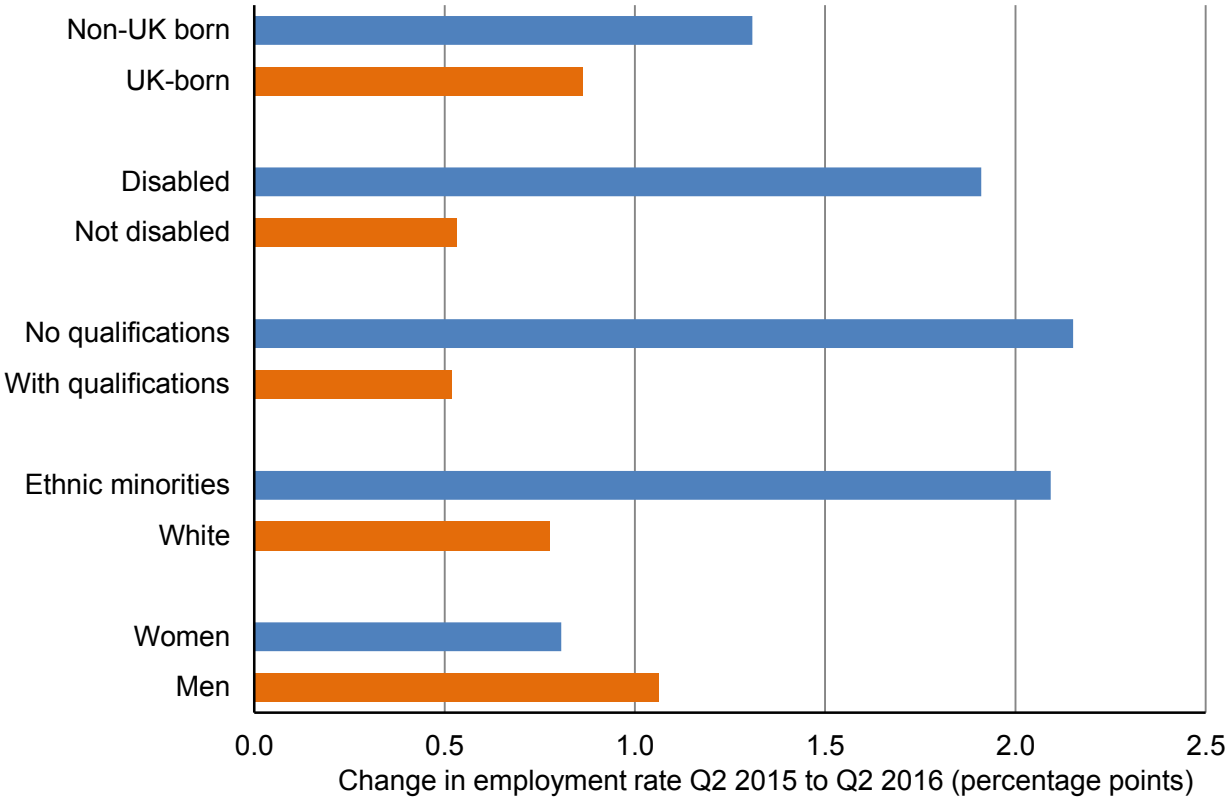
2.137 For early insights into the impact we nonetheless have some data, notably from the LFS up to the second quarter of 2016, covering one quarter following the introduction of the NLW at the beginning of April. Comparing this with the labour market in the second quarter of 2015 (prior to the announcement of the NLW policy in July 2015) has the potential to show up negative effects on employment or hours, particularly among exposed sectors or groups. However, many other factors influence the labour market, possibly disguising any effects. Equally, reactions to the NLW are likely to develop over time, with short-term responses differing significantly from long-term ones. Because of these constraints, the observations that follow can only be regarded as early indicators of the impact of the £7.20 rate.

2.138 Chapter 1 considered aggregate changes in employment and hours for the UK over the period from before the introduction of the NLW to mid-2016, looking at employment, employee jobs, hours, vacancies and redundancies, and unemployment. It found evidence of record employment levels and continued strong growth, but also some possible signs of softening – with an increase in the claimant count and redundancies in the latest data.

2.139 We begin by considering different demographic groups. Women, ethnic minorities, disabled workers, those non UK-born, and those with no qualifications are – as set out earlier in the chapter – significantly more likely to be paid at the NLW rate than other workers, with much higher coverage and bites. Changes in their employment performance are therefore a potential indicator of minimum wage effects.

2.140 Figure 2.22 shows the change in the employment rate over the year to June 2016. It suggests strong growth in employment across all the NLW-exposed groups both in absolute and relative terms. With the exception of women, all groups have outperformed their comparators (for example, the disabled employment rate has increased more than the non-disabled employment rate), with growth in employment rates also faster than for workers as a whole. While we do not have the counterfactual of how strong employment performance would have been in the absence of the introduction of the NLW, this suggests no obvious negative impact on those workers most likely to be paid the rate during its earliest stages.

Figure 2.22: Change in employment rates for those aged 25 and over, by worker characteristics, UK, 2015-2016



Source: LPC estimates using: LFS Microdata, population weights, not seasonally adjusted, single quarter data UK, Q2 2015 and Q2 2016, UK.

2.141 Table 2.7 presents a similar analysis and conclusions regarding the change in unemployment and inactivity rates for these groups of workers. Unemployment and inactivity decreased for all groups, with those of the most NLW-exposed groups generally decreasing by more than their comparator groups. As in Figure 2.20, women performed slightly more weakly than their male counterparts in terms of change in rates over the last year. However, they have still seen significant increases in employment rates, and falls in unemployment and inactivity rates.

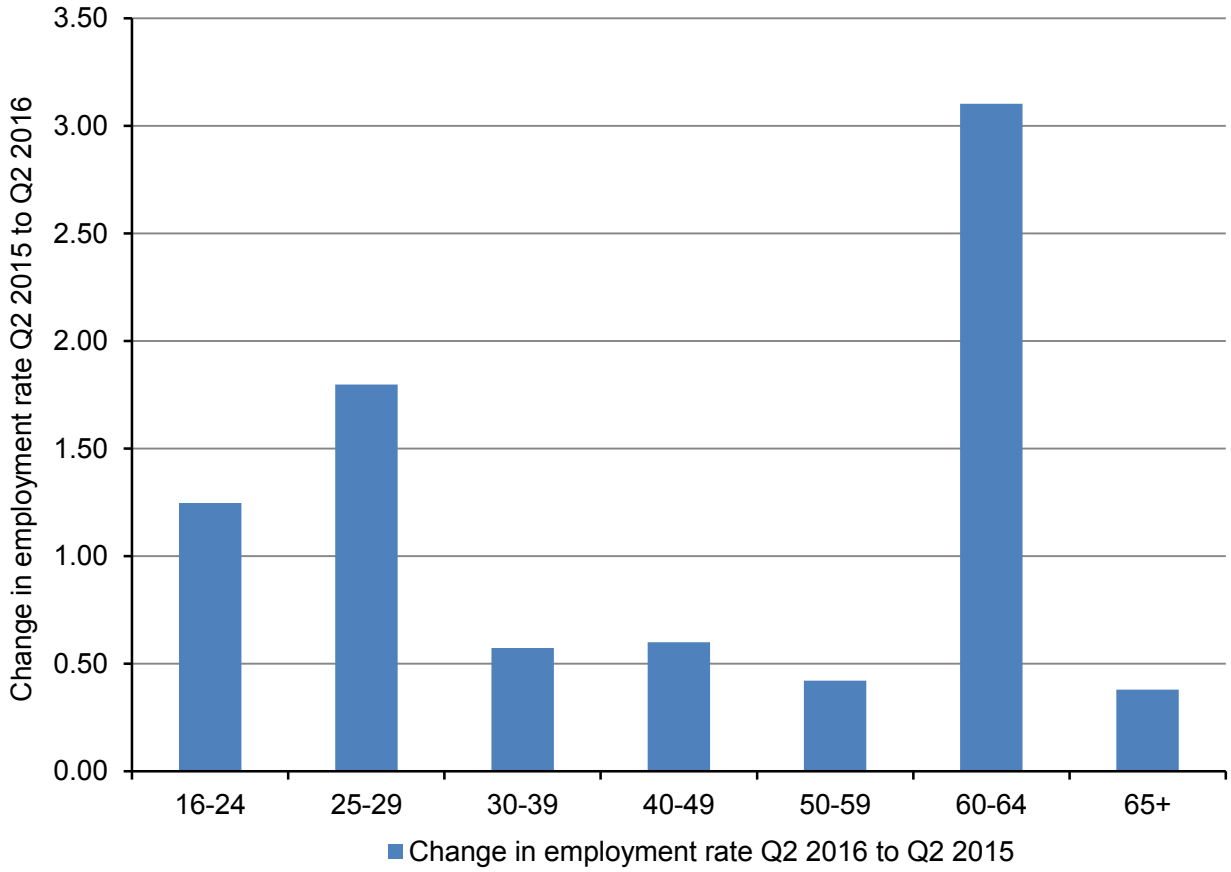
Table 2.7: Change in employment, unemployment and inactivity rates for those aged 25 and over, by worker characteristic, UK, 2015-2016

	Change in rate Q2 2015 to Q2 2016 (percentage point)		
	Employment rate	Unemployment rate	Inactivity rate
Men	1.1	-0.5	-0.7
Women	0.8	-0.4	-0.6
White	0.8	-0.4	-0.5
Ethnic minorities	2.1	-0.9	-1.5
With qualifications	0.5	-0.3	-0.3
No qualifications	2.2	-2.7	-0.8
Not disabled	0.5	-0.4	-0.2
Disabled	1.9	-0.6	-1.8
UK-born	0.9	0.0	-0.6
Non-UK born	1.3	-0.6	-0.9

Source: LPC estimates using: LFS Microdata, population weights, not seasonally adjusted, single quarter data UK, Q2 2015 and Q2 2016, UK.

2.142 Turning to age, analysis of the change in the employment rates of different cohorts between Q2 2015 and Q2 2016 again shows strong labour market performance among two of the three groups most likely to receive the rate: 25-29 year olds, and 60-64 year olds. Indeed, Figure 2.23 suggests that workers aged 60-64 actually had the strongest employment growth in the year to June 2016, followed by workers aged 25-29.

Figure 2.23: Change in employment rates, for those aged 25 and over, by age, UK, 2015-2016



Source: LPC estimates using: LFS Microdata, population weights, not seasonally adjusted, single quarter data, Q2 2015 and Q2 2016, UK.

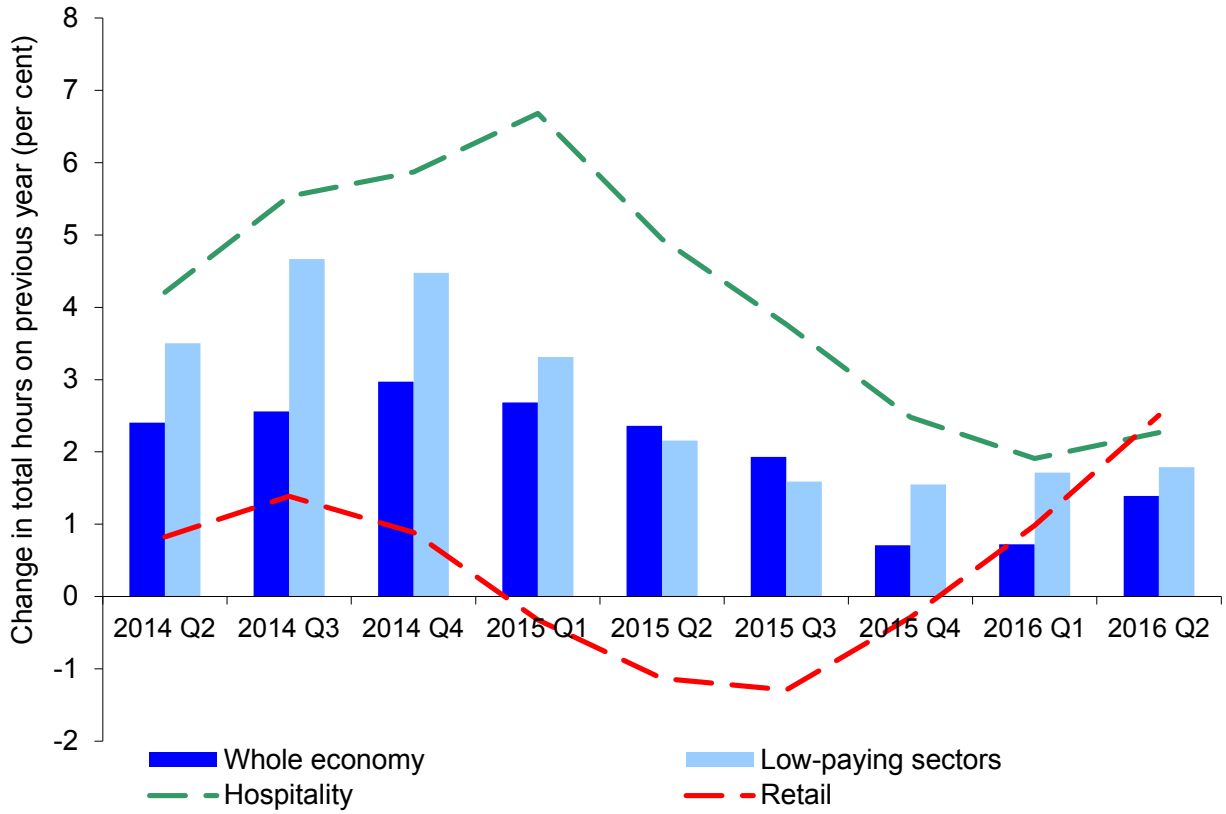
2.143 However, the picture for the third most exposed group, those aged 65 and over, is less strong, with the weakest employment growth of any group aged 25 and over. A complication here is that the population aged 65 and over is increasing rapidly. Because the employment rate is measured as a proportion of the population, its level may be depressed by a larger pool of people. Looking at the alternative measure of the growth in the employment level (rather than the rate) across the same period, we find that the level has increased for workers aged 65 and over by more than 5 per cent, providing a more encouraging picture.

2.144 Chapter 1 noted that recent employment growth in the economy has been substantially influenced by rising self-employment, so though we do not present the analysis here, we have also considered change in employment rates only for employees among these groups of workers. While the absolute changes are somewhat lower, the pattern is similar to the one above on employment rates – the groups most affected by the NLW have seen strong increases in employee numbers over the last year, and with stronger increases compared with their comparator groups. Overall, there is again not yet evidence that the NLW has significantly affected the labour market prospects for these groups of workers.

2.145 As well as varying by demographic group, the impact of the NLW also varies by sector, size of firm, and region. We look first at low-paying sectors for changes in hours and employment, as well as in jobs – and here the picture is more varied than for groups of workers.

2.146 Figure 2.24 shows changes in hours for the broad category of low-paying sectors over the past two years. We focus on hours because working time is the easiest place to make adjustments to employment so would be the first place where effects might be seen. Looking across the period, growth has remained positive, though there has been some softening in its rate of change. After strong increases in the number of hours worked in 2014, the pace slowed throughout 2015 and into the start of 2016, both across the whole economy and in the low-paying sectors. However, in the latest quarter of data, post-NLW introduction, growth was slightly higher than in previous quarters, and there was stronger growth in hours in low-paying sectors than in the whole economy. Overall hours do not appear to have decreased in NLW-exposed sectors at an aggregate level.

Figure 2.24: Change in hours by low-paying sector and the whole economy, UK, 2014-2016



Source: LPC estimates using: LFS Microdata, population weights, not seasonally adjusted, four quarter rolling average, Q3 2013 to Q2 2016, UK.

2.147 Figure 2.24 also shows the trend for retail and hospitality – the sectors where most minimum wage workers are employed. It suggests that, after diverging in hours growth for the second half of 2014, the hospitality and retail sectors began to converge across 2015. By the second quarter of 2016 hours in both sectors were growing at around 2 per cent, in line with all low-paying sectors. Growth in hours in hospitality has been slowing over much of the period since the announcement of the NLW. However, the trend began in the first quarter of 2015, and the growth in hours picked up in the second quarter of 2016. Conversely, growth in hours in retail has increased over the last year, after being negative for much of 2015.

2.148 The trend in the number of people employed across sectors is very similar to that of hours. While rates of growth slowed across 2015 and into early 2016, low-paying sectors started from a higher point and the latest data show growth in both the whole economy and low-paying sectors of between 1-2 per cent. The growth in employment in the retail sector has continued to rise faster than hospitality and grew 2.7 per cent in the year to the second quarter of 2016, whilst growth within the hospitality sector was similar to that observed in the wider economy (1.3 per cent).

2.149 Table 2.8 presents recent changes in employment and hours in a wider range of low-paying sectors. It highlights a significant degree of variability, with no clear NLW-related pattern. On the one hand, the largest rates of increase have been in particularly NLW-exposed sectors, such as the employment agencies, and textiles and clothing sectors, both of which have seen double-figure percentage increases according to the latest LFS data. On the other hand, the cleaning, food processing and social care sectors have experienced falls in employment over the last year, whilst the agriculture, cleaning, hairdressing and social care sectors saw falls in hours worked across the same period.

Table 2.8: Change in employment rates and total hours, by low-paying sectors, UK, 2015-2016

Sector	**Employment**		**Hours**	
(percentage change on previous year)	**2016 Q2**	**2015 Q2**	**2016 Q2**	**2015 Q2**
Agriculture, forestry & fishing	1.5	2.2	**-2.3**	2.9
Childcare	3.7	-1.5	4.3	0.8
Cleaning	**-6.0**	7.1	**-4.1**	6.0
Employment agencies	**11.9**	5.4	**14.1**	7.8
Food processing	**-2.8**	-0.1	0.1	-4.0
Hairdressing	0.4	6.6	**-3.8**	7.0
Hospitality	1.3	3.5	2.3	4.9
Leisure, travel & sport	3.1	7.6	3.0	7.7
Retail	2.7	-1.4	2.5	-1.1
Social care	**-1.7**	3.5	**-1.7**	4.8
Textiles & clothing	**28.5**	-1.6	**25.5**	5.6
Other sectors	1.4	2.4	1.3	2.4
All low-paying sectors	1.4	1.7	1.5	2.1
Whole economy	1.4	2.2	1.4	2.4

Source: LPC estimates using: LFS Microdata, population weights, not seasonally adjusted, four quarter rolling average Q3 2014 to Q2 2016, UK.

2.150 Table 2.9 presents the position using a different measure, the number of employee jobs in different sectors. Most low-paying sectors have seen growth in employee jobs over the last year, with solid improvement in hospitality and leisure, travel and sport, and strong growth in other NLW-exposed sectors such as textiles and food processing. On the other hand, the numbers of employee jobs in low-paying industries grew at less than half the rate of non low-paying industries – 0.6 per cent compared with 1.5 per cent. Hairdressing saw the largest proportional fall in employee jobs of 13.6 per cent, and the domiciliary care and childcare sector also saw falls in jobs of 5.0 per cent. There was also a fall in jobs in agriculture of 1.6 per cent (3,000 jobs).

Table 2.9: Change in employee jobs, by low-paying industry, GB, 2014-2016

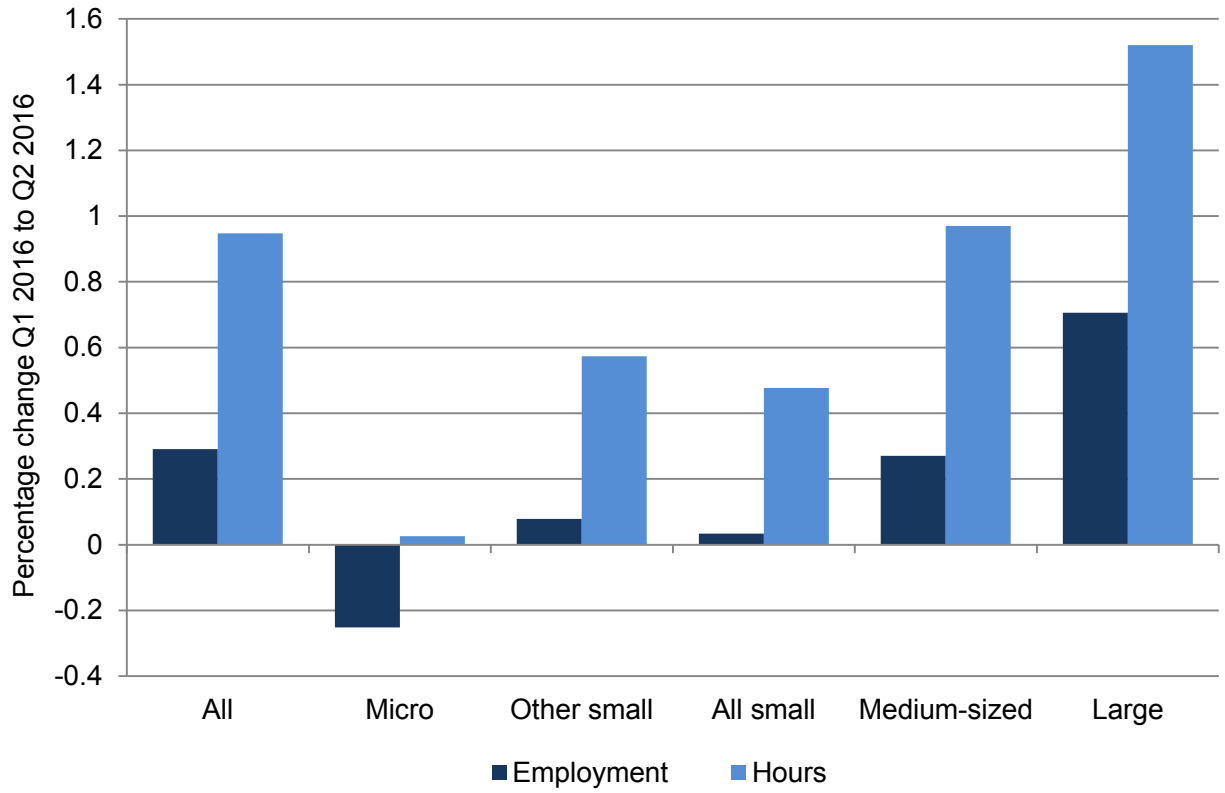
	June 2016	Change on June 2015		Change on June 2014	
	000s	000s	%	000s	%
All industries	28,944	349	1.2	887	3.2
Non low-paying industries	19,093	287	1.5	647	3.5
All low-paying industries	9,851	62	0.6	240	2.5
Consumer services	6,107	51	0.8	284	4.9
Retail	3,318	21	0.6	55	1.7
Retail (excluding motor)	2,826	4	0.1	50	1.8
Hospitality	2,122	40	1.9	97	4.8
Leisure, travel and sport	534	11	2.1	26	5.1
Hairdressing	133	-21	**-13.6**	-10	-7.0
Business-to-business	1,487	12	0.8	267	21.9
Cleaning	731	3	0.4	14	2.0
Employment agencies	756	9	1.2	34	4.7
Trade	660	17	2.6	-23	-3.4
Food processing	363	8	2.3	16	4.6
Agriculture	185	-3	**-1.6**	-2	-1.1
Textiles, clothing	112	12	12.0	24	27.3
Government-funded	1,597	-18	**-1.1**	209	15.1
Residential care	791	24	3.1	82	11.6
Domiciliary care/childcare	806	-42	**-5.0**	-96	-10.6

Source: LPC estimates using ONS employee jobs series, three-monthly, not seasonally adjusted, GB, 2014-2016, GB.

2.151 On these data, it is too early to tell if changes in hours, employment and jobs are related to the NLW. The main sectors where the position appears to be weakening across sources is social care – where hours and employment are down, and employee jobs are down in the domiciliary care and childcare sector, although up in the residential care sector. More contradictory is cleaning where hours and employment levels were down, although jobs grew slightly. Similarly, hours and jobs decreased in agriculture and hairdressing, yet employment increased.

2.152 Turning to firm size, Figure 2.25 shows the change in total hours worked and change in employment by firm size for those aged 25 and over. This reflects earlier analysis in the chapter showing that smaller firms have higher coverage of the NLW. For those aged 25 and over, there appear to have been small increases in total hours worked for all firm sizes, though micro firms have seen minimal growth in hours across the period. Employment levels have also increased marginally for all firm sizes, with the exception of micro firms where employment has fallen slightly year-on-year. On the other hand, data discussed in Chapter 1 show that vacancies amongst micro firms have increased in the latest period, which would indicate a potential strengthening of employment prospects in these firms.

Figure 2.25: Change in employment and hours, by firm size, UK, 2016



Source: LPC estimates using: LFS Microdata, population weights, not seasonally adjusted, four quarter rolling average Q2 2015 to Q2 2016, UK.

2.153 Finally, Table 2.10 shows the change in employment level and rate by region and nation. We saw earlier in the chapter that there are significant differences in the relative value of the minimum wage across the UK, so it might be expected that employment would grow more slowly in some areas than in others. However, these data suggest a more complicated picture. The regions at the top of the table are those with the highest bite, in descending order. While two countries and two regions (Wales, Northern Ireland, the North West and the South East) saw small falls in the employment levels over the three months to June 2016, this does not seem to be linked to exposure to the NLW. The East Midlands, for example, had the second highest bite of the NLW, but had seen the greatest increase in the employment rate in the three months to June. Overall, at this point in time, we can identify no clear pattern between changes in either the employment rate or levels by region, and exposure to the NLW.

Table 2.10: Change in employment, by region and nation, UK, 2015-2016

	Employment levels (000s)			Employment rates (%)		
Region	**3 mths to June 2016**	**3 mths to March 2016**	**3 mths to June 2015**	**3 mths to June 2016**	**3 mths to March 2016**	**3 mths to June 2015**
		Change (000s)			**Change (ppt)**	
East Midlands	2,295	39	35	75.6	1.2	0.7
Wales	1,440	**-14**	17	72.2	**-0.3**	0.7
Yorkshire and The Humber	2,520	10	12	72.2	0.2	0.5
Northern Ireland	833	**-4**	21	69.0	0.0	1.3
North East	1,211	16	51	71.2	0.8	3.1
West Midlands	2,661	12	65	71.9	0.5	1.3
South West	2,721	22	18	77.7	0.4	-0.5
North West	3,363	**-31**	64	72.6	**-0.8**	1.4
East	3,078	51	78	78.1	0.6	1.2
Scotland	2,629	51	14	74.1	1.0	0.0
United Kingdom	31,750	172	606	74.5	0.3	1.0
England	26,847	139	554	74.8	0.3	1.2
London	4,486	25	131	73.5	0.2	1.2
South East	4,512	**-5**	101	78.3	0.1	1.7

Source: LPC analysis based on: ONS regional labour market statistics, Q2 2015-Q2 2016, UK.

2.154 Overall, and perhaps unsurprisingly at this early stage, the data do not as yet show clear evidence of effects on employment attributable to the NLW. Groups in the labour market most likely to be earning at or below the NLW have seen strong increases in their employment rates, and decreases in unemployment and inactivity rates over the last year. Employment, hours and jobs have continued to increase across the whole economy, and in low-paying sectors. However, within low-paying sectors, there are some that have seen a decline in either employment, hours or jobs over the last year – notably social care, cleaning, hairdressing, and agriculture, all of which we heard in evidence and visits are highly exposed to cost pressures arising from the NLW. We will continue to monitor these sectors to see if the trend continues, and to understand whether these changes are related to the NLW, or part of broader changes to the labour market.

Impact on competitiveness

2.155 As well as changing pay, employment and hours, there are many other responses to an increase in the minimum wage – increasing prices, increasing productivity, decreasing profits, and ultimately business failure. Our stakeholders and survey evidence suggests that affected firms have seen an impact on their competitiveness following the introduction of the NLW. Increases in prices were often the most common response reported among employers whose wage bills increased, followed by absorbing higher costs through a decrease in profits. In the run up to the introduction of the NLW, there was much discussion about increasing productivity of labour – paying them a higher hourly wage meant that employees could be expected to increase the contribution they make. Although some firms reported making productivity-enhancing changes (investing in technology or training for staff) the evidence from stakeholders indicated that this may have been a less popular response at the introduction in April, although still considered central to coping with future increases in the NLW.

2.156 Chapter 1 set out the economic context for our decisions, including indicators of changes in competitiveness at an economy-wide level. However, there are few data available for these indicators broken down to a level and timeliness that would enable us to assess the impact of the NLW (as we have done with the impact on pay and employment). Furthermore, prices, profits and productivity are determined by many economic factors, of which a change in the wage floor is just one element. This year in particular, the uncertainty in the run-up to and the period since the EU Referendum may have also played a role in influencing these measures, across a similar period as the introduction of the NLW, making any effect harder to identify and quantify.

2.157 Here, we look at price data, for which we have more up-to-date and specific breakdowns for different goods and services, to see if prices in sectors with a high proportion of minimum wage workers have increased, and at the change in share prices when the NLW was announced as an indication of profits. We then summarise the macroeconomic competitiveness trends discussed in Chapter 1, which (again, perhaps unsurprisingly, given the nature of the data and timing) show no clear effect of the introduction of the NLW on the broad indicators.

2.158 Table 2.11 presents the annual change in prices for groups of minimum wage goods and services. The first two columns compare prices in the second quarter of 2016 with the same period in 2015 – so after the introduction of the NLW but before the EU Referendum – and the last two columns show data for the third quarter of 2016. Prices of minimum wage goods and services have tended to increase more between 2015 and 2016 than in the preceding year, and they have tended to increase by more than the general increase in CPI, RPI and the Service Producer Price Index (SPPI). Clearly, there are many factors that influence the price of goods, the minimum wage just being one of them. However, these data are consistent with the evidence from some stakeholders and research showing that price increases have been a common response to the increase in the wage floor.

Table 2.11: Price inflation for selected good and services, UK, 2014-2016

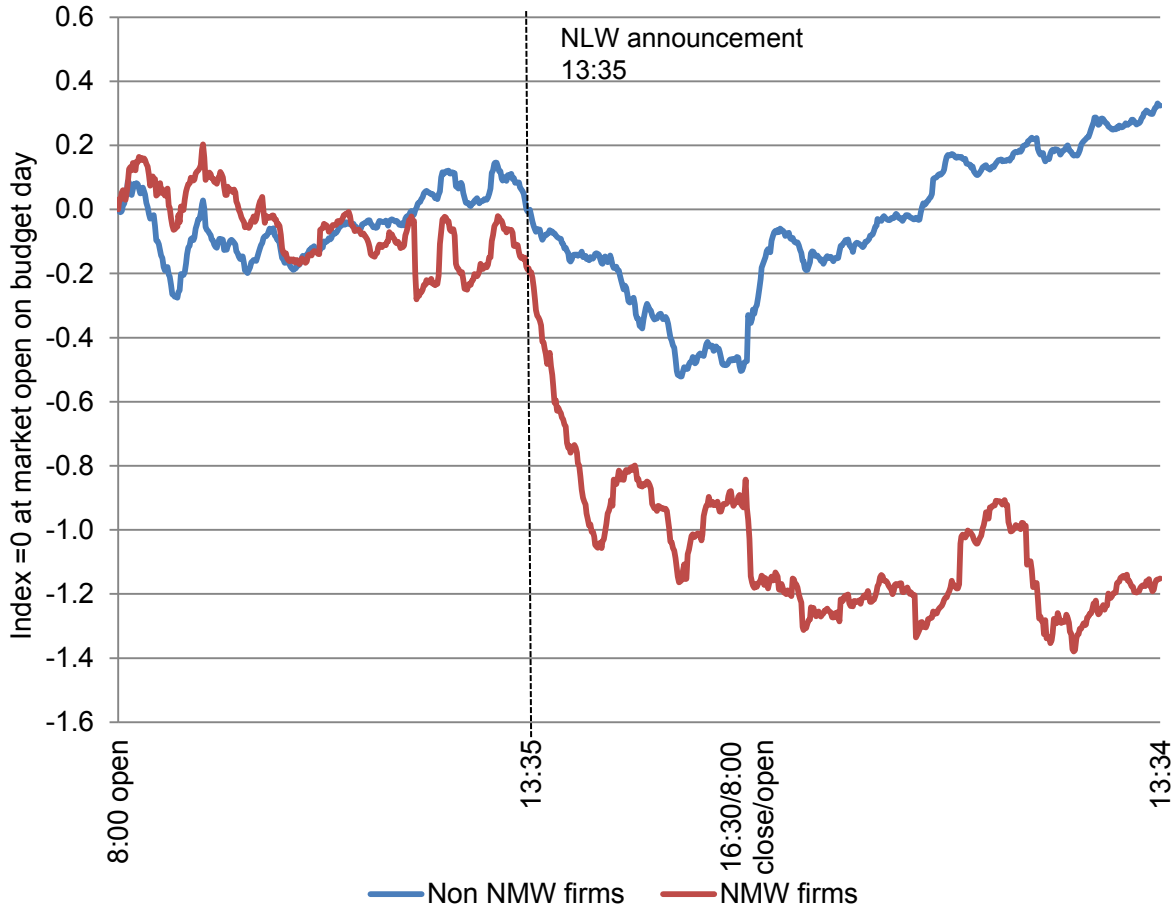
	Index	Quarter 2		Quarter 3	
		2014-2015	2015-2016	2014-2015	2015-2016
CPI	**All items**	0.0	0.3	0.0	0.8
	Restaurants & cafes	1.8	2.2	1.6	2.4
	Canteens	-1.0	1.4	-1.1	1.6
	Cleaning, repair and hire of clothing	2.6	2.2	2.1	2.4
	Domestic and household services	3.0	3.7	3.5	3.3
	Hairdressing	1.7	2.0	1.9	2.2
RPI	**All items**	1.0	1.4	0.9	1.9
	All items exc. mortgage interest payments	1.0	1.6	1.0	2.0
	Restaurant meals	1.7	2.2	1.4	2.4
	Canteen meals	-0.8	1.5	-0.8	1.7
	Take-aways and snacks	2.2	1.9	1.9	2.0
	Beer on sales	1.9	2.2	1.7	2.3
	Wine & spirits on sales	2.2	3.0	2.2	3.1
	Domestic services	3.2	3.1	3.4	3.1
	Personal services	2.1	3.1	2.0	3.3
SPPI	**Net sector**	0.5	1.2		
	Hotels	-3.6	-0.7		
	Canteens & catering	1.9	1.0		
	Employment agencies	-0.3	-1.2		
	Industrial cleaning	-0.9	2.0		
	Commercial washing & dry cleaning	1.1	1.0		

Source: LPC estimates based on ONS data: CPI all items (D7BT); restaurants and cafes (D7EW); canteens (D7EX); dry-cleaning, repair and hire of clothing (D7DM); domestic services and household services (D7E6); hairdressing and personal grooming establishments (D7EY); RPI all items (CHAW); restaurant meals (DOBE); canteen meals (DOBF); take-aways and snacks (DOBG); beer on sales (DOBI); wine and spirits on sales (DOBL); domestic services (DOCI); personal services (DOCR); SPPI aggregate net sector SIC 2003 basis (I5RX) and SIC 2007 basis (K8ZW); hotels (K8TE); canteens and catering (K8TP); employment agencies (K8XZ); industrial cleaning (K8YQ); commercial washing and dry cleaning (K8ZM), quarterly, not seasonally adjusted, UK, Q2 2014-Q3 2016.

2.159 After increasing prices, absorbing the increase in wage costs through lower profits was a response frequently reported by employers. Employee representatives also highlighted strong corporate profits as part of their evidence that both the introductory rate and future increases could be afforded. What limited data are available are too aggregated to discern any impact of the NLW.

2.160 However, an alternative indicator of profitability comes from the share price of listed firms. Bell and Machin (2016) utilized the surprise announcement of the introduction of the NLW to investigate the change in share prices of firms which employed a significant number of NMW workers compared with those that did not. They found that within a day of the announcement the value of shares in firms with more minimum wage workers were 1.2 per cent lower, stabilising at around 2 to 3 per cent lower after five days. The research compared this response with the estimated change in profitability for the firms from the increased wage cost, and found these adjustments to be of a similar magnitude.

Figure 2.26: Share prices of NMW and non NMW firms, 8-9 July 2015



Source: Bell and Machin (2016) Minimum Wages and Firm Value, Journal of Labor Economics, forthcoming.

2.161 Related to profit levels are broader measures like the level of investment in the economy and in low-paying sectors, such as retail and hospitality, in particular. Overall, as Chapter 1 showed, investment slowed in 2015, and fell slightly in the last quarter of 2015 and the first quarter of 2016. However, it then recovered slightly in the second quarter of 2016, such that investment was 1 per cent higher than the same time the previous year. Within this overall pattern, business investment fell, offset by increases in government investment, and investment in dwellings. This was notably the case too for investment within hotels and restaurants – which saw very strong growth in 2013 and 2014, but have since slowed, and decreased in the latest quarter, compared with the same period a year ago.

2.162 A critical response to the NLW is, of course, productivity. Here, again as Chapter 1 set out, the trend across the whole economy has been sluggish growth, with productivity well below the levels if the pre-recession trend had continued. However, the service sector performed slightly better in the latest data (up to the second quarter of 2016), with growth of 2.5 per cent, rather than 0.9 per cent for the whole economy. Within this, retail, and hotels and restaurants – sectors with large numbers of NLW workers – have seen very different trends in productivity recently. In particular, productivity in retail has been improving since 2013, growing at 4.5 per cent in the last year, whereas productivity in hotels and restaurants is not back to pre-recession levels, although it grew by 2.9 per cent in the last year. Overall, it is difficult to separate out any NLW impacts from broader structural trends, with (for example) retail increasing output in response to competition and the rise of the internet, and hospitality beginning to be subject to automation.

2.163 The last response to the NLW is an increase in firms leaving the market, or a decrease in the number of firms entering the market, which will materialise through the net stock of firms in the economy. The latest data available are only to 2014. However, we do have more up-to-date information on insolvencies. The data for the first quarter of 2016 show an increase in the number of insolvencies in low-paying sectors as a whole, including in retail, hospitality and cleaning. However, the same trend was apparent across the whole economy, making any potential impact of the NLW unclear.

2.164 Overall, competitiveness is the area of impact where it is most challenging to assess NLW effects – especially to separate them out from wider noise in the economy. Analysis above suggests that prices of minimum wage goods and services have increased, productivity is little changed and there has been a slight uptick in insolvencies but not out of line with broader trends in Chapter 1 which noted a slight softening in key indicators.

Conclusion

2.165 The introduction of the NLW in April was a step change in UK minimum wage policy. Employee representatives told us that a significant number and range of workers had benefited from the increase in pay, including workers earning above the NLW and some aged under 25. They welcomed the objective of a higher pay floor, but wanted a higher target, or closer links to the level of the Living Wage. They reported little evidence of an impact on jobs, and pointed to evidence of high profits to show the affordability of the NLW.

2.166 Some employer representatives reported significant challenges from implementing the introductory rate, with others more concerned about the future rate of increases. Surveys suggest that between a third and a half of employers had seen higher wage bills following the NLW. Affected employers reported significant changes in pay, in particular, ripple effects of the NLW up the distribution, coupled with some squeezing of differentials. Some also made changes to reduce shift pay, overtime, bonuses or other benefits; however, neither employer or employee representatives reported an increase in non-compliance. Increasing prices, and absorbing the cost through decreased profits were the most common responses. Firms had discussed intentions to raise productivity in the run up to the introduction of the £7.20 rate; however, in the event, a smaller number of employers actually made productivity improvements.

2.167 The scale of employment effects was harder to establish. Stakeholders reported, and surveys showed, that some firms had offered fewer hours or jobs than they would have in the absence of the NLW – most commonly through cutting hours or slowing recruitment, with a minority making redundancies. The effect was particularly pronounced in convenience stores, and horticulture. However, the data did not establish the number of jobs or hours affected.

2.168 Looking ahead to 2020, firms were less sure of how they would accommodate the NLW. Many noted further pressure on differentials, and consequent challenges for ensuring staff were motivated and had incentives to progress. Productivity increases were seen as a key response by many employers, although some of these improvements could reduce employment, and firms reported more pressure on employment levels towards 2020. Employee representatives argued that stronger employee involvement would help realise improvements in productivity.

2.169 Our analysis of the NLW rate reaffirms its significant impact – with many workers benefiting from higher pay, and challenges for business in accommodating it. The main minimum wage rate is now at its highest level ever in real terms, having peaked in 2007 against CPI, and in 2009 against RPI. For a typical minimum wage worker (working 26 hours a week) this means an increase in gross annual pay of £680, £590 adjusted for CPI, or £390 on top of what workers would have received through average earnings growth.

2.170 This increase has led to substantial gains in pay at the bottom of the hourly wage distribution, as well as increases in the bite and coverage of the NLW.

2.171 The bite of the NLW was 56.4 per cent in April – a significant increase on the April 2015 level of 52.5 per cent. We estimate it will be 55.8 per cent in October 2016, the point at which progress towards the 2020 target is measured. The average disguises significant variation between different areas of the labour market. Four regions and two nations may already have a bite of over 60 per cent in October 2016. By 2020, the bite will be above 60 per cent in all regions apart from London and the South East. The bite is higher for smaller firms, already at over 70 per cent in micro firms. The bite in each low-paying sector is already over 70 per cent, with a bite of over 90 per cent in hospitality and cleaning.

2.172 Coverage has also sharply increased – in April 2016, 1.6 million, or 6.7 per cent of workers were covered by the NLW. This could rise again to nearly 3 million workers by 2020. Coverage is higher for part-time workers with one in seven of those covered by the introductory NLW rate, compared with one in twenty five full-time workers. Women, disabled workers, those without qualifications, those aged 65 and over, and 25-29 year olds are also more likely to be covered by the NLW than other groups in the labour market. In low-paying sectors – such as cleaning, hairdressing and hospitality – more than a quarter of the workforce aged 25 and over was paid at the NLW in April.

2.173 Changes in the hourly pay distribution indicate that ripple effects from the NLW reach up to the 25th percentile of the hourly earnings distribution, or workers earning up to around £9 per hour. Average growth across the bottom quartile was 6 per cent. Women and part-time workers benefited particularly – with the average growth across the bottom quartile of 6.3 per cent and 8.0 per cent respectively. Growth in hourly wages was fairly flat across the rest of the distribution at around 3 per cent. Workers aged under 25, although not eligible for the NLW, have also benefited from its introduction – we estimate that up to an additional 7 per cent of 16 to 24 year old workers were lifted to the NLW or above on introduction. However, these ripple effects have been accompanied by some squeezing of differentials. This effect varied across sectors, with the greatest effects seen in office work and storage. Although stakeholder evidence highlighted some cases of pay consolidation, our analysis of the aggregate data does not yet find significant changes in the use of shift premium pay and overtime in the last year.

2.174 In April 2016, 306,000 workers aged 25 and over were estimated to be paid below the NLW – this is 1.3 per cent of all workers aged 25 and over, or 19 per cent of those covered by the NLW. This compares to 158,000 workers aged 25 and over, 15 per cent of NMW coverage for the cohort, who were underpaid in April 2015. We judge that a lot of this increase could be temporary non-compliance as some employers are slow to respond to the new rates, but nonetheless this remains concerning.

2.175 The initial data do not show clear evidence of NLW effects on employment and hours – though impacts need to be assessed over an extended period before definitive conclusions can be drawn. Employment in low-paying sectors grew at the same pace as the rest of the economy to June 2016, although there were falls in some NLW-exposed sectors, such as cleaning and social care. Employee jobs continued to grow in low-paying sectors, albeit at a slower pace than in recent years and slower than in non low-paying sectors. Some industries – domiciliary care and childcare, hairdressing and agriculture – saw declines in the number of employee jobs over the last year. On the other hand, many other low-paying sectors saw strong growth, such as residential care (3.1 per cent) and food processing (2.3 per cent). Within micro firms employment has shrunk and hours have only grown very weakly in the last year, whereas all other firm sizes have seen growth. Groups of workers most likely to be on the NLW have had strong performance in the labour market over the last year.

2.176 Stakeholders and research evidence discussed the impact of the NLW on competitiveness – particularly prices and profits. However, timely and specific data on this are limited. We find that over the last year prices of minimum wage goods have increased more rapidly than the main inflation indices – which could reflect higher wage costs, or other factors. We will continue to monitor these pressures.

Chapter 3
Young people

Introduction

3.1 This chapter considers the earnings and labour market position of young people aged 16-24. In our Spring 2016 Report we recommended relatively large increases in the youth rates – the biggest since the recession. But these only came into force in October 2016, and the data are not yet available to make an assessment of their effects. The focus here is on the period up to the middle of 2016, during which the October 2015 rates were in place: £3.87 for 16-17 year olds and £5.30 for 18-20 year olds. Those aged 21-24 were entitled to the then adult rate of the minimum wage, £6.70 – applicable for workers aged 21 and over until April 2016, when the National Living Wage (NLW) was introduced for workers aged 25 and over. The chapter seeks to assess whether there is any evidence that these minimum wages affected the employment prospects of young people.

3.2 A key uncertainty this year is the impact of the NLW on younger workers, which has theoretically ambiguous effects. In evidence to us, some stakeholders said they had decided to pay the NLW to all employees, irrespective of age. This was reflected in some of the data considered in Chapter 2 and in research on residential care homes in England, which found evidence of positive spillover effects on the wages of care assistants aged under 25 (Giupponi, Lindner, Manning and Machin, 2016). Significant proportions of 16-24 year olds receiving the NLW would be expected to boost the median pay of young workers, and reduce the bite and coverage of the youth rates. However, it could also reduce youth employment were some employers to target future recruitment at older workers in consideration of the higher pay (although the research cited above has so far found no significant impact on the employment of care assistants). More generally, job opportunities may be fewer in number if the higher pay of the NLW deters employers from taking on more staff or reduces job exits among older workers.

3.3 Conversely, we also received evidence of employers paying younger workers less than the NLW. This raises a countervailing risk that there may be job (or hours) losses for older workers as employers substitute downwards towards younger workers. The future level of the youth rates influences the effects of the NLW. A large gap between the youth rates and the NLW implies lower relative pay, but encourages downward substitution; a smaller gap improves the reward to young workers, but may encourage upward substitution.

3.4 In order to explore these potential impacts, this chapter contrasts the experiences of those aged 16-24 with the experiences of those aged 25-30 – the youngest part of the NLW cohort. It considers whether younger workers, particularly 21-24 year olds, have fared better or worse in the labour market than slightly older workers. And it monitors the age distribution within the key sectors employing young people for any evidence of substitution in either direction.

3.5 The major constraints in carrying out this analysis are the time lags for the policy to take effect, for employers and workers to respond and for any changes to be captured in data. These mean it is likely too soon to identify any significant changes to young workers' employment share following the introduction of the NLW, though we may pick up any changes since its announcement. It is also the case that we have little data relating to the period after the referendum decision in June to leave the European Union (EU).

3.6 Conversely, pay data – which relate to April 2016 – will capture introductory effects of the NLW, with the policy potentially affecting wage growth right up to the median for younger workers, to the extent that some younger workers receive the NLW.

3.7 Overall, the main basis for our recommendations remains labour market performance and wider changes in the economy since our last report. Our broad conclusion is that pay and employment performance has been strong, subject to the important caveats that the data neither fully captures NLW effects, effects from the 2015 upratings, nor any impact from the decision to leave the EU.

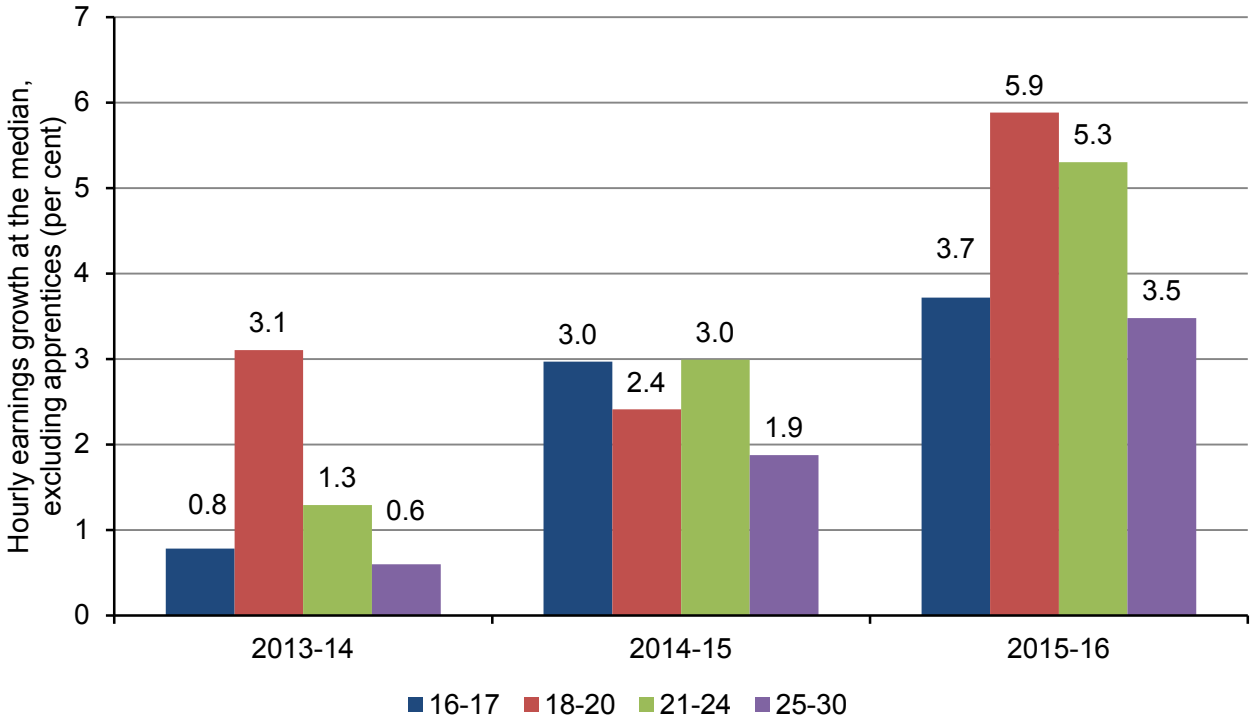
Young peoples' earnings

Earnings growth

3.8 We start by looking at earnings growth for young people, using the latest earnings data from the April 2016 Annual Survey of Hours and Earnings (ASHE). We focus on young workers excluding apprentices to provide a guide to the affordability of increases in the minimum wages for young people.

3.9 Figure 3.1 shows that young people saw very strong earnings growth at the median in the year to April 2016, exceeding that of older workers. Median hourly earnings for non-apprentice workers grew most strongly for 18-20 year olds (5.9 per cent) and 21-24 year olds (5.3 per cent). Their counterparts aged 16-17 saw slightly lower median hourly earnings growth (3.7 per cent), but this exceeded growth for 25-30 year olds (3.5 per cent).

Figure 3.1: Hourly earnings growth at the median, by age, UK, 2013-2016



Source: LPC estimates using ASHE, April 2013-16, standard weights, including those not on adult rates of pay, excluding apprentices, UK.

3.10 To look at trends over time we have to use data which include apprentices, as it was not possible to identify apprentices in ASHE prior to 2013. On this basis, 18-20 year olds' median hourly earnings growth, at 6.8 per cent, was the highest since 1999, and 21-24 year olds' earnings growth, at 5.2 per cent, was the highest growth since 2001. Median earnings growth for 16-17 year olds, at 3.3 per cent, was the strongest growth since 2006, while growth for 25-30 year olds, at 3.3 per cent, was the highest since 2009.

3.11 The high earnings growth at the median appears to be directly related to the NLW, most evidently for 18-20 year olds. In April 2015, hourly pay for 18-20 year olds was £6.80, at the middle of the earnings distribution (ten pence above the adult rate of the NMW) and in 2016 pay at the median was lifted to £7.20 (the NLW). Among 16-17 year olds, the effects were further up the distribution: the adult rate of the NMW covered those at the 75th percentile in 2015 and earnings growth here was 9.1 per cent, rising from £6.60 (ten pence below the adult rate) to £7.20. Among 21-24 year olds, the NLW covered those nearer the bottom, at the 17th percentile. Hourly pay here increased by 7.5 per cent in April 2016, from £6.70 (the adult rate in April 2015).

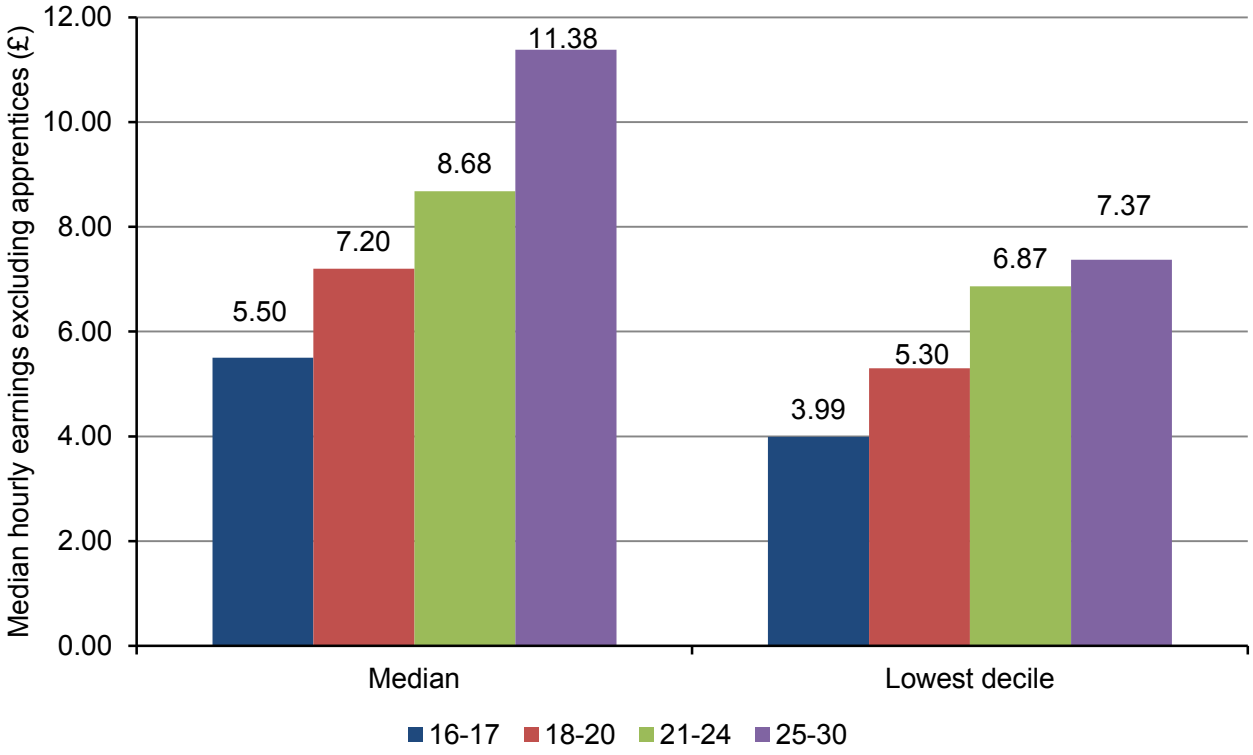
3.12 In addition, the NLW is likely to have exerted an effect on young people's earnings more generally. A very high proportion work in low-paying sectors – where many workers aged 25 and over would be eligible for the NLW. It is likely that some employers sought to implement pay increases across the board, maintaining the existing differentials to some extent.

3.13 Despite higher median earnings growth for young people, the level of their earnings remained considerably below that of older workers, likely reflecting their relative lack of experience. Figure 3.2 shows that in April 2016 median hourly pay for 16-17 year olds was £5.50 an hour (£5.30 including apprentices), compared with £7.20 for 18-20 year olds (£7.17 including apprentices), £8.68 for 21-24 year olds (£8.63 including apprentices) and £11.38 for 25-30 year olds. In other words,

16-17 year olds earn under half the pay of 25-30 year olds at the median; 18-20 year olds earn about two-thirds; and 21-24 year olds earn about three-quarters.

3.14 Given the debate about the appropriateness of a separate pay floor for 21-24 year olds, it is notable that, at the median, hourly pay for 21-24 year olds was much closer to 18-20 year olds than to 25-30 year olds (a difference of £1.48 and £2.70 respectively). While the bottom of the earnings distribution presents a different picture (hourly pay of 21-24 year olds was just 50 pence below that of 25-30 year olds) this largely reflects the existing relativities of the minimum wage, with all ages paid close to their applicable minimum wage rate.

Figure 3.2: Hourly earnings, by age, UK, 2016



Source: LPC estimates using ASHE, April 2016, standard weights, including those not on adult rates of pay, excluding apprentices, UK.

