

National Minimum Wage

Low Pay Commission Report 2018



National Minimum Wage

Low Pay Commission Report 2018

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

November 2018



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Introduction

- 1.** We, the Low Pay Commission (LPC), are an independent body that advises the Government on the levels of the National Living Wage (NLW) and the National Minimum Wage (NMW). This annual report – our 20th – provides the evidence and rationale behind our recommendations on the rates to apply from April 2019. This is our third annual report in the new cycle following the introduction of the NLW in April 2016.
- 2.** The sequencing of our recommendations and report is slightly different this year due to the early Budget. Normally, we provide advice on the rates at the end of October, with the Government announcing its response as part of the Budget in November. On the same day the Government announces the rates and publishes our annual report explaining the rationale. This year, we are publishing this report after the rates have been announced and our recommendations publicly accepted by the Government.
- 3.** Each year we receive a remit from the Government. For the NLW, the Government has set a target for it to reach 60 per cent of median earnings by 2020. Our remit this year, as it has been since the NLW was introduced, is to make recommendations that reach the target, subject to ‘sustained economic growth’. For each of the other rates our remit is to raise pay as high as possible without damaging employment prospects.
- 4.** Our recommendations this year take place against the backdrop of various other policy changes within the Government and organisational changes at the LPC. There is the ongoing progress of the Brexit negotiations, particularly as we approach the key milestones, including the date of the UK’s exit from the EU in 2019. In addition, February of this year saw the publication of the Government’s response to Matthew Taylor’s ‘Review of Modern Working Practices’. This set out a wide-ranging policy agenda that will have an impact on all workers and low-paid workers in particular. As part of this, we were asked to undertake an additional set of tasks. These were to assess the scale and nature of the issue of ‘one-sided flexibility’ and assess the impact of a higher minimum wage for non-guaranteed hours, as well as considering alternative policy ideas. Our response to that part of the remit will be given in a separate report.
- 5.** A further change for us this year has been the introduction of three new Commissioners – Kate Bell, Simon Sapper and Martin McTague. They joined the six other Commissioners in April. The delay in their appointments resulted in a more condensed programme of meetings and visits than usual.
- 6.** Last year, we recommended that the NLW stay on its path to 60 per cent of median earnings. This was on the basis that the threshold of sustained economic growth had been met, the labour market continued to perform strongly and there was little evidence of any negative employment effects from earlier upratings.

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7. Our remit for younger workers – to raise pay as high as possible without damaging employment prospects – is necessarily stricter than for the NLW. Young workers are more likely to become unemployed and suffer longer term damage following any spell of unemployment. For the youth rates last year, we recommended larger increases that narrowed the gap between these rates and the NLW on the basis that economic conditions warranted this. Earnings had been growing faster for younger workers for three consecutive years, and employment and unemployment had also improved. The share of employers making use of the youth rates had also declined as some employers chose to pay above these rates.

8. In making our recommendations on youth rates, we take into account the delicate balance between setting a pay floor for younger workers and the risk of pricing them out of the jobs market or encouraging substitution of older workers. In previous reports we have concluded that genuine differences in labour market performance mean that the pay floor for younger workers cannot be set at the same levels as the NLW without risking employment opportunities. In our Spring 2016 Report we judged that, in the absence of changes in relative performance, the pay floor for younger workers would likely increase less rapidly than that of workers aged 25 and over towards 2020. However, we also expressed countervailing concerns about creating too large a gap between the youth rates and the NLW, and consequent risks of substitution. We said we would balance these considerations in future recommendations.

Evidence gathering

9. Our commitment to making recommendations based on evidence remains the guide for the new rates for the NLW and NMW. We have, as in previous years, drawn on five broad sources:

- 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;
- in-house economic and statistical analysis of the impact of the minimum wage;
- independently published research plus our own commissioned independent research from universities, thinktanks and research bodies; and,
- front-line visits to organisations and workers around the country, which bring to life the impact of the policy.

10. We have reviewed the performance of the economy and the labour market up until the point of our meeting in October 2018. We make our recommendations on this basis. It must be emphasised, however, that our view on the outlook for the British economy in 2019 reflects the forecasts we had at the time. These take no account of any future revisions to economic forecasts or actual out-turns of any disruption from a Brexit without a transition period. We will review the economy in 2019 as part of our work on recommended rates for April 2020.

11. The cycle of reporting which was introduced alongside the NLW means that we have less time for analysing the evidence around earnings. It also means that notice of the new rates to employers is now just over four months rather than six. A key source of evidence is the Annual Survey of Hours and Earnings (ASHE), an annual survey of one per cent of workers in the PAYE

system. The survey takes place in April each year, often soon after the new rates of the NMW have been introduced. This means the survey only observes very initial employer responses. Under the pre-NLW cycle the ASHE took place six months after each uprating, giving enough time for employers to fully respond and for the rates to 'bed in'.

12. We are also limited in our ability to assess the employment and unemployment impacts of the recent upratings. We have one quarter of Labour Force Survey (LFS) data available to us covering the period following the April 2018 uprating. This is too short a timeframe to fully assess whether there have been any negative effects from the uprated NLW, other than to observe that so far there is no evidence of large-scale job loss.

13. For our in-house analysis of the economy, we drew on data available up to 19 October 2018. These included: Office for National Statistics (ONS) labour market data; pay settlement data from various pay researchers; economy and pay forecasts from the Bank of England's August 2018 Inflation Report and HM Treasury's panel of independent forecasts up to October, but not the autumn forecast of the Office for Budget Responsibility (OBR), which was published after the date we were required to deliver our findings to the Government (although before this – our full report – was published). We note the forecasts from the OBR's March 2018 Economic and Fiscal Outlook (EFO).

14. Alongside our in-house analysis and commissioned research, we spoke to a wide range of stakeholders, including employers, workers, their representatives and others. We are very grateful to the organisations and individuals that have provided evidence to assist us in reaching our recommendations for the new rates.

15. Each year we carry out a written consultation. This year we received around 60 responses, with representatives from 36 organisations attending our oral evidence sessions. In addition, a number of other organisations presented at our regular Commission meetings between March and October. Our Secretariat also held regular meetings with stakeholders.

16. We also visited employers, workers and others affected by our recommendations, talking to more than 80 organisations. Six visits took place over the course of our work for this report. We visited Kendal and South Lakeland, Barnstaple, Newry, Perth, Anglesey and Birmingham. We would like to record our gratitude to everyone who gave up their time to meet with us and who helped us organise these visits. Appendix 1 lists those stakeholders who responded to our call for evidence or whom we met on visits, and who agreed to be listed.

17. A number of commissioned external research projects informed this report. The findings are used to supplement other evidence throughout this report and a summary is given in Appendix 2.

18. We have met formally as the Low Pay Commission eight 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 mid-October for three days to review and assess the evidence relevant to our remit, and to agree all the recommendations contained in this report.

19. The recommendations of this report will take effect in April 2019.

This report

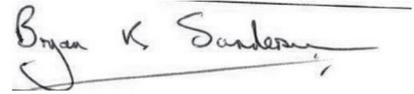
20. The report follows a similar structure to that of our 2017 Report:

- Chapter 1 sets out evidence on the performance of the UK economy looking back over 2017 and the first half of 2018.
- Chapter 2 evaluates the impact of the NLW, building on our previous assessments of its impact.
- Chapter 3 analyses the labour market position and earnings of workers aged 16-24, 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, informing our recommendation on the Apprentice Rate.
- Chapter 5 provides analysis of the forward-looking evidence from both the analytical side (including forecasts of growth, consumer confidence etc) and from stakeholders (including stakeholder views on the economic outlook and future rates of the NLW).
- Chapter 6 provides the rationale for our rate recommendations and the potential implications when they come into effect.

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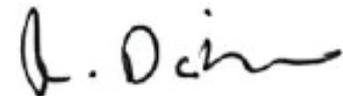
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The Government's Remit to the Low Pay Commission

National Living Wage and National Minimum Wage – Low Pay Commission remit 2018

The Government continues to build an economy that works for everyone. Making work pay for the lowest earners in our society is a core part of our commitment. Last year's increases to the National Living Wage and National Minimum Wage boosted the wages of 1.9 million workers.

The Government's objective is for the National Living Wage to reach 60% of median earnings by 2020, subject to sustained economic growth. The Government asks the Low Pay Commission to monitor and evaluate the National Living Wage and to recommend the rate which should be effective from April 2019.

In addition, the Government would like the Low Pay Commission to monitor and evaluate the levels of each of the different National Minimum Wage rates (16-17, 18-20, 21-24 age groups and apprentice rates) and make recommendations on the increase it believes should apply from April 2019 such that the rates are set as high as possible without damaging the employment prospects of each group. The Government notes the Low Pay Commission's intention to review whether the current structure of the youth rates best supports their stated remit and to produce advice by Spring 2019. The Government wants to ensure these rates continue to support young people in the labour market.

The Government also asks the Low Pay Commission to recommend the accommodation offset rate that should apply from April 2019.

In making these recommendations 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.

Review of Modern Working Practices

Last year the Review of Modern Working Practices made a series of recommendations to the Government. The Review found many examples of workers benefiting from flexible working arrangements. It also identified a risk of "one-sided flexibility" in the labour market, and workers' concerns over lack of security and uncertainty over when they will next receive work. The Government wants to find ways to tackle this issue which retains the flexibilities that many workers find valuable, and avoids placing unnecessary burdens on business.

The Government has accepted the Review's recommendation that the Low Pay Commission should be asked to consider the impact of introducing a higher minimum wage rate for hours worked that are not guaranteed as part of the contract. The Government asks the Low Pay Commission to assess the nature and extent of the issue identified in the Review; and to assess the impact of introducing a higher minimum wage for non-guaranteed hours. This assessment should consider any alternative policies that they consider address the same issue, including relevant international comparisons and any evidence provided by stakeholders.

This assessment should form part of the Low Pay Commission's October 2018 report, and Ministers will take a decision on what next steps are appropriate.

Timing

The Low Pay Commission is asked to provide a final report in response to this remit to the Prime Minister and the Secretary of State for Business, Energy and Industrial Strategy by October 2018.

Executive summary

- 1.** This is the 20th Low Pay Commission (LPC) report, and the third in which we have recommended a rate for the National Living Wage (NLW), the minimum wage for workers aged 25 and over that was introduced in April 2016.
- 2.** When the Government announced the NLW in 2015, it set a target of 60 per cent of median earnings by 2020, subject to sustained economic growth. Our remit for this report asks that we recommend the level to apply from April 2019 consistent with this aim. In contrast with the other rates, the remit for the NLW has a greater tolerance of employment loss. Analysis by the Office for Budget Responsibility (OBR) at the time when the NLW was first announced estimated that its introduction would mean 20,000-110,000 fewer jobs by 2020 than would otherwise have been the case. At the same time, it also forecast wider net employment growth of 1.1 million jobs in the period 2015-2021.
- 3.** The remit for the other rates – which cover 21-24 year olds, 18-20 year olds, 16-17 year olds, and apprentices – maintains our original objective of ‘helping as many low-paid workers as possible, without damaging their employment prospects’.
- 4.** While the NLW is subject to a target, there is flexibility built in to its design. The 60 per cent target is a relative one, with the trajectory of the NLW moving in response to actual and forecast median earnings growth, which in turn responds to the ebb and flow of economic performance. This means that if the economy were to perform better than expectations, earnings would rise and the cash amount required to meet the target would rise with it, and vice versa in the case of a downturn. There is further flexibility in that increases in the NLW are also ‘subject to sustained economic growth’, and we can, in principle, alter the path of the NLW to backload or frontload the increases.
- 5.** Our recommendations are evidence based. We now have employment and hours data for the first two years of the NLW. We also have additional research and a further round of stakeholder evidence to support our analysis, with the organisations we received evidence from also having had two years to assess the effects of the NLW.
- 6.** The NLW’s higher rate of increase and greater tolerance for job loss influence the way we consider the other rates. On the one hand, the shelter provided by the NLW to young workers with relatively lower wage costs on average, might mean that pay for younger workers could be higher than it otherwise might be. Some young workers benefit directly from the NLW as some employers choose to pay all their workers the NLW rate regardless of age. There is evidence that too large a gap between rates can be problematic for younger workers when they reach threshold ages and require a steep increase in their pay. Furthermore, we have heard concern from both employer and employee representatives that too large a gap presents issues of fairness in the workplace and heightens the risk of substitution.

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7. On the other hand, workers aged under 25 have higher unemployment and lower average pay than older workers, suggesting more caution is needed in setting their pay floor. Further to this, younger people's labour market outcomes are more sensitive to any economic slowdown and young people are more likely to see their future outcomes scarred by negative labour market experiences.

Chapter 1: The economic context

8. Chapter 1 looks at whether the economy has performed as we expected since we made our recommendations, in our 2017 Report, for the April 2018 upratings in the National Living Wage, youth rates and the Apprentice Rate. It considers data and information that cover the period up to the end of the third quarter of 2018.

9. Last autumn, we recommended that the NLW increase by 4.4 per cent to £7.83 per hour from 1 April 2018. For the other rates, we recommended the largest increases in a decade. Our 2017 recommendations are set out in Table 1; they were all accepted by the Government and implemented on 1 April 2018.

Table 1: 2017 Report recommendations

| Minimum wage rate | April 2017 | April 2018 | Increase | |
|----------------------------|--------------|--------------|----------|-----|
| | £ per hour | £ per hour | Pence | % |
| National Living Wage (NLW) | 7.50 | 7.83 | 33 | 4.4 |
| 21-24 Year Old Rate | 7.05 | 7.38 | 33 | 4.7 |
| 18-20 Year Old Rate | 5.60 | 5.90 | 30 | 5.4 |
| 16-17 Year Old Rate | 4.05 | 4.20 | 15 | 3.7 |
| Apprentice Rate | 3.70 | 3.90 | 20 | 5.7 |
| Accommodation offset | 6.40 per day | 7.00 per day | 60 | 9.4 |

10. Those recommendations took account of the forecasts available in October 2017. Since then, the economy has generally performed to those expectations. The NLW had been introduced at a time of solid GDP growth and employment performance. Its uprating in April 2018 was implemented with growth roughly in line with expectations for the first half of 2018. The outcomes and forecasts are such that there has been little change to the expected NLW path.

11. Although GDP growth has turned out in line with the forecasts it has slowed since the end of 2014. Since the first quarter of 2016, GDP growth has averaged 0.4 per cent each quarter. This is considerably below the pre-crisis average (0.7 per cent) and below the post-crisis average up to the middle of 2016 (0.5 per cent). Recent growth has also been more unbalanced with more dependence on consumer spending. Retail and hospitality – the two largest low-paying sectors in terms of employment – have been particularly important in driving that recent growth.

12. The labour market remains resilient. Although employment and job growth have slowed they remain robust. Employment and hours are at record levels with the employment rate also at record highs. Vacancies are also at record highs with redundancies at record lows. Unemployment has fallen to its lowest rate for over 40 years.

13. As a result of slowing output growth, combined with strong labour market performance, productivity growth has continued to be weak. Productivity on all three measures – per worker, per job and per hour – was only 2-3 per cent higher in the second quarter of 2018 than ten years previously. That compares with annual growth of around 2 per cent on all three measures prior to the financial crisis.

14. Inflation also turned out in line with forecasts, peaking at the end of 2017 and falling back in 2018, as the impact of the depreciation of sterling and increases in oil prices has unwound. Pay settlements and average earnings growth have picked up – again in line with the forecasts. As inflation has fallen and wage growth has picked up, that has led to some real wage growth.

Chapter 2: The National Living Wage

15. Chapter 2 considers the impact of the NLW. The introduction of the NLW on 1 April 2016 was a significant intervention in the labour market for those aged 25 and over. The 2016 uprating to £7.20 an hour was a 10.8 per cent increase on the year, at a time when average earnings were rising by 3.0 per cent. The subsequent increases of 4.2 per cent to £7.50, and then 4.4 per cent to £7.83, were also relatively large rises in the pay floor compared with the median wage (which grew by 2.0 and 2.7 per cent respectively), though significantly lower than the increase at the introduction of the NLW.

16. In Chapter 2 we look at analytical and stakeholder evidence. The analytical evidence tells us about the impacts on pay, hours and employment, whereas the stakeholder evidence tells us how employers have been responding to upratings and describes the effect on workers. We heard about the effects through a written consultation exercise, oral evidence sessions, regional visits and other meetings.

17. Over the year to April 2018, median wage growth was lower than the increase in the minimum wage in most low-paying occupations, apart from those in hospitality, food processing and textiles. The bite – the ratio of the NLW to median wages – increased in all of the regions and countries of the UK, except Northern Ireland, where wages grew faster than the NLW.

18. Immediately following the increase in April this year, coverage, which is the number of people who earned at, or below the NLW, was 1.6 million. This was virtually unchanged from the year before and very similar to that in April 2016. This shows that, even as the minimum wage moves closer to average earnings and compresses wages in the bottom half of the earnings distribution, employers are aiming to stay ahead of the NLW. Coverage grew rapidly between 2015 and 2016 from just over a million to 1.6 million and we had anticipated further growth.

19. While the number of jobs paid at the NLW has stayed relatively constant, there has been an increase in those paid just above. In particular, there was a large ‘spike’ in the earnings distribution at £8 in 2018, suggesting some employers chose to pay just above the NLW. At the same time, however, the pay distribution became more compressed towards the lower end. Spillovers, which are the effects of an uprating further up the pay distribution, decreased in 2018 when compared with 2017, meaning the NLW’s impact went less far up the pay distribution. The NLW increase in 2017 resulted in a higher increase in pay for workers earning up to approximately £9.90 (or around 7 million people), but this year the spillovers only reached those earning £9 (or around 5 million

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people). This may be an indication of pressure from the NLW, as employers struggle to maintain differentials with higher-paid staff, or may reflect the faster increase in average wages this year.

20. We increasingly heard that firms were restructuring their workforces or removing management layers in response to the ongoing pressure on differentials. At the same time, businesses in some sectors told us that they had to raise pay in excess of the NLW's increases in order to recruit and retain staff. Unions and other employee representatives acknowledged that the NLW had reduced low pay, but stressed that it remained a problem.

21. We continued to hear that some firms were cutting other aspects of pay and reward, though it was not clear how widespread this was or to what extent the NLW was the cause. Several employee representatives noted this practice but disputed that it was a consequence of the NLW. There was some evidence of non-wage benefits being cut, paid overtime use fell for both NLW workers and more generally, while the use of premium pay was flat for NLW workers. But we had observed this happening before the introduction of the NLW. We do not yet have clear evidence that the NLW has accelerated these trends.

22. Measured underpayment for those aged 25 and over increased in 2018 to 369,000 workers. This represented 1.5 per cent of the workforce or 23 per cent of all those covered by the NLW, and was an increase from 339,000 or 21 per cent of coverage in 2017. Significant increases were found for those working in childcare, where two-fifths of NLW workers were underpaid. Previous analysis has shown that underpayment tends to fall significantly over the six months that follow an uprating. Stakeholders said relatively little on the extent of underpayment, although employers and representative groups we met did highlight the increased risk of non-compliance, as more workers were paid at or close to the NLW. We heard that businesses in all sectors are more aware of HMRC's enforcement activity. We will look at compliance and enforcement in detail in a further report early next year.

23. To see if these increases in the NLW affected jobs we have looked at the employment chances of those workers most likely to be affected. Since the introduction of the NLW employment has grown fastest for the groups most likely to earn the NLW, including for those with no qualifications, non-UK born workers and workers with disabilities. This remained true following the increase in the NLW to £7.50. Employment and hours in low-paying sectors grew over the year, albeit at a slower rate than in non low-paying sectors. While employment grew more slowly in lower-paying regions and nations, this was driven by variations in the growth rates of non low-paying sectors. The first quarter of data following the uprating to £7.83 this year appears to follow a similar pattern to the previous year, though it is too soon to draw any firm conclusions from this very initial data. Overall, the analytical evidence suggests that employment effects have so far been minimal.

24. Employers tell us they have responded to the NLW by absorbing the cost through lower profits, raising prices where they can and making changes to differentials and workforce structures, instead of through large reductions in employment. For smaller firms there was increasing evidence of cuts to, or reductions in, investment. While we do hear about employment effects, particularly in certain sectors (convenience retail, textiles, wholesale and hairdressing), this is usually through slowed hiring; few employers report redundancies. Employer representatives raised concerns over the sustainability of repeated profit reductions as the NLW continues to rise and thought more would have to take mitigating action.

25. The importance of increasing productivity was widely acknowledged by our stakeholders, but there were still few concrete ideas as to how to realise these gains. Following the introduction of the NLW more employers initially planned to improve productivity through technological, organisational or skill-related means than have been able to. Instead, there is evidence that firms are relying on getting their staff to work harder to increase productivity. Smaller firms were sceptical about their ability to invest in automation to improve productivity and there were signs that they are increasingly cutting investment.

26. There was no clear trend in the data on productivity or business investment in those sectors most exposed to the NLW and we cannot clearly identify any inflation effects from the NLW upratings. Following the introduction of the NLW, we saw no large change in the trends in the births and deaths of enterprises in low-paying industries.

27. Our commissioned research was consistent with our stakeholder and other evidence. It found that firms appear to have suffered lower profits and raised prices to cope with the NLW rather than increase productivity or reduce employment. The econometric research generally concluded that the NLW had led to significant increases in the wages of the lowest paid but had not led to any general negative effects on employment retention or hours. There were some small negative employment and hours effects for women who work part-time, and for some sectors and regions, but these results were not robust.

Chapter 3: Young people

28. Chapter 3 looks at the impact of the youth rates of the minimum wage. In our 2017 Report we noted divergent fortunes for 18-24 year olds and 16-17 year olds, with the younger group seeing less improvement in pay and employment. This year, the pattern was different. While 18-20 year olds continued to see strong pay and employment growth, outcomes for 21-24 year olds, and 16-17 year olds, were slightly weaker.

29. Over the year to June 2018, employment rates for young people not in full-time education fell for 21-24 year olds, and fell very slightly for 16-17 year olds, while continuing to rise for 18-20 year olds. Unemployment has fallen across the economy, and the unemployment rate fell for both 18-20 and 16-17 year olds not in full-time education, but was unchanged over the year for 21-24 year olds. For all three age groups the unemployment rates for those not in full-time education were at historic lows. Rates of underemployment were also promising, with falls for all three youth groups and the fastest for the youngest workers.

30. In contrast, we observed increases in inactivity for 21-24 year olds over the year, both in the proportion in full-time education and the proportion that was inactive for other reasons.

31. Turning to pay, 21-24 year olds saw median pay growth of 3.1 per cent in the year to April 2018, below the growth they experienced last year (5.1 per cent). Their younger counterparts, aged 16-17 and 18-20, saw relatively strong pay growth at the median this year, of 5.4 per cent and 4.4 per cent respectively, which was above the pay growth they saw last year (1.8 per cent and 4.2 per cent respectively). However, the April 2018 increases for 16-17 and 18-20 year olds arose because they were paid at NMW rates at the median; 16-17 year olds were paid the 18-20 Year Old

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Rate, and 18-20 year olds were paid the NLW. The apparently high pay growth at their respective medians reflected the 2018 increases in these minimum wage rates.

32. To produce a more representative estimate of pay growth, we calculated average pay growth across the percentile pay distribution. Using this measure, the three youth groups saw similar pay growth over the year, ranging from 3.3 per cent to 3.6 per cent. Whilst these compare favourably with pay growth across the economy (2.5 per cent for workers aged 16 and over), 18-20 and 21-24 year olds experienced lower pay growth this year compared with last. By comparison, their counterparts aged 16-17 (and 25-30) experienced stronger pay growth this year compared with last.

33. On a more positive note, levels of minimum wage underpayment were stable over the year and employers' use of the rates was stable except for a small increase in use of the 16-17 Year Old Rate.

34. The overall picture – of historically low youth unemployment, falling youth underemployment and above-average pay growth – suggests that there is scope to raise the youth rates of the minimum wage without harming young people's employment. This is strengthened by analysis of the October 2016 and April 2017 increases, where we have, as yet, seen no clear evidence of negative employment effects.

Chapter 4: Apprentices

35. Chapter 4 looks at the impact of the Apprentice Rate and surrounding context of apprenticeship policy. In our 2017 Report, we recommended a 5.7 per cent increase to the Apprentice Rate from £3.50 to £3.70, above inflation and above average earnings growth. This was based on strong average earnings growth, particularly in the group most affected by the rate – 16-18 year-olds.

36. However, we also noted the unprecedented level of change in apprenticeship policy in England, with the introduction of the Apprenticeship Levy, co-investment for small and medium-sized companies and the acceleration of the shift from framework-based apprenticeships to newly developed standards. The immediate impact of these changes had been a spike in the number of apprentices – particularly older apprentices – recruited before the levy came into force, followed by a sharp fall in the number of starts in the final quarter of the 2016/17 academic year.

37. Since then, overall apprenticeship numbers in England have shown little sign of increasing through the 2017/18 academic year. The number of starts has decreased by around a quarter year-on-year, with particularly steep declines in level 2 apprenticeships and among apprentices aged 25 or over. A year ago, the Government told us they believed the fall was likely to be temporary. But now it could be seen as a more permanent shift in the apprentice population in response to policy reforms. Apprenticeship starts in Scotland, Wales and Northern Ireland, which have seen less policy change, remain relatively stable.

38. The Apprentice Pay Survey (APS), our preferred data source on apprentice pay, was not available in time for our analysis this year. As last year, our analysis in this area is based on the Annual Survey of Hours and Earnings (ASHE). The picture which emerges is of reasonably strong pay growth overall, but which is inconsistent between groups. Pay has continued to rise at the

median for both first and second-year apprentices (5 per cent and 7 per cent respectively) faster than for non-apprentices; but growth has been weak for first-year 16-18 year old apprentices (only 1 per cent) and median pay in the first year has actually declined for those aged 25 and over (by 5 per cent). The bite of the Apprentice Rate was stable overall (and has been since 2016), but rose for both 16-18 year old apprentices (by 3.4 percentage points, to 80.2 per cent) and those aged 25 and over (up by 4.3 percentage points, to 40.7 per cent). The use of the Apprentice Rate and measured underpayment also rose for 16-18 year olds, while they either fell or remained stable for older apprentices.

39. In general, stakeholders reported that the Apprentice Rate was rarely the main factor driving employer decisions on apprenticeships, and that previous rate increases had not had a major impact on businesses or their apprentice recruitment. Stakeholders representing both employers and workers argued for narrowing or removing differentials between the Apprentice Rate and other NMW rates. Other evidence we heard suggested that use of the rate, and the consequent impact on employers of rate increases, varied considerably between sectors – with rates rarely used in some sectors but more important to business models in others.

Chapter 5: Forward look: economic prospects and stakeholder views

40. Chapter 5 assesses the short to medium-term prospects for the UK economy. Although there is clear evidence that GDP growth has weakened since the end of 2014, and there is considerable uncertainty around Brexit, the economy is still forecast to grow by around 1.5-2.0 per cent a year for the next few years. This is much slower than the economy grew prior to the financial crisis but meets our criteria for sustained economic growth. Forecast growth is expected to be less dependent on the consumer, which may have some implications for those low-paying sectors reliant on household spending.

41. The labour market is expected to remain resilient, with employment projected to build on already record highs, and unemployment forecast to remain low. Even with the labour market tightening further, earnings growth is only expected to pick up slowly. However, that should result in faster real earnings growth, as inflation is forecast to fall back towards its 2 per cent target. Productivity is forecast to remain weak.

42. These forecasts are predicated on a negotiated deal between the UK and the EU that results in a smooth transition albeit with less trade and tighter restrictions on migration. If that was not to be the case, then the prospects for the UK economy may be different.

43. Taking account of new data since our 2017 Report and revised wage forecasts, our current projected path to 60 per cent of median earnings remains much the same as it was last year. The current on-course rate, £8.21, is a penny higher than we estimated last year but within the range we gave (£8.17-£8.23) and the target NLW for 2020 is also a penny higher, at £8.62, again within the range given last year (£8.55-£8.66).

44. Employers told us their responses to future increases would be similar to previous years, led by changes to profits and prices, but several responses may become more prevalent. Stakeholders told us they expect changes to workforce structures to become more common, as a reaction to the

squeezing of differentials we have seen since 2016. There is a broad understanding that improving productivity would help businesses manage future increases, but we still heard relatively little evidence of concrete plans. Reports of adverse employment effects stemming directly from the NLW were rare, though there were continued warnings of a 'tipping point' approaching for employers in some sectors. As in previous years, we heard that the NLW is not the only rising cost for employers, and is therefore not the only factor in business decisions.

45. The recent stability of the projected path of the NLW has helped businesses plan, and most appear to have managed better than they anticipated when the NLW was announced. Unions welcomed the positive effect the NLW has had on pay but thought it could and should go further. Few stakeholders called for us to recommend increases below the projected path in 2019, and fewer still called for the target itself to be reconsidered. On the youth rates, unions argued for equalisation with the NLW, while some employers stressed the importance of protecting young people in the labour market.

Chapter 6: Recommended rates and implications

46. Chapter 6 explains the rationale for our recommendations. As with last year, the core decision for our report was whether the most recent economic evidence met the condition of sustained economic growth to enable the NLW to be updated in line with the path to 60 per cent of median earnings.

47. We weighed the evidence carefully and judged that the evidence available was consistent with the NLW remaining on its path to 60 per cent of median earnings by 2020. Having discussed whether to round to the nearest 5 pence, we judged that, as last year, we should stay on the on-course path, and **we therefore recommended that the NLW should increase by 38 pence or 4.9 per cent to £8.21 an hour in April 2019**. On balance, we felt unable to deny workers an additional penny an hour. This approach fulfils our remit, while also taking into account the issues raised by both employers and workers.

48. In line with our original intention, our recommendation for the National Living Wage is the on-course rate using the median of available forecasts from the Bank of England and the HM Treasury panel of independent forecasts (we did not have access to the Office for Budget Responsibility's October forecasts). Our recommendation is close to the indicative on-course rate that we set out in our Autumn 2016 Report and our 2017 Report, and thus continues to support employers in their forward planning.

49. To this end, using HM Treasury panel of independent forecasts and Bank of England forecasts, we estimate that the NLW will reach its target of 60 per cent of median hourly earnings at an indicative on-course rate of £8.62 in 2020.

50. 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.

51. Last year we made recommendations for the largest increases in the youth rates for a decade. Those increases allowed a restoration of some of the value the youth rates lost during the

recession and its aftermath. Those recommendations were based on strong employment and earnings growth for all young people at that time. This year we noted that while labour market conditions are still strong they have softened slightly in some areas. This, combined with the fact that the evidence is not yet sufficient to understand the impact of these large increases, has led to a slightly more cautious approach – though all rates will still see real and relative (to average earnings) increases in value.

52. For 21-24 year olds labour market performance was weaker than last year. We noted that employment fell slightly for this group over the year, with inactivity increasing. This increase was evenly divided between those going into full-time education and those who were inactive for other reasons. The increase in inactivity is something we will consider further as part of their review into the youth rates – due in Spring 2019.

53. However, on the positive side, the share of 21-24 year olds paid at the rate for their age remains low, as many employers choose to pay above this rate. Furthermore, the unemployment rate for those not in full-time education is at a historic low. A further consideration was the gap between the 21-24 Year Old Rate and the NLW. We were concerned about this gap widening, with the consequent risk of substitution effects. **On balance, the evidence led us to recommend a 4.3 per cent or 32p increase in the 21-24 Year Old Rate to £7.70.**

54. Last year we recommended increases above 5 per cent for 18-20 year olds because of both strong earnings and employment growth. While employment has continued to increase and unemployment has continued to fall the earnings picture has slightly weakened across the distribution this year. **For these reasons, we recommended an increase of 4.2 per cent or 25p to £6.15 for 18-20 year olds.**

55. For 16-17 year olds our priority remains their effective entry into the labour market. They are the most vulnerable age group in the labour market due to their relative lack of experience. However, their labour market and earnings performance is in line with last year's positive trends. On this basis, we recommended an equivalent increase that is also above average earnings growth and inflation. **We recommended the 16-17 Year Old Rate increase by 3.6 per cent or 15p to £4.35.**

56. Making recommendations on the Apprentice Rate is challenging because of the ongoing impact of the policy changes taking place in England and the lack of a recent Apprenticeship Pay Survey. Nevertheless, we did not get a sense from either worker or employer stakeholders that recent increases in the Apprentice Rate had affected the uptake of apprenticeships. **On this basis we recommended an increase which is similar to last year's increase: by 5.4 per cent or 20p to £3.90 for apprentices.** We will look in detail at the operation and effectiveness of the Apprentice Rate as part of the youth rates review.

57. Finally, in keeping with our aim to bring the Accommodation Offset up to the level of the 21-24 Year Old Rate as long as that rate is rising in real terms, we agreed to try and achieve this commitment over two years. **We therefore recommended a 55 pence increase (or 7.9 per cent) in the Accommodation Offset to £7.55 in 2019 and we aim to finally close the gap next year.** This means the rate better reflects the costs of providing accommodation and helps the horticulture sector in particular.

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58. These upratings will have a significant impact on the hourly pay and household income of a sizable number of workers. We anticipate that the bite will increase for all age groups (compared with forecast average earnings growth in 2019 of 2.8 per cent – which we assume will be the same for all age groups). Our analysis suggests that these rates will directly raise pay in more than 2.8 million jobs.

59. Each year we estimate the impact of the recommended minimum wage increases on household income, after taking account of tax and benefits. The impacts vary by household type: with single person households receiving fewer benefits, but keeping more of the increase in the minimum wage; while family households on low pay receive more benefits, but often keep less of the increase in the minimum wage once their benefits are adjusted to take account of their increased earnings.

60. This year however, changes announced in the October 2018 Budget, including the increase in the personal tax allowance and work allowances in Universal Credit, mean that both single person households and family households will see their household income rise when the minimum wage increases in April 2019. After adjusting for tax and benefits, a single person household on the NLW would see their net weekly household income rise by 4.8 per cent in April 2019; and a married couple household, with two children and only one working parent, in receipt of Universal Credit, would see their net weekly household income rise by 4.2 per cent.

Recommendations

The National Living Wage and other minimum wage rates

We recommend that the NLW should increase by 38 pence (or 4.9 per cent) to £8.21 an hour in April 2019.

We recommend that the 21-24 Year Old Rate should increase by 32 pence (or 4.3 per cent) to £7.70 an hour from 1 April 2019.

We recommend that the 18-20 Year Old Rate should increase by 25p (or 4.2 per cent) to £6.15 from 1 April 2019.

We recommend that the 16-17 Year Old Rate should increase by 15 pence (or 3.6 per cent) to £4.35 from 1 April 2019.

We recommend that the Apprentice rate should increase by 20 pence (or 5.4 per cent) to £3.90 from 1 April 2019

Accommodation Offset

We recommend that the Accommodation Offset should increase by 55 pence (or 7.9 per cent) to £7.55 from 1 April 2019.

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Chapter 1

Economic context

1.1 In making our recommendations on the rates of the National Minimum Wage (NMW) and the National Living Wage (NLW) in October 2017, we set out the current UK economic context and assessed its prospects over the coming twelve months. This chapter looks at how the economy (including the labour market) has developed in the latter half of 2017 and the first half of 2018, and assesses whether it has turned out as we had anticipated last autumn. More importantly for this report, it also sets out our understanding of the current state of the economy which informs our recommendations for April 2019.

Background

1.2 The NLW was introduced in April 2016 for workers aged 25 and over. The ambition of the Government was that the NLW should continue to increase to reach 60 per cent of median hourly earnings by 2020, subject to sustained economic growth. When the policy was announced in July 2015, the Office for Budget Responsibility (OBR, 2015a) estimated that it could lead to a loss of around 20,000-110,000 jobs, the implication being that we should not be unduly concerned at that level of job loss but that we might wish to deviate from the target path if job loss was greater. The remit for our 2017 Report reiterated the Government's ambition for the NLW to reach 60 per cent of median hourly earnings by 2020.

1.3 It also noted that, for those workers aged under 25, the 'LPC's recommendations will guide the Government as it sets the National Minimum Wage rates with the objective of helping as many low-paid workers as possible, without damaging their employment prospects'. We were asked to make recommendations on the increases we thought should apply from April 2018 in light of that objective. In making all of our recommendations, the Government asked us to 'consider the pace of the increase, taking into account the state of the economy, the impact on employment and unemployment levels, and relevant policy changes'. We therefore made our recommendations with particular regard to median wage growth, sustainable economic growth, and job loss. We also re-iterated the importance of productivity and real wage growth for future minimum wage increases, which we had set out in our 2014 Report.

1.4 We set out our methodology for plotting the path to the target of 60 per cent of median earnings in our 2016 Spring Report. We chose to follow a path that would track the bite (its level relative to median hourly earnings) in equal proportionate stages to 60 per cent. We judged that this method would allow changes in earnings prospects to be taken into account in a smooth manner.

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1.5 In our 2017 Report, we set out our latest judgement of the path of the National Living Wage using forecasts for average wage growth from the HM Treasury panel of independent forecasts, supplemented by those from the Bank of England's August 2017 Inflation Report. Those forecasts implied that the NLW should be £7.83 in 2018, £8.20 in 2019 and would attain its target of 60 per cent of median hourly wages at £8.61 in 2020. As shown in Table 1.1, this was a very similar path to that noted in our 2016 Autumn Report, but very different to those anticipated when the NLW policy was first announced – in July 2015 – and in our first assessment of that new policy – in our Spring 2016 Report.

Table 1.1: Previous paths for the NLW, UK, 2016-2021

| | July 2015 OBR | | LPC Spring 2016 | | LPC Autumn 2016 | | LPC 2017 Report | |
|--------------------|------------------|----------------------|-------------------|----------------------|-----------------------------|----------------------|-----------------------------|----------------------|
| ASHE | 2014 | | 2015 | | 2016 | | 2017 | |
| Earnings forecasts | OBR July 2015 | | OBR November 2015 | | HMT/BoE August/October 2016 | | HMT/BoE August/October 2017 | |
| | Implied NLW path | Implied October bite | Implied NLW path | Implied October bite | Implied NLW path | Implied October bite | Implied NLW path | Implied October bite |
| 2015 | 6.70 | 53.0 | 6.70 | 53.1 | 6.70 | 53.3 | 6.70 | 53.3 |
| 2016 | 7.20 | 54.8 | 7.20 | 55.1 | 7.20 | 55.8 | 7.20 | 55.8 |
| 2017 | 7.68 | 56.1 | 7.64 | 56.3 | 7.50 | 56.8 | 7.50 | 56.9 |
| 2018 | 8.19 | 57.4 | 8.12 | 57.5 | 7.85 | 57.9 | 7.83 | 58.0 |
| 2019 | 8.74 | 58.7 | 8.61 | 58.8 | 8.23 | 58.9 | 8.20 | 59.0 |
| 2020 | 9.35 | 60.0 | 9.16 | 60.0 | 8.61 | 60.0 | 8.61 | 60.0 |
| 2021 | | | | | | | 8.89 | 60.0 |

Source: LPC estimates using the Annual Survey of Hours and Earnings (ASHE), April 2014-17, standard weights, UK; OBR forecasts for hourly earnings (OBR, 2015a, and b); HMT panel of independent forecasts median of average wage forecast (HM Treasury 2016b, 2016c, 2017a and 2017b); Bank of England (BoE) Inflation Report average wage forecasts (2016 and 2017).

1.6 Our October 2017 estimate of the target rate in 2020, £8.61, was 74 pence below that forecast by the OBR (2015a) in July 2015 and 55 pence below that of the path set out in our Spring 2016 Report.

1.7 Wage growth and the average earnings forecasts had been revised between our Autumn 2016 Report and our 2017 Report, but this had only affected the trajectory rather than total wage growth (up to 2020). Thus, we adjusted the path slightly and recommended an increase in the NLW to £7.83 an hour in 2018 (slightly down from £7.85, the reported path in our Autumn 2016 Report). We also forecast that the on-course path would give an NLW of £8.20 in 2019 (revised down from £8.23). However, as noted above, the final target for 2020 remained the same – at £8.61.

1.8 Following the General Election in June 2017, the Government announced that after 2020 and up to the end of the new Parliament (in 2022), the path of the NLW would follow average earnings growth, thus the target would remain at 60 per cent of median hourly earnings. We noted that this implied an NLW of £8.89 in 2021. There was limited information on forecasts for average wage growth out to 2022. One of those available, OBR (2017a), implied that the NLW would finally rise above £9.00, reaching £9.16, in 2022 – two years later than anticipated when the policy was first announced.

Economic forecasts used in the 2017 Report and out-turn

1.9 As noted above, in making our recommendations, we were asked to take note of the state of the economy. At the time of our deliberations for our last report, in October 2017, we had access to the forecasts made by the Bank of England in its August 2017 Inflation Report and the monthly panel of independent forecasts collated by HM Treasury up to October 2017. We did not have access to the then forthcoming forecasts published by the OBR in November 2017. Its previous forecasts were from March 2017 and thus not as timely as the other forecasts.

Economic growth

1.10 Table 1.2 shows that the forecasts were for gross domestic product (GDP) growth to be modest in the second half of 2017 and to continue at around that pace – well below the pre-crisis trend – going into 2018 at around 1.4-1.6 per cent and rising slightly to 1.6-1.7 per cent but remaining modest in 2019. Thus, sustained economic growth was forecast for the period covering our recommendations (April 2018-March 2019).

1.11 We noted that growth had weakened in the first half of 2017 as consumer spending slowed but that investment had supported growth, with trade and government spending contributing little. The pound had fallen sharply, and this was expected to boost trade and income from tourism. It was also expected to increase inflation, restricting real income growth and slowing consumer spending growth. Apart from uncertainty about the consequences of Brexit, the conditions for investment looked good (with interest rates low and the global economy expanding). The expected fiscal consolidation in 2017/18 was also relatively mild compared with recent years.

1.12 From the data that had been released by the Office for National Statistics (ONS), up to the second quarter of 2017, and the monthly estimates of GDP from the National Institute of Economic and Social Research (NIESR), we anticipated that GDP growth would be around 1.5-1.6 per cent for the whole year in 2017, with growth similar in both 2018 and 2019. However, over the course of 2018, ONS has revised its GDP series. It now reports that GDP grew by 1.7 per cent in 2017 – a little higher than we had expected.

Table 1.2: GDP forecasts available for 2017 Report

| Forecasts | Date of forecast | GDP (change on year ago) | | |
|---|----------------------|--------------------------|---------|------|
| | | 2017 | 2018 | 2019 |
| Office for Budget Responsibility (OBR) | March 2017 | 2.0 | 1.6 | 1.7 |
| Bank of England (BoE) | August 2017 | 1.7 | 1.6 | 1.7 |
| HM Treasury panel of independent forecasts | August/October 2017 | 1.6 | 1.4 | 1.6 |
| Outcome | Up to September 2017 | 1.7 | 1.4-1.6 | |

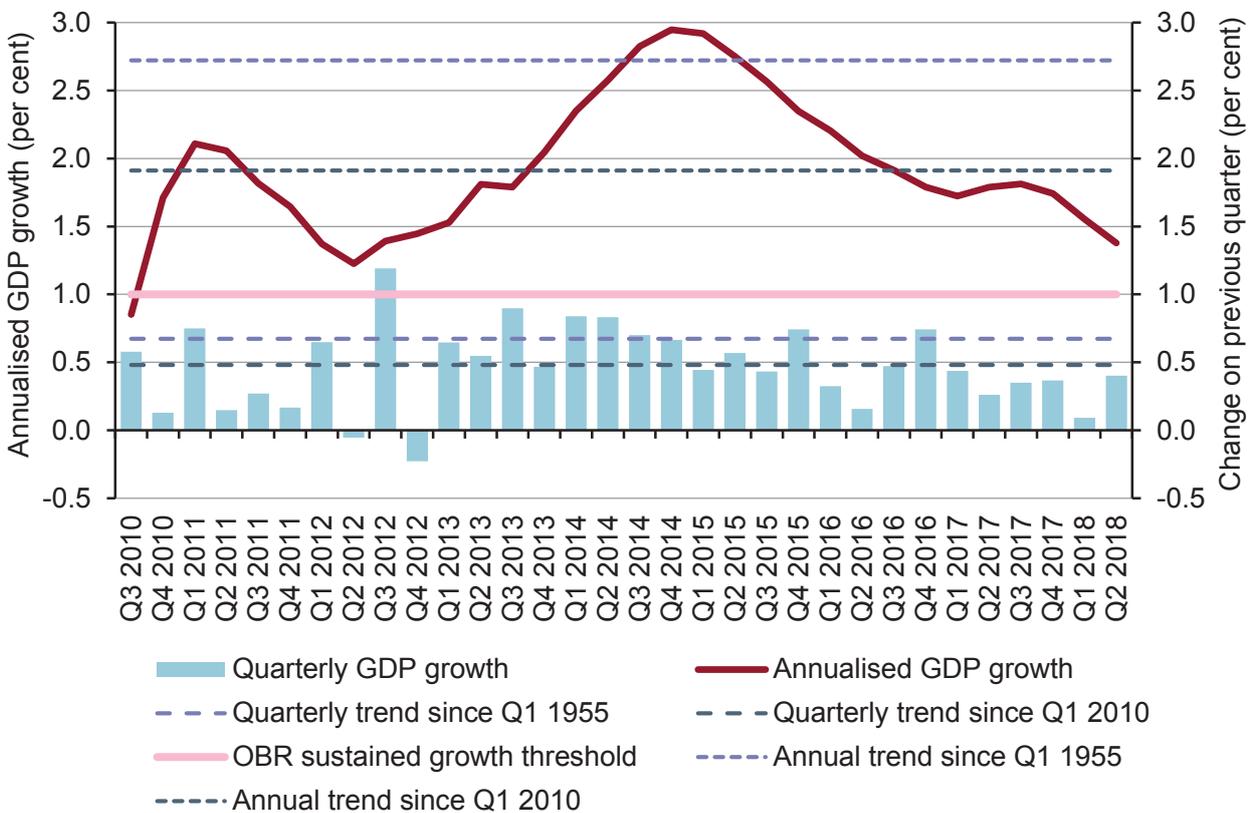
Source: OBR (2017a); Bank of England (2017a); and HM Treasury panel of independent forecasts (2017a and b). Forecasting ONS data on: GDP growth (ABMI), quarterly, seasonally adjusted, UK, 2017-2018.

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1.13 Looking ahead to 2018 and 2019, we expected similar growth to that in 2017. We now assess how the economy has turned out in the second half of 2017 and the first half of 2018. Figure 1.1 shows that quarterly GDP growth was around 0.4 per cent in the last two quarters of 2017, slowed to 0.1 per cent in the first quarter of 2018, but rebounded to 0.4 per cent in the second quarter of 2018. Although ONS (2018d) found some adverse impact of the severe wintry weather on construction and retail sales, it concluded that the effects were generally small with little impact observed elsewhere in the economy. In contrast, the Bank of England (2018d) reported that the Monetary Policy Committee judged that the adverse weather had depressed growth in the first quarter by 0.1 percentage points. The pick-up in the second quarter of 2018 was driven by the consumer and a sharp increase in retail sales.

1.14 Despite that recovery in the second quarter of 2018, quarterly GDP growth remained below its average since 2010 (0.5 per cent), which in turn was below its long-run average since 1955 (0.7 per cent).

Figure 1.1: GDP growth, UK, 2010-2018



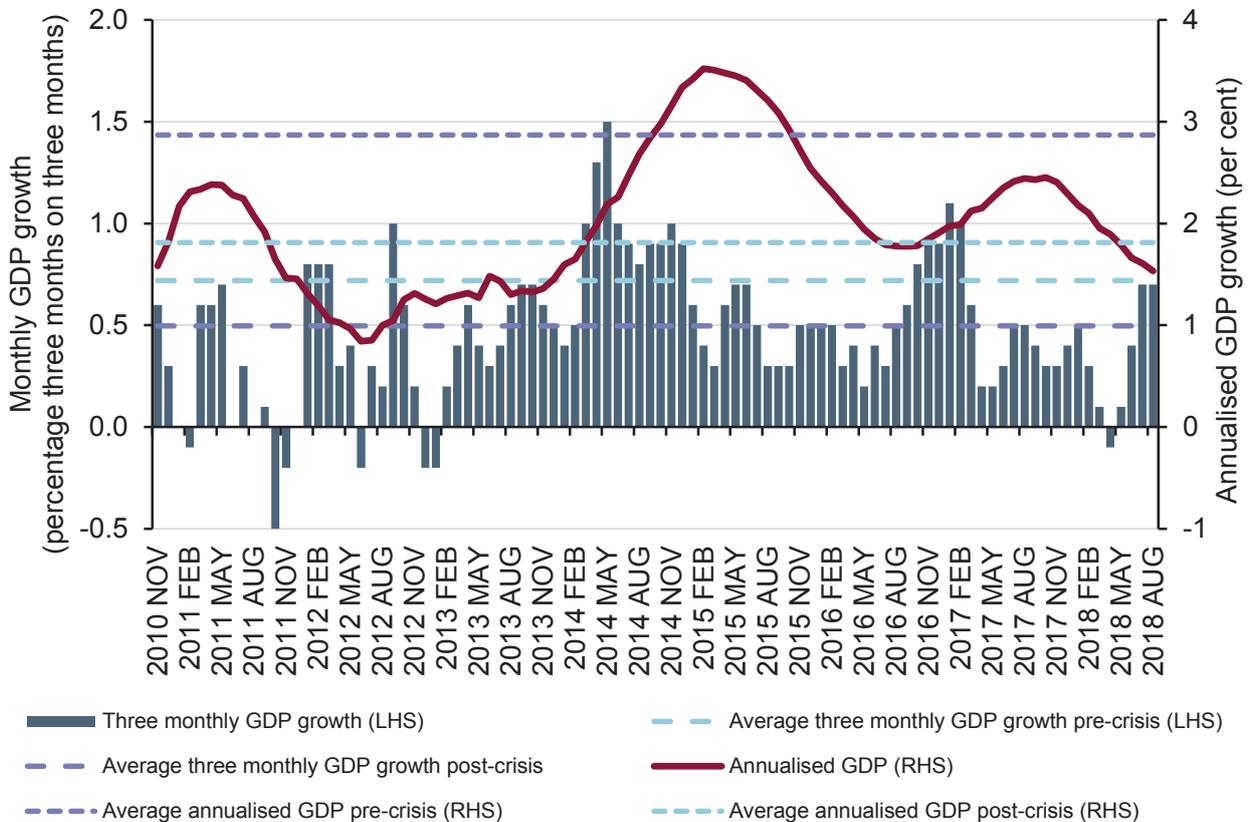
Source: LPC estimates using ONS data: quarterly change in GDP (ABMI), quarterly, seasonally adjusted, UK, Q3 2010-Q2 2018.

1.15 Figure 1.1 also shows that post-crisis annualised growth peaked at 2.9 per cent in the fourth quarter of 2014. It has since fallen to just 1.4 per cent in the second quarter of 2018. That is well below the long-run average since 1955 of 2.7 per cent and even below the trend since 2010 (1.9 per cent). It is also its weakest performance on this measure since the second quarter of 2012.

1.16 Since our 2017 Report, ONS has introduced a monthly GDP series. It is more timely than the quarterly series, with available data up to August 2018. The latest data, as shown in Figure 1.2, show a pick-up in growth after the end of the second quarter of 2018, with three-monthly GDP reaching 0.7 per cent in both July and August. The strength in August reflected strong growth in July and, to a

lesser extent, June – helped by the World Cup and the hot weather boosting food and drink sales. However, these initial estimates suggested that growth in the month of August, compared with July, was flat.

Figure 1.2: Monthly GDP growth, UK, 2010-2018



Source: LPC estimates using ONS data: monthly (three month on three month) GDP growth (ED3H), annualised monthly GDP (ECY2), monthly, seasonally adjusted, UK, November 2009 - August 2018.

1.17 That pick-up in growth, however, was not reflected in the annualised measure which has continued to slow, falling to 1.5 per cent in the second quarter of 2018. It has been below its post-crisis average since May, having spent the whole period from February 2014 to then at or above that average. It is still only about half the pace of growth experienced before the financial crisis.

1.18 Table 1.3 shows that growth in the second quarter of 2018 remained below its pre-crisis average and was much less balanced. In that previous period (1998-2007), consumer spending, investment and government expenditure had all grown at similar rates, with trade acting as a slight drag on growth (albeit with both exports and imports growing strongly). The latest data for the second quarter of 2018 suggest that investment, government spending and trade all subtracted from growth. The drag from trade reflected a large fall in goods exports in the first half of 2018. Growth was driven by a build-up of inventories and household consumption. Household consumption accounts for about 60 per cent of GDP, with investment and government spending each accounting for up to 20 per cent of GDP. Exports and imports each account for around 30 per cent of GDP, with net trade the difference between the two – and usually accounting for less than 2 per cent of GDP.

Table 1.3: Average quarterly growth for expenditure components of GDP, UK, 1998-2018

| Percentage changes on a quarter earlier | | | | | | | |
|---|--------------------|-------------|------------|------------|------------|------------|------------|
| | Quarterly averages | | | | | | |
| | 1998-2007 | 2008-09 | 2010-16 | 2017 | | 2018 | 2018 |
| | | | | H1 | H2 | | |
| Household consumption | 0.9 | -0.5 | 0.4 | 0.5 | 0.3 | 0.5 | 0.4 |
| Investment | 0.8 | -3.0 | 0.9 | 1.4 | 0.4 | -1.0 | -0.5 |
| Business investment | 1.2 | -3.4 | 1.1 | 0.8 | 0.5 | -0.5 | -0.7 |
| Dwellings investment | 0.3 | -4.7 | 1.3 | 2.3 | 1.3 | 0.0 | -0.2 |
| Government consumption | 0.8 | 0.5 | 0.2 | 0.0 | 0.1 | 0.2 | -0.4 |
| Change in inventories | 0.4 | -1.6 | 0.5 | 0.6 | -0.8 | -1.0 | 0.5 |
| Domestic Demand | 0.8 | -0.7 | 0.5 | 0.4 | 0.0 | 0.2 | 1.0 |
| Exports | 1.2 | -1.3 | 0.9 | 0.4 | 1.9 | -0.8 | -2.2 |
| Imports | 1.4 | -1.1 | 1.0 | 0.5 | 0.5 | -0.3 | -0.2 |
| GDP | 0.7 | -0.7 | 0.5 | 0.3 | 0.4 | 0.1 | 0.4 |

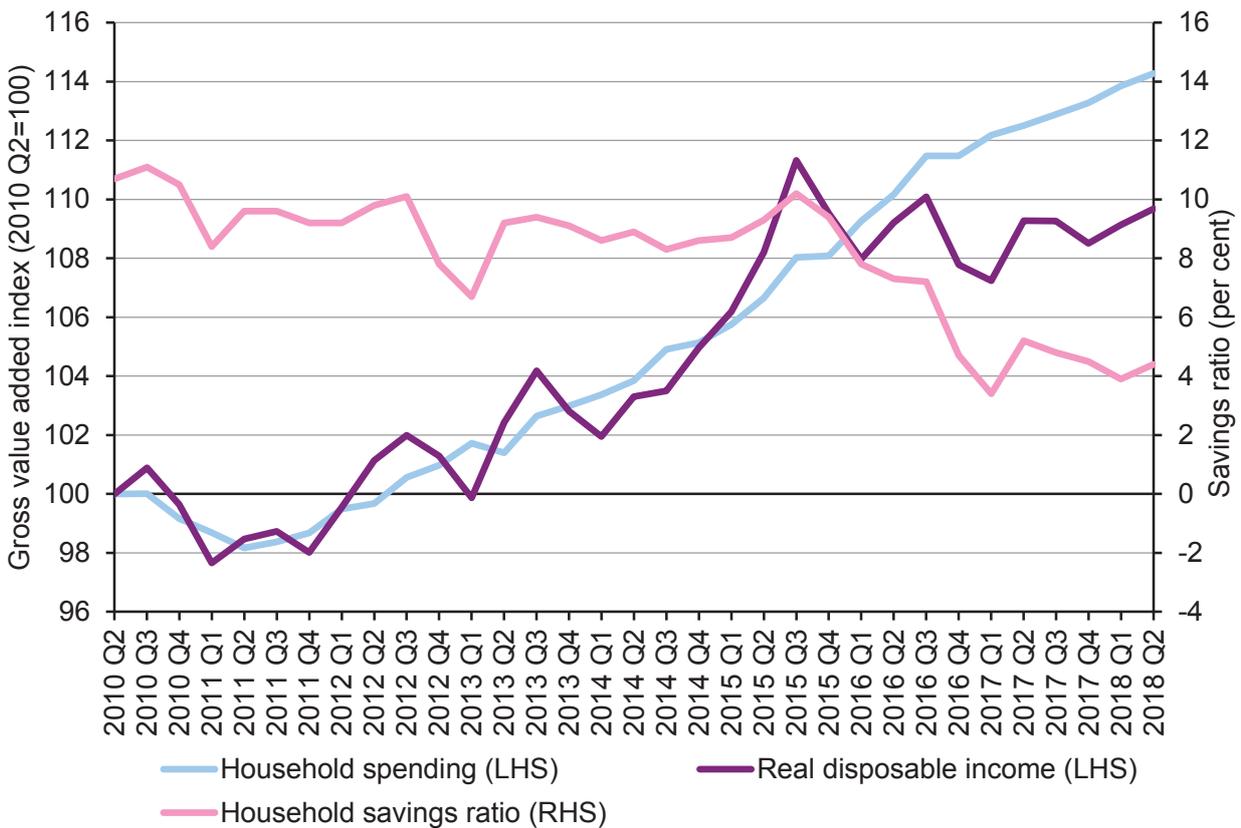
Source: LPC estimates using ONS data: household consumption (ABJR); total investment (NPQT); business investment (NPEL); dwellings investment (DFEG); government consumption (NMRY); change in inventories (CAFU); domestic demand (YBIM); exports (IKBK); imports (IKBL); and GDP (ABMI), quarterly, seasonally adjusted, Q4 1997-Q2 2018.

Consumer spending

1.19 A major determinant of household consumption is household income. Figure 1.3 shows that consumer spending grew relatively strongly and tracked the growth in real household spending from the second quarter of 2010 until the beginning of 2016. Since then, real household income has stagnated as a result of subdued nominal pay and an increase in inflation – following the depreciation of sterling related to the EU Referendum. However, household spending did not slow by the same extent.

1.20 With consumer spending outstripping incomes, Figure 1.3 also shows that the household savings ratio fell from the end of 2015 to the beginning of 2017. It has remained at around 4 per cent since. This is much lower than for most of the period since the end of the financial crisis (when it was generally just under 10 per cent). It is also much lower than in the period leading up to that crisis (when it was around 7 per cent).

Figure 1.3: Consumer spending, real household disposable income and the savings ratio, UK, 2010-2018

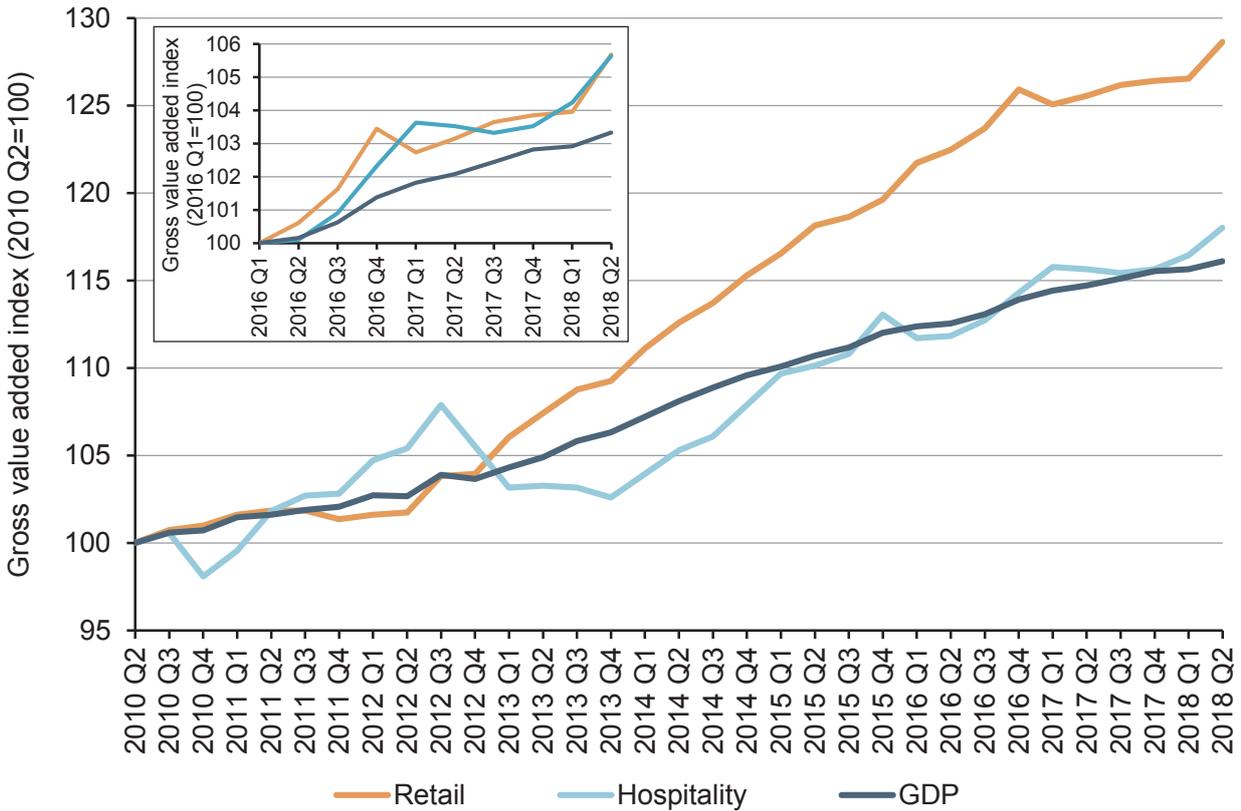


Source: LPC estimates based on ONS data: household spending (ABJR), real disposable income (NRJR), household savings ratio (NRJS), quarterly, seasonally adjusted, UK, Q2 2010-Q2 2018.

1.21 Future income prospects and interest rates will also influence spending. The Bank of England (2018a) reported that consumer confidence has been relatively stable since the middle of 2016, reflecting the record high employment levels combined with a slight uptick in pay growth. Despite the recent rises in the Bank Rate, mortgage rates have remained historically low. Moreover, with house prices continuing to increase, albeit more modestly, many households have benefitted from re-mortgaging deals that have helped maintain spending.

1.22 Two of the sectors most influenced by consumer spending and real household income, are retail and hospitality. They are also two of the most affected by the minimum wage. Figure 1.4 shows a measure of output (gross value added) for these sectors – retail (wholesale & retail trade; repair of motor vehicles and motorcycles) and hospitality (accommodation and food service activities). Since 2010, retail output growth has outstripped that of hospitality, which has generally tracked growth in the economy as a whole. The inset in Figure 1.4 focuses on the more recent period – since 2016 – and shows a slightly different picture, with both retail and hospitality growing faster than the economy in general.

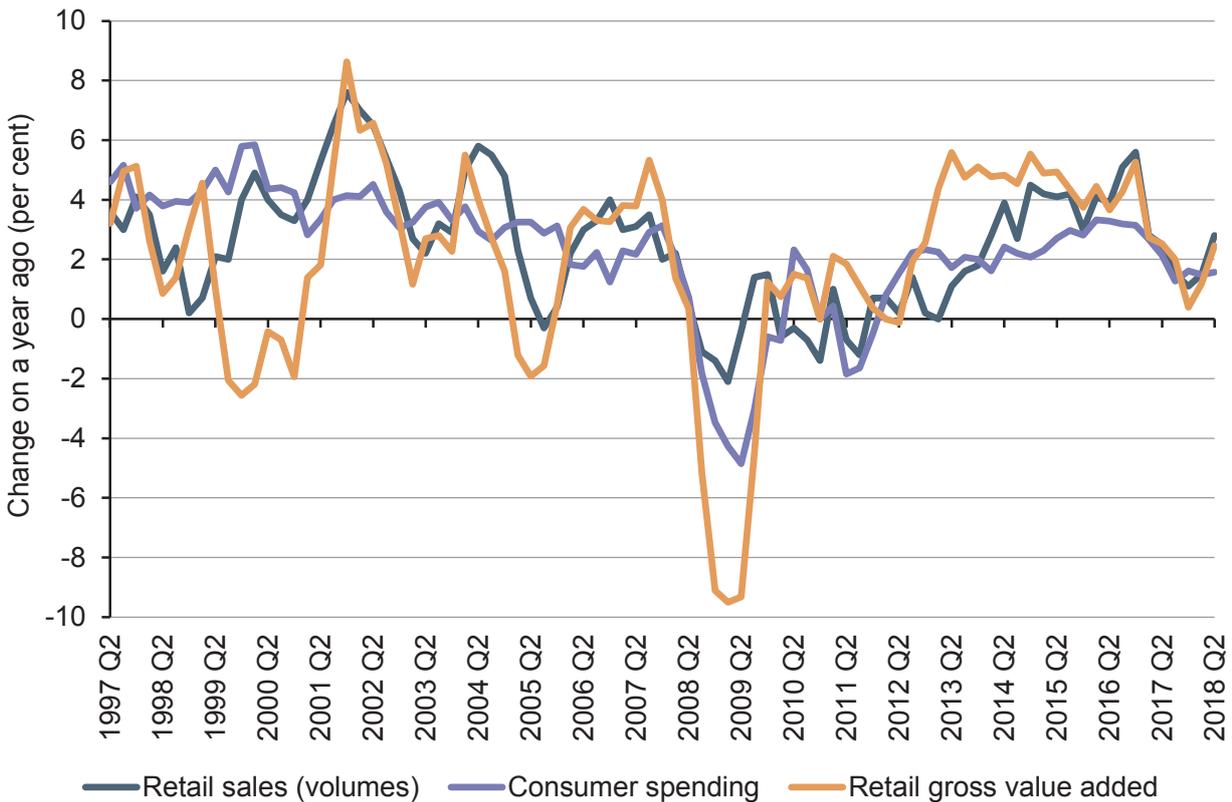
Figure 1.4: Retail and hospitality output (gross value added), UK, 2010-2018



Source: LPC estimates based on ONS data: household spending (ABJR), wholesale & retail trade (L2NE) and accommodation and food service activities (L2NQ), quarterly, seasonally adjusted, UK, Q2 2010-Q2 2018.

1.23 Looking at the retail sector in more detail, retail sales volumes generally closely track both retail output (measured by gross value added) and consumer spending over time. However, Figure 1.5 shows that retail sales growth has been stronger than consumer spending since the beginning of 2012. Although retail sales slowed sharply throughout 2017, there was a rebound in the first half of 2018, with retail sales volumes and output growing faster than consumer spending. As well as retail sales, consumer spending also includes spending on transport, utilities, insurance and housing.

Figure 1.5: Consumer spending, retail sales and retail output, UK, 1997-2018



Source: LPC estimates based on ONS data: household spending (ABJR), retail sales volumes (J5EB), and wholesale & retail trade (L2NE), quarterly, seasonally adjusted, UK, Q2 1996-Q2 2018.

1.24 Table 1.4 shows that retail sales volumes in the summer of 2018 grew faster than in the summer of 2017. However, within that overall pick-up in growth, there was much variation across different types of stores. This summer's retail sales growth was mainly driven by 'predominantly food stores' (mainly supermarkets) – with sales of food and alcohol boosted by the World Cup and the sunny weather. These volumes may also have been helped by the slowdown in shop price inflation, although that did not appear to have aided retail sales in 'predominantly non-food stores' and 'non-store retailing' (mainly mail-order), which weakened despite much lower inflation than a year ago.

1.25 Even within 'predominantly non-food stores', there was much variation. Sales volumes were particularly weak in 'textile, clothing and footwear stores'. In contrast, those in household goods improved strongly, having experienced falls at this time last year.

1.26 The sharp increase in the price of petrol and diesel, rising by over 11 per cent, did not prevent sales picking up after a fall last year, when prices had risen by around 5 per cent.

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Table 1.4: Change in average quarterly growth, by retail sector, UK, 2017-2018

| Percentage change for summer (June, July, August) on a year ago | Weight in 2018 | Quantity bought (volume) | | Amount spent (value) | | Shop price deflator | |
|--|-------------------|-----------------------------|-------------|-------------------------|-------------|---------------------|-------------|
| | | 2017 | 2018 | 2017 | 2018 | 2017 | 2018 |
| Predominantly food stores^a | 41.5 | -0.7 | 3.2 | 2.0 | 5.2 | 2.6 | 2.0 |
| Predominantly non-food stores^b | 41.3 | 2.2 | 1.5 | 5.0 | 2.0 | 3.1 | 0.6 |
| Non-specialised stores^c | 8.1 | 1.8 | 1.3 | 4.1 | 1.8 | 2.6 | 0.5 |
| Textile, clothing and footwear stores | 12.2 | 3.9 | -0.4 | 7.3 | 0.0 | 4.2 | 0.5 |
| Household goods stores | 8.5 | -0.5 | 5.8 | 2.6 | 6.6 | 3.5 | 0.4 |
| Other stores | 12.5 | 2.8 | 0.7 | 5.1 | 1.3 | 2.1 | 0.8 |
| Non-store retailing^d | 5.7 | 16.6 | 12.8 | 19.8 | 14.1 | 3.3 | 1.2 |
| Fuel stores | 11.5 | -0.2 | 2.9 | 3.3 | 15.1 | 5.0 | 11.3 |
| Total | 100.0 | 2.1 | 3.4 | 4.9 | 5.7 | 3.1 | 2.2 |

Source: ONS data: Retail sales in Great Britain: August 2018, Tables CPSA2, KPSA2 and ID1, three months on three months a year ago, seasonally adjusted, UK, August 2017-18.

Notes:

- a. Supermarkets, specialist food stores and sales of alcoholic drinks and tobacco.
- b. Non-specialised stores, textiles, clothing and footwear, household goods and other stores.
- c. Department stores.
- d. Predominantly mail-order.

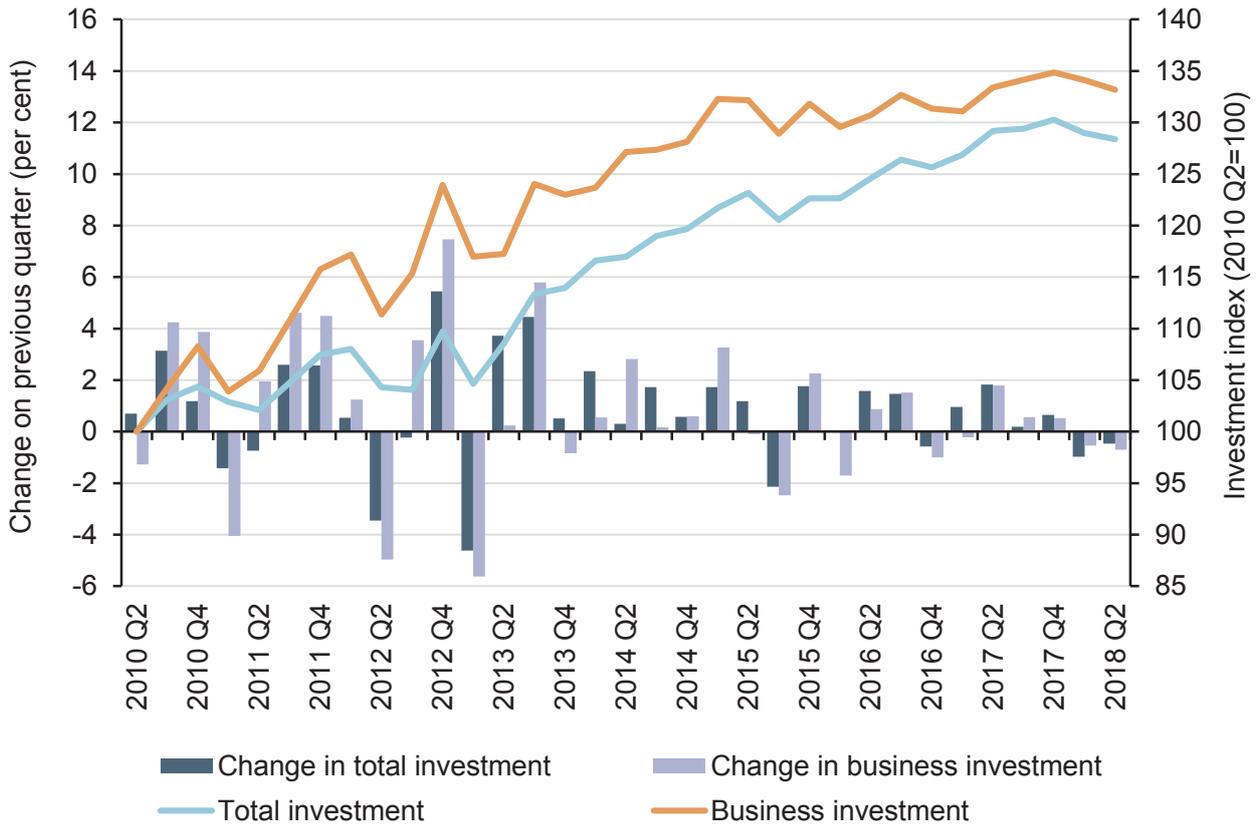
1.27 Overall, the most recent retail sales data has been encouraging and the recent headlines concerning closures and financial difficulties of several household names do not seem to have affected the headline aggregate data.

Investment

1.28 The long-term capacity of the UK economy will depend on the quantity and quality of investment. It can also enable productivity improvements. Investment accounts for up to around 20 per cent of GDP. As shown in Figure 1.6, business investment and total investment recovered quite strongly between 2010 and 2015 but have since slowed or stalled. Business investment was around 32 per cent higher in the first quarter of 2015 than it had been in the second quarter of 2010, but it has grown by only 1 percentage point between then and the second quarter of 2018. Total investment has followed a similar, albeit, slower path. It was around 28 per cent higher in the second quarter of 2018 than it was in the second quarter of 2010. This measure of investment, however, did not stall until around the first quarter of 2017. However, over the period from 2010 to 2018, investment has increased faster than GDP.

1.29 Figure 1.6 also shows that total and business investment have been particularly weak in recent quarters with both measures recording falls in the first two quarters of 2018. That followed very weak growth in the latter half of 2017.

Figure 1.6: Total and business investment, UK, 2010-2018



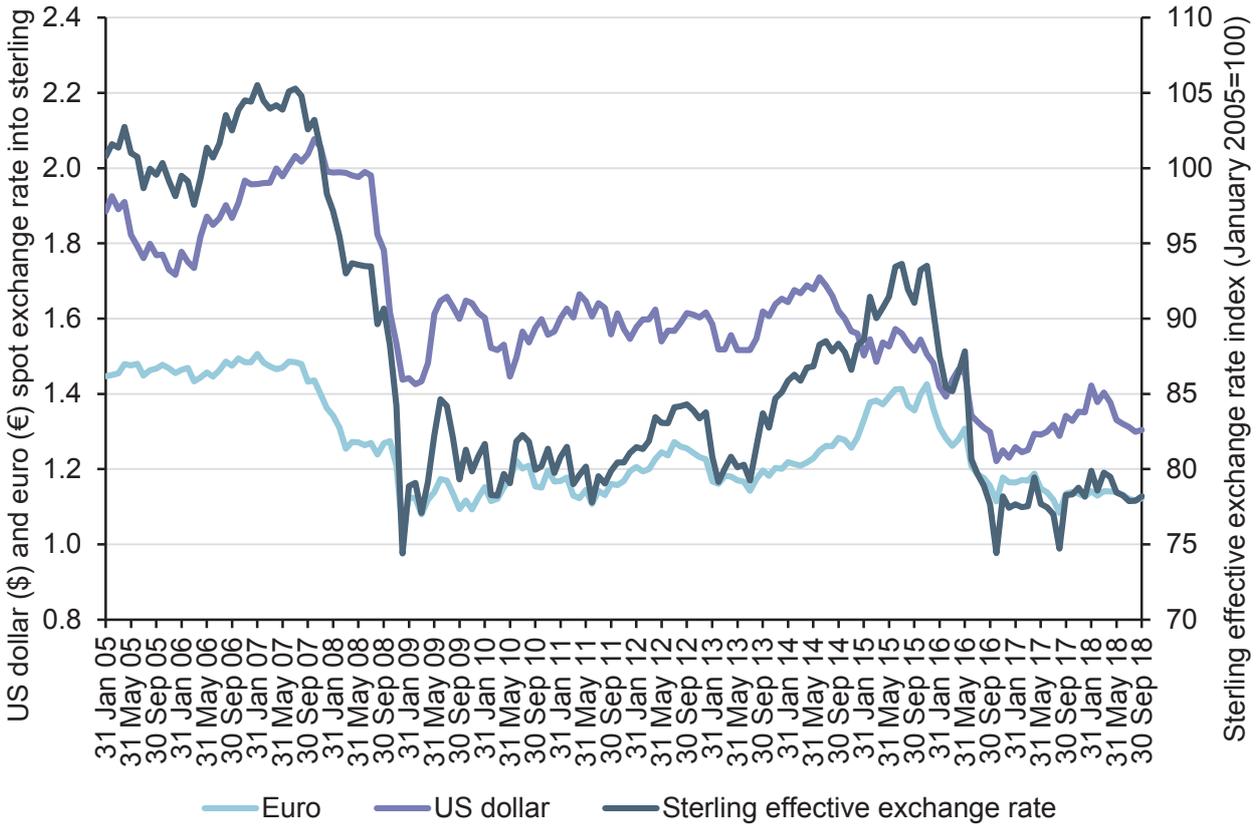
Source: LPC estimates using ONS data: total investment in whole economy (NPQT) and business investment in whole economy (NPEL), quarterly, seasonally adjusted, UK, Q1 2010-Q2 2018.

Trade

1.30 Trade is another key component of GDP growth. Exports of goods and services are influenced by the strength of global demand, while the demand for imports will be affected by the strength of the domestic economy. Exchange rates also play a role as they determine the price that importers and exporters receive. The Bank of England (2018a) reported that although global demand had weakened a little, it was relatively robust. Its measure of UK-weighted world GDP averaged around 0.6 per cent a quarter between 2014 and 2016, becoming slightly stronger since – averaging around 0.7 per cent. It was 0.7 per cent in the second quarter of 2018. This suggests that global demand is relatively strong and should have helped boost UK exports.

1.31 As shown in Figure 1.7, exchange rate movements since the end of 2015 should also have helped boost net trade. The sterling effective exchange rate has fallen by around 20 per cent with similar sterling falls against the dollar and the euro. These movements should have made the UK's exports cheaper and its imports from overseas more expensive. Thus, making UK products more attractive.

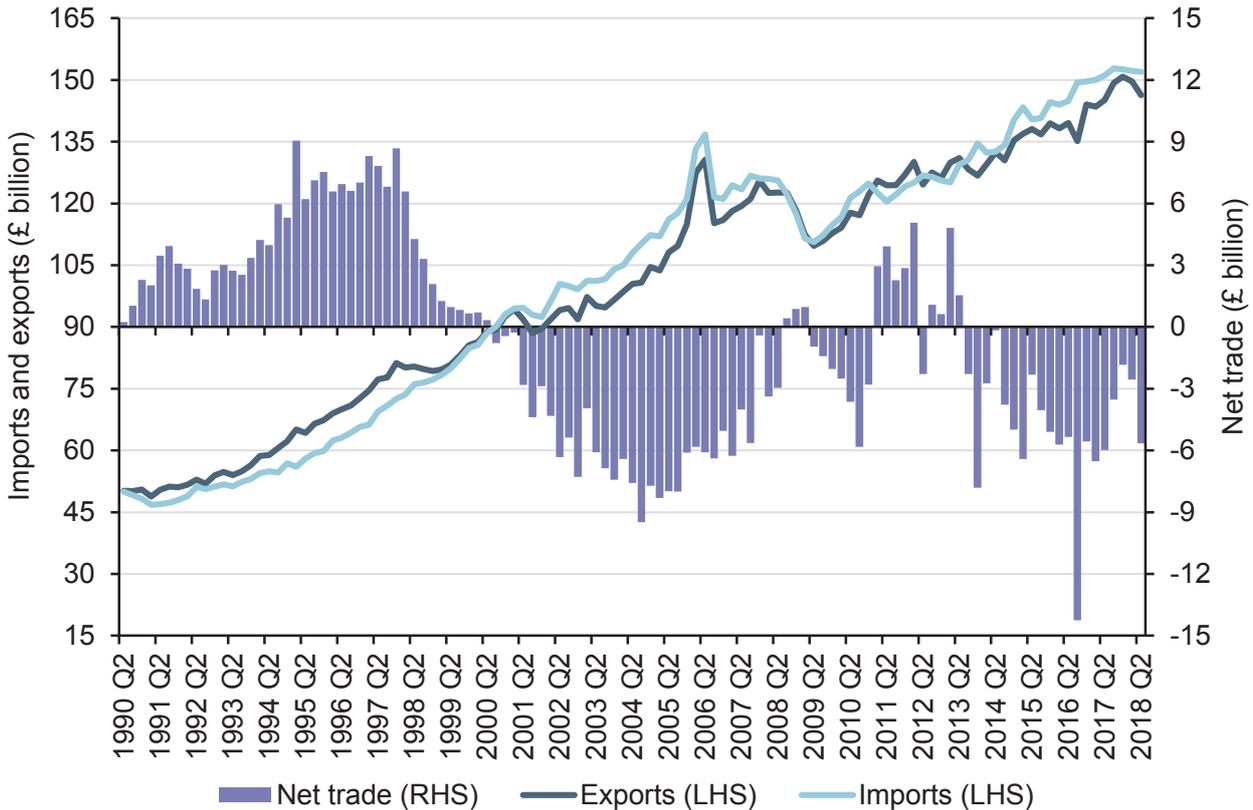
Figure 1.7: Value of sterling, UK, 2005-2018



Source: Bank of England data: Sterling effective exchange rate index (XUMLBK67), average in January 2005=100; Spot exchange rate, euro into sterling (XUMLERS); Spot exchange rate, US dollars into sterling (XUMLUSS), end month, January 2005-September 2018.

1.32 Indeed, that appeared to have been the case up to the end of 2017. Figure 1.8 shows that both imports and exports have increased since the end of the recession and are of similar magnitude (around £150 billion each quarter). Between the second quarter of 2010 and the fourth quarter of 2017, exports grew by 28.1 per cent to reach £150.8 billion, while imports only grew by 25.7 per cent, but were higher at £152.6 billion. Since then, both imports and exports have fallen. Exports have fallen in the first half of 2018 by nearly 3 per cent to £146.3 billion, while imports have only fallen back by 0.4 per cent to £152.0 billion, leaving a net trade deficit of £5.7 billion in the second quarter of 2018.

Figure 1.8: Exports, imports and net trade of goods and services, UK, 1990-2018



Source: LPC estimates based on ONS data: exports of goods and services (IKBK), and imports of goods and services (IKBL), quarterly, seasonally adjusted, UK, Q2 1990-Q2 2018.

Sectors

1.33 The strength of consumer spending in the growth data is also highlighted in Table 1.5 when looking at sectoral growth. In the first half of 2018, growth has been higher in services than in the economy as a whole. Within services, as we have already noted, retail and hospitality growth has been particularly strong. In contrast, manufacturing output has fallen in the first half of 2018, having grown faster than services in the second half of 2017. Construction output continued to be volatile with reasonably strong growth in the second quarter of 2018 offsetting some of the lost growth in the first quarter of 2018 that had, in part, been caused by the severe wintry conditions. Agricultural output had also been weak in the first half of 2018.

1.34 The recent imbalances in growth observed since the beginning of 2017 contrast with the more balanced recovery that had been experienced between 2010 and 2016. In that period, services had grown by 0.6 per cent on average over the quarter, as had hospitality, with retail growth a little higher. However, manufacturing, construction and agriculture all posted reasonably robust growth.

Table 1.5: Average quarterly growth, by sector, UK, 1998-2018

| Percentage changes on a quarter earlier | | | | | | | |
|---|-----------|---------|---------|------|-----|------|-------------|
| | Averages | | | | | | |
| | 1998-2007 | 2008-09 | 2010-16 | 2017 | | 2018 | 2018 |
| | | | | H1 | H2 | | |
| Services | 0.9 | -0.4 | 0.6 | 0.4 | 0.3 | 0.3 | 0.6 |
| Manufacturing | 0.1 | -1.4 | 0.3 | 0.4 | 1.1 | -0.1 | -0.7 |
| Construction | 0.5 | -2.1 | 0.9 | 1.8 | 0.6 | -1.6 | 0.8 |
| Agriculture | 0.2 | 0.0 | 0.4 | 1.3 | 0.3 | -1.3 | 0.1 |
| Retail and hospitality | 0.6 | -1.0 | 0.8 | 0.0 | 0.2 | 0.3 | 1.6 |
| Retail | 0.5 | -1.0 | 0.8 | -0.1 | 0.3 | 0.1 | 1.7 |
| Hospitality | 0.7 | -1.1 | 0.6 | 0.6 | 0.0 | 0.7 | 1.4 |
| Whole economy | 0.7 | -0.7 | 0.5 | 0.3 | 0.4 | 0.1 | 0.4 |

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 2018.

Macroeconomic summary

1.35 Although the economy overall performed as forecast, its composition was a little different – it was driven by the consumer rather than by investment and trade. That said, growth has slowed since the end of 2014 – increasing on average by around 0.4 per cent each quarter since the first quarter of 2016. This is slightly below its post-crisis average (0.5 per cent) and well below the pre-crisis average (around 0.7 per cent). However, there were more encouraging signs in the new monthly GDP series, with quarterly growth reaching that pre-crisis average in July and August 2018.

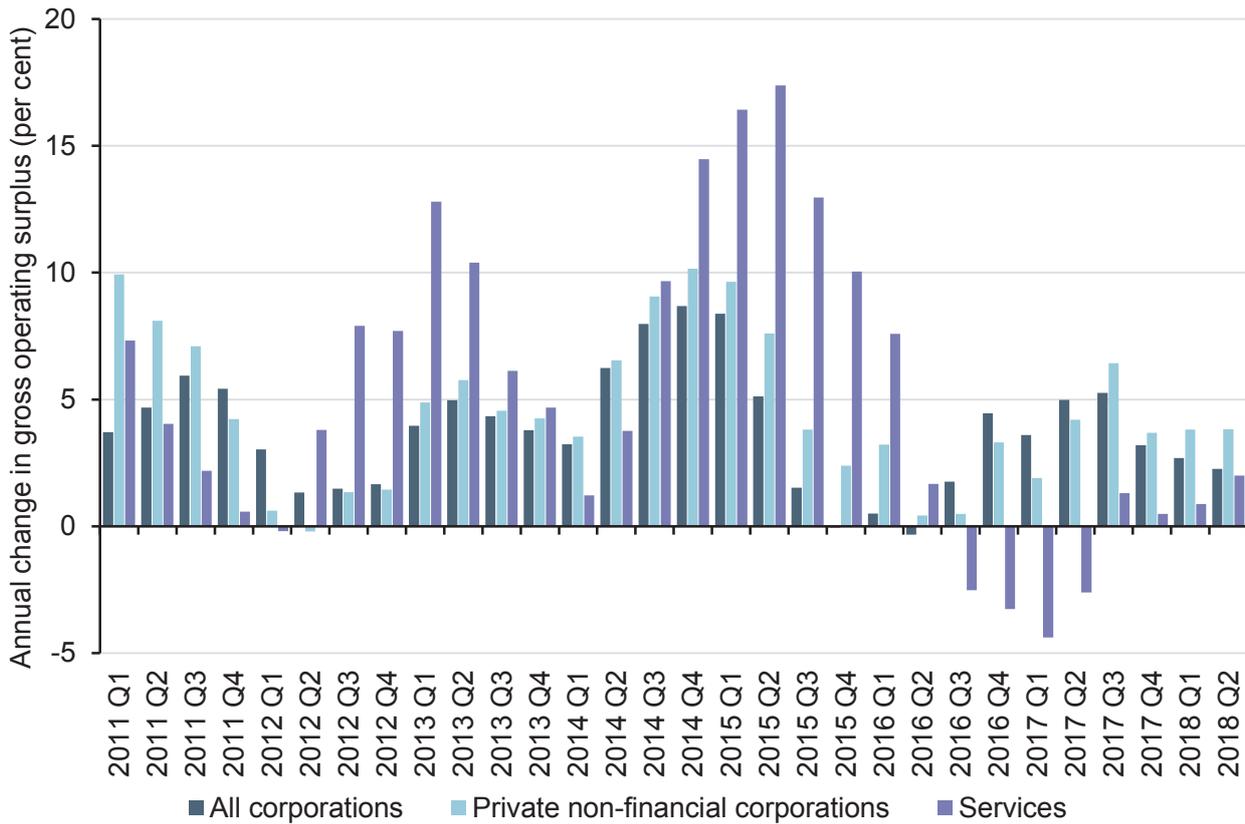
1.36 Having considered output, this chapter now goes on to consider profits and price inflation before looking at employment, productivity and pay in more detail.

Profits

1.37 An indicator of the affordability of minimum wage increases is profitability across the economy. Unfortunately, detailed sectoral and size of firm data are not available in a timely manner, though three measures of general profitability across the economy are – gross operating surplus, profit share and return on capital employed.

1.38 As shown in Figure 1.9, gross operating surplus grew strongly across the economy in 2014 and the first half of 2015, but then slowed until mid-2016. Since then gross operating surplus has grown solidly, but not as strongly as in that earlier period. Gross operating surplus for private non-financial corporations (that excludes banking and other financial corporations) has followed a similar path, although its growth has been stronger than that of the whole economy in each of the last four quarters (up to the second quarter of 2018). Gross operating surplus grew strongly in the service sector throughout 2014 and 2015, but has slowed in 2016 and actually fell on a four-quarter rolling basis in the second half of 2016 and the first half of 2017. It has since picked up but remains weaker than in the rest of the economy.

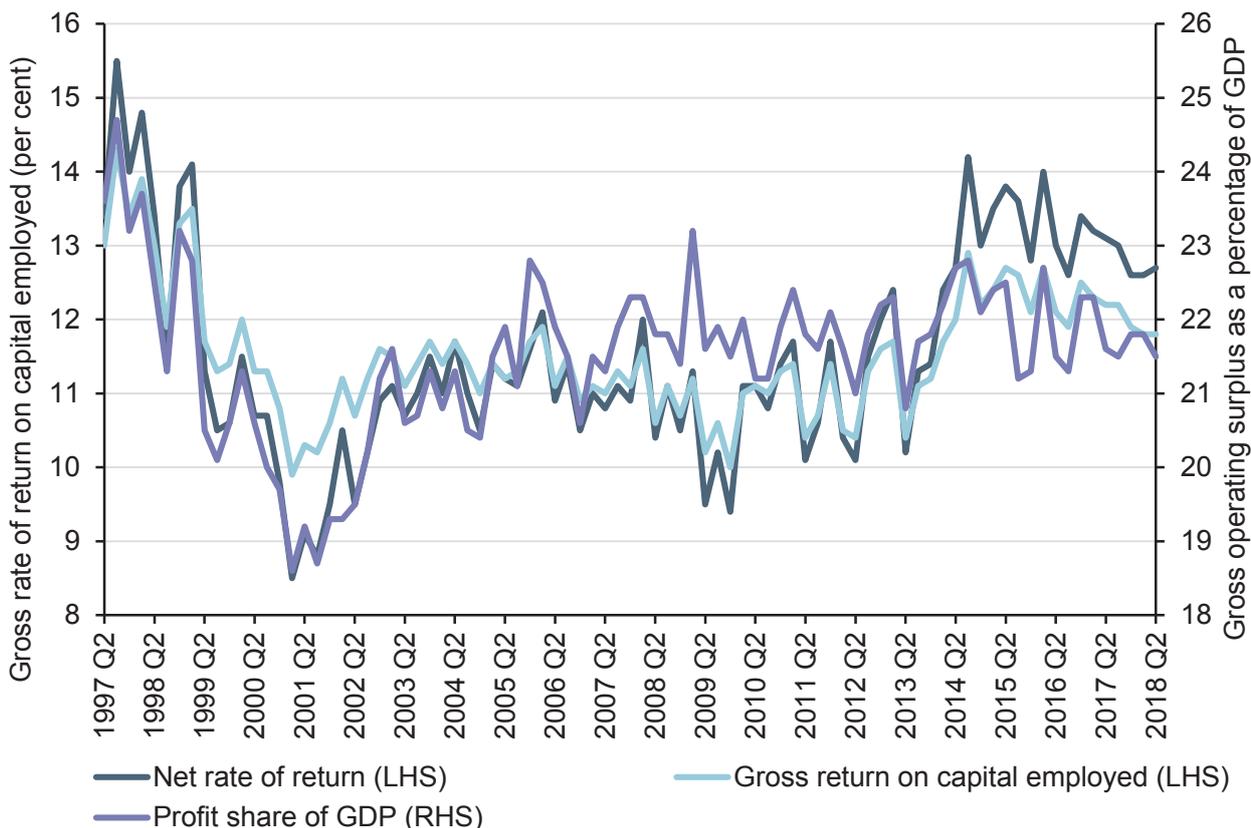
Figure 1.9: Gross operating surplus, UK, 2011-2018



Source: LPC estimates using ONS data: gross operating surplus for whole economy all corporations (CGBZ); non-finance private corporations (CAER); and services (LRYF), four quarter rolling average, seasonally adjusted, UK, Q2 2009-18.

1.39 Figure 1.10 displays recent trends for two other measures of profit – profit share (gross operating surplus as a proportion of GDP) and the gross rate of return on capital employed. It shows that the gross rate of return on capital employed fell more or less continuously from 14 per cent in 1997 to just above 9 per cent at the end of the recession (in the second quarter of 2009). It then bounced back to around 12 per cent in the third quarter of 2014 and has fluctuated narrowly around 12 per cent since then. The net rate of return has followed a similar pattern albeit at a slightly higher level since the end of 2014. The net rate of return is higher now than it has been since the late 1990s but has fallen back by around a percentage point since the middle of 2016.

Figure 1.10: Rate of return and profit share, UK, 1997-2018



Source: ONS: gross rate of return (LRXO); net rate of return (LRXP); and gross operating surplus as a percentage of GDP (IHXM), quarterly, UK, Q1 1997-Q2 2018.

1.40 The profit share of GDP fell from around 25 per cent in 1997 to a low of 18.5 per cent in the first quarter of 2001. It then increased to above 22 per cent at the end of 2005. It has remained just below this level (fluctuating between 21 and 22 per cent) ever since. None of these profit measures are suggestive of strong recent increases in corporate profitability. However, nor do they indicate much of a decline. In summary, profitability measures in 2018 appear similar to those in recent years.

1.41 We next look at inflation. It plays a key role in our analysis. Inflation reduces the purchasing power of earnings. We might be concerned that rising prices may reduce the purchasing power of the minimum wage. Many employers consider inflation when setting pay and it has traditionally played a central role in collectively bargained wage settlements. That said, the relationship between earnings growth and inflation has weakened in recent years. It can also be used as a measure to assess whether firms are passing higher wage costs onto consumers, as well as determining the ease with which firms can absorb increases in prices.

Inflation

1.42 Inflation has fallen gradually since the time of our last report, more or less as forecast. In October 2017, the inflation forecasts available to us and shown in Table 1.6 suggested that inflation, as measured by the Consumer Price Index (CPI), would peak at the end of 2017 at around 3 per cent before falling back towards the target of 2 per cent but would still be around 2.4-2.5 per cent at the end of 2018. The forecasts for the Retail Price Index (RPI) followed a similar trajectory, albeit at a

higher level. The out-turn for both of these inflation measures, up to the third quarter of 2018, has been in line with those forecasts.

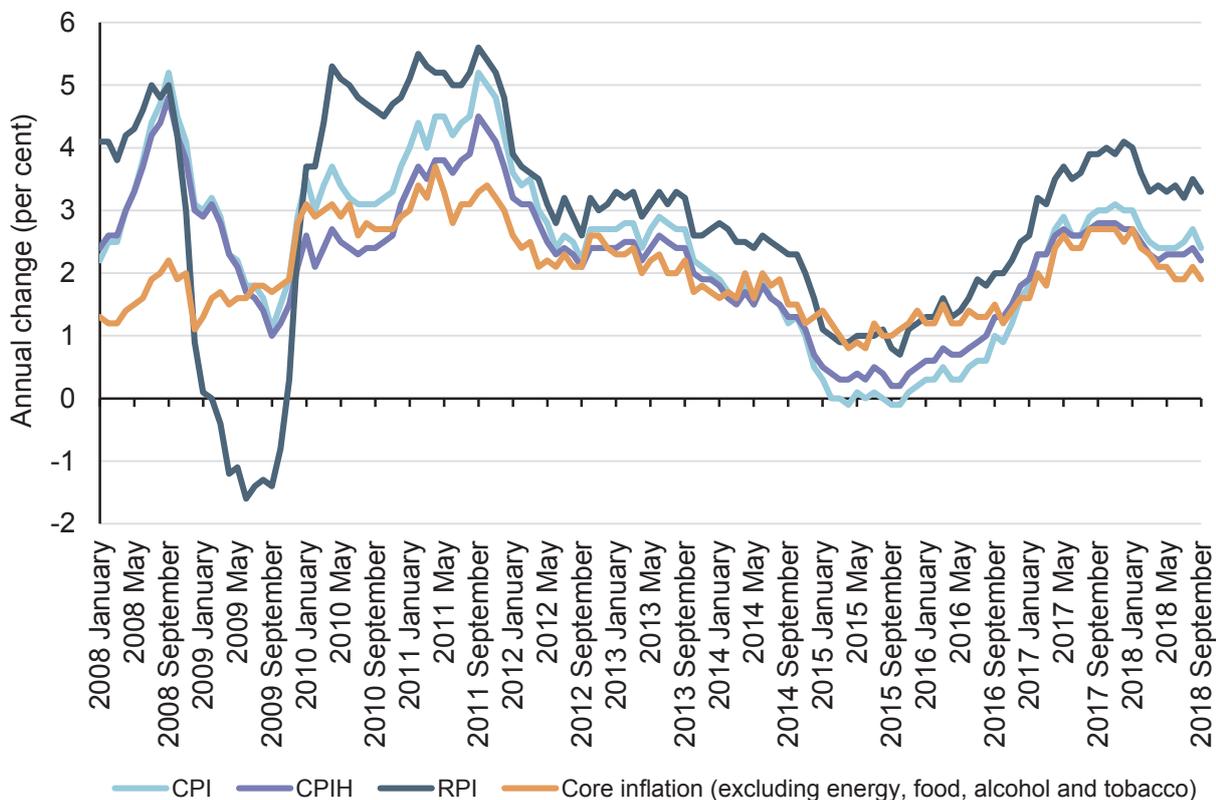
Table 1.6: Forecasts for CPI and RPI inflation, 2017-2019

| Forecasts for Q4 | Date of forecast | CPI (%) | | | RPI (%) | | |
|---|---------------------|------------|------------|------|------------|------------|------|
| | | 2017 | 2018 | 2019 | 2017 | 2018 | 2019 |
| Office for Budget Responsibility (OBR) | March 2017 | 2.4 | 2.3 | 2.0 | 3.7 | 3.6 | 3.1 |
| Bank of England (BoE) | August 2017 | 2.8 | 2.5 | 2.2 | | | |
| HM Treasury panel of independent forecasts | August/October 2017 | 3.0 | 2.4 | 2.2 | 3.9 | 3.2 | 3.2 |
| Outcome | | 3.0 | 2.5 | | 4.0 | 3.3 | |

Source: OBR (2017a); Bank of England (2017); and HM Treasury panel of independent forecasts (2017a and b). Forecasting ONS data on: consumer price index, CPI (D7G7); and retail price index, RPI (CZBH), quarterly, seasonally adjusted, UK, 2017-2019. Note: CPI and RPI inflation for 2018 are data for Q3 2018.

1.43 Inflation fell sharply at the turn of the year, as shown in Figure 1.11, but is little changed over the last six months, with all measures moving broadly in line with each other. The CPI rate of inflation was at 2.4 per cent in September 2018, down from a recent peak of 3.1 per cent in November 2017. The new headline measure – Consumer Price Index including housing costs (CPIH) inflation, which includes an estimate of owner occupier housing costs and council tax – was at 2.2 per cent in September 2018. The RPI rate of inflation was at 3.3 per cent in September 2018, down from a peak of 4.1 per cent in December 2017. Core inflation, which is unaffected by the short-term fluctuations in food and energy prices, was at 1.9 per cent in September 2018.