Bite of the youth rates

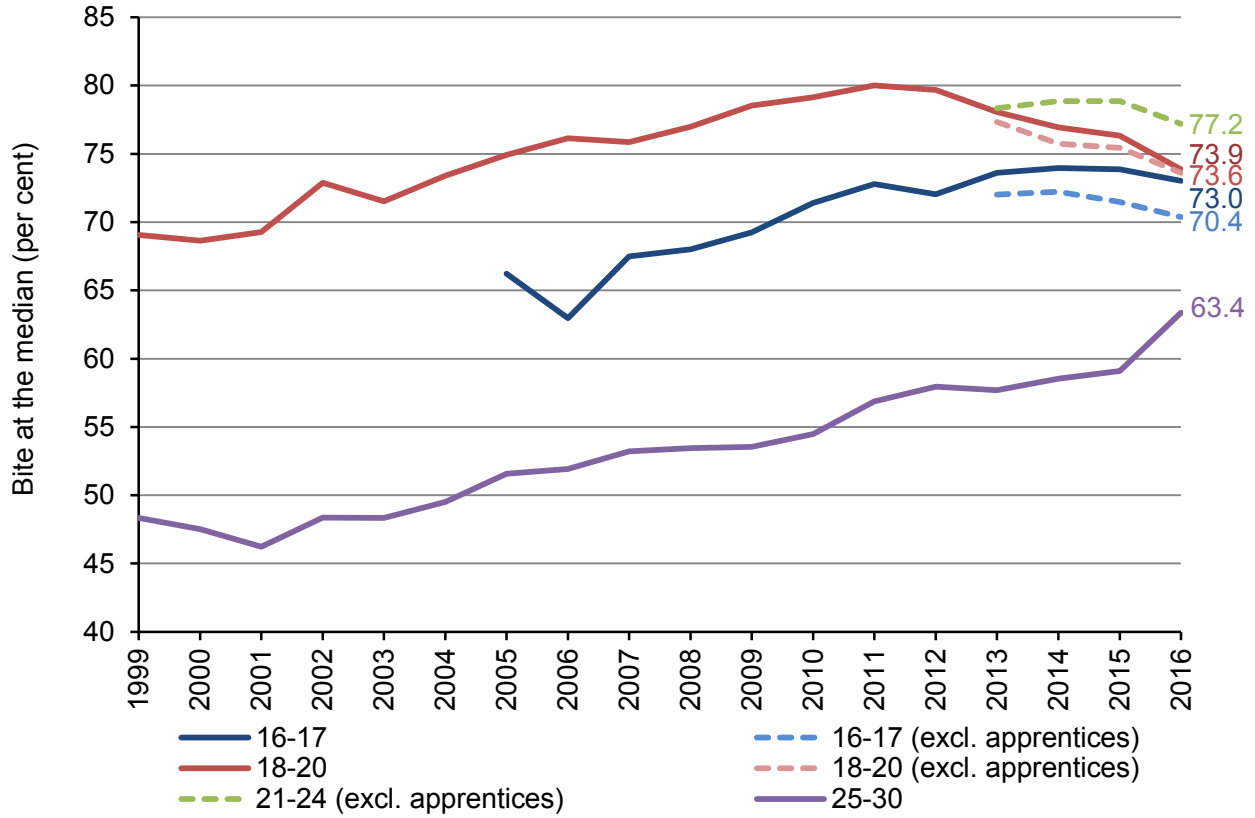
3.15 Alongside monitoring earnings growth, and the current level of hourly earnings, we monitor the bite of the minimum wage – the minimum wage relative to a measure of earnings, usually the median, so an indicator of pay compression. In the past, a rising or high bite has tended to encourage greater caution in our recommendations for increases in the level of the pay floor, on the basis that it may indicate that employers are struggling to pay very much above the minimum. This year, the exceptionally high earnings growth experienced by young workers meant that the bite of the age-applicable minimum wage fell in April 2016 for young workers, but rose for workers aged 25-30, who were covered for the first time by the NLW.

3.16 Figure 3.3 shows the bite time series from 1999, data which include apprentices and workers. For 16-20 year olds it also shows data for workers only – but for a shorter time series (dotted lines). The broad picture is that, reflecting young people's generally lower earnings, the bite has previously been higher for young workers than for older workers. It has been well above the

Government's 2020 target for workers aged 25 and over, of 60 per cent of average earnings (for example, it has previously been consistently over 75 per cent for 18-20 year olds and 21-24 year olds). It has generally risen over time – reflecting the fact that increases in the minimum wage exceeded average earnings growth in the period up to the immediate aftermath of the recession – albeit with a more complex pattern since 2012.

3.17 In the year to April 2016 however, the bite fell significantly for 16-17 year old non-apprentice workers (down 1.1 percentage points to 70.4 per cent) and their counterparts aged 18-20 (down 1.8 percentage points to 73.6 per cent). The bite for 21-24 year olds also fell (down 1.7 percentage points to 77.2 per cent). We showed in our Spring 2016 Report that 25-30 year olds had the lowest pay of the groups covered by the NLW, so we expected their bite to increase in 2016. As anticipated, the bite for 25-30 year olds (including apprentices) increased sharply by 4.3 percentage points between April 2015 and 2016 – from 59.1 per cent to 63.4 per cent – reflecting the significant increase in their pay floor. Despite this increase, their bite is still around 7 to 10 percentage points below the bites for 16-17 year olds and 18-20 year olds respectively.

Figure 3.3: Bite of the National Minimum Wage at the median of the hourly earnings distribution, by age, UK, 1999-2016

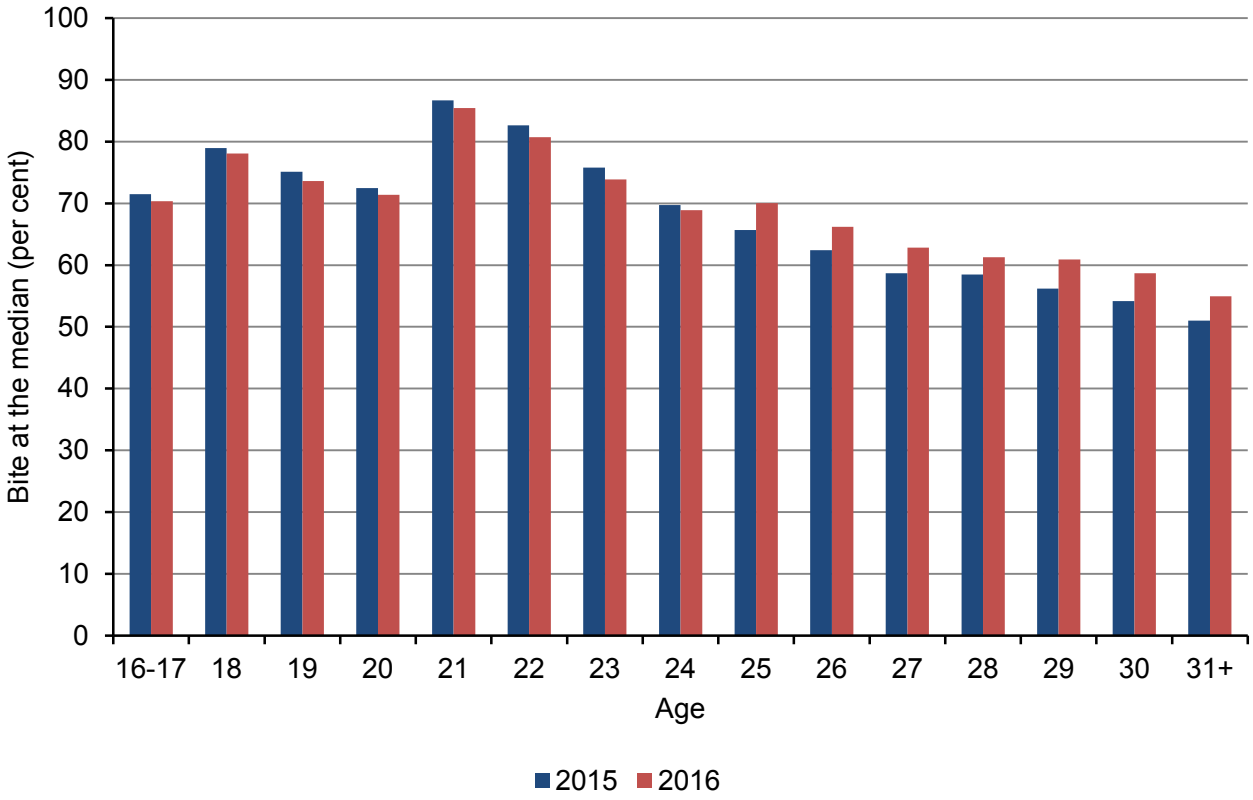


Source: LPC estimates using ASHE: without supplementary information, April 1999-2003; with supplementary information, April 2004-05; 2007 methodology, April 2006-10; and 2010 Methodology, April 2011-16, standard weights, including those not on adult rates of pay, UK.
Notes:

a. Earnings data are adjusted for a consistent time series.
b. Data include apprentices.

3.18 Despite the recent falls, the bite remains high for young workers. Looking by single year of age, Figure 3.4 shows that the bite of the 21-24 Year Old Rate (£6.70) in April 2016 – ahead of the October 2016 increase to £6.95 – was highest for 21 year olds (85.4 per cent) and 22 year olds (80.7 per cent), reflecting their relatively low median earnings (£7.84 and £8.30 respectively). Median pay was much higher for 25 year olds, at £10.28 an hour, such that their bite, at 70.4 per cent, remained below that of younger workers despite the higher wage floor of the NLW. However, their bite increased by 4.4 percentage points over the year and was just 0.4 percentage points below the bite for 16-17 year olds (70.4 per cent).

Figure 3.4: Bite of the National Minimum Wage at the median of the hourly earnings distribution, by single year of age, UK, 2016

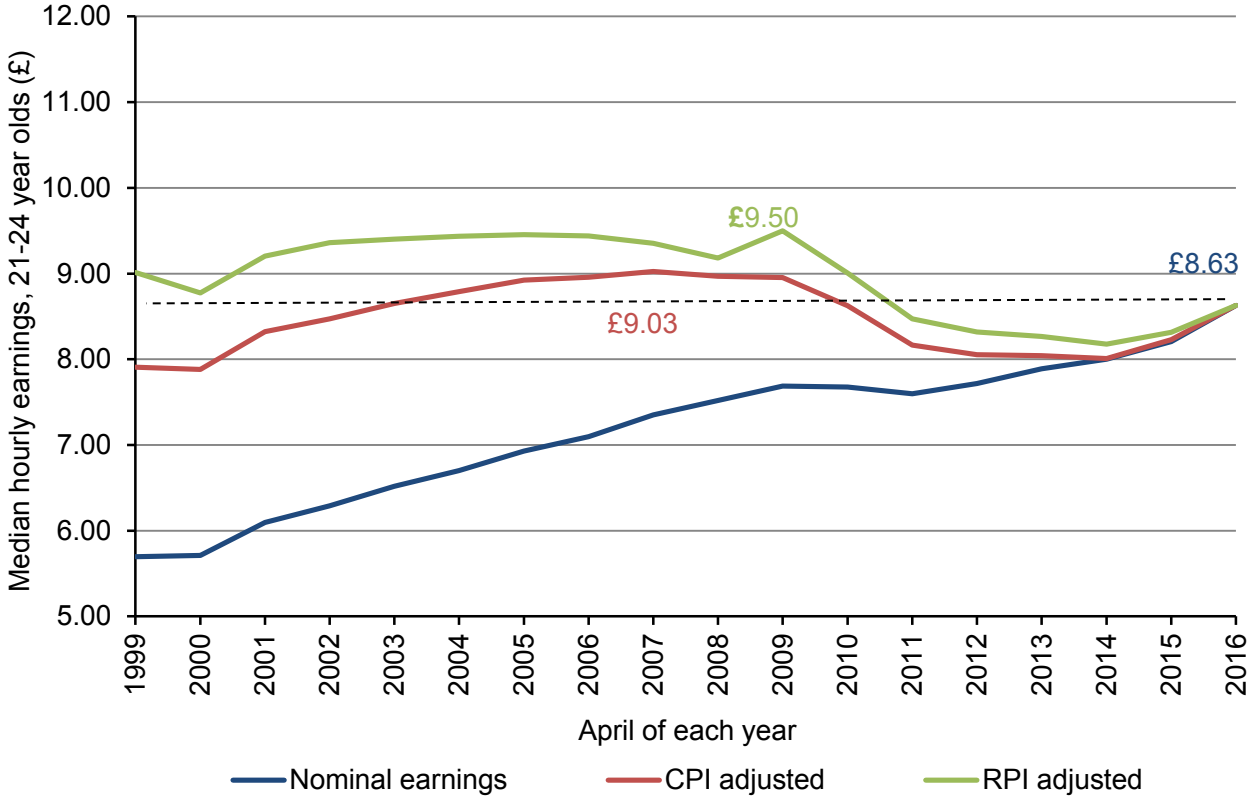


Source: LPC estimates using ASHE, April 2015-16, standard weights, including those not on adult rates of pay, excluding apprentices, UK.

Real wages

3.19 As with nominal pay growth, young people's earnings have improved when adjusted for inflation, with all three groups of young workers seeing substantial real growth in their hourly earnings over the year. Figure 3.5 shows that 21-24 year olds' real hourly earnings, measured including apprentices, grew by 40 pence (4.9 per cent) over the year using CPI inflation and by 32 pence (3.8 per cent) using RPI inflation, compared with nominal growth of 42 pence (5.2 per cent). However, real pay levels remained significantly short of their peak values, reflecting declines in the course and aftermath of the recession. Their hourly pay remains lower by 87 pence (10.1 per cent) compared with their peak value on RPI (£9.50 in 2009), and lower by 40 pence (4.6 per cent) compared with their CPI peak in 2007 (£9.03).

Figure 3.5: Nominal and real level of median earnings for 21-24 year olds, by price index, UK, 1999-2016

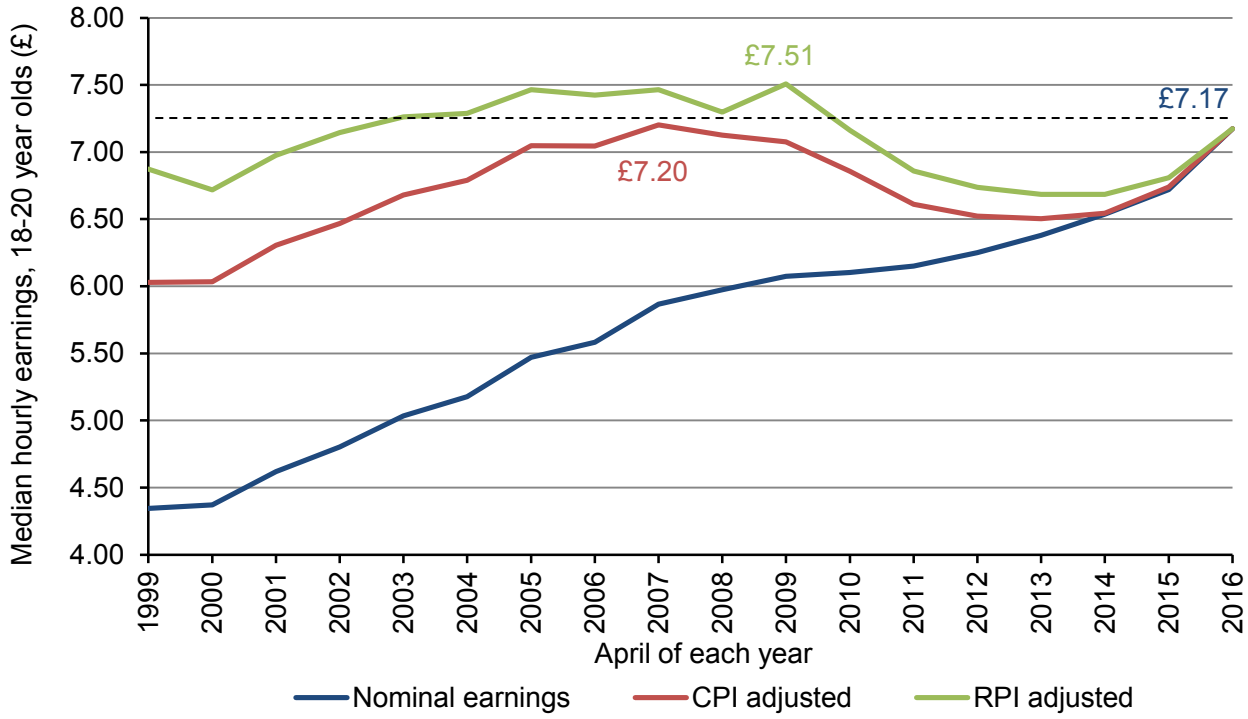


Source: LPC estimates using ONS data, CPI (D7BT) and RPI (CHAW), April 1999-2016, monthly, and ASHE: without supplementary information, April 1999-2003; with supplementary information, April 2004-05; 2007 methodology, April 2006-10; and 2010 Methodology, April 2011-16, standard weights, including those not on adult rates of pay, UK.
Notes:

a. Earnings data are adjusted for a consistent time series.
b. Data include apprentices.

3.20 Real pay gains were even greater for 18-20 year olds (including apprentices). Figure 3.6 shows that their median hourly earnings, which saw nominal growth of 45 pence (6.8 per cent), were only slightly reduced when adjusted for inflation. Using CPI inflation they grew by 43 pence (6.4 per cent), and were just 3 pence (0.4 per cent) short of their pre-recession peak in 2007 (£7.20). Their real earnings growth was slightly lower using RPI, rising by 37 pence (5.4 per cent) an hour over the year and they remained 33 pence (4.6 per cent) below their peak value in 2009 (£7.51) on this measure.

Figure 3.6: Nominal and real level of median earnings for 18-20 year olds, by price index, UK, 1999-2016

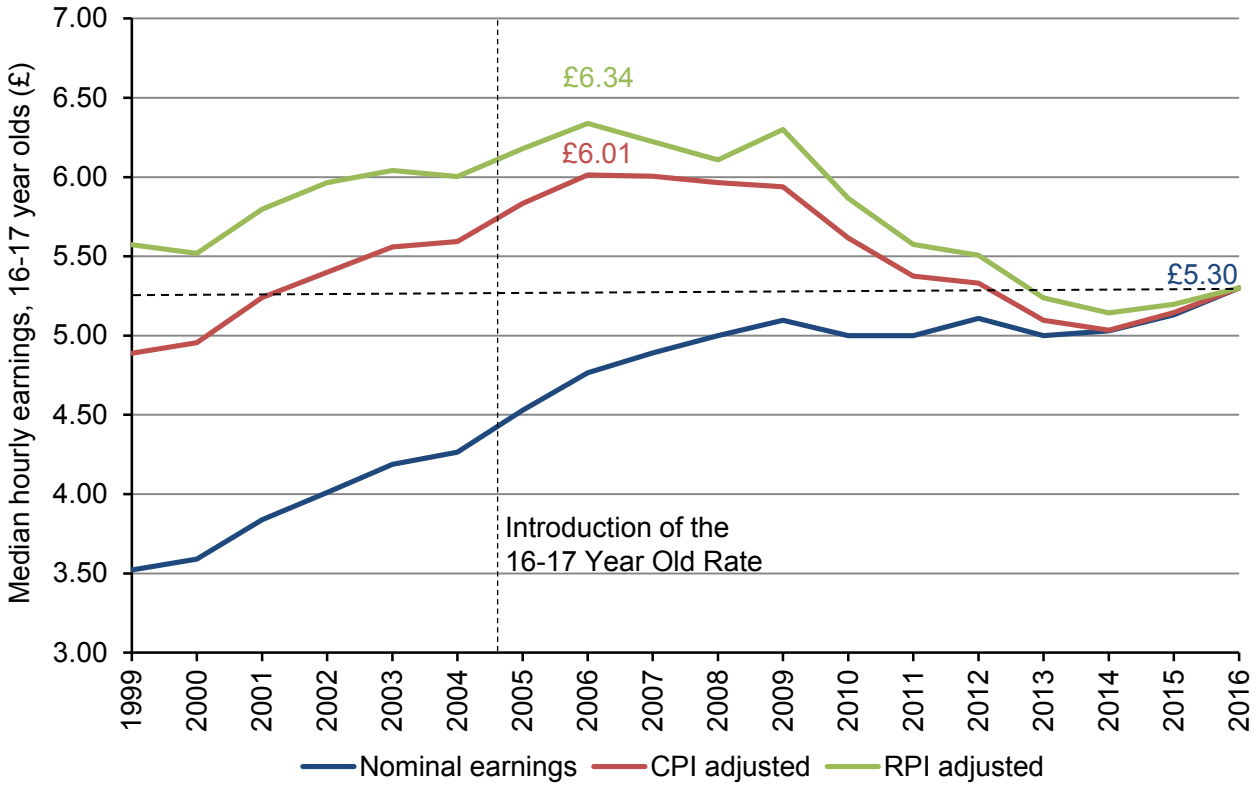


Source: LPC estimates using ONS data, CPI (D7BT) and RPI (CHAW), April 1999-2016, monthly, and ASHE: without supplementary information, April 1999-2003; with supplementary information, April 2004-05; 2007 methodology, April 2006-10; and 2010 Methodology, April 2011-16, standard weights, including those not on adult rates of pay, UK.
Notes:

a. Earnings data are adjusted for a consistent time series.
b. Data include apprentices.

3.21 Hourly earnings growth was lower for 16-17 year olds, but they also saw continued real growth – the second year in a row, following eight years of declines – with real growth only slightly below their nominal growth of 17 pence (3.3 per cent). Real hourly earnings grew by 15 pence (3.0 per cent) using CPI, but the level remained 71 pence (13.3 per cent) below its peak value in 2007 (£6.01). Earnings growth using RPI was lower, at 10 pence (2.0 per cent), and the level remained £1.04 (19.6 per cent) below its peak value in 2006 (£6.34).

Figure 3.7: Nominal and real level of median earnings for 16-17 year olds, by price index, UK, 1999-2016



Source: LPC estimates using ONS data, CPI (D7BT) and RPI (CHAW), April 1999-2016, monthly, and ASHE: without supplementary information, April 1999-2003; with supplementary information, April 2004-05; 2007 methodology, April 2006-10; and 2010 Methodology, April 2011-16, standard weights, including those not on adult rates of pay, UK.

Notes:

a. Earnings data are adjusted for a consistent time series.
b. Data include apprentices.

Coverage of the rates

3.22 As well as earnings growth and the bite, we also monitor a further leading indicator of possible minimum wage 'stress': the number of jobs paid at or below the minimum wage. An increasing proportion of jobs paid at the minimum wage, or below it, could suggest that employers are struggling to afford the rate. The latest data shows that the level of underpayment remains flat for young workers (excluding apprentices), while the proportion of young workers paid at their applicable minimum wage fell over the year.

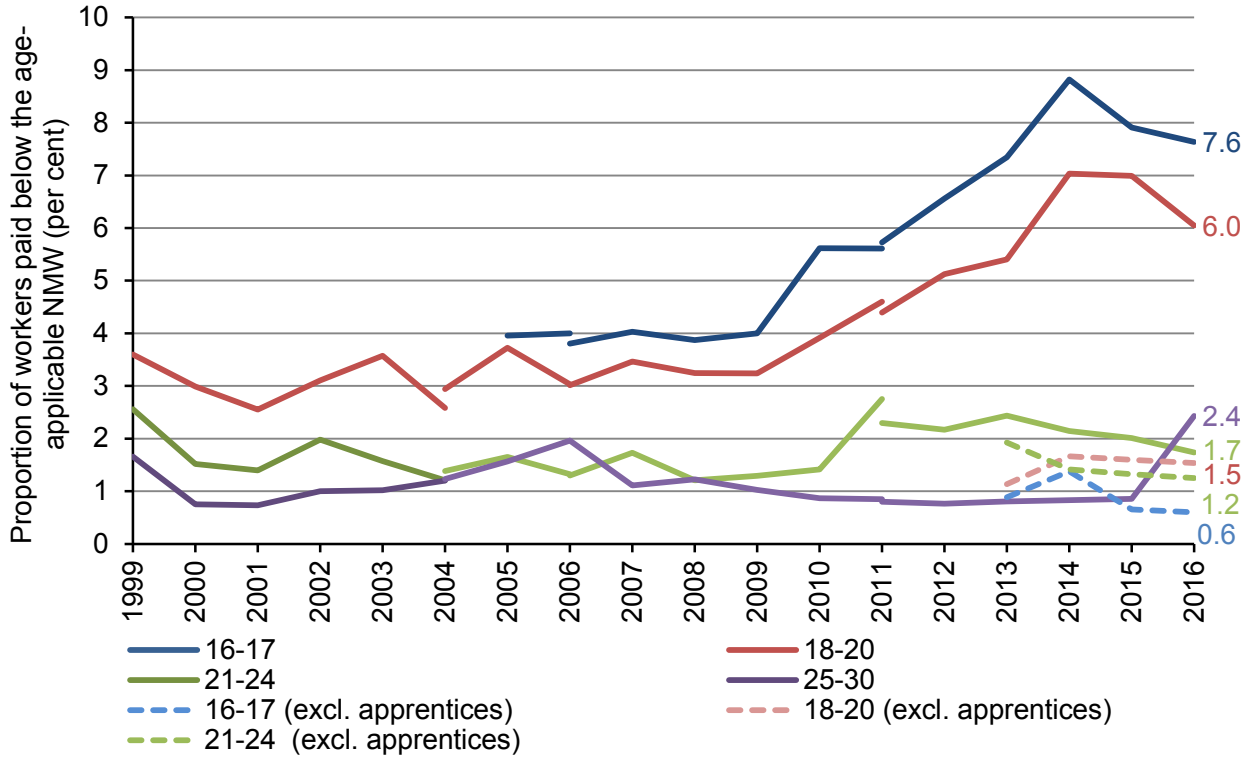
3.23 Figure 3.8 presents both the long-term and the short-term picture. It shows that the estimated proportion paid below their age-applicable rate was historically much higher for younger workers than for older workers. However, the estimate reduced considerably from 2013 once it became possible to identify, and exclude, apprentices (for whom the lower Apprentice Rate was applicable). In other words, much of the apparent underpayment for younger workers was a measurement effect.

3.24 Looking at the more recent picture, in April 2016 the proportions of young, non-apprentice workers, paid below their applicable minimum wage, were low measured as a proportion of the cohort, and stable or falling since 2014. Around 1,700 16-17 year olds (0.6 per cent) were paid below the 16-17 Year Old Rate, compared with around 1,900 (0.7 per cent) in April 2015. Among 18-20 year

olds, around 14,000 (1.5 per cent) were paid below the 18-20 Year Old Rate in April 2016, compared with around 15,000 (1.6 per cent) in 2015. Among 21-24 year olds, around 24,000 (1.2 per cent) were paid below the relevant rate in 2016, compared with around 26,000 (1.3 per cent) in 2015. By contrast, underpayment rose sharply for 25-30 year olds in April 2016 – from around 33,000 (0.9 per cent) to just under 94,000 (2.4 per cent) – following the introduction of the NLW.

3.25 As discussed in Chapter 2, the increase in measured underpayment, for workers aged 25 and over, is partly due to the change in the cycle, with the April introduction of the NLW coinciding with the ASHE data collection period. As such, we judge that a lot of this increase is temporary non-compliance, with some employers slow to implement the new rates. For 2016, ONS undertook some work to identify cases where measured underpayment arose from the pay period straddling the ASHE reference date; where workers may have been paid at the applicable minimum wage throughout, but calculated hourly pay was less than £7.20 an hour across the entire period. If these workers are counted as compliant, underpayment for 25-30 year olds (including apprentices) falls from 94,000 (2.4 per cent) to just over 77,000 (2.0 per cent).

Figure 3.8: Percentage of workers paid below their applicable minimum wage, by age, UK, 1999-2016



Source: LPC estimates using ASHE: without supplementary information, April 1999-2003; with supplementary information, April 2004-05; 2007 methodology, April 2006-10; and 2010 Methodology, April 2011-16, low pay weights, including those not on adult rates of pay, UK.
Notes:

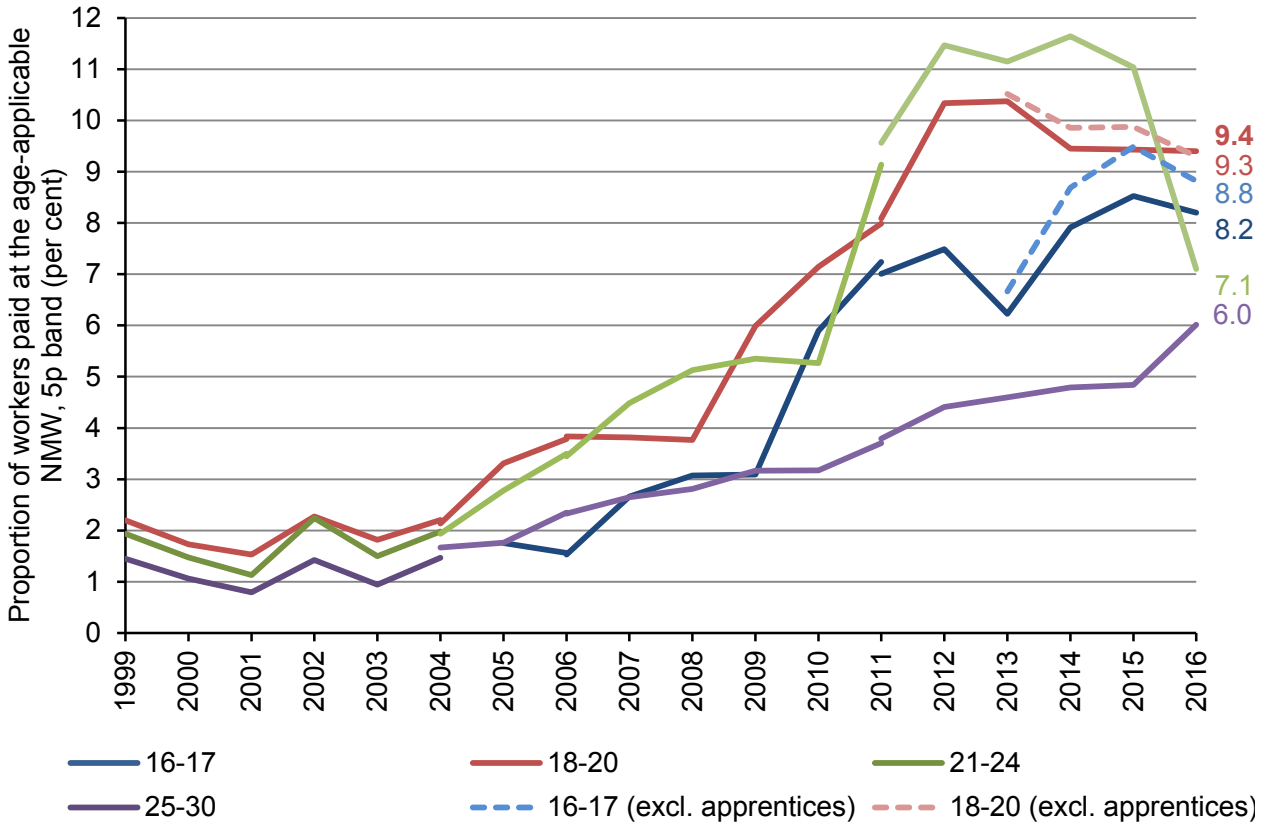
a. Direct comparisons before and after 2004, 2006 and 2011 should be made with care due to changes in the data series.
b. Data include apprentices unless specified.

3.26 The absolute level of underpayment is higher if we measure it as a proportion of those covered by the rates (those paid at or below). On this measure, underpayment for 16-17 year olds was 6.4 per cent in 2016, accounting for one in fifteen of those covered, similar to the proportion in April 2015 (6.5 per cent). It was higher, accounting for around one in seven (14.2 per cent) 18-20 year olds covered in April 2016, up slightly from 13.9 per cent in April 2015 (although the apparent

increase reflected a fall in the number paid at the 18-20 Year Old Rate, such that those paid below accounted for a larger proportion of those covered). Among 21-24 year olds, around one in seven (15.1 per cent) of those covered by the 21-24 Year Old Rate were paid below the rate in April 2016, up from 10.6 per cent in 2015 (again, reflecting a fall in the number paid at the 21-24 Year Old Rate).

3.27 Turning to use of the rates, Figure 3.9 shows the proportion of workers paid at their age-applicable rate. Historically, a much larger proportion of young workers have been covered by the rates than older workers, and coverage has increased steeply over time, reflecting stagnating median wages. However, coverage fell in the year to April 2016 for all three groups of young people, including falling by around a third – or 3.9 percentage points – for 21-24 year olds (from 11.0 per cent to 7.1 per cent). The fall was more modest for 18-20 year olds, at 0.6 percentage points (9.9 per cent to 9.3 per cent), and 16-17 year olds, at 0.7 percentage points (9.5 per cent to 8.8 per cent). As expected, given the introduction of the NLW, coverage increased for 25-30 year olds (from 4.8 per cent to 6.0 per cent). In terms of the numbers of workers affected, around 25,000 16-17 year olds, 87,000 18-20 year olds and 137,000 21-24 year olds were paid at their respective age-applicable rates in April 2016.

Figure 3.9: Percentage of workers paid at their applicable minimum wage, by age, UK, 1999-2016



Source: LPC estimates using ASHE: without supplementary information, April 1999-2003; with supplementary information, April 2004-05; 2007 methodology, April 2006-10; and 2010 Methodology, April 2011-16, low pay weights, including those not on adult rates of pay, UK.
Notes:

a. Based on a 5p band.
b. Direct comparisons before and after 2004, 2006 and 2011 should be made with care due to changes in the data series.
c. Data include apprentices unless specified.

3.28 Together, the falling proportion of young workers paid at or below their age rates give no clear indication that employers, on average, were struggling to afford the rates in April 2016, though stakeholders in particular sectors have emphasised their importance.

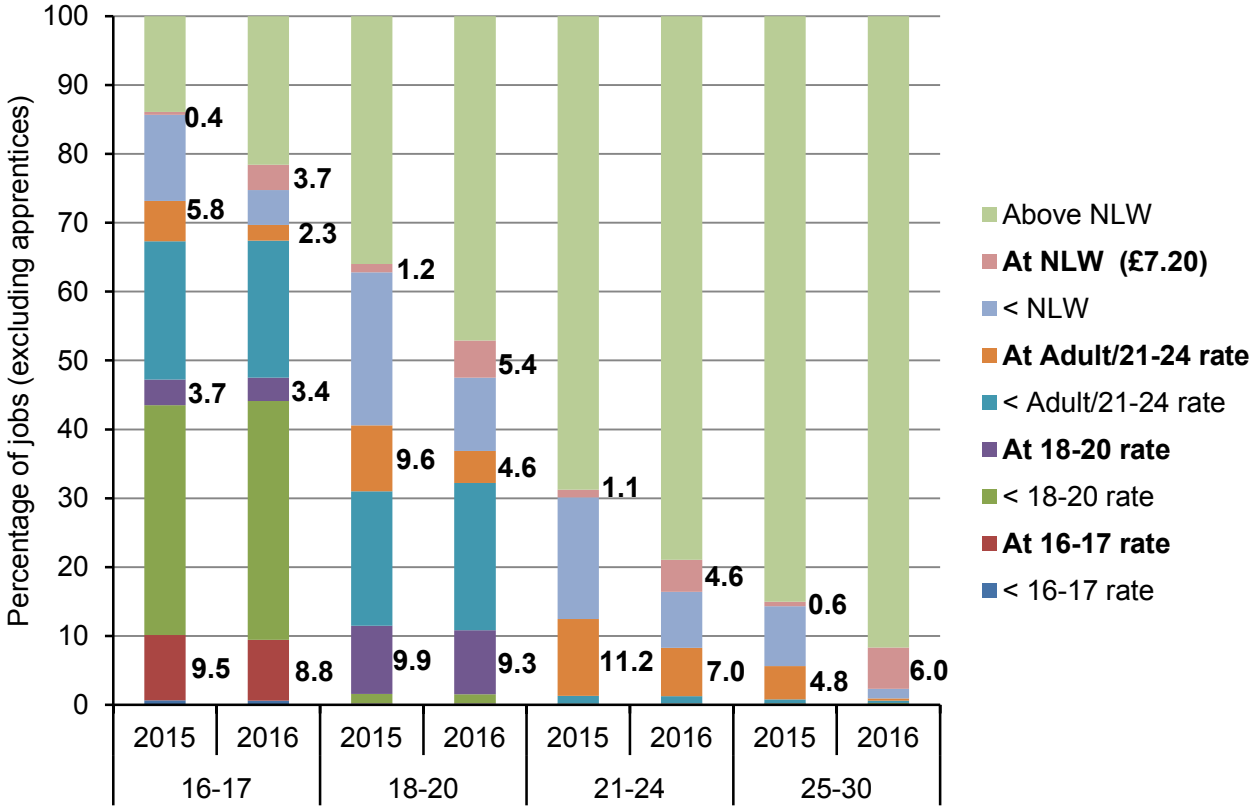
3.29 A related consideration is the degree to which employers are using the youth rates generally to pay young workers; for example, using the 18-20 Year Old Rate, 21-24 Year Old Rate or NLW to pay 16-17 year olds.

3.30 In our last report we noted that in April 2015, young workers were more likely to be paid at another minimum wage above their age-applicable rate, than at their own age-applicable minimum wage rate. Figure 3.10 shows that this pattern remained true in 2016. Among 16-17 year olds, the proportion paid at the 16-17 Year Old Rate (8.8 per cent) was smaller than the combined proportion paid at the 18-20 Year Old Rate (3.4 per cent), 21-24 Year Old Rate (2.3 per cent) or NLW (3.7 per cent), with the latter three covering 9.3 per cent of jobs for 16-17 year olds. Among 18-20 year olds, the combined proportions paid at the 21-24 Year Old Rate (4.6 per cent) and NLW (5.4 per cent) exceeded the proportion paid at the 18-20 Year Old Rate (9.3 per cent).

3.31 However, use of any of the youth rates to pay workers fell in 2016 as the NLW lifted pay for younger workers: an effect arising either directly, for those paid at the NLW; or indirectly, by pulling up pay at the bottom of the earnings distribution. The data suggest that roughly half of youth jobs paid at the adult rate in 2015 moved to the NLW in 2016.

3.32 Among 21-24 year old workers, the fall in the proportion paid at the 21-24 Year Old Rate in April 2016, discussed above, coincided with a 3.5 percentage point increase in the proportion paid at the hourly rate of £7.20 (4.6 per cent), albeit that more were still paid at the 21-24 Year Old Rate (7.0 per cent). Among 18-20 year olds, the proportion paid at the applicable 21-24 Year Old Rate roughly halved (from 9.6 to 4.6 per cent), while the proportion paid an hourly rate of £7.20 increased from 1.2 per cent to 5.4 per cent. Similarly, falling proportions of 16-17 year olds were paid at the relevant rate for 21-24 year olds (from 5.8 to 2.3 per cent), while the proportion paid at £7.20 increased from 0.4 per cent to 3.7 per cent. There was a very small fall in the proportion of 16-17 year olds paid at the 18-20 Year Old Rate (from 3.7 to 3.4 per cent).

Figure 3.10: Percentage of jobs paid at, between and above minimum wage rates, by age, UK, 2015-2016

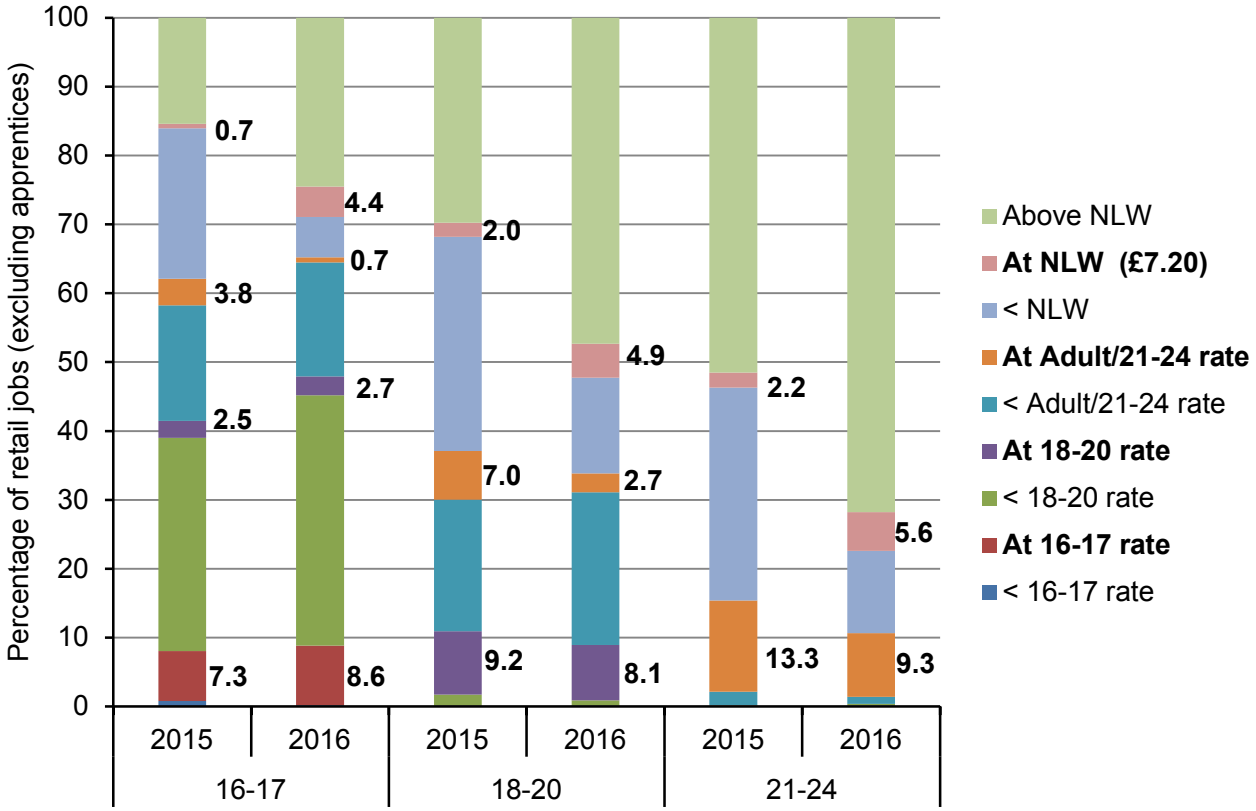


Source: LPC estimates using ASHE, April 2015-16, low pay weights, including those not on adult rates of pay, excluding apprentices, UK.

3.33 Figures 3.11 and 3.12 show the use of the minimum wage rates in retail and hospitality respectively. We focus on these two low-paying sectors because they are by far the largest employers of young people. In 2016, they accounted for one in eight (12.2 per cent) of non-apprentice jobs in the labour force as a whole, compared with a quarter of jobs held by 21-24 year olds (25.4 per cent), just over half of jobs held by 18-20 year olds (53.1 per cent), and around seven in ten jobs held by 16-17 year olds (72.2 per cent).

3.34 As with the headline picture, Figure 3.11 shows a general fall in the proportion of retail jobs paid at the youth rates, with an associated increase in the proportion of jobs paid at the NLW. The proportion of 21-24 year olds paid at the applicable rate for 21-24 year olds fell by around a third, from 13.3 per cent to 9.3 per cent, with just over one in twenty (5.6 per cent) progressing to the NLW. The proportion of 18-20 year olds paid at the 18-20 Year Old Rate also fell (from 9.2 to 8.1 per cent), as did the proportion paid at the applicable rate for 21-24 year olds (from 7.0 to 2.7 per cent). However, similar to 21-24 year olds, around one in twenty 18-20 year olds progressed to the NLW (4.9 per cent). The picture was slightly different for 16-17 year olds, with the proportion paid at their age-applicable rate increasing (from 7.3 to 8.6 per cent), although here too just under one in twenty (4.4 per cent) received the NLW in 2016.

Figure 3.11: Percentage of retail jobs paid at, between and above minimum wage rates, by age, UK, 2015-2016

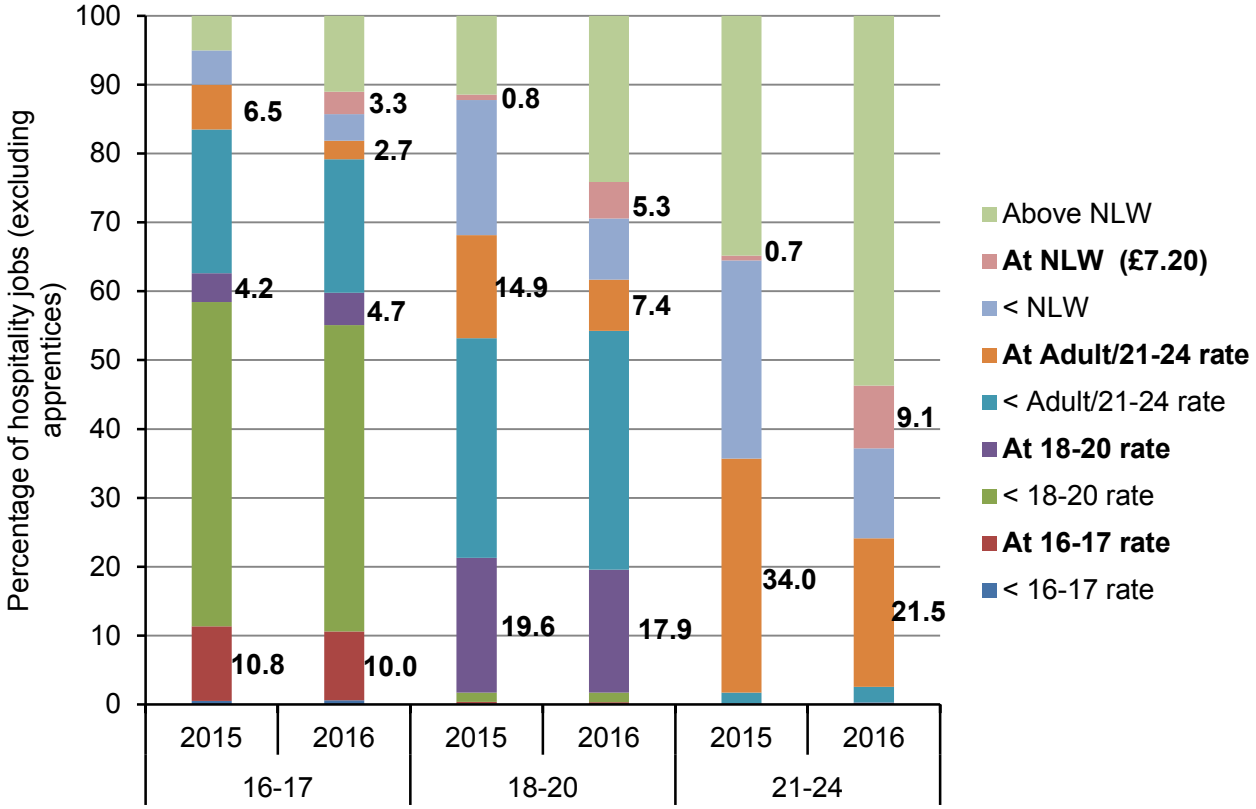


Source: LPC estimates using ASHE, April 2015-16, low pay weights, including those not on adult rates of pay, excluding apprentices, UK.

3.35 Figure 3.12 shows the changes over the year in hospitality. In general, pay is lower in hospitality, and employers are around twice as likely as retail employers to use the youth rates. For example, in 2016, 17.9 per cent of 18-20 year olds in hospitality were paid at the 18-20 Year Old Rate compared with 8.1 per cent in retail; and 21.5 per cent of 21-24 year olds were paid at the 21-24 Year Old Rate in hospitality compared with 9.3 per cent in retail.

3.36 Despite these differences, use of the youth rates fell in hospitality, as in retail, over the year to April 2016. Use of the applicable rate for 21-24 year olds fell most steeply – dropping by around a third, from 34.0 per cent to 21.5 per cent – likely reflecting pay progression to the NLW (9.1 per cent of 21-24 year olds). Use of the 18-20 Year Old Rate also fell, albeit less sharply, from 19.6 to 17.9 per cent over the year, with around one in twenty 18-20 year olds (5.3 per cent) being paid at the NLW. Among 16-17 year olds just 3.3 per cent were paid at the NLW, but the proportion paid at the 18-20 Year Old Rate increased very slightly (from 4.2 to 4.7 per cent), against a small fall in the proportion paid at the 16-17 rate (from 10.8 to 10.0 per cent).

Figure 3.12: Percentage of hospitality jobs paid at, between and above minimum wage rates, by age, UK, 2015-2016



Source: LPC estimates using ASHE, April 2015-16, low pay weights, including those not on adult rates of pay, excluding apprentices, UK.

3.37 Despite the proportions paid at the youth rates falling overall, employers are still far more likely to set pay for young workers at the youth rates – or between the youth rates – than at, or above, the NLW. Three quarters of 16-17 year olds (74.7 per cent) and half of 18-20 year olds (47.5 per cent) were paid below the NLW in 2016, falling to just under one in six 21-24 year olds (16.4 per cent).

Substitution of jobs and hours

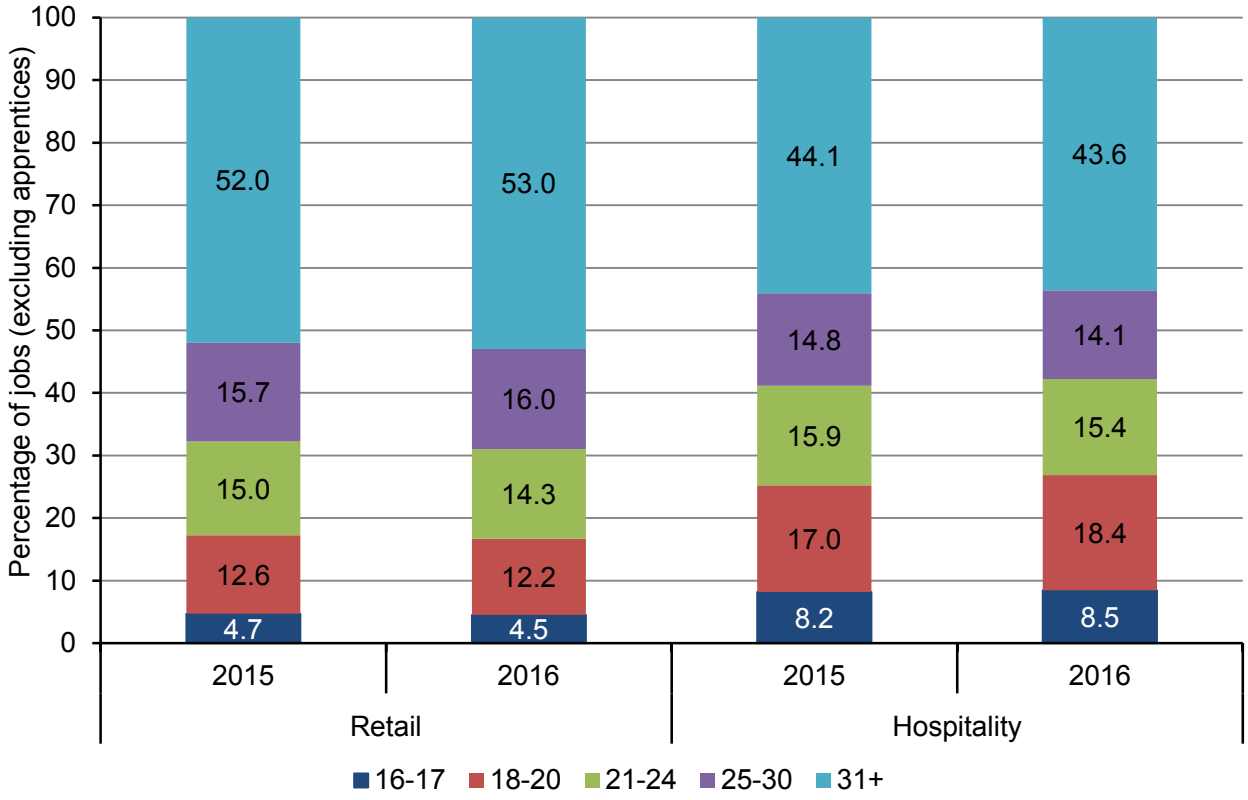
3.38 Research, and evidence from stakeholders, suggests that some employers expect to introduce age rates and increase their share of young workers going forwards in response to the rising cost of the NLW. Incomes Data Research (2016) found that over a third of affected surveyed employers expected their age profiles to shift towards employing more young workers. Separate research with employers by D'Arcy (2016) showed a similar pattern.

3.39 However, other stakeholders identified barriers to introducing age rates. Employers highlighted difficulty with differentiating pay by age, either for practical reasons ('they're doing the same job'), administrative problems (the need to develop new pay systems) or, for some employers, a perception that the youth rates are too low. Others expressed concern at the prospect of businesses increasing their share of young workers, with employers and employee representatives warning that the intentional recruitment of young workers because of their lower minimum wage rate contravenes discrimination law.

3.40 Figure 3.13 compares the age distribution in 2015 and 2016 in the two main low-paying sectors employing young workers – retail and hospitality. An increase in the share of jobs going to younger workers could indicate that employers are beginning to substitute downwards. Conversely, a decrease in the share of jobs going to younger workers could indicate that employers are beginning to substitute upwards (which is more likely where employers do not differentiate pay by age). Figure 3.13 shows that 21-24 year old workers fell slightly as a proportion of the workforce in both sectors, potentially indicating upward substitution. However, the two sectors show divergent changes regarding 16-20 year olds. In retail, 16-20 year old workers reduced slightly as a proportion of the workforce in the year to April 2016. Conversely, in hospitality, which generally has a younger workforce and makes greater use of the youth rates, 16-20 year old workers increased as a proportion of the workforce. Overall, the data show no consistent pattern at this point in time.

3.41 In-house analysis of hours (not shown) also provides no conclusive evidence of substitution. While there have been some small changes in the most recent data suggesting greater growth in hours over the year for the youngest workers, relative to older workers, the series is very volatile and it is not clear this reflects a trend.

Figure 3.13: Low-paying jobs in retail and hospitality, by age, UK, 2015-2016



Source: LPC estimates using ASHE, April 2015-16, standard weights, including those not on adult rates of pay, excluding apprentices, UK.

The youth labour market

Economic activity

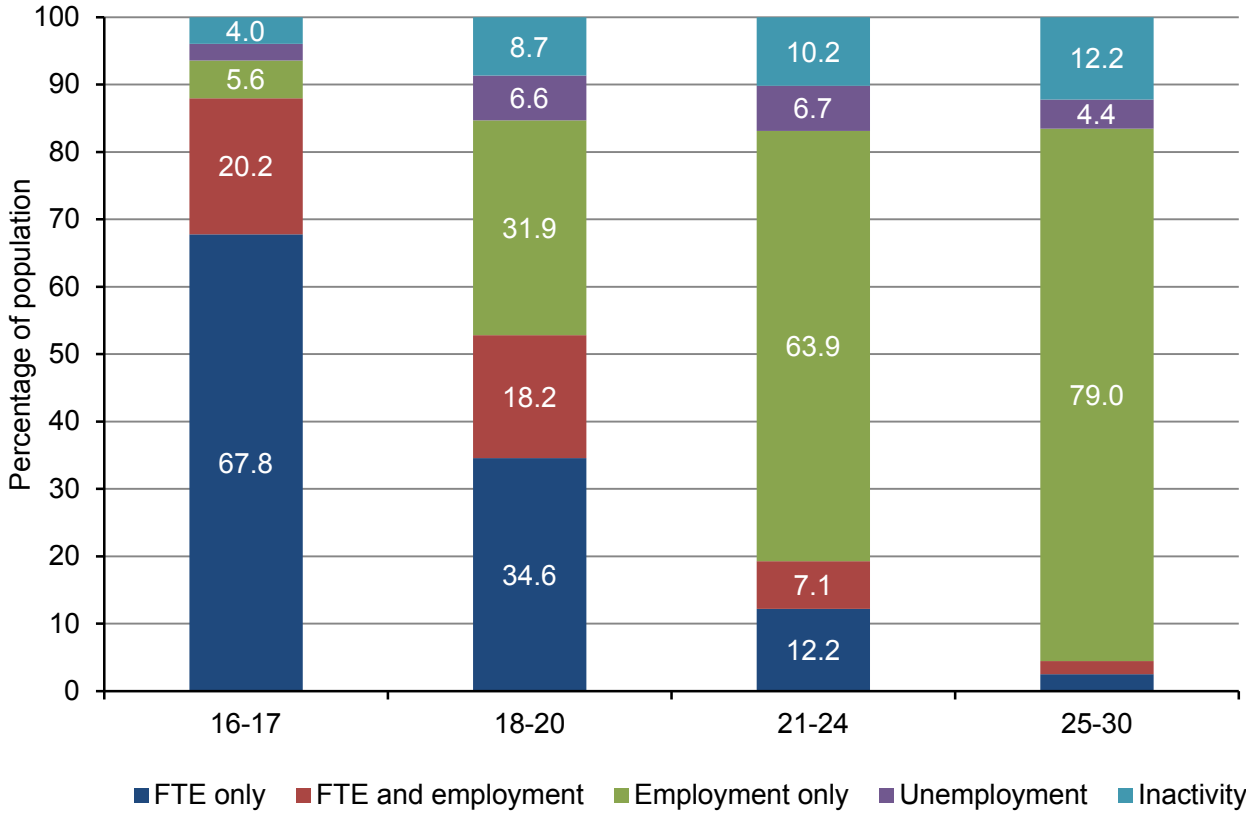
3.42 Overall then, these data suggest that pay for younger workers is substantially up, the bite is down, non-compliance is stable or falling, and there has been a fall in the use of the youth rates. But our core focus for thinking about future rates for under 25 year olds (and apprentices) is the employment effects of changes in the pay floor. We turn now to the evidence on employment outcomes for young people.

3.43 Figure 3.14 provides an overview of economic activity in the second quarter of 2016 showing, broadly, that exposure to the labour market increases with age. At younger ages people are more likely to be engaged in full-time education (FTE), sometimes combining their studies with part-time work. As they get older this pattern reverses.

3.44 In 2016, the vast majority of 16-17 year olds (88.0 per cent or around 1.2m of the total population of 1.4m) were in FTE, including a fifth (20.2 per cent or around 286,000) who were combining full-time study with part-time work. Of 18-20 year olds, just over half (52.8 per cent or 1.2m of the total population of 2.3m) were in FTE, including just under a fifth (18.2 per cent or around 426,000) combining work and study. For 21-24 year olds, the pattern is the opposite, with the majority in employment only, rather than in education or combined work and study. The total proportion in FTE was less than half that of 18-20 year olds (19.3 per cent of the cohort of 3.4m, around 661,000), including fewer than a tenth (7.1 per cent or around 242,000) working part-time whilst studying. Among 25-30 year olds, less than one in twenty (4.5 per cent) were in full-time education.

3.45 Taken together, the proportion undertaking any work (in or out of FTE) rises from around a quarter of 16-17 year olds (25.8 per cent), to half of 18-20 year olds (50.1 per cent), to over seven in ten 21-24 year olds (70.9 per cent) and eight in ten 25-30 year olds (80.9 per cent). Within this, the proportion solely in employment (and not studying full-time) rises sharply: from around one in twenty 16-17 year olds (5.6 per cent or around 80,000); to over three in ten 18-20 year olds (31.9 per cent or 744,000); over six in ten 21-24 year olds (63.9 per cent or 2.2m); and eight in ten 25-30 year olds (79 per cent or 4.2m).

Figure 3.14: Economic activity, by age, UK, 2016

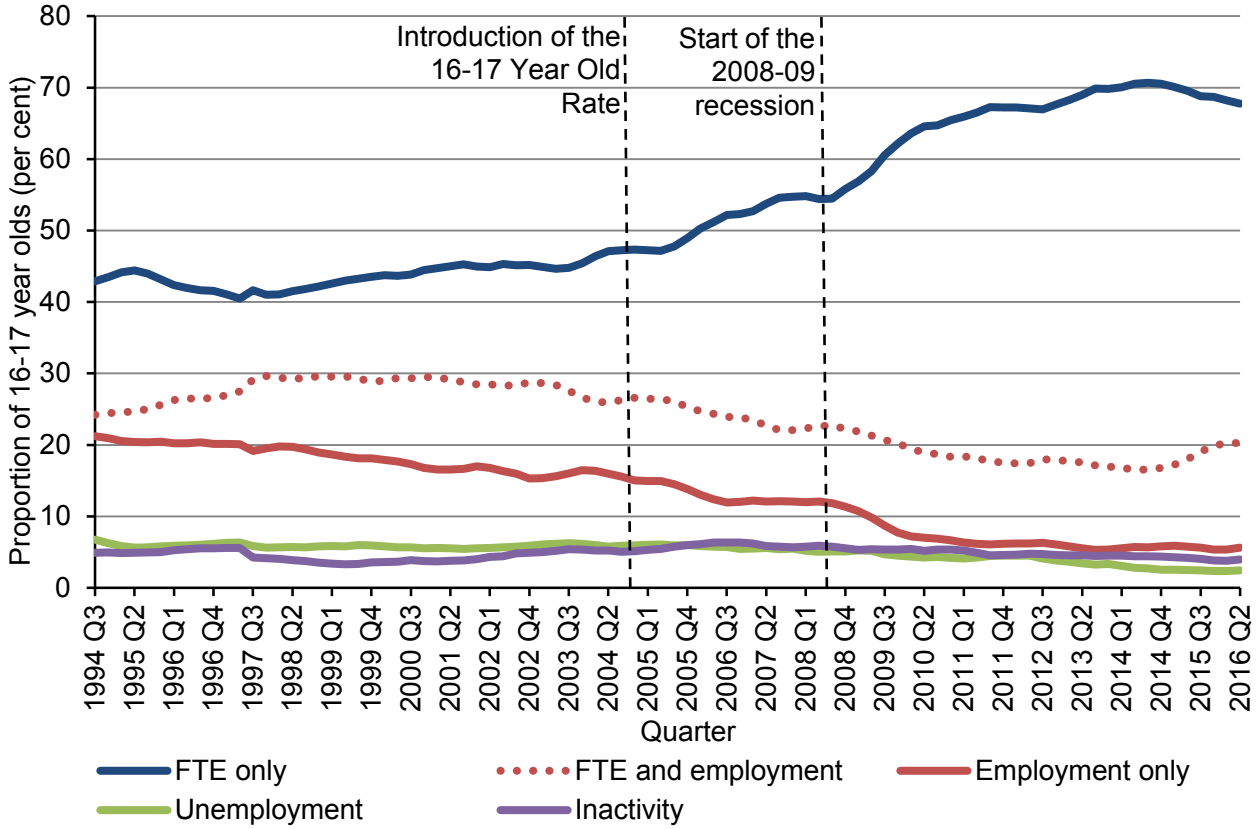


Source: LPC estimates using LFS Microdata, quarterly, four-quarter moving average, UK, Q3 2015-Q2 2016.

3.46 The long-term trend – aided by government policies, including the Raising the Participation Age (RPA) policy in England – has seen increasing participation in education. However, the year to June 2016 also saw rising participation in the labour market, partly driven, at younger ages, by those combining work and study. The proportion undertaking any work (in or out of FTE) increased by 2.4 percentage points for 21-24 year olds, 2.1 percentage points for 16-17 year olds, and 1.1 percentage points for 18-20 year olds, compared with 1.4 percentage points for 25-30 year olds.

3.47 Figure 3.15 illustrates the longer-term patterns for 16-17 year olds. From the late 1990s the proportion exclusively in full-time education increased, alongside a fall in the proportion exclusively working. More surprisingly, the proportion engaged in part-time work whilst studying also fell, leading to concerns that young people were increasingly leaving education with no prior work experience, which could harm their future work prospects. However, since 2014 the proportion working and studying has begun to recover such that by the second quarter of 2016 it was just below its level at the start of recession (20.2 per cent compared with 22.5 per cent in the second quarter of 2008). By contrast, the proportion in employment-only (5.6 per cent, around 80,000) has not recovered its pre-recession level (around 12 per cent) albeit that this likely partly reflects policies in England to ensure that 16-17 year olds remain in education until they reach 18. The proportion unemployed (excluding students seeking work who are included within the FTE-only group) remains at an historic low of 2.4 per cent (around 34,000).

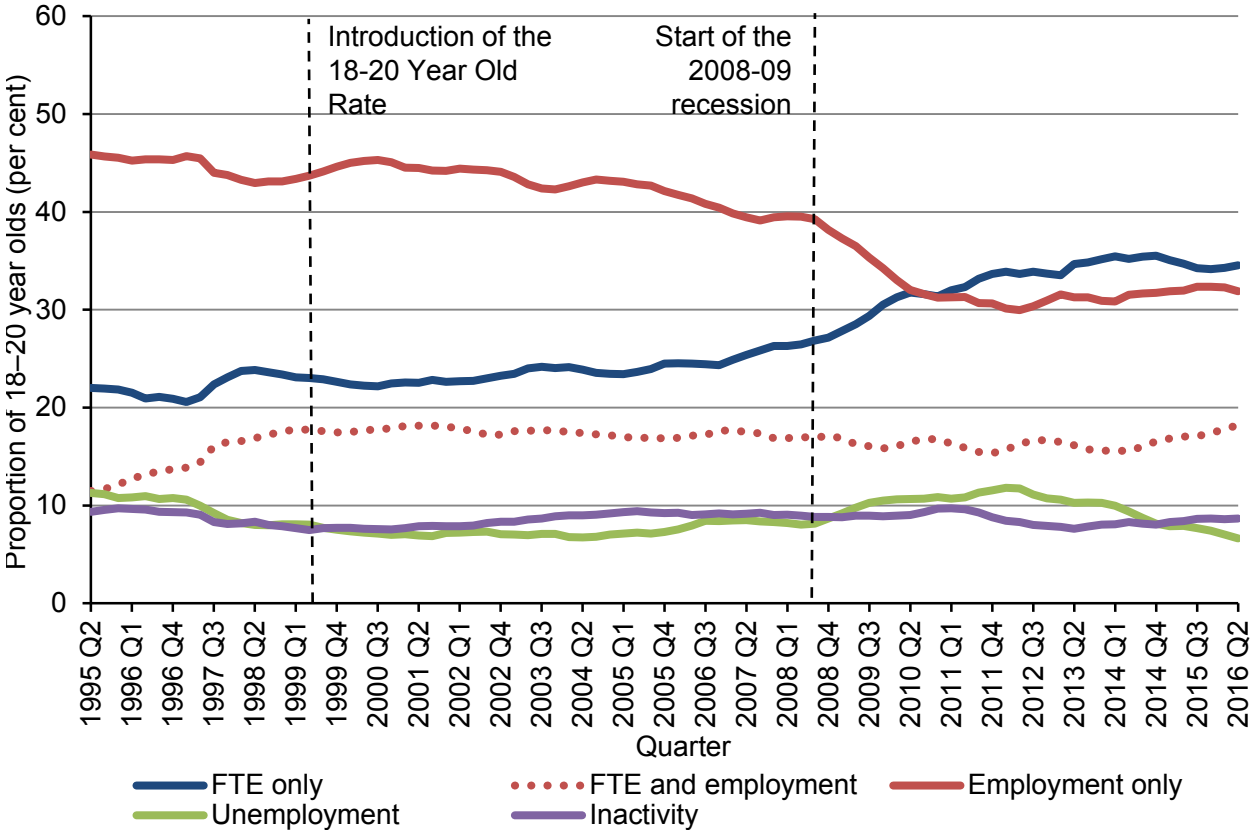
Figure 3.15: Economic activity of 16-17 year olds, UK, 1994-2016



Source: LPC estimates using LFS Microdata, quarterly, four-quarter moving average, UK, Q4 1993-Q2 2016.

3.48 Figure 3.16 presents the pattern for 18-20 year olds. As with their younger counterparts, the long-term trend has comprised rising proportions in full-time education without work, falling proportions exclusively working, and a gradual fall in the proportion working whilst studying, albeit with a much less steep decline than that observed for 16-17 year olds. However, since 2014, 18-20 year olds have seen a sustained improvement in the proportions solely in employment (reaching 31.9 per cent, around 744,000) and those working while studying (18.2 per cent), with the latter now at an historic peak, above its level at the start of the recession (around 17 per cent). The proportion unemployed has also fallen fairly consistently since the end of 2011 and is now at an historic low of 6.6 per cent (around 155,000).

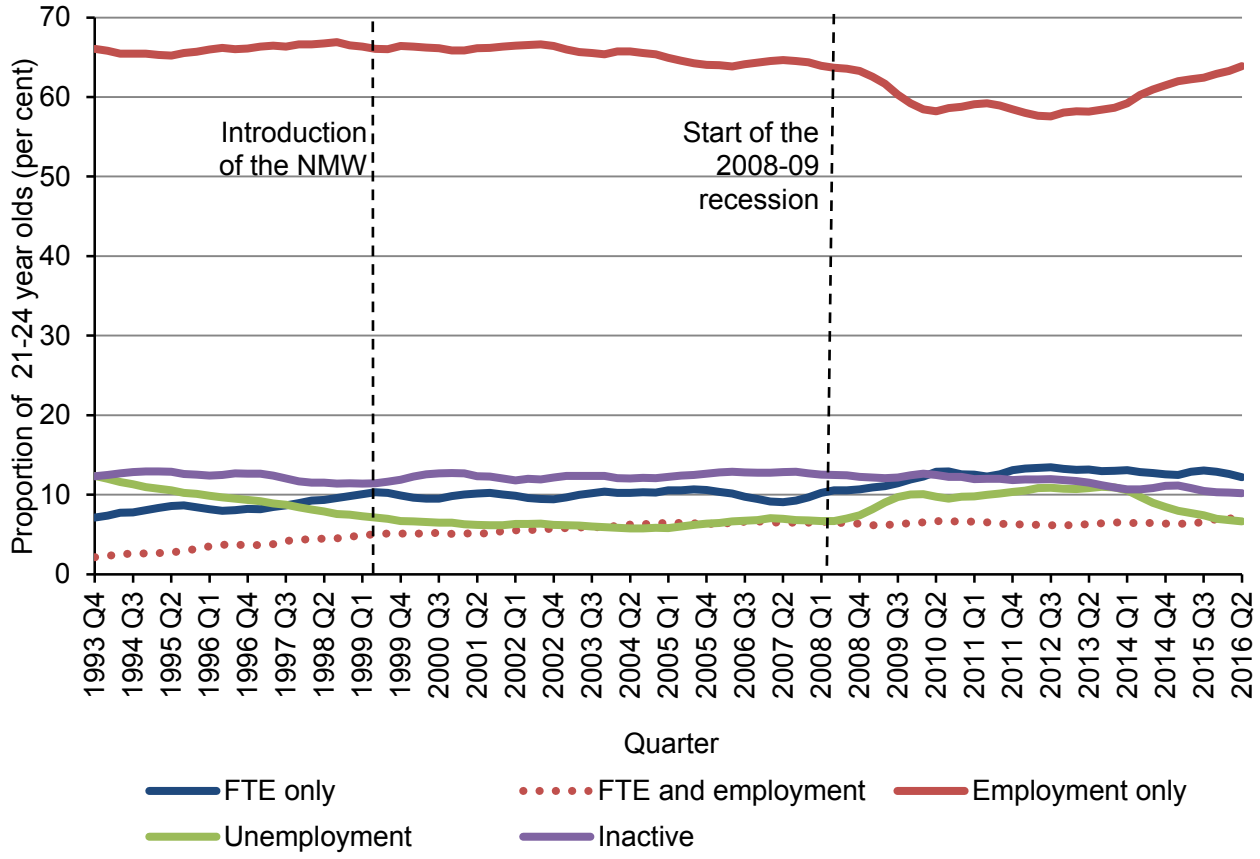
Figure 3.16: Economic activity of 18-20 year olds, UK, 1995-2016



Source: LPC estimates using LFS Microdata, quarterly, four-quarter moving average, UK, Q3 1994-Q2 2016.

3.49 Figure 3.17 shows the position for 21-24 year olds. Here, the proportion in full-time education is, as expected, considerably below that of their younger counterparts, although it has seen some small increase from 2007 onwards. The most striking feature is the fall in the proportion in employment-only during the 2008 recession, and the associated rise in the proportion unemployed, changes which slightly lagged the start of the downturn. But 21-24 year olds have seen notable improvement from 2014 onwards and the proportion unemployed in the second quarter of 2016 had fallen back to its level at the start of the recession (6.7 per cent, equivalent to around 229,000 young people). If the proportions engaged in any work are taken together – whether in employment-only or working part-time while studying – the total proportion engaged in work now exceeds the pre-recession level, and is near its historic peak in 2002. The proportion in work reached 70.9 per cent (around 2.4m) in 2016, compared with 70.2 per cent in 2008 and a peak of 72.2 per cent in 2002.

Figure 3.17: Economic activity of 21-24 year olds, UK, 1993-2016



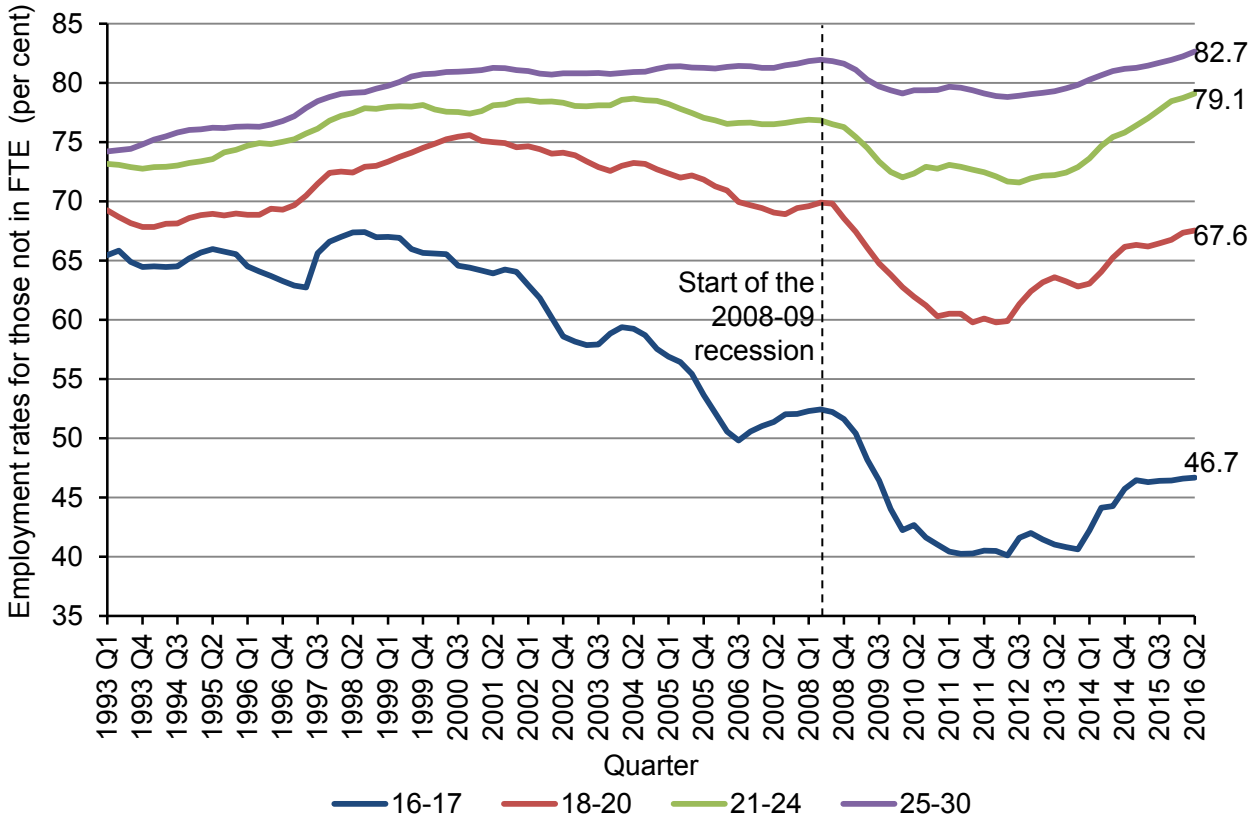
Source: LPC estimates using LFS Microdata, quarterly, four-quarter moving average, UK, Q1 1993-Q2 2016.

Employment and unemployment

3.50 While we monitor economic activity to gain a holistic view of the changes taking place in the youth labour market, we are particularly concerned with the group of young people that are not in full-time education. From its origins in the late 1990s, the Commission has taken the view that young people studying full-time are gainfully employed in acquiring knowledge and skills which will improve their long-term job (and life) prospects. So we adjust labour market data to focus on trends for the group not studying at all, or only studying part-time – as this is the cohort most likely affected by minimum wage decisions. One possible consequence of increasing participation in full-time education is that the remaining (and diminishing) pool of those not in full-time study are likely to have, on average, fewer skills and qualifications, and thus be less attractive to potential employers. It is for these groups that the minimum wage rates – if set too high – could have employment consequences: either by locking them out of the labour market or by encouraging young people to leave education prematurely. While research has generally found no significant impact of the minimum wage on the employment of young people, increases in the youth rates during recession were associated with significantly lower employment retention probabilities (RAND Europe, 2016). Taken together, the changing composition of this group, rising minimum wages and weakening of the economy could contribute to falling employment rates and rising unemployment rates for young people not in full-time education.

3.51 Figure 3.18 shows employment rates for our three youth groups, and, for comparison, the youngest part of the NLW cohort (25-30 year olds). Over the year to June 2016, employment rates rose strongly for 21-24 year olds not in full-time education – up 2.1 percentage points – well above the level at the start of recession in 2008 (79.1 per cent compared with 76.8 per cent) and the highest since records began (in 1992). The employment rate for 18-20 year olds rose less strongly, by 1.4 percentage points. This was higher than the increase among 25-30 year olds (1.2 percentage points to 82.7 per cent) but unlike the older groups, the employment rate for 18-20 year olds is still somewhat below its level at the start of the 2008-09 recession (67.6 per cent, compared with 69.9 per cent). The picture was far less positive for 16-17 year olds, albeit the cohort not in full-time education is small (around 171,000 in the second quarter of 2016). The employment rate has been fairly flat since the beginning of 2015 and increased by just 0.4 percentage points over the year, to 46.7 per cent, remaining sharply below the level at the start of recession (52.4 per cent, so a gap of 5.7 percentage points). This is unlikely to be a purely compositional effect, linked to rising educational participation, as this group had seen rising employment rates in the recent period up to 2015.

Figure 3.18: Employment rates for young people not in full-time education, by age, UK, 1993-2016

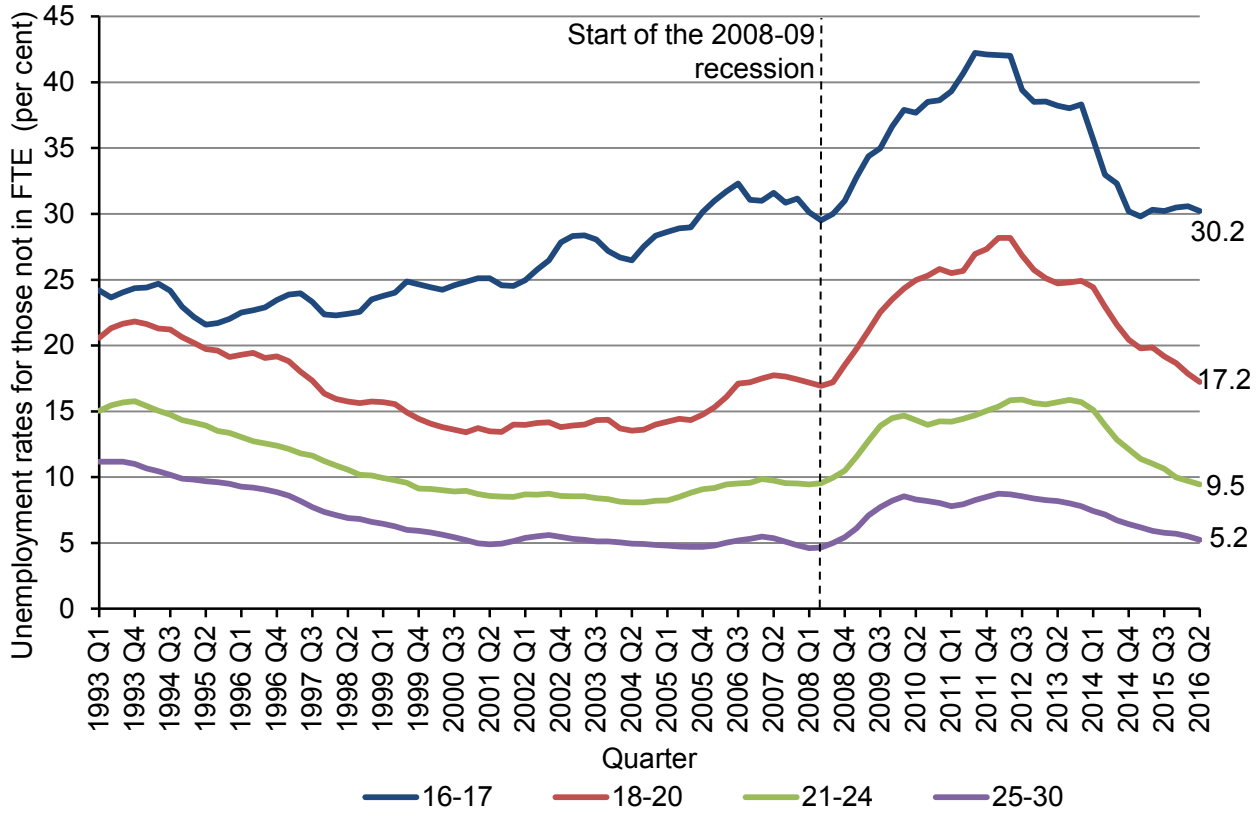


Source: LPC estimates using LFS Microdata, quarterly, four-quarter moving average, UK, Q2 1992-Q2 2016.

3.52 Figure 3.19 shows the unemployment rate for our three youth groups and the 25-30 year old group. On this measure, 18-20 year olds not in full-time education saw the greatest improvement over the year to June 2016. Their unemployment rate fell 2.6 percentage points to 17.2 per cent, and is now only a touch above its level at the start of the 2008-09 recession (16.9 per cent). The unemployment rate for 21-24 year olds also fell over the year, returning to its level at the start of the recession (down 1.6 percentage points to 9.5 per cent). This was greater than the fall for 25-30 year

olds – down by 0.7 percentage points to 5.2 per cent – whose unemployment rate remains slightly above the pre-recession level (4.7 per cent). As with employment rates, the picture was less positive for 16-17 year olds. Their unemployment rate was flat over the year, falling just 0.1 percentage points to 30.2 per cent, remaining 0.7 percentage points above the level at the start of recession (29.5 per cent), although the numbers affected were small (around 34,000).

Figure 3.19: Unemployment rates for young people not in full-time education, by age, UK, 1993-2016



Source: LPC estimates using LFS Microdata, quarterly, four-quarter moving average, UK, Q2 1992-Q2 2016.

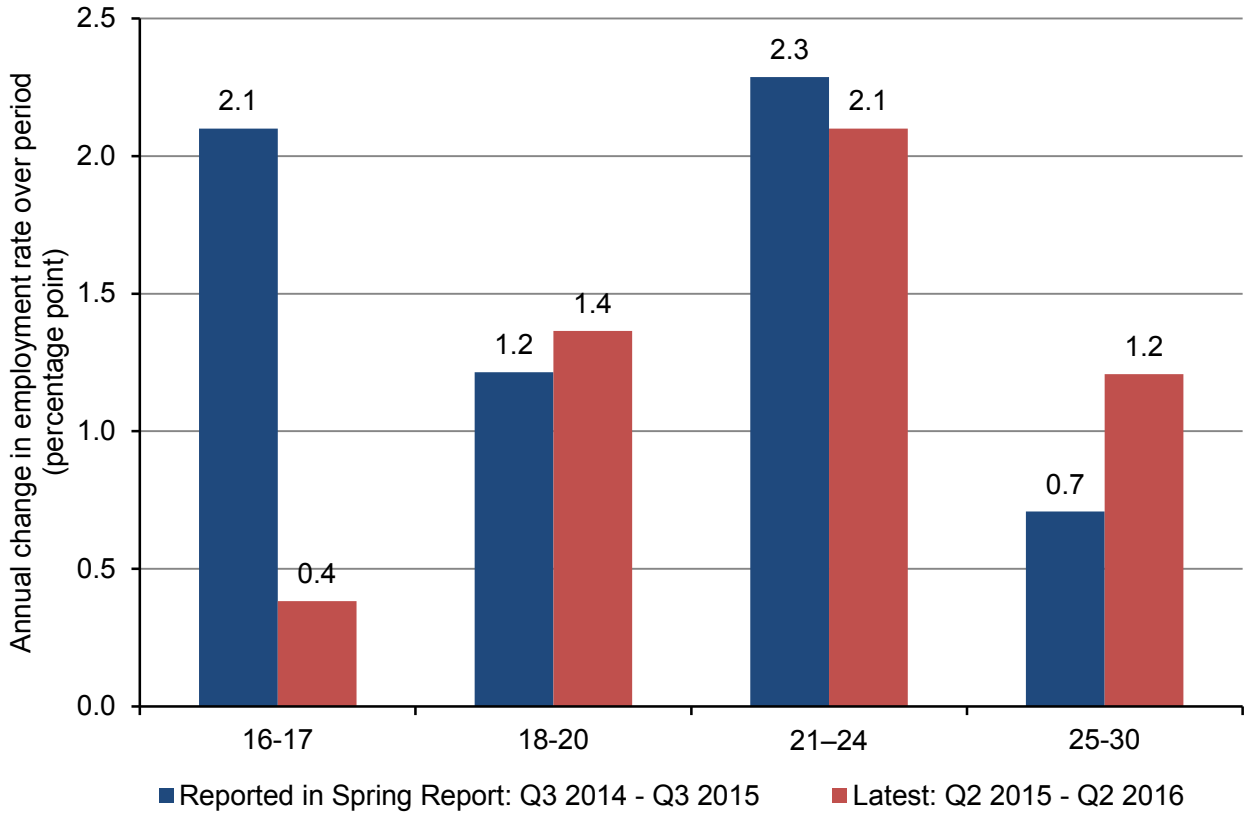
3.53 The increase in employment over the last year – alongside the fall in unemployment – provides evidence that the labour market has been improving for young people aged 18-24. However, some recent events, including both the introduction of the NLW in April 2016 and the decision to leave the EU in June 2016, are largely not captured in these data (although the data capture the period following the announcement of the NLW in July 2015), so it needs cautious interpretation.

3.54 Contributing to the case for caution is tentative evidence that the labour market improvement observed since 2014 has slowed for 16-17 year olds, and that it has possibly also slowed for 21-24 year olds. Figure 3.20 compares the change in the employment rate for young people not in full-time education over the year to the third quarter of 2015, as reported in our Spring 2016 Report, with the latest annual change in the year to the second quarter of 2016 (noting that the two periods overlap slightly, both including the third quarter (July to September) of 2015 within the rolling four-quarter average). In our Spring 2016 Report we welcomed an increase of 2.1 percentage points in the 16-17 year old employment rate over the year to September 2015, and we hoped that this was a sign that they were finally starting to make the progress previously observed among 18-20 year olds. The latest annual increase of just 0.4 percentage points over the year to June 2016 suggests that

improvement may not have been sustained. For 21-24 year olds, there was slightly less progress in this period compared with the last – with the increase in the employment rate slowing from 2.3 percentage points to 2.1 percentage points – but they are generally maintaining their rate of improvement on this measure.

3.55 The picture among 18-20 years olds is more reassuring, maintaining their progress from the previous period. Their employment rate increased by 1.2 percentage points in the year to September 2015, and by 1.4 percentage points in the year to June 2016. However, none of the youth groups have seen the relative period-on-period improvement observed among 25-30 year olds, whose rather modest increase in the employment rate in the initial period, of just 0.7 percentage points, rose to 1.2 percentage points in the latest period.

Figure 3.20: Annual change in employment rates of those not in full-time education, by age, UK, 2015-2016

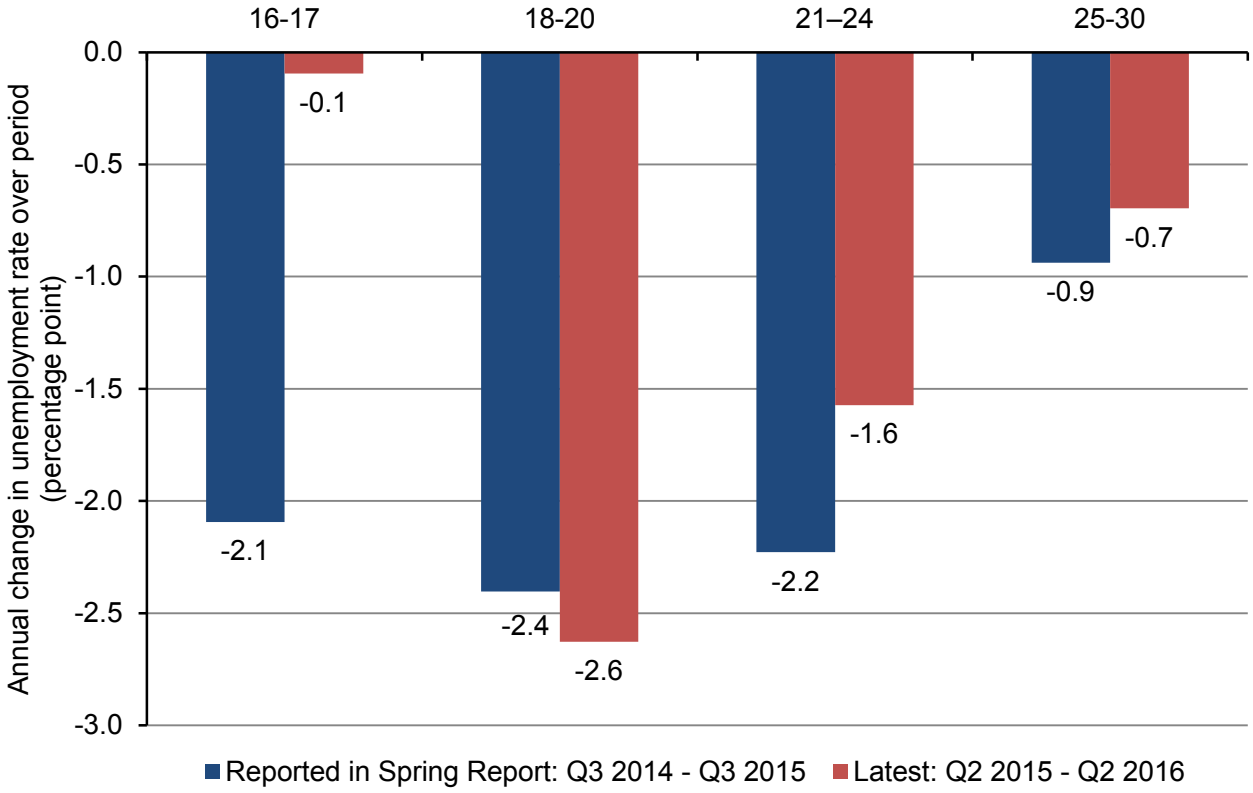


Source: LPC estimates using LFS Microdata, quarterly, four-quarter moving average, UK, Q4 2013-Q2 2016.

3.56 Figure 3.21 presents the same analysis for unemployment rates, comparing the data available for the Spring 2016 Report with the latest available data. Again there is a notable slowdown in the improvement for 16-17 year olds. Where we had observed a 2.1 percentage point fall in the unemployment rate of those not in full-time education in the year to September 2015, we observed a fall of just 0.1 percentage points in the most recent period. And the progress observed for 21-24 year olds may have also slowed somewhat. Unemployment rates for 21-24 year olds fell by 1.6 percentage points in the year to June 2016, less than the 2.2 percentage point fall in the preceding year to September 2015. Only 18-20 year olds have maintained their improvement, their unemployment rate falling by 2.4 percentage points in the earlier period and by 2.6 percentage points in the most recent period. Their 25-30 year old counterparts, covered by the NLW from April, have roughly maintained the level of improvement across the two periods, with a fall of 0.9

percentage points in the earlier period, and a similar fall of 0.7 percentage points in the year to the second quarter of 2016.

Figure 3.21: Annual change in unemployment rates of those not in full-time education, by age, UK, 2015-2016



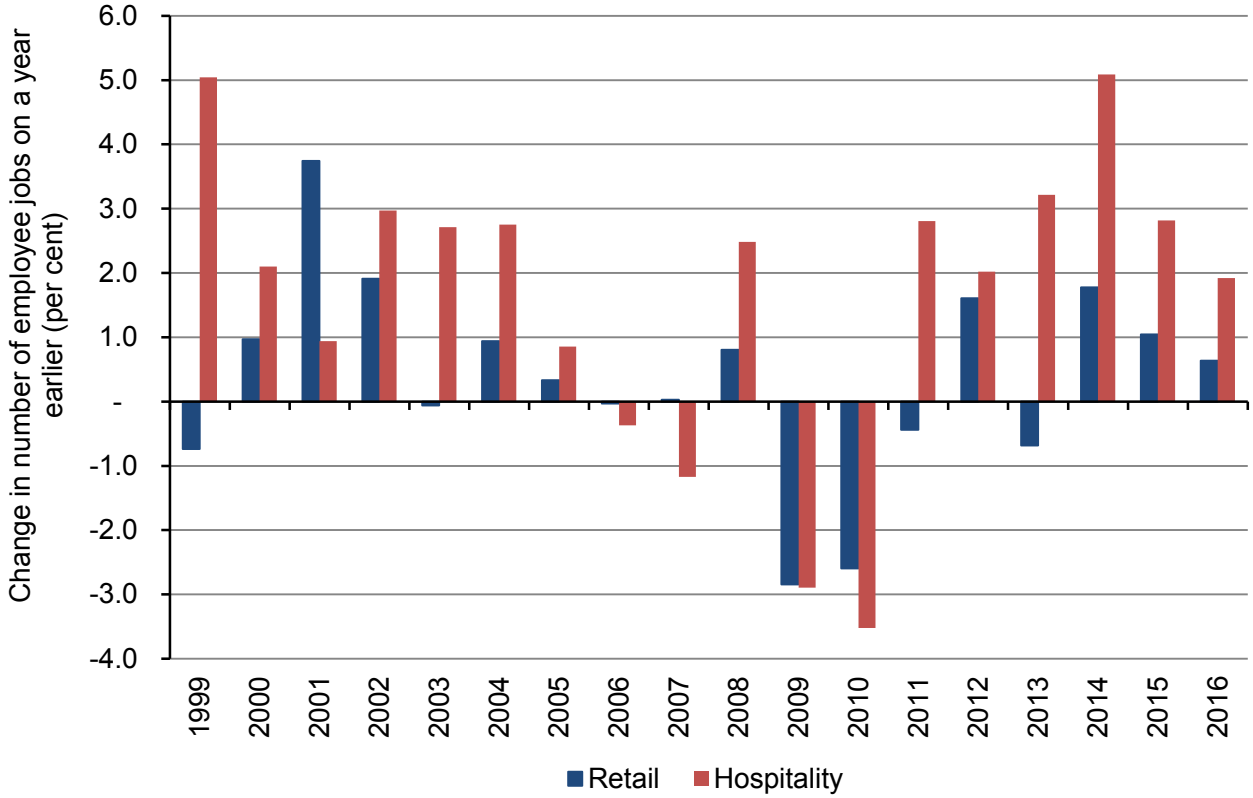
Source: LPC estimates using LFS Microdata, quarterly, four-quarter moving average, UK, Q4 2013-Q2 2016.

Job growth in key sectors

3.57 We noted previously that a large proportion of young workers were employed in low-paying hospitality and retail jobs, together accounting for a quarter of jobs held by 21-24 year olds, half of jobs held by 18-20 year olds, and around seven in ten jobs held by 16-17 year olds. As such, job growth in these two sectors provides a further indication of near-term job prospects for young workers.

3.58 Figure 3.22 shows annual growth of 1.9 per cent in hospitality and 0.6 per cent in retail (compared with growth of 1.2 per cent across the economy as a whole) in June 2016. These changes compare favourably with the recessionary period, where both sectors recorded job losses. However, the level of growth also represents the lowest annual growth since 2013 in retail, and the lowest annual growth since 2010 in hospitality.

Figure 3.22: Annual growth in employee jobs, by low-paying sector, GB, 1998-2016



Source: LPC estimates based on ONS employee jobs series (JOBS03), not seasonally adjusted, GB, 1998-2016.

Conclusion

3.59 The broad picture for young people is of robust labour market performance looking backwards, with more uncertainty looking forwards. Earnings growth was strong for 18-20 year olds and 21-24 year olds in the year to April 2016, with 16-17 year olds seeing lower growth, although still above the growth for older workers. Hourly pay at the median grew by 5.9 per cent for 18-20 year olds, 5.3 per cent for 21-24 year olds and 3.7 per cent for 16-17 year olds (compared with 3.5 per cent for 25-30 year olds). The high growth observed at the median for 18-20 year olds was likely due to the NLW, with median hourly pay rising from £6.80 in April 2015, to £7.20, the level of the NLW, in April 2016. The NLW had a less direct effect on the median pay of other groups – with the NLW falling around the 75th percentile of the 16-17 year old earnings distribution, and falling below the 25th percentile of the 21-24 year old earnings distribution. But it is probable that it exerted an effect on young worker's pay generally, with many working in low-paying sectors affected by the NLW.

3.60 Low inflation has also meant real increases in hourly pay. Accounting for CPI inflation, hourly pay at the median (including apprentices) grew by 6.4 per cent for 18-20 year olds, 4.9 per cent for 21-24 year olds and 3.0 per cent for 16-17 year olds. Using RPI inflation, growth was slightly lower at 5.4 per cent, 3.8 per cent and 2.0 per cent respectively.

3.61 High earnings growth at the median has meant a falling bite for all three groups of young workers. Over the year to April 2016, the bite for 21-24 year olds fell by 1.7 percentage points (to 77.2 per cent); the bite for 18-20 year olds fell by 1.8 percentage points (to 73.6 per cent); and the bite for 16-17 year olds fell by 1.1 percentage points (to 70.4 per cent). However, the bite remains

high for these groups compared with older workers and it is likely that the October 2016 increases in the youth rates – which the April ASHE data do not cover – will have further increased the bite for the youth rates. Moreover, measured in April, the bite was already very high for 21 and 22 year olds (85.4 per cent and 80.7 per cent respectively). Their bites were notably higher than the bite of the NLW for 25 year olds (70.0 per cent), although the bite increased for the latter group – indeed for all workers covered by the NLW – while falling for younger workers.

3.62 Despite these considerations, there is little evidence of a problem with compliance (in the data). The proportions of young workers paid below their age-applicable minimum wage were low and stable in April 2016, with less than two per cent of young workers paid below the applicable wage floor. The proportion of young workers paid at their applicable rate fell over the same period, with around one in twenty young workers being paid at the NLW in April 2016, and others being paid at a higher NMW rate, above their age-applicable rate.

3.63 As with earnings, labour market data for young people generally presents a positive picture. Among 21-24 year olds the proportion solely in employment (63.9 per cent) increased over the year to June 2016, while the proportion unemployed fell to 6.7 per cent. The proportion of 18-20 year olds solely in employment (31.9 per cent) increased slightly over the year, alongside an increase in the proportion combining work and study (18.2 per cent) and a fall in the proportion unemployed (6.6 per cent). While the majority of 16-17 year olds are in full-time education, an increasing proportion combined their study with work (20.2 per cent), while the proportion unemployed (and not in full-time education) remained low (2.4 per cent).

3.64 Looking at young people not in full-time education, the picture was generally positive for 18-24 year olds, with weaker progress for 16-17 year olds. Over the year to June 2016, the employment rate for 21-24 year olds not in full-time education increased by 2.1 percentage points (to 79.1 per cent, their highest level in over two decades) and the unemployment rate fell by 1.6 percentage points (to 9.5 per cent). The employment rate for 18-20 year olds increased by 1.4 percentage points (to 67.6 per cent), alongside a fall of 2.6 percentage points in their unemployment rate (to 17.2 per cent). The picture was less positive for 16-17 year olds (although the number not in full-time education is small). Their employment rate increased by just 0.4 percentage points over the year (to 46.7 per cent), while the unemployment rate remained flat (at 30.2 per cent) over the year.

3.65 Taken together, the earnings and labour market data generally paint a positive picture for 18-24 year olds, but a flatter one for 16-17 year olds. However, a number of concerns remain, including that the labour market improvements over the year to June 2016 were less positive than those we had observed when we met in January 2016 to decide the October 2016 rates (and the impact of the October 2016 rates is not captured in the latest data). Equally important, the available data predate the decision to leave the EU. Any slowdown would be likely to affect younger workers first, with potentially serious consequences.

Chapter 4
Apprentices

Introduction

4.1 There is an on-going cross party and cross nation commitment to continue to increase apprenticeships in both quantity and quality. In this chapter we consider apprenticeship pay, compliance and numbers of apprentices to inform our recommendations on the Apprentice Rate, which applies to all apprentices in their first year, and for 16-18 year olds in any year of an apprenticeship. Apprentices aged 19 and above are entitled to the relevant age appropriate minimum wage after their first year.

4.2 As with the minimum wage rates for workers aged under 25, our aim is to protect apprentices from exploitation, without damaging the supply of places, including for younger apprentices whose share has declined over time. These goals have been reflected in recommendations set at a discount to the 16-17 Year Old Rate to recognise the costs to employers of providing training and supervision.

4.3 The level of the rate matters for both quantity and quality. If set too high it may discourage employers from offering apprenticeships at all, by making it relatively more cost-effective to hire workers without training, but it could also damage quality via reductions in off-the-job training, which is meant to be paid, or have softer effects like less supervision and support in the workplace. If set too low it may encourage abuse of apprenticeships as a low cost option, substituting for workers purely because of lower wages, and become unattractive for workers.

4.4 Over the last year there has been substantial change in apprenticeship policy that complicates these considerations. In October 2015 the Government raised the Apprentice Rate by 57 pence to £3.30, its largest ever increase and one which is greater than that of the National Living Wage (NLW) compared to its predecessor adult rate in April 2016. It was also a relative increase compared to the youth rates (the gap with the 16-17 Year Old Rate halved). The Government subsequently announced further reforms to the way in which apprenticeships will be funded, including a new £3 billion Levy for larger employers and a requirement for co-investment for small employers in England. These changes to funding policy will have implications across the UK when they come into force in May 2017, although they will differ across the nations. The implementation of the NLW may also have a bearing, with a relatively higher wage making it more attractive for employers to take on apprentices overall and, at the margin, give longer apprenticeships to workers aged under 24 (the pay floor of a worker aged 24 or over starting an apprenticeship now increases sharply in their second year).

4.5 In this chapter we:

- Describe trends in apprenticeship earnings using the newly available Apprenticeship Pay Survey for 2016 and the Annual Survey of Hours and Earnings. We consider the impact of the increase in the Apprenticeship Rate to £3.30 on apprentice earnings and changes to the relative value of the minimum wage, or 'bite'. (It is too soon to evaluate the recent October 2016 increase to £3.40);
- Review the evidence on underpayment for apprentices, which has previously been very high, but also a focus of HMRC enforcement efforts;
- Consider current volumes of apprenticeships across the UK and whether the introduction of the £3.30 rate in 2015 has had any visible effects so far;
- Finally, consider recent changes to funding policy and how these bear on the costs of delivering apprenticeships.

4.6 The broad picture is one of strong growth in median pay, with continued increases in apprenticeship starts, but also continued high non-compliance and likely increases in apprenticeship costs in the coming year. An evidence gap remains around apprenticeship quality, specifically time spent training both on-the-job and off-the-job.

Apprentice earnings

4.7 There are two sources of data on apprentice earnings. The first is the Apprenticeship Pay Survey (APS), which surveyed 9,422 apprentices across England, Scotland and Wales over the summer of 2016. The second is the Annual Survey of Hours and Earnings (ASHE), which is a UK-wide employer survey carried out in April of 2016 of one per cent of employees with National Insurance numbers, including 1,905 apprentices.

4.8 Because there are differences in the way these two surveys operate there are inevitably occasions where they report different findings for both earnings and underpayment. The APS is a survey of apprentices themselves, with robust coverage of the key groups in whom we are interested. However, it is subject to measurement error as apprentices answering the survey will not always know their exact hourly rate or the number of hours they've worked or trained. ASHE is an employer survey which provides more accurate pay data at an individual level, but is weaker on coverage, particularly on low-paid apprentices, who are under-represented in its sample (see Drew, Ritchie and Veliziotis, 2016a and b). A key challenge for this chapter is navigating and explaining these differences where they occur. However, as a broad rule of thumb, the focus will be on the APS, which, on balance, we have always considered the more detailed and authoritative resource, with ASHE used for comparison.

4.9 The most recent APS was carried out over the summer of 2016, with the previous survey in 2014. This is the first time that two APS have been carried out with a consistent methodology, enabling us to describe how pay has changed across different ages, levels and frameworks. Because this time period covers October 2015, when the £3.30 rate was introduced, we can draw some conclusions on its impact on pay levels and patterns of pay. ASHE is carried out annually, allowing us to also compare the APS and ASHE over this period too.

4.10 In 2016, the median hourly earnings of apprentices were £6.75 in the APS and slightly higher at £6.83 in ASHE – well above the Apprentice Rate of £3.30. Table 4.1 shows that the pay distribution for apprentices aged 25 and over was very different to those aged below 25. A clear majority of those aged over 24 were paid at or above the NLW in both ASHE (89 per cent) and the APS (66 per cent). But for apprentices in the 16-18 age bracket only between 11 (APS) and 13 per cent (ASHE) earned at or above £7.20. The table indicates that the Apprentice Rate bears particularly on the youngest apprentices, with two-fifths of 16-18 year olds earning below £3.40 (40 per cent on APS, 27 per cent on ASHE), compared with just three per cent of apprentices aged 25 and over (APS and ASHE). Two-fifths (ASHE) to a half (APS) of 16-18 apprentices and up to a quarter of 19-20 year old apprentices were paid below the 16-17 Year Old Rate (APS).

Table 4.1: Distribution of hourly earnings, by age, GB and UK, 2016

		<3.30 (Oct 2015 Apprentice Rate)	3.30 – 3.40 (Apprentice Rate Oct 16)	3.40 to 3.87 (16-17 rate)	3.87 to 5.30 (18-20 rate)	5.30 to 6.70 (21-24 rate)	6.70 to 7.20 (NLW)	At or above NLW (7.20)	Total
APS	16-18	30	10	11	23	12	3	11	100
	19-20	14	5	6	24	24	5	22	100
	21-24	6	2	2	9	22	11	48	100
	25+	2	1	1	6	15	10	66	100
	Total	**10**	**3**	**4**	**13**	**18**	**8**	**44**	**100**
ASHE	16-18	4	23	12	26	18	4	13	100
	19-20	2	6	4	12	31	9	36	100
	21-24	1	4	1	2	5	20	67	100
	25+	1	2	0	2	3	4	89	100
	Total	**2**	**10**	**5**	**12**	**17**	**9**	**44**	**100**

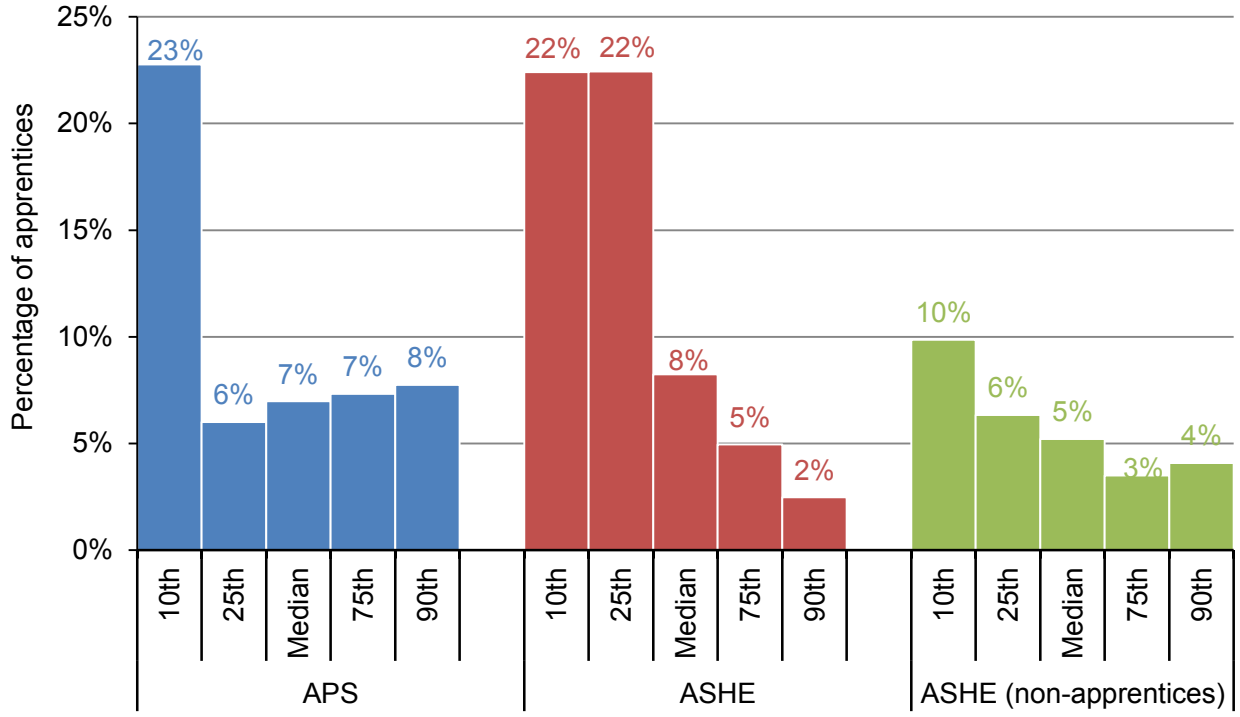
Source: LPC estimates using Apprentice Pay Survey, 2016, GB; ASHE, April 2016, low pay weights including those not on adult rates of pay, UK.
Notes

a. APS estimates based on hourly rate calculated from gross hourly pay including unpaid overtime, usual rate overtime and hours spent on work and training; excludes overtime at higher rate, tips and bonuses.
b. Unweighted sample sizes: APS n=9,422, ASHE n=1,905

4.11 Both the APS and ASHE reported median hourly pay of £6.31 in 2014, meaning that apprentice earnings grew by 7-8 per cent over the two years to 2016. This is a faster rate of growth than that found for UK non-apprentice employees, who saw growth of 5 per cent overall over the same period. However, the overall figures disguise a considerable degree of variation within the apprentice population.

4.12 Figure 4.1 shows the percentage growth in apprentice median hourly earnings across the wage distribution within ASHE (red bars), the APS (blue bars) and, for comparison, all non-apprentices in ASHE (green bars). While the figures vary somewhat by source they show that apprentice earnings growth has been far higher at the lower end of the pay spectrum. In both ASHE and the APS pay at the tenth percentile grew three times faster than pay at the median. This is likely to have been driven by the increase in the Apprentice Rate to £3.30, which followed the increase to £2.73 in October 2014. Pay at the tenth percentile in the 2014 APS was £2.68, which was the level of the Apprentice Rate that year. In the 2016 APS it was £3.29, a penny off the Apprentice Rate, showing that the bottom decile moves in line with the pay floor. By comparison, growth for non-apprentice employees was also skewed towards the lower end, but not nearly to the same extent.

Figure 4.1: Growth in hourly earnings of apprentices and non-apprentices, by percentile, GB and UK, 2014-2016

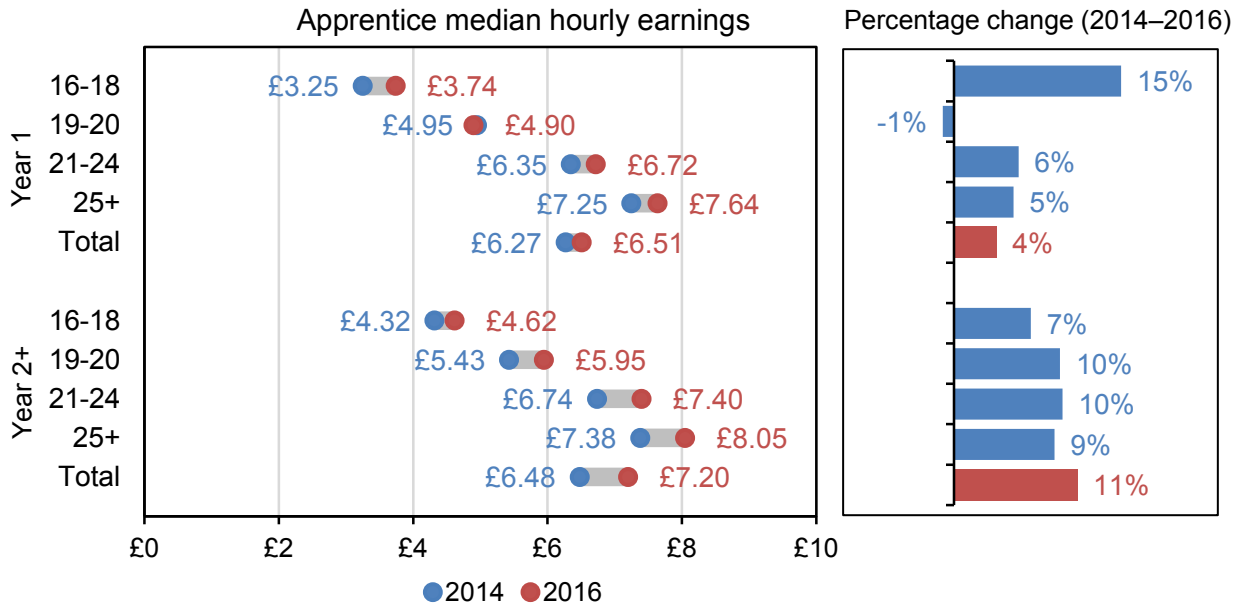


Source: LPC estimates based on Apprentice Pay Survey, 2014-2016, GB; ASHE: 2010 methodology, April 2014-2016, standard weights including those not on adult rates of pay, UK.
Note: APS estimates based on hourly rate calculated from gross hourly pay including unpaid overtime, usual rate overtime and hours spent on work and training; excludes overtime at higher rate, tips and bonuses.