Figure 1.11: Inflation, UK, 2008-2018

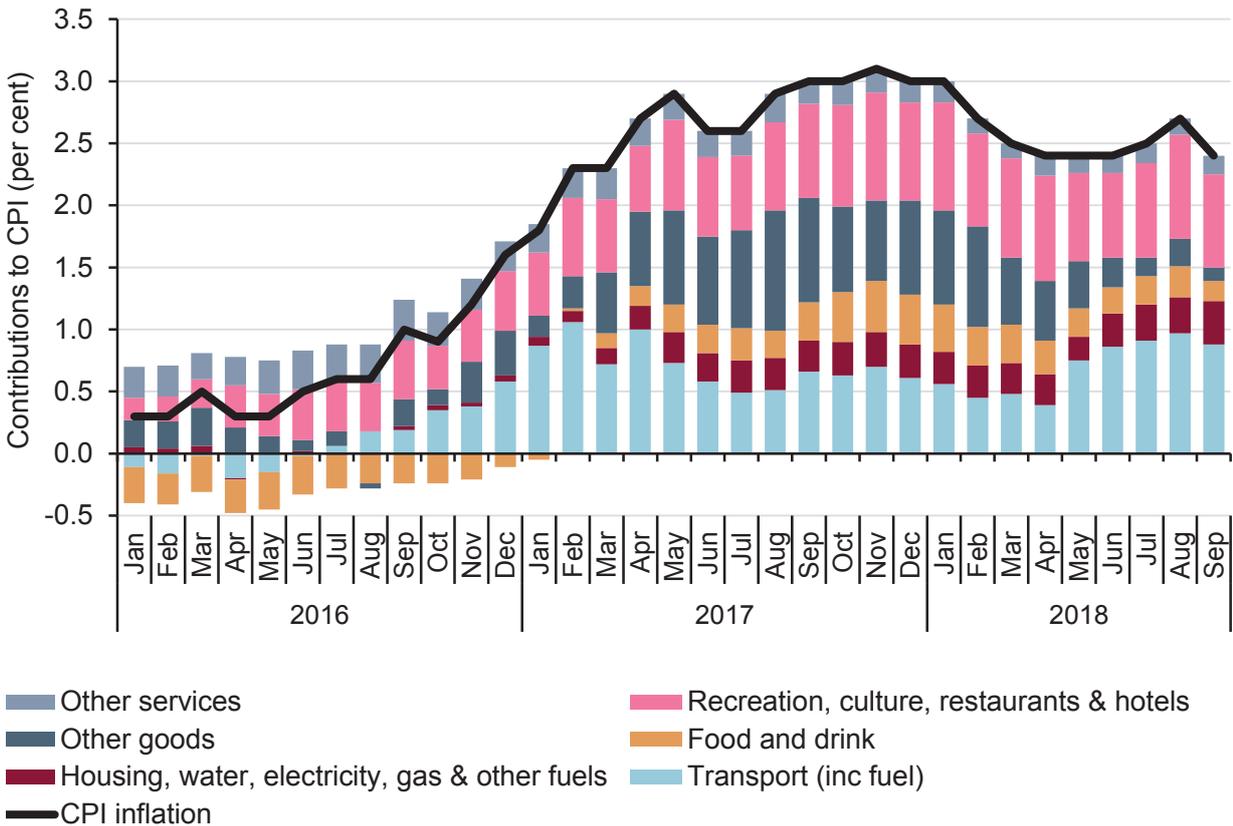


Source: ONS: CPI (D7G7), CPIH (L550), RPI (CZBH), and core inflation (DK08) monthly, not seasonally adjusted, UK, 2008-18.

National Minimum Wage

1.44 As we have already noted, the forecasts available to us at the time of our 2017 Report have proved to be unusually accurate, with inflation expected to fall back gradually from the start of 2018, as the increases in fuel and energy prices in 2017 dropped out of the annual comparison. CPI inflation was expected to remain above 2 per cent until 2019. Figure 1.12 shows that rising petrol prices since March have prevented inflation from falling further, although this has been offset, to an extent, by lower price inflation for food and drink alongside small falls in some clothing and footwear prices.

Figure 1.12: Contributions to CPI inflation, UK, 2016-2018



Source: LPC estimates using ONS data: CPI (D7G7), monthly, not seasonally adjusted, UK, 2016-18.

1.45 We now go on to look at the current state of the UK labour market.

Labour market

1.46 In this section we assess the strength of the labour market. We are particularly concerned about any adverse impact of rising minimum wages on employment. Changes in employment can arise from changes in the number of people employed, changes in the number of jobs they do, and changes in the number of hours they work. We also consider unemployment, inactivity, vacancies and redundancies as other indicators of labour market strength. In recent years we have seen a strong performing labour market with: increasing numbers of people in work; growth in the total number of jobs in the economy; and more hours worked overall. Across the last year, we have seen the labour market continue to perform well with record employment (levels and rates) although the growth in employment has recently shown some signs of slowing down.

1.47 We start by looking at the forecasts we had available in October 2017. All three of the main forecasts we used – from the OBR, the Bank of England, and the HM Treasury panel of independent forecasts under-estimated the strength of employment growth in 2017, with workforce jobs actually growing by 1.3 per cent in 2017. But all three had forecast job growth to slow in 2018 to around 0.4 per cent – the actual growth in workforce jobs in 2018. In contrast, the forecasts had expected unemployment to pick up in 2018 as employment growth slowed. The latest data suggest that the unemployment rate has continued to fall and was 4.0 per cent in the second quarter of 2018.

Table 1.7: Forecasts of employment and unemployment, 2017-2019

| Forecasts | Date of forecast | Employment growth (%) | | | Unemployment rate (%) | | |
|--|---------------------|-----------------------|------------------|------------------|-----------------------|------------------|------|
| | | 2017 | 2018 | 2019 | 2017 | 2018 | 2019 |
| Office for Budget Responsibility (OBR) | March 2017 | 0.6 ^a | 0.4 ^a | 0.4 ^a | 4.9 | 5.1 | 5.2 |
| Bank of England (BoE) | August 2017 | 1.0 | 0.5 | 0.8 | 4.4 | 4.5 | 4.5 |
| HM Treasury panel of independent forecasts | August/October 2017 | 1.1 | 0.4 | | 4.4 | 4.6 | 4.9 |
| Outcome to date | | 1.3 | 0.4 ^b | | 4.4 | 4.0 ^c | |

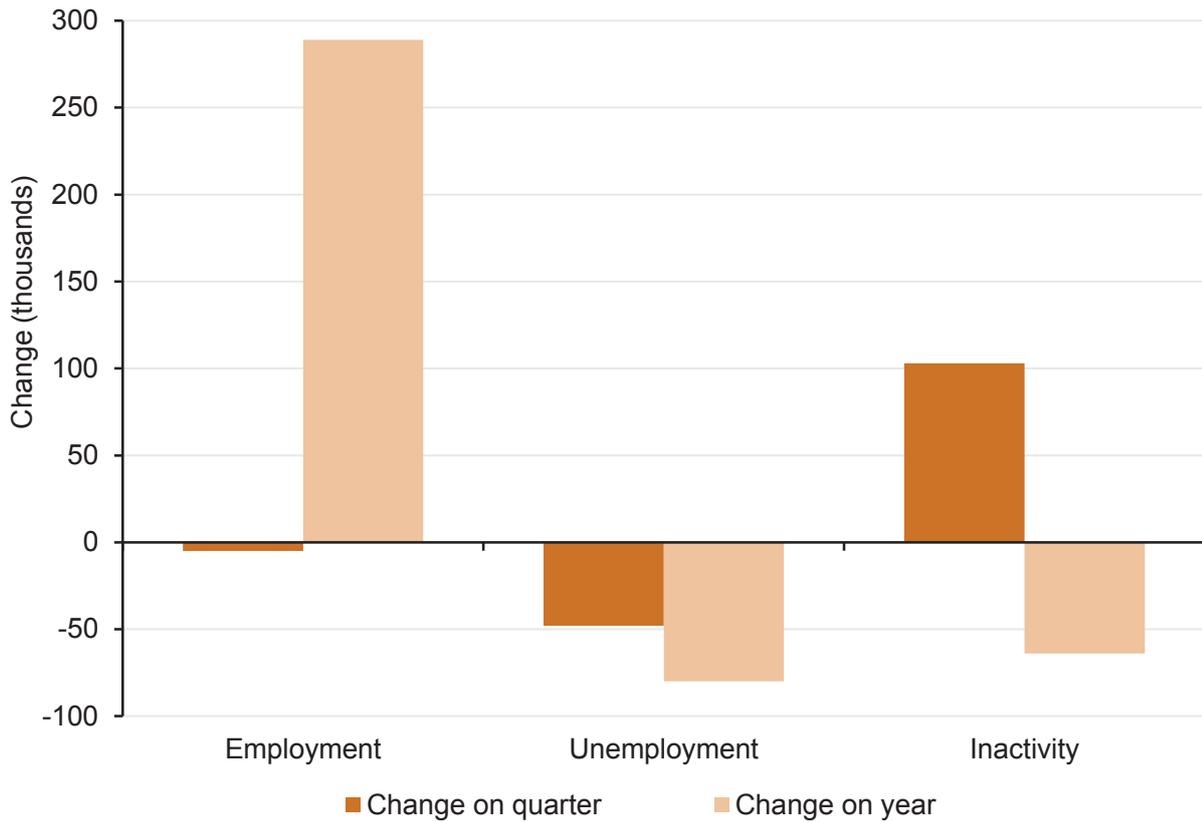
Source: OBR (2017a); Bank of England (2017); and HM Treasury panel of independent forecasts (2017a and b). Forecasting ONS data on: Workforce jobs growth (DYDC) for the whole year and ILO unemployment rate (MGSX) for the fourth quarter, quarterly, seasonally adjusted, UK, 2017-2019.

Notes:

- OBR forecasts growth in total employment (MGRZ).
- Workforce jobs (DYDC) data for 2018 was published in June 2018.
- Unemployment rate for 2018 is that for August 2018.

1.48 Figure 1.13 shows the latest headline estimates for employment, unemployment and inactivity (for the three months to August 2018) and makes comparisons with both the previous quarter (the three months to May 2018) and the previous year (the three months to August 2017). Employment changed little in the last three months but saw an increase of 289,000 (or 0.9 per cent) on the year. Unemployment (those people not in work but seeking and available to work) fell when compared with both the last quarter (down 48,000) and the last year (down 80,000). Inactivity (those not working and not seeking or available to work) rose sharply by 103,000 in the latest quarter, yet was still 64,000 lower than a year ago.

Figure 1.13: Headline changes to employment, unemployment and inactivity, UK, 2017-2018

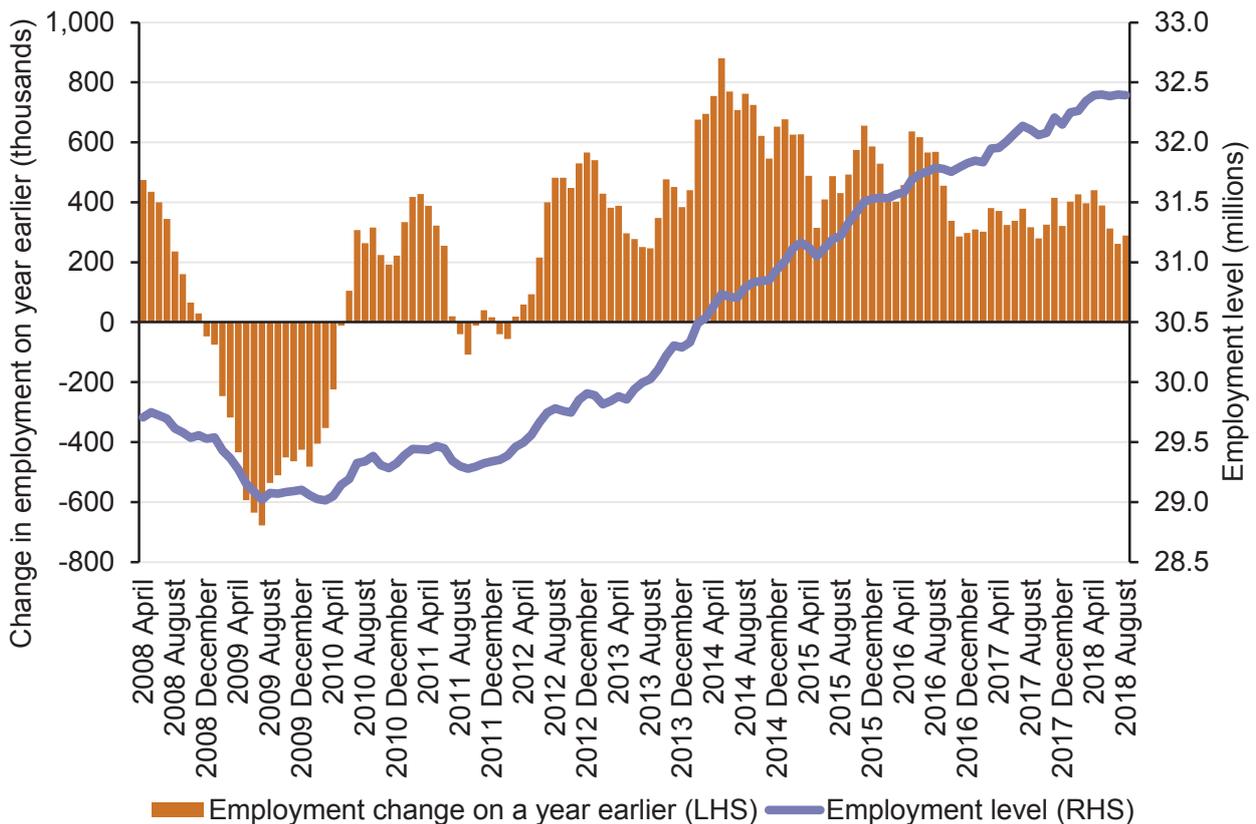


Source: LPC estimates using ONS data: total employment (MGRZ), unemployment (MGSC) and inactivity (LF2M), monthly, seasonally adjusted, UK, 2017-2018.

Employment and employee jobs

1.49 Figure 1.14 shows how employment has changed over the last decade. Since 2010 we have seen strong growth with the number of people in work increasing by over 3 million to 32.4 million. Employment has continued to grow since the introduction of the National Living Wage in 2016 with an additional 800,000 people in work in August 2018 compared with March 2016.

Figure 1.14: Employment, UK, 2008-2018



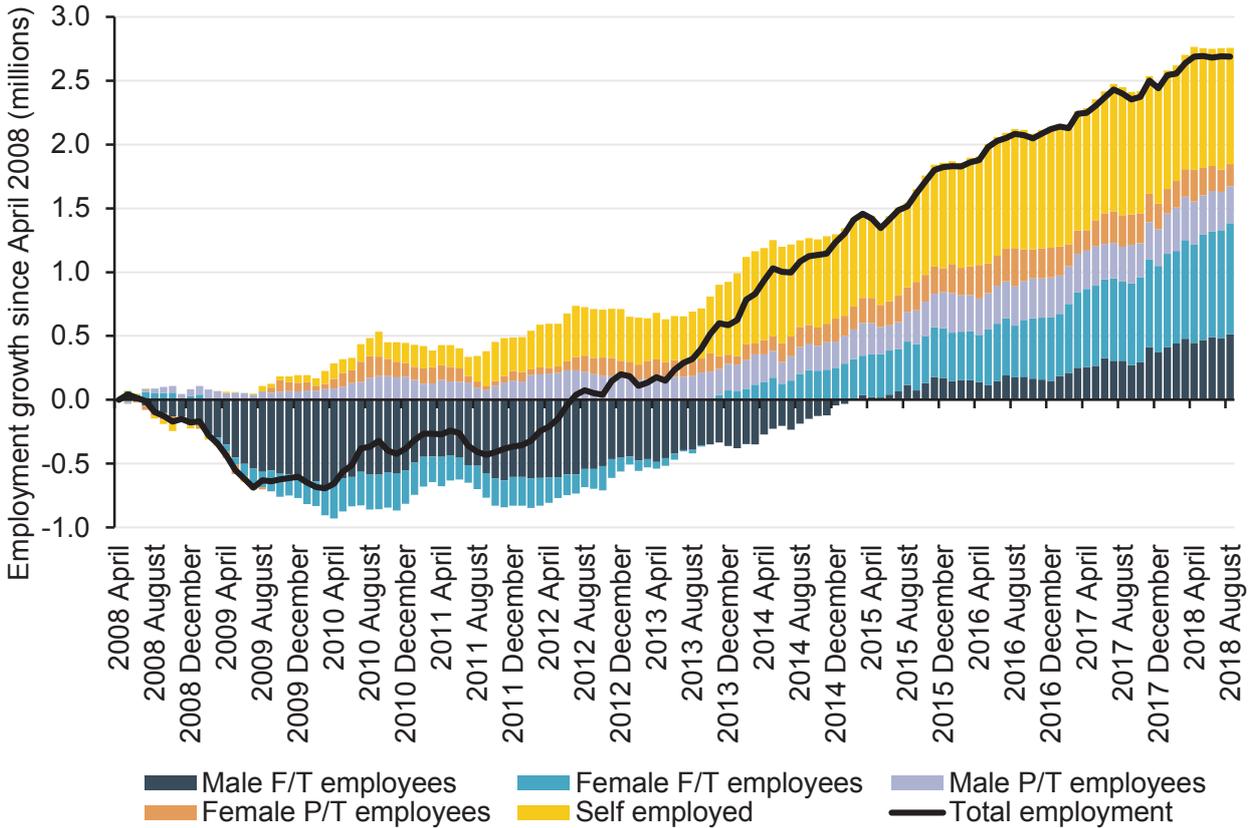
Source: LPC estimates using ONS data: total employment (MGRZ), monthly, seasonally adjusted, UK, 2008-2018.

1.50 There have been some signs of this growth stalling with total employment levels flat for several months now – total employment in the three months to August 2018 was the same as in the three months to April. With employment rates standing at 75.5 per cent, down slightly on recent record highs, and some concerns around the longer-term supply of labour (from non-UK workers) starting to show in the data, it will be interesting to see whether this is just a blip or whether the UK has reached a peak in its recent period of employment growth.

1.51 Figure 1.15 shows how in the immediate aftermath of the recession jobs were primarily lost by men working full-time. It took four years for employment levels to get back to where they were in April 2008. During this post-recession period employment growth was initially driven by self-employment. The notable increase in self-employment since April 2008 peaked in August 2017 at around 1 million but has since fallen back by 100,000, though still 24 per cent higher in August 2018 than the pre-crisis level. Self-employment now stands at 14.7 per cent of total employment, down from 15.1 per cent a year ago.

1.52 In more recent years overall employment growth has largely been driven by the increase in full-time employment, especially from women. In the last year the number of female employees working full-time increased by 250,000 (3.1 per cent) to 8.25 million and there are half a million more women working full-time in the labour market since the introduction of the NLW. The number of male full-time employees increased by over 200,000 (1.7 per cent) to 12.3 million in the last twelve months.

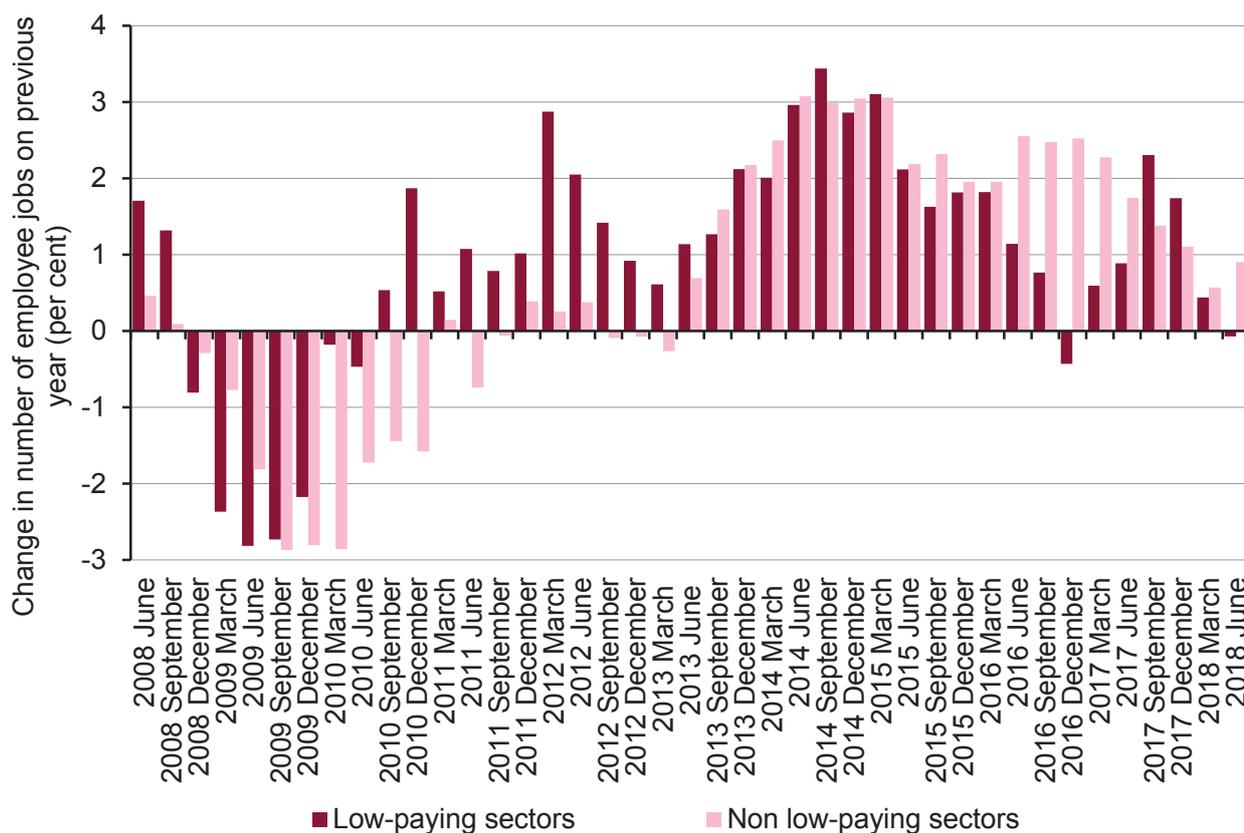
Figure 1.15: Growth in employment, UK, 2008-2018



Source: LPC estimates using ONS data: total number of people in employment (MGRZ); full-time female employees (YCBM); full-time male employees (YCBL); part-time female employees (YCBP); part-time male employees (YCBO); and total self-employed (MGRQ), monthly, seasonally adjusted, February 2008-August 2018.

1.53 As well as counting the number of people in employment to measure the strength of the labour market, we can also count the number of jobs. The total number of jobs will be higher than the total number of people in employment, as workers may have more than one job. On this job measure, Figure 1.16 highlights a slowdown in growth in both low-paying and non low-paying sectors through the second half of 2017 and into 2018. It also shows that since the introduction of the NLW, job growth has tended to be lower for low-paying sectors than for non low-paying ones.

Figure 1.16: Annual change in employee jobs, by sector, GB, 2008-2018



Source: LPC estimates using ONS data: employee jobs series, every three months, not seasonally adjusted, GB, 2007-2018.

1.54 In the year to June 2018, the total number of employee jobs grew by 0.4 per cent. This was in line with the forecasts available in October 2017 from the OBR, Bank of England and HM Treasury panel of independent forecasts.

1.55 Headline employment data showed employment growth continuing into 2018. We next look at how this changed by employment type, age, status and contract to better understand where that growth has been concentrated.

1.56 Table 1.8 shows that between August 2017 and August 2018 total employment grew overall by 289,000, with the number of employees increasing by 400,000 while self-employment fell by almost 100,000. There are now over 800,000 more people in employment since April 2016, when the NLW was introduced.

1.57 Most of the employment growth in the last year has come from older workers, with an additional 290,000 aged 50 or more in work. There has been a slight fall of 34,000 for younger workers (aged 16-24), but this partly reflects a fall in the population for this age group of 23,000 over the same period.

1.58 As already mentioned, there has been strong recent growth in the number of full-time employees. The number grew by over 450,000 in the year to August 2018 while the number of part-time employees fell by 55,000. There was also an increase in the number employed on a permanent contract, which was 480,000 higher than in August 2017. Over the same period, the number of temporary employees fell by 79,000.

National Minimum Wage

Table 1.8: Employment by status, age, hours and permanency, UK, 2016-2018

| Thousands | Latest Data (Aug 2018) | Change on Aug 2017 | Change on Apr 2016 |
|--------------------------|------------------------|--------------------|--------------------|
| Employment | 32,394 | 289 | 811 |
| Employees | 27,470 | 401 | 792 |
| Self-employed | 4,761 | -94 | 59 |
| Other | 163 | -17 | -40 |
| Employment by Age | | | |
| 16-17 | 335 | -9 | -20 |
| 18-24 | 3,499 | -25 | -86 |
| 25-34 | 7,484 | 24 | 262 |
| 35-49 | 10,815 | 8 | 75 |
| 50-64 | 9,020 | 232 | 523 |
| 65+ | 1,241 | 60 | 58 |
| Work Status | | | |
| Full-time Employees | 20,533 | 456 | 875 |
| Part-time Employees | 6,937 | -55 | -83 |
| Contract Type | | | |
| Permanent Employees | 25,949 | 480 | 907 |
| Temporary Employees | 1,521 | -79 | -115 |

Source: LPC estimates using ONS data: employment (MGRZ); employees (MGRN); self-employment (MGRQ); other combines unpaid family 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); 35-49 (YBTX); 50-64 (LF26); and 65 and over (LFK4), monthly, three month average, seasonally adjusted, UK, 2016-18.

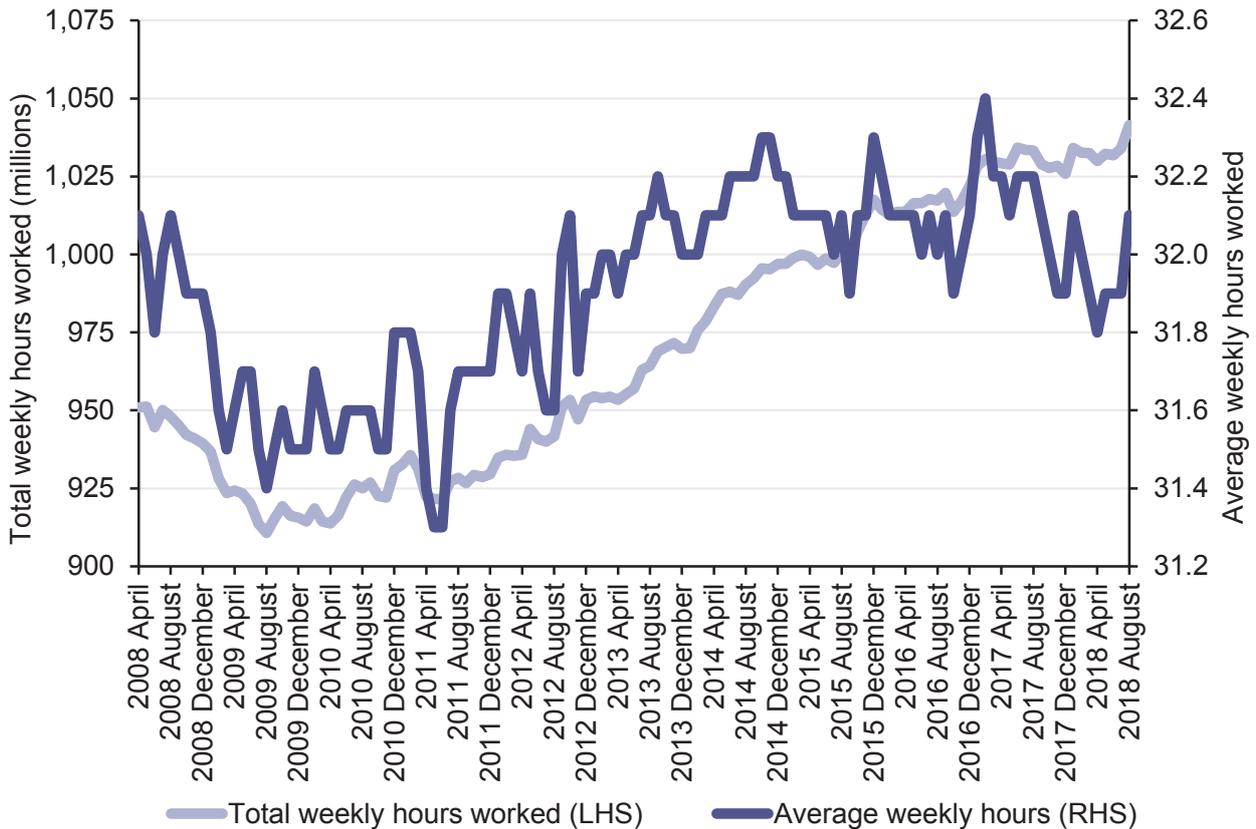
Notes: Totals may not sum due to rounding.

Hours

1.59 Instead of cutting the number of people employed or the number of jobs, firms can respond to minimum wage increases by changing hours worked. With evidence showing that firms are more likely to cut hours worked than reduce employment in response to rising wage costs, hours worked may be a more timely indicator of any impact on employment. Figure 1.17 shows that total hours worked have increased over time, to be expected with growing overall numbers in employment as already shown. However, total hours also depend on the average number of hours worked and Figure 1.17 shows that average hours has fluctuated in recent years.

1.60 In 2017 during a period of growing employment we saw a reduction in average hours worked. This resulted in little change overall in total hours worked. In recent months however, we have seen a slight uptick in average hours worked which, despite a corresponding period of flat employment levels, has resulted in a slight increase in total hours worked.

Figure 1.17: Total and average weekly hours worked, UK, 2008-2018

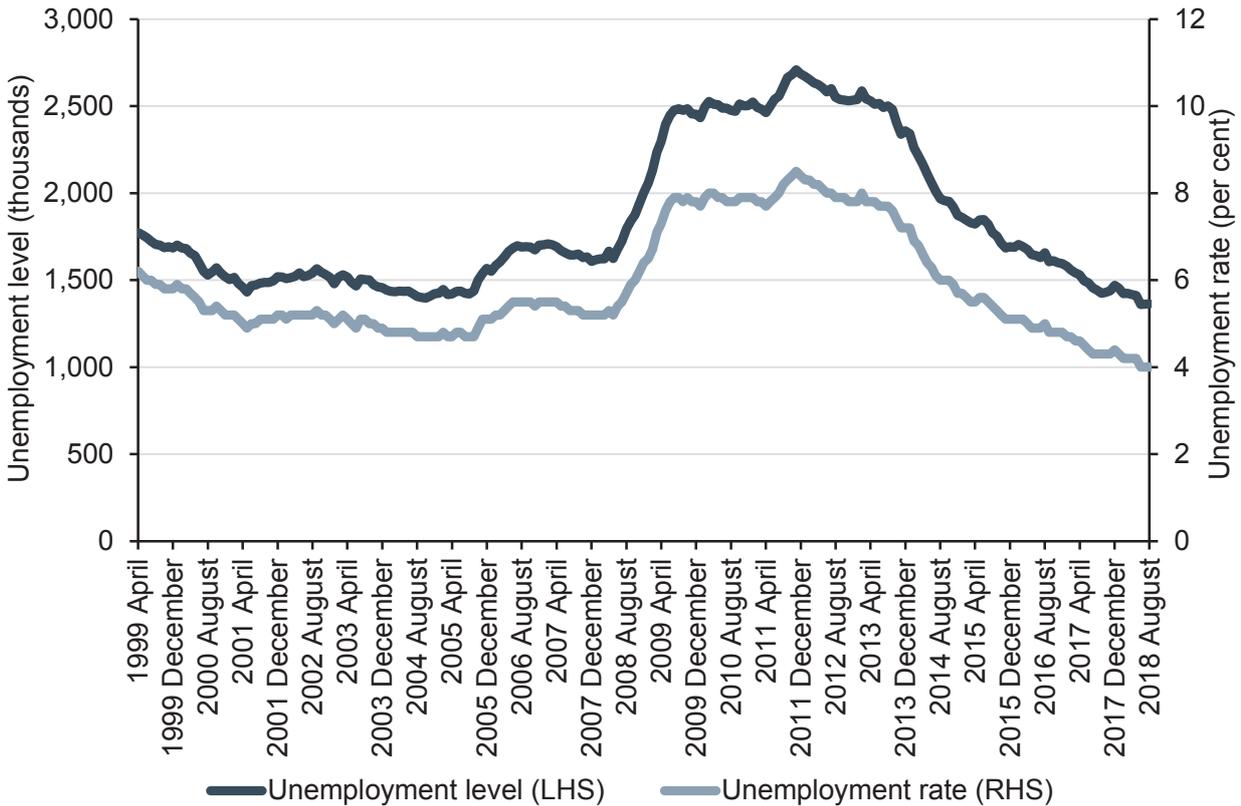


Source: ONS data: total weekly hours (YBUS) and average actual weekly hours (YBUV), quarterly, seasonally adjusted, UK, February 2008-August 2018.

Unemployment

1.61 Unemployment is another indicator of the strength of the labour market – it is defined as the number of people actively looking for work in the last four weeks and available to start within the next two weeks. Figure 1.18 shows how unemployment levels and rates have changed since the introduction of the National Minimum Wage in 1999. Pre-recession unemployment was around 1.5 million or 5 per cent of those economically active (in employment or unemployed). In the immediate aftermath of the recession, unemployment increased to around 2.5 million or 8 per cent before it started to fall back in 2013. Unemployment has continued to fall and in August 2018 stood at 1.36 million, below its pre-recession level despite a substantial increase in the labour force. The unemployment rate is now just 4.0 per cent, the lowest it has been since January 1975. This is below the forecasts made at the time of our 2017 Report and the Bank of England's equilibrium rate of 4¼ per cent and is an indication of a tightening in the labour market as spare labour capacity is absorbed.

Figure 1.18: ILO unemployment level and rate, aged 16 and over, UK, 1999-2018



Source: ONS data: 16 and over unemployment levels (MGSC); 16 and over unemployment rates (MG SX); monthly, seasonally adjusted, UK, 1999-2018.

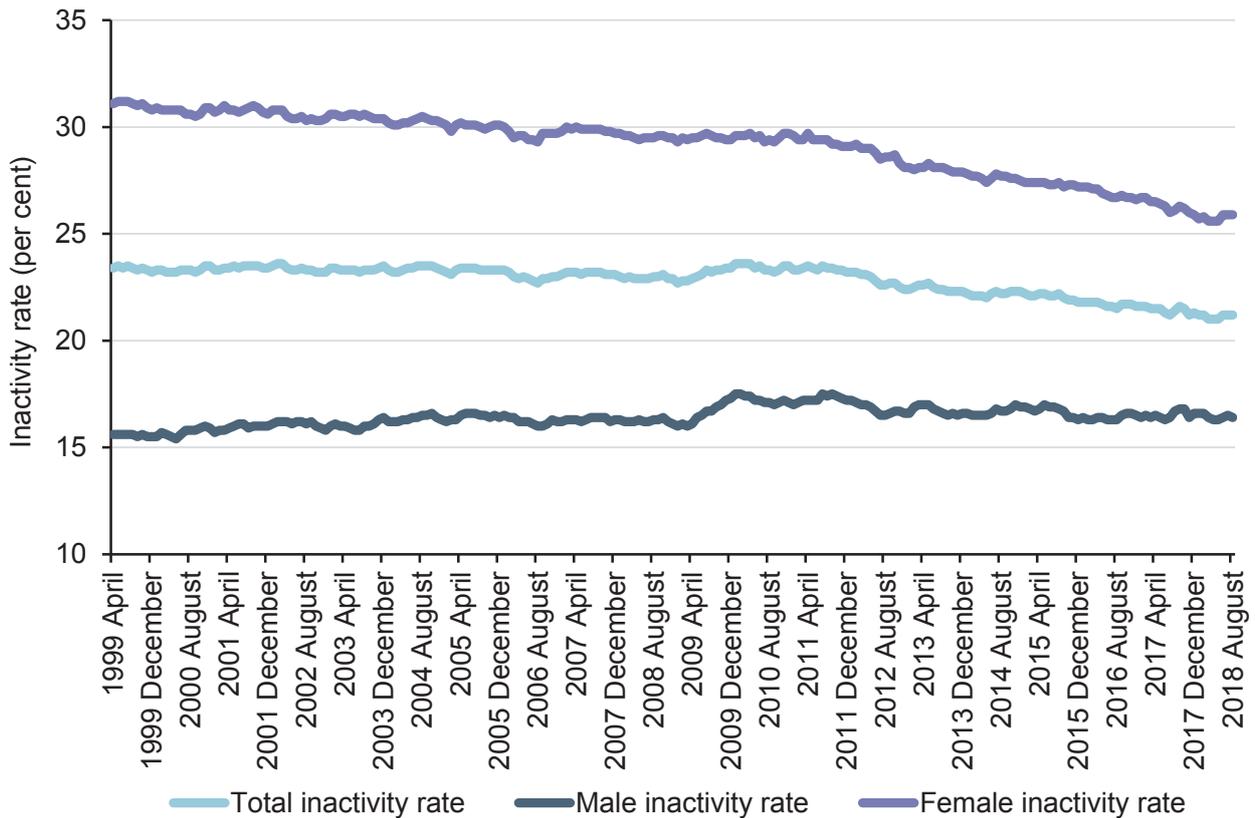
Inactivity

1.62 Those people who are neither in employment nor unemployed (seeking and available to work) are termed as economically inactive. Inactivity can be broken down into a number of categories by reason – the largest of which are: students; looking after family/home; long-term sick; and retired. It also includes discouraged workers – those wanting a job but who are no longer actively looking. Total inactivity can also be split between those wanting and those not wanting a job.

1.63 In the three months to August 2018, there were 8.75 million people aged 16-64 inactive. This was 100,000 higher than in the previous quarter, but 65,000 fewer than a year previous. There were 1.9 million stating that they wanted a job, down almost 100,000 (4.8 per cent) compared with August 2017.

1.64 Figure 1.19 shows changes in the aggregate inactivity rates for both males and females of working age since the introduction of the minimum wage. While the inactivity rate for men has increased slightly over the last twenty years, the rate for women has fallen from 31 per cent to 26 per cent. This largely reflected greater female participation in the labour market across the period, partly in response to the changing State Pension Age – with the number of females aged 16-64 who were inactive due to retirement falling by 7.2 per cent in the year to August 2018.

Figure 1.19: Inactivity rates, aged 16-64, UK, 1999-2018

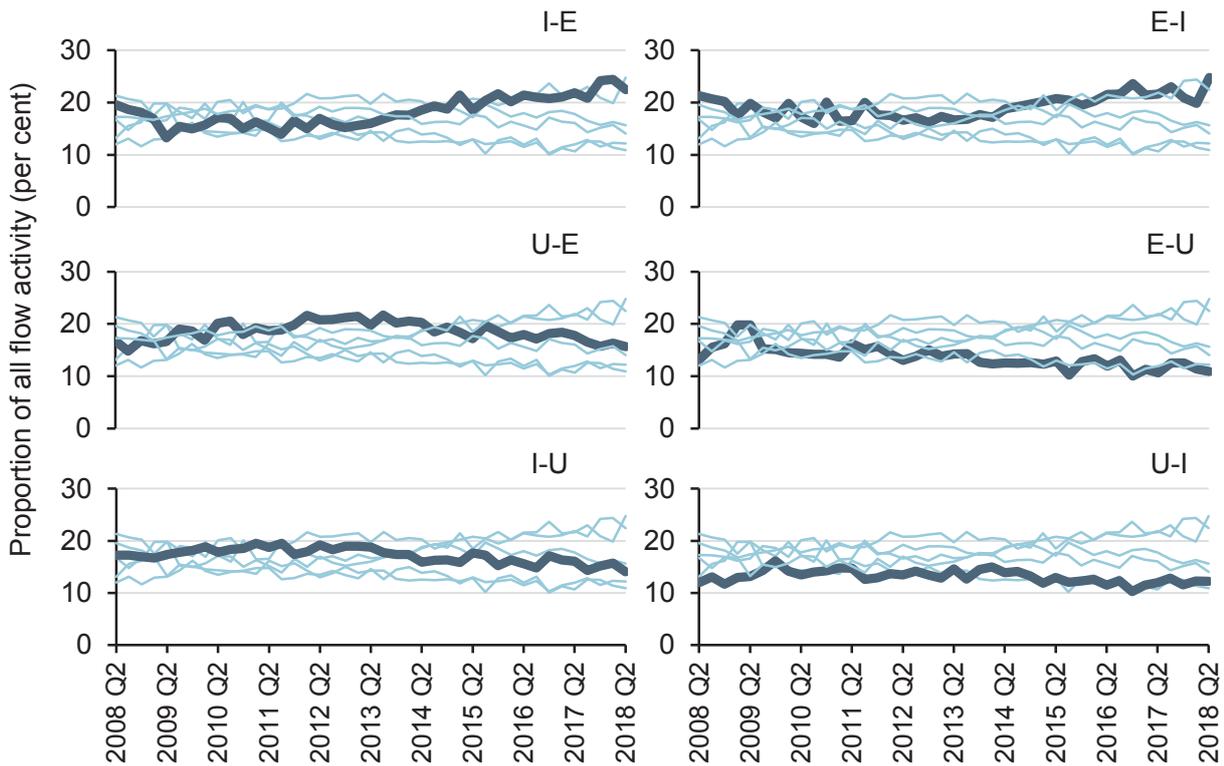


Source: LPC estimates using ONS data, total 16-64 inactivity rate (LF2S), male 16-64 inactivity rate (YBTM), female 16-64 inactivity rate (LF2T) monthly, seasonally adjusted, UK, 1999-2018.

Labour market status flows and job moves

1.65 We have looked at the headline labour market indicators of employment, unemployment and inactivity, and examined recent changes in the total stocks for each. ONS data on the net changes between these three labour market states are also available each quarter. These give a better understanding of the dynamics of the labour market. Around 2.5 million working age people change their labour market status each quarter. Previous evidence suggests that the source of flow into employment matters for pay and other outcomes – with, for example, pay pressure greater from job-to-job moves than for those entering work from unemployment or inactivity. Figure 1.20 looks at these flows between states, highlighting the proportion of the total flow for each combination of states. We can see how in the last five years or so, there has been a shift for those entering employment, with fewer entering work via unemployment and more entering via inactivity. This could be in response to changing labour market conditions, where low levels of unemployment and increasing numbers of vacancies enable individuals the opportunity to find employment more quickly and therefore not recorded as a move from inactivity to unemployment.

Figure 1.20: Labour market flows by status, UK, 2008-2018

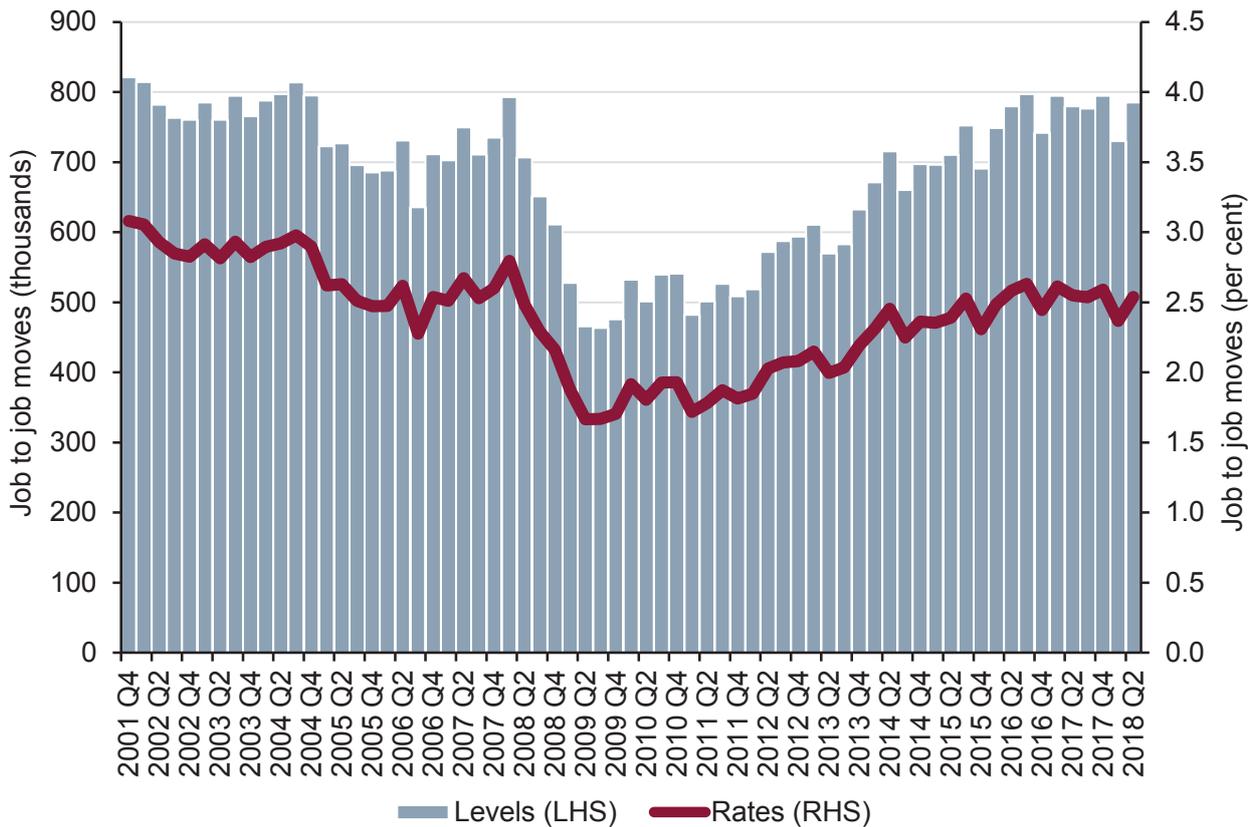


Source: ONS Labour Market flows data, August 2018, UK, 2008-2018.
 Note: E – employed; U – unemployed; and I – inactive.

1.66 For those people who remain in employment, we are able to look at the number of people who move from one job to another. Job-to-job moves are a useful indicator of the strength of the labour market – during a period of economic weakness individuals move less frequently, often favouring the security of remaining with their current employer. As confidence returns the number of moves increases. Traditionally, pay increases have been associated with job-to-job moves. However, that relationship weakened in the aftermath of the recession and the subsequent recovery.

1.67 Figure 1.21 shows a recent pick-up in job-to-job moves with quarterly levels now approaching 800,000, similar to that observed pre-recession. While the rate of job-to-job moves has also increased, to around 2.5 per cent, it is still some way below the 3.0 per cent seen pre-recession.

Figure 1.21: Job-to-job moves, UK, 2001-2018



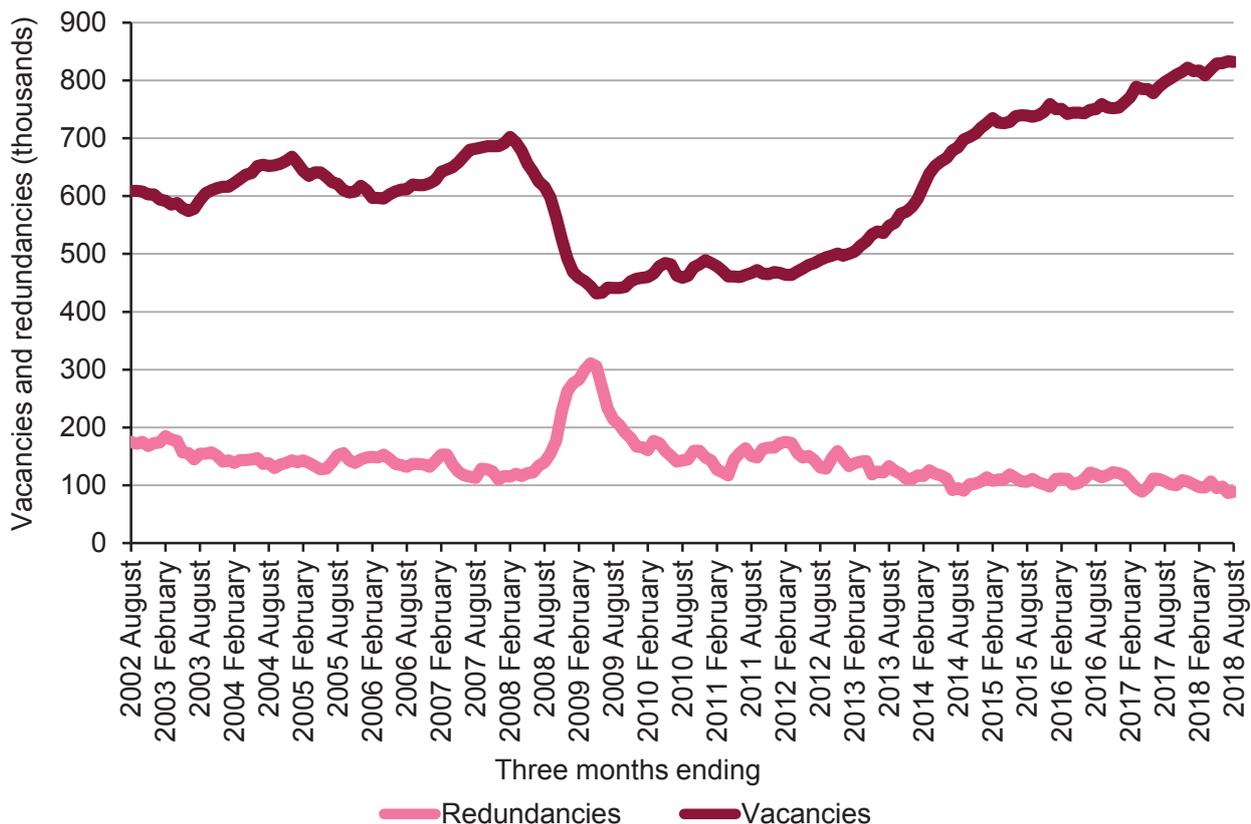
Source: ONS data: Labour market flows, August 2018, quarterly, seasonally adjusted, UK, 2001-2018.

1.68 In addition to signalling the strength of the labour market, job-to-job moves offer workers the best means of securing a rise in pay, important during a period of low wage inflation. Pay increases tend to be slightly higher for those moving jobs and employer, compared with those moving job with the same employer. Pay rises are lowest on average for workers remaining in post.

Vacancies and redundancies

1.69 Another two gauges of the strength of the labour market are vacancies and redundancies. They measure entries and exits. The falling numbers of redundancies and continuing strong growth in vacancies, as shown in Figure 1.22, suggest that demand for labour from firms remains robust. Before the crisis, there were around 600,000-700,000 vacancies each quarter. At the onset of recession, they fell sharply from 700,000 at the end of 2007 to around 420,000 in mid-2009. They remained below 500,000 until the end of 2012. Since then, vacancies have increased, surpassing the pre-recession peak at the end of 2014, and reaching over 800,000 in the summer of 2018. The trends in redundancies have been a mirror image – rising from around 100,000 pre-recession before peaking at over 300,000 in mid-2009. They have since fallen back and are now below 100,000 – lower than before the crisis.