4.13 However, growth is not limited to the bottom end. Growth at the 75th percentile was also higher for apprentices than for non-apprentices – between two (ASHE) and four percentage points (APS) higher. This suggests that there are other factors beyond the Apprentice Rate that are driving pay growth – discussed further below.

4.14 The age of the apprentice and how long they have been on the apprenticeship are key determinants of pay, but these two factors interact with one another. Simply put, older apprentices are paid more than younger apprentices, and those that are in their second year are paid more than those in their first. Much of this is mechanical: apprentices in their second year and over the age of 19 are entitled to the NMW appropriate for their age. The 2016 APS suggests that around 43 per cent of apprentices received a pay rise during their apprenticeship. In most cases this was because the apprentice completed their first year or because they reached a milestone birthday entitling them to a higher rate (turning 19, 21 or 25).

Figure 4.2: Median hourly earnings and earnings growth, by age and year of apprenticeship, GB, 2014-2016



Source: LPC estimates using Apprentice Pay Survey, GB, 2014-16.
Note: APS estimates based on hourly rate calculated from gross hourly pay including unpaid overtime, usual rate overtime and hours spent on work and training; excludes overtime at higher rate, tips and bonuses.

4.15 Figure 4.2 presents change in median hourly earnings between 2014 and 2016 by the age of the apprentice and whether they are in their first or second year (or beyond) of their apprenticeship. This shows that while earnings have grown faster for those in their second year (11 per cent compared to 4 per cent) it is the youngest apprentices, those aged 16-18 in their first year, who have seen the largest proportional growth. This is consistent with the pattern seen in Figure 4.1 of higher growth at the lower paying end of the distribution – since young apprentices tend to be paid less.

4.16 The relatively lower growth levels for first year apprentices aged 19 and over may be because their pay rates were comfortably above the Apprentice Rate and so did not have to rise much to stay compliant and still attract candidates. Furthermore, their employers may be attempting to minimise pay growth in the first year in anticipation of higher rises needed in the second year and/or when the apprentice reaches a milestone birthday.

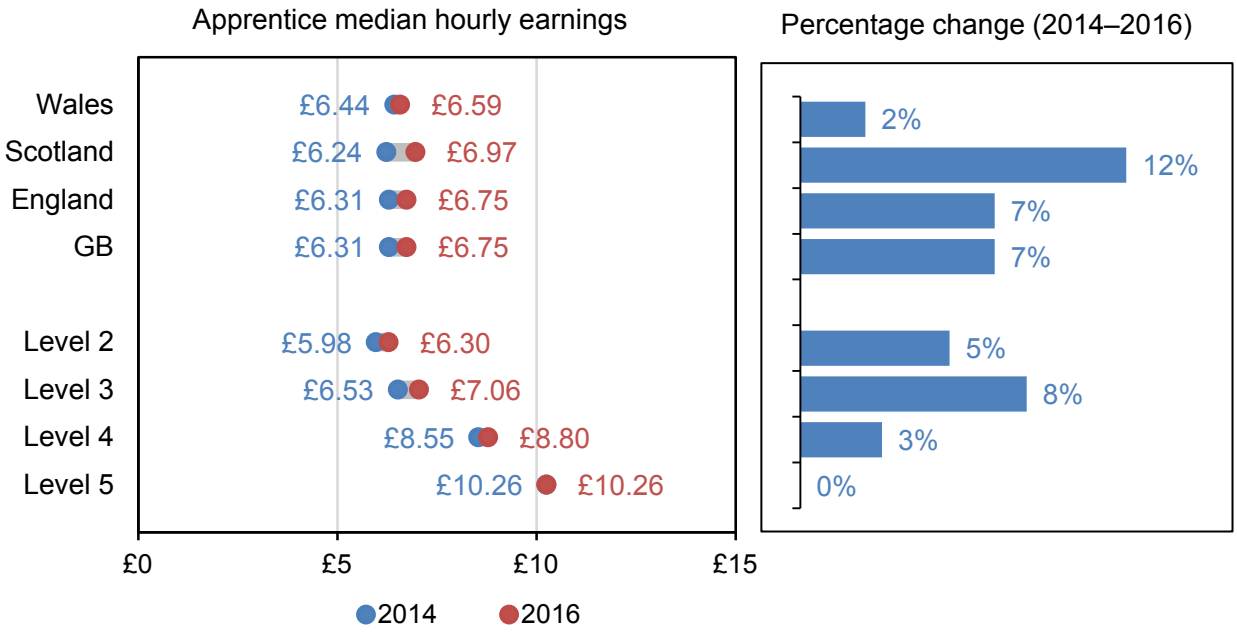
4.17 19-20 year olds in their first year stand out as the only group for whom nominal pay at the median declined over the period. However, when we look at the pay distribution for just this group, pay at the bottom end has risen sharply, by around 20 per cent at the tenth percentile. It is worth noting however that ASHE does not find a decline at the median for this group. Instead, it finds that earnings increased from £4.98 an hour to £5.31, a rise of 7 per cent. We discuss the differences between ASHE and APS later on but evidence on pay for 19-20 year olds remains contradictory.

4.18 Higher pay growth for apprentices in their second year is unlikely to have been driven by the Apprentice Rate as all but 16-18 year olds are entitled to the appropriate NMW rate for their age after their first year. Instead, there appear to be other factors at work, including the NLW: 13 per cent of respondents to the APS aged 25 and above said they had received a pay rise because the NLW was introduced.

4.19 However, despite the eligibility for the NLW of workers aged 25 and above in their second year, pay growth for this group is actually lower than for second year apprentices in their early 20s. Part of this pattern reflects the fact that median earnings for this cohort of apprentices were already above the level of the NLW in 2014, at £7.38, and so pay for many apprentices in this group did not have to grow by much to remain compliant. Equally, for those in their second year and in their early 20s it is possible that the NLW impacts have spread down the age distribution for apprentices, as they have done for some 21-24 year olds, and 18-20 year olds (discussed in Chapters 2 and 3).

4.20 It should be noted that there are differences between first and second year apprentices. Many apprenticeships do not last much longer than 12 months (the median length was 16 months in England in 2013/14), which explains why around 70 per cent of all apprentices in the APS are in their first year. Longer apprenticeships tend to be at a higher level and in certain frameworks. For example, engineering apprenticeships can last three years or more. This means that higher earnings for second year apprentices are likely to reflect these differences, some of which we explore further below.

Figure 4.3: Median hourly earnings and earnings growth, by nation and level of apprenticeship, GB, 2014-2016



Source: LPC estimates using Apprentice Pay Survey, GB, 2014-16.
Note: APS estimates based on hourly rate calculated from gross hourly pay including unpaid overtime, usual rate overtime and hours spent on work and training; excludes overtime at higher rate, tips and bonuses.

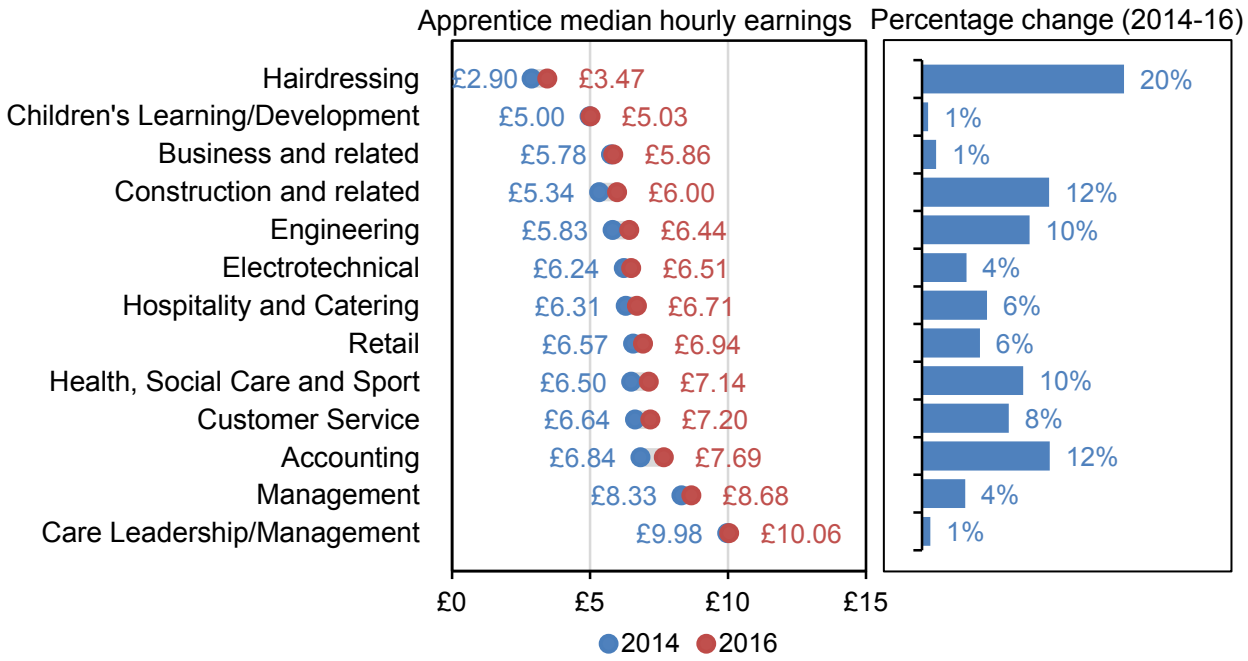
4.21 Fig 4.3 shows variations in pay and growth across the nations and by the level of the apprenticeship. The APS covers England, Scotland and Wales and so a comparison with Northern Ireland is not possible. The picture is one of rapid growth between 2014 and 2016 for Scotland, where earnings have increased by 12 per cent, 7 per cent growth in England, but little gain in Wales (2 per cent). It is difficult to conclude from these data sources alone what is happening here, though it is possible that the changes in earnings are compositional, driven by growth and/or decline in particular types of apprenticeship. We return to this when we consider apprenticeship volumes later on.

4.22 Looking by level we can see that Level 3 apprenticeships have seen hourly earnings grow faster than those at Level 2. This may explain some of the differences between those in year one

and those in their second year or beyond. Level 3 apprenticeships are equivalent to A-levels in England, Wales and Northern Ireland and Highers in Scotland, and have a longer duration than Level 2 apprenticeships, which are equivalent to GCSEs or Standard Grades. Therefore those who are in their second year are more likely to be studying at a higher level.

4.23 A critical determinant of pay is the framework that the apprentice is undertaking. Figure 4.4 shows the average hourly wages by framework from the 2014 and 2016 APS alongside the percentage increase. Hourly rates can vary considerably from as low as £3.47 per hour in Hairdressing up to £10.06 in Management. Of particular interest to the LPC are the low paying frameworks – because these are where the Apprentice Rate has the most impact.

Figure 4.4: Median hourly earnings and earnings growth, by framework, GB, 2014-2016



Source: LPC estimates using Apprentice Pay Survey, GB, 2014-16.
Note: APS estimates based on hourly rate calculated from gross hourly pay including unpaid overtime, usual rate overtime and hours spent on work and training; excludes overtime at higher rate, tips and bonuses.

4.24 Hairdressing is traditionally the lowest-paying framework, and remains so, but has seen the largest proportional earnings increase of any framework, driven by the introduction of the £3.30 rate. Similarly, construction and engineering have also seen pay growth of more than ten per cent. But other low-paying frameworks like childcare and business administration show barely any change at all. This suggests that employers have reduced the margin that they pay over the Apprentice Rate, perhaps reflecting that they are struggling to cover wage costs in these frameworks.

4.25 Looking by framework again illustrates the point that the increase in the Apprentice Rate is not the only factor pushing up wages, as there is rapid growth in higher-paying frameworks. Health and Social Care, Customer Service and Accounting have all seen above-average increases in the median hourly wage, which in these three frameworks is now close to or above the NLW.

4.26 In summary then, earnings for apprentices have increased faster than earnings overall but growth has been particularly strong at the bottom end of the pay scale, with much of this being driven by the new Apprentice Rate. Apprentices in their second year have seen faster growth than those in their first and some of this may be a spillover from the NLW. There are also compositional

changes in apprenticeships, including the on-going shift to higher level apprenticeship, which we explore later. While younger apprentices and those in some low-paying frameworks have seen substantial increases, there are some low-paying frameworks which have seen little change in nominal earnings. This may be an indication that these frameworks are under pressure. We now consider other measures of the impact of the Apprentice Rate: its bite, and trends in hours of work and volumes of apprenticeships.

Apprentice Rate bite

4.27 A key indicator of the impact of a minimum wage rate is its bite – the minimum wage as a percentage of the median earnings of those entitled to it. The LPC has traditionally considered the bite to be a leading indicator of employment impacts as it measures wage compression, which may mean that employers are struggling to cover their pay bill. In this case we consider the bite of the Apprentice Rate as a percentage of median earnings of those eligible for it: apprentices aged 16 to 18, or aged 19 and above and in their first year of their apprenticeship, which accounts for just under three-quarters of all apprentices. For those apprentices aged over 19 and in their second year or beyond we consider the bite of the appropriate minimum wage rate as a percentage of median earnings.

4.28 Between 2014 and 2016 the Apprentice Rate increased from £2.68 to £3.30, an increase of 62p or 23 per cent. At the same time median earnings of those entitled to the Apprentice Rate increased by 4 per cent in the APS and 15 per cent in ASHE. As a result the bite increased for apprentices as a whole from 44 per cent to 52 per cent as measured by the APS and from 58 per cent to 62 per cent as measured by ASHE. The higher figure in ASHE is driven by a large share of younger apprentices in this survey, whose lower wages pull the average wage down and therefore the bite up. These bites appear relatively low when compared to those of the NMW and NLW, but do not adjust for age and year. On this basis there is considerable variation within the apprenticeship cohort.

4.29 Table 4.2 shows the bite for apprentices at different ages and stages: those in their first year and those in the second year or beyond from both ASHE and APS. It suggests that bites are very high for a number of different groups of apprentices, including those aged 16 to 18 – 88 per cent in their first year – and aged between 19 and 24 and in their second year, whose bites are as high as 89 and 91 per cent (implying that the applicable minimum wage rates are the 'going rates' for second year apprentices of those ages).

4.30 Looking at the recent change, the bites have increased sharply for all apprentices eligible for the Apprentice Rate. The bite for year one 16-18 year olds has risen by six percentage points in the APS and eleven percentage points in ASHE. It has also risen sharply for apprentices eligible for the NLW – up between four and fourteen percentage points.

4.31 The bite has fallen for those in their early 20s and beyond the first year of their apprenticeship. We find this in both ASHE and the APS. The trend is driven by higher than average wage growth for this group combined with their eligibility for their age rates, which grew at a lower rate than the Apprentice Rate and the NLW. It is likely that some second year apprentices aged 19-24 years have moved on to the NLW, pulling up the median.

Table 4.2: Bite (percentage) of the applicable minimum wage at the median, by year of apprenticeship and age, GB and UK, 2014-2016

Year	Age	APS			ASHE		
		2014	2016	Bite change	2014	2016	Bite change
Year 1	16-18	82	88	6	74	85	11
	19-20	54	67	13	54	62	8
	21-24	42	49	7	42	45	3
	25+	37	43	6	33	41	8
Year 2+	16-18	62	71	9	53	62	9
	19-20	93	89	-4	82	76	-7
	21-24	94	91	-3	81	80	-1
	25+	86	89	4	56	71	14
All AR eligible		44	52	8	58	62	4

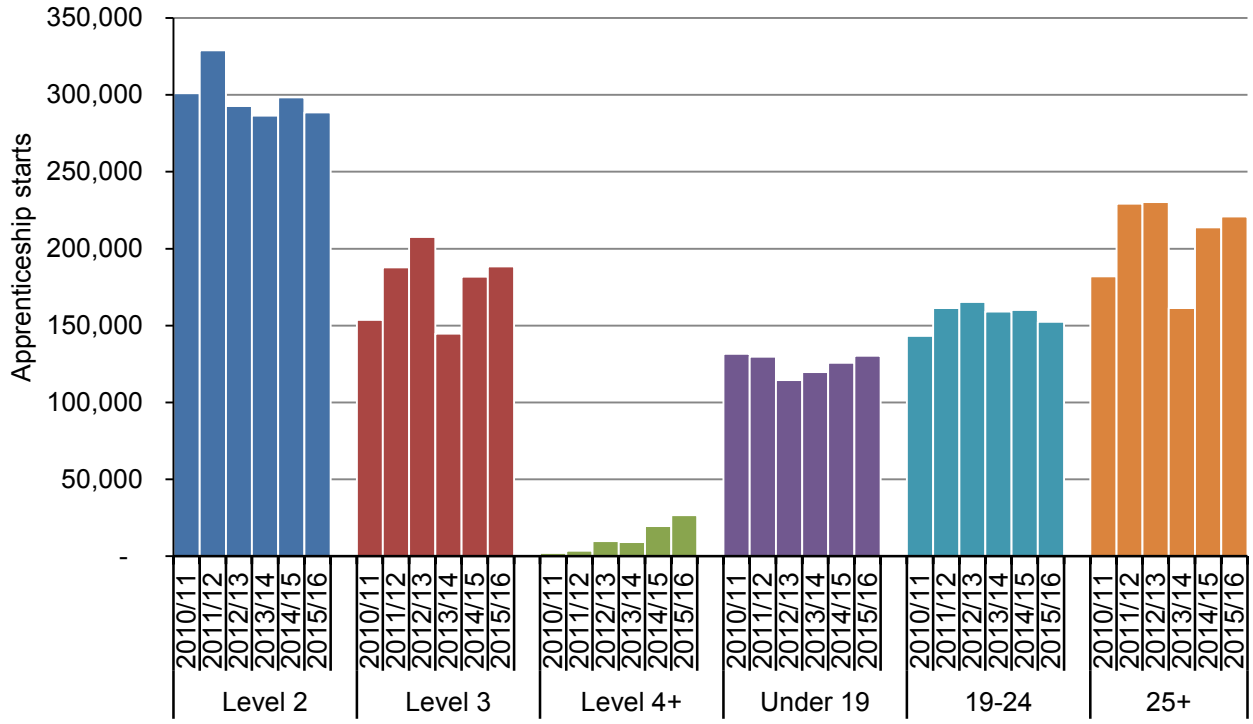
Source: LPC estimates using Apprentice Pay Survey, GB, 2014-16; ASHE, April 2014-16, standard weights including those not on adult rates of pay, UK.
Notes:

a. APS estimates based on hourly rate calculated from gross hourly pay including unpaid overtime, usual rate overtime and hours spent on work and training; excludes overtime at higher rate, tips and bonuses.
b. Bite changes are the percentage point difference between the 2014 and 2016 bite.

Hours and volumes of apprenticeships

4.32 Governments across the UK are seeking to increase both the number and quality of apprenticeships. In England the Government has committed to securing three million apprenticeship starts by 2020. We consider the impact of the increase in the Apprentice Rate to £3.30 by each nation in turn below, though available data is very limited in its detail, and figures for Wales were not available. Figure 4.5 shows apprenticeship starts in England for the age of the apprentice and level by academic year.

Figure 4.5: Apprenticeship starts, by age and level, England, 2010/11-2015/16

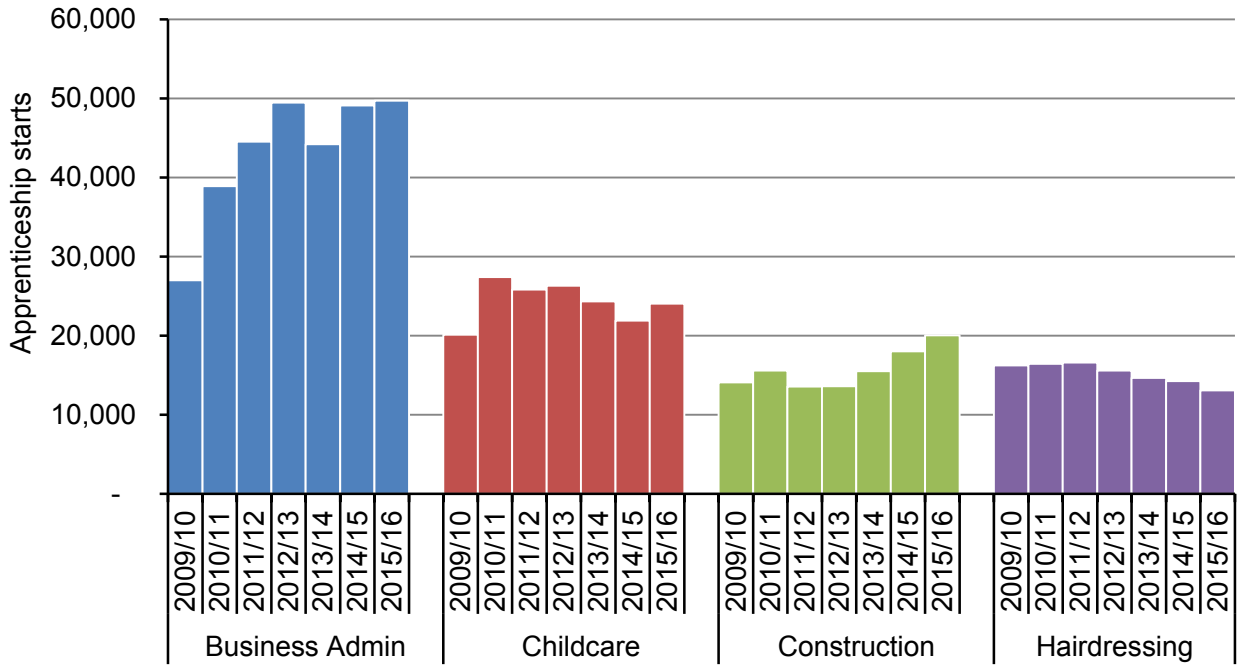


Source: LPC analysis using statistics from Skills Funding Agency FE data library: apprenticeships, England, 2010/11-2015/16.

4.33 Overall starts increased by 1 per cent between 2014/15 and 2015/16 to just over half a million (503,800) with a higher share of starts at Level 3 and Level 4 and above. However, over the same period there has been a fall in Level 2 starts (by 9,600 or 3 per cent), which tend to be lower-paid and are most exposed to changes in the Apprentice Rate. This is hard to interpret. On the one hand, it could indicate a wage effect. On the other, the decline is in line with the long-term trend. Previous declines precede the announcement of the increase in the Apprentice Rate, so could reflect policy emphasis on promoting higher skilled apprenticeships. They are offset by ongoing increases in Level 3 and Level 4 and above starts. This shift to higher levels explains some of the overall increase in pay for apprentices as higher-level apprenticeship tend to receive higher pay.

4.34 Looking at starts by age, the group for whom we might expect to see large impacts is 16 to 18 year olds, the group that is lowest paid and has the highest bite. However, the numbers of starts increased by 4 per cent, ahead of the overall increase of 1 per cent. Meanwhile starts fell among 19-24 year olds, suggesting no clear pattern.

Figure 4.6: Apprenticeship starts, by selected low-paying framework, England, 2009/10-2015/16



Source: LPC analysis using statistics from Skills Funding Agency FE data library: apprenticeships, England, 2010/11-2015/16.

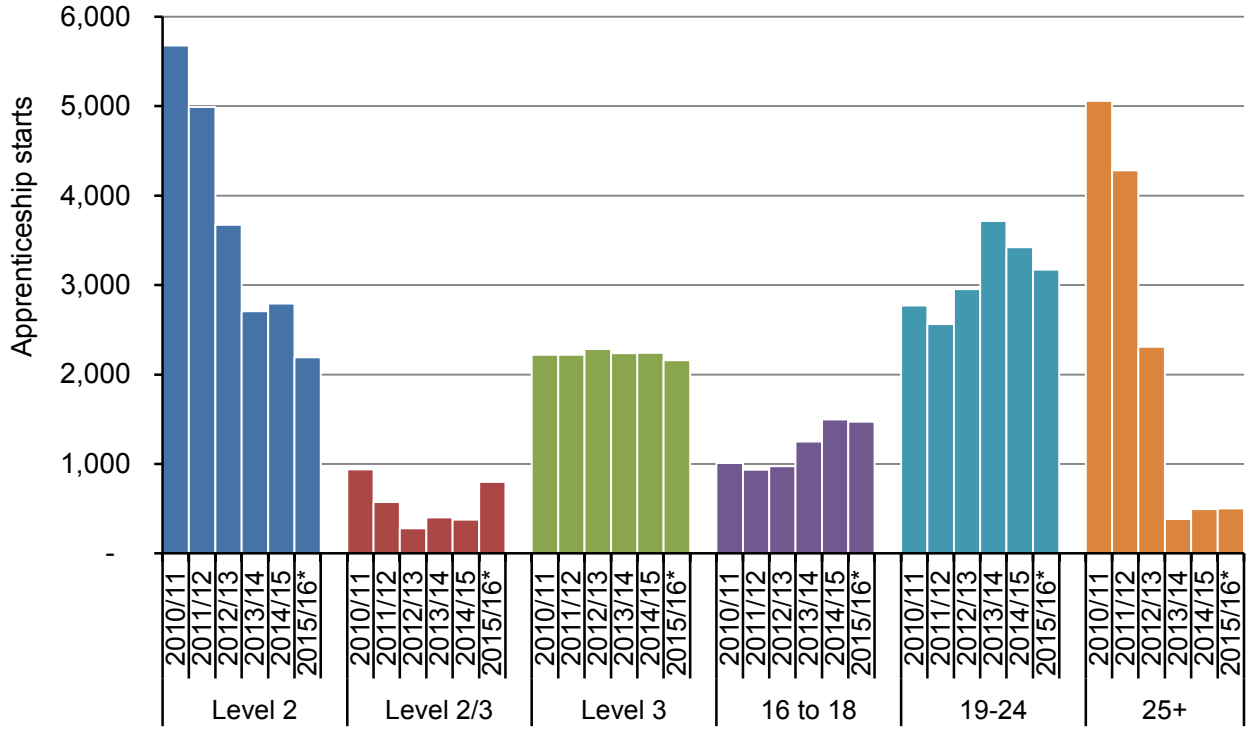
4.35 Figure 4.6 shows starts in selected low-paying frameworks in England: Hairdressing, Childcare, Construction and Business Administration. As noted above, Hairdressing saw the largest pay increase and this was driven almost entirely by the £3.30 Apprentice Rate. Starts here fell by 8 per cent from 14,250 to 13,080 between the 2014/15 and 2015/16 academic years. However, they have fallen for four years consecutively, from 2011/12 when the Apprentice Rate increased by only 10 pence or 4 per cent. Nevertheless, the most recent annual decline was greater than those in the previous three years.

4.36 Conversely, childcare apprenticeship starts, which saw barely any growth in median hourly earnings despite the Apprentice Rate rise, have seen an increase of 10 per cent on the year to 24,000 starts, reversing a four year decline. This growth may have been enabled by keeping wage costs down. Alternatively, it could reflect more use of apprentices if squeezed differentials have

made it harder to employ trained workers. In a survey of 119 employers in low paying sectors by Incomes Data Research (IDR, 2016) for this report childcare employers noted that they were facing significant pressures on pay and differentials arising from the NLW. They reported their intention to increase the number of apprentices to boost productivity.

4.37 The case of construction apprenticeships illustrates the sensitivity of starts to trends in the relevant sector/occupation more broadly. Construction apprenticeships saw double digit growth in both starts (11 per cent over the last year), and earnings (12 per cent over the last two years). Starts, at just over 20,000, are now back to pre-recession levels. But these reflect the buoyancy of construction more generally. We heard in oral evidence that employment overall has risen for two years and pay awards are set to be higher than any other industry. Some of the sector wide pay growth reflects ongoing skills shortages, which in turn reflects the increase in apprenticeship places.

Figure 4.7: Apprenticeship starts, by age and level, Northern Ireland, 2010/11-2015/16



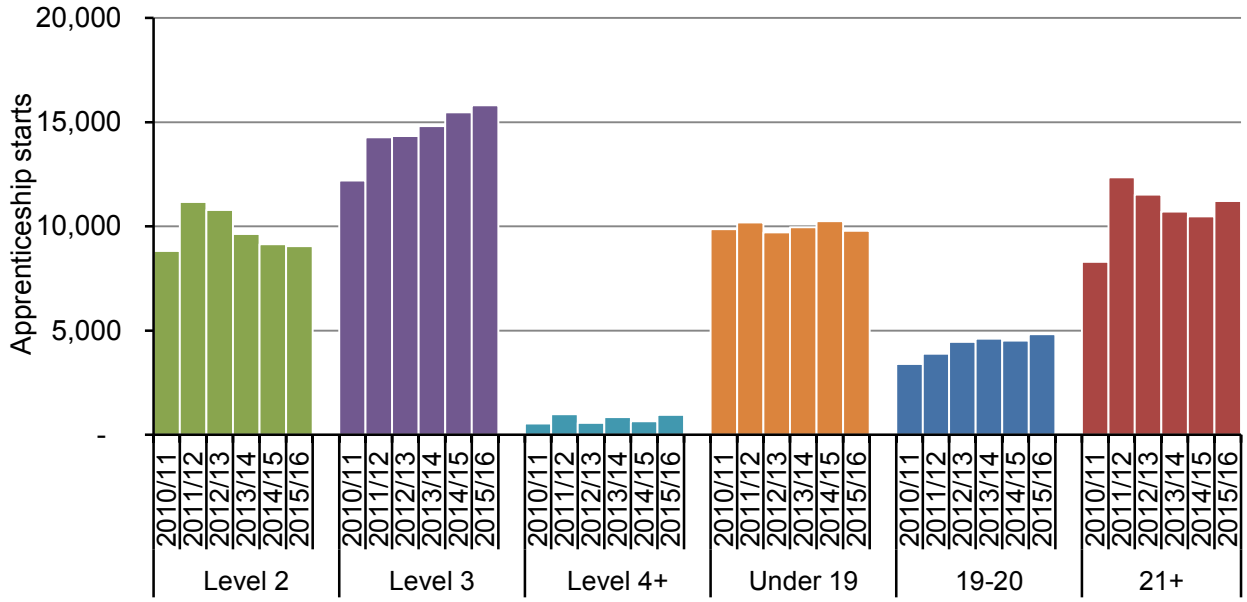
Source: LPC analysis using data from the Department for the Economy, Northern Ireland Executive, 2010/11-2015/16.
Note: The * for 2015/16 refers to fact that data for this year is incomplete.

4.38 Comparable data across the devolved nations present a mixed picture. The equivalent data for Northern Ireland are incomplete for the 2015/16 academic year, showing the starts up to April only. Despite these figures not capturing the total number of starts in 2015/16 there is no obvious additional negative impact of the £3.30 Apprentice Rate in Northern Ireland in Figure 4.7 (starts are falling but were already doing so). The large decrease in starts for those aged 25 and above is mainly driven by local economic conditions (apprenticeships are an employer driven programme in Northern Ireland) and policy focusing on the 16-24 age group. This also accounts for the large falls in numbers of Level 2 apprenticeships.

4.39 In Scotland there has also been no obvious drop off in aggregate starts following the introduction of the higher Apprentice Rate (indeed, overall starts were up by 2 per cent between the financial years of 2014/15 and 2015/16) but, unlike in England, there has been a small reduction in

starts for those aged 16 to 18, though an increase for 19-20 year olds and 21 year olds and over. In addition, there have been falls in Level 2 starts alongside increases in Level 3 and Level 4+ starts.

Figure 4.8: Apprenticeship starts, by age and level, Scotland, 2010/11-2015/16



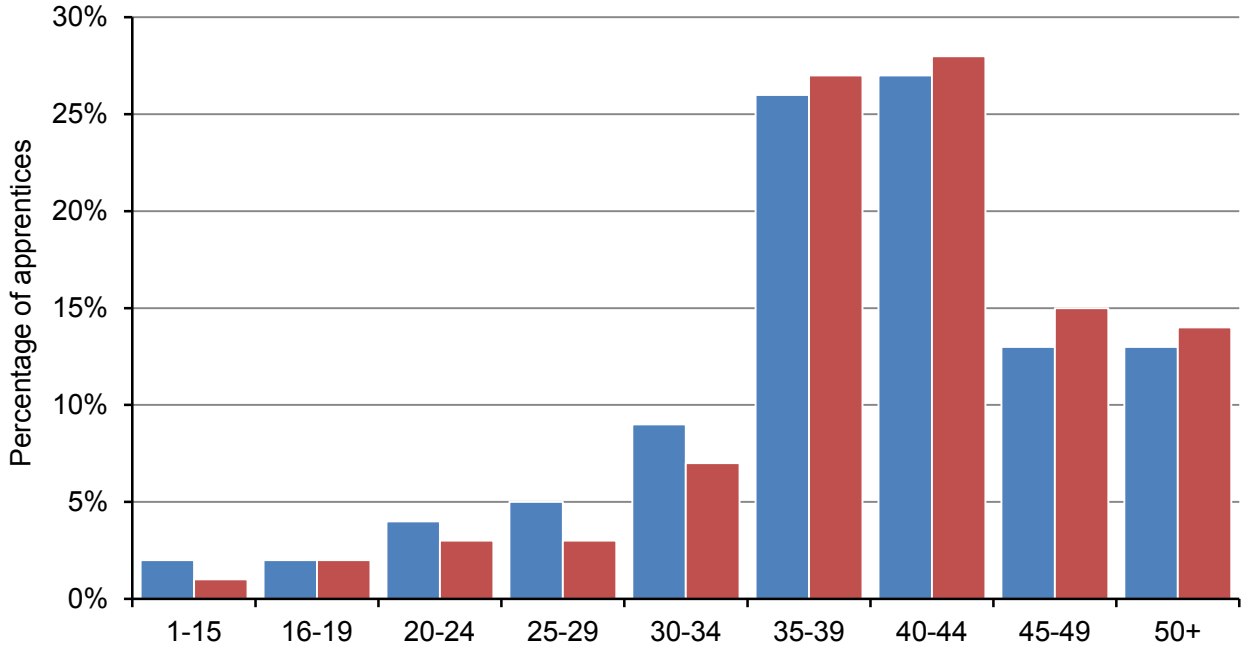
Source: LPC analysis of data provided by Skills Development Scotland, 2010/11-2015/16.

4.40 There are significant differences in the make-up of apprenticeships across the nations. In England Level 3 starts make up 37 per cent of the total, but in Scotland this rises to 61 per cent. We have already noted that Level 3 frameworks saw greater pay increases than Level 2, so this may partly explain why Scottish apprentices have seen higher pay growth than their English counterparts.

4.41 Further analysis of starts in Scotland by framework (not shown) presents a similar picture to that for England, with the exception that Hairdressing starts increased over the last year for which data is available. They increased by 4 per cent, reversing four years of consecutive decline.

4.42 As well as effects on starts, changes in the minimum wage can affect hours of work. Figure 4.9 shows total hours worked per week from the APS in 2014 and 2016. If the Apprentice Rate were too high we might expect a reduction in hours worked, but Figure 4.9 shows the opposite. The share of apprentices working 35 hours or above has increased from 79 per cent to 84 per cent. A similar pattern is found when looking at those apprentices most likely to be affected by the rates, specifically younger apprentices and those at lower levels (analysis not shown).

Figure 4.9: Total hours worked per week (including training), GB, 2014-2016



Source: LPC estimates using Apprentice Pay Survey, GB, 2014-16.

Underpayment and non-compliance

4.43 Having considered pay, the bite and starts, we now turn to non-compliance. Previous LPC analysis has shown rates of payment below the minimum to be persistently high when compared to underpayment for other minimum wage rates, particularly for younger workers and in some low-paying frameworks. HMRC has prioritised it as an area for enforcement activities. Nonetheless, it remains a critical area of risk given the large increase in the rate. The key challenge here is that non-compliance is difficult to measure, with the APS and ASHE producing very different estimates.

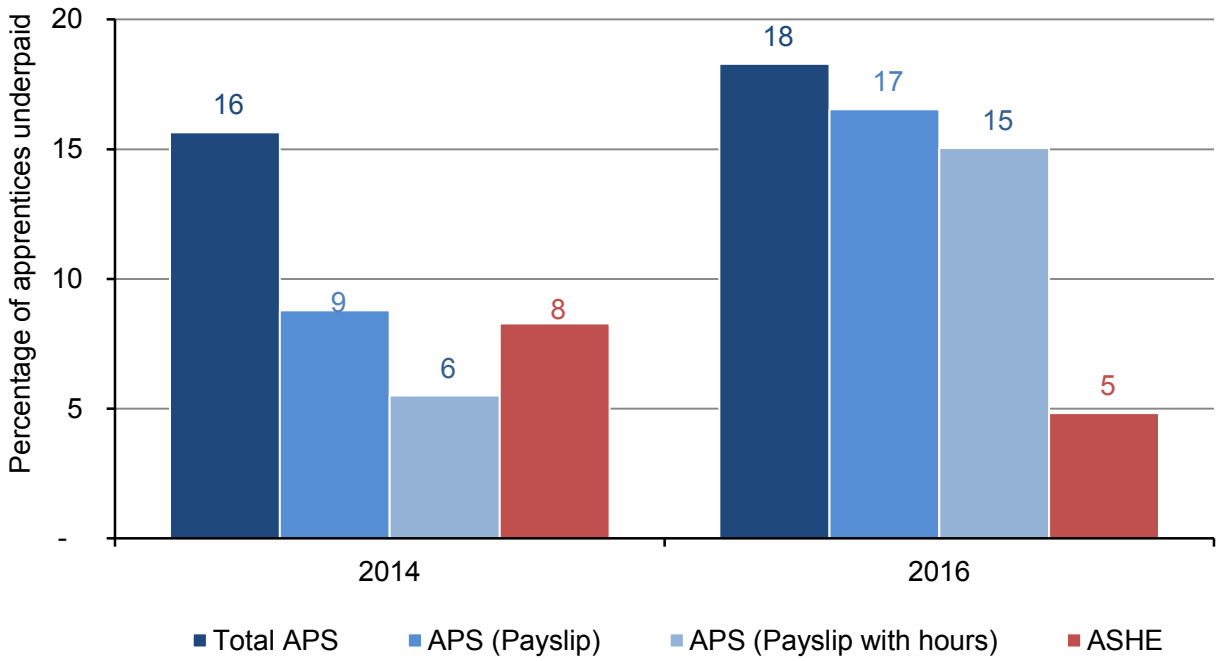
4.44 As with other minimum wage rates, underpayment itself is not a direct measure of non-compliance as there are legitimate reasons workers can be paid below the minimum (for example use of the accommodation offset). However, both the APS data and ASHE highlight levels much higher than is likely to be explained by this kind of factor. In particular, the APS data finds that overall just under one in five (18 per cent) apprentices are not paid the appropriate rate for their age in 2016, up from 16 per cent in 2014. ASHE finds underpayment to be 5 per cent overall, down from 8 per cent in 2014.

4.45 Clearly, there is a substantial difference in both the level and the trend of underpayment between the two different sources. However, it is important to note that on both measures, the rate is high. Were the lower ASHE level the true rate at 5 per cent, this would still be more than twice as high as underpayment for workers aged 25 and over and entitled to the NLW.

4.46 There are a number of reasons why the APS and ASHE produce different figures in any one year, and these are tied to the design of both surveys. Last year the LPC commissioned research (Drew, Ritchie and Veliziotis, 2016a and b) with the aim of reconciling the two sources. It concluded that, because of likely reporting error in hours, the APS estimate of non-compliance should be

regarded as an upper bound, while, because of under-representation of lower-paid apprentices, ASHE should be regarded as a lower bound, with the actual level somewhere in between. These differences are discussed in Box 4.1 below. However, the research also highlighted a preferred estimate, derived by narrowing the APS sample down to just those apprentices who have a payslip that stated their hours when completing the survey[10].

Figure 4.10: Alternative measures of minimum wage underpayment, GB and UK, 2014-2016



Source: LPC estimates using Apprentice Pay Survey, 2014-2016, GB; ASHE, UK, April 2014-16, low pay weights including those not on adult rates of pay, UK.

4.47 Figure 4.10 compares the main measures of underpayment. In 2014 the overall APS measure was 16 per cent, but was significantly lower for those with a payslip (9 per cent) and lower still for those meeting the researchers' preferred criteria (6 per cent). This estimate was in line with ASHE estimate however, suggesting a degree of consensus.

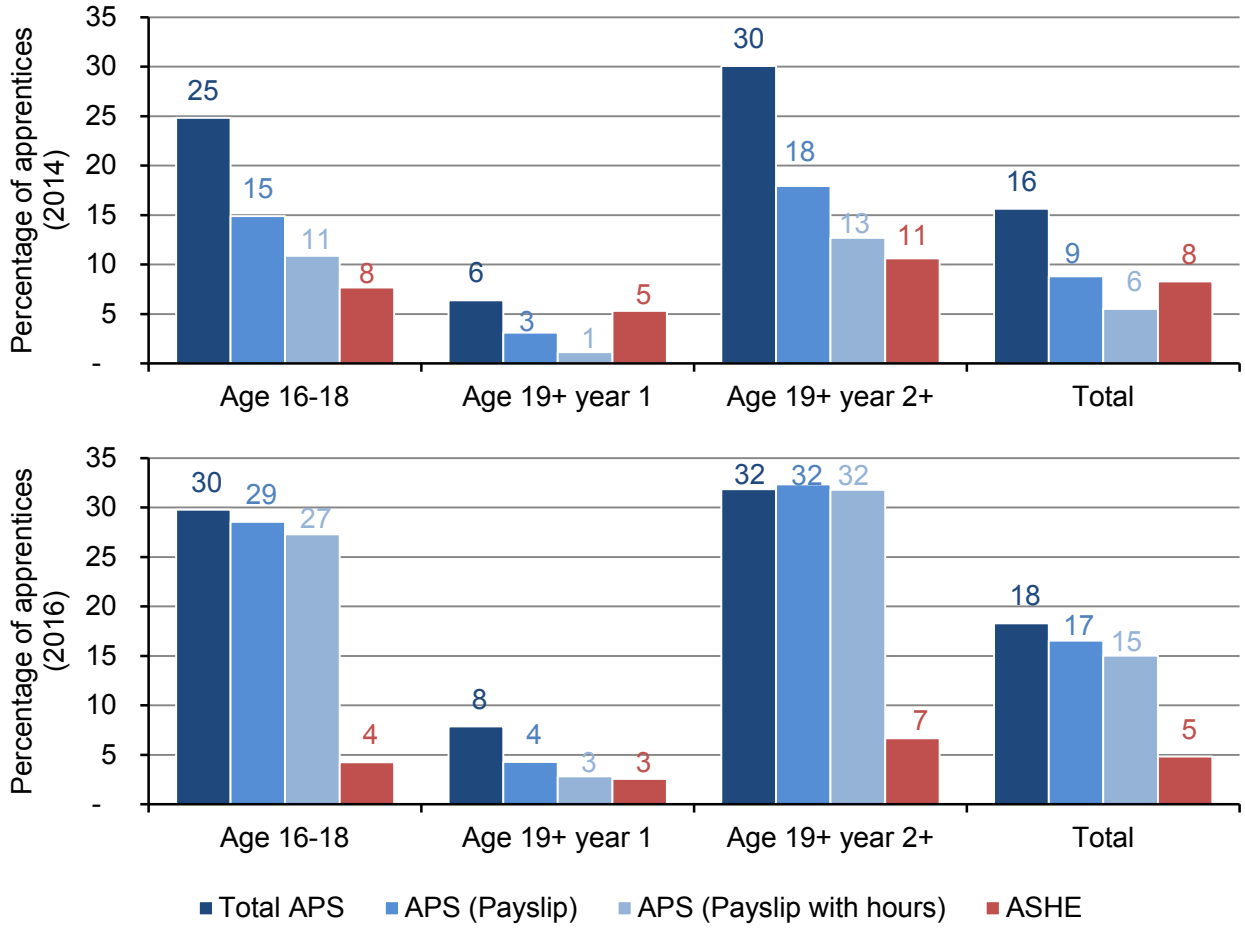
4.48 Unfortunately, this pattern is not repeated in the 2016 APS. The measure based on those with a payslip stating their hours (15 per cent) is only slightly below the overall measure (18 per cent), well above ASHE estimate (5 per cent) and more than double the 2014 equivalent measure (6 per cent). Given that a requirement for a payslip will likely bias the sample in favour of more compliant employers (by excluding those with less formal practices), this measure of non-compliance might understate the problem. Overall this data suggests that apprentice non-compliance remains significantly higher than for non-apprentices and – tentatively – that it may have worsened.

4.49 Figure 4.11 below repeats the analysis shown in Figure 4.10 but breaks measured underpayment down into 16-18 year old apprentices, those aged 19 and above and in their first year, and those aged 19 and above in their second year. This shows that the pattern of highest underpayment for 16-18 year olds and those aged 19 and above in their second year remains in

10 Those who fit this criteria make up a fairly small share of the sample overall, between 15 and 20 per cent, and so the survey loses some of its statistical 'power'. They are also likely to be unrepresentative - missing out employers who have less formal working practices, or where employees do not want to reference a non-compliant payslip for fear of getting their employer into trouble. These latter factors are likely to bias measured underpayment downwards.

place in the 2016 data. Only for apprentices aged 19 and above in their first year do ASHE and APS payslip measures produce similar estimates, as in 2014.

Figure 4.11: Alternative measures of minimum wage underpayment, by age and year of apprenticeship, GB and UK, 2014-2016



Source: LPC estimates using Apprentice Pay Survey, 2014-2016, GB; ASHE, UK, April 2014-16, low pay weights including those not on adult rates of pay, UK.

4.50 One further check to measure the extent of underpayment is to look at how pay is distributed below the NMW rates. Where a lot of pay is clustered just below the NMW rates (for example lots of first year apprentices paid at £3.29), this is more likely due to measurement error, reflecting that there is little material gain for the employer. Again we use our preferred measure, which is derived from those apprentices in the APS who have a payslip stating their hours when completing the survey.

4.51 Figure 4.12 shows the distribution of underpayment for Apprentice Rate eligible apprentices (those aged 16-18 or 19 or above and in their first year) who were paid below £3.30. Around 13 per cent are paid between £3.21 and £3.30 and a further 14 per cent are paid between £3.11 and £3.20, which could be regarded as a 'near miss'. But the majority of underpayment, just under 70 per cent, is much lower, with a clear spike close to the old Apprenticeship Rate of £2.73.

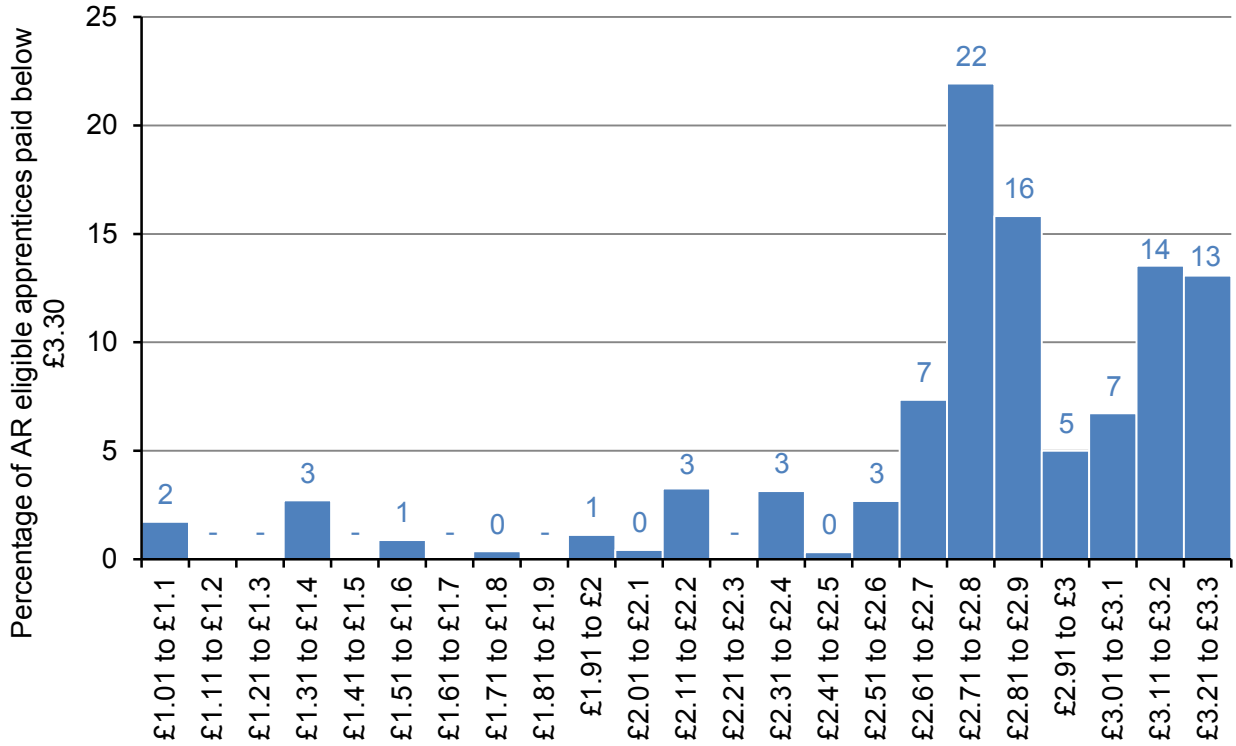
Box 4.1: Sources of error in data on apprentice pay and compliance

ASHE is a survey of employers answering on their employee's behalf. This means that ASHE data should be more accurate as answers are based on records of hours and earnings. However, many apprentice employers are unaware that they are in fact employing an apprentice. The Government carried out several surveys of employers, the most recent of which found that just over a third of apprentice employers did not know. The proportion almost doubled when looking at employers of apprentices who already worked for the employer before beginning their apprenticeship (DfE, 2016b).

Because of this issue, ASHE survey undercounts apprentices, particularly adults. In the weighted population of apprentices in ASHE around 15 per cent are aged over 25 compared to 39 per cent in the APS. Furthermore, research commissioned by the LPC suggests that those apprentices missing from ASHE are disproportionately likely to be on low earnings and changing jobs frequently – both key risk factors for non-compliance. Together this means that ASHE undercounts apprentices and with this may be undercounting some non-compliance.

The APS has much better coverage. But it has a countervailing problem of measurement error. That is, it is a survey of apprentices themselves and contains the chance of error as many apprentices do not know their hourly wage rate (in fact they may not even have one if they are salaried). They may also not know exactly how many hours they work and train off the job. Knowledge of training hours is vital because apprentices are supposed to be paid for these hours too.

Figure 4.12: Distribution of hourly pay for apprentices paid below the Apprentice Rate, GB, 2016



Source: LPC estimates using Apprentice Pay Survey (those apprentices with a payslip that states their hours only), GB, 2016.
Note: Unweighted sample size n = 99

Changes in underpayment

4.52 Table 4.3 shows the estimate of underpayment derived from the whole sample of the APS (that is, not just those with payslips stating their hours) by age, level of apprenticeship, gender and stage of their apprenticeship. Using the whole sample enables a closer look at individual groups of apprentices to see where the changes have taken place. But it should be reiterated that these figures are upper-bound estimates of underpayment, and changes are indicative only. Broadly, the data suggest that underpayment has increased amongst the youngest apprentices, those at Level 2 and for those in their second year and over the age of 25. This latter change may reflect this group's eligibility to the NLW, where the higher rate means there is a sharp cliff-edge (an increase from £3.30 on these data to £7.20).

Table 4.3: Percentage of apprentices underpaid, by various characteristics, GB, 2014-2016

	2014	2016	Percentage point change
Total	16	18	3
16-18	25	30	5
19-20	21	23	3
21-24	18	18	1
25 or older	8	11	3
Level 2	17	21	4
Level 3	15	16	2
Level 4	5	6	1
Level 5	5	5	0
Male	16	18	2
Female	16	19	3
(All) 1st year	10	12	2
(All) after 1st year	29	31	2
(25+) after 1st year	25	32	7

Source: LPC estimates using Apprentice Pay Survey, GB, 2014-16.

4.53 Turning now to underpayment by framework, measured on the same 'upper bound' basis, it ranges from just under half of apprentices in Hairdressing to just five per cent in Care Leadership and Management. In the earnings section we noted that Hairdressing tends to be the lowest paid framework, and the table below shows that it also has the highest non-compliance. However, the level of increase in non-compliance is relatively low and is likely to be within the margin for error for this estimate. We also noted barely any increase in pay in childcare frameworks, which, given the increase in Apprentice Rate, we might expect to be associated with an increase in non-compliance. But the estimates below show no change here.

Table 4.4: Percentage of apprentices underpaid, by framework, GB, 2014-2016

	2014	2016	Percentage point change
Hairdressing	45	48	2
Children's Learning and Development	28	28	0
Construction and related	22	25	3
Electrotechnical	18	24	7
Health, Social Care and Sport	12	17	5
Engineering, Manufacturing Technologies	16	17	1
Business and related	14	16	3
Hospitality and Catering	10	15	5
Retail	12	15	2
Customer Service	11	12	1
Accounting	9	8	-1
Management	4	8	3
Care Leadership and Management	5	5	0

Source: LPC estimates using Apprentice Pay Survey, 2014-2016, GB.

4.54 Larger than average change in underpayment, on this measure, is seen in Electrotechnical, Hospitality and Catering, and Health, Social Care and Sport. Electrotechnical and Hospitality and Catering saw below average growth in earnings which, combined with higher non-compliance could suggest that employers may be struggling with costs. Starts in Hospitality and Catering frameworks fell in England, Scotland and Northern Ireland, albeit these falls were in line with longer term trends. While Social Care starts have levelled off, this follows extremely rapid growth over the last five years or so.

4.55 Overall, the evidence suggests that non-compliance remains a significant problem for apprenticeships and one that may have grown. This complicates the previous evidence that there does not seem to have been a significant negative impact of the Apprentice Rate increase to £3.30 on apprenticeship volumes: an increase would have a lower impact on volumes if large numbers of employers were not paying it.

4.56 In their research Drew, Ritchie and Veliziotis (2016a and b), undertook a small number of qualitative interviews with both apprentices and employers in two of the sectors where underpayment seems to be most prevalent, childcare and hairdressing. Their findings suggested that apprentices had limited knowledge concerning their pay and hours; difficulty estimating training hours; little knowledge of the minimum wage; and assumed that employers would pay them the right amount. The research also suggested that not all employers in these sectors were completely aware of the correct pay rates for apprentices and that mistakes may not represent unscrupulous attempts to pay the wrong wages.

4.57 However, they also found that time spent on training may not always be paid. Hairdressing apprentices received in-salon training but a large amount of learning was expected to be carried out independently without reward. They also noted a potential problem with e-learning, with childcare employers expecting apprentices to complete it in their own time.

Changes in apprenticeship funding

4.58 Finally we turn to wider changes in apprenticeship policy. Over the last year the Government has announced a series of reforms to the way apprenticeships will be funded. In the November 2015 Autumn Statement the then Chancellor George Osborne announced that from April 2017 there will be an Apprenticeship Levy of 0.5 per cent of an employer's pay bill for all UK employers with a pay bill greater than £3m. This Levy will pay for the apprenticeship training and assessment currently provided by colleges and training providers and funded via government grants. By 2020 the Levy is estimated to cost UK employers £3bn.

4.59 Levy-paying employers in England will see their contributions enter a digital account which will be used to pay training and assessment providers for their services. In the devolved nations the situation is less clear.

4.60 Smaller employers in England whose wage bill is below the £3m threshold will still be able to access apprenticeship training. But they will be required to contribute 10 per cent of the costs faced by colleges, training providers and assessment bodies in delivering the training and assessment. Levy paying employers will meet 100 per cent of these costs from their Levy account.

4.61 There will be extra support for small businesses in England and those taking on the youngest apprentices. Employers with fewer than 50 employees taking on 16-18 year old apprentices will not be required to co-invest. This support extends to those taking on 19-24 year old care leavers and those with a Local Authority Education, Health and Care plan. An additional payment of £1,000 to employers and a further £1,000 payment to training providers will be given to all employers taking on apprentices aged 16-18, 19-24 year old care leavers and those who have an Education, Health and Care Plan.

4.62 Each apprenticeship framework and standard will be allocated to one of fifteen funding bands, within which employers and providers will negotiate over the price for training and assessment. The funding band will set a limit to the level of public funding provided for that framework or standard. Training providers who are training 16-18 year olds will receive transitional support over the first year of the new system. This will amount to an additional cash payment equivalent to 20 per cent of the upper-limit value of the funding band for the relevant framework.