Figure 1.22: Vacancies and redundancies, UK, 2002-2018



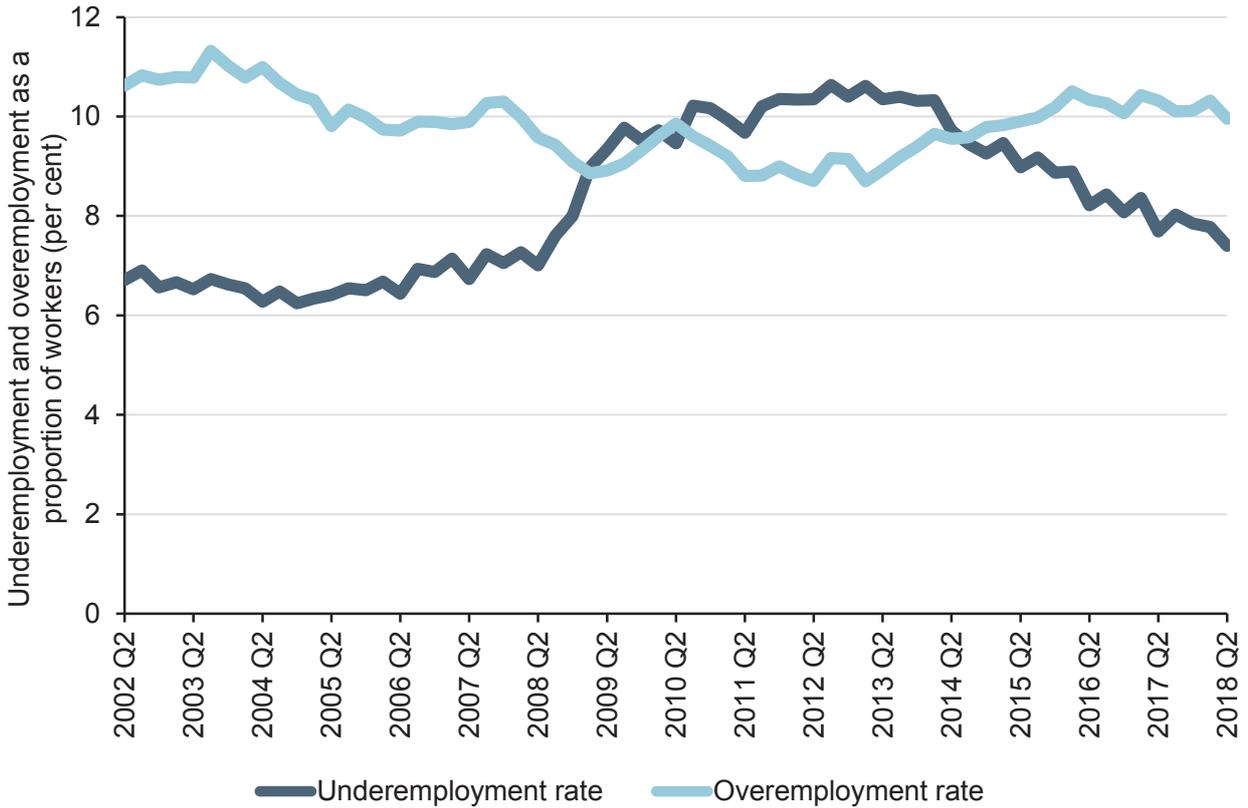
Source: ONS: vacancies (AP2Y) and redundancies (BEA0), monthly, seasonally adjusted, UK, 2002-2018.

Underemployment

1.70 Low unemployment coupled with high vacancy rates suggest a tightening in labour market conditions with limited spare capacity in the economy. However, that would usually lead to increased wage pressure, which has not yet become apparent. That might mean that traditional measures of labour market tightness – unemployment and vacancies – may no longer be important determinants of wage pressure. For example, we have already seen in Figure 1.20 how in recent years more people are moving into employment directly from inactivity rather than unemployment.

1.71 An alternative measure of slack (or tightness) is the degree of underemployment in the labour market. This is where individuals would like to work more hours than they currently do. Figure 1.23 shows the changes in both underemployment (workers wanting more hours) and overemployment (workers wanting fewer hours) rates since 2002. The proportion of workers wanting more hours increased to around 10 per cent in the aftermath of the financial crisis as total hours worked were cut in order to save jobs. Since 2014, we have seen a steady fall in underemployment although the rate is still above that seen pre-recession, suggesting there remains some slack in the system. Overemployment has been much less volatile across the same period. It is now back to its pre-recession level.

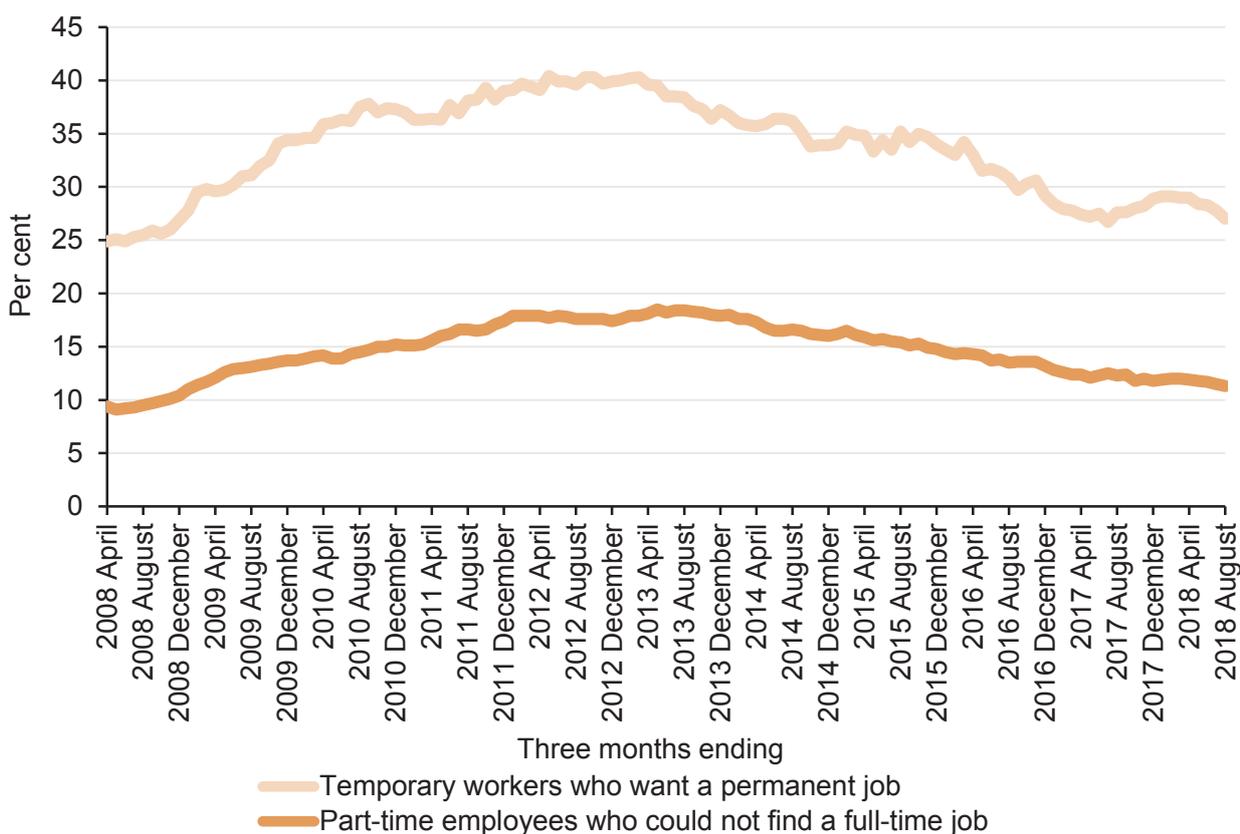
Figure 1.23: Underemployment and overemployment rate, UK, 2002-2018



Source: ONS data: underemployment and overemployment of those aged 16 and over (EMP16), quarterly, not seasonally adjusted, UK, 2002-2018.

1.72 Figure 1.24 looks at two other indicators of underemployment: the proportion of temporary workers wanting a permanent job and the share of part-time workers who are unable to find full-time employment. Both indicators have fallen in recent years, back towards those seen pre-recession. These broader measures suggest that there are indications that any spare capacity within the labour market may be becoming more limited.

Figure 1.24: Temporary workers wanting permanent jobs and part-time employees wanting full-time, UK, 2008-2018



Source: ONS data; temporary not permanent (YCCI) and part-time not full-time (YCDA), monthly, seasonally adjusted, UK, 2008-2018.

Summary of the labour market

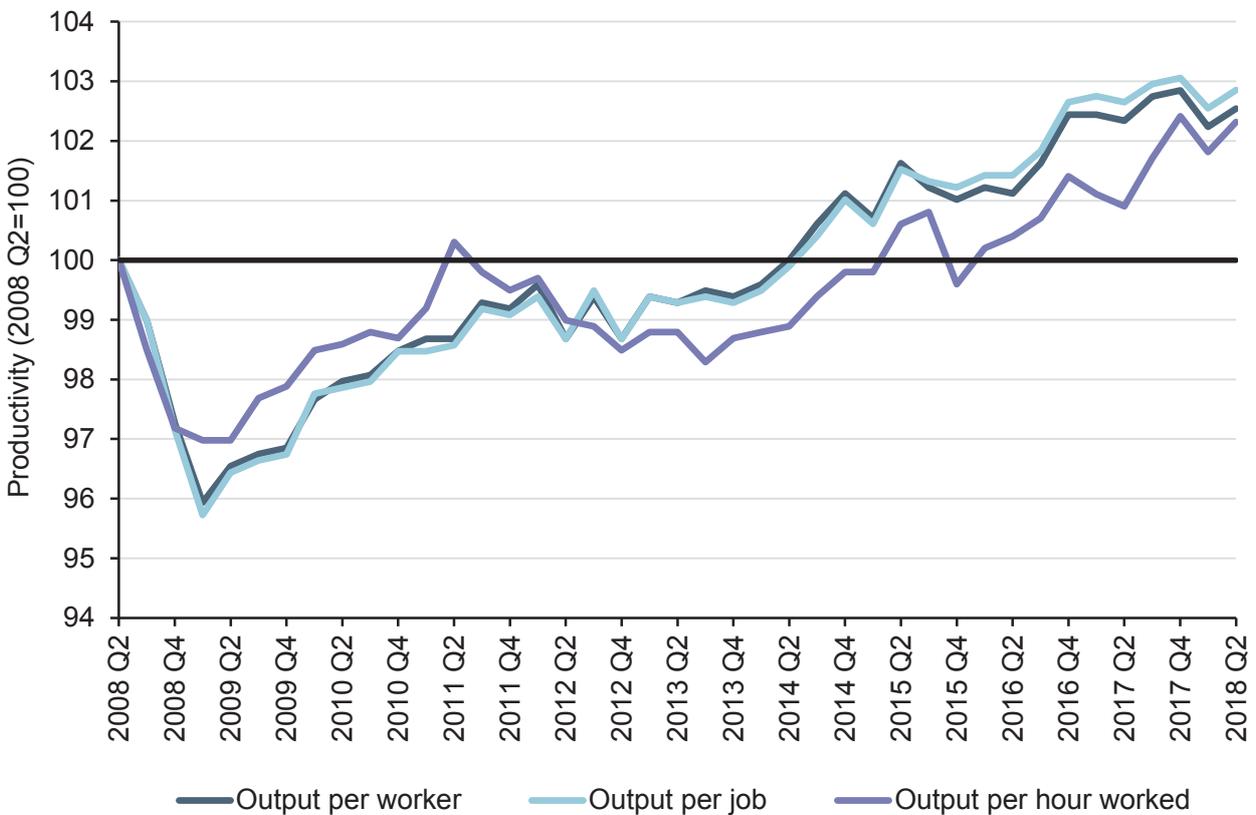
1.73 The labour market continues to perform strongly – with record employment levels, continued employment growth, low unemployment levels and rates, record vacancies and redundancies at their lowest since records began. However, while low unemployment is an indicator of a tightening labour market, underemployment – while falling – remains above its pre-recession level.

Productivity

1.74 In our 2014 Report, we noted that future minimum wage increases depended on: sustained economic growth; stable or rising employment (especially in the low-paying sectors); and an expectation of real wage increases. We noted that a sustained increase in real wages depended on increased productivity. Over the long term, movements in average wages are a guide to changes in productivity. The modest output growth in the UK since the end of the recession, combined with the remarkably resilient labour market, is reflected in the poor productivity performance over the last decade. Figure 1.25 shows that productivity on all three measures – output per worker, output per job and output per hour – has taken a long time to recover to its levels in the second quarter of 2008. Output per worker and output per job did not recover to those levels until the second quarter of 2014. The performance per hour was worse with productivity measured on this basis the same in the first quarter of 2016 as it was in the second quarter of 2008. Productivity on all three measures had looked to have rebounded in the immediate aftermath of the recession, recovering most of the

lost ground by the end of 2010. However, since then productivity growth has been very sluggish with little growth seen until the end of 2013.

Figure 1.25: Productivity (output per worker, hour and job), UK, 2008-2018



Source: LPC estimates using ONS data: output per worker (A4YM), output per job (LNNN), output per hour (LZVB), quarterly, seasonally adjusted, UK, Q2 2008-18.

1.75 There was some improvement in productivity growth per worker and per job in 2016, but there has been little growth since. Output per hour has performed a little better since the beginning of 2016 as the growth in hours has lagged the growth in employment. However, even this growth is far lower than the productivity growth experienced prior to the financial crisis, which was around 2 per cent a year on each measure. Indeed, productivity on all three measures was only 2-3 per cent higher in the second quarter of 2018 than in the second quarter of 2008, some ten years ago.

1.76 We now go on to look in more detail at pay and earnings, in order to consider the final factor that we thought enabled future minimum wage increases – sustained real earnings growth.

Pay settlements and earnings growth

1.77 Since our deliberations in the autumn of 2017, pay settlements have shown a small but notable rise, to 2.5 per cent, having been stuck at 2.0 per cent for over five years. Average earnings growth has picked up in recent months, though it is too early to say if this will be sustained into the medium term. Real average earnings levels are unchanged over the last two years.

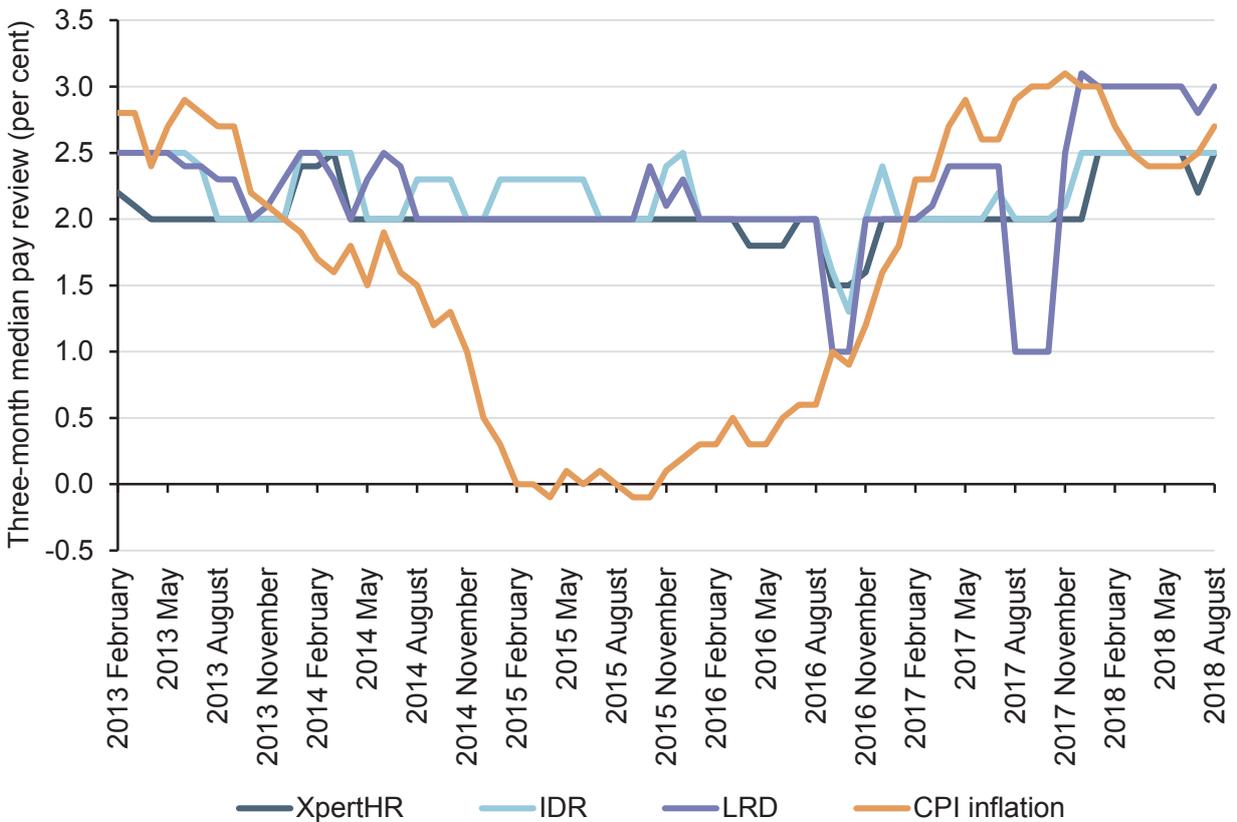
Pay settlements

1.78 There are no official records for pay settlements kept by the ONS. We therefore monitor the pay awards recorded by four private sector pay research organisations – XpertHR, Incomes Data Research (IDR), Labour Research Department (LRD), and EEF, the manufacturers’ organisation – each covering different sectors of the economy with some degree of overlap. Together, they give a useful picture of what is happening to pay awards across the economy.

1.79 Prior to our deliberations last autumn, we consulted with these pay researchers, as well as with the Bank of England’s Regional Agents and the Chartered Institute for Personnel and Development (CIPD), to discuss the outlook for pay settlements in 2018. All had undertaken surveys of employers’ intentions. In general, they expected pay settlements to remain at around 2 per cent, although some pointed to a slight pick-up towards 2.5 per cent.

1.80 Pay settlement medians showed a distinct upturn at the turn of the year to around 2.5 per cent, as shown in Figure 1.26, having been close to 2.0 per cent for the previous five years. Both XpertHR and IDR pay have a pay settlement median of 2.5 per cent for the 2018 calendar year so far, while LRD recorded median pay increases (to the lowest rate of pay in an organisation) at 3.0 per cent in 2018. Although not shown in Figure 1.26, EEF, which monitors pay in the manufacturing sector, recorded a median pay settlement of 2.6 per cent in the three months to June 2018.

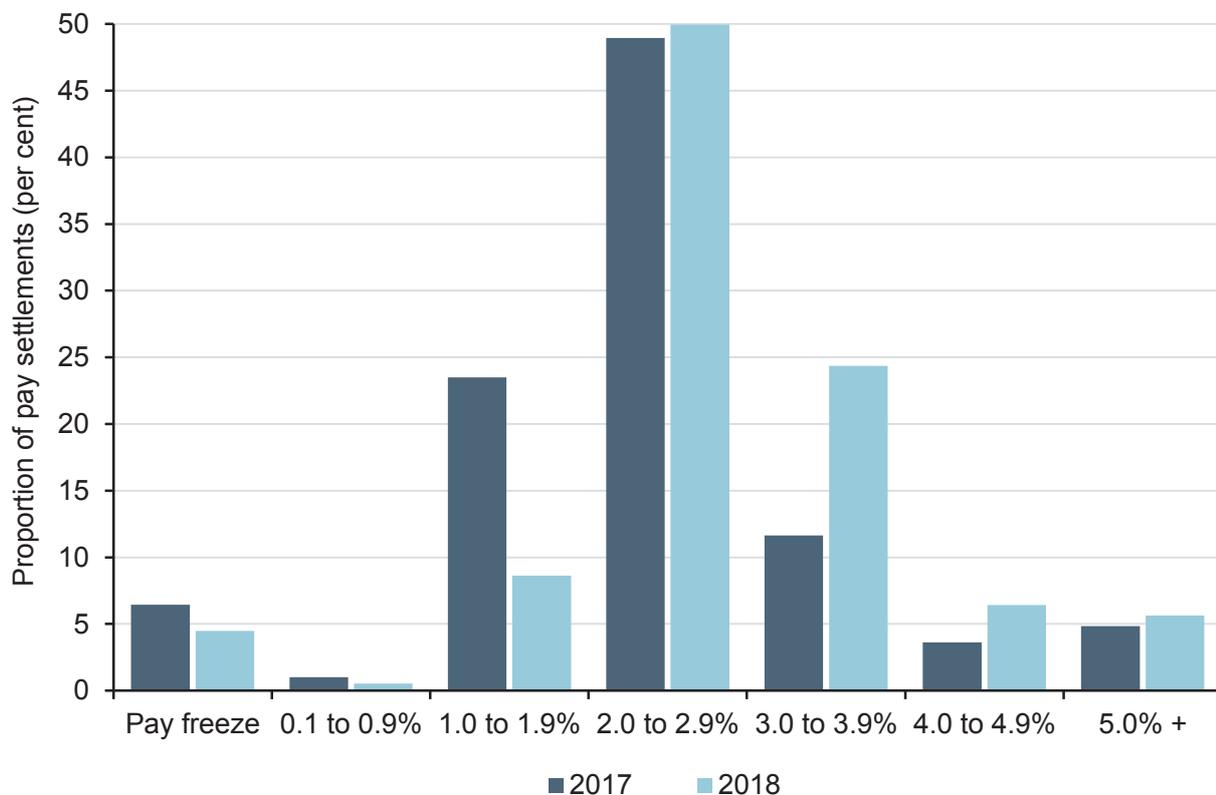
Figure 1.26: Pay settlements, UK, 2013-2018



Source: XpertHR, IDR, and LRD, pay databank records, three-month medians; CPI (D7G7), UK, 2013-18.

1.81 Figure 1.27 shows the change in the distribution of pay reviews between 2017 and 2018 reported by XpertHR, with a smaller proportion below 2.0 per cent in 2018, but a higher proportion at 3.0 per cent and above. This is only partly an effect of the change in public sector pay policy. In 2017, 68 per cent of public sector pay reviews recorded by XpertHR were between 1.0 and 1.9 per cent. In 2018 (to the end of September), only 15 per cent of public sector pay reviews were in this range. For the private sector, 21 per cent of pay reviews were between 1.0 and 1.9 per cent in 2017. From January to September 2018, this was just 8 per cent. There have also been notable falls in the number of pay freezes in the last two years. These have fallen to just 4 per cent of all pay awards in 2018 so far. There has also been a large increase in the proportion of awards above 3 per cent this year – around 36 per cent so far in 2018 compared with just 21 per cent of all awards in 2017.

Figure 1.27: Distribution of pay settlements, UK, 2017-2018



Source: LPC estimates using XpertHR data, UK, 2017-18.

1.82 Table 1.9 shows pay settlements by sector for 2018. Pay reviews in the low-paying sectors – hotels, catering and leisure, and retail and wholesale – reported a pay settlement median at 2.5 per cent, in line with the rest of the economy. The public sector and the not-for-profit sectors remained a little behind other sectors, with median pay reviews at 2.0 per cent, but the gap was less than had been recorded in recent years.

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Table 1.9: Pay settlements by sector, UK, 2018

| Sector | Number of settlements | Lower quartile (per cent) | Median (per cent) | Upper quartile (per cent) |
|--|-----------------------|---------------------------|-------------------|---------------------------|
| All | 1,137 | 2.0 | 2.5 | 3.0 |
| Public | 34 | 2.0 | 2.0 | 2.8 |
| Private | 1,103 | 2.0 | 2.5 | 3.0 |
| Manufacturing | 429 | 2.2 | 2.8 | 3.0 |
| Private services | 674 | 2.0 | 2.5 | 3.0 |
| Facilities, security and support services | 20 | 1.8 | 2.7 | 4.2 |
| Finance | 34 | 2.3 | 2.5 | 3.0 |
| Hotels, catering & leisure | 114 | 2.0 | 2.5 | 3.0 |
| Information & communication | 107 | 2.0 | 2.5 | 3.0 |
| Not for profit | 127 | 1.8 | 2.0 | 2.5 |
| Professional & business services | 155 | 2.0 | 2.5 | 3.0 |
| Retail & wholesale | 76 | 2.0 | 2.5 | 3.0 |
| Transport & storage | 41 | 2.0 | 2.8 | 3.8 |

Source: LPC estimates using XpertHR data, UK, 2018.

Note: Numbers subject to rounding.

Earnings growth

1.83 We now turn to look at how those pay awards have turned into actual pay increases. In our 2017 Report, as shown in Table 1.10, the recent forecasts available to us from the Bank of England and the HM Treasury panel of independent forecasts suggested that average wage growth would turn out to be around 2.0-2.2 per cent in 2017 and then rise to 2.6-3.0 per cent in 2018. The less timely OBR forecasts suggested much stronger pay growth in 2017. However, it had similar wage growth in 2018 as the other two forecasts. Average wage growth (including bonuses) turned out to be a little higher in 2017 (2.4 per cent) than forecast by the Bank of England and the HM Treasury panel of independent forecasts. However, the latest data suggest that the forecasts for 2018 are in line with the outcome to date.

Table 1.10: Forecasts for average wage growth, 2017-2019

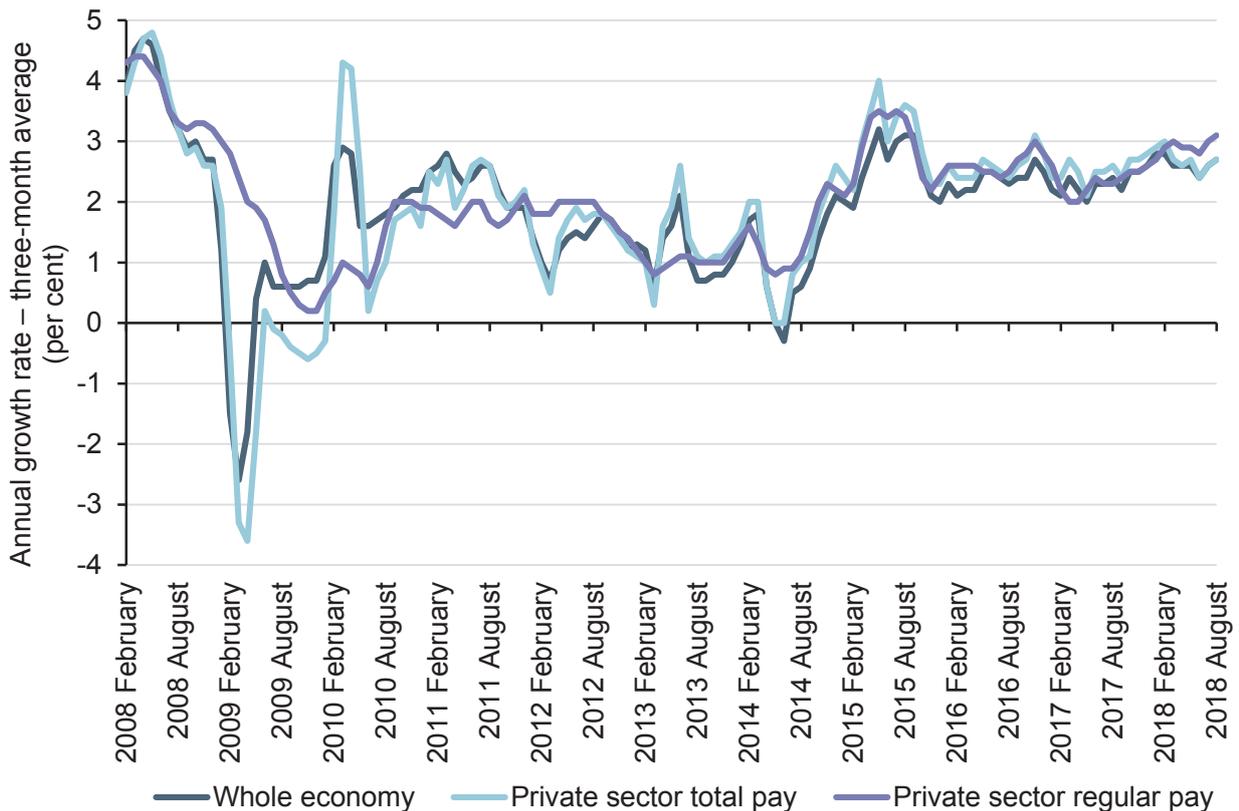
| Forecasts | Date of forecast | | Wage growth (change on year ago) | | |
|---|--|--------|----------------------------------|------------|------|
| | | | 2017 | 2018 | 2019 |
| Office for Budget Responsibility (OBR) | March 2017 | Weekly | 2.6 | 2.7 | 3.0 |
| | | Hourly | 2.7 | 3.0 | 3.3 |
| Bank of England (BoE) | August 2017 | Weekly | 2.0 | 3.0 | 3.3 |
| HM Treasury panel of independent forecasts | August/October 2017 | Mean | 2.2 | 2.7 | 3.1 |
| | | Median | 2.2 | 2.6 | 3.0 |
| Outcome | Average Weekly Earnings total pay | | 2.4 | 2.7 | |
| | Average Weekly Earnings regular pay | | 2.2 | 2.9 | |

Source: OBR (2017a); Bank of England (2017); and HM Treasury panel of independent forecasts (2017a and b). Forecasting ONS data on: Average Weekly Earnings, AWE (KAB9), whole year, seasonally adjusted, GB, 2017-2019.

Note: Average weekly earnings growth for 2018 compare January-August 2018 with January-August 2017.

1.84 As shown in Figure 1.28, whole economy annual average weekly earnings (total pay) growth that includes bonuses was at 2.7 per cent in the three months to August 2018. Regular pay growth (which excludes bonuses) was stronger, at 3.1 per cent in the three months to August, the highest rate since January 2009. While pay growth was still moderate by historic standards, there were distinct signs of a pick-up over the last year. Regular pay growth has averaged 2.9 per cent so far in 2018, compared with 2.2 per cent overall in 2017. Total pay growth has also been higher in 2018, although it has exhibited less of a pick-up than regular pay. Total average earnings growth has averaged 2.7 per cent so far in 2018, compared with 2.4 per cent in 2017.

Figure 1.28: Average weekly earnings growth, GB, 2008-2018



Source: ONS: AWE total pay (KAC3), private sector total pay (KAC6), private sector regular pay (KAJ4), annual three-month average change for the whole economy, monthly, seasonally adjusted, GB, 2008-18.

1.85 Looking at earnings growth by sector offers some understanding of the recent higher earnings growth. Figure 1.29 shows that public sector average earnings growth (excluding financial services) was at 2.8 per cent in the three months to August 2018, its highest rate since August 2009. As well as the public sector, the recent earnings data have seen strong growth in the construction sector, following a weak 2017, and in the lower-paid wholesale, retail, hotels and restaurants sector, with the latter possibly influenced by the NLW increase in April 2018.

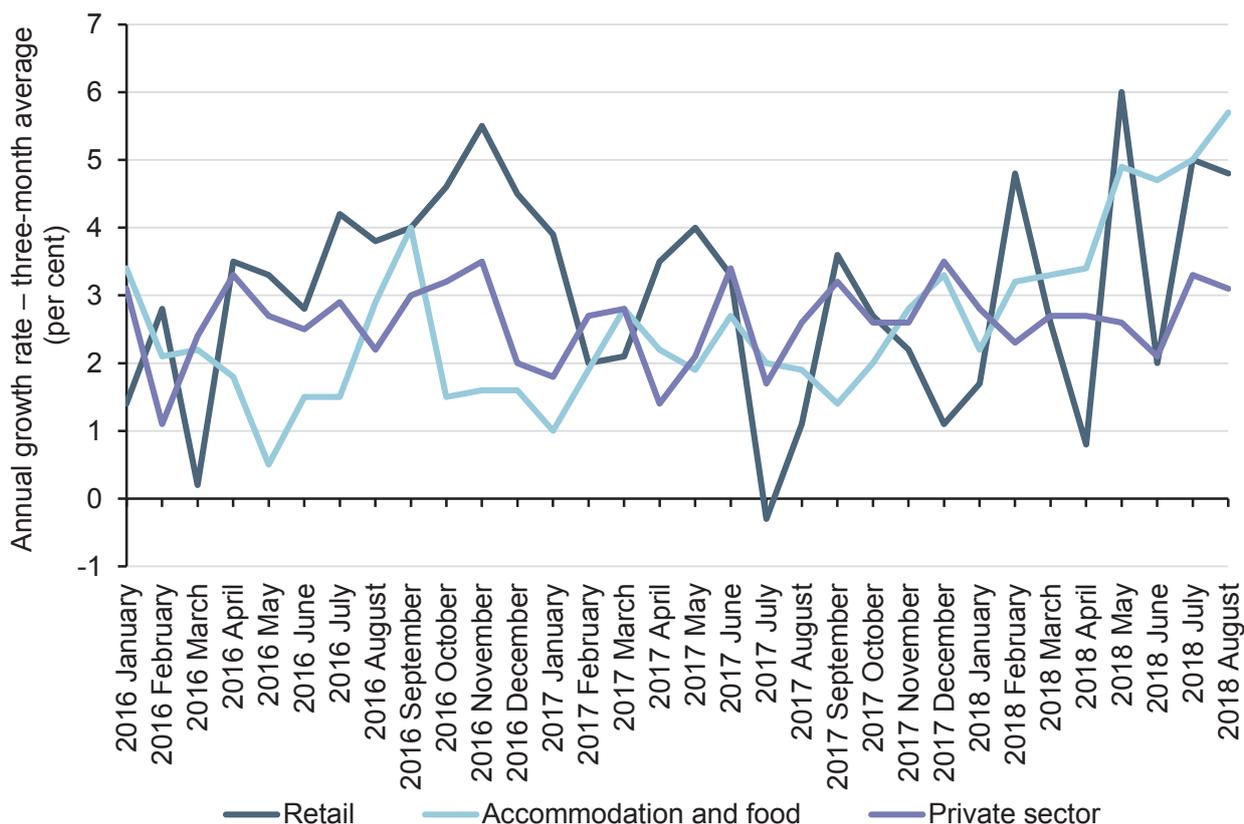
Figure 1.29: Average weekly earnings growth, by sector, GB, 2016-2018



Source: ONS, total pay: AWE private sector (KAC6), public sector excluding financial services (KAE2), wholesaling, retailing, hotels and restaurants (K5CI), construction (K5CF), annual three-month average change, monthly, seasonally adjusted, GB, 2016-18.

1.86 Disaggregating the data further to look at the two lowest paid industries – retail trade and repairs, and accommodation and food services – in more detail, requires using non seasonally-adjusted monthly data. Figure 1.30 shows that average earnings growth in these two sectors has been higher than in the private sector overall in 2018. Earnings growth in retail trade and repairs has averaged 3.4 per cent in 2018 so far, while in accommodation and food services, the lowest-paying industry identified in the Average Weekly Earnings (AWE) data, earnings growth has averaged 4.1 per cent in 2018. In comparison, the private sector as a whole, saw earnings growth averaging 2.7 per cent in 2018 on this measure. Both low-paying sectors saw a distinct pick-up in earnings growth in March-May this year, which may have been an NLW effect, but there is a high degree of variation in these monthly earnings growth data, particularly in the retail sector.

Figure 1.30: Average weekly earnings growth in low-paying industries, GB, 2017-2018



Source: ONS: AWE private sector (KA40), retail and repair (K589), accommodation and food (K58C), annual three-month average change, monthly, not seasonally adjusted, GB, 2016-18.

1.87 Alternative measures of earnings growth can be estimated from the Annual Survey of Hours and Earnings (ASHE). We are grateful to the ONS for pre-release access to these data, which were released on 25 October. As shown in Table 1.11, median hourly pay excluding overtime for all workers increased by 2.5 per cent from £12.42 in April 2017 to £12.73 in April 2018. The increase was similar for median gross weekly earnings and median annual earnings. These were a little below the wage increases that had been forecast. However, the growth in mean hourly, weekly and annual was stronger and above those forecasts.

Table 1:11: Increases in hourly, weekly and annual wages, UK, 2017-2018

| | 2017 | 2018 | % Change |
|--|--------|--------|----------|
| | £ | £ | % |
| For those aged 16 and over | | | |
| Median hourly earnings excluding overtime | 12.42 | 12.73 | 2.5 |
| Mean hourly earnings excluding overtime | 16.20 | 16.76 | 3.5 |
| Median gross weekly earnings | 448.5 | 460.0 | 2.6 |
| Mean gross weekly earnings | 537.9 | 555.0 | 3.2 |
| Median gross annual earnings | 23,484 | 24,006 | 2.2 |
| Median gross annual earnings | 29,002 | 29,832 | 2.9 |
| For those aged 25 and over | | | |
| Median hourly earnings excluding overtime | 13.01 | 13.37 | 2.7 |
| Mean hourly earnings excluding overtime | 16.46 | 17.23 | 4.6 |

Source: LPC estimates using ONS data; ASHE 2010 methodology, 2017-2018.

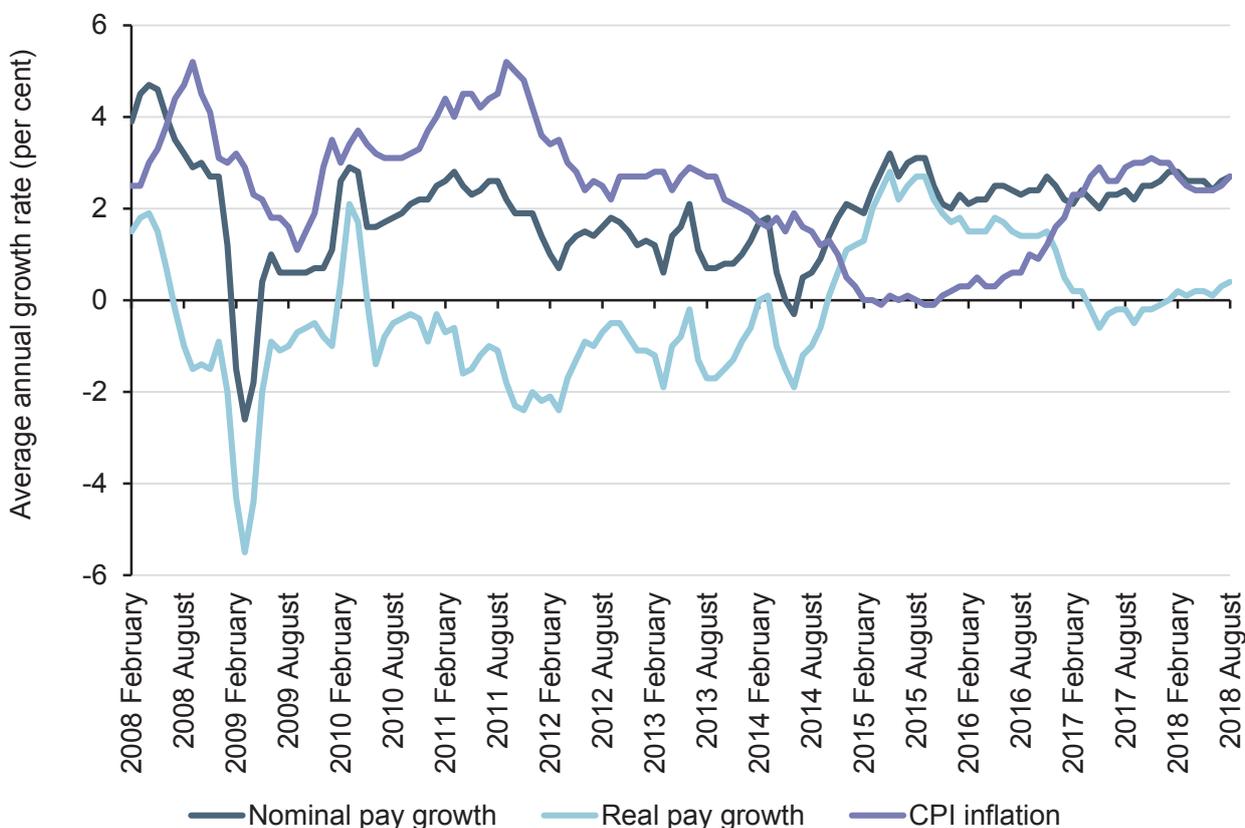
National Minimum Wage

1.88 For those covered by the National Living Wage – workers aged 25 and over and not in the first year of an apprenticeship – the increases in hourly wages were a little higher. The increase in median hourly earnings excluding overtime was 2.7 per cent, which was in line with the forecasts. We use this measure of earnings to determine the relative bite of the NLW (its value relative to the median).

Real wage growth

1.89 The small fall in inflation along with the small rise in earnings growth has meant that real (inflation-adjusted) average earnings growth has been positive since December 2017, albeit at a very low rate – 0.4 per cent in the three months to August 2018. As shown in Figure 1.31, this followed a period of falling real wages in 2017, leaving real average pay levels unchanged over the last two years.

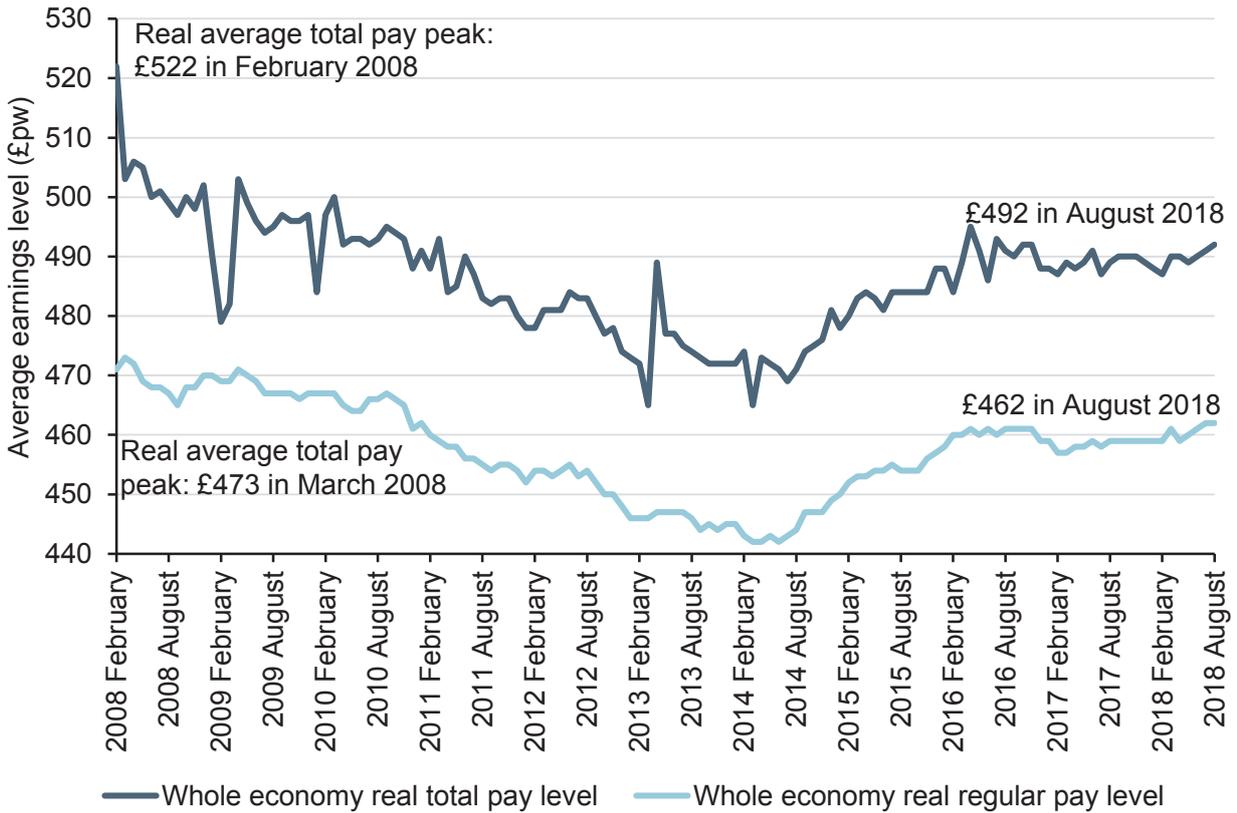
Figure 1.31: AWE nominal and real (CPIH adjusted) total pay growth, GB, 2008-2018



Source: ONS: AWE whole economy total pay growth (KAC3), real earnings growth (A3WW), CPI inflation (D7G7), monthly, seasonally adjusted, GB, 2008-18.

1.90 Figure 1.32 shows that average regular earnings (excluding bonus payments) remain 2.3 per cent below their spring 2008 peak in real terms, while real average total earnings (including bonus pay) are 5.7 per cent below the peak seen in the three months to March 2008.

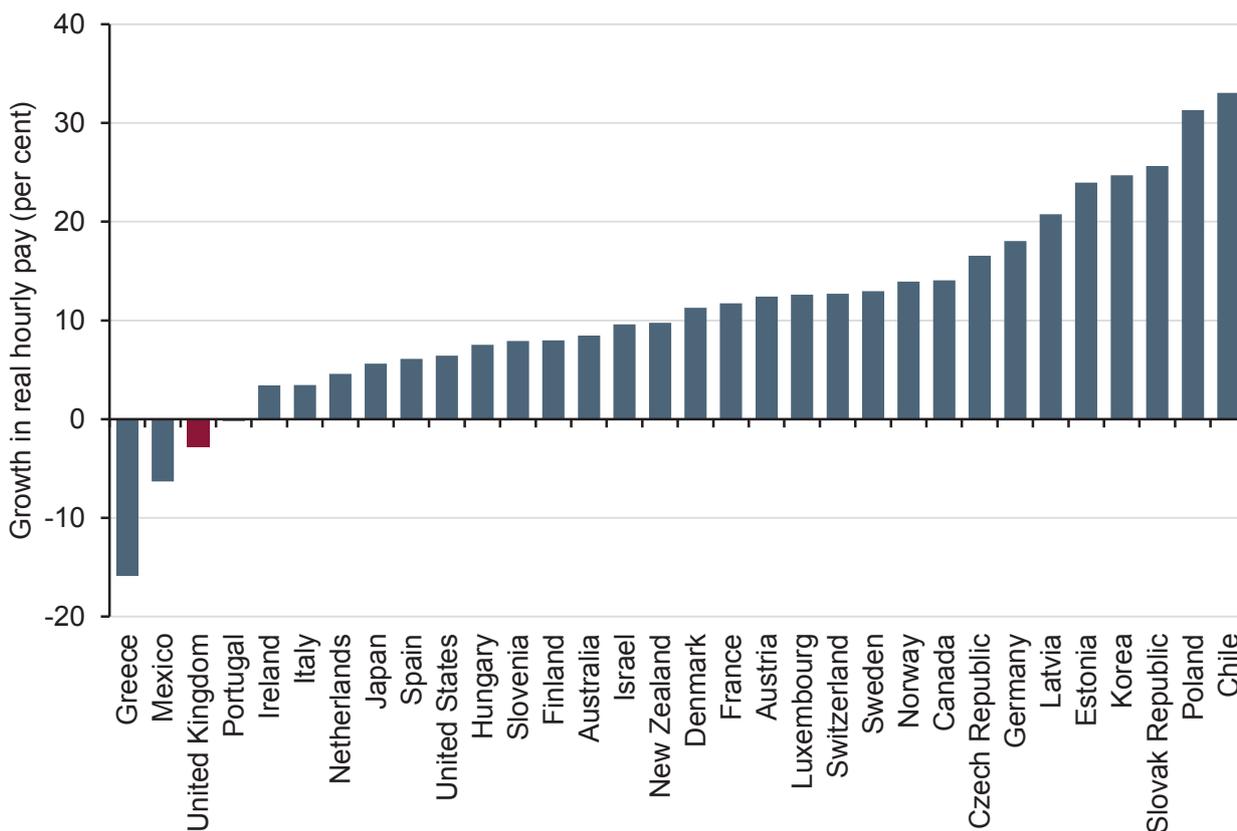
Figure 1.32: AWE real total and regular average earnings levels, GB, 2008-2018



Source: ONS: Real AWE total pay (A3WX), AWE regular pay (A2FC), monthly, seasonally adjusted, GB, 2008-18.

1.91 Figure 1.33 shows that this reduction in real wages has not generally been experienced in other countries. Indeed, only Greece and Mexico have seen larger real wage falls over the last decade. In contrast, real wages in France and Germany have grown by more than 10 per cent over the same period.

Figure 1.33: Change in real hourly pay, OECD countries, 2007-2017



Source: LPC estimates using Organisation for Economic Co-operation and Development (OECD) data based on average wages divided by average hours, 2007-17.

1.92 We now look at what the wage growth outcome has meant for the path of the NLW.

Implications for the National Living Wage

1.93 As we have noted, the forecasts available last autumn for GDP growth, employment growth, inflation and wage growth in 2018 have proved remarkably accurate. This is in stark contrast to recent years, when the forecasts for average wage growth had generally been higher than the outturn but with actual employment growth much higher than forecast. The forecasts for unemployment in 2018, however, have proven too pessimistic with the unemployment rate falling to 4.0 per cent and looking set to fall further.

1.94 In our 2017 Report, forecasts from the HM Treasury panel of independent forecasts and those of the Bank of England suggested that the on-course rate of the NLW would be £8.20 in 2019 and the NLW target would be met at £8.61 in 2020. The latter target was the same as in our Autumn 2016 Report. The provisional median hourly wage for April 2017 was £13.03 and the implied median hourly wage for 2018 was £13.35. The latest data estimate that the median hourly wage in April 2017 was £13.01 with a provisional estimate of £13.37 for 2018. Thus, the forecasts have proven reasonably accurate and the National Living Wage of £7.83 had approximately the same bite as we expected. We look at the impact of any changes in the forecasts on the path of the NLW in Chapter 5.

Conclusion

1.95 Although GDP growth has turned out in line with the forecasts it has slowed since the end of 2014. Between the first quarter of 2016 and the second quarter of 2018, GDP growth has averaged 0.4 per cent each quarter. This is considerably below the pre-crisis average (0.7 per cent) and is also below the post-crisis average (0.5 per cent). Recent growth has also been more unbalanced, with more dependence on consumer spending. Retail and hospitality have been particularly important in driving that recent growth. And they are the two largest low-paying sectors in terms of employment.

1.96 The labour market has again been resilient. Although employment and job growth has slowed, it remains robust. Employment and hours are at record levels with the employment rate also at record highs. Vacancies are also at record highs with redundancies at record lows. Unemployment has fallen to its lowest rate for over 40 years.

1.97 As a result of the strong labour market performance and slowing output growth, productivity growth has continued to be weak. Productivity on all three measures – per worker, per job and per hour – were all only 2-3 per cent higher in the second quarter of 2018 than ten years previously. That compares with annual growth of around 2 per cent on all three measures prior to the financial crisis.