Implications for employer costs and the Apprentice Rate

4.63 There are a number of interactions between these changes, the Apprentice Rate and, indeed, the NLW. The Levy is to a large extent a sunk cost and employers who want to maximise the value of their Levy contribution will need to take on apprentices, potentially creating a powerful incentive to offer places, and one increased for older apprentices by the introduction of the NLW. On the other hand, it is still a cost, which will need to be funded. Moreover, it only relates to part of the expense of taking on an apprentice. For example, employers provide on-the-job training, management, mentoring, provision of equipment and materials and exposure to a range of tasks and activities as well as pay the wages of their apprentice for both their time at work and at college. Current apprentice employers pay little towards the training and assessment costs of colleges and training providers, though they invest in the apprenticeship in other ways. The introduction of the Levy means that the training and assessment costs of training providers and colleges will now need to be

met by the employer through their Levy contribution. One risk is that employers look to minimise activities that they have traditionally invested in – on the job training, management and so on – in order to lower the overall cost.

4.64 Stakeholder evidence was mixed on the implications for apprentice pay. A number of employer representatives highlighted concerns about the Apprenticeship Levy. For example, the CBI told us that 45 per cent of businesses they surveyed thought that the Levy would lead to increased prices or reduced margins. It said 'firms are expecting the Levy to put downwards pressure on wages. A sharp rise in the NMW, coupled with the increased costs that the Levy represents poses a real risk to the long-term viability of apprenticeships'. Others were more supportive, or drew different implications. EEF for example, thought the Apprentice Rate needed to be higher in order to mitigate the risk of the Levy leading employers to take on apprentices purely because of the lower wage.

4.65 The TUC did not comment directly on the Levy, but highlighted cases of apprenticeships that it thought should properly be considered jobs and where it believed the lower wage was inappropriate. Employee representatives also pointed out that little was changing in practice in some of the most exposed parts of the system: training costs will (as now) be waived for small employers taking on 16-18 apprentices. There will be additional funding on top of this for any employer taking on a 16-18 year old apprentice. This is more generous than the previous AGE (Apprenticeship Grant for Employers) grant as this was only available to first time apprentice employers.

4.66 Overall, the impact on apprenticeship volumes and quantity of these reforms remains unclear – though the Government's aim is to improve both. One potential impact is a change in the profile of the employers involved in apprenticeships, with larger firms – which already account for most apprenticeships – making up a bigger share. This would reflect the fact that the Levy is unavoidable for firms with large payroll bills, so may have the effect of encouraging more larger employers to offer places, whereas higher training costs via co-investment depend on smaller employers signing up. The LPC will monitor the impact closely from April when the Levy is implemented.

Conclusion

4.67 This chapter has shown that apprenticeships have undergone significant change over the last year. Apprentice hourly wages grew by 7-8 per cent between 2014 and 2016, faster than earnings for non-apprentices (5 per cent) and with far higher growth at the lower end. Pay at the bottom decile increased by just under a quarter (22 per cent), driven by the October 2015 increase in the Apprentice Rate.

4.68 However, the Apprentice Rate is not the only driver of pay growth. Those in their second year or beyond saw greater increases in pay, some of which may be a spillover from the introduction of the NLW. There are also on-going compositional changes in apprenticeships, with more starting at Levels 3 and above in England and Scotland. Higher-level apprenticeships tend to be better paid, but they also last longer which means that apprentices are more likely to reach a second year and/or reach a milestone birthday entitling them to a higher rate.

4.69 Rising median pay, including significant growth at the bottom end, was still lower than the growth of the Apprentice Rate itself, which meant that the bite rose. It remains very high for some groups, for 16-18 year olds in their first year it is 85-88 per cent. There is a limited evidence base to determine the impact on apprenticeship volumes. There does not seem to have been a negative impact on aggregate levels, or hours of work, both of which have grown, as have apprenticeships for 16-18 year olds. However, there have been continued falls in Level 2 starts in England and falls for 19-24 year olds, though these predate the increase and its announcement. Similarly, there have been declines in hairdressing apprenticeships in England, though these look in line with longer term trends and in Scotland Hairdressing apprenticeships have increased.

4.70 Over the same period, there may have been an increase in underpayment, which was already high, notwithstanding that accurately measuring non-compliance is extremely challenging. The upper-bound estimate of non-compliance has risen for the youngest apprentices, those at Level 2 and for those in their second year over the age of 25. This latter change may reflect the sharp change in the rate for apprentices becoming eligible for the NLW. This rise in underpayment may suggest affordability pressures arising from the new rate.

4.71 One possible impact of the Apprentice Rate that we have been unable to explore here is effects on quality. Employers must pay the wages of their apprentices while they are studying at college. So an increase in the Apprentice Rate increases the cost of off-the-job training, potentially creating an incentive to minimise its provision. There is insufficient evidence to assess these kinds of effects, for example changes to the number of hours that apprentices spend training on or off the job, or softer quality changes like supervision and support in the workplace.

4.72 Future increases in the Apprentice Rate are set to take place in the context of substantial policy change. The introduction of the Apprenticeship Levy in particular creates a large cost for some employers, but may also encourage some to offer more apprenticeships. One risk is that some employers look to minimise their investment in management, on the job training and wage costs to compensate for now needing to cover activities traditionally provided by colleges and training providers for minimal cost. For smaller non Levy-paying employers, co-investment also raises costs.

Chapter 5
The rates

Introduction

5.1 This chapter considers our recommendations for the rates of the minimum wage, where a particular challenge bearing on decision-making for this report is the UK's decision to leave the European Union (EU). The introduction of the National Living Wage (NLW) would in any event have been a substantial change for business and the labour market. The Referendum result means the policy is now taking effect against the backdrop of a broader economic change, with uncertain consequences.

5.2 Understanding the real world implications is made particularly challenging by timing and data constraints. The first is an inherent feature of implementing a new policy: the NLW only took effect in April, so implementation and measurement lags mean early recommendations on the rates needing to be made in advance of full evidence being available (for example, without econometric evidence). The second is the timing of the NLW cycle, which was introduced on an April cycle to align with the tax year rather than the October calendar previously applying to the other rates. This means we face earlier reporting requirements and will have less timely data in some areas – notably pay forecasts from the Office for Budget Responsibility (OBR).[11] To these considerations, manageable in times of economic continuity, is now added the constraint of limited hard evidence on the performance of the economy and labour market following the EU Referendum result in June, and likely greater volatility in data. The overall effect is to make a high quality decision harder – with any recommendation likely to carry more risk than usual.

5.3 To maximise the information available to us, the meeting to agree the recommendations in this report was held in late October 2016, with deliberations based on data and information available up to 27 October. This included the Bank of England August Inflation Report and the HM Treasury Panel of Independent Forecasts from October, as well as ONS labour market data. The most recent forecasts from the OBR date from March. The preliminary estimate of GDP for the third quarter of 2016 was released on 27 October.

5.4 In the other chapters of this report we set out the evidence base informing our recommendations. Chapter 1 gave an overview of the state of the economy in 2016. Chapter 2 considered the early evidence on the likely impact of the introduction of the NLW and its 2020 level. Chapter 3 analysed the youth (16-24 year old) labour market, while Chapter 4 looked at apprentices. This chapter builds on the findings of these chapters including setting out our approach, evidence about the economy following the UK's decision to leave the EU, stakeholder views and other costs facing business.

11 The most recent available OBR forecasts to inform minimum wage recommendations will in future be seven months old (from March, for a decision in October), rather than three months (from November, for a decision in January). We use a range of forecasts below including the Bank of England's and those of independent forecasters.

Approach

5.5 The key determinant of our recommendations is of course the remit provided to the LPC by the Government, under which – following the introduction of the NLW – we have a twofold role. The Government's goal is to 'move away from a low wage, high tax, high welfare society and encourage a model of higher pay and higher productivity'. For workers aged 25 and over, we are required to advise on the pace of increase of the NLW such that it meets the Government's ambition of reaching 60 per cent of median earnings by 2020 'subject to sustained economic growth'. For workers aged under 25 and apprentices, we are required to recommend rates that 'help as many low-paid workers as possible without damaging their employment prospects' (BIS, 2016b).

The National Living Wage

5.6 Table 5.1 describes the key differences in more detail. In essence our task for the NLW is to work out the best profile for the rate given its starting point of £7.20 and 2020 end point, 'subject to sustained economic growth'. As we set out in our Spring 2016 Report, the 60 per cent goal is a stretching one – measured on a comparable basis it would give the UK one of the highest minimum wages in the world in relative terms. We also highlighted its inbuilt flexibility: a dynamic target is a more prudent way of raising the pay floor than alternatives such as a fixed cash target because its level should automatically adjust to reflect changes in economic circumstances, as these should be captured in the forecasts.

5.7 We set out in our Spring 2016 Report how we intended to approach making recommendations on the NLW, which for this report covers the April 2017 rate and an indicative rate for April 2018.

Table 5.1: The National Living Wage and other minimum wage rates

Area of difference	National Living Wage	Other rates
Target	The 'ambition… is that it should continue to increase to reach 60 per cent of median earnings by 2020'. The Government's 'objective is to have a National Living Wage of over £9 by 2020'.	No target.
Role	The LPC is asked to 'monitor and evaluate the NLW and recommend the level… In making recommendations in relation to the National Living Wage the LPC is asked to consider the pace of the increase...'.	'The Government would like the LPC to monitor, evaluate and review the levels of each of the different NMW rates (those for 16-17, 18-20, and 21-24 year olds, and the Apprentice Rate)'.
Period	The LPC is asked to 'recommend the level of the National Living Wage to apply from April 2017… the Government also asks the LPC to provide an indicative rate for April 2018'.	The LPC is asked to 'make recommendations on the increase it believes should apply from April 2017'.
Tolerance for employment effects	Analysis by the Office for Budget Responsibility (OBR, 2015b) in July 2015 estimated that, as a consequence of the NLW's introduction, there would be 20,000-110,000 fewer jobs by 2020 than there otherwise would have been – against wider employment growth of 1.1 million jobs.	The Government's 'aim is to have NMW rates that help as many low-paid workers as possible without damaging their employment prospects'.
Other considerations	'The ambition is… subject to sustained economic growth…the LPC is asked to consider the pace of the increase, taking into account the state of the economy, employment and unemployment levels, and relevant policy changes'.	'The LPC is… asked to consider the state of the economy and labour market as well as any relevant policy changes'.

Source: LPC summary of remit, BIS, 2016b.

5.8 We said that we would determine the pace of the increase by calculating the rate putting us on course for 60 per cent by 2020 and then judging its affordability within the terms of our remit, drawing on economic, labour market and pay analysis, independent research and stakeholder evidence. We thought we would probably calculate the on-course NLW on a rolling bite path basis, using the latest forecasts (that is, neither on a cash basis nor using the forecasts when the policy was announced in July 2015, both of which would rapidly date and become poorly aligned with the economy).

5.9 While we would endeavour each year to consider the best possible trajectory in light of the economic evidence, in the absence of economic shocks or other strong evidence the default was likely to be a straight-line path to 60 per cent, based on even steps in the relative value of the NLW. However, it was open to us to vary the profile of the NLW in our recommendations in order to front-load or back-load it.

5.10 A straight-line bite path was the default for several reasons including that: there was likely to be limited evidence available given measurement time lags; variation in the trajectory was in any event a zero-sum game – with smaller increases in one year arithmetically resulting in higher increases later on; large adjustments in one direction or the other would be needed to make a significant difference to the level of the rate; and stakeholders were divided on the merits of back-loading or front-loading the path.

5.11 Under our remit, progress to 60 per cent of median earnings is 'subject to sustained economic growth', with scope for the LPC to recommend delay in achieving the 2020 goal should this condition not be met, although there is no formal definition. We said that in interpreting our remit we would put weight on the Government's starting assumptions when the policy was introduced. For example, in July 2015, the OBR (2015b) estimated that, as a consequence of the NLW's introduction, there would be 20,000-110,000 fewer jobs by 2020 than there otherwise would have been, against wider employment growth of 1.1 million jobs 2015-21. This assessment was cited in the Summer Budget 2015 (HM Treasury, 2015a). Two other measures that have a bearing are the official definition of a recession – negative GDP growth for two consecutive quarters – and the rules set out in the Government's fiscal framework. Under its fiscal charter, the Government's targets disapply in the event of the OBR assessing, as part of its economic and fiscal forecast, that there is a 'significant negative shock to the UK'. This is defined as real annual GDP growth of less than one per cent on a rolling four quarter basis – whether in the most recent period, at the time of the assessment or during the forecast period (HM Treasury, 2015c). Following the EU Referendum result the Government said it would no longer pursue its surplus target, before new OBR forecasts.

5.12 We calculated the on-course rate for April 2017 – based on the data available in January 2016 so likely to change as new pay data emerged and forecasters updated their predictions – at £7.64, with a 2020 end point of £9.16. Following the OBR's March forecasts, the projected on-course rate fell – to £7.60 in April 2017 and £9.02 in 2020 respectively, which was the path set out in our consultation documents in the spring.

The other minimum wage rates

5.13 We also set out in our Spring 2016 Report how we intended to approach making recommendations on the minimum wage rates for workers aged under 25 and apprentices, which for this report covers the rates for April 2017. Here, we said that our task was in principle unchanged from our approach since the origins of the policy in the late 1990s: making recommendations that raise the rates as high as possible consistent with avoiding damage to employment. However, the NLW had a bearing on our approach – first because it raises the question of relativities in pay-setting and, second, because it affected the calendar.

5.14 On the issue of relativities, the remit requires us to manage the risks of pricing younger workers out of employment through making their absolute cost too high. But this cannot be undertaken in isolation from trends in the pay floor of older workers – since if they become more expensive to hire, younger workers become relatively cheaper. The NLW may therefore provide some shelter for higher pay floors for younger workers than would be the case were recommendations on the rates made in its absence.

5.15 We considered in detail how to treat pay for younger workers, including concerns that lower pay floors for 21-24 year olds, 18-20 year olds and 16-17 year olds were unjustified. We concluded that, given the objective in our remit of avoiding job loss for those aged under 25 (unlike for workers aged 25 and over where some consequences for employment had been accepted), the pay floors for younger workers needed to be set below the level of the NLW. This reflected genuine differences in labour market performance: for example, 21-24 year olds not in full-time education had unemployment rates almost twice as high as 25-30 year olds, median pay was much lower than for older workers and the relative value of the minimum wage was the highest of any age group. We thought that, in the absence of changes in relative performance, the pay floor for younger workers would probably increase less rapidly than that of workers aged 25 and over towards 2020. We also, however, recognised countervailing concerns that too large a gap between the pay floor for different ages would have unintended consequences, creating disincentives to hire or retain employees near the boundary, and potentially encouraging employers to substitute younger workers for older. We said we would balance these considerations in future rate decisions.

5.16 The calendar is the other factor affecting our recommendations, with the Government aligning all the rates from April 2017. This means that the recommendations made in our last report, covering workers aged under 25 and apprentices, will have effect for six months (from October 2016 to March 2017) rather than the twelve we expected when we made them in spring 2016. We said in our last report that, should this be the case, our next recommendations would 'likely be somewhat lower than they otherwise would have been' in order to accommodate two increases in six months.

5.17 These conclusions are the backdrop to this chapter and the deliberations of Commissioners on the rates. What do the political and economic changes since February mean for our approach?

5.18 On the NLW, the key questions raised include what a period of uncertainty means for the on-course rate and the degree to which this remains affordable within the terms of our remit given, on the one hand, an economic shock and, on the other hand, that a relative target adjusts its level in line with pay forecasts. We examine below the outlook for the economy for 2017 and 2018, its implications for the level of the NLW and its affordability. We then set out stakeholder evidence on the rate, the profile of the NLW and the 2020 target.

5.19 On the other rates, the absence of a target means we do not face the same question of the degree to which adjustment in the target via changing pay forecasts manages economic risks. Rather, the key decision points are the pre-existing ones of the appropriate level of the rates given economic circumstances, bearing in mind the shelter provided by the NLW and the change in calendar, with the former likely an upward pressure and the latter likely a downward pressure relative to the level of increase we would make in the absence of these factors. We also need to consider the impact of uncertainty following the vote to leave the EU, where – as noted in Chapter 3 – younger workers are more exposed to changes in the economic cycle than older workers.

The prospects for the economy

5.20 As we showed in Chapter 1, the UK economy and labour market had performed reasonably well up to the end of the second quarter of 2016. The economy had grown by at least 0.4 per cent in each of the previous thirteen quarters and by 0.7 per cent in the second quarter of 2016. Although job growth had slowed from its record rates in 2014, it was still robust and headline unemployment had continued to fall. Low inflation meant increases in real wages. However, there were also some possible signs of softening. GDP growth for the whole year in 2016 is likely to be lower (around 2.0 per cent) than in 2015 (2.2 per cent) or 2014 (3.1 per cent). The claimant count had increased since February, redundancies had started to pick up, productivity remained sluggish and, even with the tightening labour market, nominal wage growth was subdued. That said, total employment, total hours worked, the number of workforce jobs, and the 16-64 year old employment rate were all at record highs at the end of the second quarter of 2016.

5.21 The main change since then has been the vote to leave the EU on 23 June, which will have significant effects on the economy in both the short-term and long-term. With little hard evidence becoming available since then, the situation remains one characterised by a high degree of uncertainty. It was in this context that we discussed the future rates of the NLW and the other minimum wage rates.

Low-paying sectors differently exposed to pressures in the economy

5.22 The future outcomes of the lowest-paid workers (including young workers, older workers, part-time workers and women) will to a great extent be determined by the prospects for firms in the low-paying sectors which employ them. But low-paying sectors are differently exposed to risk in the economy depending in part on their customer.

5.23 The biggest employing low-paying sectors are those that are consumer-facing, notably retail and hospitality. Their fortunes will depend in turn on trends in real incomes and confidence about the future. In recent years, the picture on consumer spending has been one of moderately sustained strength. Indeed, as we noted in Chapter 1, it has been household spending that has driven recent growth in the economy. This has been supported by a range of factors including robust employment growth, higher house prices, low costs of borrowing, easier access to credit, a running down of savings and real wage growth as inflation has remained low.

5.24 By contrast, the prospects for traded low-paying sectors, such as textiles, agriculture, and food processing, will depend less on domestic spending and more on demand for their products overseas as well as their price – the latter affected by changes in the exchange rate. Firms that import their inputs will also be affected by exchange rate movements. The strength of world demand, especially in those areas that the UK trades most with – such as the EU and the US – is a critical factor. The recent picture on trade has been less encouraging than consumer spending, with – as Chapter 1 showed – little sign of rebalancing into the first half of 2016.

5.25 A third group of low-paying sectors, such as cleaning and employment agencies, are more dependent on business-to-business activity. Demand for services here is in turn closely related to the performance of the economy as a whole – with consumer spending, business investment, profitability, and government spending all playing key roles. In recent years, increased outsourcing and the contracting out of services have helped increase demand in this sector. However, more recent anecdotal evidence suggests that while this trend has continued across the economy, some companies have sought to bring services back in-house. Profitability of these sectors will also depend on the ability of companies to pass additional costs onto customers. The most recent data, up to the second quarter of 2016, suggested that this ability to increase prices varies across the sector – with employment agencies seeing prices fall in the last two quarters while cleaning companies had been more able to increase the price of their services. Business prices for hotels were down from the end of 2015, while catering prices had increased by 1 per cent.

5.26 A final group of low-paying sectors are those directly affected by government funding, such as childcare and social care. As well as the level of government spending, which in turn reflects the fiscal position, these sectors will also depend on the strength of consumer demand and the ability of providers in these sectors to raise prices. The outlook here has previously been one of real pressure on employers in both the private and public sector. While data suggested some increase in government capital spending into 2016, reductions in other spending continued, with further cuts scheduled – ahead of any further adjustments in the Autumn Statement in November.

5.27 The outlook in terms of the affordability of minimum wage increases in all of these sectors will depend on demand; profitability; the ability to raise prices; non-labour costs; the ability to increase productivity; and the availability and cost of labour. These are considered alongside the implications of wider economic change since June.

Brexit anticipated to have short-term and long-term effects

5.28 Pre-Referendum concerns about leaving the EU highlighted different effects in the short-term and in the long-term. Studies and assessments ahead of the Referendum suggested that it would constitute a significant economic shock. The immediate effects could potentially include falls in business and consumer confidence, a fall in the value of sterling, and decisions on investment and hiring being delayed until the outcome of the negotiations became clearer. Some analysis thought a recession probable. In the longer-run, there were likely impacts on migration, investment and trade – though the direction and magnitude of these was more uncertain. Those studies highlighted effects including: that migration of both EU and non-EU migrants could fall (if freedom of movement from the EU was restricted and further constraints were placed on the migration of those from outside the EU); that foreign direct investment could be lower (if overseas firms no longer had automatic and free access to the EU market); and that trade could be lower as a result of increased

trade barriers and tariffs (at least with the EU), though the magnitude of the migration, investment and trade effects would all depend on the outcome of negotiations, and some studies also emphasised opportunities for the UK.

5.29 In the immediate aftermath of the vote consumer confidence, business confidence and share prices fell sharply, before rebounding. This may partly reflect policy-makers using flexibilities in the Government's macroeconomic framework to manage the transition and support the economy. On 1 July, the Government said it was no longer pursuing its 2020 fiscal surplus target. At its July meeting, the Monetary Policy Committee of the Bank of England (2016c) decided to wait before acting although it noted that 'most members of the Committee expect monetary policy to be loosened in August'. On 4 August, it reduced interest rates to 0.25 per cent – the lowest in the Bank's history – and committed to additional quantitative easing (Bank of England, 2016e).

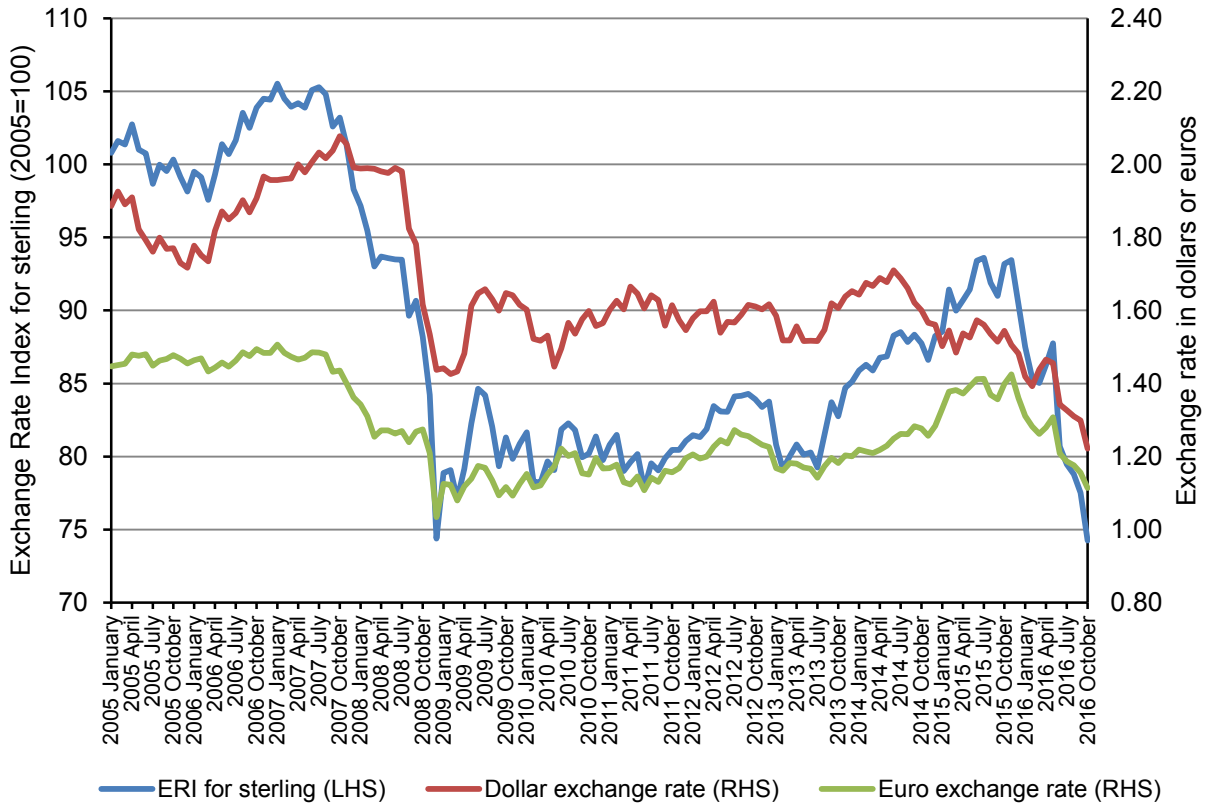
5.30 The change in some indicators appears to have been persistent. The pound fell sharply across a basket of currencies immediately after the vote, and has since fallen further. Measures of uncertainty in the economy have sharply increased – reflected in both the Bank of England (2016d) uncertainty index and the NIESR (2016) uncertainty index. Hiring and investment intentions, and the housing market, have weakened. On the other hand, consumer spending and labour market measures of activity have generally been on the upside of expectations since June. GDP growth in the quarter since the Referendum was positive and ahead of previous revisions down in some forecasts.

5.31 Overall, it seems likely that the shape of the response to recent change across the economy has shifted – from an immediate shock to one that will play out over a longer time frame. This is reflected in forecasts for growth, employment and pay, which have been revised down sharply for 2017 and 2018, though with limited change in 2016. It is also reflected in how forecasts have changed between June and October, with a small move upwards for 2017 relative to the position immediately after the Referendum, but still well down on expectations in the spring.

Pound has fallen sharply

5.32 The major 'hard' change since June has been the depreciation of sterling. Although sterling has been softening against most leading currencies since the middle of 2015, the trade-weighted effective sterling exchange rate fell by around 8 per cent between the end of May and the end of June, with sterling also falling by just under 8 per cent against the dollar and the euro. By the end of October, the trade-weighted effective sterling exchange rate was over 15 per cent lower than it was at the end of May. Sterling was over 16 per cent lower against the dollar and almost 15 per cent lower against the euro. Figure 5.1 puts these falls in historical perspective. It shows that, at the end of October 2016, the trade-weighted effective sterling exchange rate was close to 21 per cent lower than in July 2015 and around 30 per cent lower than in July 2007. Compared with the period before the financial crisis, the pound was around 40 per cent down against the dollar and 25 per cent down against the euro.

Figure 5.1: Sterling exchange rates, 2005-2016



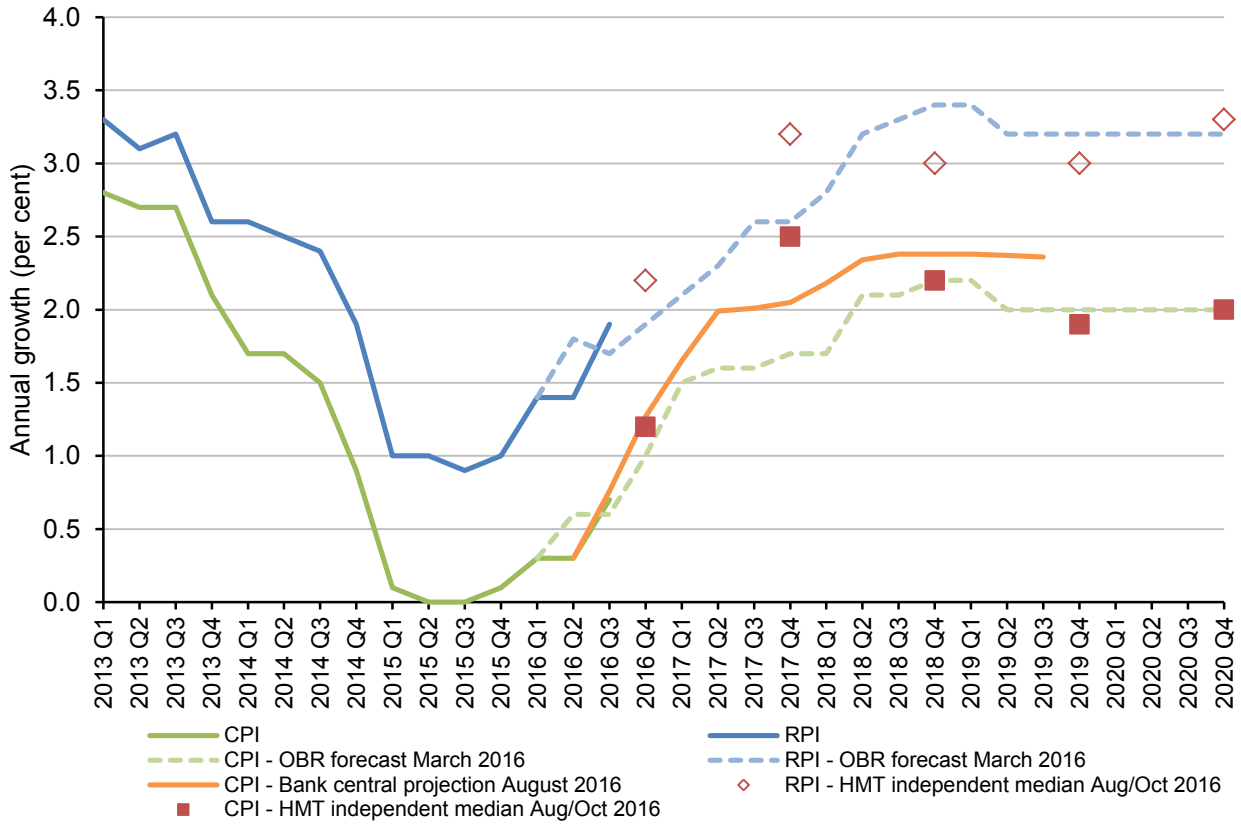
Source: Bank of England: sterling trade-weighted exchange rate index – ERI (XUMLBK67), dollar exchange rate (XUMLUSS), and euro exchange rate (XUMLERS), end of month spot rates, January 2005-October 2016.

5.33 The fall in the exchange rate has ambiguous effects. On the one hand, it should reduce the price of UK goods and services for overseas buyers, thus potentially boosting the volume of exports and supporting traded sectors including low-paying ones such as agriculture and textiles (though it will also increase the costs of many input prices and raw materials, offsetting these gains. In its Manufacturing Outlook, the manufacturers' organisation, EEF (2016) forecast that domestic-focused, import-intensive sectors, such as food and drink manufacturers, and textiles manufacturers, would be unlikely to see any boost from the fall in sterling). On the other hand, it will increase the cost of foreign goods and services to the UK, likely feeding through into higher prices and inflation (albeit it may boost domestic industry as the home market substitutes for foreign imports).

Lower exchange rate increases expected inflation

5.34 Inflation as measured by the Consumer Prices Index (CPI) has already risen from a low point of -0.1 per cent in 2015 to 1.0 per cent in the latest figures, for September 2016. In July 2015, CPI inflation was expected to rise from its then zero level to 1.3 per cent at the end of 2016 and 1.8 per cent in 2017, staying below the 2 per cent target but rising gradually as the oil price recovered. The picture was similar when we published our Spring 2016 Report earlier this year. The OBR (2016b) forecast in March saw a lowering of near-term expectations, as the oil price remained low. These pre-Referendum forecasts suggested that inflation would rise over the next year, as the oil and food price falls of a year earlier fell out of the 12-month index, to 0.7 per cent in the final quarter of 2016 and 1.6 per cent in the fourth quarter of 2017, as shown in Figure 5.2.

Figure 5.2: CPI, RPI and forecasts of price inflation, UK, 2013-2020



Source: LPC estimates using ONS data: CPI (D7G7), RPI (CZBH), quarterly, not seasonally adjusted, UK, Q1 2013-Q2 2015; Bank of England Inflation Report (2016d); OBR (2016b); and HM Treasury Panel of Independent Forecasts (2016i and j).

5.35 The forecasts now suggest a CPI inflation rate of around 2 per cent in the second quarter of 2017 and 2.0-2.5 per cent in the fourth quarter of 2017 with some forecasters projecting that CPI might reach 3.0 per cent during 2017. CPI inflation is then forecast to fall gradually back to its long-term target of 2 per cent.

5.36 The Referendum result has had a number of influences on the expected path for inflation. Forecast lower expected economic growth is deflationary, but is offset by the change in the exchange rate. The Retail Prices Index (RPI) inflation path is affected by a further factor, the expected path of interest rates, which is now lower than previously assumed prior to the Referendum. This offsets the exchange rate impact so that the short-term forecast for RPI inflation is largely unchanged, at 3.2 per cent in the fourth quarter of 2017, and the longer-term forecast, with RPI stabilising at around 3 per cent, is slightly lower than forecast before the Referendum.

5.37 Higher inflation has a range of implications. For businesses, price rises in fuel and food will increase costs to UK firms, potentially squeezing margins, particularly for small firms and in those industries that find it difficult to pass on costs in the form of higher prices. However, higher inflation might make it easier for other firms to pass on costs. For employees, higher inflation presents the prospect of falling real wages. For consumers, higher inflation clearly presents a risk to the spending levels that have been the key driver of GDP growth over the last couple of years. This would in turn affect consumer-facing minimum wage sectors.

5.38 Retailers, the biggest minimum wage employer, already face fierce price competition and have experienced shop price deflation over the last three years. Commodity prices, usually denominated in dollars, had in any event started to rise through 2016 and will rise further as sterling falls.

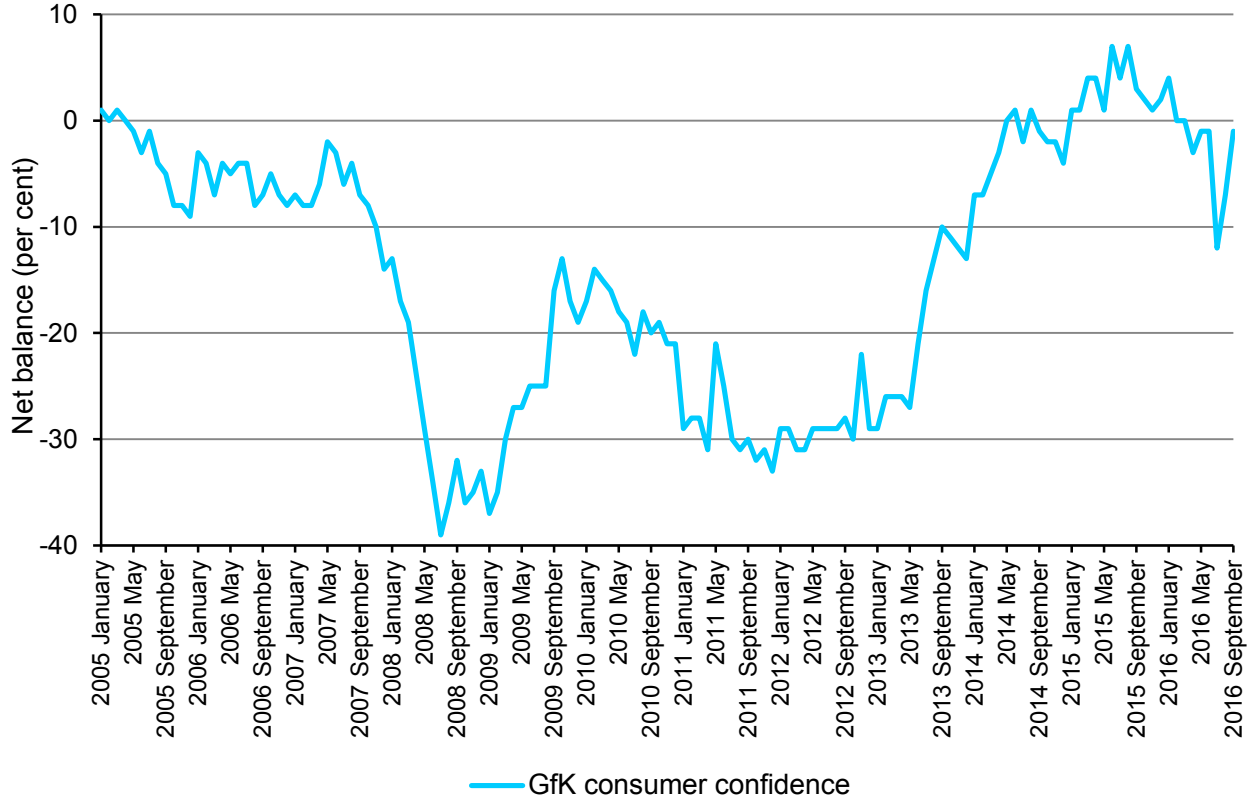
5.39 Looking at the other big minimum wage employer, hospitality, there may be benefits from a lower pound via tourism. In its UK Hotels Forecast 2017, PWC (2016) noted that the weak pound could boost both overseas tourism and encourage staycations, albeit other factors could mitigate some of the benefit – including greater corporate and consumer uncertainty and any effects on the hospitality sector's ability to recruit and retain staff, some of whom are migrants.

5.40 We now go on to look at softer indicators. These have generally followed a different pattern to the currency in the sense that a sharp fall in the immediate aftermath of the Referendum was followed by a correction as the immediate concerns were not realised. The extent of the correction has though varied across the indicators.

Consumer confidence fell then recovered

5.41 Considering measures of consumer confidence first, Figure 5.3, shows that the GfK index has, over the long-term, broadly moved with the economic cycle, particularly strengthening from 2012 in the aftermath of the recession. However, since the middle of 2015 there had been some weakening. It then fell sharply at the time of the EU Referendum – but has since bounced back. The overall position is that, by September 2016, it was in the same position that it was in June 2016 – a net balance of -1, and above the levels seen between 2009 and mid-2014, albeit still below those in 2015.

Figure 5.3: Consumer confidence, UK, 2005-2016



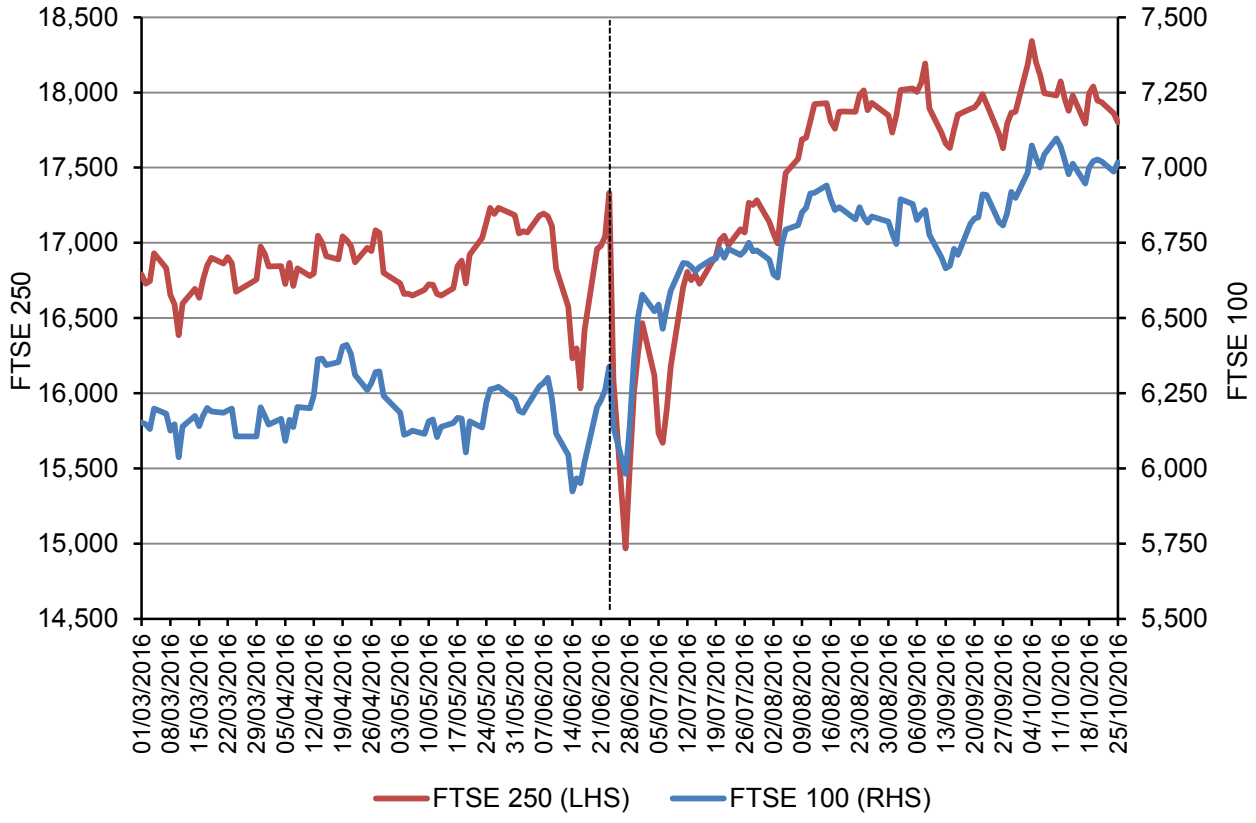
Source: GfK consumer confidence index, monthly, UK, 2005-2016.

5.42 The Deloitte Consumer Tracker (2016b) also recorded an increase in consumer confidence in the third quarter of 2016, having also experienced a weakening from the middle of 2015. It noted that an increase in confidence about job security had driven the rebound. However, it also highlighted some regional differences – with consumer confidence falling in London while improving elsewhere. Looking forward, it emphasised that consumer sentiment and consequent spending may be affected by the prospect of higher inflation and the start of the formal negotiating process to leave the EU by March 2017.

Share prices fell and then recovered more strongly

5.43 Another broad indicator is share prices, which also suggest a degree of recovery after an immediate shock, albeit one complicated by interactions with the depreciation of sterling. After falling sharply in the immediate aftermath of the Referendum, the FTSE-100 quickly regained those losses and increased towards and above 7,000 – its record level. This reflects the fact that most FTSE-100 companies are large multinationals trading in dollars or euros and the value of those trades has increased – enhancing the profits of those firms. Using the more locally orientated FTSE-250, Figure 5.4 shows this measure was affected more severely and for longer after the Referendum but has also regained its losses and was above 18,000 by the end of September – past its previous peak. The FTSE-all share index showed similar movements to the FTSE-100.

Figure 5.4: Share prices, UK, 2016



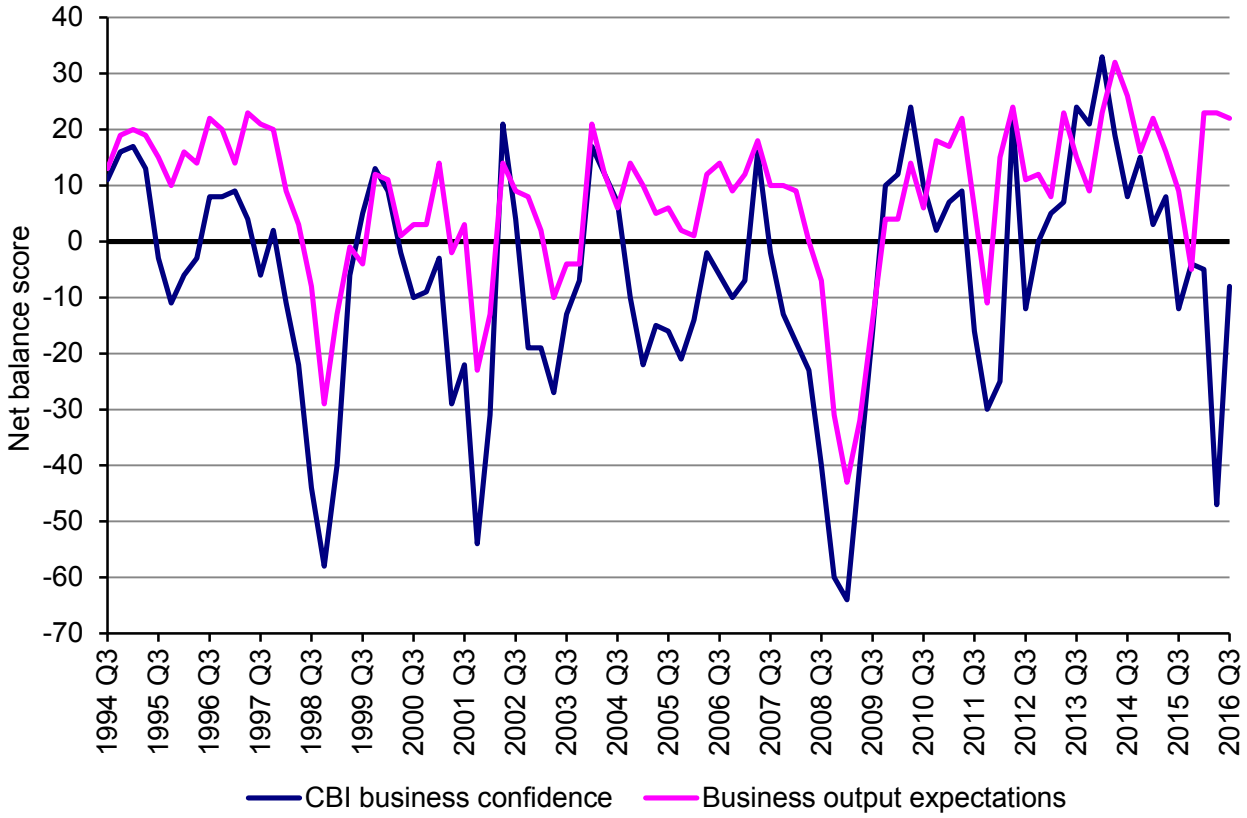
Source: London Stock Exchange: FTSE-100; and FTSE-250, UK, March-October 2016.

Note: Indices are closing prices for the day shown.

Business confidence fell sharply, partly recovered and then stabilised

5.44 Relative to consumer confidence and share prices, trends in business confidence follow a similar trajectory but with somewhat less of a rebound. Figure 5.5 shows that sentiment dropped sharply in June before bouncing back in the third quarter of 2016 (CBI, 2016). However, it remains negative with 28 per cent of firms pessimistic, offsetting the 20 per cent that were more optimistic. More encouraging is that output expectations look fairly resilient with 27 per cent of businesses anticipating an increase in volumes compared with 14 per cent expecting a fall (albeit that was still a weakening compared with the two previous quarters).

Figure 5.5: Business confidence, UK, 1994-2016



Source: CBI: business confidence index; and business output expectations score, monthly, UK, 1994-2016.

5.45 Other measures of business confidence present a mixed picture. According to the Deloitte Survey of Chief Financial Officers (2016a) business optimism improved in the third quarter of 2016, after the sharp fall after the Referendum, although it remains subdued and is lower than it has been since 2012. Concerns about Brexit and weak demand in the UK were foremost with uncertainty remaining elevated. The British Chambers of Commerce (BCC, 2016) found that growth had slowed further after June, most noticeably in services. While it did not record a bounce-back in confidence in the third quarter of 2016, it had not seen a sharp fall after the Referendum. Business confidence on its measure has been slowing gradually since the beginning of 2014 for both manufacturing and services firms.

Investment intentions have weakened

5.46 The robustness of business confidence and wider sentiment is likely to bear particularly on business investment. In line with trends discussed above, investment intentions have slowed somewhat since June. The Bank of England's regional Agents (2016g) found that companies' investment intentions had fallen in the third quarter of 2016, with reports that some investment projects were being scaled back or deferred. However, projects that had already started were largely continuing as were those that were seeking to cut costs and increase productivity. Investment had remained more resilient in consumer services. Overall, business investment looked set to be broadly flat over the next year.

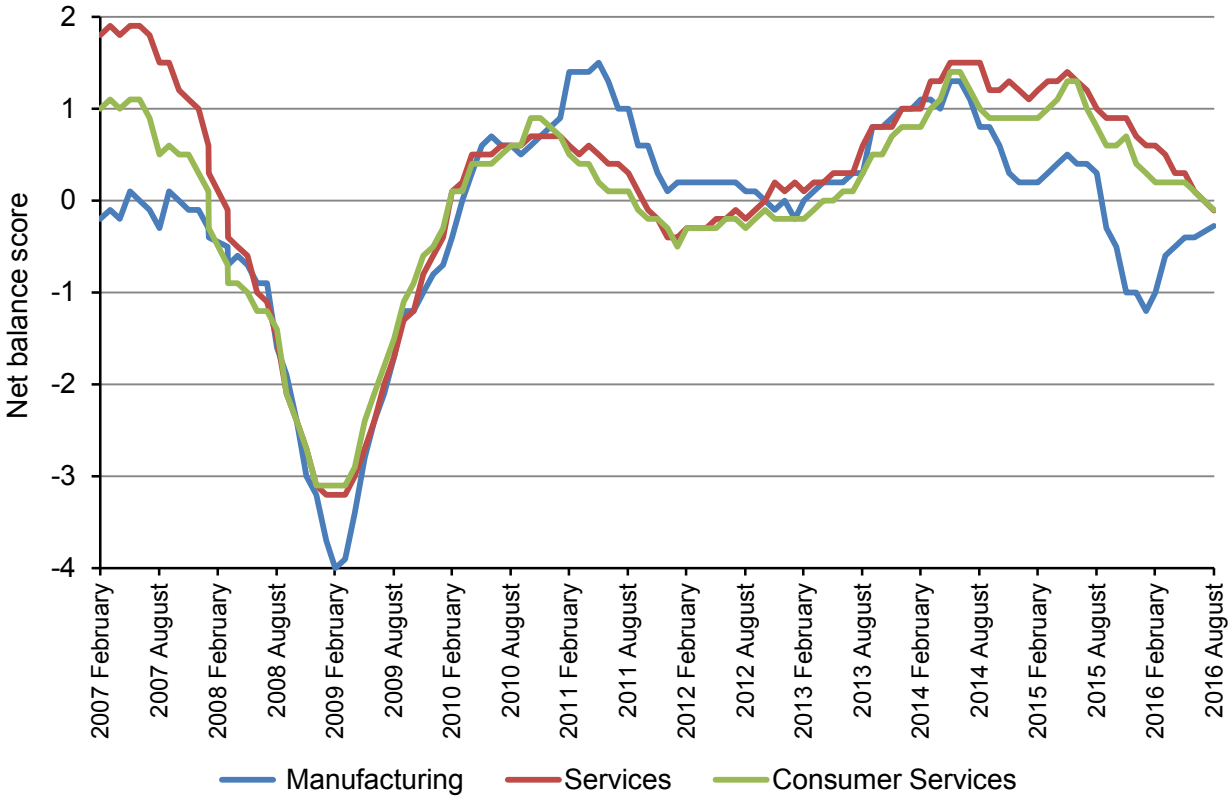
5.47 Looking at the composition of investment intentions, there was little difference between manufacturing and services with both declining towards a net balance of zero by September 2016. In its Manufacturing Outlook, EEF (2016) noted a continued downward drift in investment intentions in manufacturing in the third quarter of 2016. The BCC (2016), in its Quarterly Economic Survey, also noted some slowing in investment intentions. In contrast, the CBI (2016) noted an improvement in that quarter. The BCC (2016) also noted a slowdown in the balance of firms intending to increase investment in training.

5.48 In its Chief Financial Officer Survey, Deloitte (2016a) found that the outlook for hiring, capital spending and discretionary spending had improved in the third quarter though all three measures remained below pre-Referendum levels, and significantly below the levels recorded in 2014 and 2015.

Hiring intentions also weakened but with some signs of recovery

5.49 An important metric for decisions on the rates is the outlook for employment. We discuss jobs data below. On business intentions to hire, data to July from the Bank of England Agents (2016g) showed that intentions had been weakening since well before the Referendum for both manufacturing and services. As shown in Figure 5.6, these fell further for services and consumer services over 2016, with the latest data (for August) seeing services move into the first negative balance since the end of 2012. The more pronounced and steeper fall in manufacturing since the middle of 2015 – with more manufacturing firms laying off workers than those recruiting workers – appears to have started to reverse in 2016. However, hiring intentions in manufacturing remain negative, with the rate of gain slowing since the summer.

Figure 5.6: Employment intentions, UK, 2007-2016



Source: Bank of England; Agents scores, monthly, UK, 2007-16

5.50 In its Report on Jobs, the Recruitment and Employment Confederation (REC)-IHS Markit (2016) presented a more encouraging picture with permanent placements rebounding in August and September after falling in June and July. Temporary placements had improved after slowing in the immediate aftermath of the EU Referendum. However, the rates of growth remained modest. It noted that internet-based recruitment spending had fallen in the first two quarters of 2016, while ONS data showed vacancies had also grown at their slowest pace for four years.

5.51 In contrast, private sector permanent and temporary vacancies grew strongly in September 2016, although vacancies continued to fall in the public sector. Demand for temporary hotel and catering staff had picked-up strongly with them becoming the most sought-after temporary staff in the economy – even more so than in engineering, and nursing and medical staff. The demand for the latter (some of whom are in social care) was still strong but had seen a weakening for both temporary and permanent positions over the year. While average starting salaries for permanent workers had increased in September, they had slowed to their weakest pace for over three years for temporary and contract workers.

5.52 REC (2016), in its Jobs Outlook, found that employers were still intending to hire though confidence remained shaken. The smallest firms were more optimistic than larger ones. The BCC (2016) noted that employment intentions in manufacturing and services were similar but had fallen back in the third quarter of 2016. It also noted a weakening in London that was not observed elsewhere in the UK.

5.53 EEF (2016) also found that recruitment activity in manufacturing had fallen in the third quarter of 2016 but expected it to improve in the next couple of quarters as export orders increased.

In contrast, the CBI (2016) found that while expectations of output volumes had increased, employment intentions fell (a balance of -15 per cent) to their lowest since October 2009.

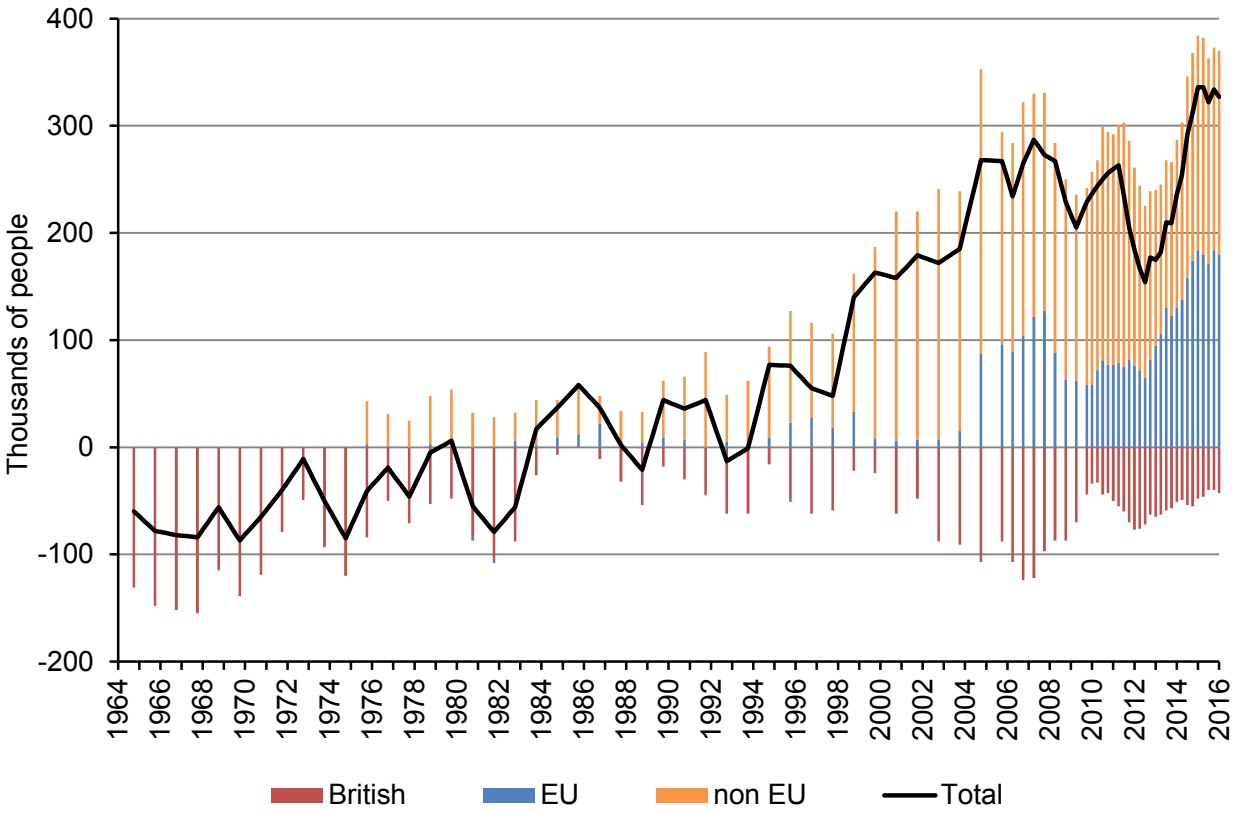
5.54 Overall, the set of softer indicators reviewed above – consumer confidence, share price, business confidence, investment and hiring intentions – suggest a mixed picture. On the one hand, they have generally recovered following sharp falls in late June and July. On the other, most of them remain weaker than earlier in the year.

Migration and the labour supply will be affected by exiting the EU

5.55 The Referendum result is likely to affect migration but the impact will not be known for some time. In the short-run, migration could be affected by the fall in sterling and change in sentiment. REC (2016) highlighted anecdotal evidence that EU migrants, particularly academics and scientists, were choosing to accept job offers elsewhere in the EU. On the other hand, some EU migrants may be attracted to come to the UK before any barriers are imposed. In the longer-run, the extent of future migration will depend on the terms of the future negotiations.