1.98 Inflation also turned out in line with forecasts, peaking at the end of 2017 and falling back in 2018. The impact of the depreciation of sterling and increases in oil prices has unwound. Pay settlements and average earnings growth have picked up – again in line with the forecasts. As inflation has fallen and wage growth has picked up, that has led to some real wage growth.

1.99 This chapter has considered data that covers the period up to the end of the third quarter of 2018. Our recommendations for the April 2018 upratings in the National Living Wage, youth rates and the Apprentice Rate were made taking account of the forecasts available in October 2017. The economy has generally performed to those expectations in 2017 and 2018. The NLW had been introduced at a time of solid GDP growth and employment performance. Its upratings in April 2018 were implemented with growth roughly in line with expectations for the first half of 2018. The outcomes and forecasts are such that there has been little change to the expected NLW path. The increases in the youth rates have been absorbed and aggregate employment has continued to be stronger than expected. 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.

1.100 We next, however, look in more detail at the impact of the introduction of the NLW in April 2016 and its subsequent upratings in April 2017 and April 2018.

Chapter 2

The impact of the National Living Wage

Introduction

2.1 This report is the third since the introduction of the National Living Wage (NLW) in April 2016. Our remit for the NLW is to recommend rates so that it meets a target of 60 per cent of median earnings in 2020, subject to sustained economic growth. We continue to monitor the labour market and the low-paying sectors of the economy to assess what effects the NLW has had, and to check the economic health of those most affected by the NLW.

2.2 This chapter examines how the NLW has affected pay, employment and competitiveness. Our evidence draws on a range of sources, including: 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.

2.3 First, we examine the characteristics of NLW workers and jobs. We then look at the effect of the NLW on pay and coverage, employment and hours, and competitiveness. In each section, we use analytical, research and stakeholder evidence to establish what, if any, effect the NLW has had. Where possible, we describe the nature of any changes or responses reported by businesses and workers, and their representatives.

The characteristics of NLW workers and jobs

2.4 We begin the detailed look at the effects of the National Living Wage by looking at the characteristics of workers paid at the NLW. NLW workers are spread around the economy, both geographically and through different sectors and job types. Table 2.1 shows the numbers of minimum wage jobs and total jobs by various characteristics. The data suggest that for workers aged 25 and over there are 1.60 million jobs paying the NLW, which represents around 6.5 per cent of all jobs held by those aged 25 and over (excluding first year apprentices, for whom the NLW does not act as a wage floor).

2.5 Most NLW jobs are in sectors that we define as 'low-paying'; that is, sectors in which either there are a high proportion or high number of jobs paid at the minimum wage. Almost half of all NLW jobs are in the three largest low-paying occupations: cleaning and maintenance, retail, and hospitality, despite these sectors only employing 13 per cent of all jobs undertaken by workers aged 25 and over. Occupations we define as non low-paying contain around three-quarters of all jobs, but only 19 per cent of NLW jobs. Nine-out-of-ten NLW jobs are in the private sector.

National Minimum Wage

2.6 Over three-fifths of all NLW jobs are held by women, compared with around half of all jobs. There are almost one million part-time jobs paid at the NLW, representing 15 per cent of all part-time workers. Proportionally, those aged between 25 and 29 and those aged over 60 are the most likely of any age group to be working in an NLW job.

Table 2.1: National Living Wage jobs, by characteristics, UK, 2018

| Characteristic | | NLW (Thousands) | Total Economy (Thousands) |
|-------------------|--------------------------------------|--------------------|------------------------------|
| Sector | Public | 80 | 6,190 |
| | Private | 1,420 | 16,280 |
| | Voluntary | 110 | 2,180 |
| Time | Full-time | 620 | 18,050 |
| | Part-time | 980 | 6,600 |
| Permanence | Permanent | 1,430 | 22,970 |
| | Temporary | 160 | 1,550 |
| Sex | Male | 610 | 12,390 |
| | Female | 1,000 | 12,270 |
| Age | 25-29 | 250 | 3,270 |
| | 30-59 | 1,150 | 19,100 |
| | 60+ | 210 | 2,290 |
| Firm Size | Micro (1 to 9 employees) | 330 | 2,020 |
| | Other Small (10 to 49 employees) | 310 | 3,450 |
| | Medium (50 to 249 employees) | 240 | 3,690 |
| | Large (250 to 4,999 employees) | 380 | 7,410 |
| | Very large (5,000 or more employees) | 350 | 8,060 |
| Occupation | Cleaning & Maintenance | 240 | 780 |
| | Retail | 310 | 1,590 |
| | Hospitality | 230 | 810 |
| | Other low-paying sectors | 510 | 3,730 |
| | Non low-paying sectors | 310 | 17,740 |
| Total | | 1,600 | 24,650 |

Source: LPC estimates using ASHE 2010 methodology, low pay weights, excluding first year apprentices, UK, April 2018.

Note: Totals may not sum due to rounding.

The impact of the National Living Wage on pay and coverage

2.7 We now focus on more quantitative analysis of the impact of the National Living Wage (NLW). This section looks at the impact of the NLW on pay: examining 'bite', coverage, the earnings distribution, wage spillovers and non-compliance. We start by examining earnings and pay.

The impact of the National Living Wage on earnings and pay

2.8 The NLW was updated by 4.4 per cent in April 2018 to £7.83 an hour from its previous rate of £7.50. As shown in Table 2.2, this increase was faster than the increase at the median (up 2.7 per cent to £13.37), and therefore raised pay for workers at the bottom end of the hourly pay distribution. The increase in the NLW was slower than the 4.6 per cent increase in mean hourly earnings. Wages at the 10th percentile grew by 3.4 per cent, in between median wages and the NLW; and wages at the 25th percentile grew by 2.7 per cent, as fast as median wages.

Table 2.2: Growth in the NLW at different points in the hourly earnings distribution for workers aged 25 and over, UK, 2017-2018

| | April 2017 | April 2018 | Growth |
|---|------------|------------|--------|
| Minimum wage for those aged 25 and over | £7.50 | £7.83 | 4.4% |
| Median hourly earnings (excluding overtime) | £13.01 | £13.37 | 2.7% |
| Mean hourly earnings (excluding overtime) | £16.46 | £17.23 | 4.6% |
| 10 th percentile of hourly earnings (excluding overtime) | £7.81 | £8.08 | 3.4% |
| 25 th percentile of hourly earnings (excluding overtime) | £9.25 | £9.51 | 2.7% |

Source: LPC estimates using ASHE 2010 methodology, standard weights, excluding first year apprentices, UK, 2017-18.

Notes:

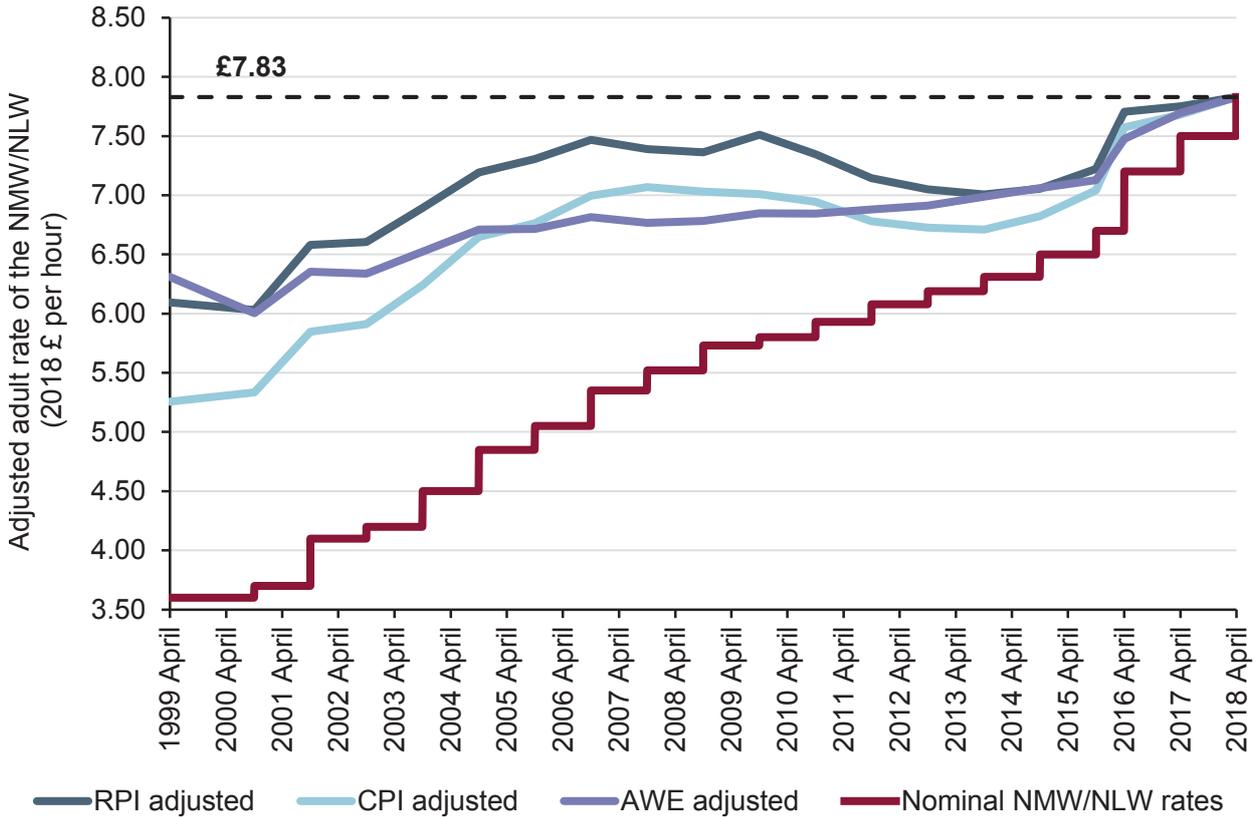
- Hourly earnings exclude overtime.
- Growth figures are based on raw, unrounded data.

2.9 There was similar growth in weekly pay. Median weekly earnings were £487 in 2018, a 2.4 per cent increase on the £476 in 2017. Median weekly earnings for NLW workers also grew at 2.4 per cent to £188.

2.10 The 4.4 per cent nominal increase in the minimum wage was equivalent to a 2.1 per cent real increase (when adjusted for CPIH inflation, 1.9 per cent when adjusted for CPI inflation and 1.0 per cent when adjusted for RPI inflation). The increase in the NLW was 1.8 percentage points higher than the Average Weekly Earnings. Adjusted for inflation, the NLW has increased the wage floor by 11 per cent since October 2016. Figure 2.1 shows the value of the current NLW rate adjusted for various measures of inflation. The current level of £7.83 is not only the highest in cash terms, it is also the highest it has ever been in real and relative value (that is, when adjusted for the main measures of inflation and for average weekly earnings).

National Minimum Wage

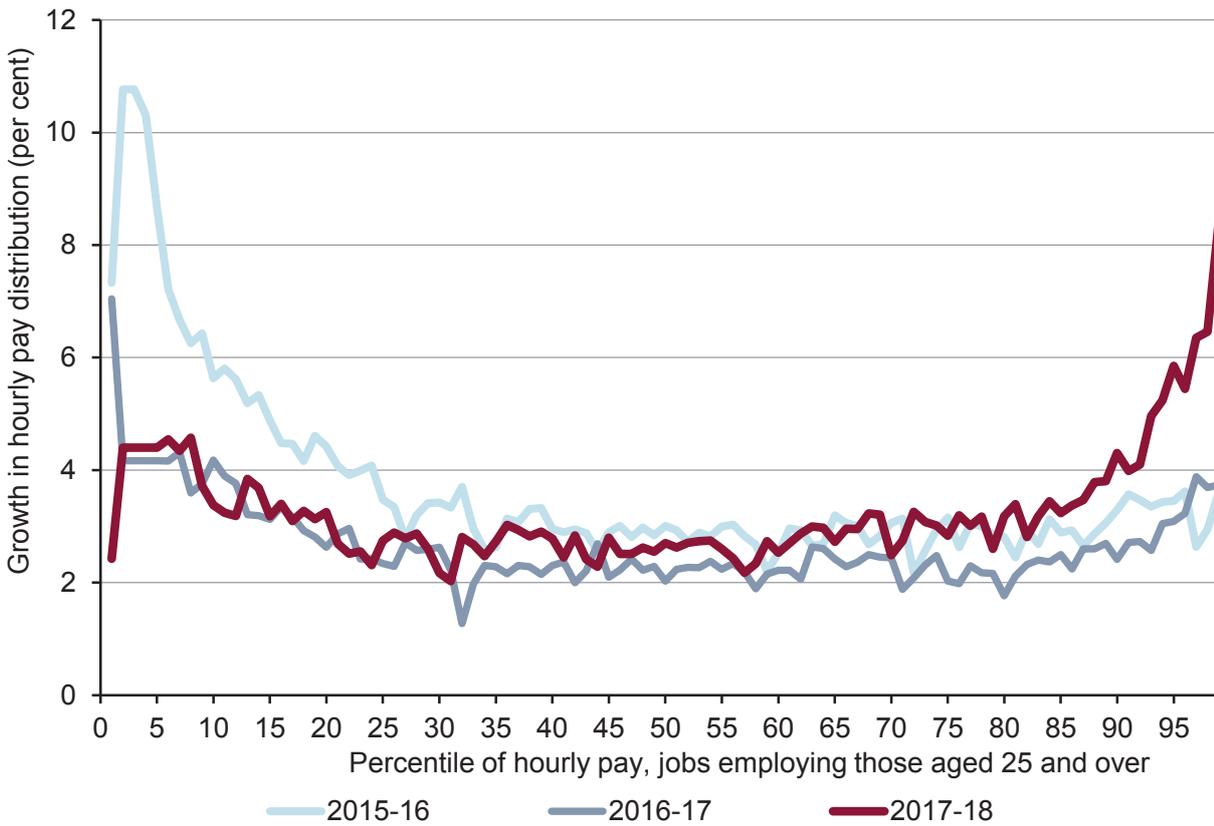
Figure 2.1: Real and relative value of the NMW/NLW, UK, 1999-2018



Source: LPC estimates based on ONS data: AEI including bonuses (LNMQ) 1999-2000, AWE total pay (KAB9) 1999-2018, CPI (D7BT) 1999-2018, and RPI (CHAW) 1999-2018, 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 2018.

2.11 Figure 2.2 shows how hourly pay growth has varied over the pay distribution. Pay has grown fastest among the bottom decile, who benefit most from increases in the NLW, and among the top 20 per cent. The faster increase in hourly pay for the highest paid is similar to the pattern seen in the pre-crisis period. Pay growth among the lowest hourly-paid workers was similar in 2016-17 and 2017-18, but wage growth in 2017-18 was much faster at the middle and especially at the top. Despite the faster growth among the highest paid in 2018, taking the period as a whole since the introduction of the NLW, hourly pay has grown most at the lower end of the pay distribution.

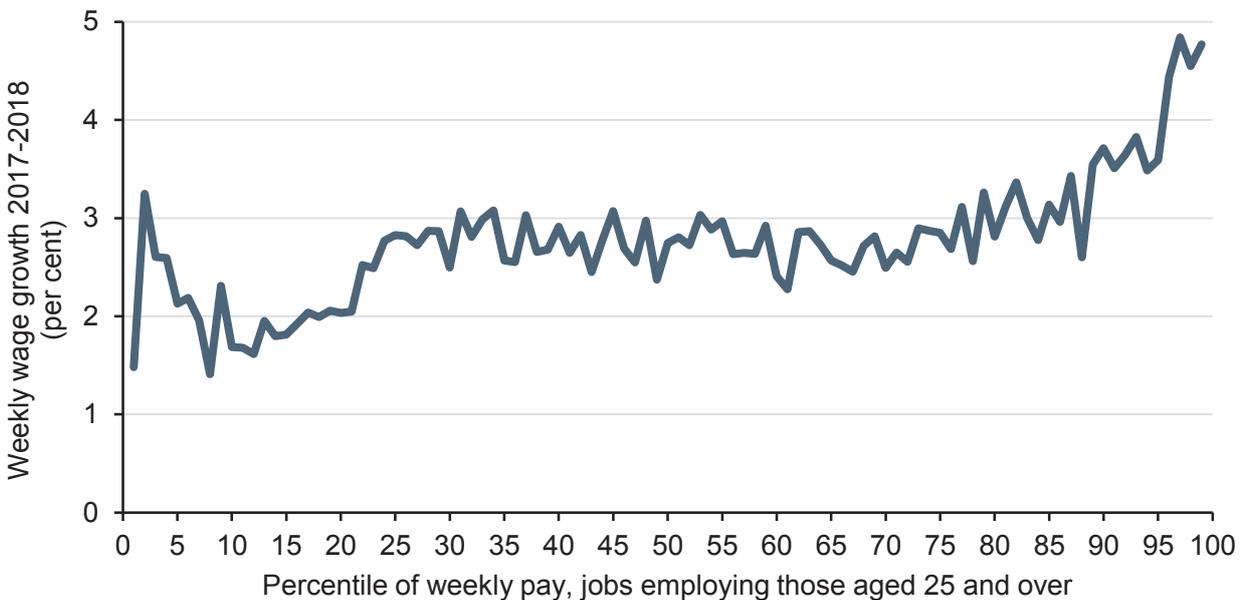
Figure 2.2: Percentage growth in the hourly wage distribution for workers aged 25 and over, UK, 2015-2018



Source: LPC estimates using ASHE 2010 methodology, standard weights, UK, 2015-18.
 Note: Data exclude first year apprentices.

2.12 The picture on weekly wages is different. Figure 2.3 shows how nominal basic wages have risen across the weekly earning distribution. For the most part, earnings growth has been subdued among the lowest weekly earners. This finding is common across other sources of data.

Figure 2.3: Weekly wage growth for workers aged 25 and over, UK, 2017-2018



Source: LPC estimates using ASHE 2010 methodology, standard weights, excluding first year apprentices, UK, 2017-18.

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2.13 However, if we just concentrate on NLW workers, who are focused in the bottom 20% of the weekly wage distribution, we can see that they experience stronger weekly wage growth at the lower end of the earnings distribution, suggesting the effect shown in Figure 2.3 is not driven by reduced hours following minimum wage increases. As shown in Figure 2.4, the data are quite noisy, but if we smooth the relationship we can see three broad trends: those in the bottom sixth or so, who have seen their weekly wages grow faster than the increase in the minimum wage, as they have taken on extra hours; those in the next group up to about two-fifths, who have seen weekly wages grow approximately as quickly as hourly wages due to their hours staying reasonably constant; and those in the top fifth, who have seen weekly pay growth of around 3.6 per cent as their hours decreased slightly, but whose weekly wages still grew faster than for non-NLW workers, and 1.2 per cent faster than the cost of living, thus also giving real wage increases. These data cannot tell us whether these falls in hours are voluntary or not. However, later in this chapter we find that underemployment, that is workers who want more hours, continues to fall for low-paid workers.

Figure 2.4: Weekly wage growth for NLW workers aged 25 and over UK, 2017-2018



Source: LPC estimates using ASHE 2010 methodology, low pay weights, excluding first year apprentices, UK, 2017-18.

2.14 Pay rises for minimum wage workers have been welcomed by unions and other organisations. Clearly, the NLW has raised pay for those towards the bottom of the earnings distribution, and the majority of our stakeholders welcome this outcome. Organisations in sectors that report businesses struggling with the increased cost also told us that they strongly believe people should be paid fairly for the work that they do. Social care representative bodies were particularly keen to stress their desire to see workers paid more for what is skilled and difficult work, and told of recruitment difficulties, but highlighted funding and other cost pressures as constraints on pay.

2.15 Several stakeholders representing employees stated that the NLW was not high enough to make a difference to the problem of low pay across the economy. UNISON told us that the NLW ‘has contributed strongly to reducing hourly low pay rates in the economy when measured against average earnings but not against a Living Wage and, despite the “national living wage”, low pay remains a particularly acute problem in comparison to the OECD average and against most other comparable countries’. The Communication Workers’ Union (CWU) thought that the NLW was becoming a going rate in a ‘race to the bottom’ in some sectors, including cleaning. The National Union of Rail, Maritime and Transport Workers (RMT) also described how the NLW is seen by some firms as the maximum they will pay, not the minimum. An Usdaw (the Union of Shop, Distributive and Allied Workers) survey (2018) of over 10,500 retail workers found that three-quarters of respondents paid below £8.50 per hour have struggled to pay bills.

2.16 The Living Wage Foundation welcomed the NLW but noted that it is not sufficient to meet workers’ needs. It argued that raising pay further helps recruitment and retention. The Living Wage Foundation’s survey of accredited firms found that more than half report improvements in recruitment into entry level roles (53 per cent) and staff retention (52 per cent). GMB cited research by Citizens UK to emphasise potential benefits to HM Treasury of a higher NLW ‘that if just the top three retailers all paid the Living Wage, the Treasury would save over £200 million’ via savings on benefits and tax credits.

2.17 On pay more widely, we have heard multiple examples of firms raising pay above the NLW to overcome recruitment difficulties. In some sectors and businesses there is a tension in reconciling such reports with claims that the NLW is having detrimental effects, because employers would have to raise pay regardless of NLW increases.

2.18 The British Chambers of Commerce (BCC) told us that, despite the NLW having raised pay for many workers, labour shortages mean that employers are struggling to retain staff on the NLW. At oral evidence the BCC told us that workers are moving jobs for small increases in hourly pay. The National Farmers’ Union (NFU) estimated that wage growth in the agricultural sector was between 9 and 12 per cent in 2017/18 and will again be above the NLW’s path in 2018/19 (9-10 per cent). This has been necessary to attract seasonal workers. Hotels in Scotland, especially those in rural locations, told us that they could not attract enough qualified staff at the NLW, so paid a premium above it.

Case study: facilities management provider

A large facilities management provider described the benefits to the business of higher pay for staff. It encourages clients to pay above the NLW (at the voluntary living wage) on contracts for facilities management, and where possible it submits two bids to all potential clients – one based on the NLW and one on the voluntary rate. It has found that when clients sign up to the higher rate, staff turnover and absenteeism have significantly fallen.

On existing contracts, there is a need to either share or pass on increases in the NLW to clients but sometimes the company has to absorb the cost which can affect the financial viability of the contract; this is particularly problematic in long-term contracts that cannot be renegotiated.

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2.19 In contrast, we also heard on our visits that there are practical barriers to low-paid workers changing jobs. Availability of and transport to jobs is one factor, but we also heard that workers are reluctant to sacrifice benefits and rights accrued over time, or to move to a job they do not know for sure will be an improvement.

2.20 The next two sections explore the bite and coverage of the NLW. These are our traditional measures of how the level of the minimum wage affects the earnings of individuals.

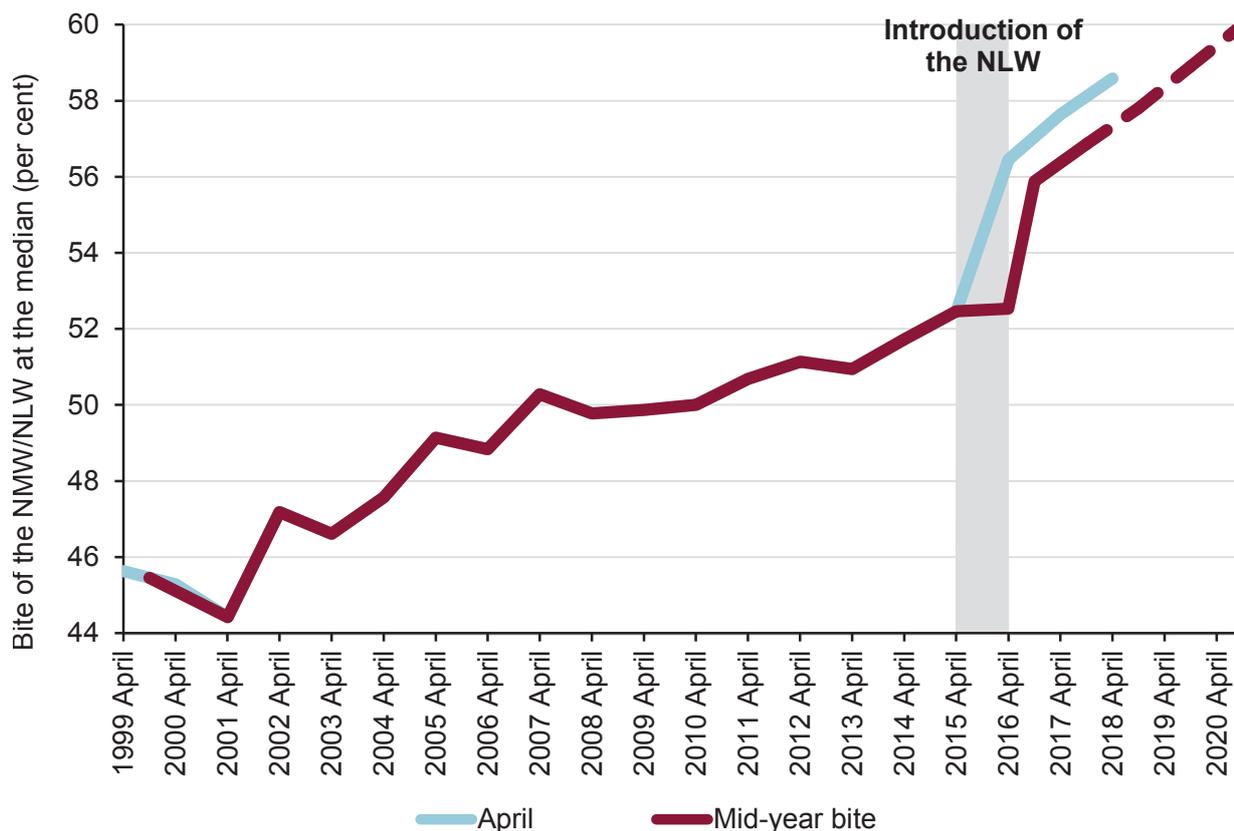
The bite of the National Living Wage

2.21 The 'bite' of a minimum wage is commonly used to measure and compare the level of the minimum wage. The bite of a minimum wage is the ratio between the minimum wage and a given point on the earnings distribution. While we look at ratios between the wage floor and various points on the earnings distribution, we commonly use the bite at the median as an indicator of the 'toughness' of the wage floor. The target we have been given by the Government for the NLW is determined by the bite at the median.

2.22 A higher bite indicates that the minimum wage is closer to the wage earned by those at the mid-point of the earnings distribution. A higher ratio between minimum and average wages suggests that wages are being compressed at the lower end of the wage scale, and could indicate that employers are more likely to struggle to cope with increases in the minimum wage. However, additional information would then be needed to examine any effects on, for example, jobs, hours, profits and business demography to examine if a minimum wage was having any detrimental impacts.

2.23 The bite of the NLW has increased in the most recent year to 58.6 per cent of median wages in April 2018 as the 4.4 per cent increase in the wage floor outstripped the 2.7 per cent increase in median wages. As shown in Figure 2.5, the bite is significantly higher than at any point in the history of the NMW/NLW and is still on track to meet the Government's 2020 target.

Figure 2.5: 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 2011-18, standard weights, UK; and earnings forecasts from HM Treasury panel of independent forecasts (2018b), and Bank of England average earnings forecasts (2018a).

Notes:

- Bites from mid-year 2018 are based on earnings forecasts and may change when out-turn data is available.
- Data include all apprentices (as it is not possible to identify apprentices prior to 2013).

2.24 Using the most recent data for earnings growth we anticipate that the bite was likely to have been 57.8 per cent in October 2018, around one percentage point higher than the bite estimated for October 2017 (56.9 per cent). The mid-year bite, recorded in October, is used to set the target rate for the NLW.

Table 2.3: Bite of the NMW/NLW for workers aged 25 and over, UK, 2015-2018

| | | Median £ | Rate £ | Bite Per cent | Point in year |
|------------|---------------------|-------------|-----------|------------------|----------------------------|
| NMW | April 2015 | 12.38 | 6.50 | 52.5 | Mid-year |
| | October 2015 | 12.57 | 6.70 | 53.3 | At uprating estimate |
| NLW | April 2016 | 12.76 | 7.20 | 56.4 | At uprating |
| | October 2016 | 12.88 | 7.20 | 55.9 | Mid-year estimate |
| | April 2017 | 13.01 | 7.50 | 57.6 | At uprating |
| | October 2017 | 13.19 | 7.50 | 56.9 | Mid-year estimate |
| | April 2018 | 13.37 | 7.83 | 58.6 | At uprating |
| | October 2018 | 13.55 | 7.83 | 57.8 | Mid-year estimate forecast |

Source: LPC estimates and calculations using: ASHE 2010 methodology, April 2015-18, UK; earnings forecasts from HM Treasury panel of independent forecasts (2018b) and Bank of England average earnings forecasts (2018a).

Note: Data exclude first year apprentices.

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2.25 The bite of the NLW for workers, as shown in Figure 2.6, has increased in all regions, with the exception of Northern Ireland. Nominal wages grew by 4.7 per cent in Northern Ireland, moving it from the lowest paid country/region in 2017 to the fifth lowest paying area. The bite of the NLW is above 60 per cent in every region and country of the UK, with the exceptions of Scotland, the South East and London.

Figure 2.6: Bite of the NMW/NLW for workers aged 25 and over, by country and region, UK, April 2015-2018

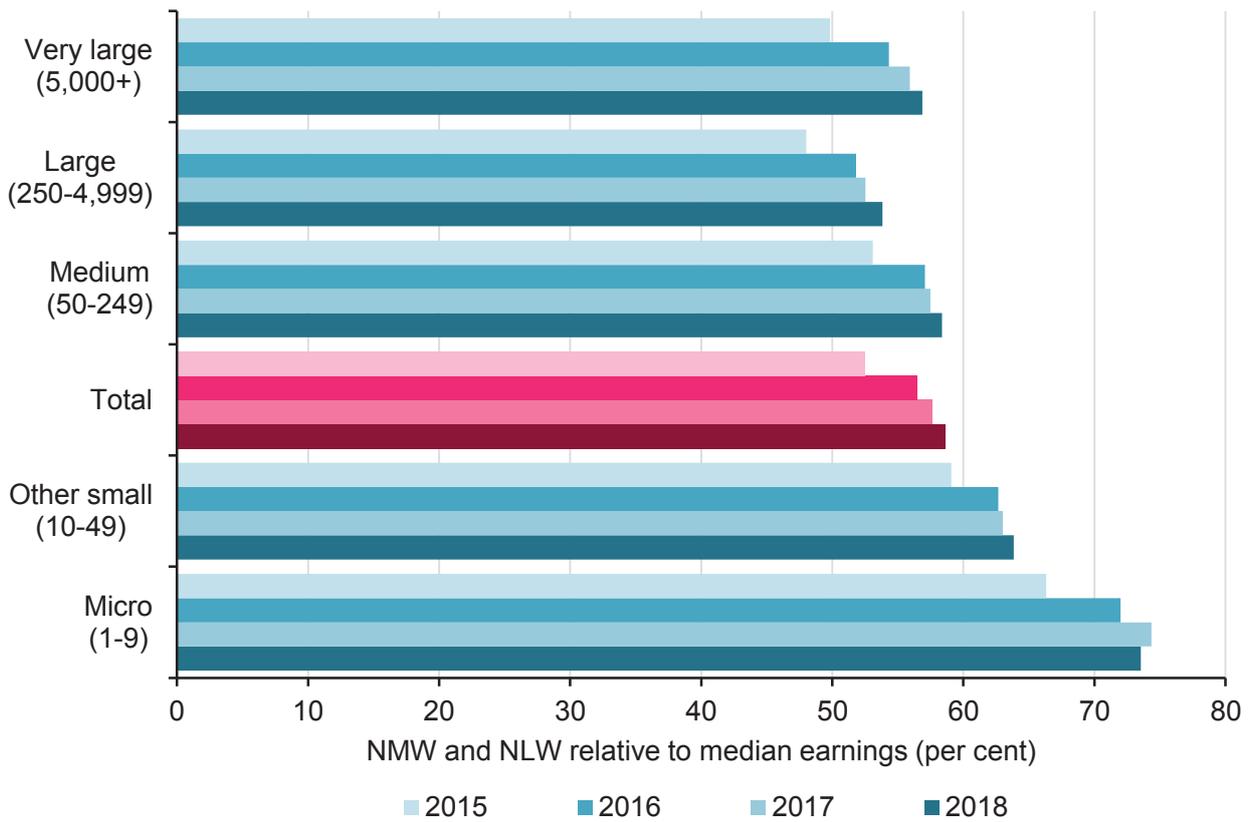


Source: LPC estimates using ASHE 2010 methodology, standard weights, UK, April 2015-18.

Note: Data exclude first year apprentices.

2.26 Figure 2.7 examines the bite by size of employer. With the exception of the largest employers (those employing more than 5,000 workers), the bite of the NLW increases as employer size decreases. The 2018 data show that across our employer size bands, micro-employers (those employing fewer than ten workers) experienced the fastest growth in the median pay, up 5.6 per cent, much faster than the increase in the NLW, and therefore we observe the bite falling. However, the bite is still highest in micro-employers.

Figure 2.7: Bite of the NMW/NLW for workers aged 25 and over, by employer size, UK, April 2015-2018

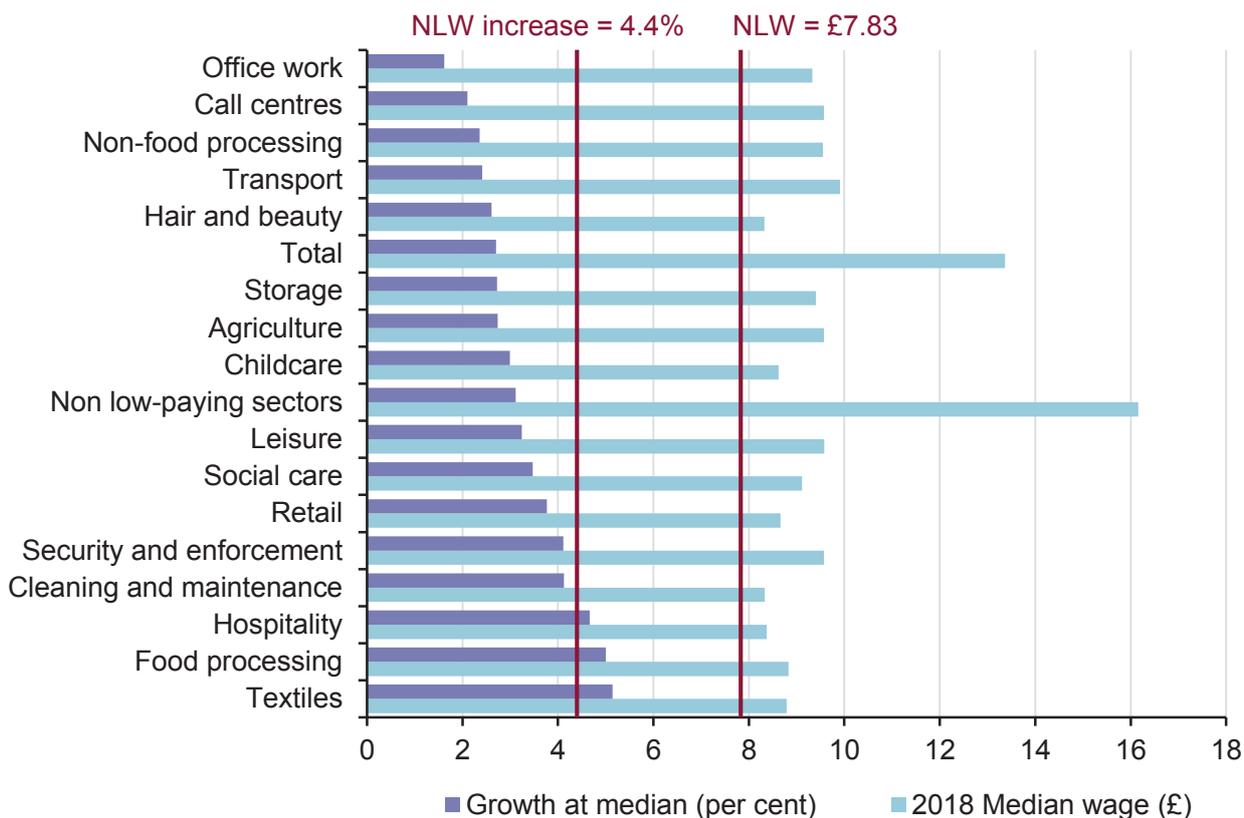


Source: LPC estimates using ASHE 2010 methodology, standard weights, UK, April 2015-18.
 Note: Data exclude first year apprentices.

2.27 Figure 2.8 shows both the level and growth of wages in 2018 across the occupational groups we examine. Hospitality, food processing and textile occupations have experienced growth in median wages above the increase in the NLW. Wage rises in office work, call centres, non-food processing and transport occupations were more subdued, with median wages rising by less than 2.5 per cent in these occupations.

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Figure 2.8: Hourly pay and earnings growth at the median for workers aged 25 and over, by low-paying occupation, UK, April 2017-2018



Source: LPC estimates using ASHE 2010 methodology, standard weights, UK, April 2017-18.

Notes:

- Data exclude first year apprentices.
- Low-paying occupations based on definitions as set out in our 2017 Report (Appendix 3).

2.28 Table 2.4 shows how minimum wages bite to different extents across low-paid occupations. Bites are highest in hair and beauty, cleaning and maintenance and hospitality, where half of workers are paid within 55 pence of the minimum wage. There remain considerable variations in bite across low-paying occupations with a fifteen percentage point difference between hair and beauty and transport occupations. Overall, wages grew more quickly in low-paying occupations than in the rest of the economy but the bite grew by the same amount, 0.6 percentage points in both sectors.

Table 2.4: Bite of the NMW/NLW for workers aged 25 and over, by low-paying occupation, UK, April 2015-2018

| Occupation | Bite (per cent) | | | | Change (ppts) |
|--------------------------|-----------------|------|------|------|---------------|
| | 2015 | 2016 | 2017 | 2018 | 2017-2018 |
| Hair and beauty | 85.6 | 90.0 | 92.4 | 94.0 | 1.6 |
| Cleaning and maintenance | 88.4 | 92.3 | 93.8 | 94.0 | 0.2 |
| Hospitality | 89.7 | 93.4 | 93.8 | 93.5 | -0.2 |
| Childcare | 84.1 | 88.9 | 89.6 | 90.8 | 1.2 |
| Retail | 86.3 | 90.0 | 89.8 | 90.4 | 0.5 |
| Textiles | 81.3 | 88.2 | 89.7 | 89.1 | -0.6 |
| Food processing | 85.2 | 90.0 | 89.2 | 88.7 | -0.5 |
| Social care | 79.9 | 85.0 | 85.1 | 85.9 | 0.8 |
| Office work | 73.1 | 79.5 | 81.7 | 83.9 | 2.2 |
| Storage | 75.9 | 82.6 | 81.9 | 83.3 | 1.3 |
| Non-food processing | 72.4 | 79.3 | 80.4 | 82.0 | 1.6 |
| Call centres | 71.5 | 80.6 | 80.0 | 81.8 | 1.8 |
| Agriculture | 72.8 | 78.9 | 80.5 | 81.8 | 1.3 |
| Security and enforcement | 74.3 | 81.7 | 81.5 | 81.8 | 0.2 |
| Leisure | 74.5 | 80.0 | 80.8 | 81.8 | 0.9 |
| Transport | 71.5 | 76.9 | 77.5 | 79.0 | 1.5 |
| Low-paying sectors | 82.0 | 87.3 | 87.9 | 88.6 | 0.6 |
| Non low-paying sectors | 43.3 | 47.0 | 47.9 | 48.5 | 0.6 |
| Total | 52.5 | 56.4 | 57.6 | 58.6 | 1.0 |

Source: LPC estimates using ASHE 2010 methodology, standard weights, UK, April 2015-18.

Notes:

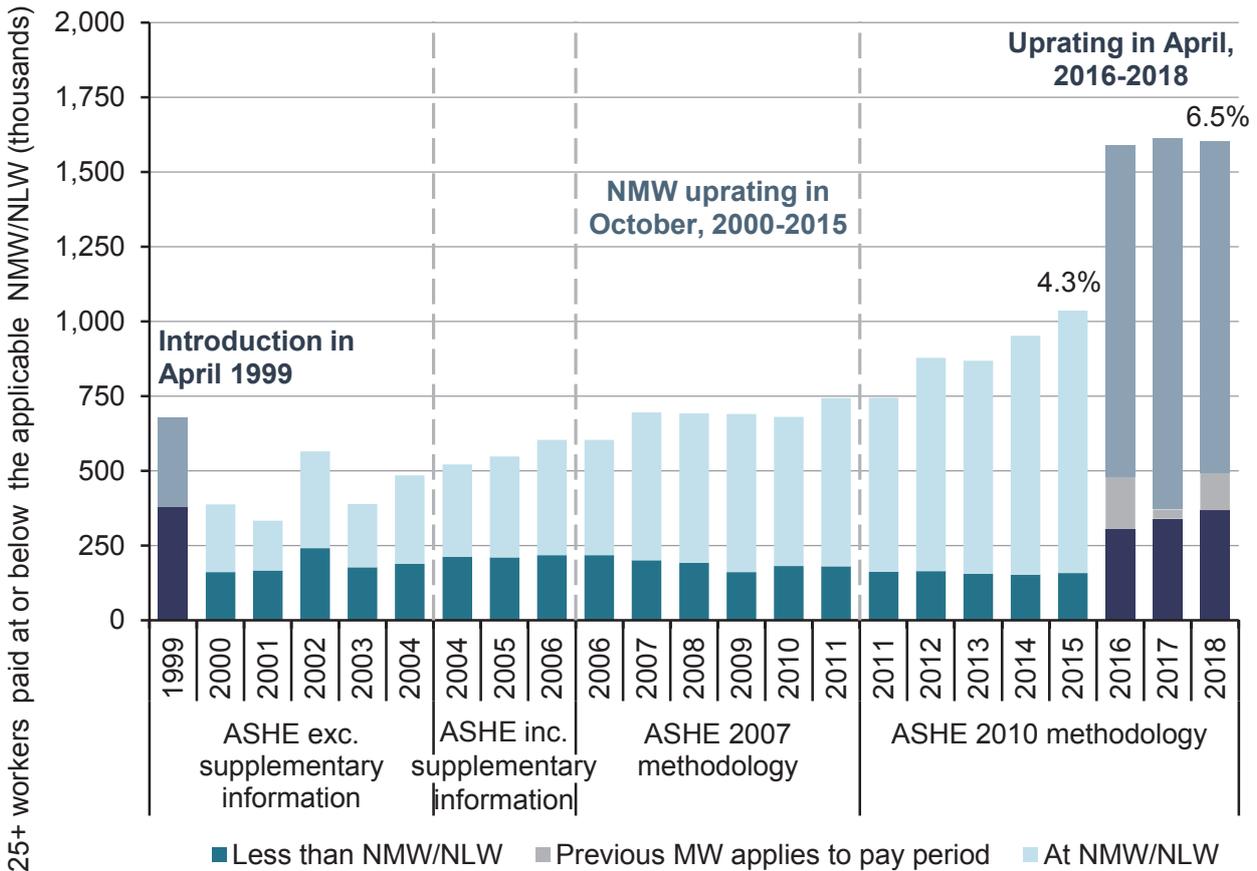
- a. Data exclude first year apprentices.
- b. Low-paying occupations based on definitions as set out in our 2017 Report (Appendix 3).

Coverage of the National Living Wage

2.29 The other measure that we typically use to gauge the impact of a minimum wage on the pay distribution is its coverage, which shows the number of workers who are paid the minimum wage. Figure 2.9 shows how coverage for workers aged 25 and older has changed since the introduction of the National Minimum Wage (NMW) in 1999. It highlights the impact the introduction of the NLW had as coverage increased from around 1 million in 2015 to 1.6 million in 2016. Subsequent upratings of the NLW in 2017 and 2018 however have not resulted directly in increased levels of coverage, though those earning slightly above the NLW continue to grow. We discuss this point in more detail later in the chapter.

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Figure 2.9: Coverage of the NMW/NLW for workers aged 25 and over, UK, 1999-2018



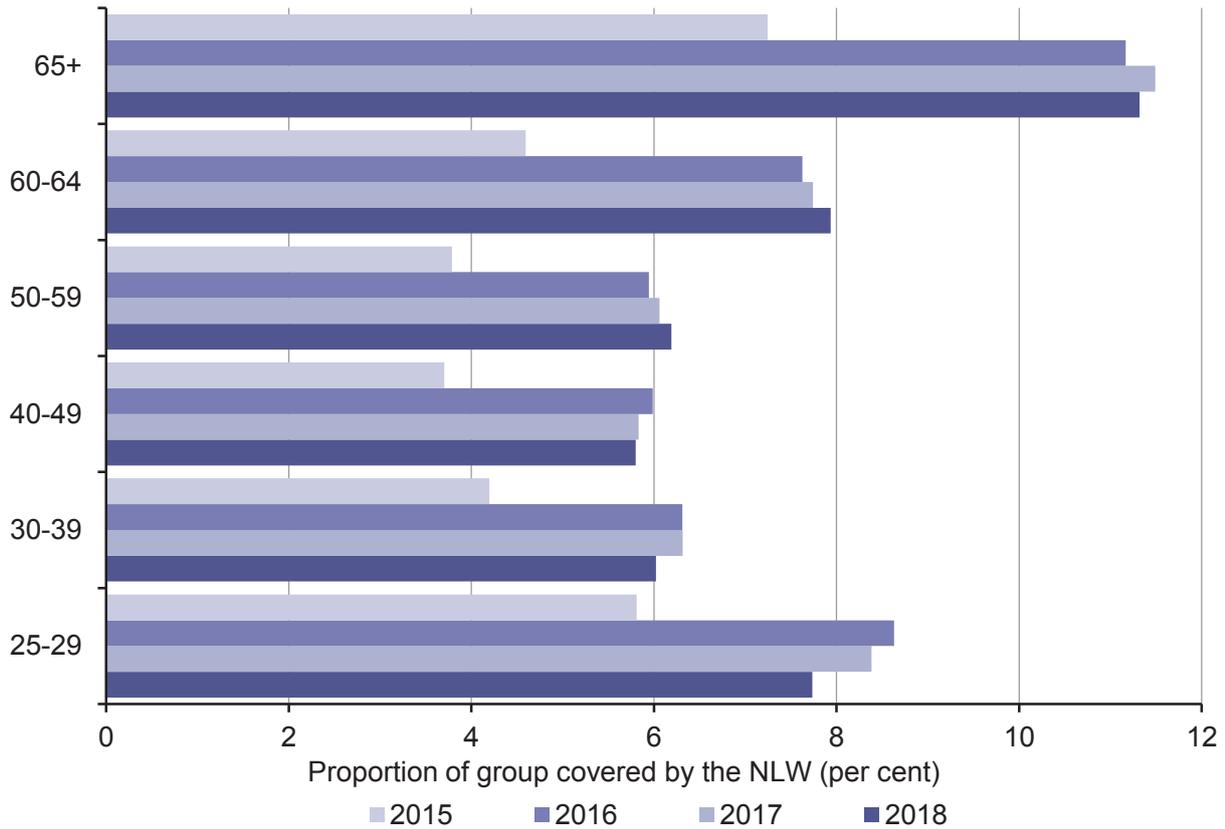
Source: LPC estimates using ONS data: ASHE without supplementary information, April 1999-2004; ASHE with supplementary information, April 2004-06; ASHE 2007 methodology, April 2006-11; and ASHE 2010 methodology, April 2011-18, low pay weights, UK.

Notes:

- a. Data include apprentices, as they cannot be identified prior to 2013.
- b. Data for 1999, 2016-2018 are for different points in the minimum wage year than all other years, so cannot be directly compared.

2.30 Figure 2.10 shows the variation in coverage by age for workers aged 25 and over. Coverage is highest for older workers, with 11 per cent of those aged 65 and over paid at the NLW. Coverage for those aged 25-29 has fallen behind coverage of those aged 60-64 for the first time since the introduction of the NLW as a result of increasing coverage for 60-64 year olds and falling coverage for 25-29 year olds.

Figure 2.10: Coverage of the NMW/NLW for workers aged 25 and over, by age, UK, 2015-2018



Source: LPC estimates using ASHE 2010 methodology, low pay weights, UK, April 2015-18.

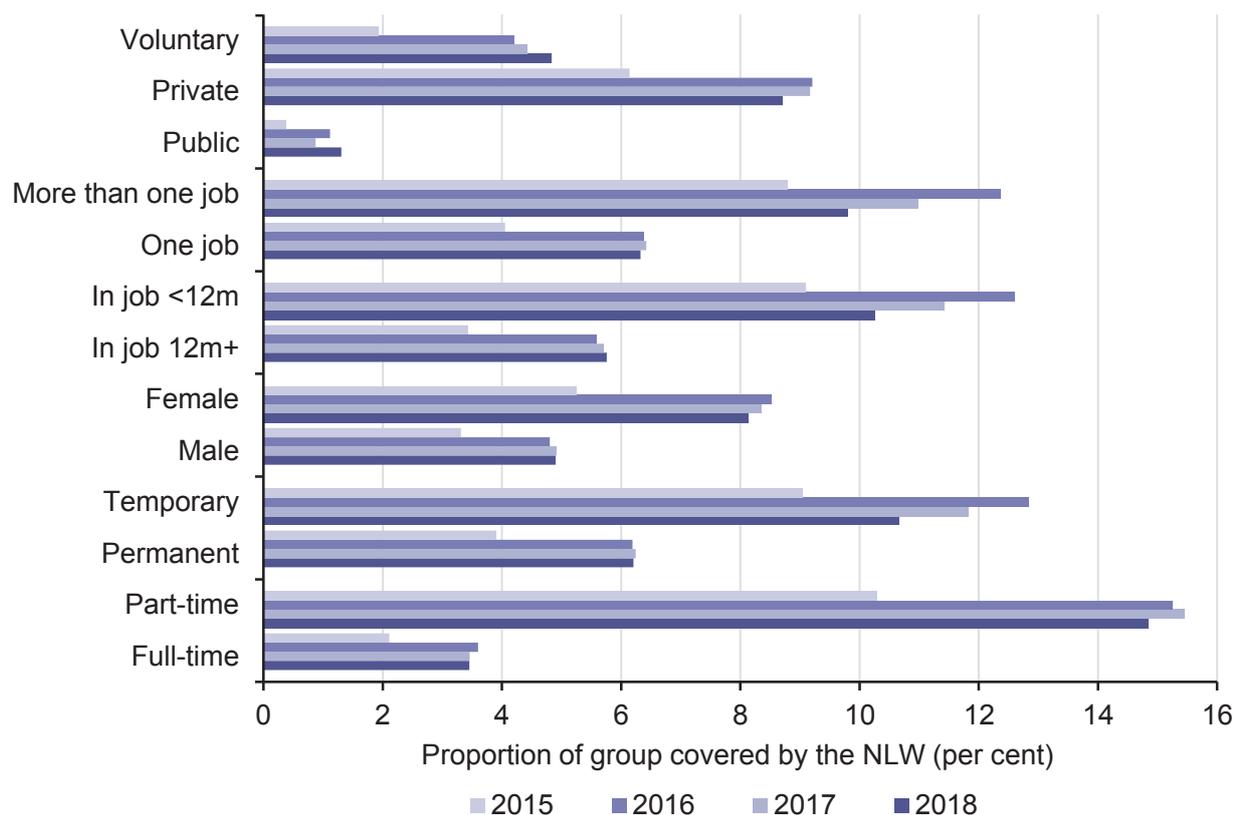
Notes:

- 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.