5.56 Figure 5.7 shows that net migration was negative for much of the period from the 1960s through to the 1980s – as more people emigrated than came to the UK – but has been positive and increasing since the mid-1990s. More recently, net migration has reached record levels. Non-EU migration has continued to increase and contributed around half of the net migration to the UK in the first quarter of 2016 – 190,000. There was a similar net number for EU migrants – 180,000. The number of British subjects emigrating (126,000) exceeded the number coming back (82,000) by around 43,000.

Figure 5.7: Net long-term international migration to the UK, 1964-2016



Source: LPC estimates using ONS data: Long-term international migration and international passenger survey, UK, 1964-Q1 2016.

5.57 Most current EU migration is for work-related reasons, while most non-EU migration is for study. Taking both EU and non-EU migration together, around 250,000 people came to the UK in the first quarter of 2016 for work-related reasons with 105,000 non-British leaving for jobs in other countries – a net increase in migration for work of 145,000. If restrictions on migration are imposed, labour supply could be reduced by up to 150,000 a year.

5.58 Many low-paying sectors are exposed to any changes in migration rules. Sectors such as horticulture, social care, food processing, hospitality and retail make use of labour supply from the EU, particularly from Eastern Europe. Concerns about the future workforce have been raised by business organisations from these sectors.

5.59 The Migration Advisory Committee (2012), Dhingra, Ottavano, van Reenen and Wadsworth (2016) and Alfano, Dustmann and Frattini (2016) have all summarised the research evidence on the impact of migration on the wages and employment of native workers. They found little evidence that immigration has held back native wage growth on average. Dustmann, Frattini and Preston (2013), and Nickell and Saleheen (2015) found evidence that migration may have held back pay growth at the bottom of the distribution but both studies found this effect to be small. They also found little evidence of adverse employment effects for native workers: employment rates for native workers have increased to record levels at the same time as net migration has also been at record levels.

5.60 Recent research from the International Monetary Fund (IMF), by Jaumotte, Koloskova, and Saxena (2016), found positive effects of migration on both employment and wages for both low-skilled and high-skilled native workers in advanced industrial economies, albeit with the effects greater for the higher-skilled. That research found that migrants helped increase productivity in both low-skilled and high-skilled jobs and that this was the main driver behind those positive wage effects.

Output forecasts have been revised down with increased variance

5.61 Ultimately, the range of changes following the Referendum result has been reflected in aggregate in revised forecasts – for pay, employment and GDP. They suggest that, economic effects will be felt in 2017 in particular. A rebound in some indicators has affected the level of the forecasts, but not, at the time of writing, the broad picture.

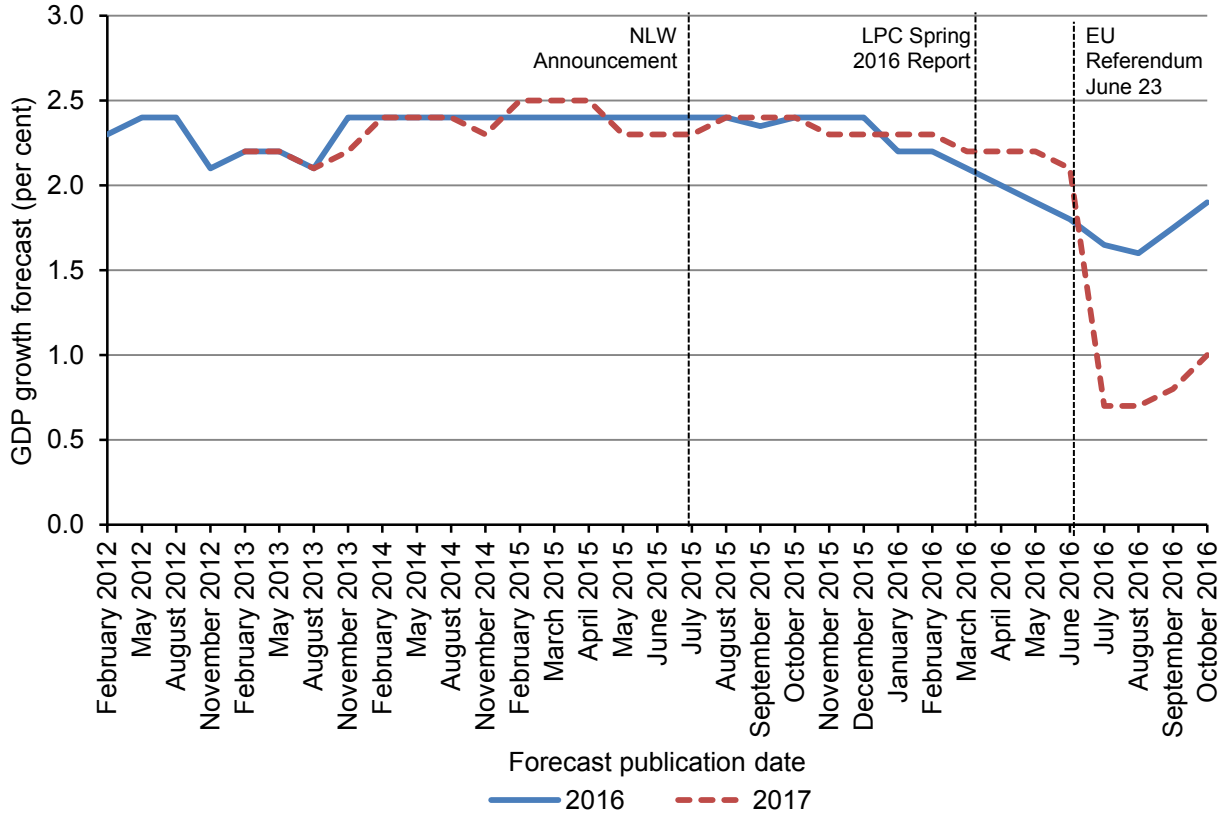
5.62 When we met in January for our Spring 2016 Report, the OBR was forecasting that growth in 2016 would be 2.4 per cent and growth in 2017 would be 2.5 per cent. The Bank of England was forecasting growth of 2.5 per cent and 2.7 per cent and the median of the HM Treasury Panel was 2.2 per cent in 2016 and 2.3 per cent in 2017.

5.63 These forecasts were revised downwards in the first quarter of 2016 in response to softening in the economy: the Bank of England was expecting growth to weaken by about half a point to 2.0 per cent in 2016 and 2.3 per cent in 2017, with slightly smaller revisions by the OBR (2.0 and 2.2 per cent respectively) and in the median of the HM Treasury Panel (1.8 and 2.1 per cent respectively).

5.64 Since the summer there have been major revisions to forecast growth in 2017. Figure 5.8 shows that the median of the HM Treasury Panel forecasts was marked down from 2.1 per cent to 0.7 per cent between June and July – the largest single month adjustment since the series began in 1997. In its August Inflation Report, the Bank of England (2016d) revised growth from 2.3 per cent to

0.8 per cent. Adjustments for 2018 were also substantial with the Bank revising down growth from 2.3 per cent to 1.8 per cent and the median of the HM Treasury Panel falling from 2.2 per cent to 1.4 per cent.

Figure 5.8: Forecasts for 2016 and 2017 GDP growth, UK, 2012-2016



Source: LPC estimates using HMT panel of independent forecasts median of recent forecasts, UK, 2012-16.

5.65 Not only has there been a fall in the median forecast of GDP growth in 2017, there has also been greater uncertainty, reflected in the widening of the range of forecasts. As shown in Table 5.2, the forecasts made in February 2016 for GDP growth in 2017 were tightly grouped around the median of 2.3 per cent with an interquartile range of 0.4 percentage points (from 2.1 to 2.5 per cent). Indeed, 17 of the 20 forecasts were within 0.4 percentage points of the median. The forecasts ranged from 1.2 per cent to 2.7 per cent – a range of 1.5 percentage points. By August, the post-Referendum median of new forecasts for 2017 GDP growth had fallen to 0.5 per cent, while the interquartile range had widened to 0.8 percentage points (from 0.2 to 1.0 per cent) and the range had widened to 4.0 percentage points (from -1.3 to 2.7 per cent). There were seven forecasters who expected output in the economy to fall in 2017. By October, the median of new GDP growth forecasts had moved up slightly to 1.0 per cent, as newer forecasts took account of the immediate post-Referendum data. The interquartile range had fallen back to 0.4 percentage points (from 0.7 per cent to 1.1 per cent) with 25 of the 36 forecasts within 0.4 percentage points of the median. The range, however, remained wide (from -1.3 to 2.6 per cent) but only three forecasters were now expecting output to fall in 2017.

Table 5.2: HM Treasury Panel of Independent Forecasts 2017 wage forecasts, UK, 2016

GDP 2017	Month of published forecast for GDP growth in 2017								
	February	March	April	May	June	July	August	September	October
Average	2.2	2.1	2.1	2.1	2.1	0.5	0.5	0.7	0.9
Median	2.3	2.2	2.2	2.2	**2.1**	0.5	0.5	0.8	**1.0**
Interquartile range	0.4	0.3	0.4	0.4	0.4	0.6	0.8	0.5	0.4
Upper quartile	2.5	2.3	2.3	2.3	2.3	0.8	1.0	1.0	1.1
Lower quartile	2.1	2	1.9	1.9	1.9	0.2	0.2	0.5	0.7
Maximum	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.5	2.6
Minimum	1.2	1.2	1.2	1.2	1.2	-1.3	-1.3	-1.3	-1.3
Range	1.5	1.5	1.5	1.5	1.5	4.0	4.0	3.8	3.9
Count	20	25	32	36	37	26	33	34	36

Source: LPC estimates using HMT panel of independent forecasts median of new forecasts, UK, February-October 2016.

Labour market resilience set to be tested

5.66 With the economy expected to slow markedly, the forecasts for employment have also been revised down. Expectations had begun to soften before the Referendum. The OBR forecasts in November 2015 suggested that employment growth would slow from 1.3 per cent in 2016 to 0.6 per cent in 2017. In March 2016, the OBR (2016b) also forecast 1.3 per cent employment growth in 2016 but revised it down to 0.3 per cent in 2017.

5.67 Other forecasts at that time expected the labour market to be more resilient. In February, the Bank of England (2016a) had forecast employment growth of around 0.75 per cent with the unemployment rate continuing to fall to around 4.8 per cent. Similarly, the median of the HM Treasury Panel (2016b) forecasts for employment growth in March was 0.7 per cent with the unemployment rate falling to 4.9 per cent.

5.68 In line with the weakening in employment and vacancy intentions in June and July, the Bank of England (2016d) forecast following the Referendum anticipated no employment growth in 2017, with the unemployment rate projected to rise to 5.6 per cent by the first quarter of 2018. The median of the HM Treasury Panel forecasts – two months later in October, so taking account of rebound in some indicators – presented a very similar picture, with employment forecast to fall by 0.1 per cent and the unemployment rate to reach 5.6 per cent in the fourth quarter of 2017.

5.69 Based on the latest employment forecasts, employment is now set to fall by 0-60,000 in 2017, compared with forecasts of employment growth of around 200,000-250,000 pre-Referendum. The projected increase in the unemployment rate from 4.9 to 5.6 per cent implies an increase in the level of unemployment by around 225,000-250,000.

5.70 This weakening in the labour market is also reflected in the forecasts for wage growth.

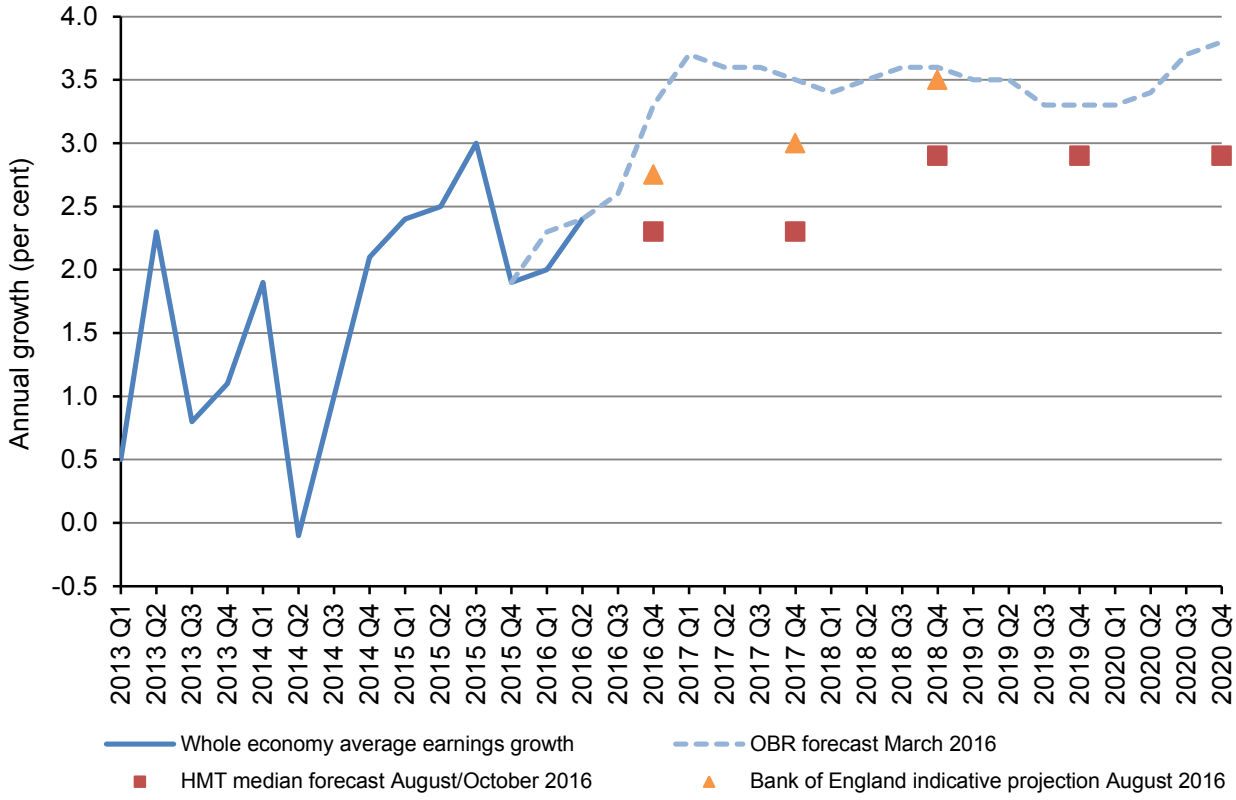
Wage growth expected to be weaker than previously forecast with a near-term squeeze on real earnings growth

5.71 When the NLW policy was developed in 2015, the OBR anticipated pay growth of 4.0 per cent in 2016. By the time of our Spring 2016 Report, this had been revised to 3.2-3.75 per cent.

5.72 Earnings growth forecasts have been revised down further since June, as shown in Figure 5.9. Earnings growth is now forecast to be 2.5-3.0 per cent at the end of 2017, a downward revision of 0.6-0.75 percentage points since the pre-Referendum forecasts. The Bank of England forecast from August is slightly higher; the median of the HM Treasury Panel lower.

5.73 These lower forecasts reflect the change in the economy since the summer, with the consensus of forecast judging that lower expectations for output and productivity growth, and lower employment growth will lead to a weaker labour market – offsetting any wage effect from the higher expected path for inflation.

Figure 5.9: Average earnings growth and forecasts, UK, 2013-2020



Source: LPC estimates using: ONS AWE total pay (KAC3), quarterly, seasonally adjusted, GB, 2013-2016; OBR (2016b); HMT panel of independent forecasts (2016i and j), Bank of England (2016d) assumptions and indicative projections.

Interpreting the forecasts

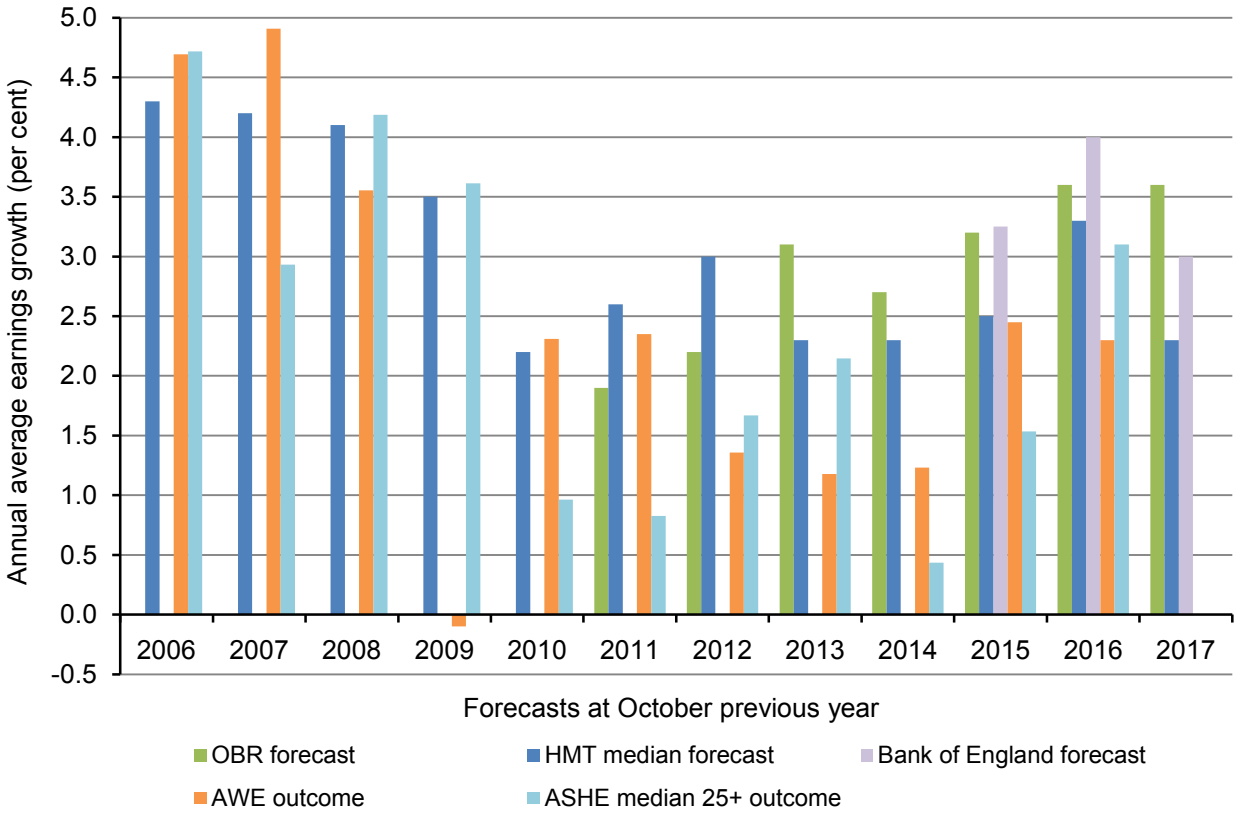
5.74 A key challenge for the LPC is how to interpret these forecasts. On the outlook for growth, it is clear that there is much more uncertainty than previously, and GDP data in October was slightly higher than expected. The ONS estimated that GDP growth in the third quarter of 2016 was 0.5 per cent and that GDP was 2.3 per cent higher than in the third quarter of 2015, whereas most commentators had expected it to slow to 0.3 per cent. Growth was driven mainly by consumer spending and services.

5.75 However, the available data at the time of writing have not changed the shape of the anticipated outlook. As we noted above, and showed in Figure 5.8, growth forecasts for 2016 had been affected far less than 2017: growth for the whole of 2016 was initially revised downwards, from 1.8 per cent to 1.6 per cent, but has since been revised back up to 1.8 per cent. With the most recent GDP data, we now estimate that GDP growth for the whole of 2016 will be 2.0-2.1 per cent, with the lion's share of any post-Referendum adjustment still expected from next year.

5.76 On employment, the forecasts suggest a substantial increase in unemployment, against a backdrop of Government expectations when it developed the NLW policy that the higher wage floor could cause 20,000-110,000 job losses against a net increase of 1.1 million jobs by 2021. On the other hand, data published so far suggest that the labour market has been broadly resilient since June. While the ONS (2016e) reported some softening in the labour market in the three months to August or September, with vacancies and total hours worked stalling, and unemployment increasing, employment continued to grow. In addition, the labour market starts from a position of strength with record levels of employment, jobs and hours worked: any weakening comes after a period of strong growth – the number of workforce jobs increased by 1.5 per cent in the year to June 2016, which was higher than had been forecast.

5.77 On pay forecasts, we are particularly interested in the degree to which forecasts are likely to accurately 'price in' economic change. In recent years, they have generally been too optimistic relative to the out-turn, as shown in Figure 5.10, persistently over-estimating earnings growth. This has been due to: lower than expected inflation; slower than expected productivity growth; a tightening labour market producing less upward pressure on pay than in previous decades; and expanding employment keeping average pay down – new employees tend to be paid less than incumbents, and the expansion had been disproportionately in lower-paid jobs.

Figure 5.10: Average earnings growth, forecasts and outcomes, 2003-2017



Source: LPC estimates using: ONS AWE total pay (KAB9) annualised, monthly, seasonally adjusted, GB, 2003-2016; ASHE: 2007 methodology, April 2006-10; and 2010 methodology, April 2011-16, standard weights, UK; HMT panel of independent forecasts, October 2006-16; OBR average earnings forecasts 2011-16; and Bank of England (2015a and 2016d) conditioning assumptions, 2015-16.

5.78 On the other hand, there is also reason to believe that the revised forecasts look more plausible than in the past. They are closer, in particular, to forecasts for pay settlements, based on short-term surveys of employers' expectations, which have generally been more accurate than forecasts for average earnings growth in recent years. In a survey published at the end of October 2016, XpertHR (2016d) found that private sector employers were predicting a median pay award of 2 per cent in the year to the end of August 2017. This was the same increase that XpertHR had recorded across the private sector over the past year and was in line with the forecast that they made a year ago (XpertHR, 2015). CIPD (2016b) also found that the median expected pay award in the private sector was 2 per cent for the 12 months to September 2017. Both of these surveys, and the data on pay settlements in recent years, suggest remarkable stability in pay bargaining in the face of changing inflation and substantial employment growth. Out-turn data so far for 2016 shows average earnings growth at 2.2 per cent for the first eight months of the year, broadly in line with revised expectations.

5.79 Across growth, employment and pay forecasts a final consideration is that there is much greater uncertainty. This was reflected in greater divergence across the independent forecasters in the panel, as we showed in Table 5.2 when considering GDP. Table 5.3 shows that earnings forecasts for 2016 and 2017 have a similar mean and median but that the uncertainty surrounding the forecast increases in 2017. The interquartile range increases to 0.9 percentage points, up from just 0.3 percentage points in 2016. That interquartile range then falls in 2018, although the number of forecasts also falls from 28 to 13. The range of forecasts also follows a similar pattern. The forecasts for 2016 range from a low of 1.7 per cent to a high of 2.9 per cent. For 2017,

the lowest forecast is for average wage growth of 0.8 per cent, while one forecaster has average wages increasing by 3.9 per cent.

Table 5.3: Variation in forecast earnings, UK, 2016-2020

Average wage growth	2016	2017	2018	2019	2020
Median	2.3	2.3	3.0	2.9	2.7
Mean	2.3	2.3	2.8	2.9	2.8
Lower quartile	2.1	1.9	2.6	2.5	2.5
Upper quartile	2.4	2.8	3.0	3.2	3.3
Interquartile range	0.3	0.9	0.4	0.7	0.7
Minimum	1.7	0.8	1.3	2.2	2.1
Maximum	2.9	3.9	3.5	3.9	3.5
Range	1.2	3.1	2.2	1.7	1.4
Count	28	28	13	10	10

Source: LPC estimates using forecast data from HMT panel of independent forecasts (2016i and j) and Bank of England (2016d), UK, August-October 2016.

Implications for the rates

5.80 The context for the recommendations for the youth rates and the Apprentice Rate is one where the economy starts from a position of reasonable strength with GDP increasing by around 2 per cent in 2016, employment growth of around 1.5 per cent, and real average wage growth close to 2 per cent. However, the forecasts suggest that the economy is likely to slow with little employment growth and higher unemployment. This is a downwards pressure on the wage rates under our consideration given that we are seeking to make recommendations with no adverse effect on jobs. However, average wages are still expected to grow by around 2.0-2.5 per cent with CPI inflation also picking up to at least 2.5 per cent.

Implications for the National Living Wage

5.81 The position for the NLW is different from the other rates in that revisions to the forecasts are directly reflected in its likely value via the moving target.

5.82 Between July 2015 and the most recent estimates, forecast growth across the whole period 2015-2020 has fallen by about a third. At the time of our Spring 2016 Report, as shown in Table 5.4, the OBR expected GDP to be about 12.5 per cent higher in 2020 than in 2015 – in line with expectations when the NLW was announced. However, in March that had been revised down to 11 per cent. There have been no OBR forecasts since then. The equivalent from the median of the HM Treasury Panel suggested GDP would grow by 11.8 per cent. After the Referendum that has now fallen to 8.5 per cent.

5.83 Forecast average wage growth shows a similar change in scale. In July 2015, wages were expected to grow by around 22 per cent between 2016 and 2020. By our Spring 2016 Report, this had been revised down to around 20 per cent and that was then revised to 18-19 per cent by March, the time of the last OBR forecast. The equivalent HM Treasury Panel forecast (in February) was also for wage growth of around 19 per cent. This has been further revised since the Referendum to less than 14 per cent.

5.84 In contrast, CPI inflation was expected to grow by around 9 per cent over the same period. Since June, this has been revised up to just above 10 per cent. Thus, real wage growth is now forecast to be moderate – around 1 percentage point a year – instead of the 2 percentage points that had been forecast when the NLW was announced in July 2015.

5.85 Table 5.4 also shows that, at the time that the NLW was announced, the OBR forecast employment would grow by 0.9 million between 2015 and 2020, with 0.7 million due to an increase in the number of employees. In March the same employment growth was forecast.

Table 5.4: OBR forecasts for GDP, price and wage growth, employment and unemployment, UK, 2015-2020

2015-2020 growth	OBR			HM Treasury		
	July	November (Spring 2016 Report)	March	February (Spring 2016 Report)	May/June	August/October
GDP growth	12.5	12.5	11.0	11.8	11.0	8.5
Wage growth (AWE)	21.6	19.7	17.9	19.0	17.3	13.6
Wage growth (hourly)	22.8	20.8	19.1	–	–	–
CPI inflation	8.7	9.0	8.7	8.9	9.0	10.1
Change in employment (millions)	0.9	1.1	0.9	–	–	–
Change in employees (millions)	0.7	0.9	0.7	–	–	–

Source: LPC estimates using HMT panel of independent forecasts (2016b, e, g, i and j); OBR Forecasts (2015b, 2015c and 2016b) and ONS data: GDP growth (ABMI), total employment (MGRZ) and total employees (MGRN), quarterly, and AWE total pay (KAB9), monthly, seasonally adjusted; CPI (D7G7), quarterly, not seasonally adjusted, UK (GB for AWE), 2015-16.

5.86 In light of the revisions to the forecasts we have seen since June, particularly to the outlook in 2017 and 2018, the March OBR (2016b) forecast is likely to be out of date. To project the NLW path out to 2020 we have instead used a median based on the monthly HM Treasury Panel of Independent Forecasts (covering two years up to 2017) supplemented by its quarterly medium-term outlook (covering five years up to 2020) and also including the Bank of England (covering 3 years – currently up to 2018). The median of the HM Treasury Panel had been closer to the out-turn than the Bank in forecasting wage outcomes, but we thought it sensible to take as broad a view as possible.

5.87 Table 5.5 shows how the revisions affect a straight-line NLW path calculated on this basis. The on-course rate in 2017 is £7.50, rising to £8.61 at 60 per cent of median earnings in 2020. This is a downwards revision from our Spring 2016 Report estimates of £7.64 in 2017 and £9.16 in 2020, itself a revision from the £9.35 cash figure when the NLW was announced.

5.88 The scale of revision is closely aligned with the adjustment in GDP growth and wage forecasts, with the NLW also expected to be about a third lower than when the policy was announced. The original NLW target – £9.35 an hour – was £2.15 higher than the introductory level of the NLW – £7.20. Our latest estimate of the NLW target is £8.61 – 74 pence lower than the original target. Thus, on current data, the increase in the NLW is now expected to be an increase of £1.41 over four years instead of £2.15 (though this is likely to change give uncertainty in pay forecasts).

5.89 Our latest estimate of the NLW target in 2020 is 55 pence lower than it was in our Spring 2016 Report. We estimate that around 30 pence of that revision was due to weaker wage forecasts before June and 25 pence afterwards. In terms of the on-course rate for 2017, around 8 pence of the revision was before June with about 6 pence afterwards.

Table 5.5: Updated paths for the NLW to 2020

LPC estimates using:				Year				
ASHE (year)	Earnings forecast	Measure		2016	2017	2018	2019	2020
2014	OBR July 2015	Median	£	13.13	13.68	14.26	14.89	15.59
		NLW	£	**7.20**	7.68	8.19	8.74	**9.35**
		Bite	%	54.8	56.1	57.4	58.7	60.0
2015	OBR November 2015	Median	£	13.06	13.56	14.10	14.66	15.27
		NLW	£	**7.20**	7.64	8.12	8.61	**9.16**
		Bite	%	55.1	56.3	57.6	58.8	60.0
2015	OBR March 2016	Median	£	12.98	13.43	13.95	14.44	15.03
		NLW	£	**7.20**	7.60	8.05	8.50	**9.02**
		Bite	%	55.5	56.6	57.7	58.9	60.0
2016	OBR March 2016	Median	£	13.02	13.47	13.99	14.49	15.08
		NLW	£	**7.20**	7.61	8.07	8.52	**9.05**
		Bite	%	55.3	56.5	57.6	58.8	60.0
2016	HMT including the Bank (May)	Median	£	12.93	13.32	13.78	14.27	14.76
		NLW	£	**7.20**	7.56	7.97	8.41	**8.86**
		Bite	%	55.7	56.7	57.8	58.9	60.0
2016	Bank (August)	Median	£	12.94	13.32	13.77		
		NLW	£	**7.20**	7.56	7.96		
		Bite	%	55.6	56.7	57.8		
2016	HMT including the Bank (August/October)	Median	£	12.91	13.20	13.57	13.96	14.35
		NLW	£	**7.20**	**7.50**	**7.85**	**8.23**	**8.61**
		Bite	%	55.8	56.8	57.9	58.9	60.0

Source: LPC estimates using ASHE April 2014-16, standard weights, UK; OBR (2015b, 2015c and 2016b) forecasts for hourly earnings; HMT panel of independent forecasts (2016e, i and j); and Bank of England (2016b and d)

Note: Bank of England only forecasts earnings growth up to 2018.

5.90 However, as we noted in the discussions of the wage forecasts above, there has also been an increase in divergence due to greater uncertainty about the future path of the economy, particularly in 2017. Table 5.6 shows the path of the NLW with ranges to signify the degree of uncertainty around these measures.

Table 5.6: Forecast range for the NLW path, 2016-2020

	2016	2017	2018	2019	2020
Lower quartile		£7.48	£7.80	£8.15	£8.50
Median	**£7.20**	**£7.50**	**£7.85**	**£8.23**	**£8.61**
Upper quartile		£7.54	£7.91	£8.31	£8.73

Source: LPC estimates using ASHE April 2016, standard weights, UK; HMT panel of independent forecasts (2016i and j) latest post-Referendum forecasts; and Bank of England (2016d) average earnings conditional assumptions, 2016.

Summary of the economy

5.91 In summary, the outlook for the UK economy has undergone a significant change since the EU Referendum in June, with an immediate weakening followed by recovery in some indicators. The main enduring changes have been a fall in sterling, with inflation likely to rise. There is much more uncertainty – including in relation to migration and the fiscal outlook.

5.92 Forecasts, as summarised in Table 5.7, suggest a weakening in the economy in 2017, with GDP growth less than half the rate previously expected, employment expected to remain flat instead of growing, and unemployment forecast to rise. This is partly reflected in the outlook for wages. The Bank of England expects inflation to rise to 2.0-2.5 per cent in 2017 but with wage growth slightly faster. In contrast, the median of the HM Treasury Panel wage forecast is weaker than the Bank's and suggests falling real wages.

Table 5.7: Forecasts for 2016-18, 2016

	OBR forecasts (March 2016)			Bank of England forecasts (August 2016)			Median of HM Treasury Panel (August/October 2016)		
	2016	**2017**	**2018**	**2016**	**2017**	**2018**	**2016**	**2017**	**2018**
GDP Growth (whole year)	2.0	2.2	2.1	2.0	0.8	1.8	1.9	1.0	1.4
Average Earnings AWE (whole year)	2.6	3.6	3.5	2.75	3.0	3.5	2.2	2.2	2.9
Inflation RPI (Q4)	1.9	2.6	3.4				2.1	3.2	3.0
Inflation CPI (Q4)	1.0	1.7	2.2	1.2	2.0	2.4	1.1	2.5	2.2
Employment growth (whole year)[3]	1.3	0.3	0.6	0.5	0	0.75	1.3	-0.1	
ILO unemployment rate (Q4)	5.0	5.0	5.2	5.0	5.4	5.6	5.1	5.5	5.7
Claimant unemployment (Q4)	0.75	0.78	0.84				0.79	0.84	0.90

Source: OBR (2016b); Bank of England (2016d); and HMT panel of independent forecasts (2016i and j); GDP growth (ABMI), total employment as measured by workforce jobs (DYDC), ILO unemployment (MGSC) and claimant unemployment (BCJD), quarterly, and AWE total pay (KAB9), monthly, seasonally adjusted; RPI (CZBH) and CPI (D7G7), quarterly, not seasonally adjusted, UK (GB for AWE), 2015-16.

Note: Bank of England forecast of ILO unemployment rate for the third quarters, 2016-18.

5.93 Recent GDP data do not change the outlook significantly – though forecasts are likely to be modestly revised up for 2016. Projected increases in unemployment for 2017 are significant, though come against the backdrop of high employment and low unemployment levels.

5.94 Taking the whole of the NLW period, from announcement in 2015 to reaching the target in 2020, the fall of roughly a third in GDP and wage forecasts is reflected in a similar scale adjustment in the revised on-course rate of the NLW relative to its original path. Wage forecasts informing the calculation look more aligned with pay settlements data than in the past.

Stakeholder views on the National Living Wage

5.95 Chapter 2 considered the impact of the introduction of the NLW. It suggested that, as expected, it had been manageable for employers on average but with bigger reported impacts in affected sectors such as convenience stores, horticulture and social care. Looking ahead, employers in a wider range of sectors were worried about the affordability of the NLW by 2020, with some highlighting it as a risk to business viability, though some sectors and employee representatives were more sanguine, or thought it would have business benefits.

5.96 This range of opinion was reflected in stakeholder views on future rates, where there were two key points of discussion: first, the level of the NLW for 2017 given the vote to leave the EU and, second, the implications for the future profile and 2020 goal. The majority of employer responses argued that economic uncertainty made the case for caution in relation to the rate for April 2017, though this was not always clearly defined. The National Farmers Union (NFU), the Association of Convenience Stores (ACS) and a social care charity called for a freeze in the rate. The BCC recommended an increase of 2.6 per cent (which would be £7.39). The British Beer and Pubs Association (BBPA) thought that any increase should be smaller than the March 2016 on-course bite path, suggesting £7.40. The National Day Nurseries Association (NDNA) agreed suggesting the rate should be 'as low as possible' due to funding shortfalls in childcare. The CBI and CIPD called for caution, with strong appeals for the LPC to move away from the 2020 target should the economy decline (see below). EEF thought circumstances argued for 'modest increases' in the first year.

5.97 In contrast, at the upper end of those employer organisations providing particular numbers, the Federation of Small Businesses (FSB) suggested 4 per cent (which would be £7.49). A large hospitality firm thought the March 2016 on-course rate – £7.60 – would be affordable for its business, but was concerned about the future path.

5.98 Employee representative responses were more bullish, arguing that ambition remained essential – to sustain confidence, to support demand at a time when there was pressure on household incomes, to reduce pressure on the public finances, and on the simple grounds of fairness. The TUC, Unite and the Communication Workers Union (CWU) argued for a £10 minimum wage as fast as possible – justified on the basis of continued strong employment performance, and record levels of corporate profitability. In the absence of a £10 minimum wage, Unite called for a rate in 2017 of £8.70. The CWU sought staged increases above inflation and average earnings growth. The TUC and the Union of Shop, Distributive and Allied Workers (Usdaw) both quoted the linear cash figure needed to put the NLW on course for £9 by 2020 – 45 pence or £7.65.

5.99 Discussion of the rates bore directly on the broader question of the future profile of the NLW and 2020 goal. Trade unions argued strongly for the 2020 target to apply – without delay in this date. The TUC argued that the NLW should 'at least continue to rise to meet the target of 60 per cent of median earnings by 2020'. It argued that 'while we acknowledge that the UK's decision to leave the

EU poses some threat to economic stability and growth, this makes it more important than ever that we protect wage growth in order to maintain demand in the economy… the Government's target of 60 per cent of median earnings is achievable and indeed could be exceeded if the current economic course is maintained'. So, 'now is the time for the LPC to hold its nerve… Premature pessimism risks becoming a self-fulfilling prophecy that would leave too many workers stuck in poverty pay and curtail their spending'. Unite agreed: 'it would be wrong to be overly cautious and risk hitting the lowest paid hardest'. It thought that there was scope for the minimum wage to be higher – arguing that its value as a proportion of operating surpluses would be a better way to measure its affordability than its value as a proportion of average wages. Failing a large increase in its value, 'a straight-line profile is beneficial in that it enables employers to plan ahead'.

5.100 UNISON and the CWU took similar views. For the former, sustained economic performance meant there was 'no reason for the LPC to depart from its plan to follow a straight path'. It contested the argument that uncertainty made the case for back-loading the profile of the NLW arguing that 'uncertainty is not liable to abate for many years, and therefore does not provide a reason to divert' particularly given that the relative 'formula [of the target]... provides a mechanism for adjusting the target wage down in the event of recession'. For the CWU, the path should be front-loaded: 'moving too slowly risks too much to do later if there is a change in the economy'.

5.101 Reflecting their broad calls for caution, employers also sought reassurance on the path of the NLW. No employer supported front-loading, with a number including the ACS, EEF, the Food and Drink Federation (FDF) and a group of trade associations that wrote to the LPC collectively concerned that reliance on out-of-date or over-optimistic pay forecasts could inadvertently lead to rates above the true on-course rate: 'We are concerned that focusing on a fixed figure based on projections four years into the future risks a front loading of NLW increases… We strongly recommend the Commission takes an approach to reaching their targets on a year-by-year basis and which, now more than ever, avoids front-loaded NLW rates'.

5.102 Others supported back-loading the path with the NFU arguing it would provide more time for adjustment and help firms tied into forward contracts agreed before the NLW was introduced, and the UK Fashion and Textiles Association (UKFT) suggesting it would help ensure there was greater certainty.

5.103 This view contrasted with some employers who thought a straight-line was best for planning purposes. For example, the Federation of Wholesale Distributors (FWD) recommended annual median earnings levels increasing by 1.25 per cent each year. The National Federation of Retail Newsagents (NFRN) argued that a 'straight-line profile… is more manageable than either a front or back loaded approach'. The British Hospitality Association (BHA) thought a straight line preferable to front-loading or back-loading. The Local Government Association (LGA) was 'content to support the straight-line profile for each year to 2020' though said it would welcome 'certainty over the figure as early as possible'. The National Hairdressers Federation (NHF) said 'we agree that a straight-line trajectory means the additional costs are more easily planned for each year [but] we would want to see a full evaluation of the impact that the NMW has already had'. A large hospitality firm said 'a straight-line path is the best way for us to manage the NLW'.

5.104 Others were unsure, or supported a straight line contingently. The CIPD, for example, thought we should 'consider back-loading the glide path, rather than spreading increases equally'.

However 'bigger increases in 2018 and 2019' would be 'risky'. The BCC agreed: smaller increases now were warranted, but it was also concerned about storing up large jumps towards 2020. The FSB felt similarly: 'in light of the current economic environment, there is a strong argument in favour of back-loading NLW rises to later in the parliament. However, we do not know what state the economy will be in 2019-2020. If it is severely worse than at present, any decision to backload increases could have significant negative consequences. … In light of this, we are inclined to support the LPC's decision to follow a straight-line path'.

5.105 Such uncertainties underpinned the final set of views – that the target should be reconsidered if the economy deteriorated. The CBI argued that 'uncertainty is likely to hit both growth and jobs… the path of the NLW should be guided by caution… if necessary, the LPC should move away from the 60 per cent of median earnings target'. It added 'if economic conditions warrant a move away from the 2020 target then the LPC should do so to ensure the NLW remains affordable'. The CIPD agreed. Given uncertainty arising from Brexit and a clear need for time for firms to adjust, 'it would be prudent to adopt a longer timescale to achieve the NLW policy goal'. The BCC thought that the 'Government needs to be cautious about making increases to the wage floor that, if unsustainable, could threaten jobs and business'. The FSB said that the LPC should have the power to deviate from the target if it becomes clear that 60 per cent is no longer attainable. A large hospitality firm urged us to 'consider whether the target of 60 per cent of median earnings by 2020 is sustainable and affordable'.

Stakeholder views of the rates for those aged under 25 and apprentices

5.106 There was limited stakeholder evidence provided on the rates affecting workers aged under 25 and apprentices, with comment tending to relate to the 21-24 Year Old Rate, or rates for younger workers as a whole. It focused on two main issues: first, the basis of the pay floor for these workers; second, the level supported by the evidence, and in view of the new calendar.

21-24 Year Old Rate

5.107 Employee representative responses overwhelmingly argued against a lower pay floor for younger workers than those aged 25 and over, reiterating past calls for the LPC to recommend rates aligned with the NLW. UNISON was representative of these views, arguing that it was 'fundamentally unfair and discriminatory' to have lower rates for younger workers. It was concerned that the 21-24 Year Old Rate adds an incentive to employers to discriminate in recruitment on grounds of age – one that will grow the bigger any gap in value between the rate and the NLW becomes. A 22 year old minimum wage worker argued that pay differentiation was unfair: 'Nobody has noticed that I have three years experience! People who start [the] first day of work get more money than me, because they are older… I do not pay less for energy and milk because I am 22, the price is the same'. The TUC thought the LPC should set out its long-term view of the appropriate relativities between the different age bands. The Welsh Government said that it had 'yet to see any evidence which demonstrates someone between 21 and 24 is making a significantly less valuable contribution than that made by someone of 25'. The Scottish Government agreed saying that the fact rates for younger workers may increase less rapidly than the NLW was 'a very real cause for

concern.' The Intergenerational Foundation also argued for reduced variation by age, but differed from other responses making this case to the extent that it agreed that there was a trade-off between employment levels and pay levels. It based its argument for higher youth rates on the view that unemployment risks could be managed by other policy tools, whereas the minimum wage is the Government's key lever to raise incomes for younger workers.

5.108 Employer representative responses reflected a range of views. The CBI said that 'maintaining a differential wage floor for the under-25s… protects the employment prospects of this group'. It felt that 'looking at the unemployment data following the 2008 financial crisis, it is evident that young people felt the brunt of the recession… we should not do anything that would further damage young people's prospects'. Representatives in retail, hospitality, hairdressing and convenience stores broadly shared this view. Some sectors gave examples of employers who were maintaining or making greater use of the youth rates, including the 21-24 Year Old Rate, in light of the introduction of the NLW. The Association of Licensed Multiple Retailers (ALMR) said the 21-24 Year Old Rate was 'widely used' in pubs and bars.

5.109 Others argued it was difficult to use the 21-24 Year Old Rate in practice – either because of perceived legal risk, employment relations challenges or, more commonly, because differentiating pay by age did not align with the values of the business. The Association of Labour Providers (ALP) highlighted a position statement from the Ethical Trading Initiative (ETI) which specified that paying workers aged under 25 a lower minimum wage than those above was discriminatory under the ETI 'Base Code'. Suppliers of many supermarkets, retailers and brands are audited against these labour standards.

5.110 A third view expressed some discomfort with youth rates as a whole. EEF commented that very few of its members varied pay by age as they based reward on skills and experience, which had previously led it to argue that variation should be phased out. However wider uncertainty meant it has become more cautious. It was 'too early to tell whether manufacturers will start to pay based on age as opposed to skill level'. The NDNA was concerned that too large a differential would lead to a less qualified workforce as employers substituted younger workers for older workers.

5.111 On the specific question of the level of the rates, there was also a range of employer views. A number of organisations called for a freeze, including the NFU, which cited high long-term youth unemployment and the challenge of absorbing the October 2016 increase to £6.95. It thought this was considerably higher than previous increases at a time when inflation was near to zero and the move to an April calendar from October would compound cost challenges for growers, who employ seasonal labour over the summer. The NHF also called for a freeze on the other rates to avoid the prospect of minimum wage rises in quick succession in October 2016 and April 2017. So did the ALMR. Three fifths (62 per cent) of respondents to an ACS survey thought the 21-24 Year Old Rate should be frozen, with the organisation urging the LPC to 'exercise restraint' should an increase be deemed necessary to manage the differential with the NLW. The Chartered Institute of Payroll Professionals (CIPP) said 'we would not be opposed to a freezing of the NMW rates in April 2017'.

5.112 Other employers urged caution. The CBI emphasised the high bite for 21-24 year olds saying it 'agrees with the LPC's assessment that the youth rate should grow more slowly than the NLW'. It thought 'a cautious uprating… will allow employers to continue investing in training young people'. The BHA said there 'was a very strong case for either no increase to the NMW suite of rates or a

very modest increase'. The BCC recommended a 1.3 per cent increase in the 21-24 Year Old Rate to £7.04. The BBPA thought that any increase should 'reflect a six-monthly equivalent to reflect the annualised change'. It suggested no more than the 6 monthly inflation rate from October to April – 'so approximately one per cent'. EEF suggested caution – reflecting other business costs and the new calendar.

5.113 A final employer perspective suggested that the 21-24 Year Old Rate should depend on the path of the NLW. A large hospitality firm said it should increase at the same rate as the rate for workers aged 25 and over, with a view to preserving a 50 pence differential. The NDNA thought 'rates should increase at a lower level than the NLW, but too large a gap should be avoided'.

5.114 By contrast, employee representatives called for higher increases. The TUC thought 21-24 year olds 'should be included in the full living wage rate… At the very least the LPC should make recommendations that start closing the gap'. It argued that 'there is room for the LPC to make recommendations that start to narrow the gap with older workers' and do so 'as quickly as can be sustained'. Unite agreed: 21-24 year olds should receive the NLW and the calendar alignment occurring in April was 'an opportunity to close the gap with the NLW'. The CWU thought all the rates should be aligned with a 'genuine living wage'. GMB thought the NLW should apply to all workers.

16-17 Year Old Rate and 18-20 Year Old Rate

5.115 There were few responses on the 18-20 Year Old Rate and the 16-17 Year Old Rate. The CIPP, ALMR and NHF sought a freeze across the rates for younger workers. The FDF also supported this view. While its members generally didn't use the youth rates, it warned that a second increase in six months could have a detrimental impact: 'a rise should be minimal if at all'.

5.116 The BCC recommended an increase of 1.1 per cent for 18-20 year olds to £5.61 and 1 per cent for 16-17 Year Olds to £4.04. It commented that: 'further increases need to be restrained and proportionate given [NMW rates] are already being increased in October 2016'.

5.117 Employee representatives sought more ambitious increases. Unite argued that the youth rates should 'increase by more than the NLW in real terms to help close the gap'. UNISON argued that a sharp decline in the unemployment rate for younger workers meant we ought to deliver 'major improvements' in the minimum wage. The real value of the pay floor for younger workers had fallen significantly since 2009, and we needed to avoid too big a gap that would incentivise age discrimination. It referred to a 7-10 per cent increase for workers aged under 20 to help restore the real value. In the absence of its preferred policy of the NLW applying to all workers, GMB thought the youth rates should 'increase faster than inflation and average earnings to make up what has been lost'.

Apprentice Rate

5.118 Again there were relatively few responses on the Apprentice Rate. The CBI urged caution, arguing that 'an excessive rise to the rate poses a real risk to the viability of apprenticeships, particularly in conjunction with… [the introduction of] the Apprenticeship Levy' which takes effect in April 2017. The BCC suggested a one per cent increase was appropriate, lifting the rate to £3.43. The FDF thought that the introduction of the Levy meant that the rate should 'not be set much higher' though some members have questioned the need for a specific pay floor for apprentices.

The NDNA said that nurseries welcomed the recognition that the Apprentice Rate gave to the investment that employers make in apprentices. Staff were often used as supernumeraries so not counted in ratios. Nurseries and hairdressers both expressed concern that the structure of the rate meant it applied only for the first year for workers aged 19 and over. This meant an increase in the rate before qualifications were achieved.

5.119 By contrast, EEF called for an increase in the level of the Apprentice Rate to drive quality. The rate was an important lever to protect training given the Apprenticeship Levy, which could incentivise low-quality apprenticeships or the re-badging of existing training as apprenticeships.

5.120 The TUC also argued for a higher rate: 'A significant hike in the Apprentice Rate is warranted, with a plan to match the young workers rate [16-17]'. It repeated its position from the LPC's 2015 review of the structure of the rate, arguing that the application criteria of the Apprentice Rate should be narrowed – only applying to Level 2 apprentices aged 16-18, or 19-20 in their first year. It provided several examples of apprentice job descriptions that it thought showed clear evidence of substitution – with apprentices undertaking roles that should properly be undertaken by trained workers, but for much lower pay. Similarly, UNISON warned of substantive posts in the NHS being replaced with apprenticeships paid below the rates specified in the NHS pay deal, Agenda for Change. Unite argued that the Apprentice Rate, like the wider youth rates, should increase by more than the NLW in real terms to help close the gap. GMB thought that the rate should increase at least in line with RPI inflation, and supported the TUC position on narrowing its application.

Implications of other government legislation for employer costs

5.121 Most employer representative stakeholders emphasised that we should not see the impact of the minimum wage, and especially the NLW, in isolation from other employment costs facing businesses. Firms highlighted a range of policies that we have discussed in previous reports including pensions auto-enrolment, the Apprenticeship Levy, reforms to statutory sick pay, changes in holiday pay, the new Immigration Skills Charge, reform of dividend tax credits and (especially for hospitality and retail firms) business rates. The key difference from recent years, they tended to argue, is that April 2017 marks a step change in costs thanks to the staging of small firms into pensions auto-enrolment, and for larger firms the introduction of the Levy. By contrast, employee representative stakeholders and the Government highlighted policy changes lowering costs for employers including Corporation Tax cuts, business rates reform and increases in the Employment Allowance. Business stakeholders were generally concerned that these changes were not well-targeted on labour intensive firms facing higher costs.

Apprenticeship Levy

5.122 A key regulatory cost identified by businesses in our consultation was the Apprenticeship Levy, a measure announced in the Summer Budget 2015 to raise £3 billion per year to help pay for three million apprenticeships that the UK Government has set as a policy goal for this parliament. The Levy, which comes into effect in April 2017, is set at 0.5 per cent of the pay bill and will be collected via Pay As You Earn (PAYE), but with an exemption for employers with a pay bill of less

than £3 million. The Government has said that, in England, 'employers who are committed to training will be able to get more out than they pay in' with the Government topping up funds by 10 per cent. Under the policy, these funds have to be spent via a digital apprenticeship service on training and assessment of apprentices – which will typically either mean college courses, or accredited training providers. The OBR has previously estimated that, combined with auto-enrolment, the Levy would reduce forecast earnings growth over the five years to 2020-21 by 0.7 percentage points (OBR, 2015a), though it acknowledged uncertainty associated with these estimates. It may also promote training and investment, with benefits to productivity and wage growth in the longer-term.

5.123 For employers with a pay bill of less than £3 million, the Government is introducing rules requiring a cash contribution, or so-called 'co-investment'. It has proposed employers pay 10 per cent of training and assessment costs, with the Government paying the remaining 90 per cent. In recognition of the costs of taking on younger recruits – and past challenges in ensuring apprenticeships get extended to school leavers as opposed to older workers and existing employees – employers taking on a 16-18 year old apprentice will attract an additional contribution of £1,000, initially paid via the training provider. This replaces an existing programme, the Apprenticeship Grant for Employers, which supports SMEs taking on 16-24 year olds, although this was only available for the first time an employer took on an apprentice. In addition, small firms (those with fewer than 50 staff) training 16-18 year olds as apprentices will not have to contribute at all towards training or assessment costs.

5.124 Employer responses were often critical of the Levy, arguing it was a payroll tax and unlikely to promote high quality training. EEF warned that it could incentivise low-quality apprenticeships or the re-badging of existing training as apprenticeships. The CBI thought that it strengthened the case for caution with regards to the NLW, and the Apprentice Rate.

5.125 Analysis shows mixed overlap with sectors most exposed to the NLW. Department for Education data (DfE, 2016a) suggest that low-paying sectors including wholesale and retail, accommodation and food, administration and support and transport and storage will have a collective levy bill of £500m in the first year of its operation. This will amount to a fifth of the total to be collected, which is slightly less than these sectors' share of employment (28 per cent). The levy will also fall on the public sector, which is made up of predominantly large organisations, and the finance and professional, technical and scientific sectors – where wage bills are higher. These sectors will make up a little over half of the total levy bill (47 per cent), compared to just over a third of employment. However, the net cost will depend on what employers get back in training, with some stakeholders in low-paying sectors arguing that they will be less likely to recoup benefits than public sector employers. Overall, it is too soon to tell what the impact of the Levy will be. We will monitor its impact when it is implemented next Spring.

Pensions

5.126 We have commented on the introduction of automatic enrolment to a workplace pension in successive reports. The main development for this remit is that auto-enrolment is set to cover all firms with fewer than 50 employees by April 2017 (staging began in June 2015) though contributions are still being phased in, starting with a minimum of two per cent of relevant earnings, with a minimum of one per cent from the employer. Contributions are set to increase to a minimum of five per cent by April 2018, with a minimum of two per cent from the employer, rising to eight per cent

and three per cent respectively by April 2019. Firms were concerned not just about the direct cost of the pension but also about start-up costs, administration, legal advice and communications.

5.127 Firms expressed concern that, with opt-out rates lower than expected, costs are higher. However, as we have argued in previous years, implications for firms in low-paying sectors are mitigated by the fact that many minimum wage workers are part-time so do not earn enough to reach the £10,000 eligibility threshold for the policy. At £7.20, workers aged over 25 need to work an average of 27 hours a week to reach the threshold, falling to 26 hours at the latest on-course rate of £7.50. About half of NLW workers would be below the threshold on this basis.

National Living Wage, Corporation Tax and Employment Allowance

5.128 The NLW is likely to increase wage bills for employers in low-paying sectors though the exact figure is sensitive to what happens to wage differentials and use of the youth rates (it is higher if firms also increase pay for other workers, and pay the NLW to younger workers). In its evidence, the Government pointed out that it is cutting Corporation Tax from 20 per cent to 19 per cent in 2017, and to 17 per cent by 2020. It has also increased the Employment Allowance for employer National Insurance Contributions (NICs), from £2,000 to £3,000 in April 2016. This added to wider NICs reforms: from April 2015, the Government removed the requirement on employers to pay NICs for most workers under the age of 21. It has also previously highlighted business rates reforms in the 2016 Budget, including permanently doubling Small Business Rate Relief and extending thresholds.

Recommended rates

5.129 Deliberations this year focused on the outlook for the economy and the labour market in the wider context of the UK's decision to leave the EU, particularly for 2017-18, which is the horizon for the recommendations in this report.

5.130 The central debate in relation to the NLW was the degree to which automatic adjustment in the on-course rate, reflecting the effect of lower pay forecasts on the relative goal, was sufficient to manage any economic risks.

5.131 For the rates for younger workers, the central debate concerned what weight to put on strong performance in the labour market over the past year compared with possible softening in the economy, which would likely affect younger workers first and most severely.

5.132 In reaching our recommendations we bore in mind that:

- We have different remits for workers aged 25 and over and those aged under 25. For the former, we recommend the pace of increases towards 60 per cent of median earnings subject to 'sustained economic growth'. For younger workers and apprentices we are required to make recommendations that 'help as many low-paid workers as possible without damaging their employment prospects'.
- Early concerns about an immediate recession following the Referendum in June have not come to pass, and a number of economic indicators are better than feared. However, the consensus of forecasters remains that the UK faces lower growth – around 1 per cent in

2017 compared with a previous expectation of over 2 per cent – and higher unemployment (as weaker hiring and investment intentions fall short of continued working age population growth). We note that the Government announced in July that it is no longer pursuing its fiscal surplus target. Furthermore, a number of GDP forecasts suggest that the definition of an economic shock set out in its fiscal framework could be met.