2.31 As shown in Figure 2.11, coverage fell in 2018 for workers with characteristics associated with higher coverage. Conversely, coverage increased, or was flat, for those workers with characteristics associated with lower coverage. Coverage fell for workers who: work in the private sector, worked more than one job, had been in their job for less than a year, were female, work in temporary jobs and work in part-time jobs.

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Figure 2.11: Coverage of the NMW/NLW for workers aged 25 and over, by worker and job characteristics, UK, 2015-2018



Source: LPC estimates using ASHE 2010 methodology, low pay weights, UK, April 2015-18.

Notes:

- 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.
- Data exclude first year apprentices.
- 'In job <12m' refers to those with less than 12 months in a job, 'In job 12m+' refers to those 12 months or more in a job.

2.32 The particularly fast falls in coverage for those who are in temporary jobs, have been in their job for less than 12 months and for younger workers may reflect the tightening labour market for the lowest paid that we have heard about from stakeholders. These groups of workers would be most likely to have taken advantage of higher-paying jobs created in a more competitive wage environment.

2.33 Table 2.5 shows that coverage fell in low-paying occupations overall and increased in non low-paying occupations, continuing a trend seen last year. When low-paying occupations are broken down further we can see that the occupations with the highest coverage have seen falls in the proportion of workers earning the NLW, while low-paying occupations with relatively low coverage have – for the most part – seen slightly higher coverage. In 2016 around 15 per cent of NLW workers were in low-paying occupations, by 2018 this had increased to 19 per cent.

Table 2.5: Coverage of the NMW/NLW for workers aged 25 and over, by occupation, UK, 2015-2018

| Occupation | Coverage (per cent) | | | | 2017-2018 Change |
|------------------------|---------------------|------|------|------|------------------|
| | 2015 | 2016 | 2017 | 2018 | Percentage Point |
| Hair & beauty | 22.1 | 28.2 | 35.8 | 33.1 | -2.7 |
| Cleaning & maintenance | 22.9 | 32.6 | 31.5 | 30.5 | -1.0 |
| Hospitality | 23.7 | 31.8 | 32.1 | 28.6 | -3.5 |
| Food processing | 16.7 | 23.6 | 23.0 | 20.7 | -2.3 |
| Textiles | 15.7 | 25.9 | 26.6 | 19.9 | -6.7 |
| Retail | 12.4 | 20.5 | 19.7 | 19.6 | -0.1 |
| Childcare | 8.8 | 17.1 | 16.4 | 15.8 | -0.6 |
| Transport | 8.9 | 14.7 | 14.5 | 13.8 | -0.6 |
| Leisure | 7.5 | 13.6 | 13.2 | 13.8 | 0.6 |
| Agriculture | 5.9 | 11.3 | 12.8 | 13.6 | 0.8 |
| Non-food processing | 8.5 | 12.0 | 12.3 | 13.2 | 0.9 |
| Social care | 6.6 | 15.4 | 12.5 | 12.8 | 0.3 |
| Storage | 9.1 | 14.6 | 12.4 | 11.8 | -0.6 |
| Security & enforcement | 5.4 | 13.5 | 10.5 | 11.8 | 1.3 |
| Call centres | 4.5 | 10.9 | 7.7 | 11.0 | 3.3 |
| Office work | 5.2 | 10.4 | 10.9 | 9.7 | -1.2 |
| Low-paying sectors | 12.8 | 20.3 | 19.5 | 18.7 | -0.8 |
| Non low-paying sectors | 0.9 | 1.4 | 1.7 | 1.7 | 0.0 |
| Total | 4.3 | 6.7 | 6.6 | 6.5 | -0.1 |

Source: LPC estimates using ASHE 2010 methodology, low pay weights, UK, April 2015-18.

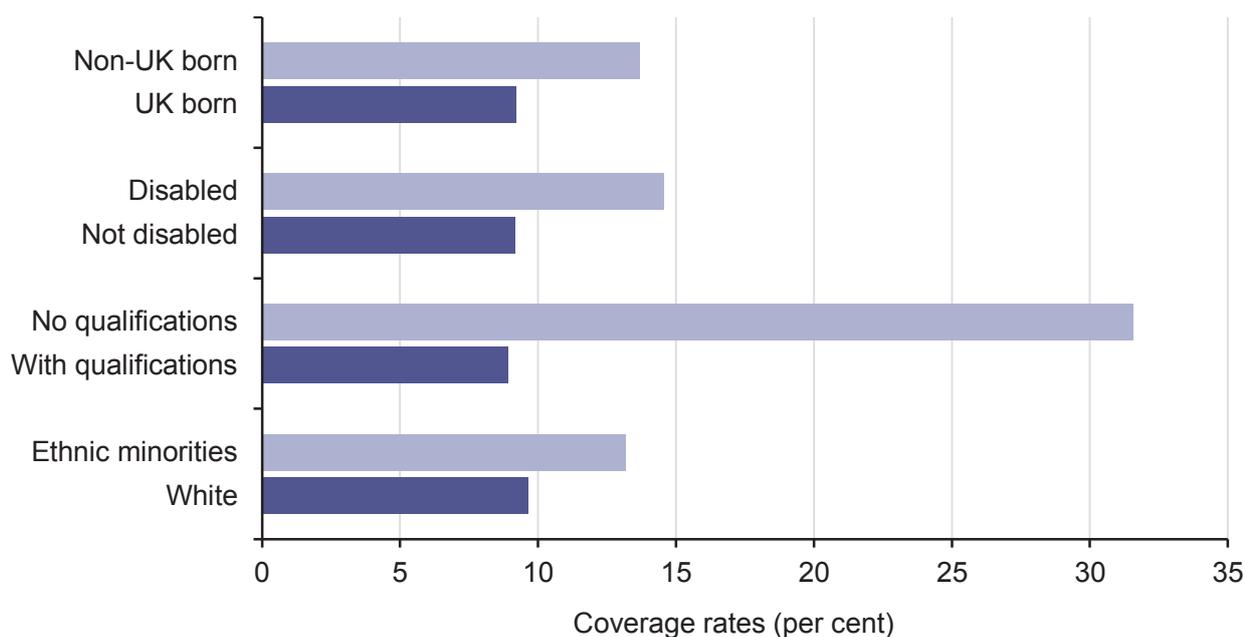
Notes:

- 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.
- Data exclude first year apprentices.
- Low-paying occupations based on 2017 definition.

2.34 Figure 2.12 shows the differences between coverage by worker characteristic using the Labour Force Survey (LFS). The LFS contains more information on worker characteristics than the Annual Survey of Hours and Earnings (ASHE), which is the source of all the other figures in this section of the chapter, but the wage figures are less reliable – which explains the slightly higher coverage in this data set. The data show non-UK born workers, those with disabilities, those without qualifications, and ethnic minorities have higher coverage than their direct comparators. The difference in coverage is largest when separating workers by qualifications, as workers with no qualifications are much more likely to work in unskilled jobs.

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Figure 2.12: Coverage of the NMW/NLW for workers aged 25 and over, by worker characteristic, UK, 2017-2018



Source: LPC estimates using: LFS microdata, income weights, quarterly, imputed wages, not seasonally adjusted, UK, Q2 2017-Q1 2018.

2.35 Alongside our analysis of coverage by sector and characteristic, we also received survey evidence from stakeholders that gives some insight into the proportion of firms covered by minimum wage increases. The sampling methodology for surveys varies, and is often a self-selecting sample of organisations' members. We note the number of respondents to each survey below. This year, we issued guidance to stakeholders on survey questions, which mean that responses can be compared more directly.

2.36 The Federation of Small Businesses (FSB), Chartered Institute of Personnel and Development (CIPD) and BCC surveyed members on the extent and nature of the impact of the NLW. In each year since the NLW was introduced, the proportion of FSB survey respondents (561 total respondents in 2018) that had their wage bills increased by the NLW has remained between 48 and 52 per cent, reflecting the relatively stable NLW coverage. A similar proportion, 51 per cent, of 2,001 total respondents (from a YouGov panel) to the CIPD's Summer 2018 Labour Market Outlook survey had been affected by the NLW since its introduction. This was up slightly on 2016 and 2017. Since 2016, the BCC's annual workforce survey (1,100 respondents in 2018) has asked businesses how they might change their behaviour as a result of possible increases in the NLW by 2020. The main change since the NLW's introduction was a fall in the proportion of businesses not expecting to be affected or stating that they will not have to take action.

Forecasting 2020 coverage

In previous reports we have included forecasts of NLW coverage in 2020 based on the number of individuals who were paid less than 60 per cent of the median wage – our target rate for that year. This original estimate of three million workers covered in 2020 can be better thought of as the number of people who would have their pay directly increased by the rising pay floor, rather than an exact prediction of the numbers earning within five pence of the minimum wage.

As we set out in our 2017 Report, this estimate did not take into account any spillovers from the minimum wage as employers choose to maintain differentials between roles or keep their minimum pay ahead of the NLW. Having assessed how employers have responded so far to the NLW it appears unlikely that coverage, measured on that original basis, will reach 3 million by 2020. Variations in employer and worker responses, and the difficulties in forecasting these going forward, mean that we would not be confident in including an updated projection. However, we will continue to review how employers maintain differentials in response to a higher minimum wage.

2.37 Overall our analysis seems to indicate that coverage fell for the groups most likely to be paid the NLW, but this was almost entirely offset by increases in coverage for the groups relatively less likely to be paid the NLW.

Affected sectors

2.38 Our analysis shows that a few sectors and regions are disproportionately affected by the NLW. These are groups with high bites and/or coverage as outlined above. During our consultations, certain sectors expressed more concern about the effects of the NLW on businesses. Representatives and firms in these sectors often reported similar responses to what we have heard more generally – changes to prices and profits being common – but also thought there had been or would be negative employment effects. Employer representatives conducted surveys to contribute to their evidence, which give us useful insight into the extent and nature of the NLW's effects. It is worth noting though that some of the organisations that ran these surveys told us that firms affected by the NLW are more likely to respond.

2.39 Association of Convenience Stores (ACS) members rate wage costs as their most pressing concern. The Federation of Wholesale Distributors (FWD) emphasised that wholesale is a sector particularly affected by the impact of the NLW; in 2015, around 30 per cent of its workers earned less than the £7.20 threshold before its introduction. The National Hairdressers' Federation's (NHF) NLW survey (379 respondents) found that the NLW has increased wage bills for 71 per cent of its members. Around three quarters of horticulture businesses were affected by the 2018 increase, according to respondents to the NFU's survey (138 respondents from the horticulture sector, 439 in total). The NFU told us that the NLW was still a cost pressure for some firms, but that labour shortages were a pressing issue for many and wages at the bottom are growing faster than the NLW.

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2.40 Social care organisations continued to warn of a ‘crisis’ in the sector, as local authority funding often did not cover the rising cost of care. While the NLW was not the cause of the problems, it exacerbated the pressure on firms, according to the representative bodies we consulted.

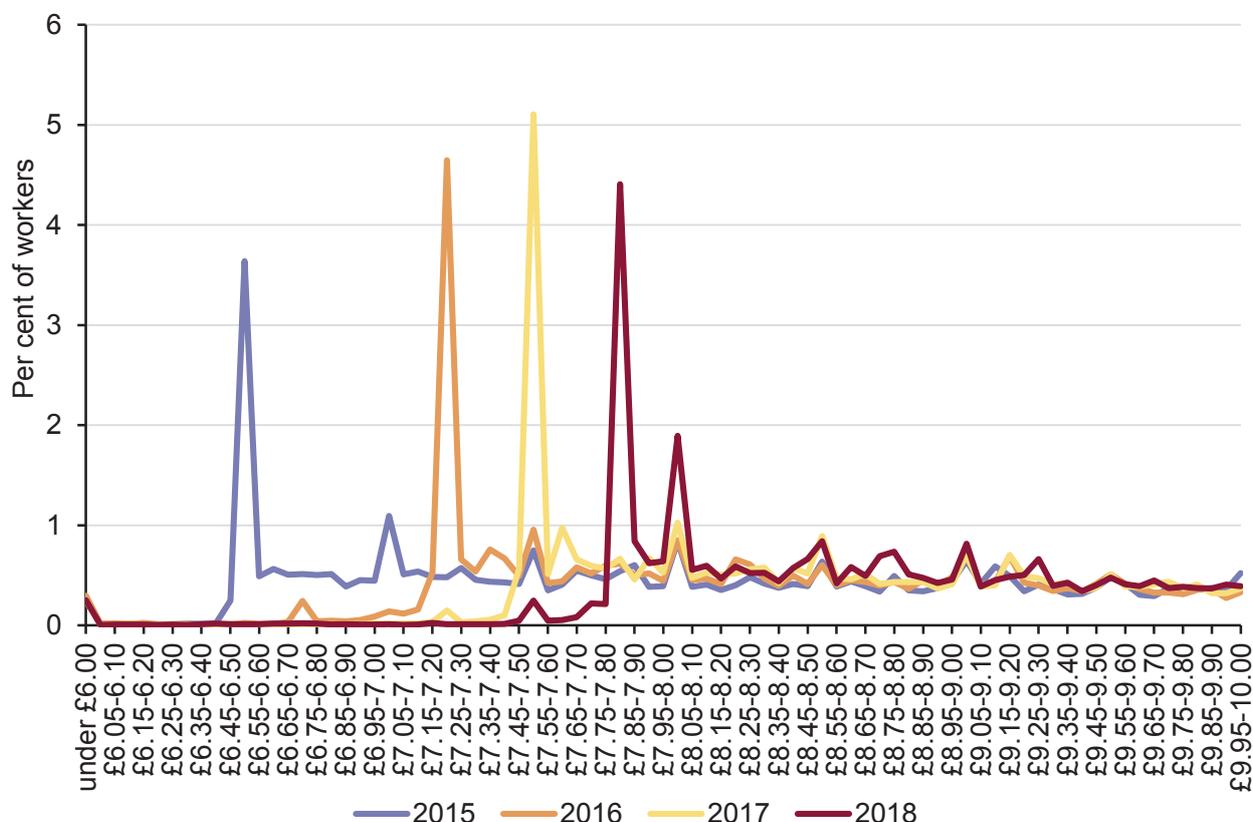
2.41 Some sectors did not report significant difficulty dealing with increases, although some had made changes to manage the increased cost. The British Retail Consortium (BRC) reported that 60 per cent of its members support the ambition of the NLW to raise pay. EEF (the Manufacturers’ Organisation) told us that in manufacturing most firms pay above the rate. The Food and Drink Federation (FDF) thought that most food manufacturers were paying more than the NLW, but that some had problems with differentials and others were unable to pass costs on to supermarkets.

The pay distribution

2.42 This section examines the impact of the uprating of the NLW on the hourly pay distribution. We examine how the distribution of hourly wages has changed since 2015, and whether this may explain the flat coverage we have seen in Figure 2.9.

2.43 Figure 2.13 shows the distribution of hourly wages. While the proportion of workers paid at or less than the NLW decreased very slightly in the year, there is a noticeable spike in pay at £8.00 an hour, which is considerably higher than seen in previous years. This suggests that while a slightly lower proportion of workers are earning the minimum wage, an increased number are earning just above it.

Figure 2.13: Hourly wage distribution for workers aged 25 and over, UK, 2015-2018



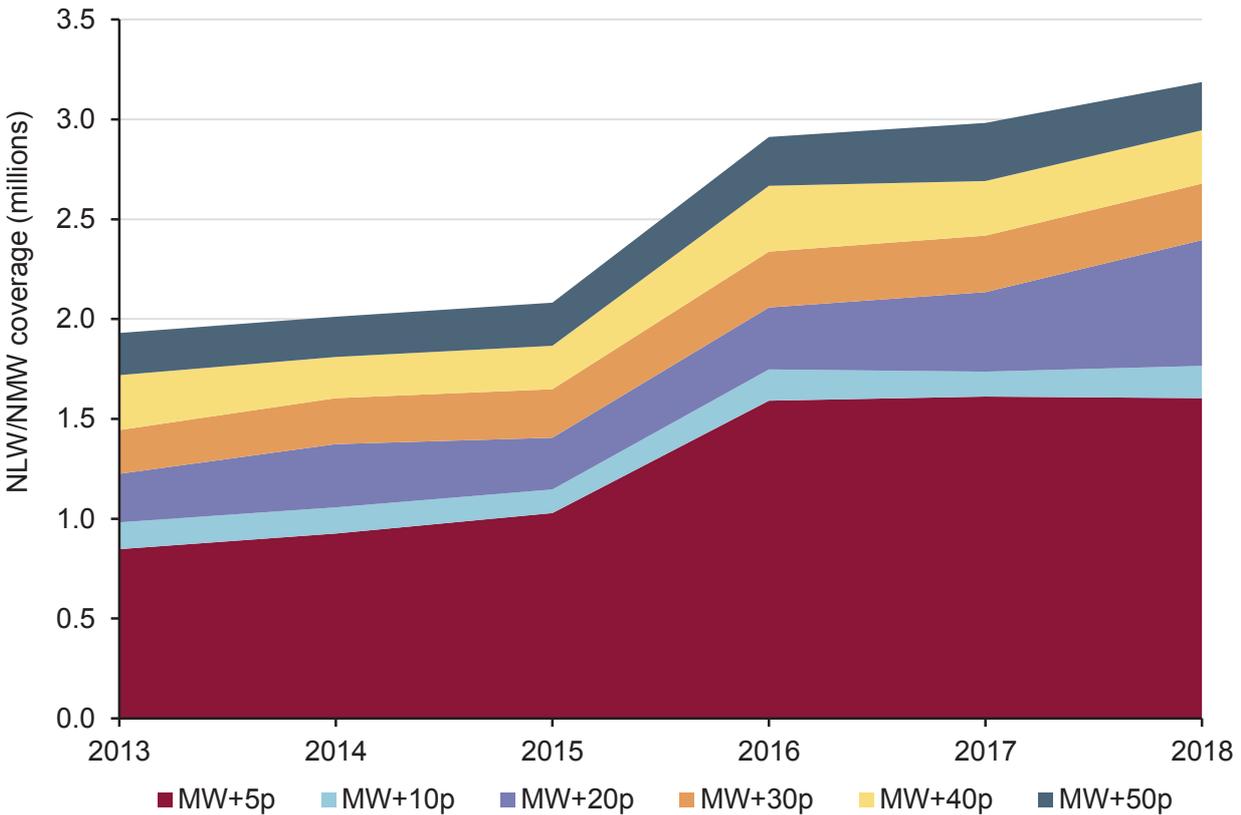
Source: LPC estimates using ASHE 2010 methodology, low pay weights, UK, April 2015-18.

Notes:

- Data for 2016 onwards are for different points in the minimum wage year compared with 2015, so should not be directly compared.
- Data exclude first year apprentices.

2.44 Figure 2.14 shows more clearly how the number of workers earning slightly above the wage floor has increased in the last five years. The number of workers earning up to five pence over the NLW – our traditional definition of coverage – has remained broadly flat since the introduction of the NLW, as has the number earning between five and ten pence over the NLW. However, the number of workers earning between 10 and 20 pence above the NLW has doubled from 310,000 to 630,000 since its introduction (from 1.3 per cent of workers to 2.6 per cent).

Figure 2.14: Wages within different earning bands of the NMW/NLW, for workers aged 25 and over, UK, 2013-2018



Source: LPC estimates using ASHE 2010 methodology, low pay weights, UK, April 2013-18.

Notes:

- a. Data for 2016 onwards are for different points in the minimum wage year compared with 2015, so cannot be directly compared.
- b. Data exclude first year apprentices.

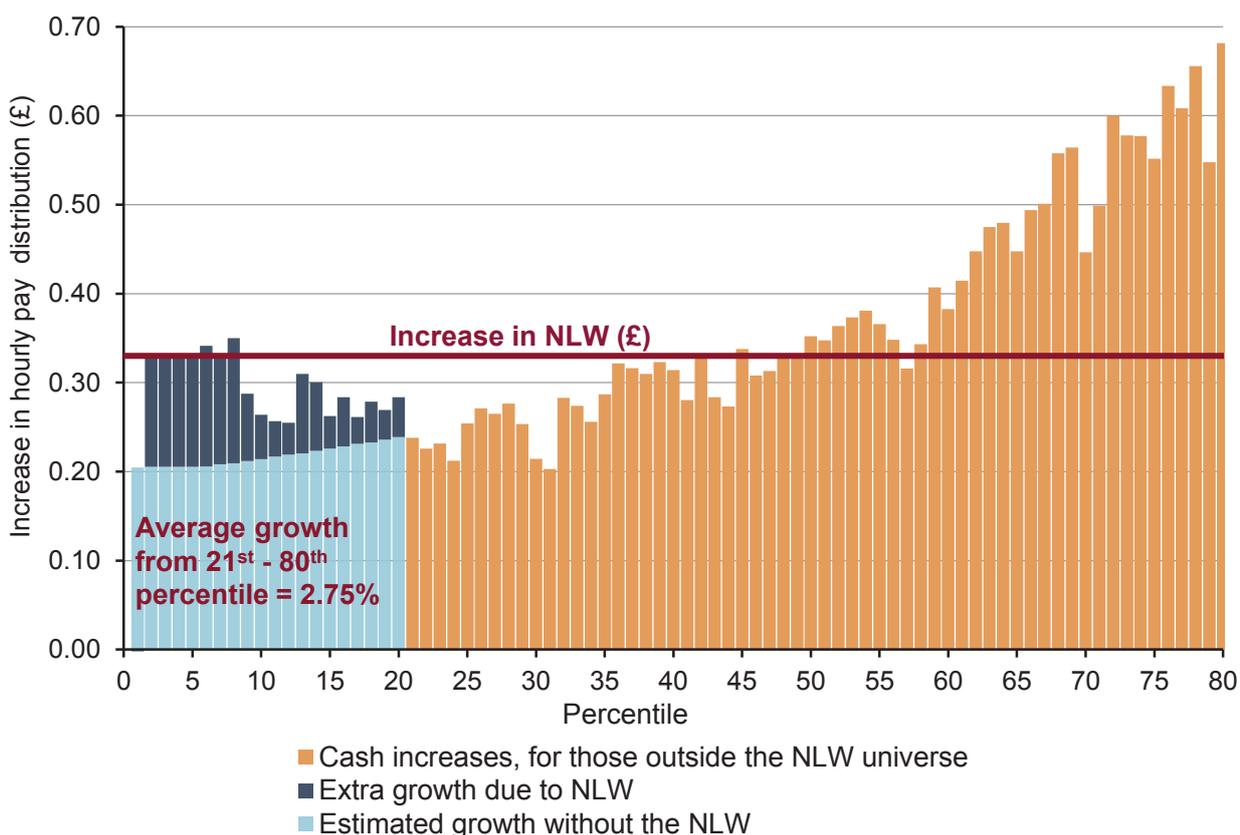
2.45 This increase in those paid slightly above the NLW may be part of the reason why we have not seen the increase in NLW coverage that we expected following the two most recent upratings of the NLW. It is hard to predict whether there will continue to be an increasing number of workers paid just above the NLW as it approaches the 60 per cent target or whether at some point these workers will be absorbed into the group paid at the NLW.

Wage spillovers

2.46 Since the NLW’s introduction, we have consistently heard that firms have been unable to afford to give the same percentage increases to higher-paid staff as to those on the NLW. The cost of maintaining differentials between staff grades can be significant and we hear of many firms reducing differentials or removing pay grades to mitigate NLW costs. At the same time, other employers have maintained differentials, or given higher-paid staff larger increases than they otherwise would. This has contributed to the minimum wage spillovers that we have observed.

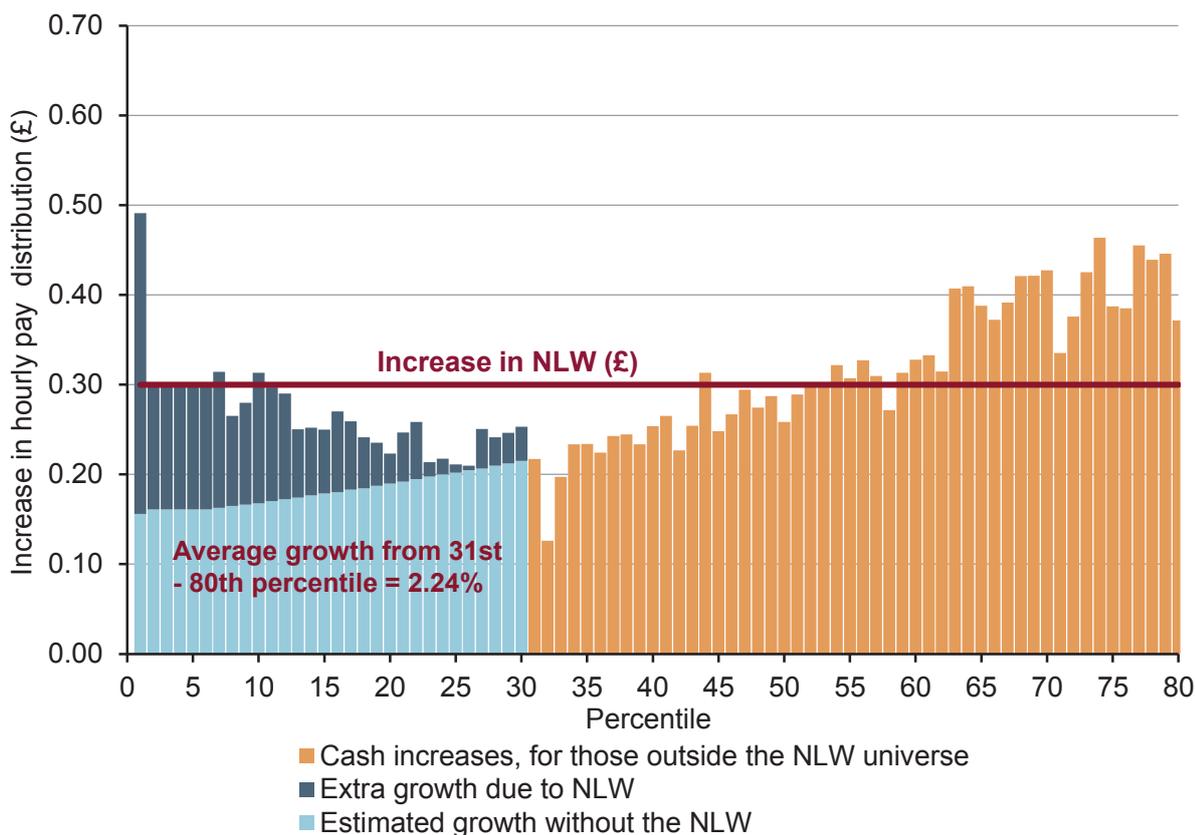
2.47 We estimate spillovers as those jobs paid above the NLW (5th percentile in 2018) who receive pay growth greater than the average growth in wages of jobs higher up the wage distribution. Figure 2.15 shows how, in the absence of the NLW, we might have expected those at the bottom of the wage distribution to have received hourly pay increases of between 20 and 24 pence (light blue bars). In reality, workers up to the 20th percentile received 25 to 35 pence per hour, although only those up to the 8th percentile (£8 per hour) received a cash increase matching, or exceeding, that of the NLW.

Figure 2.15: Cash growth in the hourly wage distribution including spillovers for workers aged 25 and over, UK, 2017-2018



Source: LPC estimates using: ASHE 2010 methodology, standard weights, UK, April 2017-2018.
 Note: Data exclude first year apprentices.

Figure 2.16: Cash growth in the hourly wage distribution including spillovers for workers aged 25 and over, UK, 2016-2017



Source: LPC estimates using: ASHE 2010 methodology, standard weights, UK, April 2016-17.

Note: Data exclude first year apprentices.

2.48 Comparing Figure 2.15 and Figure 2.16 shows how spillovers change from year-to-year. In 2018, they only travelled as far as the 20th percentile (£9.00 per hour), affecting around 5 million jobs, compared with 2017, when they extended as far as the 30th percentile (£9.88 per hour), affecting over 7 million jobs. Higher average wage growth in 2018 may have reduced the capacity of employers to pay NLW-equivalent cash awards to those workers paid just above the minimum in order to maintain differentials. The cumulative impact on employers of above-inflation increases for workers on the NLW is also likely to be a contributing factor this year to a reduction in spillovers. This has resulted in the continued squeezing of pay differentials.

2.49 The Confederation of British Industry (CBI) argues that 'median wage growth remains stubbornly low, showing the NLW is compressing the wage distribution in the lower half of the labour market, rather than being a catalyst for broad based wage growth'. The data confirm this, with faster growth for lower-paid workers than for those slightly above the bottom. There are significant wage spillovers from the NLW, but, for the most part, these do not match the increases in the wage floor and have not extended as far up the pay distribution this year. Employers and workers tell us that reduced differentials can affect employee relations, morale and staff retention. Employers may respond by restructuring their workforce and removing management levels, and evidence suggests the latter approach has become more common this year; the CBI expects this to continue as the NLW rises.

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2.50 Around a quarter of respondents to a BCC survey were planning to 'reduce the rate of basic pay growth for staff', about the same proportion as last year but higher than in 2016, when only 15 per cent anticipated such an effect. This suggests that the NLW has affected pay structures more than employers initially expected. Other survey evidence does not show continued compression. In the FSB's survey, 40 per cent of affected respondents had kept differentials between the NLW and supervisors at the same level, 14 per cent reduced and 13 per cent increased the gap. We have heard that small firms may consider it more important for morale to maintain differentials given that these employers have more direct relationships with staff. It is also possible that employers have reduced differentials to the minimum realistic level. While the minimum wage bite remains highest in the smallest employers, as shown in Figure 2.7, strong wage growth among the smallest employers led to it actually falling over the last year in this category as wage growth outpaced the minimum wage.

2.51 The British Beer and Pub Association (BBPA) told us that differentials in pubs have been 'eroded' since the introduction of the NLW, and more senior roles are now receiving the same percentage increases as staff paid the NLW. Scottish hoteliers told us that differentials had been affected in many businesses. Often middle management positions were awarded the lowest pay increases as differentials were already slim in operational roles. Some have cut management positions, often in larger firms, by centralising management functions.

2.52 We find some evidence of these falling differentials in the hospitality sector when we compare pay levels for occupations with different skill levels. Our analysis of wage data has found that pay for chefs and cooks at the lower end of the pay distribution has increased more slowly than for waiters, bar staff and assistants, which might indicate that the pay premium for these types of workers has been squeezed. While there is some evidence of this happening in 2014 and 2015, the change is particularly noticeable in 2016, indicating that the introduction of the NLW may have reduced this premium. The pay premium at the 20th percentile fell from 35p in 2015 to just 5p in 2016 (though it has recovered to 17p in 2018). Between 2015 and 2018 this premium fell from 70p to 50p at the 30th percentile and from 89p to 70p at the 40th percentile.

Case study: hospitality workers in Scotland

Hospitality workers in Scotland told us that opportunities for progression in the sector, at least in terms of pay, are hard to come by. One worker recounted how he had progressed from being a waiter to head waiter and then wedding supervisor, but described differentials in the hotel he worked in as 'non-existent'. He told us he had been expected to take on these additional responsibilities for no financial reward as the pay was the same in each role.

2.53 The BRC reported retailers reviewing pay structures, removing managerial roles and reducing differentials. It was concerned about the impact on career progression as management roles fell in number and workers had less incentive to take on more responsibility. The BRC's employee survey found people reporting fewer opportunities for promotion.

2.54 The ACS pointed out that smaller retailers have limited scope to alter management structures, although some employers thought ‘enriching’ the jobs of lower-level staff, as management roles are removed, had a positive effect on staff engagement. The British Independent Retailers’ Association (BIRA) told us that its members ‘have had to limit pay rises for higher wage staff, who they now fear will leave, damaging already poor productivity in the [small retail] sector’.

2.55 The FDF reported that falling differentials have been one of the main effects of the NLW and thought that ‘hollowing out’ of job structures could follow. We heard about issues with differentials from poultry processing workers on visits as well, with the extra rate paid to skilled workers only 14 pence per hour more than the basic rate of £8 per hour.

2.56 The Local Government Association (LGA) reported that the NLW has compressed differentials within local government pay structures. It meant that a more fundamental review of the pay spine had to be carried out. This involved combining some existing points and equalising the gaps between others. This had increased the costs beyond those purely associated with ensuring compliance with the minimum wage.

2.57 Usdaw insisted that in its 2018 pay negotiations with retailers, differentials were maintained on a percentage basis. Indeed, it cited examples of differentials being restored, including at Argos with managers receiving a 6.8 per cent increase this year. Usdaw agreed that there was an issue with a lack of progression opportunities, and cited retailers removing or combining grades, but it did not think this was because of pay pressure from bottom grades. The Scottish Trades Union Congress (STUC) thought the reduction of differentials was an opportunistic effort to minimise costs rather than a genuine business need. Unite’s consultation response also recognised a concern with ‘squeezing’ of differentials.

Case study: retail workers’ differentials

Udaw told us that retailers have not cut back on other aspects of pay and reward in response to the NLW. However, members of the union we met in Newry felt they had seen a gradual change in differentials and conditions. Workers from one supermarket told us that some in-store supervisory levels had been removed and replaced with a ‘section leader’ role. This paid £1 per hour above basic pay and came with additional responsibilities, such as acting as a keyholder and doing staff rotas. According to the workers we met, internal staff rarely applied for this section leader role as they felt that the extra money was not enough to compensate for the level of responsibility expected. Some also felt they lacked the skills or experience to make the move to ‘section leader’.

2.58 In social care, differentials have been affected, as even when Local Authority fees accounted for minimum wage increases, funding still did not reflect the need to increase pay further up pay scales. Dimensions, a care provider, told us that it had ‘radically reconsidered’ its pay structure, but that differentials had still been squeezed, causing staff to be less willing to seek promotions. Cymorth Cymru, a representative body for the learning disability supported living sector in Wales, found that Local Authorities could often be reluctant to provide funding to maintain differentials. It told us that the end result of that reluctance is that many middle managers are paid only marginally above the NLW, and often on the same rate of pay as those they manage.

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2.59 The NLW also influences wages for workers aged below 25. Many of our stakeholders told us they do not pay younger workers, particularly those aged 18-24, less than older workers – although this varies by sector. To gain an understanding of the scale of this spillover to younger workers, we examined the number of workers within the pay rates influenced by the NLW. The data set out in Table 2.6 indicate that slightly less than a third of younger workers have their pay influenced by the NLW, and that the number has been quite consistent over the first few years of the NLW.

Table 2.6: Proportion of jobs filled by 16-24 year olds paid at or above the NLW, UK, 2016-2018

| | Proportion paid between NLW and 20 th percentile (per cent) | | |
|-------|--|------|------|
| | 2016 | 2017 | 2018 |
| 16-17 | 17 | 17 | 15 |
| 18-20 | 33 | 33 | 31 |
| 21-24 | 31 | 31 | 29 |
| 16-24 | 30 | 30 | 28 |

Source: LPC estimates using ASHE, low-pay weights, UK, 2016-18.

2.60 Avram and Harkness (2018) present provisional findings from a study into the effect of minimum wages on job progression out of minimum wage jobs using ‘Understanding Society’ (and a small sample from the British Household Panel Survey) data. Previous studies in the UK had focused on the effects of the NMW in the years prior to 2010. While the existing literature convincingly shows that the minimum wage boosted wage growth for the lowest paid, the evidence of its impact on wage progression is limited. Cai, Mavromaras and Sloane (2018) and Jones, Jones, Latreille, Murphy and Sloane (2013) found no effects on low wage dynamics in the UK, while Rinz and Voorheis (2018), looking at the US, found that minimum wages had increased earnings mobility at the bottom of the wage distribution.

2.61 Avram and Harkness examine the period from 2009 to 2016, modelling the effect of the minimum wage through high and low-paid travel to work areas. They find that there is substantial mobility out of minimum wage jobs, with half of workers at the wage floor leaving their job for a higher-paying one each year. However, they find that the vast majority of these movements are to jobs that are still low paying (defined as less than two-thirds of the median wage), but slightly above the minimum wage. They find no evidence of any minimum wage effect on transition probabilities, but do find evidence of effects from higher wage areas, and individual and job characteristics.

2.62 Workers in the public sector, in a large firm, and with higher levels of educational qualifications, are more likely to transition into a non low-paying job (a job paying more than two-thirds of the median wage). On the other hand, part-time workers, those with a history of unemployment spells, female workers, workers in hospitality, food and beverage manufacturing and textile manufacturing, and those that have been working in a minimum wage job for a longer period, are less likely to transition to a non low-paying job.

2.63 Aitken, Dolton and Riley (2018), looking at the introduction of the NLW and the subsequent uprating to £7.50, found evidence of significant increases in real wages for low paid employees, with larger real wage increases for those with earnings at or just above the NMW than there otherwise would have been.

2.64 Overall the data suggest that employers have struggled to maintain differentials for jobs that are paid more than 20p above the NLW and that the NLW has had less of an indirect effect on wages for this group than in previous years; however, there are still substantial spillovers from the increasing NLW. In keeping with this, stakeholders told us that they continue to struggle to keep up differentials as the minimum wage increases and that this is an important issue for them.

Pay consolidation

2.65 A common theme in stakeholder evidence, both prior to the introduction of the NLW and subsequently, was that firms would respond to the higher wage floor by changing the overall benefits package offered to employees. Last year, we concluded that the NLW had not had a measurable effect on premium pay, overtime or bonuses, but there were areas where firms might cut back, in response to recent increases. Changes to other aspects of pay and reward, such as paid breaks, holiday entitlements and salary sacrifice schemes, were more difficult to assess as reliable data on these was not readily available.

2.66 We continue to hear that some firms are cutting some other aspects of pay and reward, though it is not clear how widespread this is or to what extent the NLW is the cause. Several employee representatives noted this practice but disputed that it was a consequence of the NLW. Usdaw asserted that reductions to paid breaks, pay premia and bonuses were not in response to the NLW, but were in train anyway – though some workers perceived this as a trade-off. Usdaw did not have ongoing concerns around consolidation of premium rates or other benefits. The BRC also thought there was little evidence of a reduction in benefits. Indeed, some businesses we met said they had looked at enhancing non-wage benefits to help with recruitment and retention difficulties.

Case study: manufacturer in North Devon

A manufacturer we visited in North Devon told us that until recently, recruitment and retention has not been a problem, and the firm had a high proportion of long-serving staff. It puts this partly down to the lack of other options in the immediate vicinity. Now, however, it is feeling the effects of a tightening labour market. In response to this, it has broadened the non-wage benefits that staff are entitled to, introducing a 'benefit portal' offering discounts, for example, on gym membership.

2.67 Unite noted some evidence of firms removing or reducing terms and conditions, including pay premia, annual leave entitlements, sick pay and pension contributions. It thought, though, that firms were using the NLW as an excuse to cut these areas rather than as a genuinely necessary response to the NLW. Unite argued that this was a cause for concern as basic pay was just one element of the package needed to give people quality of life.

2.68 A Chartered Institute of Payroll Professionals' (CIPP) survey (of 32 payroll and HR professionals) found that for 95 per cent of respondents, the NLW had not affected benefit packages. However, at roundtable events with the CIPP we heard isolated examples of some benefits being cut. Sometimes this was to ensure that employers remained compliant with the minimum wage – for example, the withdrawal of some salary sacrifice schemes.

2.69 Sectors telling us that firms have had difficulty accommodating the NLW also told us that some have looked to make savings on other reward elements. The NHF told us that some businesses have had to cut back on benefits and incentives. This was also the case in wholesale, and UK Fashion and Textiles (UKFT) thought that firms had been unable to increase premium pay in line with the NLW. ACS thought that larger firms in the convenience sector were starting to look at other aspects of pay and reward to offset the cost of the NLW, and its survey found more members (42 per cent of those affected by the NLW compared with 36 per cent last year) were reducing benefits. Among Small to Medium-sized Enterprises (SMEs), only 7 per cent of affected firms had done so in the FSB's survey, but 21 per cent of affected firms planned to in the BCC's survey of members. This perhaps reflected an awareness that the most common responses so far (profits and prices) may not be sustainable as the NLW continues to rise.

Case study: multi-channel retailer

A multi-channel (online and high street) retailer told us that each percentage point increase in the NLW costs its business £300,000. They were of the view that the announcement of the NLW left them little time to plan, but concluded that they would not have to act in the first year of the rate.

Since then, they have decided upon a structured response, focused on workforce structure and pay. To maintain differentials, they have reduced the number of grades in their retail operations. They have also reviewed staff terms and conditions, which they say remain 'attractive', removing paid breaks and some Sunday premia but retaining bank holiday and night shift premia.

2.70 The data suggest that there has been some reduction in the use of other pay benefits for NLW workers, but this seems to be occurring for all workers. The use of shift premia among NLW workers has been flat for the last few years but fell slightly for workers paid above the NLW. Earnings from shift premia were also flat for NLW workers, while they fell for workers paid above the NLW. The proportion of NLW workers that received overtime pay decreased very slightly in the last year after a few years of flat or increasing levels, while overtime use has been falling for workers earning above the NLW for the last few years. Average overtime earnings, for those that received them, decreased slightly for NLW workers, due to falling hours of overtime worked, but on the other hand increased slightly for workers earning above the NLW. This is consistent with stakeholder evidence indicating that when firms have consolidated pay, it was through other measures, and that any decreases in shift premia and overtime are following economy-wide trends.

Measured underpayment and non-compliance

2.71 In 2017 we published a separate report on non-compliance and enforcement of the National Minimum Wage, looking in detail at the nature and extent of non-compliance, and reflecting on the latest policy response. We intend to produce a similar report in early 2019. In this section, we look solely at the latest ASHE data measuring underpayment and make comparisons with previous years following the introduction of the NLW in 2016.

2.72 As highlighted in previous years, the move to an April uprating has two complications from a measurement perspective. Firstly, we are now attempting to measure pay at the point immediately after an increase, when underpayment is at its highest. Labour Force Survey data has shown that underpayment drops in subsequent months, suggesting some firms take time to adjust to the new rate. Secondly, the timing of the survey in April can affect the number of workers recorded as paid below the new NLW, as employers are not legally required to increase pay until the first full pay period after the uprating of the NLW.

2.73 An ASHE survey date earlier in the month, as experienced in 2016 and 2018, will therefore result in a larger volume of workers – for example, those paid monthly – identified as compliant with the previous rate but paid below the new rate (as indicated by a low pay flag in the data). On the other hand, a later survey date, such as in 2017, will result in fewer legitimately recorded as underpaid, as most people will have experienced a pay period following the uprating. Table 2.7 shows the effect this has had on the raw underpayment data since the move to an April uprating in 2016.

Table 2.7: Impact of ASHE survey date on underpayment for those aged 25 and over, UK, 2016-2018

| | 2016 | 2017 | 2018 |
|--|----------------|----------------|----------------|
| Survey date (pay period containing) | 13 April | 26 April | 18 April |
| Total underpayment | 479,000 | 371,000 | 493,000 |
| Legitimate underpayment (low-pay flag) | 174,000 | 32,000 | 124,000 |
| Adjusted underpayment | 305,000 | 339,000 | 369,000 |

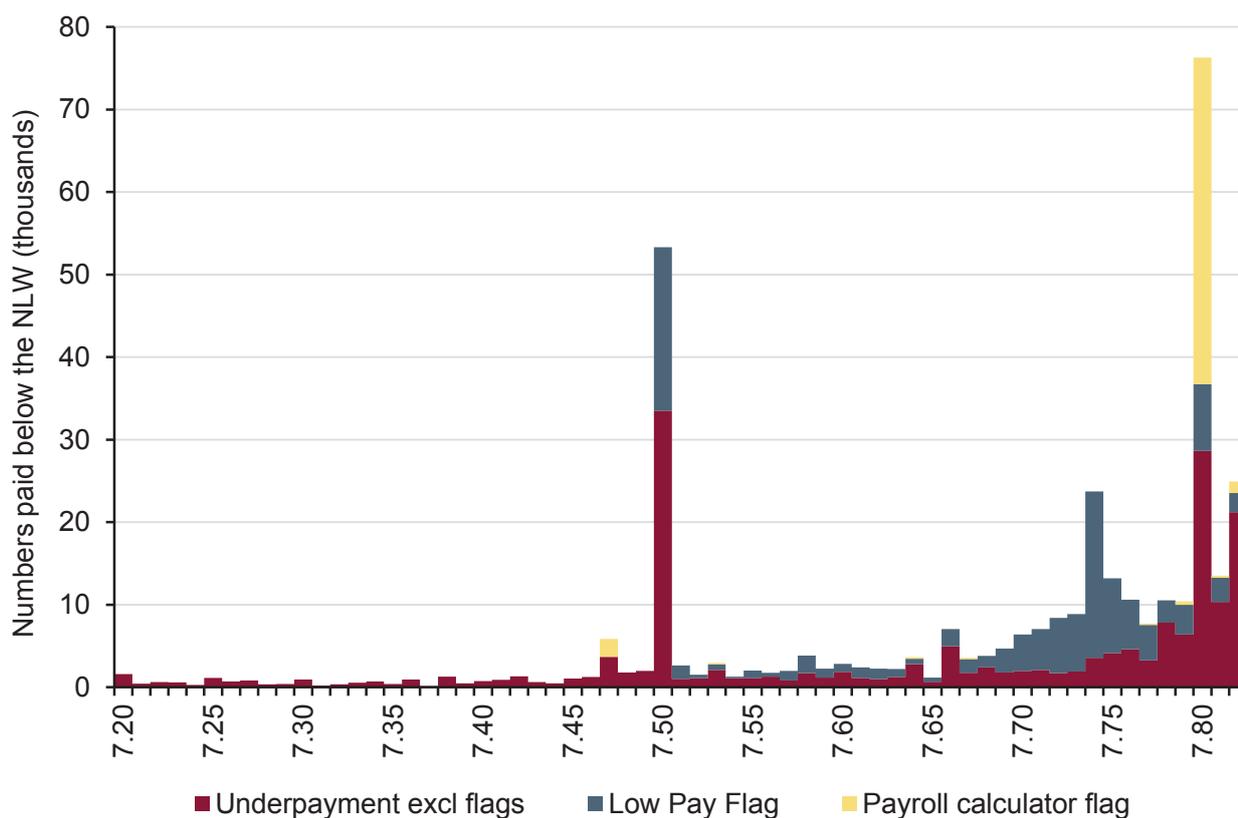
Source: LPC estimates using: ASHE, low pay weights, low pay flag, UK, April 2016-18.

Note: Data exclude first year apprentices.

2.74 Figure 2.17 looks at how those 25 and over are distributed from the introductory NLW rate of £7.20 to the current rate of £7.83. There is a large spike at the previous rate of £7.50 where over 50,000 workers are still being paid, though 30,000 of these (grey bar) are for legitimate reasons and will likely see their pay increase. Another large spike is found at £7.80, just below the current rate of £7.83. The Office for National Statistics (ONS) have identified that 40,000 of these workers have a monthly pay period that should have a derived rate of exactly the NLW, but whose actual rate is slightly different due to it being calculated on exactly 52 weeks per year rather than 52.18 (365.25/7). More worryingly there are an additional 135,000 workers paid below £7.20 that form a long, albeit low tail of underpayment with no significant spikes.

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Figure 2.17: Hourly earnings distribution from £7.20 to the NLW, for employees aged 25 and over, UK, 2018

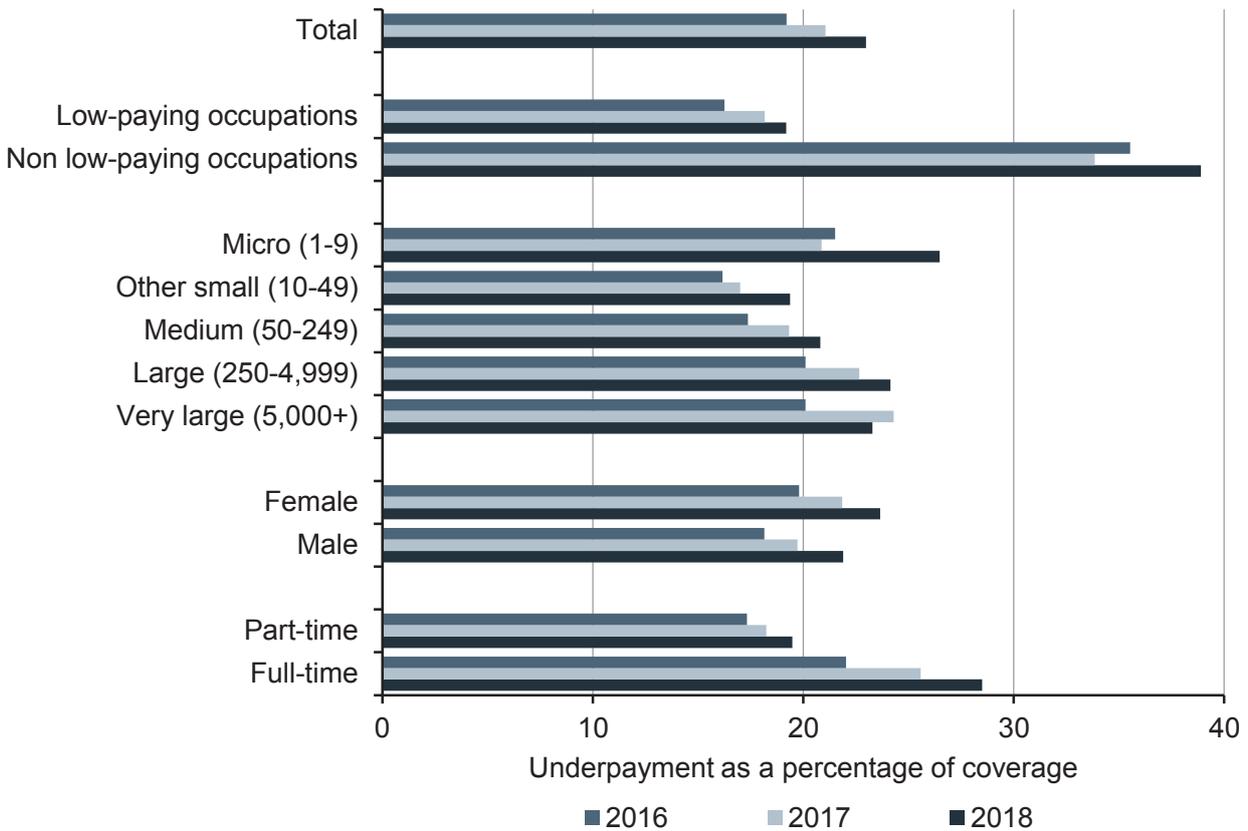


Source: LPC estimates using: ASHE 2010 methodology, low pay weights, low pay flag and payroll calculator flag, UK, April 2018.
 Note: Data exclude first year apprentices.

2.75 As already shown in Table 2.7, 2018 data identify around 370,000 jobs underpaid the NLW. This represents around 1.5 per cent of all jobs, but 23 per cent of all those covered and is an increase from last year. In our 2017 Report, using provisional 2017 data, we estimated that underpayment was roughly 280,000 or 18 per cent of coverage. However, whilst conducting processing of final 2017 data, ONS identified a number of already validated low-pay cases that had subsequently and incorrectly had higher pay values imputed in their place. The implication of this is that final 2017 data shows a substantial increase in 2017 underpayment numbers to 340,000, 1.4 per cent of all jobs or 21 per cent of coverage.

2.76 Figure 2.18 examines underpayment as a share of coverage for a range of characteristics since the introduction of the NLW. A quarter of a million workers in low-paying occupations were recorded as underpaid, 19.2 per cent of the 1.3m covered by the NLW, an increase from 18.2 per cent in 2017. The number of workers from non low-paying occupations paid below the NLW also increased to 120,000, representing 38.9 per cent of the 310,000 covered. This is a substantial increase, up from 33.8 per cent of coverage in 2017. We have already seen earlier in this chapter that women are more likely to be in low-paid work. The 2018 data show that they continue to be more likely to be underpaid than men, with 23.6 per cent of the one million female NLW workers paid below the NLW compared with 21.9 per cent of men covered, though the gap has narrowed. Full-time workers and workers in the smallest employers (micro employers) both saw large increases in the proportions underpaid of those covered at 28.6 per cent and 26.5 per cent respectively.

Figure 2.18: Underpayment as a proportion of coverage by characteristics for employees aged 25 and over, UK, 2016-2018

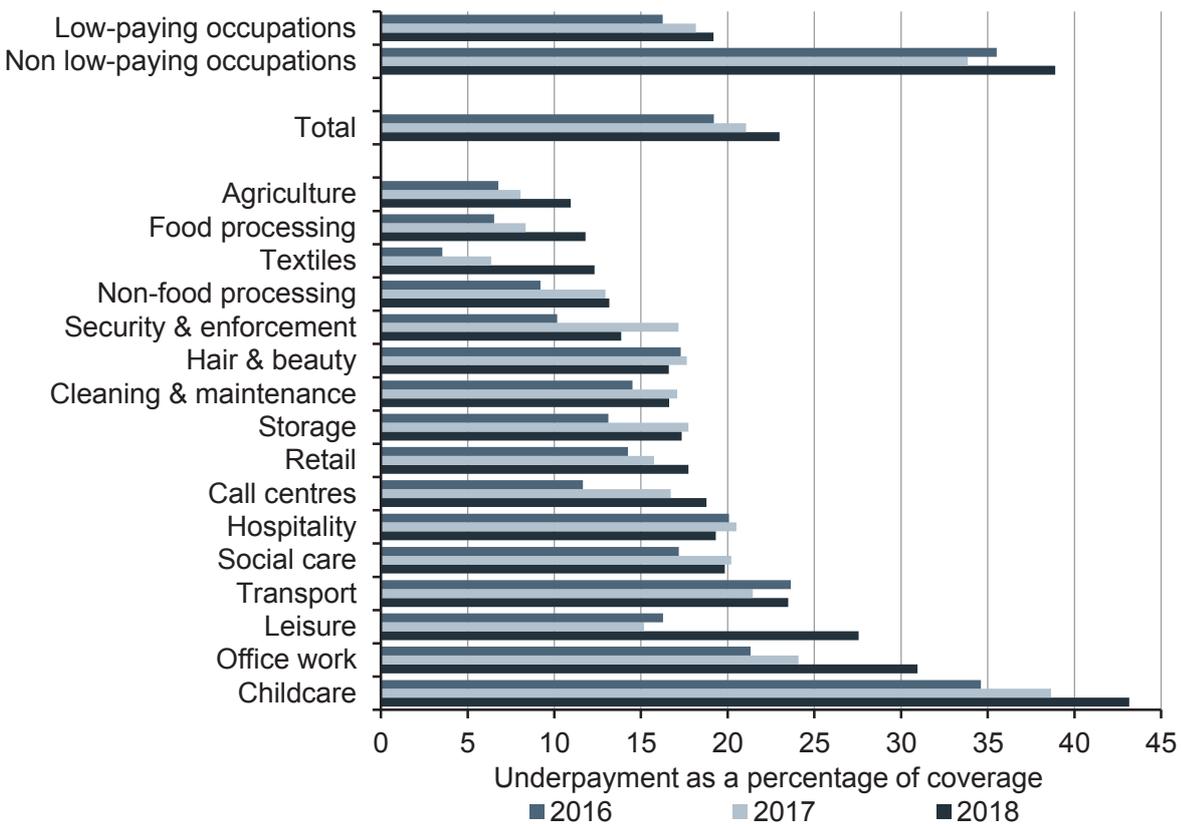


Source: LPC estimates using: ASHE 2010 methodology, low pay weights and low pay flag, UK, April 2016-2018.
 Note: Data exclude first year apprentices.

2.77 Figure 2.19 looks at measured underpayment by occupation and shows increases across most occupations in 2018. In terms of levels of underpayment, retail, hospitality, and cleaning and maintenance – the three largest low-paying sectors – have the most underpaid workers with 55,000, 45,000 and 40,000 respectively. As a proportion of coverage, childcare has by far the highest rate of underpayment, with over 40 per cent of NLW workers in the sector underpaid in 2018. Large rises were also found in leisure and office work.

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Figure 2.19: Underpayment as a proportion of coverage by occupation for employees aged 25 and over, UK, 2016-2018



Source: LPC estimates using: ASHE 2010 methodology, low pay weights and low pay flag, UK, April 2016-2018.

Note: Data exclude first year apprentices.

2.78 Stakeholders said relatively little on the extent of underpayment, although employers and representative groups we met did highlight the increased risk of non-compliance, as more workers were paid at or close to the NLW. Discussion on this topic centred on the increased awareness among businesses in all sectors of HM Revenue and Customs' (HMRC) enforcement activity. We will engage with stakeholders again when we produce a separate report early next year on compliance with, and enforcement of, the minimum wage.

2.79 Our meetings with employers did shed light on some of the reasons for underpayment and firms being found to be non-compliant with the minimum wage. Many of these were described as 'technical breaches' around accommodation, uniforms, salary sacrifice, and other deductions or calculations. We heard from some groups, including universities and payroll providers, that workers paid significantly above the minimum wage can be found to have been underpaid, once deductions are considered. There was concern that in some cases the application of the rules around the minimum wage can mean that employees lose access to schemes that are for their benefit. Business groups stressed that their members had made genuine mistakes and thought there should be more focus on deliberate non-compliance. They also called for more guidance and education for firms on how to remain compliant.

2.80 The TUC argued that 'more needs to be done' on enforcement. Improvements to guidance, more prosecutions and more regular naming and shaming were suggestions to improve the regime further. Unite thought HMRC should prioritise high-risk sectors, naming hospitality. It also cited issues it thought were not being investigated well enough or required improved guidance for

employers and workers, including: migrant domestic workers, unpaid trial shifts, agency workers, tips and salaried workers. UNISON was concerned with compliance in social care. GMB officers in Birmingham told us that HMRC could be reluctant to work with unions representing workers in third-party complaints; they thought that workers were unaware of their rights or the specifics of their payslips, and so needed assistance from unions.

2.81 We will examine underpayment in more detail in a separate non-compliance report which will bring together the latest data on recorded underpayment with enforcement data and reflect on the latest policy responses concerning non-compliance and enforcement.

The impact of the NLW on employment and hours

2.82 Increases in the minimum wage have clearly led to higher wages and improved earnings, as historic evidence and the data presented in the previous sections show. However, the evidence around the effect of the NMW and NLW on other labour market and firm outcomes is more limited. Higher minimum wages have caused higher costs to firms, but it is less clear how employers have responded to these increased labour costs. In this section of the report we look at how employment and hours, and therefore demand for labour, has changed over the year following the April 2017 uprating of the NLW.

2.83 It is important to note that unlike the NMW, where the Commission was asked to increase pay for the lowest earners without any detriment to their employment prospects, there was an acknowledgement by the Government that the NLW could result in fewer jobs. At the introduction of the NLW, the Office for Budget Responsibility (OBR, 2015a) forecast that there could be 20,000 to 110,000 fewer jobs in the economy than there would have been if the NLW had not been introduced. It should be noted that this figure was set against forecast employment growth of 1.4 million between 2014 and 2020, whereas employment growth has already exceeded that, rising by 1.6 million in the three months to June 2018 on the 2014 level.

2.84 Econometric analysis and research are best placed to identify how higher minimum wages have affected employment, and the most recent research that we have commissioned is summarised in the next few paragraphs. Econometric analysis can better identify a counterfactual – what would have happened in the absence of a higher minimum wage – than the approach we take later in this section.

2.85 Aitken, Dolton and Riley (2018) have produced their final results following a provisional report last year (Aitken, Dolton, Ebell and Riley, 2017). The interim findings in Aitken, Dolton, Ebell and Riley (2017) suggested that the NLW led to real wage increases for the lowest paid, and that there was no conclusive evidence of an impact of the introduction of the NLW on employment retention. Final results published in Aitken, Dolton and Riley (2018) showed that the NLW had a clear and significant effect on wages. Using the ASHE data, they found no robust effect on general employment retention, but did find some evidence of negative effects on employment retention in the retail and hospitality industries and amongst women working part-time. The authors concluded that the NLW had been a significant intervention in the labour market, raising the wages of the lowest paid, but that it had so far had little adverse impact on employment retention overall.

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2.86 Capuano, Cockett and Gray (2018) are also examining the impact of the minimum wage on employment and hours using ASHE and the LFS as part of an ongoing project that is not due to report until autumn 2019. So far, they have looked at the effects on workers aged 25 and older using LDS data. To date they find no robust evidence that the NLW had an impact on employment retention or hours for workers aged over 25. Furthermore, the authors conclude that even if the results were strongly statistically significant the magnitude of the effects would be small in economic terms.

2.87 Dickens and Lind (2018) used the variation in minimum wage 'bite' across travel to work areas in the UK to model the impact of the NLW introduction and the £7.50 uprating. Unlike the other two studies, this approach should capture all employment change (entry and exit from the labour market) and not just employment retention (which just examines exits). The research finds a strong wage effect in both years, with the effects stronger in the first year (2016) and for women.

2.88 The authors found a modest, but statistically significant, negative effect on employment in 2017, but no effect in 2016. The results suggested that those who would have been in employment without the higher minimum wage transition to inactivity instead. They did find some positive but not robust effects on self-employment in both 2016 and 2017. The estimates for employment loss from the increase of the NLW to the 2020 level are within the band of employment loss expected by the OBR at the time of the NLW's introduction.

2.89 Most employer representatives we received evidence from did not claim that the NLW has led directly to a reduction in employment. Survey results on the whole did not show redundancies to be a common or increasing response to rate changes. Only 5 per cent of affected firms in the FSB's survey reported having made redundancies. Reductions in hours and delayed recruitment were more common responses and have grown slightly in frequency. In oral evidence, the FSB stated that small firms were still creating jobs. The Recruitment and Employment Confederation (REC) told us that for agencies the NLW had so far not affected demand for staff from clients, who have absorbed the cost. Some employer representatives thought employment responses could become more common by 2020.

2.90 Some employer representatives did argue that there had been reductions in employment since the NLW was introduced, though several acknowledged the presence of other factors. It is also difficult to tell whether there is a net effect of any reductions in employment, or whether people are able to find jobs and hours lost elsewhere. Reported effects in different low-paying sectors are discussed in paragraphs 2.98 to 2.101 below.

2.91 Trade unions argued that the NLW has not affected employment in low-paying sectors. The TUC stated there is 'no evidence' for this, while UNISON pointed to the UK's record employment figures. Unite highlighted that pay had increased for NMW/NLW workers faster than average wages since 2016 with no employment loss and repeated the LPC's finding that employment has increased faster for groups likely to be paid the NLW (women, ethnic minorities, people with disabilities, and those with no qualifications – as shown in Figure 2.20). GMB told us 'we have not seen a marked change in staffing numbers ... in the companies and contracts where GMB has recognition within the sector'.

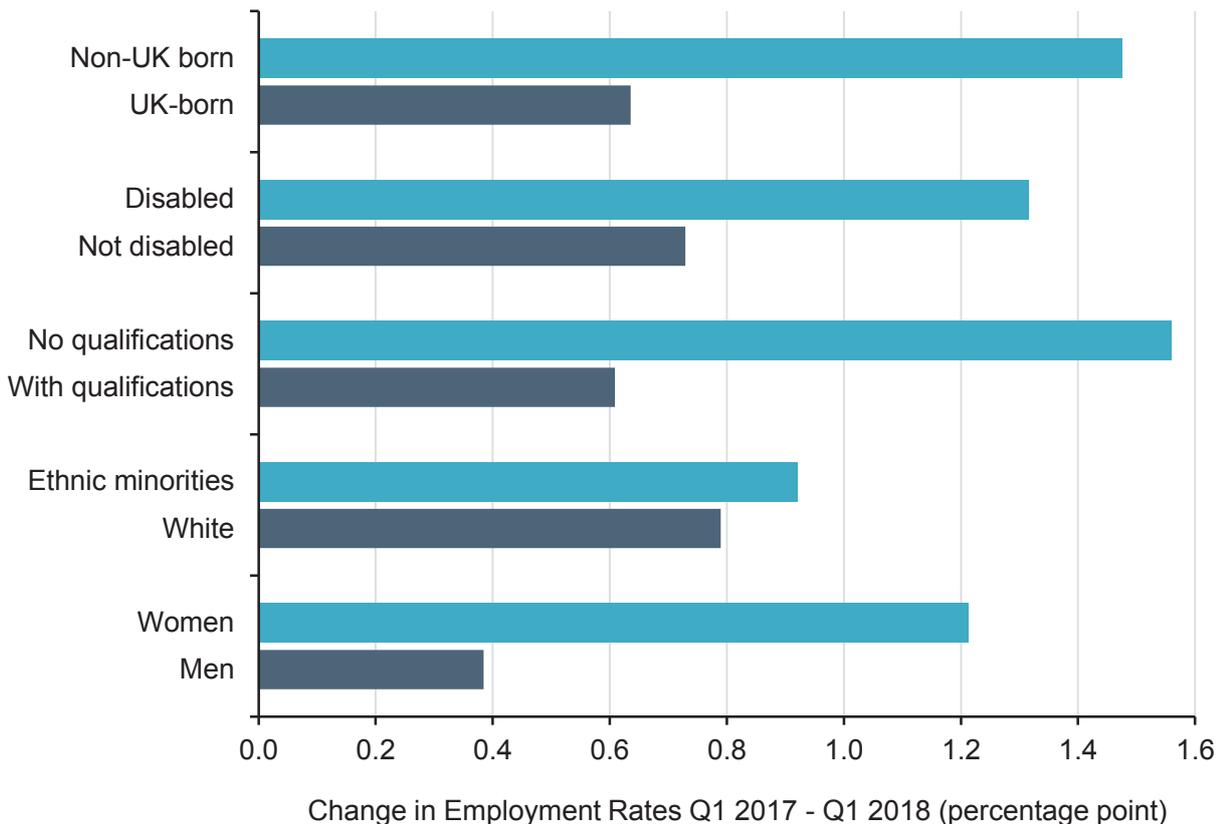
2.92 The rest of the section takes a higher-level approach to examine how the demand and supply of labour has varied between groups with different levels of exposure to the NLW. We start by looking at personal characteristics, before moving on to sectors of the economy, and finish with a look at workplace characteristics.

Personal characteristics

2.93 If there were employment effects, we would expect to see them for the groups of workers most affected by the NLW. Figure 2.12 shows how coverage of the NLW varies by various characteristics. We can therefore look at the employment rates of individuals associated with higher NLW coverage to assess the health of the employment market for low-paid workers and to consider if we can determine any evidence of an effect of the NLW increases on employment levels.

2.94 Figure 2.20 shows how employment has changed over the twelve months when the NLW was set at £7.50, for individuals with characteristics associated with higher NLW coverage. Employment has grown faster for those types of individuals than for their comparators, suggesting no obvious negative employment impacts from the April 2017 uprating of the NLW. This continues the pattern seen since 2015, where these groups have seen consistently faster employment growth.

Figure 2.20: Change in employment rates for those aged 25 and over, by personal characteristics, UK, 2017-2018



Source: LPC estimates using LFS Microdata, population weights, quarterly, four quarter moving average, UK, Q2 2016-Q1 2018.

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2.95 Table 2.8 shows how employment, unemployment and inactivity have changed for each of these groups. Both unemployment and inactivity have fallen faster for those groups associated with higher NLW coverage. Coupled with the faster rises in employment for these groups, it is clear that individuals in these groups have experienced positive labour market outcomes relative to the average. Therefore, it seems that these groups have suffered no obvious adverse initial impacts from the NLW. While workers aged under 25 have done relatively worse in the labour market and a higher proportion of these are covered by the NLW, the NLW does not act as their wage floor. The figures include students in full-time education who constitute a relatively large part of 16-24 year olds. If these students are excluded, employment rates for 16-24 year olds rose slightly over the period. Young people are discussed in more detail in Chapter 3.

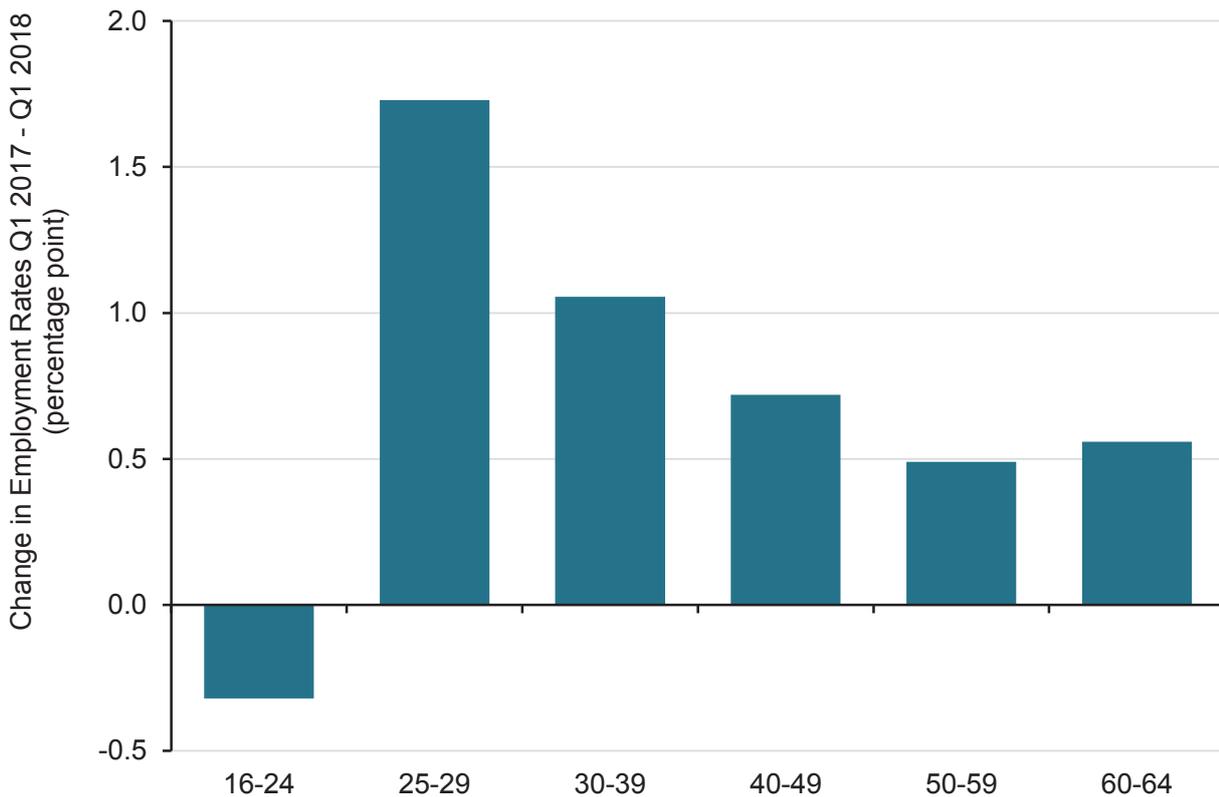
Table 2.8: Change in employment, unemployment and inactivity rates for those aged 25 and over, by personal characteristics, UK, 2017-2018

| Characteristic | Employment | Unemployment | Inactivity |
|-----------------------------|---|--------------|------------|
| | Change 2017 Q1 – 2018 Q1 (percentage point) | | |
| Male | 0.38 | -0.41 | -0.03 |
| Female | 1.21 | -0.39 | -0.95 |
| White | 0.79 | -0.38 | -0.49 |
| Ethnic Minorities | 0.92 | -0.51 | -0.56 |
| With qualifications | 0.61 | -0.40 | -0.28 |
| No qualifications | 1.56 | -0.22 | -1.56 |
| No disabilities | 0.73 | -0.34 | -0.44 |
| With disabilities | 1.32 | -1.00 | -0.90 |
| UK | 0.64 | -0.35 | -0.36 |
| Non UK-born | 1.48 | -0.62 | -1.02 |
| All aged 25 and over | 0.81 | -0.40 | -0.50 |
| All aged under 25 | -0.32 | -0.78 | 0.92 |

Source: LPC estimates using LFS Microdata, population weights, quarterly, four quarter moving average, UK, Q2 2016-Q1 2018.

2.96 We can also look at labour market outcomes by age. As shown in Figure 2.10, those aged 25-29 and 60-64 are the age groups where workers are most likely to be paid the NLW (excluding those not covered by the NLW, or not of working age). Figure 2.21 shows how employment rates have changed for each age group. Individuals aged 25-29 have seen the fastest employment growth among all age groups, while individuals aged 60-64 have seen slightly faster growth than those aged 55-59.

Figure 2.21: Change in employment rates, by age, UK, 2017-2018



Source: LPC estimates using LFS Microdata, population weights, quarterly, four quarter moving average, UK, Q2 2016-Q1 2018.

2.97 Overall it appears that individuals with characteristics most associated with the NLW have experienced relatively better changes in labour market outcomes since the increase in the NLW to £7.50 in April 2017 than the average worker. Thus, there is little evidence to suggest any negative effects on employment or unemployment rates resulting from the NLW upratings for the most vulnerable groups for whom it acts as a wage floor.

Sectors of the economy

2.98 In this section we examine how hours, employment and jobs have changed in the low-paying sectors of the economy. We look at changes both by industry and by occupation. In some sectors, businesses we met and representative bodies in low-paying sectors described some effects on employment levels. Clearly, we cannot draw conclusions from these alone as it is difficult to tell from stakeholder evidence whether reported reductions in jobs and hours are a result of churn, consolidation, changes in business models or other market factors. Equally, the NLW is unlikely to be the only factor affecting business decisions.

2.99 BIRA and ACS reported that hours had been reduced by some small retailers. The ACS's survey (of 63 businesses representing 3,005 stores and employing 40,444 staff) found three quarters of affected respondents had reduced staff hours, around the same proportion as last year. Around two fifths reported reducing staff numbers, down from almost half. The ACS recognises that its survey is based on 'a self-selecting sample, meaning those affected by NLW increases are more likely to respond', but asserts that the NLW is having a 'damaging impact'. One sign that employment has been affected is that owners have reported taking on more hours themselves.

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This is borne out by the ACS's local shop report, which shows a rising proportion of owners working more than 70 hours a week, and more employees working fewer than 16 hours, though it is difficult to identify trends at this level in the official data. It argued, though, that many workers in the sector favour shorter working hours. Overall, the ACS reports that employment numbers among its members are broadly stable.

2.100 UKHospitality's written evidence highlighted business failures and a fall of 30,000 jobs in the hospitality sector between the first quarter of 2017 and the second quarter of 2018, though at oral evidence it told us that the fall was partly due to a market correction, with over-expansion and oversupply leading to closures. At the same time, UKHospitality acknowledged recruitment difficulties – members we met said that they had started to take on more part-time workers, as they were unable to fill the full-time roles they preferred to use. Further, Table 2.4 shows strong wage growth at the median in hospitality causing the bite of the minimum wage in the sector to fall. It should be noted that while there was a fall in the first quarter of 2018 from the level in the first quarter of 2017, based on a 12 month average, the number of jobs increased by almost 13,000¹. Hoteliers we met noted that reducing staff numbers could mean poorer levels of service so was not a desirable response to rising wage costs.

2.101 The FWD told us that the introduction of the NLW has had negative employment effects in wholesale and distribution, though it acknowledged that other factors (automation and increasing efficiency) are contributing to this trend in the sector. Smaller firms in the sector were more likely to be affected, it said, with larger operators largely paying above the NLW. The BRC told us that signs of a reduction in employment in retail were due to 'broader structural changes' in the sector, and that the NLW was one of the factors driving this.

2.102 The differences in some sectors between Table 2.9 and Table 2.10 are due to the fact that the industry figures will include workers in higher paid roles within those industries, such as managers in retail, and the occupational figures will include workers doing low-paid jobs, but in employers whose predominant business is not associated with low-paying jobs, such as in-house cleaners in a financial firm. Moreover, the industry figures are based on the employee jobs data set, which contains all jobs, whereas the employment figures are based on the LFS and only include main jobs. Some of the smaller sectors can experience noise in the data due to their small sample sizes giving figures that can vary, due to randomness in the sampling of individuals.

2.103 Table 2.9 shows how the number of jobs in low-paying industries has changed since the uprating of the NLW in April 2017 and since before the introduction of the NLW in April 2016. Low-paying industries added notably fewer jobs than the economy as a whole between March 2016 and March 2018, but a slightly larger proportion since March 2017. When we look at an industry type level, we can see that jobs in consumer services and business-to-business services increased, while the number of jobs in traded goods and government-funded services decreased slightly.

¹ Source: ONS Emp 13: All in employment by industry: People (not seasonally adjusted)

Table 2.9: Change in employee jobs, for employees aged 25 and over, by low-paying industry, GB, 2016-2018

| | March 2018 | Change on March 2017 | | Change on March 2016 | |
|----------------------------------|---------------|----------------------|-------------|----------------------|-------------|
| | Thousands | Thousands | % | Thousands | % |
| Consumer services | 6,284 | 94 | 1.5 | 163 | 2.7 |
| Retail | 3,357 | 22 | 0.7 | -26 | -0.8 |
| Retail (excluding motor) | 2,826 | 14 | 0.5 | -40 | -1.4 |
| Hospitality | 2,208 | 49 | 2.3 | 136 | 6.5 |
| Leisure, travel and sport | 531 | -7 | -1.3 | 12 | 2.3 |
| Hairdressing | 189 | 30 | 18.7 | 41 | 28.0 |
| Business-to-business | 1,545 | 45 | 3.0 | 59 | 4.0 |
| Cleaning | 730 | 6 | 0.8 | 8 | 1.1 |
| Employment agencies | 815 | 39 | 5.1 | 51 | 6.6 |
| Trade | 657 | -2 | -0.3 | 13 | 2.0 |
| Food processing | 355 | -10 | -2.7 | -5 | -1.4 |
| Agriculture | 232 | 16 | 7.3 | 27 | 13.3 |
| Textiles, clothing | 70 | -8 | -10.0 | -9 | -11.7 |
| Government-funded | 1,577 | -4 | -0.2 | -50 | -3.1 |
| Residential care | 646 | -40 | -5.8 | -53 | -7.6 |
| Domiciliary care/childcare | 932 | 36 | 4.0 | 3 | 0.3 |
| Low-paying industries | 10,064 | 133 | 1.3 | 184 | 1.9 |
| Non low-paying industries | 19,576 | 232 | 1.2 | 695 | 3.7 |
| Total | 29,640 | 365 | 1.2 | 879 | 3.1 |

Source: LPC estimates using ONS employee jobs series, twelve-month average, not seasonally adjusted, 2016-18.

Note: Totals may not sum due to rounding.

2.104 Table 2.10 shows how employment and total hours worked have changed in different occupations in the year following the April 2017 uprating of the NLW. Similar to the picture based on industries, we can see that low-paying occupations have added employees over the year when compared to the previous year, but at a lower rate than non low-paying industries. Employment growth was highest in hair and beauty, textiles and call centres, while employment fell fastest in agriculture, food processing and non-food processing. Hours grew more slowly, or fell more quickly, than employment in most low-paying occupations, and for low-paying occupations overall, indicating that average hours worked also fell.

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Table 2.10: Change in levels of employment and total hours, for employees aged 25 and over, by low-paying occupations, UK, 2017-2018

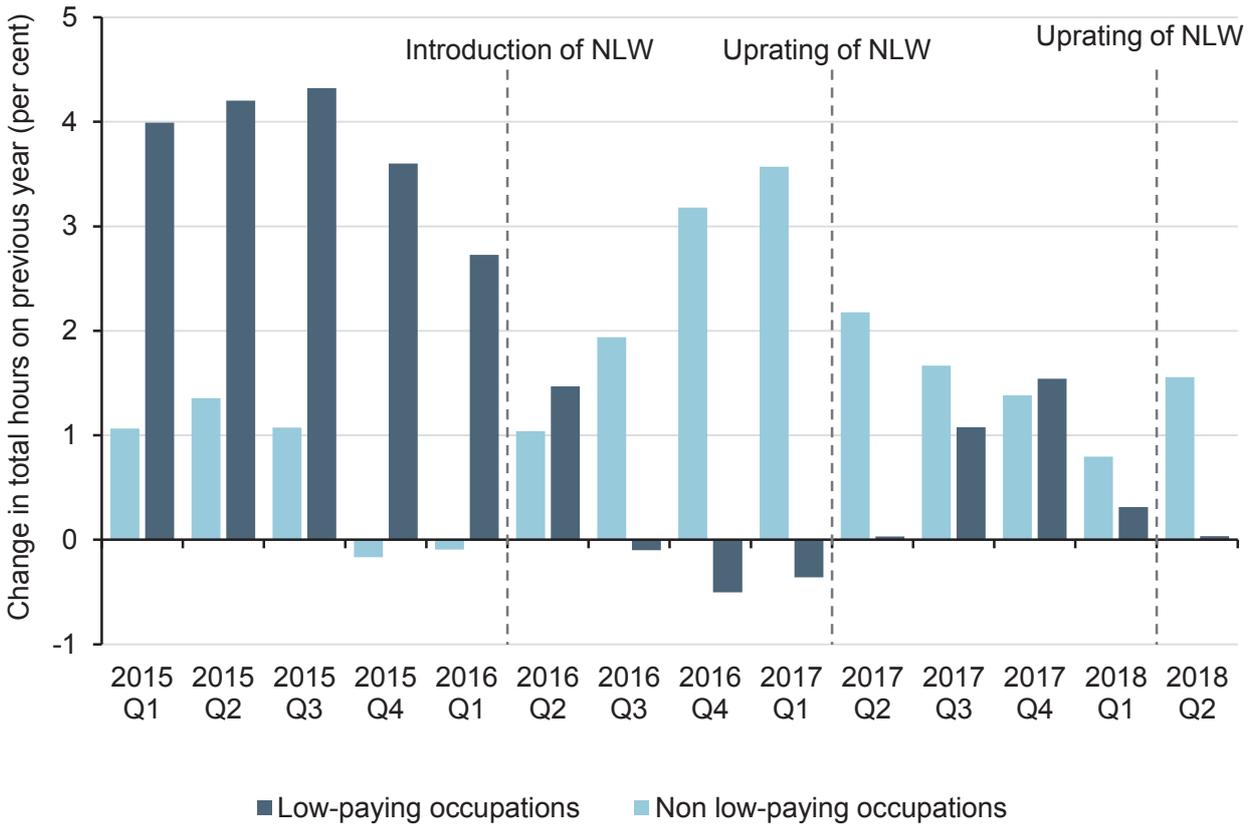
| Occupation | Number of employees (thousands) | Change on previous year (per cent) | |
|----------------------------|------------------------------------|------------------------------------|------------|
| | | Employment | Hours |
| Agriculture | 107 | -18.2 | -18.9 |
| Call centres | 103 | 6.3 | 6.1 |
| Childcare | 282 | -0.5 | -0.5 |
| Cleaning and maintenance | 668 | 2.2 | -0.5 |
| Food processing | 283 | -7.3 | -7.9 |
| Hair and beauty | 77 | 18.1 | 31.7 |
| Hospitality | 721 | -0.1 | 0.8 |
| Leisure | 165 | 0.6 | -3.7 |
| Non-food processing | 335 | -6.5 | -6.8 |
| Office work | 424 | 4.1 | 4.7 |
| Retail | 1,397 | 5.2 | 6.0 |
| Security and enforcement | 184 | 5.3 | 7.0 |
| Social care | 693 | -0.1 | -0.2 |
| Storage | 350 | 4.7 | 1.2 |
| Textiles | 49 | 14.4 | 12.5 |
| Transport | 325 | -4.5 | -5.5 |
| Low-paying occupations | 6,162 | 1.0 | 0.3 |
| Non low-paying occupations | 16,707 | 2.5 | 0.8 |
| Total | 22,869 | 2.1 | 0.7 |

Source: LPC estimates using LFS Microdata, population weights, not seasonally adjusted, four quarter rolling average, UK, Q2 2016 to Q1 2018.
Note: Totals may not sum due to rounding.

2.105 The differences in the data sources can be seen most clearly when looking at retail. The number of jobs in low-paying retail occupations held by those aged 25 and over is less than half of the overall number of jobs in the industry, as estimated using the ONS employee jobs series. The number of jobs in the retail industry grew slowly in the year, while employment in low-paying retail occupations grew more quickly. This is consistent with the picture we have heard from stakeholders in this industry, where we have been informed that firms have been removing management layers and reducing the headcount in their head offices.

2.106 Figure 2.22 shows how total hours worked have changed since 2015, for low-paying occupations and the wider-economy. Total numbers of hours have grown more slowly in low-paying sectors since the introduction of the NLW in April 2016. Since the uprating in April 2017 there has been a narrowing in the growth in hours between low-paying and non-low-paying occupations.

Figure 2.22: Change in hours for those aged 25 and over, by sector, UK, 2015-2018



Source: LPC estimates using LFS Microdata, population weights, not seasonally adjusted, four quarter rolling average, UK, Q2 2014-Q1 2018.

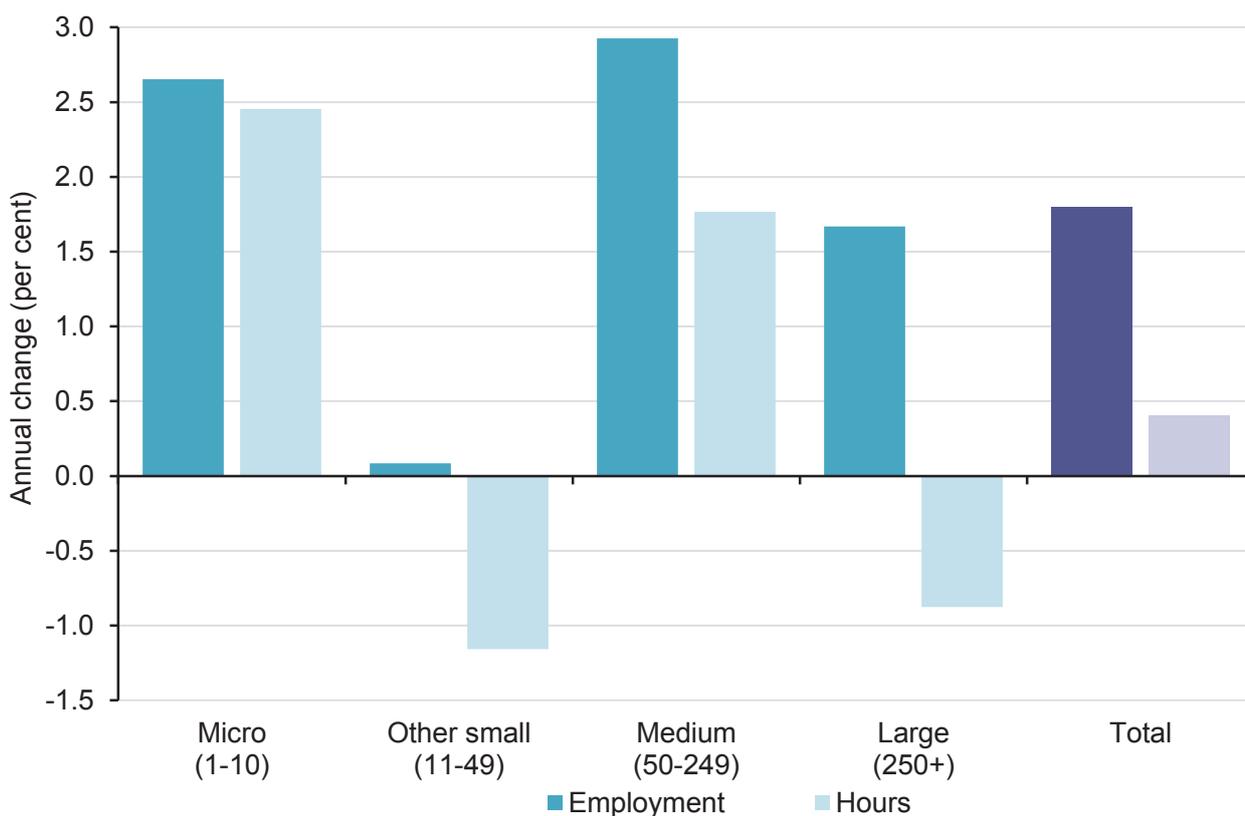
2.107 In both low-paying industries and occupations, employment and hours have grown since April 2017, but by less than in the non-low-paying sectors.

Workplace characteristics

2.108 In this section we examine how growth in hours and employment has changed across workplace size and location. Employer representatives have expressed more concern over the ability of small employers to manage NLW increases than they have in relation to bigger companies. The Labour Force Survey lacks information on the size of the employer, but does have information on the size of the workplace. Coverage is highest in micro-workplaces (those with ten employees or fewer) and then falls as size increases. Figure 2.23 shows how micro-workplaces have seen faster growth in employment and hours compared with the economy as a whole. Hours have also grown fastest in micro workplaces. However, hours in other small workplaces (those with 11-49 employees), which have the second highest coverage, has fallen, while employment is essentially flat. Micro-workplaces contain around one in five workers, other small and medium around one in four each and large workplaces the remaining three in ten workers.

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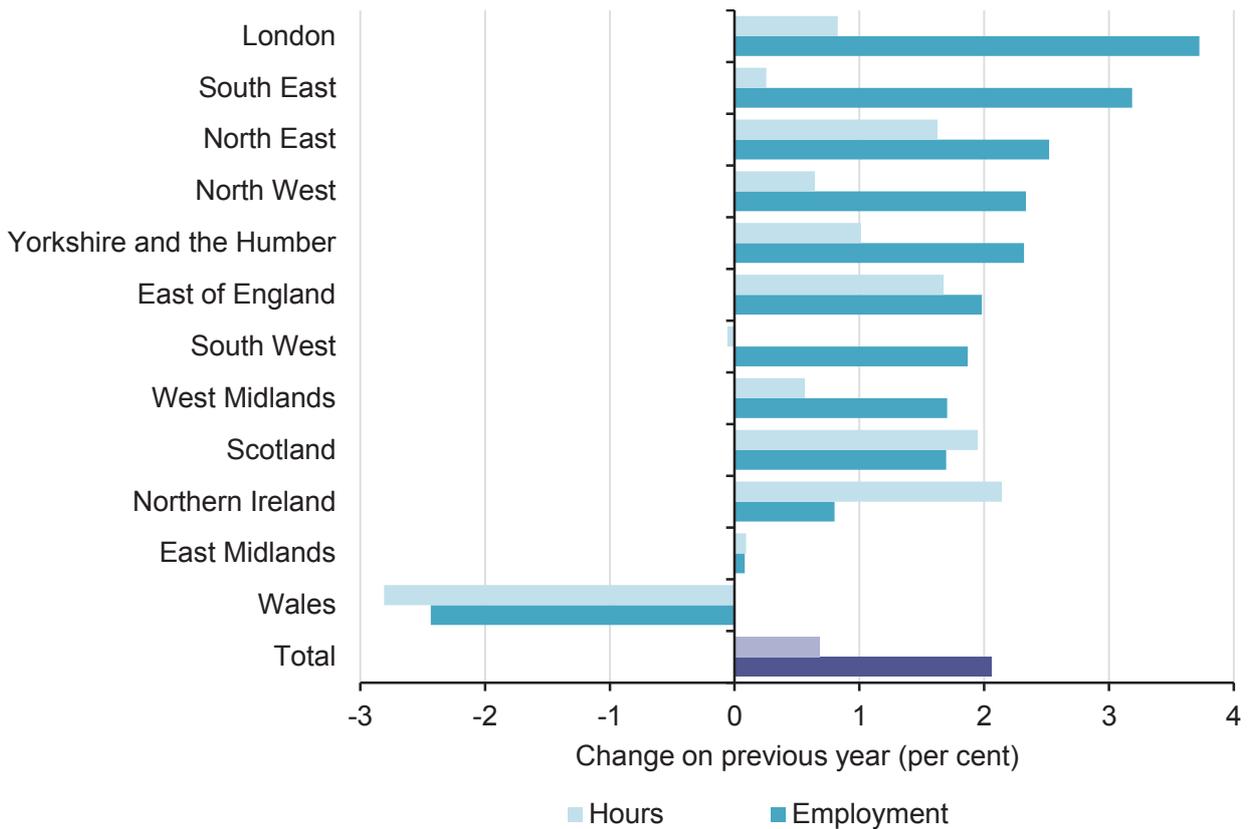
Figure 2.23: Change in employment and hours for those aged 25 and over, by workplace size, UK, 2017-2018



Source: LPC estimates using LFS Microdata, population weights, not seasonally adjusted, four quarter rolling average, UK, Q2 2016-Q1 2018.

2.109 We finish this section by looking at how employment has varied geographically. Figure 2.6 showed how median pay, and therefore 'bite', varied geographically across the UK. We therefore look at geographical variations in employment and hours to examine how low-paying areas have responded to the increase in the NLW. Figure 2.24 shows how employment and total hours worked have grown over the last year. London and the South East – the two highest-paying regions of the country – have seen the fastest employment growth, while Wales, the East Midlands and Northern Ireland – the three of the lowest-paying areas – have seen the slowest growth, with employment falling in Wales. The fall in Wales may be due to the relatively small number of observations. The larger, and therefore more reliable, if less timely, APS showing a different pattern of employment, and the LFS suggesting strong employment growth in the subsequent quarter, indicates that this may be the issue. The growth in hours was less correlated with pay levels, with fast growth in Northern Ireland, but much slower growth in the South East.

Figure 2.24: Change in employment and hours for those aged 25 and over, by region and nation, UK, 2017-18

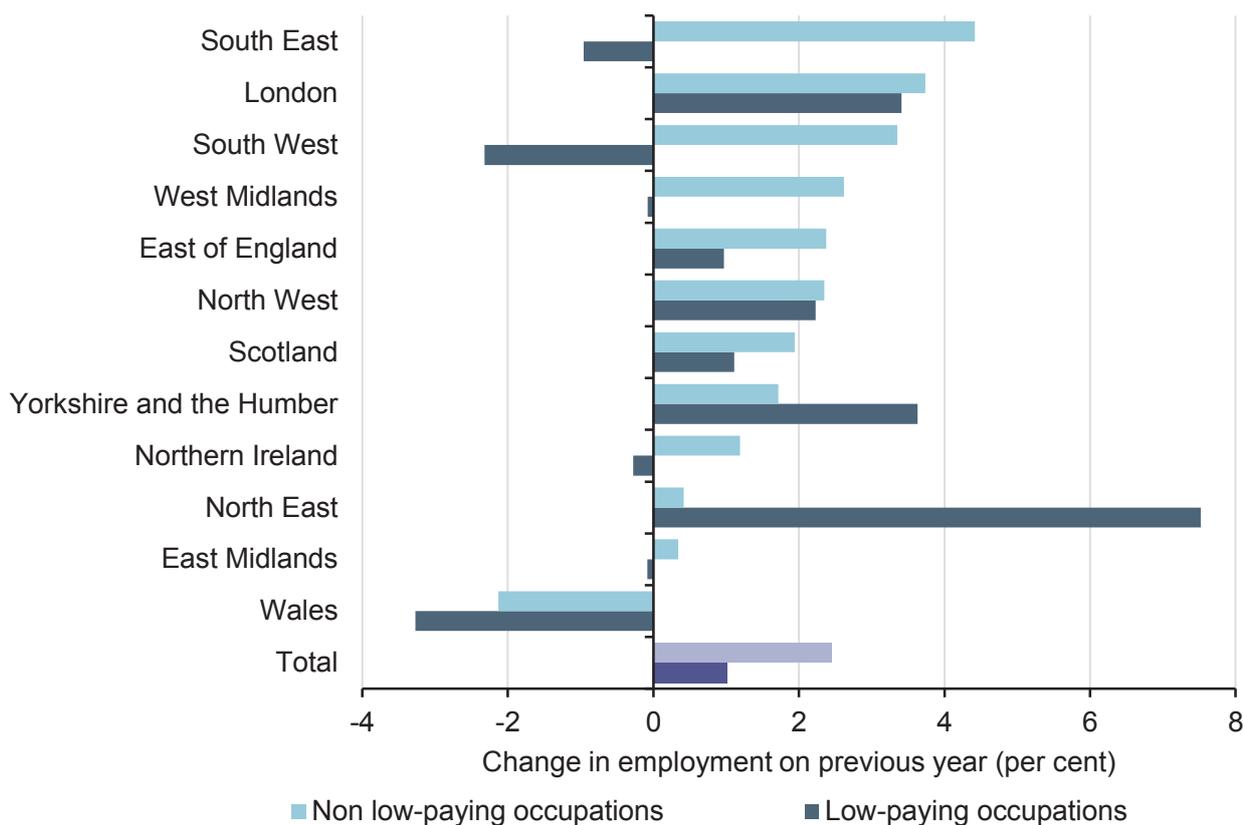


Source: LPC estimates using: LFS Microdata, population weights, not seasonally adjusted, four quarter rolling average Q2 2016-Q1 2018, UK.

2.110 Figure 2.25 splits the employment changes by low-paying/non low-paying occupations to enable us to dig deeper into any relationship between area and the changes in employment rates shown in Figure 2.24. Any relationship appears to be driven by the non low-paying occupations, suggesting that this relationship is more likely to be due to the general labour market conditions in these areas rather than NLW, which should affect low-paying occupations more. There is considerable variation in the low-paying occupations, with fast growth in the North East, Yorkshire and the Humber and London, and falls in Wales, the South West and the South East.

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Figure 2.25: Change in employment for those aged 25 and over, by low-paying occupations, region and nation, UK, 2017-2018



Source: LPC estimates using: LFS Microdata, population weights, not seasonally adjusted, four quarter rolling average, UK Q2 2016-Q1 2018.

2.111 The data show that while employment has grown quickest in the highest-paying geographic areas of the UK, this relationship is predominantly driven by non low-paying occupations, making it difficult to attribute this to changes in the minimum wage.

Underemployment

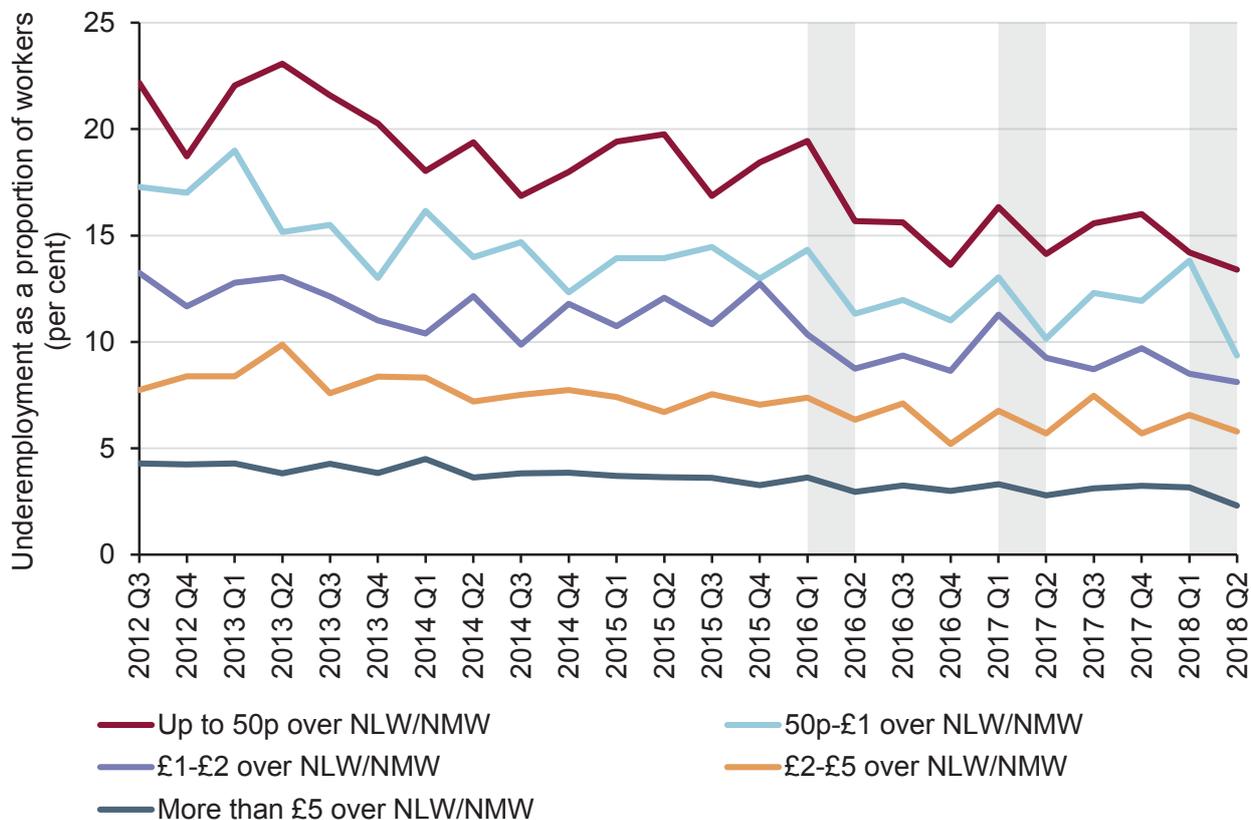
2.112 A fall in average hours worked in low-paid occupations that was shown in Table 2.10 could be driven by employers, as they responded to higher wage costs by reducing the number of hours offered, or due to workers requesting fewer hours as their income increased. One way to look at what may be driving this is to look at levels of underemployment, the number of workers who want to work more hours. If employers are driving the fall in hours then you would expect levels of underemployment to increase, whereas if workers are driving the fall, you would expect underemployment to decrease.