- Sterling is down around 15 per cent against the dollar, the euro, and a trade-weighted basket of currencies since June. The falling pound points in different directions, potentially boosting trade but also likely leading to an increase in input and raw material prices from overseas and a pick-up in consumer price inflation. With productivity flat, average wage growth is forecast to remain at around 2.0-2.5 per cent. So, if inflation rises, there is a risk of real wage reductions.
- There is limited evidence on the sensitivity of unemployment and employment to relative increases in the pay floor in periods of economic softening.
- Evidence on the impact of the NLW to date is necessarily inconclusive. Firms in exposed sectors have warned of employment risks, but there is limited clear evidence of this yet in the aggregate data.
- Ultimately, our remit has changed the burden of proof for the NLW with a starting presumption of an increase with some tolerance of employment loss.

National Living Wage

5.133 Employers generally urged caution in view of economic uncertainty, with some arguing for lower increases now, or moving away from the 2020 target altogether. This would, they argued: provide more time to see what happens to the economy; make it easier for firms to adapt to higher wage costs by investing in productivity-raising measures; and help to manage pressures in April 2017 arising from increases in other business costs such as pensions auto-enrolment (extending to cover all small businesses) and the Apprenticeship Levy (affecting larger businesses).

5.134 By contrast, employee stakeholders urged ambition, pointing out continued strong labour market performance, limited hard evidence of economic harm post-Referendum, and survey data suggesting most employers had coped with the introductory rate of the NLW. They called for (at a minimum) a recommendation for an on-course rate, adjusted no more than to reflect the changed pay forecasts. Some employers also saw risk in lower increases now because these would, as a matter of simple arithmetic, mean sharper increases towards 2020.

5.135 We have weighed these considerations carefully. Overall, **we recommend for April 2017 an increase in the NLW of 30 pence or 4.2 per cent to £7.50 per hour**. In line with our original intentions, this is the on-course rate using the median of available forecasts from the HM Treasury Panel of Independent Forecasts with the Bank of England added (we did not have access to the OBR's November forecasts, though in recent years the HM Treasury Panel median forecast for average wage growth has come somewhat closer to the out-turn).

5.136 The recommendation represents a finely balanced decision in conditions of considerable uncertainty. On the one hand, it is a significant increase at a time of average pay growth of 2-3 per cent and would protect these low-paid workers from the higher inflation likely to result from the

depreciation of sterling. On the other hand, as a consequence of the automatic adjustment designed into a moving target, it is substantially below the £7.64 we projected in our Spring 2016 Report, reflecting actual and forecast weaker pay growth.

5.137 Commissioners considered at length whether to recommend departing from the on-course rate bearing in mind the uncertainty of the economic prospects, with the real possibility of a significant downturn and consequent risks to employment. However, we judged that the limited evidence available at this early stage did not justify departing from the straight-line path, particularly given the downward adjustment in value.

5.138 For 2018, the HM Treasury Panel and Bank of England forecasts imply a NLW within an interquartile range of £7.80 to £7.91. A material worsening in economic performance and prospects would lead us next year to consider whether to recommend that the NLW should not increase relative to median earnings, moving below a straight-line path to 60 per cent in 2020, to safeguard employment.

5.139 Looking ahead, using the HM Treasury Panel forecasts alone, as the Bank of England's do not extend out this far, we estimate that 60 per cent of median earnings in 2020 will equate in cash terms to an NLW of £8.61, within an interquartile range of £8.50 to £8.73. This is down from £9.16 in our Spring 2016 Report and £9.35 when the policy was announced in July 2015. We estimate that more than half of the revision occurred before June, with slightly less than half of the revision afterwards.

Youth rates

5.140 Turning to the youth rates and the Apprentice Rate, we have as in the spring kept in mind that the Government designed the age structure on the basis that younger workers are more exposed than older workers to employment risks of a higher pay floor. Our objective for younger workers is to recommend a rate that should not reduce employment (unlike for the NLW where our role is to advise the Government on a path where some consequence for jobs has been accepted).

5.141 We drew attention in our last report to the evidence for differences in labour market performance that mean the pay floor for younger workers, including 21-24 year olds, cannot currently be set at the same level as that for workers aged 25 and over without risk to employment. We also said we would balance the risks of pricing younger workers out of employment were we to set the rate too high against the risks of encouraging employers to substitute younger workers for older ones were we to set the rate too low.

5.142 A new challenge is the change in the minimum wage calendar – with all rates aligned from April 2017 – which means that these recommendations, if accepted, will come into force six months after those we made in our Spring 2016 Report. In light of this we have adjusted the rates to ensure that neither workers nor employers are advantaged or disadvantaged. The rates are lower than they would be on a full-year basis to recognise that workers will in effect receive two increases in just six months – one in October 2016 and another in April 2017.

5.143 Our Spring 2016 Report made our first ever recommendations for 21-24 year olds as a distinct group, a cohort established as a new age band of the minimum wage by the introduction of the NLW. We recommended a significant increase in the rate, but less rapid than the increase that

those aged 25 and over were set to receive under the NLW. This reflected that 21-24 years old had strong pay growth and improving employment prospects, but unemployment rates for those not in full-time education were almost double those of 25-30 year olds.

5.144 The labour market data since our last report suggest that 21-24 year olds' performance has strengthened further in 2016 with higher pay growth at the median than 25-30 year olds – likely reflecting some workers of this age receiving the NLW. Employment rates have risen and unemployment rates for those not in full-time education have fallen below pre-recession levels. However, unemployment rates for 21-24 year olds remain higher than for 25-30 year olds, the level of pay rates remains lower (especially for 21 and 22 year olds) and the bite remains the highest of any age group – even before the October 2016 increase in the minimum wage is seen in the data.

5.145 Balancing these considerations, **we recommend that the 21-24 Year Old Rate should increase to £7.05 from 1 April 2017. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 5.2 per cent. It is equivalent to an increase at an annual rate of 3.2 per cent**.[12]

5.146 In recent years we have generally recommended smaller increases for workers aged under 21 than for older workers because their labour market position has been worse and the damaging consequences of unemployment more serious.

5.147 However, in our Spring 2016 Report, solid pay growth, sharply falling unemployment and the shelter provided by the NLW meant that we were able to recommend a large increase in the pay floor of 18-20 year olds. For 16-17 year olds we were more cautious, reflecting positive but relatively weaker wage growth and employment performance.

5.148 In data since our last report, employment, unemployment and pay of 18-20 year olds has continued to improve strongly. Substantial pay growth meant that the bite fell sharply – again almost certainly reflecting some workers of this age receiving the NLW. The unemployment rate for those not in full-time education fell more strongly than for other age groups. However, its level remains three times higher than for 25-30 year olds and pay a third lower, with the bite the second highest of any age group.

5.149 The improvement in the position of 16-17 year olds has been more limited. Pay growth for 16-17 year olds was similar to that of those aged 25 and over in the year to April 2016 – but below that of those aged 18-24. Both the employment rate and unemployment rate for those not in full-time education were flat over the year, with possible recent signs of performance slowing further.

5.150 Critically, for both age groups the data predate any effects from the UK's decision to leave the EU, where any fall in employment or rise in unemployment would be likely to bear on younger workers first.

5.151 Balancing strong performance looking backwards against these groups' greater exposure to labour market risks looking forwards, **we recommend an increase in the 18-20 Year Old Rate to £5.60 from 1 April 2017. This recommendation, if accepted, would deliver a cumulative**

12 For this and other rates for workers aged under 25 and apprentices, we calculate the annual rate as the April 2017 increase on the hypothetical April 2016 rate (had the minimum wage already been operating on this calendar). April 2016 was the midpoint of the minimum wage year, so the applicable baseline is the average of the rates in force in October 2015 and October 2016.

increase since October 2015 of 5.7 per cent. It is equivalent to an increase at an annual rate of 3.1 per cent.

5.152 For 16-17 year olds, we recommend an increase to £4.05. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 4.7 per cent, equivalent to an increase at an annual rate of 2.8 per cent.

Apprentice Rate

5.153 In successive years we have sought to recommend a level for the Apprentice Rate that protects workers from exploitation while encouraging the supply of places overall (and particularly for younger workers, whose relative share has fallen over time). These goals have been reflected in recommendations set at a discount to the 16-17 Year Old Rate to recognise the costs to employers of providing training and supervision.

5.154 In our Spring 2016 Report, we recommended a moderate increase in the Apprentice Rate in view of limited new evidence, substantial policy change, and the Government's decision to implement a 21 per cent increase in October 2015, the impact of which it was premature to judge.

5.155 For this report, the new 2016 Apprentice Pay Survey and further data on starts show very strong pay growth without conclusive negative effects on apprenticeship supply. Starts have increased overall and for 16-18 year olds, although they have fallen at Level 2 and for 19-24 year olds.

5.156 The main area of concern is that data suggest very high, and possibly worsening, levels of non-compliance. On our lower bound estimate, the level of underpayment is 5 per cent, rising to 15 per cent using our preferred measure.

5.157 Balancing these considerations, **we recommend an increase to £3.50. This recommendation, if accepted, would deliver a cumulative increase since October 2015 of 6.1 per cent. It represents an increase at an annual rate of 4.5 per cent**.

5.158 We encourage the Government and HMRC to redouble enforcement efforts for apprentice pay as well as monitoring quality in minimum wage apprenticeships, where little information is available.

Accommodation offset

5.159 We conducted a review of the accommodation offset in 2013. As a result, we said that we would stage increases towards the (then) adult rate of the minimum wage when economic circumstances meant that its real value was tending to rise – with the aim of ensuring provision of higher quality accommodation by employers. In recognition that the value of the offset needs to increase significantly if timely progress is to be made towards the 21-24 Year Old Rate, **we recommend a 40 pence increase in the offset to £6.40**. This should both better reflect the costs of providing accommodation and help the horticulture sector in particular.

Implications of the recommended rates

5.160 In assessing the likely impact of our minimum wage rate recommendations, we have looked at likely changes to the bite, the coverage and the implications for household income taking account of tax and benefit changes.

Position relative to average earnings

5.161 In order to estimate the effect of our recommendations on the bite and coverage of the rates, we need to forecast how earnings are likely to change between April 2016 and October 2017. Reflecting earnings growth through the year, the bite and coverage are at their highest in April and fall gradually over the year to the following March. For the NLW, October is the point at which the bite is measured for the purposes of the 2020 target because it is the mid-point of the year, and the Government has previously advised that this timing best represents the underlying policy intention of the target – an average 60 per cent bite across the year.

5.162 We take two approaches to estimating the future bite and coverage. Our first approach assumes that all workers (and apprentices) receive pay increases in line with forecast average earnings growth. We use the median of the HM Treasury Panel of Independent Forecasts (including the Bank of England), which estimate average wage growth of 2.25 per cent for 2016 and 2.20 per cent for 2017. We then adjust these to estimate wage growth in each respective period between April/October of each year. This leads to projected wage growth of 1.1 per cent between April 2016 and October 2016; 2.2 per cent from April 2016 to April 2017; and 1.1 per cent between April 2017 and October 2017.

5.163 However, forecasts of average earnings growth are not available for young people, whose earnings growth may be lower or higher than average, with implications for the bite and coverage of the youth rates. To address this we adjust the average wage growth forecasts to produce an estimate of wage growth for young people which maintains the relativities in the most recent earnings data available to us.[13] It should be noted that these age-adjusted wage forecasts are likely to provide an upper bound, so may understate any increase in the bite.

5.164 Table 5.8 summarises the bite estimates based on these two approaches. It shows the bite from April 2015 to October 2017, measured against the median hourly earnings of workers and apprentices covered by the respective rates at that time.

5.165 Looking first at workers aged 25 and over, we estimate that the recommended rate of the NLW in April 2017 (£7.50 an hour) will have a bite of 57.4 per cent upon implementation, falling to 56.8 per cent by October of that year. This compares with a bite of 56.4 per cent following the introduction of the NLW in April 2016 (£7.20 an hour), falling by 0.6 percentage points to 55.8 per cent in October 2016. The increase in the bite of the NLW, of 1.1 percentage points over the year,

13 In the year to April 2016 young workers and apprentices saw higher hourly earnings growth at the median compared with the average (3.3 per cent): 14 per cent above average for 16-17 year olds (3.7 per cent); 81 per cent higher for 18-20 year olds (5.9 per cent); 59 per cent above average for 21-24 year olds (5.2 per cent); and 73 per cent above average for the cohort covered by the Apprentice Rate (5.6 per cent). In our second approach we adjust the average wage growth forecasts accordingly, maintaining these relativities. This is likely to be an upper-bound on the basis that the higher wage growth seen for young workers in April 2016 was partly due to the introduction of the NLW, with some young workers benefitting directly and others seeing their wages rise as employers implemented the NLW across the low-paying sectors in which young people primarily work. It is not clear yet whether they will continue to benefit from future increases in the NLW to the same degree, which are in any event lower percentage increases on current forecasts.

maintains the straight-line path to a NLW which, on this trajectory, will be 60 per cent of median earnings in October 2020.

Table 5.8: Bite of the NMW/NLW, UK, 2015-2017

Bite at the median	Assuming average earnings growth[a]					Assuming age-adjusted earnings growth[b]			
	16-17	18-20	21-24	AR	25+/ NLW[c]	16-17	18-20	21-24	AR
Apr 2015	71.5	75.4	78.9	54.4	52.5	71.5	75.4	78.9	54.4
Apr 2016	70.4	73.6	77.3	62.3	56.4	70.4	73.6	77.3	62.3
Oct 2016 (estimated)	71.9	76.2	79.3	63.4	55.8	71.8	75.6	78.8	62.9
Apr 2017 (estimated)	72.0	76.1	79.6	64.6	57.4	71.8	74.8	78.6	63.6
Oct 2017 (estimated)	71.2	75.3	78.7	63.9	56.8	70.9	73.3	77.2	62.4
Estimated change in the bite, 2016-2017 (pp):									
April-April	1.7	2.5	2.3	2.3	1.1	1.4	1.1	1.2	1.3
October-October	-0.7	-1.0	-0.6	0.5	1.1	-0.9	-2.2	-1.6	-0.5

Source: LPC estimates based on ASHE, standard weights, including those not on adult rates of pay, UK, April, 2015-16; HMT panel of independent forecasts (2016j); Bank of England (2016d) average earnings forecasts.

Notes:

a. Median hourly earnings uprated by HMT panel of independent forecasts and Bank of England average earnings forecasts for the period.

b. Maintains pay growth relativities between different rate populations, corresponding to ASHE 2015-2016 out-turn growth. On this basis HMT panel (including BoE) forecasts are adjusted as follows: 16-17 (*1.14); 18-20 (*1.81); 21-24 (*1.59); AR (*1.73).

c. In April 2015 workers aged 25 and over (alongside those aged 21-24 years) were covered by the adult rate of the NMW.

5.166 Turning to younger workers, under our basic assumption of forecast average earnings growth, we estimate that the bite of the youth rates and Apprentice Rate will have increased following the relatively high increases in the youth rates in October 2016 (set against an assumption of relatively low forecast average earnings growth). The bite of the 16-17 Year Old Rate is estimated to have increased by 1.4 percentage points between April 2016 and October 2016 – to 71.9 per cent – following the increase of 3.4 per cent in the 16-17 Year Old Rate (to £4.00 an hour). The recommended rate of £4.05 in April 2017 is estimated to maintain the bite (72.0 per cent), although it will then fall to 71.2 per cent by October 2017. Using our second approach, which assumes slightly higher earnings growth for young workers, the bite would be a little lower in April 2017, at 71.8 per cent, unchanged on October 2016, and would then fall to 70.9 per cent by October 2017.

5.167 For 18-20 year olds, the 4.7 per cent increase to £5.55 in the applicable rate in October 2016 is estimated to have increased their bite by 2.6 percentage points, from 73.6 per cent to 76.2 per cent, assuming average earnings growth. The recommended increase in April 2017 (to £5.60) maintains that bite at 76.1 per cent, but it will then fall to 75.3 per cent by October 2017. Using our second approach, which assumes above-average earnings growth for young workers, the bite of the recommended 18-20 Year Old Rate is estimated to be 74.8 per cent in April 2017, falling to 73.3 per cent by October.

5.168 Turning to 21-24 year olds, assuming average earnings growth, their bite is estimated to have increased by 2 percentage points to 79.3 per cent in October 2016, following the 3.7 per cent increase in the 21-24 Year Old Rate. The recommended increase in the rate to £7.05 an hour is estimated to increase the bite very slightly – up 0.3 percentage points to 79.6 per cent in April 2017 – before falling to 78.7 per cent in October 2017. If we assume above-average earnings growth similar to their outturn earnings growth in 2015-2016, the recommended rate would have a bite of 78.6 per cent on implementation, falling to 77.2 per cent in October 2017. This would represent a return to its level in April 2016 (77.3 per cent).

5.169 Table 5.8 also shows the projected bite path of the Apprentice Rate, measured against median hourly earnings for the cohort in their first year of an apprenticeship or aged 16-18. The bite of the Apprentice Rate increased sharply between April 2015 and April 2016 using ASHE – up by 7.9 percentage points to 62.3 per cent – following the 21 per cent increase in the rate to £3.30, in October 2015. Assuming average earnings growth, the bite is estimated to have increased by 1.1 percentage points to 63.4 per cent following the 3.0 per cent increase (to £3.40) in October 2016. The recommended rate of £3.50 is estimated to increase the bite by a further 1.2 percentage points, to 64.6 per cent, falling to 63.9 per cent in October 2017. If we assume above-average earnings growth, the bite of the recommended rate will be 63.6 per cent in April 2017, falling to 62.4 per cent in October – similar to its level in April 2016 (62.3 per cent).

Coverage

5.170 Another way of looking at the impact of the NMW is to assess the number of people who will be covered by the minimum wage upratings. As with the bite, this is sensitive to when in the year it is measured, and to pay forecasts. Table 5.9 sets out our coverage estimates using the median of the HM Treasury Panel of Independent Forecasts (including the Bank of England) – 2.2 per cent between April 2016 and April 2017.

5.171 Looking first at coverage of the NLW for workers aged 25 and over, the recommended NLW is estimated to raise it by 390,000; from 1.6 million jobs (6.7 per cent of the cohort) in April 2016 to 2.0 million (8.3 per cent) in April 2017. This would represent a 24 per cent (or 1.6 percentage points) increase in coverage, although, as noted previously, coverage falls through the year and will be lower in October 2017 when we measure the bite of the NLW. It is estimated to cover 1.8 million jobs, 7.6 per cent of the cohort, at the mid-year point in October 2017.

Table 5.9: Coverage of the NMW/NLW, UK, 2016-2017

Coverage of the rates (including eligible apprentices)	Assuming average earnings growth[a]						Assuming age-adjusted earnings growth[b]			
	16-17	18-20	21-24	AR	NLW	Total	16-17	18-20	21-24	AR
Percentage covered:										
Apr 2016	**9.4**	**11.5**	**8.4**	**18.8**	**6.7**	**7.1**	**9.4**	**11.5**	**8.4**	**18.8**
Apr 2017 (estimated)	14.3	14.6	11.5	22.3	8.3	8.9	10.0	12.7	10.3	20.7
Number covered (000s):										
Apr 2016	**27**	**115**	**169**	**36**	**1,596**	**1,943**	**27**	**115**	**169**	**36**
Apr 2017 (estimated)	41	145	230	43	1,986	2,446	29	126	207	40
Increase April 2016-2017:										
Number (000s)	14	31	61	7	390	502	2	12	38	4
Percentage point	4.9	3.1	3.0	3.5	1.6	1.8	0.6	1.2	1.9	1.9
Percentage	52.0	26.7	36.2	18.8	24.4	25.9	6.4	10.0	22.4	10.2

Source: LPC estimates based on ASHE, standard weights, including those not on adult rates of pay, UK, April 2015-16; HMT panel of independent forecasts (2016j) and Bank of England (2016d) average earnings forecasts.

Notes:

a. Median hourly earnings uprated by HMT panel of independent forecasts and Bank of England average earnings forecasts for the period.

b. Maintains pay growth relativities between different populations, corresponding to ASHE 2015-2016 out-turn growth. On this basis HMT (incl. BoE) forecasts are adjusted as follows: 16-17 (*1.14); 18-20 (*1.81); 21-24 (*1.59); AR (*1.73).

5.172 Turning to the youth rates and Apprentice Rate, we again take two approaches: first assuming average earnings growth for all groups, and second assuming above-average earnings growth, in which we maintain the relativities between young/apprentice workers' earnings growth and average earnings growth as observed in the 2016 ASHE.

5.173 Looking first at 16-17 year olds, Table 5.9 shows that, assuming average earnings growth, coverage is estimated to increase from 27,000 (9.4 per cent) in April 2016 to around 41,000 (14.3 per cent) in April 2017, equivalent to a 52 per cent increase over the year. However, the jump in coverage is likely to have occurred in October 2016, when the 16-17 Year Old Rate increased by 3.4 per cent, from £3.87 to £4.00 an hour. The forthcoming increase to £4.05 in April 2017 is unlikely to increase coverage substantially. Coverage is lower if we assume above-average earnings growth for 16-17 year olds. On this basis, the recommended rate will cover around 29,000 (10 per cent) of the cohort in April 2017.

5.174 Turning to 18-20 year olds, Table 5.9 shows that, assuming average earnings growth, coverage is estimated to increase by around 30,000 (a 27 per cent increase) over the year, with the recommended rate covering around 145,000 (14.6 per cent) of the cohort in April 2017 – compared with 115,000 (11.5 per cent) in April 2016. Again, the increase in coverage over the year results primarily from the October 2016 increase in the 18-20 Year Old Rate – an increase of 4.7 per cent – rather than from the recommended rate for April 2017. Coverage will be lower for 18-20 year olds if we assume above-average earnings growth over the year. On this basis, the recommended rates are estimated to cover around 126,000 (12.7 per cent) 18-20 year olds in April 2017.

5.175 Coverage of the 21-24 Year Old Rate shows a similar pattern. Assuming average earnings growth, coverage is estimated to increase by around 61,000 (or 36 per cent) over the year to April 2017, rising from 169,000 (8.4 per cent) in April 2016 to around 230,000 (11.5 per cent) in April 2017. Again, much of the increase over the year is due to the October 2016 increase in the 21-24 Year Old Rate – from £6.70 to £6.95 (3.7 per cent). If we assume above-average earnings growth, the recommended rate implies coverage of around 207,000 (10.3 per cent) 21-24 year olds in April 2017.

5.176 There is a slightly different pattern for apprentices, with a larger part of the increase over the year to April 2017 arising from the recommended rate, which is a little higher than the recommendations for the other youth rates. Assuming average earnings growth over the year, we estimate that coverage of the Apprentice Rate will increase from 36,000 to around 43,000 – or from 18.8 to 22.3 per cent – over the year to April 2017, with around half of the increase arising from the October 2016 increase and the remainder arising from the recommended increase for April 2017. If apprentices see above-average earnings growth over the year the Apprentice Rate would cover around 40,000 apprentices (20.7 per cent) in April 2017.

5.177 Overall, if the wages of the low-paid increase in line with average earnings forecasts, the total number of jobs that will be covered by the new rates in April 2017 is estimated to be about 2.4 million (8.9 per cent), of which around 2 million will be covered by the NLW and around 460,000 covered by the other rates. Compared with the number of jobs covered in April 2016, this represents an increase of around half a million jobs, of which around 390,000 are due to the NLW and around 113,000 due to the other rates.

Impact on personal tax allowance and household income

5.178 In 2015 the Government said it intended to raise the personal tax allowance such that no minimum wage worker working 30 hours or fewer at the adult rate of the NMW (for workers aged 21 and over) paid income tax. While the NLW has for many workers and employers become the de facto main rate, the tax commitment is tied to the successor of the adult rate, the 21-24 Year Old Rate. The Government is subject to a duty to consider the impact on an individual working 30 hours a week on the NMW and report at each fiscal event. In support of this, the Government increased the income tax personal allowance from £10,600 in 2015/16 to £11,000 in 2016/17. It will increase to £11,500 from 2017/18. On this basis, the recommended increase in the 21-24 Year Old Rate for October 2017 has no implications for the personal tax allowance. For those working 30 hours a week on the 21-24 Year Old Rate, gross annual earnings will rise from £10,871 in October 2016 (based on £6.95 an hour) to £11,028 in April 2017 (based on £7.05), thus remaining below the threshold of £11,500.

5.179 By contrast, workers aged 25 and over working 30 hours on the NLW will be liable for some income tax although the increase in the tax threshold – from £11,000 in 2016/17 to £11,500 in 2017/18 means that their tax deductions will fall in April 2017. Table 5.10 shows that NLW workers working 30 hours a week had annual pre-tax earnings of £11,262 in 2016/17, of which they were liable for tax on just £262. The increase in the recommended rate of the NLW implies annual earnings of £11,732, but set against the higher tax threshold their taxable pay falls by around £31 (12 per cent) to £231.50. In terms of weekly income, the recommended rate of the NLW implies a pre-tax increase of £9.00 a week (4.2 per cent), from £216 to £225, between 2016/17 and 2017/18. However, after-tax earnings vary according to household circumstances, with tax credits boosting

the earnings of low-income households, particularly those with children. Modelling is sensitive to the precise assumptions.

5.180 Using HM Treasury estimates, Table 5.10 shows that weekly household income for a single person aged 25 and over paid at £7.20, with no children, was boosted through the tax and benefit system by 3.1 per cent in 2016/17 – giving an after-tax hourly rate of £7.42; while the household income for a married couple (one working, with two young children) was boosted by 91 per cent, equivalent to an after-tax hourly rate of £13.78 in 2016/17. Changes to taxes and benefits in 2017/18 reduce slightly the after-tax gains to low-income households, off-setting some of the gains from the recommended increase in the NLW. Weekly household income for a single person with no children is boosted by 1.0 per cent in 2017/18 after tax/benefits (compared with 3.0 per cent in 2016/17), producing an hourly after-tax rate of £7.57. This represents an annual increase of 15 pence an hour (or 2.0 per cent), compared with the recommended increase in the NLW of 30 pence (4.2 per cent). For a married couple with two children (one adult working) weekly household income is boosted by 86 per cent in 2017/18 after tax/benefits (compared with 91 per cent in 2016/17), producing an hourly after-tax rate of £13.93. This represents an increase of 15 pence an hour (or 1.1 per cent), off-setting some of the gains from the NLW, albeit all workers continue to see growth in their take-home pay, with employers contributing a larger share.

Table 5.10: Impact of Personal Tax Allowance and benefit changes on household income of NLW workers, UK, 2016/17-2017/18

NLW worker, 30 hour week	2016/17	2017/18	2016/17 to 2017/18	
	£	£	£	%
Hourly rate	**7.20**	**7.50**	**0.30**	**4.2**
Annual pay	11,262	11,732	469	4.2
Tax threshold	11,000	11,500		
Taxable pay	262.24	231.50		
Weekly pay before tax/NICs/Tax Credits	216.00	225.00	9.00	4.2
Single, no children				
Weekly pay after tax/NICs/Tax Credits	222.73	227.19	4.47	2.0
Gains (£)	6.73	2.19		
Gains (%)	3.1	1.0		
After-tax hourly rate	**7.42**	**7.57**	**0.15**	**2.0**
Married couple, one working, 2 children				
Weekly pay after tax/NICs/Tax Credits	413.46	417.81	4.35	1.1
Gains (£)	197.46	192.81		
Gains (%)	91.4	85.7		
After-tax hourly rate	**13.78**	**13.93**	**0.15**	**1.1**

Source: LPC estimates using HM Treasury data, October 2016.

5.181 Table 5.11 shows the same analysis for a worker on the 21-24 Year Old Rate. Unlike workers covered by the NLW, 21-24 year olds were covered by two rates in 2016: £6.70 an hour from April to September 2016 and £6.95 from October 2016. As expected, hourly after-tax earnings of single people with no children are lower than for their counterparts with children, because the latter group receive tax credits. However they receive more of the gains of wage increases because they are not subject to in-work support being withdrawn as they earn more.

Table 5.11: Impact of Personal Tax Allowance and benefit changes on household income of NMW workers aged 21-24 years, UK, 2015/16-2017/18

21-24 Years, 30 hour week	2015/16	2016/17	2015/16 to 2016/17		2017/18	2016/17 to 2017/18	
	£	£	£	%	£	£	%
Hourly rate	6.70	6.95	0.25	3.7	7.05	0.1	1.4
Annual pay	10,480	10,871	391.05	3.7	11,028	156	1.4
Tax threshold	10,600	11000			11,500		
Weekly pay before NICs	201.00	208.50	7.50	3.7	211.50	3.00	1.4
Single, no children							
Weekly pay after NICs	195.48	202.08	6.60	3.4	204.84	2.76	1.4
After-tax hourly rate	**6.52**	**6.74**	**0.22**	**3.4**	**6.83**	**0.09**	**1.4**
Married couple, one working, 2 children							
Weekly pay after NICs/Tax Credits	406.41	402.17	-4.25	-1.0	403.70	1.53	0.4
After-tax hourly rate	**13.55**	**13.41**	**-0.14**	**-1.0**	**13.46**	**0.05**	**0.4**

Source: LPC estimates using HM Treasury data, October 2016.

Enforcement and non-compliance

5.182 As noted in the introduction of this report we have not for this cycle of the minimum wage looked in detail at issues of compliance and enforcement on the grounds that we undertook an in-depth analysis in our Spring 2016 Report, and little new evidence has become available on the effectiveness of the policy response. We are considering making compliance and enforcement the subject of a separate report next year when more evidence is set to have emerged. Non-compliance is likely to be an issue of increasing importance as the value of the NLW increases, which could triple coverage for workers aged 25 and over between 2015-2020. It may also be affected by changes to rules on migration following the decision to leave the EU, if these lead to tighter restrictions on low-skilled labour, which in turn could influence levels of illegal working.

5.183 Nonetheless, Chapters 2, 3 and 4 set out some of the early data on the extent of underpayment of the minimum wage in April 2016, including the NLW, as measured by the Annual Survey of Hours and Earnings (ASHE). It suggested that non-compliance may have risen around the time of the introduction of the NLW, though it was uncertain how much of this reflected transitional issues, as the NLW uprating occurs in the same month as the data is gathered (that is, some of the

non-compliance may be temporary or an artefact of the survey date). Chapter 4 also considered evidence from the 2016 Apprentice Pay Survey, which suggested continued high rates of non-compliance. Rates were particularly high for apprentices in particular low-paying sector apprentice frameworks such as hairdressing, for 16-18 year olds, and for apprentices in their second year.

5.184 We did however receive some evidence from stakeholders on enforcement – most frequently from unions, employment lawyers, and in the consultation responses from the social care and creative sectors. Most respondents, including employee representatives, had not observed increased non-compliance arising from the NLW, or did not comment on it. HMRC advised us there had been no clear NLW effect apparent in calls it had received via the ACAS helpline or other cases.

5.185 In its evidence, the Government highlighted increases in funding and broader improvements in performance by HMRC (BEIS, 2016d). Funding rose to £20 million in April 2016, up from £13m in the previous financial year. Meanwhile the number of investigations rose more than 20 per cent year on year. Arrears identified increased from £3.29 million for 26,300 workers in 2014/15 to £10.2 million for 58,000 workers in 2015/16. It also emphasised that new approaches were being deployed including the creation of a 'Promote' team within HMRC focused on employer behaviour change, in addition to HMRC's traditional reactive complaints-based work and proactive targeted-enforcement work. On penalties, it stressed continued progress with the naming scheme – as of September 2016, 687 employers had been named for NMW underpayment. It also committed to renewed focus on criminal prosecutions for the most serious cases, though it has previously highlighted challenges here, including: that the CPS has to decide prosecution is in the public interest and has a realistic chance of success; and that it is a slower route to recovering arrears than civil routes.

5.186 The key issues highlighted by stakeholders included lack of clear guidance on employers' responsibilities and the status of the LPC's previous recommendations on compliance. We recommended in our Spring 2016 Report that the Government review the current obligations on employers regarding provision of payslips and consider introducing a requirement that payslips of hourly-paid staff clearly state the hours being paid for. We also recommended that the Government establish a formal public protocol for HMRC to handle third party whistleblowing on breaches of the minimum wage, which should include arrangements for giving all possible feedback to relevant third parties and appropriate continuing involvement in any resulting casework. In its response to our Spring 2016 Report, the Government said it was committed to effective enforcement and would consider these options in full. We await further news but continue to urge the Government to act on these recommendations.

5.187 On broader stakeholder views, there was wide support for greater recent funding for HMRC and stronger and more strategic enforcement including better triaging of cases, and more proactive investigations.

5.188 Some stakeholders highlighted concerns that HMRC needed to do more on serious non-compliance. In oral evidence one organisation cited cases of textile manufacturers in the informal sector paying well below the minimum wage. The NHF called for more action on chair-renting abuse, informal sector businesses not complying with the minimum wage, tax or VAT, and freelance hairdressers working for cash-in-hand.

5.189 The Government advised us that HMRC is developing a sophisticated risk assessment model that will bring together real time information on tax, National Insurance, benefits and tax credits

flagging cases where non-compliance was likely. It was undertaking proactive work in traditional sectors such as social care, and hair and beauty, but also in other at-risk parts of the low-wage economy including car dealerships, employment agencies, wedding planners, call centres, nail bars and car washes.

5.190 By contrast, with calls for a greater share of focus on rogue employers, Unite wanted the Government to take a broader approach to the precarious labour market. At oral evidence, it sought a stronger threshold to defend unfair dismissal cases where employers rely on the legal defence of 'some other substantial reason'. It saw this as linked to employers adjusting wider reward packages to offset NLW costs: the (in its view) ease of dismissing employees meant they enjoyed little power to resist unfavourable changes to terms and conditions.

5.191 Some employee representatives were also concerned about risks in relation to enforcement – notably self-correction, the HMRC practice whereby employers in breach of the law and served with a Notice of Underpayment in respect of a complaint can themselves correct other similar cases, which HMRC later validates via looking at the pay of a sample of workers. Unions and employment lawyers welcomed the rapid resolution this affords but some expressed concern that self-corrected arrears are not subject to penalties or included in the naming scheme. The Government's evidence suggested that self-correction accounted for £4.6m in arrears in 2015/16 – approaching 45 per cent of the sums identified in the year. We have previously urged HMRC and BEIS to monitor this closely to ensure that an appropriate balance is struck.

5.192 As in previous years, several employers, unions and the Employment Lawyers Association called for clearer guidance. Areas cited for clarification include salary sacrifice schemes, deductions for wages (for example, to pay for uniforms and for childcare for nursery workers) and payment for travel time. The UK Homecare Association (UKHCA) and Scottish Social Services Council called for guidance to address issues such as travel time, unsocial hours premiums and payments for sleep-in shifts. The Welsh Government warned that lack of up-to-date workforce data among providers was a barrier to effective enforcement, especially given high turnover of staff. The ALP called for sectors to have access to NMW technical advisors to aid the development of guidance. It also flagged weaknesses in the GOV.UK website and ACAS website. HMRC has advised us that its 'Promote' team is currently developing guidance for four sectors: social care, bakeries, employment agencies and seafarers – all of whom are groups we have previously flagged as at risk. It is also working with the TUC to add a feature to its website that will help employees work out if they are being underpaid.

5.193 Rising self-employment and its possible abuse in response to changing employment regulation was raised by the TUC, GMB and CWU. GMB cited the example of Uber drivers, and alleged 'Victorian' practices it thought used by delivery firms. GMB wrote in its consultation response that 'while some workers embrace flexibility, it is clear that some employers are using lawful arrangements, such as self-employment and zero-hours contracts, to exploit people doing work identical to that of permanent employees.'

5.194 Again like last year, Equity highlighted concerns about interns, volunteers and other workers on 'low or no pay work', arguing that employers classifying work as 'voluntary' when they should be paying the minimum wage is not 'compatible with the intention of the NMW Act… and believe that this practice should be challenged by the LPC.' Equity and others felt that workers were often

unable to take their cases to a tribunal for fear of getting a bad reputation in an industry where getting work is often about personal connections.

5.195 Finally, stakeholders continued to raise concerns about non-compliance in social care, particularly in relation to travel time, sleepovers and time on call. Unite and the TUC were concerned to find out whether HMRC investigations into large care providers had been completed, and how much non-compliance had been uncovered.

5.196 We have previously commented on the large discrepancy between estimates of the scale of non-compliance in social care put forward by research, trade unions and some think tanks and the number of cases in the sector where non-compliance is found when HMRC responds to complaints or undertakes proactive investigations. For example, Hussein (2011) estimated that between 9 and 13 per cent of front-line care jobs were likely to be paid below the minimum wage, which equated to about 155,000-220,000 workers. HMRC strongly agreed that non-compliance in the sector is a significant problem, with a 48 per cent strike rate for the Human Health and Social Work sector in 2015/16 (that is, 48 per cent of employers investigated had at least one case of non-compliance). However, the actual levels uncovered as a proportion of the workforce are far lower than research and stakeholder estimates. For example, in 482 social care investigations undertaken in the social care sector between 2013 and 2016, underpayment was found in 129 cases closed so far, helping 3,868 workers.

5.197 We believe the discrepancy of scale in different sources merits further investigation by the Government: it may be that there are barriers to effective enforcement – perhaps through inadequate documentation, limited basis for deciding between competing claims of employers and workers, or technical aspects of the law like treatment of sleepovers. Or it may be that, when the detailed operation of the law is taken into account, non-compliance has been over-estimated in commentary on the sector. The degree of non-compliance is likely to be very sensitive to assumptions and evidence on travel time and so on.

Conclusion

5.198 Our recommended rates for the NLW and the other rates of the minimum wage reflect a careful assessment of the outlook for older and younger workers, the economy and the labour market — but one made in conditions of considerable uncertainty. With economic growth forecast to weaken and unemployment to rise in 2017, pay forecasts have also softened, with the adjustment reflected in the value of the on-course rate of the NLW. We judged that the limited evidence available at this early stage did not justify departing from a straight-line path. For younger workers, generally strong labour performance looking backwards needed to be weighed against these groups' greater exposure to any economic risks looking forwards, and the change in calendar that meant the April 2017 increase, if accepted, would come six months after their last increase. After reviewing a wide range of evidence, we have made recommendations we judge are appropriate to an economy that enjoys a strong labour market but one that is also facing a period of adjustment.

Appendix 1
Consultation

We are grateful to all those people and organisations that contributed to the preparation of this report. We would like to thank in particular those who provided evidence, either written or oral, and those who organised or participated in Low Pay Commission visits and meetings. All such individuals and organisations are listed below, unless they expressed a wish to remain unacknowledged.

Adam Smith Institute
Adecco
Alliance Trust Savings
Angus Soft Fruits
Association of Convenience Stores
Association of Directors of Adult Social Services
Association of Labour Providers
Association of Licensed Multiple Retailers
Association of School and College Leaders
Avant Healthcare Services Limited
Birmingham Law Society
Blackburn with Darwen Borough Council
Blakemore Retail
Bonningale Nurseries
British Beer & Pub Association
British Chambers of Commerce
British Hospitality Association
British Hospitality Association (Scotland)
British Retail Consortium
Broadway Premier Convenience Store
Business in Sport and Leisure
C J Lang & Son Ltd
Care England
Castle Fruit Farm
CBI
Chandler & Dunn Ltd
Chartered Institute of Payroll Professionals
CIPD
Cobrey Farms

Communication Workers Union
Co-operatives UK
Cornwall Council
Dundee & Angus Chamber of Commerce
East Scryne Farm
EC Drummond (Agriculture) Ltd
EEF, the manufacturers' organisation
Employment Lawyers Association
Equity
Eric Jon Hair Studio
Fane Valley Stores
Federation of Wholesale Distributors
Fletcher Salads
Food and Drink Federation
Forum of Private Business
FSB
Gateshead Council
GMB
Grampian Growers
Greggs Plc
Hairs and Graces
Happy Staffie Rescue
Henderson Group
Henry Scrope
Hospitality Ulster
Incomes Data Research
Independent Children's Homes Association
Institute for Fiscal Studies
Intergenerational Foundation
Interserve Healthcare
Irish Congress of Trade Unions
Jack & Jills Cleaning Service Ltd
Jackson Gray Hair Salon
John Knox
John Lewis Partnership
John Saul Ltd
Knowsley Knowledge
KP Snacks
L F Papworth Ltd
Linden Foods
Local Government Association

Londonderry Chamber of Commerce
Manchester City Council
Mark Watson
Martyna Rudolf
Migration Advisory Committee
National Care Association
National Day Nurseries Association
National Farmers' Union
National Farmers' Union Scotland
National Federation of Retail Newsagents (NFRN)
National Hairdressers Federation
National Institute of Economic and Social Research
National Union of Students (NUS)
NHS Health Scotland
Northern Ireland Hotels Federation
Northern Ireland Independent Retail Trade Association
Orchard Lodge Farm
Overgate Shopping Centre
Oxfordshire County Council
Park Manor Care Home
Place UK Ltd
RA Irwin & Co Ltd
Rail, Maritime and Transport Workers' Union
Rav Garcha (Independent Retailer, NISA/Simply Fresh)
Recruitment & Employment Confederation
Red Squirrel Nursery
Registered Nursing Home Association
Resolution Foundation
Sainsbury's, NI
Scottish Government
Scottish Grocers' Federation
Scottish Social Services Council
Scottish Women's Convention
Spar Stores, Londonderry
SPDNS Nurse Care Ltd
St Columba's Church Day Centre
Stocks Farm
Textile Services Association
Trades Union Congress
UK Fashion & Textile Association
Union of Shop, Distributive and Allied Workers

UNISON
Unite
United Kingdom Home Care Association
University of Leicester
Velocity Recruitment
Voluntary Organisations Disability Group
Welsh Government
Whitbread Plc
White Horse Child Care Limited
Willow Farm
Wilsons Convenience Store Ltd
Windmill Hill Fruits
Woodlark Nurseries Ltd
Wye Fruit Ltd
XpertHR

Appendix 2
Research update for the Autumn 2016 Report

1. Since the Low Pay Commission (LPC) was established in 1997, research has played a vital role in informing Commissioners about the impact of the National Minimum Wage (NMW). In both its commissioned research and that conducted independently, the Commission has sought to use the findings to better understand the impact of the NMW and how it might affect the labour market and economy more generally. This continues to be the case. Indeed, the importance of research has been given an added boost this year with the introduction of the National Living Wage (NLW) – a step change in the value of the minimum wage for those aged 25 and over, as well as a stated commitment to increase it significantly above average earnings growth over the next four years.

2. When the NMW was first introduced in 1999, there was limited official data on pay and employment to conduct detailed and robust econometric studies to assess the impact. Instead, emphasis was placed on surveys of employers, case studies of particular sectors and firms, and focus groups. The more detailed econometric studies came later and indeed did not become the dominant research type until the Fourth Report in 2003 – four years after its introduction.

3. To underline this change to the minimum wage framework in the UK, we commissioned a meta-analysis study – a study of previous studies – to assess the impact so far of the NMW on employment and hours. After summarising those findings, this appendix sets out the findings of three studies that utilise surveys of employers and case studies to give initial insights about the impact of the introduction of the NLW. The appendix concludes by summarising research that investigated the pay of apprentices and the gender pay gap.

4. We start by considering an overview of the impact of the NMW on employment and hours. RAND Europe (2016) conducted a meta-analysis of 22 previous studies that had investigated the impact of the NMW on employment, hours and employment retention. It should be noted that we commissioned the vast majority of these analyses.

5. The study built on previous work by de Linde Leonard, Doucouliagos and Stanley (2014), which was unique in the literature in that it was the only published study that had focused solely on the UK. Most previous meta-analyses of the minimum wage, such as Card and Krueger (1995), and Doucouliagos and Stanley (2009), had used only US studies or – in the case of Belman and Wolfson (2014), and Chletsos and Giotis (2015) – had used studies from more than one country.

6. De Linde Leonard, Doucouliagos and Stanley (2014) used 16 UK studies published before the end of 2012 that had investigated the impact of minimum wages on employment – covering the NMW and the sectoral minimum wages set by the Wages Councils, prior to their abolition in 1993. It found no evidence of any publication bias – positive, negative and insignificant findings were all as likely to be published. The new study – RAND Europe (2016) – extended the sample to those studies published up to 2016 and focused solely on the impact of the NMW. It also found no evidence of any

publication bias. This was in stark contrast to the US studies, which had found a significant publication bias in favour of studies that had found a negative impact. This bias was particularly strong before the seminal Card and Krueger (1994) paper that had found evidence of significant positive effects on employment.

7. That previous study of the UK – de Linde Leonard, Doucouliagos and Stanley (2014) – had also identified no significant overall employment effect, although it found some evidence that the employment effect was more negative in the care home sector. It also noted that the measure of the NMW and the inclusion of the unemployment rate in the regression specifications affected the estimated employment effects. RAND Europe (2016) also found no significant overall effect of the NMW on employment, hours or employment retention.

8. It did, however, find that certain research dimensions affected the size of the reported employment effect. For example, using the Annual Survey of Hours and Earnings (ASHE); using a lag on the minimum wage; or focusing on the introduction of the NMW increases the adverse employment effect. Conversely, using the bite of the minimum wage, regressions using difference-in-difference methodology and limiting analysis to post-recession tends to increase the positive effects on employment. Taken together, however, these effects are generally small and imply negligible economic effects – either positive or negative.

9. Although RAND Europe (2016) found no overall employment effects, it did find some significant adverse employment effects for some sub-groups in some periods. There were relatively larger adverse employment effects for part-time employees, which appeared to be exacerbated during the recession. By contrast, the significant negative effects on employment retention for part-time employees disappeared during the recession. There was, however, a significant positive impact on hours for part-time workers although it was tiny and not of economic significance.

10. In general, the hours and employment of young employees had not been affected by increases in the NMW. But the study did find significantly lower employment retention probabilities for younger workers during the recession. The negative findings on employment retention for young people outside that period were not statistically significant.

11. However, it should be noted that meta-regression analysis does have limitations, which should be considered when interpreting the findings of the study. It is only as good as the studies and data that inform the analysis. Further, all meta-analyses are to some extent subjective in terms of: the sample of research studies included; the selection of which estimates to include from the various studies; the degree of group think; and the interaction and collaboration among the researchers undertaking the individual studies. The authors noted these caveats and suggested that making these meta-studies as transparent as possible (describing the studies and the estimates included) and enabling access for future researchers to the meta-data used will help mitigate some of these limitations. Despite that, we believe that this study is an important summary of the employment effects of the NMW to date. It supports our previous view, summarised in our Spring 2016 Report, that the NMW has so far had little impact on employment in aggregate, but that there was some evidence of a negative impact on particular sub-groups in particular periods.

12. Having assessed the impact of the NMW to date, we now consider the initial impact of the step change in the NMW to the NLW. We commissioned three studies to help inform us: Incomes Data Research (2016) looked at how pay settlements and pay structures had been affected; D'Arcy

(2016) looked at how firms in low-paying sectors had coped with the introduction of the NLW; and Giupponi, Lindner, Manning and Machin (2016) focused on how care homes had been affected.

13. Incomes Data Research (2016) used a structured electronic survey of 119 low-paying sector employers covering all sizes of firm and follow-up semi-structured telephone interviews with 9 of them to investigate employers' approaches to the implementation of the new NLW. The research looked at the impact of the NLW on pay systems and other conditions of employment; whether age profiles had changed; and the impact on labour costs, profits, prices, work organisation and productivity. Although the responses should not be considered as representative of the whole economy, the responses from the surveyed employers give a valuable insight into how some of the most-affected firms are coping with the NLW.

14. The study found that the NLW had increased the pay of the lowest-paid workers aged 25 and over, with the median pay for those across the surveyed sectors increasing to £7.20 – the level of the NLW. As a consequence, nearly half of the surveyed employers had implemented or expected to implement changes to work patterns, pay structures and premiums. Some in retail and childcare were looking to end paid breaks, with a number of retailers also looking to reduce unsocial hours premiums and change grading structures. Employers in childcare, and social care and housing were more likely to reduce non-pay benefits to save costs.

15. Labour costs had increased across the firms in the survey by an average of 7 per cent, although it ranged from close to 0 per cent to around 15 per cent. In the former case the firm was already paying above the NLW, in the latter case the firm had used this opportunity to increase pay above the likely NLW in 2017 and maintain differentials. That was not the general case. Most surveyed employers had increased their starter rates to meet NLW obligations and had also increased their established and supervisor pay rates, albeit more slowly. Thus differentials had been squeezed across nearly all of the surveyed firms. This was more pronounced in childcare, hospitality, and retail, where the pay structures were relatively flat.

16. Age-related pay was most prevalent in childcare and hospitality – with the median for 16-17 year olds at or close to the 16-17 Year Old Rate. This contrasted with a median of at least the NMW (£6.70) in the other low-paying sectors. For 18-20 year olds it was similar with the median being at or close to the 18-20 Year Old Rate (the former Youth Development Rate) in those two sectors but above the NMW in the rest. Those two sectors were also the only ones that looked to have made extensive use of the NMW for 21-24 year olds – the median in both childcare and hospitality was £6.70. For other low-paying sectors, it was higher. However, the median in the social care and housing sector was £7.13, below the NLW, suggesting that some employers were making use of lower rates for 21-24 year olds. The median for those aged 25 and over was the NLW (£7.20) in childcare and hospitality. It was also the median in retail. However, the median for 21-24 year olds and 18-20 year olds in retail was also the NLW.

17. Going forwards, fewer than 10 per cent of those employers currently not using age-related rates planned to introduce them, although that proportion was higher in hospitality, manufacturing, retail and childcare. But over a third of the surveyed employers expected their age profiles to shift towards employing more young workers.

18. According to the surveyed responses, a third of employers were expecting to protect profits as they sought to pass the higher labour costs on to consumers in the form of higher prices.

Improvements in productivity (such as reorganising roles and responsibilities, and investing in new technology) were ongoing and were not necessarily linked to the introduction of the NLW. However, in childcare, employers were looking to apprentices to improve the quality of the workforce and boost productivity.

19. Building on the research that the Resolution Foundation has conducted since the NLW was announced, including: a joint employer survey with the Chartered Institute for Personnel and Development (CIPD) – D'Arcy and Davies (2016); an in-house analysis of the social care sector – Gardiner (2016); and a survey of employers across the economy – D'Arcy and Whittaker (2016), D'Arcy (2016) also investigated the impact of the introduction of the NLW on businesses.

20. D'Arcy and Whittaker (2016) surveyed 500 employers in June 2016 and found that most employers were unaffected by the NLW but that a small proportion of firms had experienced large increases in their wage bills. Increasing prices and lowering profits had been the most common responses in managing the additional wage costs. Lower employment, investing in training and technology, and getting greater effort from employees were more common responses than reducing aspects of the reward package, scaling back investment plans, and hiring more workers aged under 25. Looking forwards to the next five years, employers would again be looking to increase prices but with productivity improvements more prominent than lowering profits. Hiring more young workers had also become a more common response. However, this survey did not inform us of the scale of any of the responses and may not have picked up the problems in the most-affected sectors.

21. To address these gaps, D'Arcy (2016) undertook a larger survey of 800 employers in the most-affected sectors – hospitality, cleaning/landscaping, food manufacture/processing and retail – with more detailed questions on the scale of responses. In addition, case study interviews were used to gain a better understanding of the decision processes.

22. He found that, of these low-paying sectors, just under half (47 per cent) of the employers surveyed had seen their wage bills increase as a result of the NLW. Among the sectors investigated, wage bill rises were reported the most by employers in hospitality (59 per cent) and the least in retail (39 per cent). Cleaning/landscaping (43 per cent) and food processing (48 per cent) fell in between these two. Interestingly, firms with fewer than 50 employees were less likely (41 per cent) than medium-sized, those with 50-249 employees, (59 per cent) or large firms with 250 or more employees (61 per cent) to say their wage bills had increased.

23. Among those who had seen the NLW increase their wage bill, 27 per cent had used fewer staff or used different kinds of staff. This overall picture did not vary greatly by sector.

24. To gauge the extent of these changes, survey respondents were asked if they'd made them 'a lot', 'a moderate amount' or 'a little'. Of those who had used fewer or different kinds of staff 27 per cent said they had done this 'a lot', 43 per cent 'a moderate amount' and 30 per cent 'a little'. The most popular options for employers who had changed employment were to hire fewer staff than they would have otherwise done (62 per cent), offer fewer hours to staff (52 per cent) and make more use of casual staff or zero hours workers (43 per cent). Just 2 per cent said they had made staff redundant.

25. By contrast with the findings from IDR (2016), this survey suggested that changes to employment were more popular than increasing prices – 30 per cent of those whose wage bill had

risen took this option. However, increasing prices was far more common in cleaning (61 per cent) than in accommodation, food processing and retail (33 per cent, 27 per cent and 23 per cent respectively). A higher proportion of affected employers took actions to increase productivity (67 per cent) than raise prices.

26. Finally, the survey asked employers about their plans for the future. Of those whose wage bills had already increased just 6 per cent planned to take no action in future. Far more planned to: raise prices (73 per cent); ask staff to do more (58 per cent); accept lower profits (51 per cent); invest more in training (49 per cent); use fewer workers/offer fewer hours to staff/slow or reduce recruitment (32 per cent); and hire more staff under the age of 25.

27. Giupponi, Lindner, Manning and Machin (2016) surveyed residential care homes in England before and after the introduction of the NLW, effectively repeating the previous research on residential care homes by Machin, Manning and Rahman (2003), Machin and Wilson (2004), and Georgiadis (2006) that was conducted using surveys when the NMW was introduced in 1999.

28. They found that the introductory rate of the NLW had a significant impact on the wages of care assistants. Around two thirds of care assistants were paid below £7.20 prior to the introduction of the NLW (with around a third paid at the statutory NMW of £6.70). After the introduction of the NLW, only 4 per cent remained paid below £7.20 while those paid at the effective minimum (now the NLW) increased to 39 per cent. There was a significant increase in both the hourly wage and weekly earnings after the introduction of the NLW.

29. They also found evidence of large positive spillover effects on the wages of care assistants aged under 25. Before the introduction of the NLW, around three quarters were paid less than £7.20 (the forthcoming NLW) with around a third paid at the statutory minimum (£6.70). After the introduction of the NLW, fewer than a quarter remained paid below £7.20 while nearly a third were now paid at the new NLW. The wages of care assistants aged under 25 increased much faster than for those aged 25 and over.

30. The research has so far found no significant impact on the employment of care assistants or on the share of employment of those aged under 25. There is also no evidence of any significant impact on prices or productivity. The researchers concluded that most care homes seem to have adapted to the NLW without any adverse consequences to date. However, the survey had limited information on the quality of care and whether there had been changes in the services delivered. Evidence from the Care Quality Commission (2016) suggested that some firms may have withdrawn from providing local authority-funded care – either withdrawing completely or switching to private, fee-paying customers. The authors attempted to address this by: noting that prices had not appeared to have increased; and looking at care home closures where they found little evidence that their sample was affected by attrition bias.

31. We now turn to look at the pay of apprentices. Building on their previous research, Drew, Ritchie and Veliziotis (2016b) examined the level of apprentice minimum wage underpayment – as measured in ASHE and the BIS Apprentice Pay Survey (APS) – and explored some of the factors which may explain it. In line with their previous research (Drew, Ritchie and Veliziotis, 2015 and 2016a) they found that measured underpayment was higher in the APS than ASHE but estimates were much closer when using payslip data to calculate an hourly rate in the APS (although employees providing detailed payslip data may represent those with 'better' employers). Both

sources have weaknesses which tend towards either underestimates (ASHE) or overestimates (APS) of underpayment. They concluded that ASHE represents a lower bound estimate of underpayment and APS an upper bound.

32. In both sources, underpayment was associated with age and year of apprenticeship. Non-compliance decreases with age when the Apprentice Rate is the relevant minimum (first year apprentices); in contrast, it increases with age when a higher minimum needs to be paid (for apprentices aged 19 and over who have completed at least twelve months of their apprenticeship). And large differences between frameworks existed which could only partly be explained by observable characteristics.

33. The study included qualitative research with hairdressing and childcare apprentices and employers, to explore the reasons for underpayment. Their findings suggested that apprentices had: limited knowledge concerning their pay and hours; difficulty estimating training hours; little knowledge of the minimum wage; and assumed that employers would pay them the right amount. The research also suggested that not all employers in these sectors were completely aware of the correct pay rates for apprentices and that mistakes may not represent unscrupulous attempts to pay the wrong wages. The higher incidence of underpayment in hairdressing may also partly reflect the size of firm. The hairdressing sector is dominated by small firms, which are less likely than larger firms to seek information and advice on the applicable pay rates. The authors concluded that (observable) non-compliance may be the result of employer error.

34. However, they also found that time spent on training may not always be paid. Hairdressing apprentices received in-salon training but a large amount of learning was expected to be carried out independently and this was unpaid. They also noted a potential problem with e-learning, with childcare employers expecting apprentices to complete it in their own time.

35. In summary, the level of underpayment among apprentices in 2014 was lower than suggested by the headline APS 2014 estimate, and closer to the ASHE 2014 estimate, although it remained much higher than for non-apprentice workers. Observable underpayment may be the result of employer error, with the structure of the apprentice minimum wage a contributory factor but non-payment of training hours may also increase underpayment. This, combined with a lack of awareness of the apprenticeship rate, a focus on overall pay over their hourly rate and a belief that employers will 'do the right thing' among apprentices, led to underpayment.

36. A further study in which the Low Pay Commission has been involved looked at low pay and the gender pay gap. Funded by the ESRC Impact Award programme as a co-production project, Butcher, Mumford and Smith (2016) provided a robust assessment of the importance of a number of determinants of the gaps in earnings between the four groups of employees who make up the British workforce – males and females who work full and part-time. The analysis considered the contribution of individual employee characteristics as well as occupation, industry, region and other workplace specific characteristics. The results were compared with previous findings for 2004 (Mumford and Smith, 2009) and with alternative data from the ASHE series for 2004, 2011 and 2015.

37. The raw overall gender earnings gap was shown to have fallen in the Workplace Employment Relations Survey (WERS) and ASHE data over time. It had done so gradually for full-time workers and with more variability for part-timers. For the overall pay gap between full-time and part-time workers, there had been little change. The raw gender earnings gap had typically declined over time

across occupations and industries, but not uniformly. In many cases, the raw gender pay gap was commonly close to zero at low wages (and was zero at the National Minimum Wage) but was substantially higher from around the 7th decile; the authors concluded that this could be taken as evidence of glass ceiling effects in most occupations and industries in Britain.

38. Decomposition analysis showed that individual characteristics, occupation and industry were important in determining the gender earnings gap. Industry and region were also important for the pay gap between full-time and part-time workers. Putting working hours and gender together, therefore, the research found a complex story for earnings gaps. The gap between female and male full-time employees declined between 2004 and 2011 (from 14.0 to 12.2 log points – still a large difference) and was mainly not explained by observable characteristics. Within occupation, the decompositions showed industry was important; and within industry, occupation was important. Segregation at occupation and/or industry level was therefore a concern.

39. For all of the across gender and working hour decomposition comparisons that were analysed (for 2004 and 2011), the unexplained (or discrimination component) was always associated with males having higher wages than females. As discussed in Mumford and Smith (2009), the finding that a large pure gender earnings gap remained for both full and part-time employees suggested that the Equal Pay legislation in Britain had still not been fully effective. The finding that segregation of females into occupations, industries and workplaces accounted for a significant proportion of the raw earnings gap suggested that more vigorous application of comparable worth policies may be necessary to further close the gender earnings gap.

40. In summary, we again conclude that the research in general finds little adverse impact of the minimum wage on employment, although there is a growing body of evidence suggesting a negative impact on female part-time employment retention. However, these effects were not found across all specifications and data sources. There were also some negative effects found on hours and employment during the recession for some groups of workers. But these appear to have faded away as the economy has begun to recover.

41. The initial findings of the research on the NLW can be summarised as that the NLW has led to a large increase in wages for the lowest paid and that there has been some significant spillovers on the wages for those aged under 25. Firms initially appear to have coped by: a limited squeezing of differentials; increasing prices; and accepting a squeeze in profits. Survey evidence on reductions in employment and hours was limited and the results mixed. Future research will monitor and assess these effects further.

Future Research

42. We have also commissioned three other research projects for our 2017 Report. These have a focus on the introduction of the new NLW in April 2016. The research projects will: further analyse the impact of the NLW on pay settlements and pay structures; assess the interaction of the NLW with the tax and benefit system; and investigate the impact of the NLW on the use of non-standard employment arrangements, including variable hours contracts, zero hours contracts and 'bogus self-employment'.

- **The impact of the National Living Wage: A study of changes in pay settlements, pay structures and age-related pay.** Victoria Farrington, Ken Mulkearn and Louisa Withers (Incomes Data Research).
- **The impact of the National Living Wage on individuals with non-standard employment arrangements.** Bethania Mendes De Brito Antunes and Sian Moore (University of Greenwich), Kirsty Newsome (University of Sheffield), Stephanie Tailby (University of the West of England, Bristol), and Geoff White (University of Greenwich).
- **The National Living Wage, the National Minimum Wage, and the tax and benefit system.** Mike Brewer and Paola De Agostini (University of Essex).

Table A2.1: Low Pay Commission Research Projects for the Autumn 2016 Report

Project Title and Researchers	Aims and Methodology	Key Findings
The impact of the National Minimum Wage on employment: a meta-analysis **Marco Hafner, Shanthi Nataraj, Paulina Pankowska, Martin Stepanek, Jirka Taylor** and **Chris van Stolk** (RAND Europe)	This study conducted a comprehensive systematic review and meta-analysis (a study of studies) of the empirical research of the impact of the National Minimum Wage on employment, hours and employment retention probabilities. It built on and complements previous work by de Linde Leonard, Doucouliagos and Stanley (2014), whose analysis of the NMW in the UK had covered 16 minimum wage studies (with 236 estimated elasticities among 710 estimates of partial correlations). This new analysis found 22 studies with at least one estimate of the impact on employment (with 240 elasticities among 1,451 estimates of the impact of the NMW on employment and hours, as well as 863 estimates of the impact on employment retention probabilities). Thus, this study includes more than 2,000 estimates from the empirical literature in the meta-analysis and doubles the sample size of the previous UK meta-analysis study. As well as focussing on the impact of the NMW since its introduction in 1999, the study also analysed specific labour market sub-groups, such as women, part-time employees and young people. Further, it investigated different increases in the NMW and their timing, for instance during the introduction or whether the NMW upratings had different effects during the recession.	The main findings of the research were: • Overall, and in line with the previous study by de Linde Leonard, Doucouliagos and Stanley (2014), it found no publication selection bias in the UK literature on the NMW – that is, studies were just as likely to be published irrespective of the findings (whether positive or negative). In contrast, similar studies in the US have found significant publication bias in favour of studies that found negative effects. • More importantly, it also found – again in line with the previous study – that there were no overall 'genuine' adverse employment effects. This was true of the impact on employment, hours and employment retention. • However, they did identify factors in the research that were associated with strengthening any negative employment effect: – using the Annual Survey of Hours and Earnings; – estimates that focus on the introduction of the NMW; and – including a lag of the NMW increase. • Conversely, factors associated with weakening the adverse impact on employment were: – using difference-in-difference methodology; and – using a relative measure of the NMW (its bite or toughness). • The researchers noted that the size of these positive and negative effects in economic terms was probably negligible. • However, specific sub-groups were found to be more adversely affected by NMW increases. These included: – residential care homes; – part-time employees (especially looking at employment retention) across all time periods except the recession; and – young workers during the recession.

Project Title and Researchers	Aims and Methodology	Key Findings
Impact of the National Living Wage **Victoria Farrington, Katherine Heffernan, Ken Mulkearn, Louisa Withers,** and **Sarah Welfare** (Incomes Data Research)	This study investigated employers' approaches to the implementation of the new National Living Wage for those aged 25 and over. It used a structured electronic survey of 119 low-paying sector employers covering all sizes of firm and follow-up semi-structured telephone interviews with 9 of them. It sought to examine the impact of the NLW, when it was introduced in April and in the future as it moves towards £9. It looked at: • the impact on pay systems and other conditions of employment; • whether workforce profiles might change as a result of the age threshold contained in the new provisions • the effects on labour costs, profits and prices; and • the extent of effects on the organisation of work and measures to enhance productivity. The respondents were fairly evenly spread across firm size, although slightly more firms with 1,000-9,999 employees were surveyed and slightly fewer firms with 250-999 employees. Most of the sampled firms had multiple sites. In total they employed around 1.2 million and had an age profile that was similar to that of the whole UK workforce. The nine in-depth telephone interviews covered a small South West nursery chain; an East Midlands childcare and domiciliary care provider; three UK-wide non-food retailers; three large UK retailers; and a food manufacturer with plants in Scotland and South East England.	The main findings of the research were: • A third of surveyed employers regarded initial implementation of the NLW as difficult. This rose to over a half when considering future increases. • Measures to offset the cost impact of the new floor, such as changes to pay structures, premiums or working patterns, appear to be most likely in childcare, and social care and housing, but also in retail & distribution. • The main pressure on pay differentials from the NLW arose in three sectors (childcare, hospitality, and retail & distribution), where pay structures were comparatively flat. • Age-related pay was most prevalent in two sectors – childcare and hospitality. Looking at pay rates by age in those sectors, the median rate for 16-17 year olds and 18-20 years olds were at or close to the age-related minimum wage. Similarly for workers aged 21-24, the median was at the NMW (£6.70). That compared with a median of £7.20 (the NLW) in retail & distribution. • In retail, the median for those aged 18-20, 21-24, and 25 and over was the NLW (£7.20). Age-related pay generally only applied to those aged under 18 in this sector. • Just over a third of employers thought their age profile would change following the advent of the NLW. • The median increase in wage bills was 6 per cent, but the interquartile range was relatively wide, 2-11 per cent. • Firms were contemplating passing the increase in labour costs onto consumers, rather than accepting a squeeze in profits. • On productivity, the most common approach was to re-organise roles and responsibilities, followed by investment in new technology. However, most respondents reported that these measures would be taken anyway and were not necessarily linked to the NLW. • Childcare employers reported being more likely to increase the number of apprentices in order to boost productivity.

Project Title and Researchers	Aims and Methodology	Key Findings
Industrial strategies? Exploring responses to the National Living Wage in low-paying sectors **Conor D'Arcy** (Resolution Foundation)	This study built on previous work conducted by the Resolution Foundation looking at the initial impact of the National Living Wage. That work consisted of: a joint employer survey with the Chartered Institute for Personnel and Development (CIPD) – D;Arcy and Davies (2016); an in-house analysis of the social care sector – Gardiner (2016); and a survey of 500 employers across the economy – D'Arcy and Whittaker (2016). Those two previous employer surveys did not consider the scale of any of the responses and may not have picked up problems in the most-affected sectors. This study attempted to rectify this by undertaking a larger survey of 800 employers in the most-affected sectors – hospitality, cleaning, food processing and retail. The survey was conducted by Ipsos MORI. It repeated similar questions on the impact but asked more detailed questions about the scale of responses. It asked for more detailed information on, for example, offered hours; hiring staff; redundancies; use of casual and zero hours workers; and use of self-employed workers. In addition, the study used semi-structured interviews with senior decision-makers in affected-sector firms to discuss the approach adopted and expectations of the future impact and response.	The main findings of the research were: • Just under half (47 per cent) of employers had seen their wage bills increase as a result of the NLW. Among the sectors investigated, wage bill rises were reported the most by employers in hospitality and the least in retail. • Small firm employers were less likely than medium-sized or large firm employers to say their wage bills had increased. • Among those who had seen the NLW increase their wage bill, 27 per cent had used fewer or different kinds of staff. This overall picture did not vary greatly by sector. • Of those who had used less or different kinds of staff 27 per cent said they had done this 'a lot', 43 per cent 'a moderate amount' and 30 per cent 'a little'. • The most popular options for employers who had changed employment were: to hire fewer staff than they would have otherwise done; offer fewer hours to staff; and make more use of casual staff or zero hours workers. Just 2 per cent said they had made staff redundant. • Around 31 per cent of those whose wage bill had increased raised prices. • More than half of surveyed firms had not sought to increase productivity. • Finally, the survey asked employers about their plans for the future. Of those whose wage bills had already increased just 6 per cent planned to take no action in future. Far more planned to raise prices (73 per cent); ask staff to do more (58 per cent); accept lower profits (51 per cent); and invest more in training (49 per cent).

Project Title and Researchers	Aims and Methodology	Key Findings
Impact of the National Living Wage on the social care sector **Giulia Giupponi** (London School of Economics)**, Attila Lindner** (University College, London), **Steve Machin** (London School of Economics) and **Alan Manning** (London School of Economics)	This study investigated the impact of the introduction of the National Living Wage on the social care sector. It built on previous research by two of the authors in this sector surveying residential care homes. Manning and Machin had been involved in the Sunshine Coast survey of care homes on Southern England in 1992-93; the before and after introduction of the NMW surveys of all British care homes in 1998-99; and the follow-up survey on closures in 2001. In this study, they surveyed all care homes covered by the Care Quality Commission (CQC) in England before and after the introduction of the NLW. They conducted a pilot survey in November 2015 that yielded 45 responses from 250 care homes and a main pre-NLW survey in January that yielded a further 1,364 responses (from 16,626 care homes). The response rate was similar to the earlier studies. However, the post-NLW response rate was disappointingly lower – just 629 responses from 17,130 care homes. The survey covered hourly pay, weekly earnings, hours, age, occupation, qualifications, and tenure of the workers as well as financial information of the care home. The study compared its results with information from the National Micro Data Set – Social Care, which is a database on the adult social care workforce, covering around 25,000 establishments and 700,000 workers across England. It is completed voluntarily by firms in the industry.	The main findings of the research were: • Before introduction, around 40 per cent of the responding firms thought the level of the NLW was about right with around 38 per cent thinking it too high. After introduction, around half of the responding firms thought the level was about right with those thinking it too high falling to less than a quarter. • The NLW has had a significant impact on pay in the care home industry. • Around 28 per cent of all care assistants were paid at the NMW (£6.70) with a further 36 per cent at or below £7.20 prior to the introduction of the NLW. • After April, around 39 per cent of care assistants were paid at the NLW of £7.20. • Weekly earnings increased after the introduction of the NLW. • There was evidence of large positive spillovers for care assistants aged under 25. Before April, around 30 per cent of those aged under 25 were paid at the NMW (£6.70) with a further 44 per cent paid £7.20 or less. • After April, only 24 per cent remained being paid below £7.20 with 31 per cent paid at the new NLW. • The wages of care assistants aged under 25 increased faster than for those aged 25 and over. • So far, there was no clear evidence of negative employment consequences. • There was no evidence of any significant impact on prices or productivity. • The researchers concluded that most care homes seem to have adapted to the NLW without any adverse consequences to date.

Project Title and Researchers	Aims and Methodology	Key Findings
Understanding apprentice pay **Hilary Drew, Felix Ritchie and Michalis Veliziotis** (University of the West of England)	This study built on previous research by the same authors (Drew, Ritchie and Veliziotis, 2015 and 2016a) exploring the pay of apprentices although the focus of this study was on underpayment of the minimum wage. Its two main aims were to: • assess the extent of underpayment of the various applicable minimum wage rates • investigate the reasons for underpayment. The study contained two parts: a quantitative analysis of apprentice pay using two national data sets; and a qualitative component exploring the views and experiences of apprentices, employers and trainers in two of the lowest-paying apprenticeship frameworks – childcare and hairdressing. The quantitative analysis used the 2014 ASHE and the 2014 BIS Apprentice Pay Survey (APS) to test the findings from their previous research. This sought to explain the gap between the ASHE and APS estimates of underpayment, and investigate whether their previous findings on the factors associated with underpayment still held. Building on this, qualitative research with apprentices, employers and trainers sought to test competing hypotheses of why apprentices were more likely than workers to be paid below the minimum wage. These included a lack of knowledge by apprentices and employers regarding the age/year applicable minimum wage rates; and confusion around the payment of training time.	The main findings of the research were: • Underpayment was much lower in the 2014 Apprentice Pay Survey (16 per cent) and the 2014 ASHE (5.5 per cent) than in the 2011 and 2012 Apprentice Pay Surveys (20 per cent and 29 per cent respectively). • ASHE represents a lower bound estimate of underpayment and APS an upper bound. • APS (5.7 per cent) and ASHE (5.5 per cent) estimates were similar where payslip data were used to calculate the hourly rate in APS (although employees providing detailed payslip data may represent those with 'better' employers). • Non-compliance decreased with age when the Apprentice Rate (AR) was the relevant minimum (apprentices in their first year or aged under 19); in contrast, it increased with age when a higher minimum needs to be paid (for those apprentices aged 19 or over and who have completed at least 12 months of their apprenticeship). • Lack of knowledge on the part of apprentices contributed to underpayment. Hairdressing apprentices: had limited knowledge concerning their pay and hours; had little knowledge of the minimum wage; and assumed that employers would pay them the right amount. • Lack of knowledge on the part of employers also contributed and was likely exacerbated by the complexity of the apprentice minimum wage structure. This may be more likely in small firms, partly explaining the higher levels of underpayment in hairdressing and childcare. • Non-payment of training hours may also increase underpayment, with particular risks regarding the payment of time spent on e-learning.

Project Title and Researchers	Aims and Methodology	Key Findings
Workplaces, low pay and the gender earnings gap in Britain **Tim Butcher** (Low Pay Commission), **Karen Mumford** and **Peter Smith** (University of York)	This study provided a robust assessment of the importance of a number of determinants of the gaps in earnings between the four groups of employees who make up the British workforce; males and females who work full and part-time. The analysis considered the contribution of individual employee characteristics as well as occupation, industry, region and other workplace specific characteristics. It built on previous work (Mumford and Smith, 2009) that had used the 2004 Workplace Employment Relations Survey (WERS). This analysis updated that work using the 2011 WERS and supplemented it using ASHE. Earnings functions were estimated and decomposition analysis at the mean provided and explored for the WERS samples. Results for 2011 were compared with the previous findings from the 2004 WERS data. Earnings gaps across the wage distribution were also considered using data from the ASHE series for 2004, 2011 and 2015.	The main findings of the research were: • The raw overall gender earnings gap in Britain had fallen between 2004 and 2015. It had done so gradually for full-time workers and, with more variability, for part-time workers. There had, however, been little overall change between the full-time and part-time pay gap. • The raw gender earnings gap was changing over time in occupations and industries, but not uniformly. In many cases, the raw gender earning gap was commonly close to zero at low wages and substantially higher from around the 7th decile; this could be taken as evidence of glass ceiling effects in most occupations and industries in Britain. • Individual characteristics, occupation and industry were important to the gender earnings gap. Industry and region were also important for pay gaps between full-time and part-time workers. Putting working hours and gender together, they found a complex story for earnings gaps. • The gap between female and male full-time employees declined between 2004 and 2011 (from 14.0 to 12.2 log points – still large) and was mainly not explained by observable characteristics. • Within occupation, the decompositions showed industry was important; and within industry, occupation was important. • Finding that a large pure gender earnings gap remained for both full and part-time employees suggested that the Equal Pay legislation in Britain was still not fully effective. • Finding that segregation of females into occupations, industries and workplaces accounted for a significant proportion of the raw earnings gap suggests that more vigorous application of comparable worth policies might be necessary to further close the gender earnings gap.

Appendix 3
Main data sources

Introduction

1. In this appendix we document the main data sources used in our analyses and outline any major changes that have occurred since our 2015 Report. There are three main sources of data that we use in this report to measure earnings: the Annual Survey of Hours and Earnings (ASHE), Average Weekly Earnings (AWE), and the Labour Force Survey (LFS). These are all published by the Office for National Statistics (ONS). There are two main sources of employment information: the LFS and the ONS employee jobs series. The LFS captures the number of people in employment, whereas the employee jobs series measures the number of jobs in the economy. This is an important distinction as a person can have more than one job.

2. In addition to employment and earnings data, we also look at a variety of macroeconomic data and statistics. This appendix outlines the two main macroeconomic series on inflation and gross domestic product (GDP) used in our analyses, as well as summarising the revisions that ONS has recently made to GDP estimates.

3. In our 2013 Report, we reviewed and updated our definitions of the low-paying sectors based on the latest the Standard Occupation Classification (SOC) 2010 codes. The final section of this appendix sets out full definitions of each low-paying occupation and industry. The NLW marks a step change in the number, and type, of workers – and jobs – covered by the minimum wage. Over the course of the year we will be reviewing our classification of low-paying sectors, to include any new (or returning) sectors.

4. ONS (2016) has produced a guide to sources of data on earnings and income, which examined the range of data sources and outputs that can be used to conduct analysis of earnings and income within the UK (including AWE, ASHE and LFS). Aimed at helping individuals to select the most appropriate data source for their analytical needs, it outlined the sources available at the different stages of earnings and income, looking specifically at:

- what was measured;
- what was published and what was covered;
- what were the limitations; and
- what were the main uses and strengths.

Annual Survey of Hours and Earnings

5. ASHE is the main source of structural earnings data in the UK and is regarded by ONS as the best source of earnings information for cross-sectional analysis. It provides information on the level, distribution, and composition of earnings, as well as information on hours, gender, age, geography, occupation and industry. It is a survey of employees completed by employers and conducted in April each year. Results are based on a 1 per cent sample of employee jobs in Pay-As-You-Earn income tax schemes obtained from HM Revenue & Customs (HMRC). The self-employed are excluded. Employees not on an adult rate of pay are excluded from ASHE earnings estimates made by ONS, but we include them in our own analysis of earnings from ASHE. This means that our earnings estimates may differ from those of ONS. The 2016 ASHE was based on approximately 183,000 returns and related to the pay period which included 13 April.

6. From 2011, ASHE data have been reweighted to SOC 2010 codes. This means that earnings estimates for 2011 onwards are not directly comparable with those prior to 2011. In light of these changes to occupation codes, we reviewed and updated our definitions of the low-paying occupations in our 2013 Report. The results and methodology of the review were outlined in Appendix 6 of our 2013 Report.

7. In 2013 HMRC changed the criteria which determined how businesses reported employees' earnings via their PAYE schemes. Previously businesses only needed to operate PAYE for employees earning above the Lower Earnings Limit (LEL) for National Insurance contributions (NICs); and they did not need to report all new jobs until the end of the tax year. Since 2013 employers have been required to report details of all employees via their PAYE scheme, including those below the LEL, provided they had at least one employee earning above the LEL. In addition, they have been required to report all jobs in 'real-time', rather than at the end of the year. ONS advise that it is not possible to precisely quantify the impact of these changes as many employers (particularly large firms) already provided information for all employees, including those below the LEL, and it is not possible to identify specific jobs that are included as a result of the changes. Analysis of the 2014 ASHE by ONS showed that the composition of the sample was not distorted as a result of this change to real time information with minimal impact on ASHE low pay estimates.

8. Owing in part to these changes, there is no official, consistent, long-run time series of structural earnings in the UK. The best source available now consists of five overlapping New Earnings Survey (NES)/ASHE data sets: NES, 1975-2003; ASHE without supplementary information, 1997-2004; ASHE with supplementary information, 2004-2006; ASHE 2007 methodology, 2006-2011; and ASHE 2010 methodology, 2011 onwards. In order to produce a consistent series over time, we have used the annual increases in the older data series to adjust the level of earnings to make the previous series compatible with the current series. This generally has the effect of reducing the estimates of the mean and median in years prior to 2011, which increases our estimates of the bite (the NMW relative to the median or mean) for that period.

Apprentices

9. In 2013 two new questions on apprentices were included in ASHE as experimental statistics. These required employers to identify whether an employee was an apprentice and, if so, to record the date that the apprenticeship had commenced. The 2013 data were not fully validated and have

not been published by ONS. In the 2014 ASHE the apprentice questions were fully validated by ONS. The new data allow us to analyse underpayment of the Apprentice Rate and whether apprentices aged 19 and over beyond their first year of apprenticeship receive at least their entitlement to the age-related minimum wages. It also allows us to separately identify minimum wage jobs held by apprentices.

10. Drew, Ritchie and Veliziotis (2015 and 2016b) compared estimates of apprentice earnings from ASHE with estimates from the BIS Apprentice Pay Survey suggest that ASHE data may produce an upper-bound estimate of apprentice pay and, correspondingly, a lower-bound estimate of non-compliance.

11. The identification of apprentices also means that we can examine earnings and non-compliance separately for workers and apprentices. Until 2014 the grouping together of apprentices and non-apprentice workers had a downward effect on earnings for young people, as apprentices tend to have lower earnings. From 2014 onwards we are able to produce three distinct time-series: an adjusted time series from 1997 onwards, including both workers and apprentices; a series from 2014 onwards for non-apprentice workers only; and a series from 2014 onwards for apprentices only.

NLW alignment

12. The introduction of the NLW has important implications for our use, analysis, and interpretation of ASHE data. A key change is that the NLW was introduced in April, coinciding with the ASHE data collection period. The 2016 ASHE survey collected information using the pay reference period of 13 April 2016, just two weeks after the introduction of the NLW. Previously, the new minimum wage rates had been introduced in November, with measurement of earnings, the bite and underpayment occurring six months after implementation of the new rates. Both the bite of the minimum wage, and measured underpayment, are at their highest upon introduction, and correspondingly lower when measured six months after implementation. From April 2017 all minimum wage rates will be introduced in April to ensure alignment with the NLW. This introduces a break in the time series, with a jump in estimates of the bite and underpayment.

13. The increase in measured underpayment poses particular difficulties. In addition to a time-lag in implementing the new rates, employers are not legally required to increase pay to the new minimum wage until the first full pay period after the introduction of the minimum wage. Hence workers may be paid below the new rates and not considered to be non-compliant, provided they are paid at least the previous minimum wage. In order to identify these workers ONS introduced a new question in the 2016 ASHE to identify the start date of the pay period. Using this variable, ONS identified around 175,000 workers aged 25 and over who were paid at or above the old minimum wage (£6.70) but below the NLW (£7.20) and whose pay period started in March and continued into April – hence spanning the introduction of the NLW on 1 April 2016. These cases are identified in the ASHE Microdata by the variable 'nlpflag' to enable their identification when measuring underpayment.

14. A further consequence of the change in our reporting cycle has been the impact on the timing of the publication of this year's ASHE. To enable us to report to the Government in October as requested, ONS brought forward the release of the 2016 ASHE from mid-November to 26 October. We are grateful for its co-operation.

Average Weekly Earnings

15. AWE is a short-term measure of the level of average weekly earnings per employee in Great Britain which is based on data from the Monthly Wages and Salaries Survey. It replaced the previous measure of short-term changes in earnings, the Average Earnings Index (AEI). AWE provides a monthly measure of regular pay, bonus pay and total pay. This measure uses current industry weights that are updated each month to take account of the distribution of jobs across sectors. ONS also produces a decomposition of the growth rates to show how much growth is due to wage growth, and how much results from changes in employment across sectors. The AWE estimates are not just a measure of pay as they also reflect compositional changes within the workforce.

16. There have also been changes to the data resulting from the reclassification of major employers between the private and public sectors. Guidance, as a result of the introduction of the 2010 European System of Accounts (ESA10) from 1 September 2014, meant that Network Rail was reclassified from the private sector to the public sector. This affected the estimates of Average Weekly Earnings (AWE) released in December 2014, resulting in revisions to the AWE and PSE estimates. The revisions to the AWE estimates only go back to 2010. Apart from Network Rail, Lloyds Banking Group plc was reclassified to the private sector from April 2014 following the sale of some government owned shares to private sector investors. It had been classified to the public sector between July 2009 and March 2014. ONS estimates that, if the April 2014 reclassification had not occurred, the public sector single month growth rates from April 2014 would have been around 0.3 percentage points higher and the corresponding private sector growth rates would have been around 0.1 percentage points lower.

17. During 2013, ONS released three AWE historic time series, all of which are monthly in frequency and include bonus payments: the whole economy series runs from January 1963 to 2010, while public and private sector series are available from January 1990 to 2010. The method used to compile these time series takes into account the observed relationship between AEI and AWE, in particular that AWE increased faster than AEI for most of the period between January 2000 and July 2010. Therefore, these new AWE historic time series show more growth than the AEI. The differences are relatively small between 1990 and 1999, but larger when earlier periods are considered. The difference between the AEI and AWE wage growth should not be over-interpreted, as there is considerable uncertainty introduced by the estimation process. As these historic time series are only available up to 2010, when the AEI was discontinued, there is no fully consistent complete time series for these data sets up to the present time.

Labour Force Survey

18. The LFS is the official data source used to measure employment and unemployment. It is a quarterly survey of around 60,000 UK households conducted on a rolling monthly basis and provides information on: employment; unemployment; earnings; and personal and socio-economic characteristics, including gender, ethnicity and disability.

19. In our report, analyses of aggregate employment, unemployment and hours worked use seasonally adjusted monthly and quarterly LFS data published by ONS. For detailed analyses of the labour market by age, ethnicity, disability and other personal characteristics, we use the non-seasonally adjusted LFS Microdata. We take the four-quarter moving average of these outputs to take account of seasonality, which is different from the seasonal adjustment method used by ONS. Consequently our analyses based on LFS Microdata produce estimates of levels that differ from the headline aggregates published by ONS.

20. ASHE contains no information on disability, ethnic background, country of birth, nationality or education level. The LFS is, therefore, our only timely source of data on earnings for disabled people, ethnic minorities, migrants and people with no qualifications. However, data on pay and hours in the LFS tend to be less reliable than in ASHE. Reasons for this include: a smaller sample; people often answering the earnings questions without reference to pay documentation (although they are prompted to consult available documents); and some information being provided by proxy respondents. ASHE collects information from employers about employees' paid hours, whereas the LFS collects information from individuals about their actual and usual hours of work, which might include unpaid hours. This generally means that the derived hourly earnings variable in the LFS is lower than the derived hourly pay rate recorded in ASHE. Where a stated hourly rate of pay is unavailable from the LFS, ONS has developed an imputation method using a nearest-neighbour regression model, which also takes account of information on second jobs in estimating the median earnings of various groups of workers. This methodology reduces the differences between hourly earnings estimates from the LFS and ASHE, and we use it to estimate earnings in our LFS analyses.

21. In this report the estimates we present on disabled people use the old definition of working age (men aged 16-64 and women aged 16-59), rather than all aged 16-64, in order to allow for consistency across time. The LFS changed the way it asked questions on disability in 2010, which caused a discontinuity in the time series. Prior to 2010 most women aged 60 or over were not asked whether they had a work-limiting disability. Since the state pension age for women started to increase (in April 2010) the question has been asked of all women aged 60-64. Men were not affected by this change. Until there are sufficient data on the new basis to form a substantive time series, we will continue to use the old working age definition for analyses of disabled people. In April 2013 the disability questions on the LFS were harmonised to other ONS social surveys. This was to bring these questions in line with the Equality Act. But this change does not appear to have led to noticeable discontinuity in the time series data for employment of disabled people (those with a work-limiting disability).

22. LFS Microdata are usually revised on an annual basis, resulting from reviews of the seasonal adjustment process and reweighting to new population estimates. In August 2014, ONS reweighted the LFS Microdata back to 2001 to account for the 2011 Census population estimates. Reweighting appeared to have a very small impact on the labour market data, and trends reported in the past remained largely unchanged. In May 2016 ONS again reweighted the LFS Microdata back for two years (the third quarter of 2012 to the fourth quarter of 2015), using the mid-year population estimates. Our consistent back-series of estimates takes account of these revisions.

Employee Jobs

23. The employee jobs series provides a timely breakdown of jobs in the UK. A number of Short Term Employer Surveys, which collect data from businesses across the economy, are used to compile the employee jobs series. Figures at a more detailed industry level, however, are available only for Great Britain and are not seasonally adjusted. This makes quarter-on-quarter comparisons problematic, particularly as much of the employment in the low-paying sectors is of a seasonal nature, for example, Christmas trading in the retail sector. Comparisons between one quarter and the same quarter a year earlier, however, help to alleviate this problem.

24. In December 2014 ONS revised estimates of workforce jobs, including the employee jobs series, back to 1981. These revisions were caused by benchmarking to estimates from the annual Business Register and Employment Survey (BRES), updating the seasonal factors and taking on board late information such as later responses to the survey. A consistent back-series, based on the Standard Industry Classification (SIC) 2007, is also available back to the second quarter of 1978.

Inflation

25. ONS publishes monthly inflation indices which reflect changes over twelve months in the cost of a 'basket' of goods and services on which people typically spend their money. We use three main inflation measures: the Consumer Prices Index (CPI), Retail Prices Index (RPI), and Retail Prices Index excluding mortgage interest payments (RPIX).

26. Each measure uses the same basic price data, but the CPI (which follows international definitions) excludes Council Tax and a number of housing costs faced by homeowners that are included in the RPI. Other differences include: the methodologies used to combine individual prices at the first stage of aggregation; the sources used to derive the weighting that each component contributes; and the population whose spending the 'basket' is designed to represent. The RPI is never revised and the CPI, although revisable in theory, has only ever been revised in exceptional circumstances.

27. In early 2013, the RPI was assessed against the Code of Practice for Official Statistics and found not to meet the required standard for designation as a National Statistic due to the formulae not meeting internationally-recognised best practices. However, ONS also noted that there was significant value to users in maintaining the continuity of the existing RPI's long time series without major change, so that it may continue to be used for long-term indexation and for index-linked gilts and bonds in accordance with user expectations. Therefore, while the current methodology for producing the RPI remains unchanged, ONS has constructed a new price index (known as RPIJ) which is based on a new methodology and has been published since March 2013. The only difference between the methodologies used to compile the RPI and RPIJ arises from different formulae used in calculating the average of price changes relative to a different period. This results in the RPIJ measure of inflation being lower than or equal to the RPI.

28. In January 2015, the UK Statistics Authority published an independent review of UK consumer prices statistics led by Paul Johnson (2015), Director of the Institute for Fiscal Studies. This review considered what changes are needed to the range of consumer price statistics produced for the UK to best meet current and future user needs. It recommended that ONS should move

towards making CPIH (the measure of consumer price inflation including owner occupiers' housing costs) its main measure of inflation. In the meantime, the CPI should continue to be the main measure of inflation. However, CPIH had its National Statistics status removed in August 2014 following issues relating to how some administrative data sources used to estimate owner occupiers' housing costs were processed. The UK Statistics Authority announced in March 2016 that CPIH still does not meet the standards to be a National Statistic. Decisions regarding the range and scope of consumer price statistics will be made by the Authority Board following the recommendations of the Johnson Review.

29. The RPI measure continues to be used by forecasters although to a lesser extent in recent years; it is still the main measure of inflation used in wage negotiations; and the time series goes back to 1948. Further, following an independent exercise looking at consumer price indices, Courtney (2014) came to the opposite conclusion with regards to the relative merits of CPI and RPI. Until RPIJ or another measure of inflation becomes as widely used as RPI, we will continue to use RPI, along with CPI, as our main measures of consumer price inflation.

Gross Domestic Product

30. GDP provides a measure of total economic activity. It is often referred to as one of the main 'summary indicators' of economic activity and is used to measure growth in the economy. Since 2011, ONS has made several changes to the methodology used to produce GDP estimates, resulting in revisions to the data.

31. In 2011 ONS implemented significant methodological changes in the production of GDP figures, which brought the UK in line with international standards. The details of these changes and their impacts were outlined in Appendix 4 of our 2012 Report. These changes included: adopting the 2007 SIC; using a revised classification of products; changing the method of calculating inflation; and revising the base and reference years. Following these changes the data indicated that the 2008-09 recession was shorter (five quarters instead of six) but deeper (7.1 per cent loss of output instead of 6.4 per cent) than previously thought.

32. Since our 2014 Report, ONS has made several other revisions to the GDP estimates. Revisions undertaken by ONS in September 2014 were the result of methodological changes implemented in the National Accounts to be compatible in measuring National Income across EU countries. GDP data released in December 2014 showed that the recession still started in the second quarter of 2008 and lasted for 6 quarters. But the recession was not as deep as previously estimated – output fell by 6.1 per cent from the pre-recession peak in the first quarter of 2008 to the trough in the second quarter of 2009. Data also suggested that the economy returned to its pre-recession level of GDP in the third quarter of 2013, three quarters earlier than previously thought.

33. Further revisions were made in June 2016 as a result of improvements made to the UK National Accounts (Blue Book) in current price terms. Methodological changes included improvements to imputed rental estimates. Estimates of the revision to annual GDP growth in current prices (1998 to 2014) is -0.35 percentage points with real GDP annual growth (1998 to 2014) revised down by 0.03 percentage points. Larger revisions have been made to current price estimates than real GDP revisions because the main impact on rental estimates is on the prices being used.

Definitions of Low-paying Sectors

34. Throughout this report we refer to the low-paying sectors. We define these as occupations or industries which contain a high number or proportion of low-paid workers based on the SOC and SIC codes published by ONS. We have two distinct definitions of low-paying sectors, one based on industries and one on occupations. Table A3.1 sets out a list of low-paying sectors defined by SIC 2007 and SOC 2010 respectively. These definitions are used when conducting detailed analysis of low-paying sectors using ASHE or the LFS.

35. As mentioned previously, our current classification is based on a review undertaken in 2013. We anticipate that the NLW will cover an increasing number of workers, jobs and industries. Over the next year we will be reviewing the low-paying classifications, through further analysis of the 2016 ASHE. It is anticipated that some new jobs and industries will be covered. This may include Security, which was removed from our industry classification in the 2013 review.

Table A3.1: Definitions of low-paying industries and occupations, by SIC and SOC

Low-paying industry/ occupation	Old industry definition (SIC 2007)	Current industry definition (SIC 2007)	Old occupation definition (SOC 2000)	Current occupation definition (SOC 2010)
Retail	45, 47, 77.22, 95.2	45, 47, 77.22, 95.2	1234, 5496, 711, 7125, 721, 925	1254, 5443, 7111,7112,7114, 7115, 7123-7125, 7130, 7219, 925
Hospitality	55, 56	55, 56	5434, 9222-9225	5434, 5435,9272-9274
Social care	86.10/2, 87, 88.1	86.10/2, 87, 88.1	6115	6145, 6147
Employment agencies	78.10/9, 78.2	78.10/9, 78.2	-	-
Food processing	10	10	5431-5433, 8111	5431-5433, 8111, 9134
Leisure, travel and sport	59.14, 92, 93	59.14, 92, 93	6211, 6213, 6219, 9226, 9229	3413, 3441, 3443, 6131, 6139, 6211, 6212, 6219, 9275, 9279
Cleaning	81.2, 96.01	81.2, 96.01	6231, 9132, 923	6231,6240, 9132, 9231, 9233-9236, 9239
Agriculture	01, 03	01, 03	5119, 9111, 9119	1213, 5112-5114, 5119, 9111, 9119
Security	80.1	-	9241, 9245, 9249	-
Childcare	85.1, 88.91	85.1, 88.91	6121-6123, 9243, 9244	6121-6123, 9244
Textiles and clothing	13, 14	13, 14	5414, 5419, 8113, 8137	5412-5414, 5419, 8113, 8137
Hairdressing	96.02, 96.04	96.02, 96.04	622	622
Office work	-	-	4141, 4216, 9219	4129, 4216, 7213, 9219
Non-food processing	-	-	-	5211, 5441, 8112, 8114-8116, 8125, 8131, 8134, 8139, 9120, 9139
Storage	-	-	-	9260
Transport	-	-	-	5231, 8135, 8212, 8214

Note: '-' denotes not applicable.

36. Industry definitions will capture many workers, such as managers and supervisors, who will not necessarily be low paid while occupational definitions can be more focused on specific low-paid jobs. Ideally we would like our earnings and employment analyses to be based on occupational definitions. However, official employment data using these definitions are not available although we can estimate them quarterly using LFS Microdata and annually using ASHE. There is no regular, official data series on employment by occupation but ONS does provide one on employment by industry, the ONS employee jobs series. In addition, policymakers and stakeholder groups tend to be industry-based. Therefore, we tend to focus our analysis on industries.

37. Unfortunately, the ONS employee job series does not have a detailed breakdown of sectors up to four-digit SIC codes. We therefore use broader industry-based classifications when considering the ONS employee jobs series. Table A3.2 contains SIC2007 codes used to define low-paying sectors in our analysis of the ONS employee jobs series. In our 2013 Report and reports prior to that time, we only used the SIC code '87' to define social care in our analysis of employee jobs. However, this definition only covered social care workers who undertook residential care activities. In this report, we again use SIC code '88' for our definition of social care in order to include a large number of domiciliary care and childcare workers.

Table A3.2: Definitions of low-paying industries, by SIC 2007

Low-paying industry	SIC 2007
Textiles, clothing	13, 14
Retail	45, 47
Hospitality	55, 56
Cleaning	81, 96.01
Hairdressing	96.02
Agriculture	01, 03
Food processing	10
Leisure/Travel/Sport	92, 93
Employment agencies	78.2-3
Residential care	87
Domiciliary care/childcare	88

Appendix 4
International comparisons

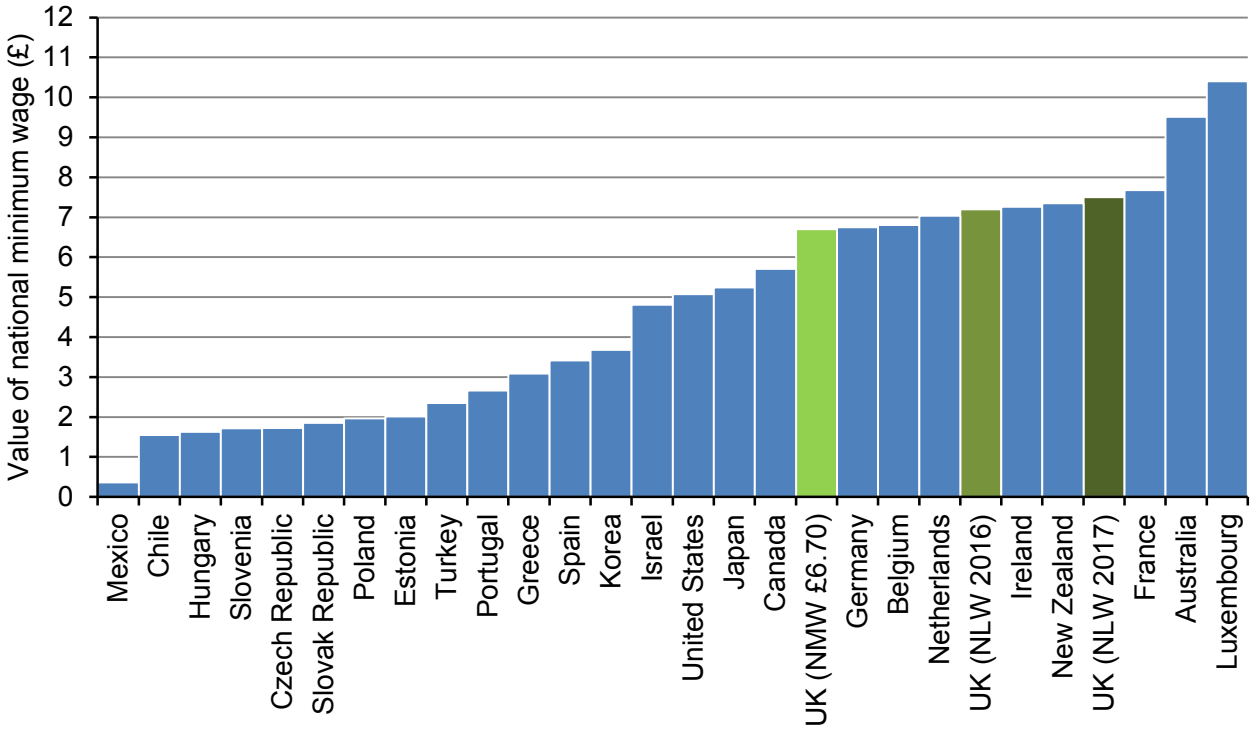
1. For this report we have updated our analysis of the value of the UK minimum wage when compared to those of other countries. This is the first report for which the NLW has been in effect, so we can see the impact this has had on the UK's ranking. However, our assessments of the relative bite and coverage of each minimum wage has not been updated because there is no additional data available to that which we used in our Spring Report.

The limitations of international minimum wage comparisons

- The relevant pay period for minimum wages is defined differently (hourly, daily, monthly) between countries and may not readily be converted into an hourly rate for comparative purposes.
- Definitions of minimum wage coverage differ, particularly with regards to the age and experience of those workers covered.
- In the UK nearly all workers are covered irrespective of contract status but in some countries the minimum wage is limited to blue collar workers, or permanent and full-time workers and might exclude seasonal, migrant, and casual workers or have lower rates for workers in 'tipping' sectors.
- Upratings to minimum wages take place at different times in different countries, which weakens the accuracy of comparisons.
- It is difficult to compare the value of minimum wages across countries because exchange rates fluctuate. Purchasing power parities (PPPs) attempt to address this problem but these also have considerable weaknesses.
- The costs of minimum wage workers to employers also differs across countries, with some countries subsidising employers of minimum wage labour and others having tax regimes that directly or indirectly affect labour costs of minimum wage workers.

2. As we forecast in our Spring 2016 Report, the introduction of the NLW moved the UK up the rankings when its value is ranked against comparator countries in sterling exchange rate terms. Figure A4.1, using average exchange rates for the month of April, shows that the UK moved from ninth to sixth highest among our comparator countries when we moved from the National Minimum Wage of £6.70 to the NLW of £7.20. It also shows that the value of the on-course rate of the NLW in 2017 would move the UK up to fourth highest.

Figure A4.1: Comparative value of minimum wages, by country, April 2016

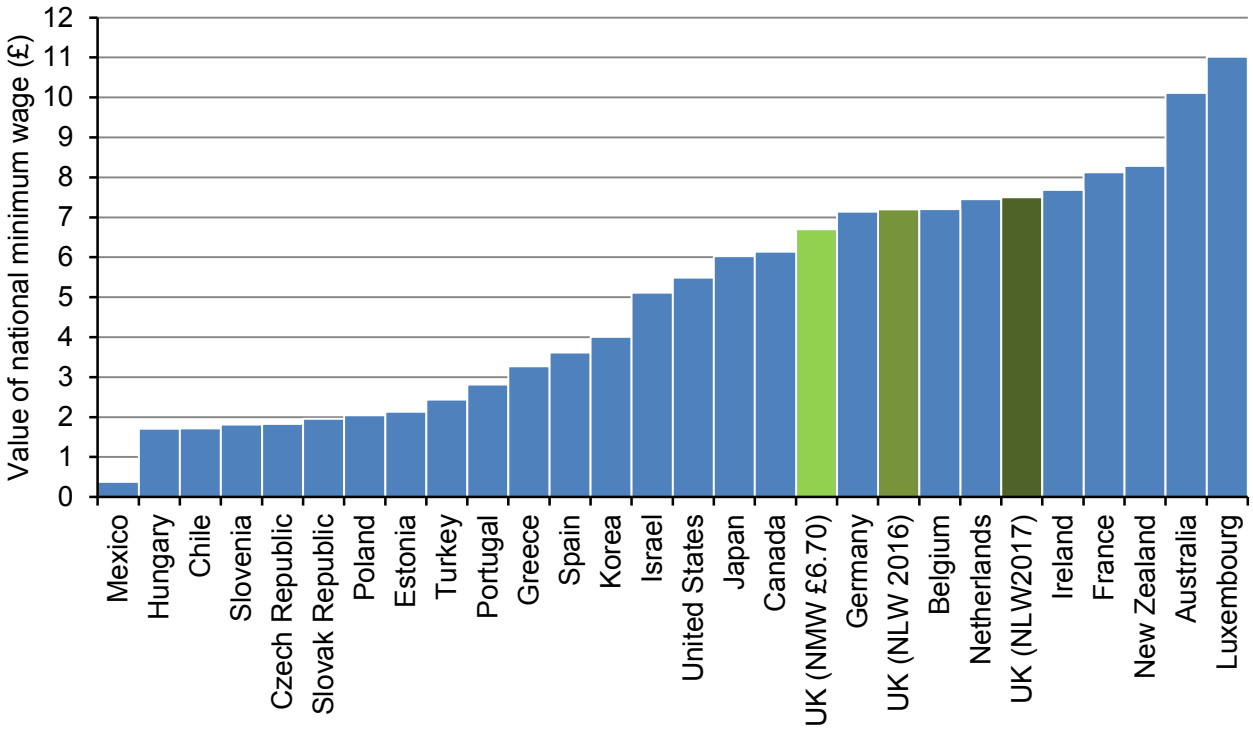


Source: LPC estimates using OECD data, April 2016.
Notes:

a. Data are converted to GB sterling.
b. Exchange rates are April monthly averages.

3. However, comparing the value of the NLW immediately after its introduction in April to its value in July shows the limitations of using exchange rates for comparison. Comparing Figure A4.1 with Figure A4.2 demonstrates this effect. The pound depreciated by around 7 per cent against the Euro between April and July, with similar changes to exchange rates with other currencies. This meant that much of the increase in value of the NLW relative to minimum wages in other countries was cancelled out by exchange rate depreciation.

Figure A4.2: Comparative value of minimum wages, by country, July 2016



Source: LPC estimates using OECD data, July 2016.
Notes:

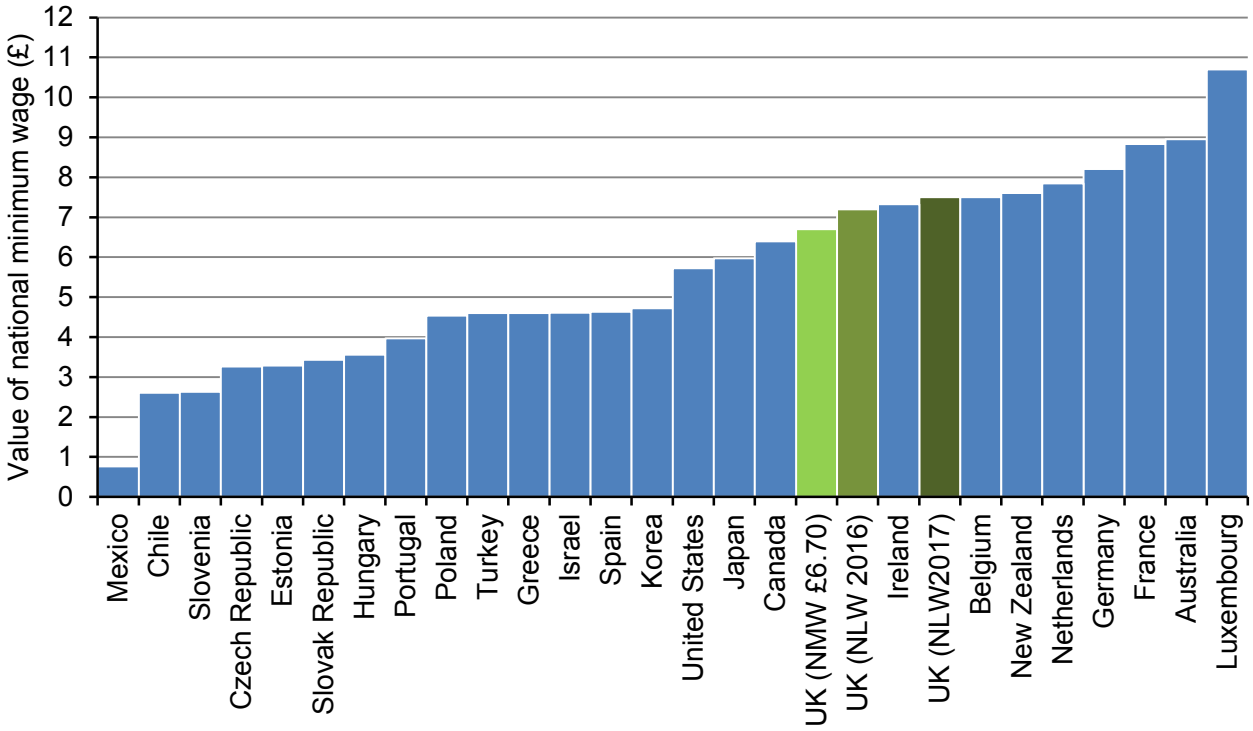
a. Data are converted to GB sterling.
b. Exchange rates are July monthly averages.

4. In addition, these kinds of comparisons do not take into account the relative cost of living in different countries. By using purchasing power parities (PPPs), derived from the OECD's Comparative Price Levels, we can attempt to address this issue. PPPs take account of the cost of living in each country, allowing us to more accurately compare the real value of minimum wages across countries.

5. Figure A4.3 shows that, while the UK has not moved up in the rankings as a result of the NLW when measured using PPPs, its relative value has increased. At £7.50, the on-course rate for the NLW in 2017, the UK would move up one place to above Ireland and be virtually level with Belgium and New Zealand.

6. This projection of the value of the NLW compared with other countries' minimum wages assumes that they will not increase, so the relative increase in value of the NLW is likely to be somewhat smaller than Figure A4.3 suggests. However, it is likely that the NLW's path to 60 per cent of median earnings will see it rise considerably faster than minimum wages in the countries we compare it with.

Figure A4.3: Purchasing power parity of minimum wages, by country, July 2016



Source: LPC estimates based on OECD data.
Notes:

a. Data are converted to GB sterling.
b. PPP estimates calculated using OECD July comparison ratios.

7. Table A4.1 shows recent and future rises in minimum wages in the countries where changes have happened or will do shortly. The introduction of the NLW in April meant an increase larger than we have seen in our comparator countries. The next largest increase was in Ireland, where the minimum wage increased by 5.8 per cent on 1 January 2016. However, the likely increase there for 2017 will be just 1.1 per cent. The NLW, on the other hand, is set to rise consistently at a relatively fast rate, with a recommended 4.2 per cent increase in 2017 following the initial 10.8 per cent year-on-year increase.

Table A4.1: Recent changes in adult minimum wages, by country, 2016-2017

Country	Previous hourly rate[a]	New hourly rate	Date of uprating	Percentage change
UK	**£6.70**	**£7.20**	**1 April 2016**	**7.5 (10.8 year-on-year)**
Australia	$AU17.29	$AU17.70	1 July 2016	2.4
France	€9.61	€9.67	1 January 2016	0.6
Germany	€8.50	€8.84	1 January 2017	4
Ireland	€8.65	€9.15	1 January 2016	5.8
	€9.15	€9.25	1 January 2017	1.1
Japan	JPY798[b]	JPY823[b]	August 2016	3.1
Netherlands	€8.70	€8.87	1 July 2016	2
New Zealand	$14.75	$15.25	1 April 2016	3.4

Source: LPC estimates.
Notes:
a. For countries where the minimum wage is not expressed as an hourly rate, the rate has been converted to an hourly rate assuming a working time of 8 hours per day, 40 hours per week and 173.3 hours per month.
b. Data for Japan are mean average of prefectural (regional) rates.

8. While the increases in minimum wages in other countries have not been as fast as in the UK, we follow them and any research on their effects closely. Germany introduced a national minimum wage in January 2015, and is an example in which we are particularly interested. The initial research on the effects is somewhat inconclusive, with some evidence of price rises in sectors affected by the new minimum and mixed evidence of employment effects. Garloff (2016) concluded that there had been no overall negative effect on employment, and no indication of a significant effect on unemployment levels. However, Bossler and Gerner (2016) found a significant increase in wages for affected firms and workers, and also pointed to an employment reduction of 1.9 per cent in affected firms – mainly through reductions in hiring – and a reduction in hours of 0.6 per cent in affected firms. The German Minimum Wage Commission published provisional findings on the effects of the newly introduced minimum wage, but these were mainly confined to descriptive analysis due to lack of data sources. It will produce more detailed findings based on data to be produced in 2017, including a comprehensive earnings survey.

9. In the United States, the federal minimum wage has been set at $7.25 since 2009, but states, cities and local municipal authorities have discretion to set higher rates if they wish. A growing number of cities and states are doing so, with examples of rates rising quickly in some locations including Seattle, New York and California, which have set targets of $15. The increases in US cities and states are shown in table A4.2. In most of the cases listed, the rates of growth in minimum wages exceed that of the NLW. However, in most cases they start at a relatively low bite, and the paths to the target minimum wages have flexibilities built in: varying by firm size in Seattle and New York City, where smaller firms have longer to adjust; and varying by location in the rest of New York State.

Table A4.2: Recent changes in adult minimum wages, by country and city, UK and US, 2016-2017

City/State	Previous hourly rate	New hourly rate	Date of uprating	Percentage change
UK	**£6.70**	**£7.20**	**1 April 2016**	**7.5 (10.8 year-on-year)**
Seattle (500 or more employees)	$11.00	$13.00	1 January 2016	18.2
	$13.00	$15.00	1 January 2017	15.4
Seattle (less than 500 employees)	$10.00	$10.50	1 January 2016	5
California	$9.00	$10.00	1 January 2016	11.1
	$10.00	$11.00	1 January 2017	10
New York City (10 or more employees)	$9.00	$11.00	31 December 2016	22.2
New York City (fewer than 10 employees)	$9.00	$10.50	31 December 2016	16.7
Greater New York State	$9.00	$9.70	31 December 2016	7.8
Portland Metropolitan area	$9.75	$11.25	1 July 2016	15.4

Source: LPC research.

10. In our Spring 2016 Report, we said that we awaited with interest the results of the research commissioned by the city of Seattle into the effects of its new minimum wage. There, the minimum wage rose on 1 January 2016 from $11 to $13 for companies with over 500 employees and from $10 to $10.50 for companies with fewer. Seattle has tasked the Evans School of Public Policy and Governance at the University of Washington with evaluating the effects of the policy over time. The Seattle Minimum Wage Study Team (2016) reported on the initial effects. Median wages for low-paid workers increased from $9.96 to $11.14, but the strength of the economy in Seattle was found to be a large factor – it attributed $0.73 of the increase to the minimum wage. There was evidence that increased wages were offset by modest reductions in hours and employment, but those that kept their jobs gained an average of $13 per week and worked 15 fewer minutes per week. There was no evidence of any increase in business failures or price effects.

11. Allegretto, Jacobs, Montialoux and Reich (2016) conducted an impact study of the $15 minimum wage that will be in place in New York State by 2021. They forecast that there will be a large increase in wages for many workers, a small effect on employment, increased automation and productivity, and higher prices in some sectors. We will monitor these cases with interest.

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