2.113 Underemployment is defined by combining three groups of workers: those workers who would like to work more hours in their current job, those who are searching for an additional job, and those who would like a new job with longer hours to replace their current job. Workers must be able to increase their hours within the next two weeks and be working less than the EU Working Time Regulations set hours (currently 48 hours for those aged over 18).

2.114 Figure 2.26 shows how underemployment fell significantly for the lowest paid between 2013 and 2018. Underemployment has fallen in the second quarter, when compared to the first quarter, in every year since the introduction of the NLW. This seems to show that as minimum wages increase,

the underemployment experienced by workers affected fell, as the income they earn moves closer to the income level at which they are happy with their hours. However, as the falls are common across all wage bands, though to a smaller extent at higher wage bands, the change may be independent of changes to minimum wages.

Figure 2.26: Underemployment for workers aged 25 and over, by pay levels, UK, 2012-2018



Source: LPC estimates using LFS Microdata, income weights, imputed wages, not seasonally adjusted, UK, Q3 2012-Q2 2018.

2.115 The proportion of low-paid workers who are searching for an additional or second job is relatively constant across the period. The recent fall in underemployment for low-paid workers is driven by a fall in those who would like more hours in their current job or who are searching for a new job with more hours.

2.116 While our stakeholders recognised the presence of underemployment and some of the working arrangements that can contribute to it, we received little evidence that the NLW had led to an increase in underemployment. In contrast, Datta, Machin and Giupponi (2018) found evidence to suggest that the NLW had led to an increase in the use of zero-hours contracts – which are associated with higher levels of underemployment – especially in social care, as employers looked to mitigate the increased cost.

2.117 Overall, the continuing tightening of the labour market has led to better employment outcomes for those groups expected to be low paid. While employment in low-paying sectors grew more slowly than non low-paying sectors, this could be part of a tightening labour market, as scarce workers are attracted into higher-paying sectors. It is difficult to determine from the data any significant negative labour market effects from the £7.50 an hour minimum wage uprating in April 2017.

Impact on competitiveness

2.118 Employers can adjust to the impacts of higher minimum wages through a variety of channels. Previously in this chapter we have looked at how pay, employment and hours have changed. Other options available to firms to moderate the impact of the minimum wage on their business include increasing prices, decreasing profits, or through increasing productivity. In the extreme, firms that are not able to react to mitigate the impact may go out of business.

Profits and prices

2.119 Our stakeholders tell us that the most common effect of the NLW outside of the pay bill has been to reduce their profits. The next most common way was through price increases, but many stakeholders have warned that this was not always possible in price-taking or highly competitive sectors. Employer representatives told us that more of their members will look to increase prices as the NLW continues to increase.

2.120 Businesses in a variety of sectors reported profit reductions. These included firms or representative bodies in convenience retail, cleaning, food manufacturing, wholesale, horticulture, and hair and beauty. In some cases, it was acknowledged that this was caused by a variety of factors, not only the NLW. The CBI argued that ‘there is a limit to firms’ ability to afford increases through reduced profits’, and thought that price rises and other changes would become more widespread. On the other hand, unions argued that profitability of UK firms was high.

2.121 In the FSB’s surveys of its members, accepting lower profits and raising prices have been the most common responses in each year since 2016, albeit with a higher proportion of respondents each year having done each. Of the businesses affected by the minimum wage in the FSB’s survey this year, 71 per cent said they have taken lower profits or absorbed the cost – this has increased steadily from 59 per cent in 2016 and 64 per cent in 2017. Around 41 per cent said they had raised prices this year, again a higher proportion than last year. Reducing investment was the third most common response.

2.122 The results show a general trend towards more of these firms having to make changes, but the FSB thought the NLW had ‘gone down better than expected’ so far. The target and having a sense of the path had been useful for employers. There has been ‘no terrible shock to the system’ and members were still creating jobs.

2.123 In the CIPD’s Summer Labour Market Outlook survey, reported responses were consistent with previous years, with accepting lower profits the most common (34 per cent), followed by improving productivity (26 per cent) and increasing prices (21 per cent). The CIPD’s survey was not directly comparable to previous years. Planned responses in the BCC’s survey were similar to those in the FSB’s and CIPD’s surveys.

2.124 In some sectors, businesses are effectively ‘price-takers’, or see their market as too competitive to be able to raise prices. In this latter group, we have heard on visits that hotels do not want to be the first to move to raise prices. The BBPA thought that a highly competitive market made it difficult for pubs to manage costs by increasing prices. It estimated that the NLW has meant an additional staff cost of £144 million over three years across the sector, or around £2,750 for every pub in the UK, and that much of this has not been reclaimed elsewhere. However, UKHospitality told

us that ‘evidence from businesses suggests that wage rises are contributing to price rises’. As in hospitality, we heard from the NHF that hair and beauty businesses have raised prices where possible, but are constrained by competition and price-sensitive consumers. One of its member employers, at oral evidence, said that consumers ‘won’t budge’ on price and that his profits are diminishing.

2.125 Supermarkets and other large retailers were cited by several sectors as limiting firms’ ability to raise prices – not only in retail, but food processing, textiles and wholesale businesses as well. Convenience stores told us that competition with supermarkets meant that they were unable to raise prices, although the ACS thought that more small retailers were raising prices this year. The Association of Labour Providers (ALP) told us that more could be done to protect smaller businesses from ‘supply chain bullying’, so that firms were able to raise prices to account for cost pressures. The NFU confirmed this sentiment, as did NFU Scotland, which explained that contracts with supermarkets can span three to five years and failed to take into account farms’ known future cost increases.

Case study: convenience retail in Scotland

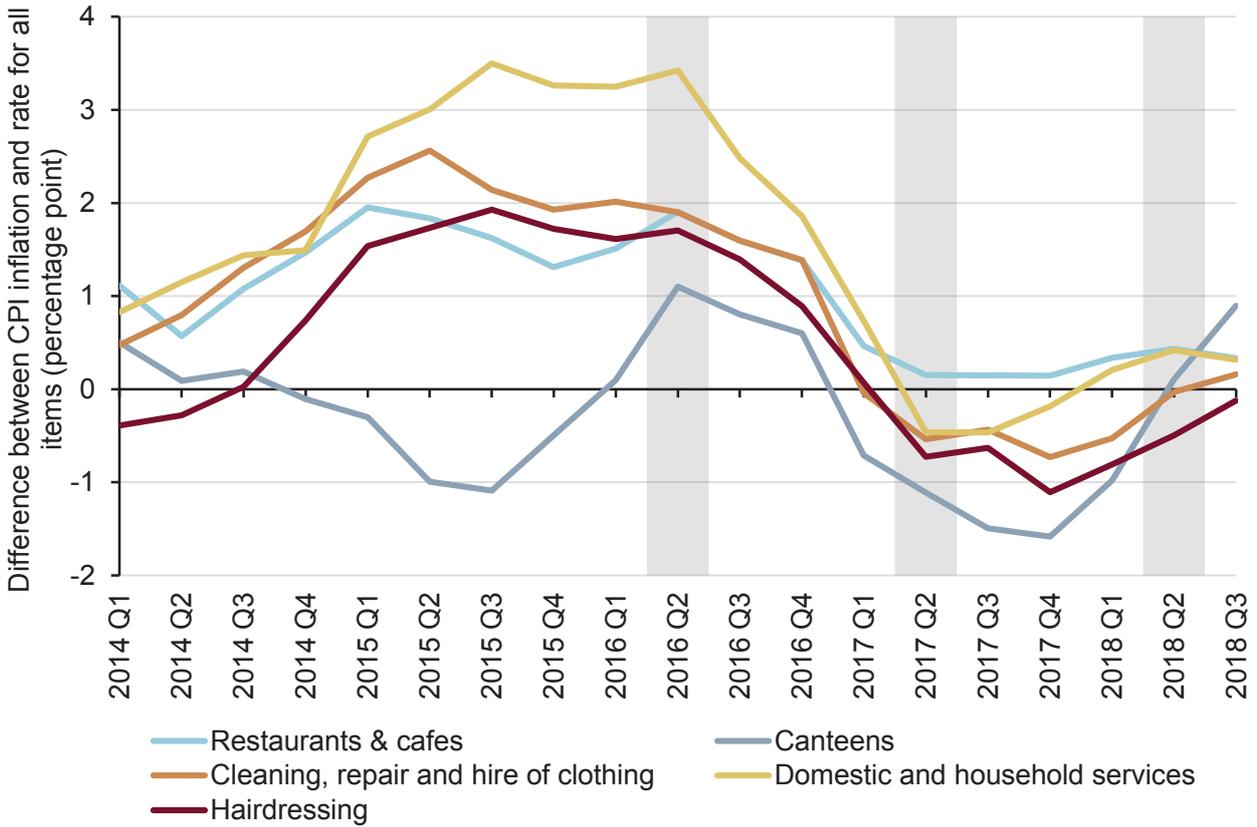
Increases in the NLW have contributed to lower profits and forced changes to business practices in a chain of convenience stores in Scotland that we visited. In 2017/18, costs increased by £1 million because of a range of factors including the NLW, business rates and fuel cost rises. In earlier years of the NLW, the business maintained its profit levels, but this was harder once ‘low-hanging fruit’ changes had been made; in 2017/18, turnover remained static as stores looked to compete on price with supermarkets, so profits had fallen.

Differentials for supervisors have been reduced from 50 pence above the NLW to 40 pence, and the effective differential of salaried managers has narrowed. Across the business, which employs over 2,000 people, the equivalent of 27 full-time jobs were cut – this was partly done through investment in the introduction of biometric time-keeping, which has stopped overestimation of hours. The fall in profits has meant reduced investment in the business overall. At the same time, increasing productivity was seen as important in managing future cost increases. The firm was trying to automate some back-office functions, but ultimately the rise in costs will result in fewer stores in the estate, and since we visited 13 stores have either been disposed of or put on the market for sale. We heard that these will most likely be operated as independent businesses employing fewer staff.

2.126 Care providers reported difficulty in raising prices, as Government funding failed to cover cost increases, and they expressed concern that future cost increases would eat further into margins. However, the issues in the social care sector are complex, and the main representative bodies in the sector did not argue that the NLW had directly caused reductions in employment.

2.127 Looking at the data for prices in sectors of the economy most affected by the NLW, we can see some evidence of a small ‘spike’ in inflation in low-paying sectors around the introduction of the NLW in the second quarter of 2016. However, in the period since then, there is little evidence in the data of price rises coinciding with the NLW upratings. It may be that businesses are spreading the cost of increases throughout the year, or that the price rises due to wage increases are not large and cannot be clearly seen among all the changes that appear in the inflation data.

Figure 2.27: Inflation in low-paying industries, UK, 2014-2018



Source: LPC analysis using ONS data: D7BT (all items), D7EW (restaurants & cafes), D7EX (canteens), D7DM (cleaning, repair and hire of clothing), D7E6 (domestic services and household services), D7EY (hairdressing and personal grooming establishments) quarterly, UK, Q1 2014-Q3 2018

2.128 We do not have access to data on profits, but can construct a proxy by using approximate gross value added at basic prices minus total employment costs from the Annual Business Survey that is conducted by ONS. On this measure profits rose for both of the largest low-paying industries, retail and hospitality, by 5 and 4 per cent respectively. Profits in retail grew as quickly as the economy as a whole, while profits in hospitality grew more slowly than that of the economy as a whole, but faster than the 0.7 per cent increase in prices.

Adult social care

Organisations in the adult social care sector again told us that providers are under significant pressure from rising costs and a lack of funding. The National Care Association (NCA) told us that the sector has been 'in crisis for a decade'. It lamented that 'despite numerous commissions on funding all arguing that the sector needed more funding, there has been no increases on the scale required'.

The consensus among our stakeholders though was that funding, rather than the NLW, was the key challenge for the sector. The Association of Directors of Adult Social Care (ADASS) told us that extra funding had not been enough to cover cost increases from the NLW and an ageing society, and has only pushed back the 'tipping point'. Providers' ability to cross-subsidise with private clients varies. It thought there was a 'real danger' of councils' statutory duties not being met as most will be unable to draw the same funds from the Council Tax Precept next year, and other relief will not be available. The LGA noted that demographic pressures and inflation were already increasing the funding gap for adult social care services and that the impact of the NLW was adding significantly to those pressures. GMB urged the LPC to 'remind the government that they must find a workable way of ensuring that social care is properly funded'. The Welsh Government told us it had 'listened to the concerns raised by the social care sector in Wales and provided additional recurrent funding through local authorities in 2017-18 to help the sector to meet the financial pressures accentuated by the implementation of the UK Government's "National Living Wage"'.

It appears that home care has come under more pressure than other parts of the sector. The UK Home Care Association (UKHCA) estimates the average cost of an hour of home care at £18.01, with councils only paying an average of £16.12. We heard evidence that travel time was often not properly accounted for in local authority rates with rural areas particularly adversely affected. One provider, Housing and Care 21, told us that it had ceased to offer home care as it was no longer profitable, and ADASS (2017 and 2018) had found that the handing back of contracts was becoming more common in home care. According to the UKHCA, some firms had improved productivity by optimising travel time, but there was relatively little scope to make services more efficient, with visits often already only 15 minutes long.

In residential and nursing homes, we heard that there can be scope to optimise and integrate services. We also heard from an NCA member at oral evidence that firms were looking to take on more complex work (for which higher rates were paid) and expanding to take advantage of economies of scale. Smaller firms, 'the backbone of the sector', were more vulnerable and consolidation continued. Our analysis of business starts and failures suggests that high turnover and consolidation was also a feature of the social care sector before the NLW.

Giupponi and Machin (2018), building on research that we had commissioned (Giupponi, Lindner, Machin and Manning, 2016), found that the NLW had strongly affected the wages of care home workers, without significantly affecting employment. They found that care homes had a limited ability to raise prices, as described above. They concluded that it was quality of service, rather than profits, that had suffered as a result of the increased costs of the minimum wage. There was no evidence that the NLW increased the probability of firm closure, leading to the conclusion that any profit hit so far had not been large enough to drive care home providers out of business. In those care homes where the NLW bit hardest, there was a negative effect on all five Care Quality Commission rating measures. This, the research concluded, 'raises concerns about the future ability of the care home industry to meet fundamental standards of quality and safety (at current levels of funding)'.

We have repeatedly heard, including from the NCA at oral evidence, that care providers struggle to recruit and retain staff, and want to pay more for what is difficult and skilled work, but are unable to do so. Birmingham social care employers we met, who paid above the NLW, needed to raise pay further when the NLW increased or lose their competitive edge. A learning disability care provider echoed this sentiment, saying that it was now unable to pay more than the NLW to attract staff and was struggling to recruit. The UKHCA discussed competition for staff with the NHS and other sectors, where the work was perceived as easier, meaning that firms had to pay above the NLW. Care England told us about high vacancy numbers, highlighting the future workforce as a crucial challenge as demand for care grows.

In childcare, the story was similar, according to the National Day Nurseries Association (NDNA). It told us that the majority of nurseries make a loss on the 30 hours of Government-funded childcare they provide, and have to top up the fees with charges for food and extra hours. It thought that the introduction of the 30 hours policy had adversely affected the sector. Providers were keen to have the best-qualified staff possible (a key factor for parents choosing nurseries being good staff), but funding pressure increasingly made this difficult. Nursery staff were leaving the sector or moving to work in schools or other sectors because of the better pay on offer pay for the level of responsibility.

Productivity and investment

2.129 Improvements in productivity are widely understood as important for the sustainability of minimum wage rises, but we have still heard relatively few specific examples of firms increasing productivity to manage increased costs. The CIPD has also previously noted this disconnect in intention and action, with many firms intending to improve productivity, but few examples of how this might be achieved.

2.130 Some employer representatives and unions were concerned that some firms do not look any further than trying to get workers to do more in the same time, while a smaller number had looked to increase training and redesign job roles in a more strategic way.

2.131 Around a quarter of respondents (26 per cent) to the CIPD's survey who reported having been affected by the NLW said they had improved efficiency or raised productivity. However, it also found that work intensification was the main change in the pursuit of higher productivity: 27 per cent

(of those affected by the NLW) required staff to take on additional tasks, 25 per cent required staff to be more flexible with their hours and 15 per cent increased the pace of work or raised performance standards.

2.132 In the ACS's survey of almost 4,000 convenience store workers, it found that 37 per cent 'expected to be asked to work harder' because of the NLW. The BRC described 'staff being asked to take on more responsibility' and stressed the importance of skills development in enabling workers to progress into higher-paid roles. In Birmingham, Usdaw members reported an increase in 'multi-skilling', suggesting that this was a feature in the retail sector and AF Blakemore, a large convenience retail business, told of a need to pursue this approach.

2.133 GMB reported that security workers were increasingly expected to cover several sites within a wider geographical area, and that businesses were investing less in training and development to keep costs low. The STUC also argued that investment in workers' skills was being neglected.

2.134 Some firms said they were investing in training for staff, sometimes in combination with changing job roles as cuts to differentials meant management roles were reduced. The CBI told us that investing in training has been a common response to the NLW for its members. The FWD told us that it thought the NLW had led to more investment in training of low-paid staff. ACS members thought 'enriching' job roles was a positive for both workers and employers, raising productivity and worker engagement. Others, however, had cut back on training to save money, and those that were pursuing multi-skilling were not clear on whether this would be reflected in better pay for staff.

Case study: hospitality in Northern Ireland

Nigel works for a chain of bars in Northern Ireland. He lamented the lack of investment in staff skills and pay of his employer. 'Employers complain that it is perceived as a low-paid, precarious industry – that's because it is a low-paid, precarious industry', he said. He noted that hospitality used to be a skilled trade in the UK, and indeed still is in many EU countries. He told us there had been a 'race to the bottom' on pay, and that there had been little training for staff. Managers in the business are given labour cost budgets and manage staffing accordingly, which means on-call shifts and salaried workers covering at periods of high demand or for absence. Nigel thought that this approach to staffing and skills affects not only staff morale and leads to high turnover, but reduces the quality of service.

2.135 Large employers are looking to increase automation as the NLW increases, though the consequences for jobs and the role of the NLW in this trend are unclear. The CBI told us that more firms are increasing levels of automation – and noted it as a common expected response to future increases. It is not clear whether such automation would reduce staff numbers, whether it is directly related to NLW increases or the scale of investment needed to achieve it.

2.136 The BRC noted that automation continues in the sector. Usdaw cited OECD research, which reported that the risk of automation has often been overstated. In horticulture, we have previously heard that automation is some way off. Labour shortages, rather than the NLW, were also cited by the BCC as a factor in accelerated automation of processes in manufacturing. In wholesale, the FWD thought automation had increased and would continue to do so. It predicted, though, that smaller operators would be less able to increase productivity through automation.

National Minimum Wage

2.137 Smaller firms, we heard, often find it unaffordable or unviable to invest in automation, and other avenues are not viable either due to a lack of economies of scale. The FSB's survey found that just 11 per cent of firms affected by the NLW had increased productivity, with job redesign the most common measure among those that had.

2.138 Equally, among SMEs, cutting back on or delaying investment more generally has been cited as a response to the NLW – 30 per cent of affected SMEs in the FSB's survey had reduced investment or expansion, up from 23 per cent in 2016. At oral evidence we also heard from the FSB that firms are reducing investment in training because of rising costs and wider uncertainty. The NHF, whose members are mostly SMEs, also found a high proportion of affected survey respondents saying they had cut back on investment.

2.139 The ACS and its members corroborated this evidence, saying that technology such as self-service tills, were both undesirable for stores where personal interaction was a selling point, and unaffordable for small businesses. Further, 51 per cent of ACS survey respondents affected by the NLW said it had caused them to reduce investment. We found that in the convenience store we visited near Perth, the devaluation of the pound had made some solutions, including electronic shelf-edge pricing and self-service tills, unviable (the machines were made in the EU), and the ACS reported that investment in the sector was down 5 per cent on last year.

2.140 Hospitality firms have told us that decisions around productivity were finely balanced, especially where automation was concerned. Hotels and restaurants are reluctant to make changes that might lower the level of service they offer.

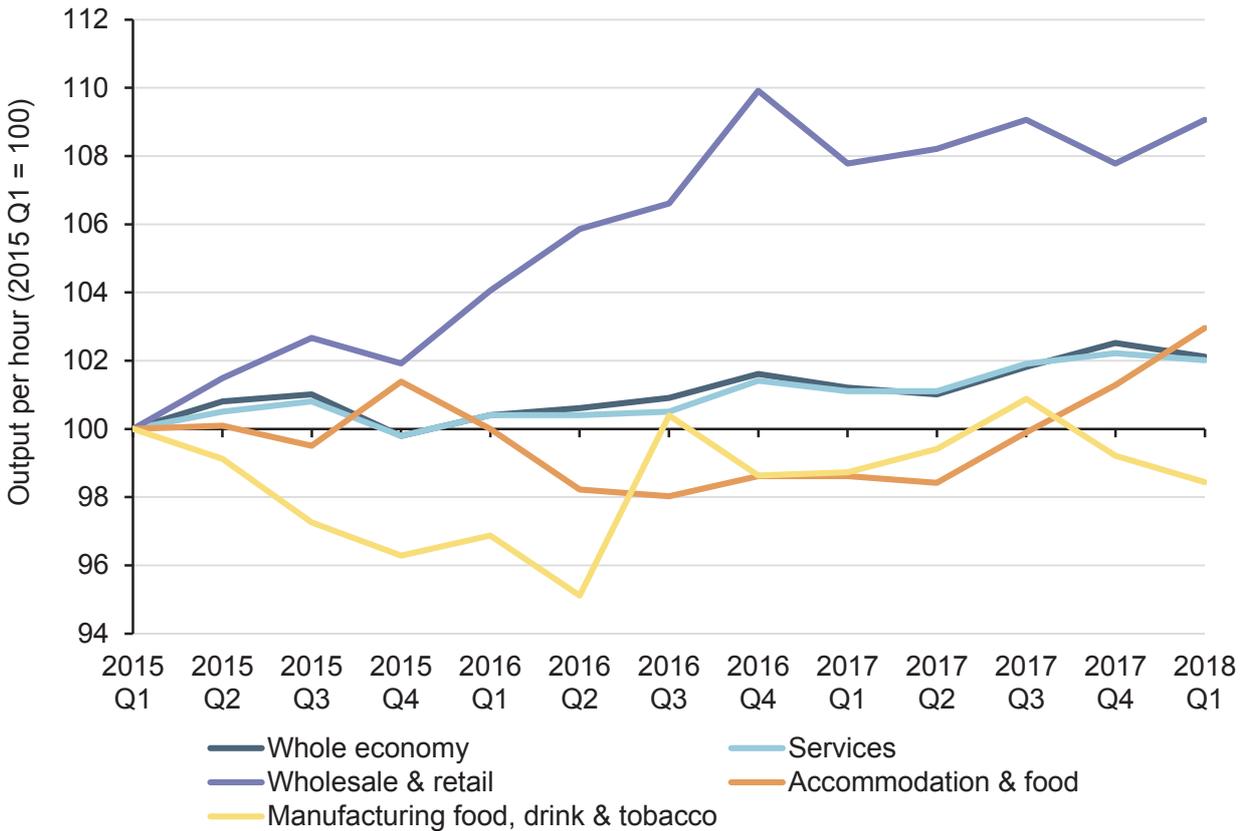
Case study: productivity in hotels

A hotel in Cumbria told us that decisions around increasing productivity were finely balanced, with careful consideration given to the effect on the level of service offered. They gave the example of whether to have fewer waiting staff during breakfast service, which would mean guests having to make their own toast. They decided against this because it did not fit with the market positioning of the hotel. On a Scottish visit, hoteliers thought that mid-market hotels had moved towards what they called a 'focal service' model, pursuing efficiency and in many cases removing staff. These hotels often featured systems such as self-check-in and self-service breakfast. This trend predated the NLW, but the increase in wage costs had led to renewed focus on productivity.

2.141 Care firms are looking to use technology to increase efficiency. In home care, firms found it very difficult to increase productivity once individuals were giving care, now that visits had been cut down to the minimum length. Trying to minimise travel time is one way of increasing productivity and firms were using rostering and routing software.

2.142 It is difficult to assess the impact of the NLW on productivity. We lack a good counterfactual or comparison, and the data are not timely at the fine level that would be ideal. Nevertheless, Figure 2.28 shows how output per hour worked has changed in the last three years across a series of low-paying industries. Productivity in retail has grown quicker than in the economy as a whole over the period. After falling in the period up to the introduction of the NLW (Q2 2016) productivity in accommodation and food services has since grown faster than in the economy as a whole.

Figure 2.28: Output per hour worked, by sector, UK, 2015-2018

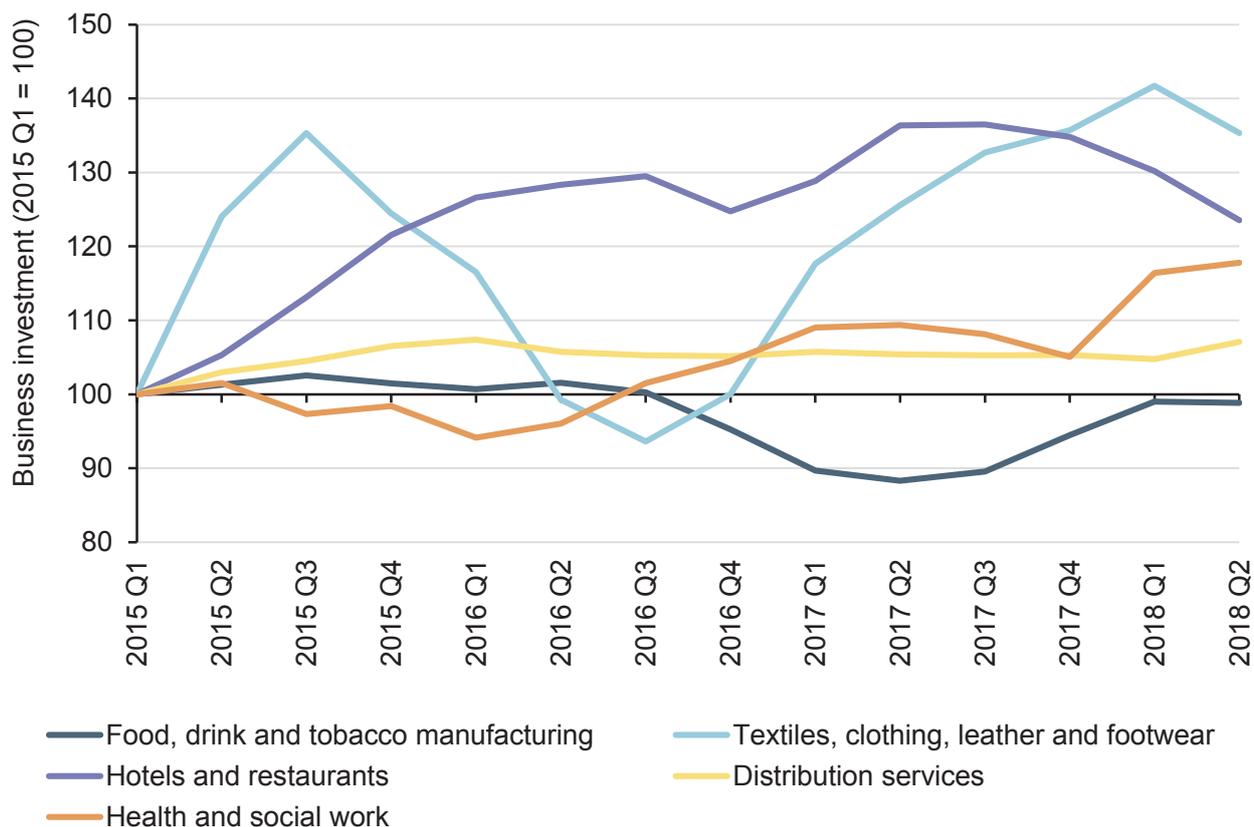


Source: LPC estimates using ONS data (output per hour): whole economy (LZVB), services (DJP9), wholesale and retail services (DJQ4), accommodation and food services (DJR2), and manufacturing food, drink & tobacco (DJK9), quarterly, seasonally adjusted, UK, Q1 2015-Q1 2018.

2.143 Productivity is growing faster than average in the two largest low-paying sectors, but it is difficult to ascribe causation to the increases in the NLW. The increases in productivity in both wholesale and retail, and accommodation and food, over this period were less than the increases in the NLW, but productivity in these sectors is also dependent on the output of higher-paid staff who have not seen wage increases of the same size as the NLW.

2.144 Figure 2.29 shows how investment has changed in various low-paying sectors since 2015. Investment in textiles, clothing, leather and footwear manufacturing has increased by a third in the last 18 months, whereas investment in hotel and restaurant services, distribution services (retail and warehousing), and food, drink and tobacco manufacturing has remained broadly flat over that period.

Figure 2.29: Business investment by sector, UK, 2015-2018



Source: LPC analysis using ONS data (chained volume measure): distribution services (DS7K), food, drink and tobacco manufacturing (DS4T), textiles, clothing leather and footwear manufacturing (DS4X), hotels and restaurants (DS86), and health and social work (DSA3), four-quarterly average, seasonally adjusted, UK, Q2 2014-Q2 2018.

2.145 Lordan (2018) examined the effect of minimum wages on automation and offshoring (moving jobs overseas) using the LFS and ASHE. This paper built on previous research by Lordan and Neumark (2017), which focused on the US, and Lordan (2017), which had looked at the UK using just the LFS. Lordan (2017) had found that increases in minimum wages were followed by decreases in the share of jobs that were offshorable and automatable, but these effects were modest and considerably smaller than in the US. The study found larger effects in manufacturing and among older males and black workers. The effects on hours were also significant but modest, with the same groups of workers more affected. Significant but modest effects were also found when using shares of hours in automatable or offshorable employment.

2.146 At the individual level, Lordan (2017) found that following a minimum wage increase, low-skilled workers in automatable or offshorable employment were less likely to keep their jobs in the next period than those in non-automatable or non-offshorable jobs. They also worked fewer hours. Similar to the job level analysis, the effects were modest, but they were greater for manufacturing, men and older workers.

2.147 Lordan (2018) built on this research using the ASHE data set. The research found effects consistent with Lordan (2017) for automatable employment (modest, but statistically significant negative effects), but found no effect from minimum wages on offshorable employment. The author noted that the cost of automation technology is decreasing, and research and development is progressing quickly, which could result in the observed effects becoming larger over time.

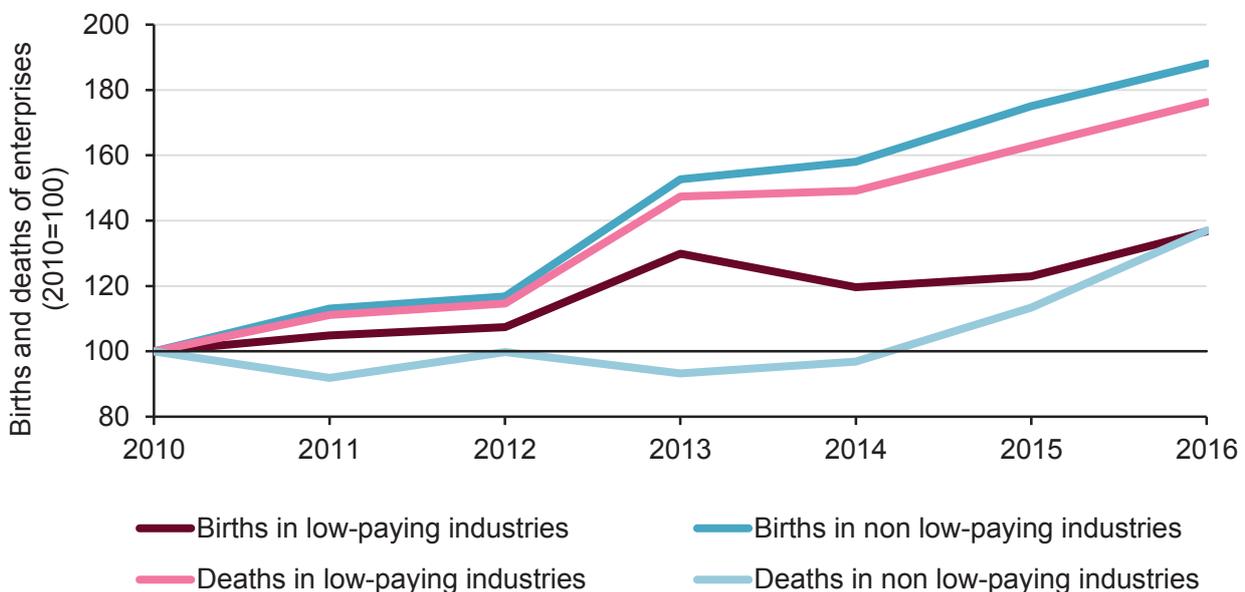
2.148 Cribb, Joyce and Norris Keiller (2018) also looked at the impact of minimum wages on automation. They argued that the small or negligible employment effects of the minimum wage found to date may not apply going forwards as the NLW increases to a rate of over £8.50 an hour in 2020. They noted that many of the jobs covered by the minimum wage in 2015 were not readily doable by machines. However, they found that jobs that were likely to be directly affected by the NLW in 2020 were more than twice as likely to be in the top decile of the most ‘routine occupations’ as those covered by the minimum wage in 2015. They observed that the ease of automation increases up to a quarter of the way along the earnings distribution. However, they concluded that it was unclear what the net employment effects would be, with the possibility that technology, even as it replaces some jobs, will create others complementary to that new technology.

Business demography

2.149 Increased wages for low-paid workers could result in an increase in enterprises going out of business (‘deaths’) as costs increase faster than revenues, making it no longer economical to keep businesses going. Similarly, the creation of new business (‘births’) could also fall, if entrepreneurs feel that the expected returns are not enough to justify the cost of setting up a new business.

2.150 This is the first report where we have data on the births and deaths of enterprises after the introduction of the NLW in April 2016. Figure 2.30 shows how, despite the 7.5 per cent increase in the wage floor following the introduction of the NLW, we saw no large change in the trends in the births and deaths of enterprises in low-paying industries.

Figure 2.30: Births and deaths of UK enterprises, by sector, UK, 2010-2016



Source: LPC estimates using ONS Business Demography data, UK 2010-2016.

2.151 When looking at individual low-paying sectors we can see that the only sector where enterprise deaths picked up considerably in 2016 was in the social care sector; however, this was matched by a similarly large increase in births, indicating that there was increased churn of enterprises, and not particularly a fall in the number of enterprises in the sector. Due to the lag between the period covered and the data being published, the data shown here would not include any of the recent high-profile closures of retail and hospitality businesses.

2.152 Stakeholders in the social care sector reflected this. We heard about consolidation in the sector caused by rising costs and funding pressure. The NCA told us that some providers had exited the market, and Housing and Care 21 thought that implementing the NLW had put some small organisations out of business. ADASS survey evidence confirmed that firms exiting the market was a common occurrence.

2.153 In other sectors competition and cost pressures have driven some firms to exit the market, we heard. It is difficult to tell from stakeholder evidence whether this results in churn, consolidation, or, in fact, in jobs being lost. In Scotland, convenience stores were closing, and the total number had fallen, the Scottish Grocers' Federation (SGF) said. In England there has been consolidation in the retail market, such as with the Co-op buying Nisa. Usdaw thought that business failures in retail were more to do with restructuring in the sector (with more independents opening) and consolidation, as with the merger of Tesco and Booker. Likewise, UKHospitality told us that business failures in the hospitality sector – referred to as the 'casual dining crunch' – are part of a market readjustment, but that the NLW is a factor in some of the business failures.

Conclusion

2.154 The analysis in this chapter shows that the introduction of the NLW, and the subsequent uprating in April 2017 and April 2018, had strong positive effects on pay for those on the NLW, which was welcomed by employer and worker representatives alike. The NLW has also had a significant impact on the wage distribution for low-paid individuals aged 25 and over in the UK, with stakeholders telling us of falling differentials and firms now looking to restructure their workforce. Stakeholders gave us few reports of major employment effects, but the situation is still challenging for certain sectors, particularly convenience, wholesale, hair and beauty, and social care. Stakeholders have warned that the responses employers have used since 2016 may not be sustainable, and more were having to act to mitigate the cost of the NLW. Official data show that employment in low-paying sectors had grown more slowly than the rest of the economy, and some stakeholders had spoken to us about slower hiring and fewer hours being offered. However, employment rates for the groups of workers most likely to be paid the NLW continue to grow faster than for the economy as a whole. Consistent with what we have heard post-2016, firms are reporting lower profits and higher prices due to the NLW, but we did not see major competitiveness effects at the macro level. We intend to keep monitoring the impacts of the NLW on various measures to further inform our decision making.

2.155 We now turn to the situation for young people, and the effects of recent increases in the youth rates.

Chapter 3

Young people

Introduction

3.1 The remit for the three youth rates of the National Minimum Wage – for 16-17, 18-20 and 21-24 year olds – is to raise young people’s pay as high as possible without harming their employment prospects. This chapter considers the impact of recent increases in the youth rates on the employment and pay of young people, together with the latest evidence on the youth labour market, in order to inform the recommendations for the forthcoming rates increases.

3.2 Data from the 2018 Annual Survey of Hours and Earnings (ASHE) are used to assess the impact of the April 2018 minimum wage increases on young people’s pay; and the effect of those increases on the bite, and coverage, of the minimum wage rates.

3.3 Labour Force Survey (LFS) data are used to assess the impact of the NMW increases on young peoples’ employment. We need at least a full year of LFS data to assess the labour market impact of the April 2018 increases, data which will not be available until next spring. So while the chapter contains data for the quarter following the April upratings this year, this is insufficient to understand the full effects of those increases. Instead, we look at the employment effects of the October 2016 and April 2017 increases in the youth rates; and we use the latest LFS data to assess, more broadly, the current health of the youth labour market.

3.4 The first part of the chapter focuses on the youth labour market. The second part looks at pay, pay growth, minimum wage bite and coverage, as of April 2018.

The youth labour market

3.5 The assessment of labour market data is a critical part of the decision-making process when recommending the rates of the minimum wage. Data on employment and unemployment are used to assess whether previous increases in the minimum wage rates have succeeded in meeting the remit, ‘to raise pay without harming employment’. And the latest data are used to determine whether the economy can sustain further minimum wage increases.

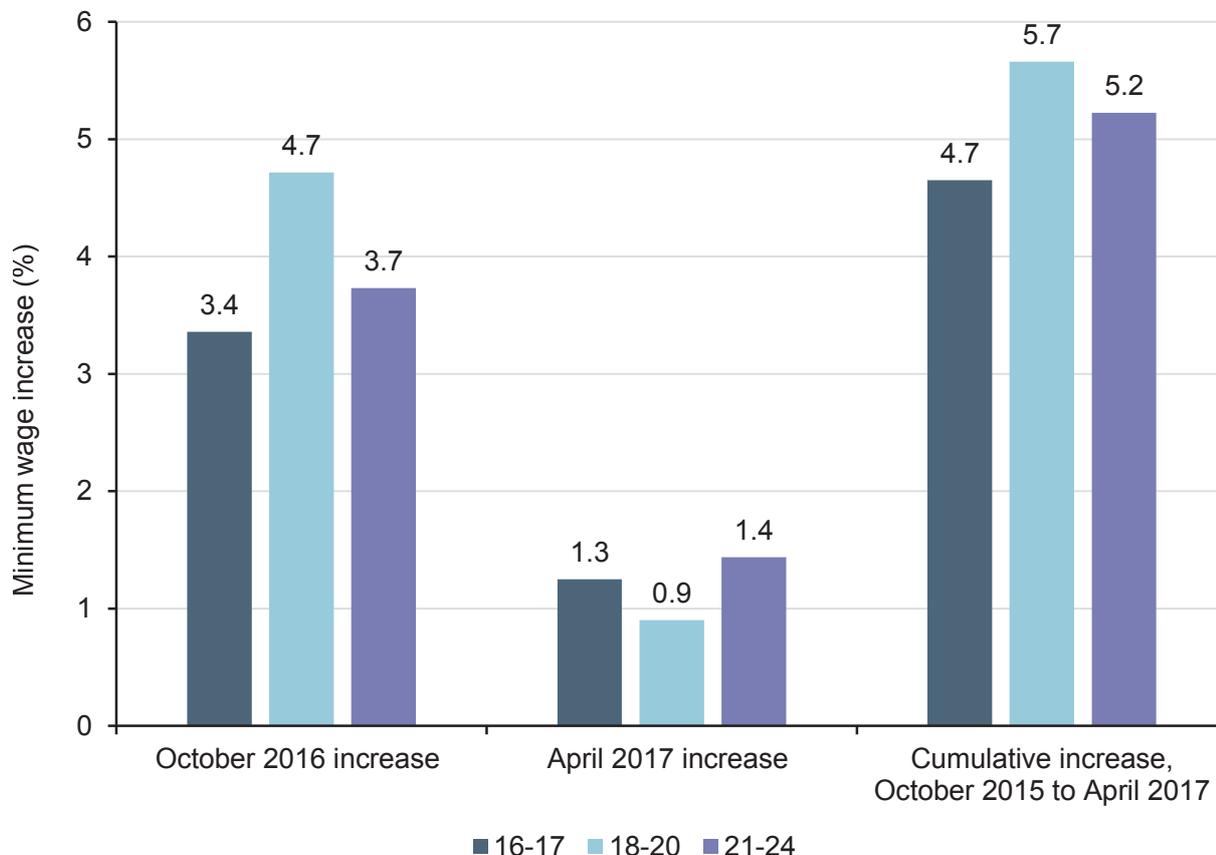
The employment impact of recent minimum wage increases

3.6 In April 2017, the youth rates moved to a new uprating cycle to align with the uprating of the National Living Wage (NLW), in April of each year. The change to the cycle necessitated two increases in the youth rates over the course of a year; in October 2016, under the old cycle, and then six months later, in April 2017, under the new cycle. The April 2017 increases took account of the potential employment risks of imposing two successive pay rises over a six-month period.

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Nevertheless, Figure 3.1 shows that the combined increases were equivalent to an increase of 5.2 per cent for 21-24 year olds; 5.7 per cent for 18-20 year olds; and 4.7 per cent for 16-17 year olds.

Figure 3.1: Minimum wage increases, by age, UK, 2016-2017

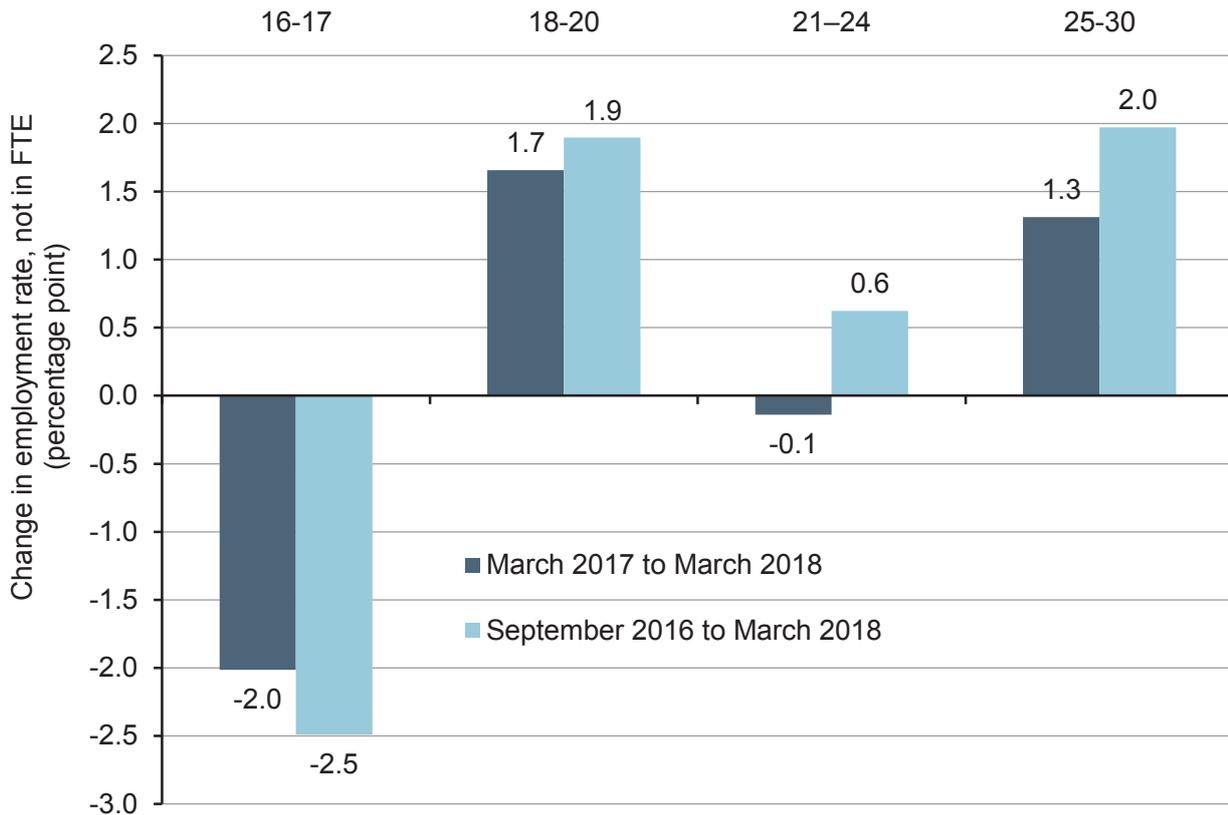


Source: LPC.

3.7 To assess the impact of these two rate increases on young people's employment prospects we focus on the outcomes for young people that are not in full-time education (FTE), as they are the group most at risk. While it is valuable, and often important, for their counterparts in full-time education to combine their studies with part-time work, the impact of not working is likely to be less significant than for those who are not otherwise engaged in studying for a qualification. Outcomes for the three youth groups are compared with each other, and also with a comparison group aged 25-30 years, covered by the National Living Wage (NLW).

3.8 Figure 3.2 shows the change in the employment rate over two time periods: the 12 months following the April 2017 rate increases; and, going further back, the 18 months following the October 2016 increases in the youth rates, which captures the combined effects of the October 2016 and April 2017 increases. The employment data show a mixed picture, with employment rates rising for 18-20 year olds, remaining fairly stable for 21-24 year olds, and falling for 16-17 year olds. Their counterparts aged 25-30 saw employment growth similar to 18-20 year olds.

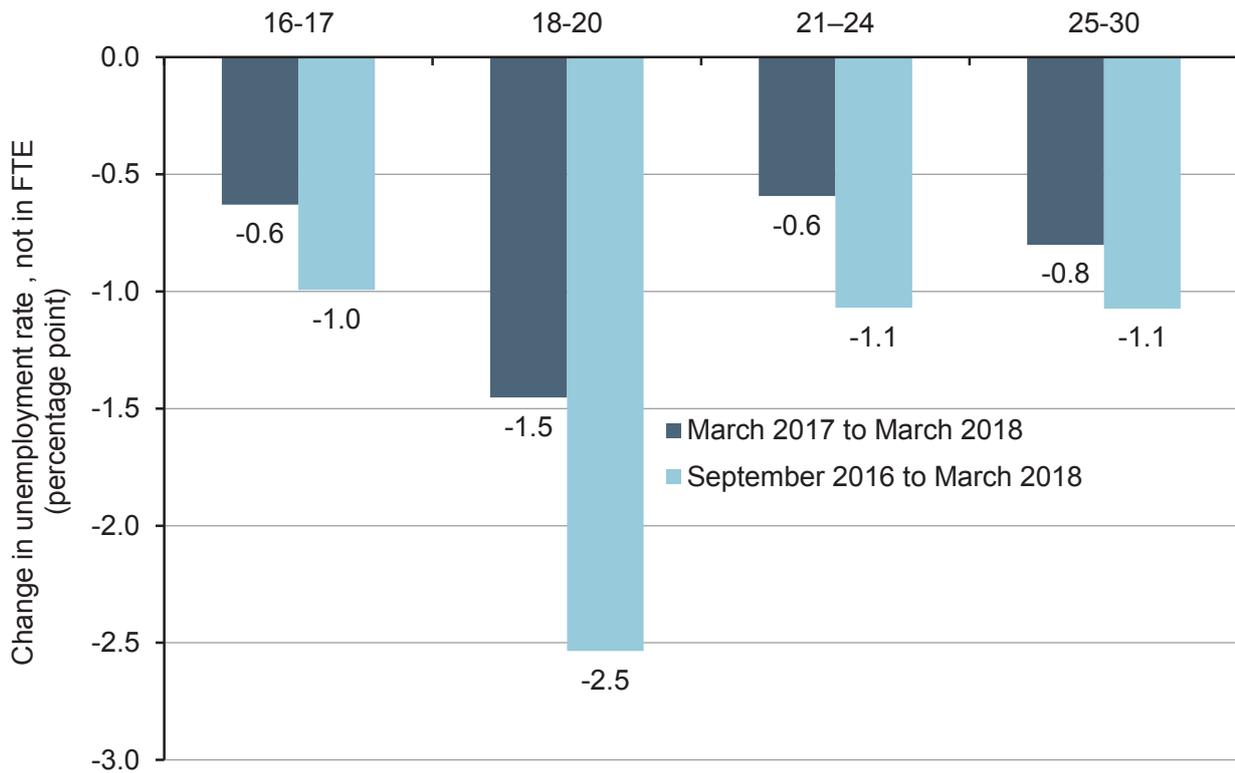
Figure 3.2: Change in employment rates (not in FTE), by age, UK, 2016-2018



Source: LPC estimates using LFS microdata, quarterly, four-quarter moving average, UK, Q4 2015-Q1 2018.

3.9 Unemployment rates show a more positive picture (as shown in Figure 3.3), with unemployment rates falling for all three groups of young people in the period following the October 2016 and April 2017 minimum wage increases. As in previous years, 18-20 year olds saw the strongest falls in unemployment, despite receiving the largest minimum wage increase over the 18 month period. Their counterparts aged 25-30 saw smaller unemployment falls in both periods, although the magnitude of these falls was similar to 16-17 and 21-24 year olds.

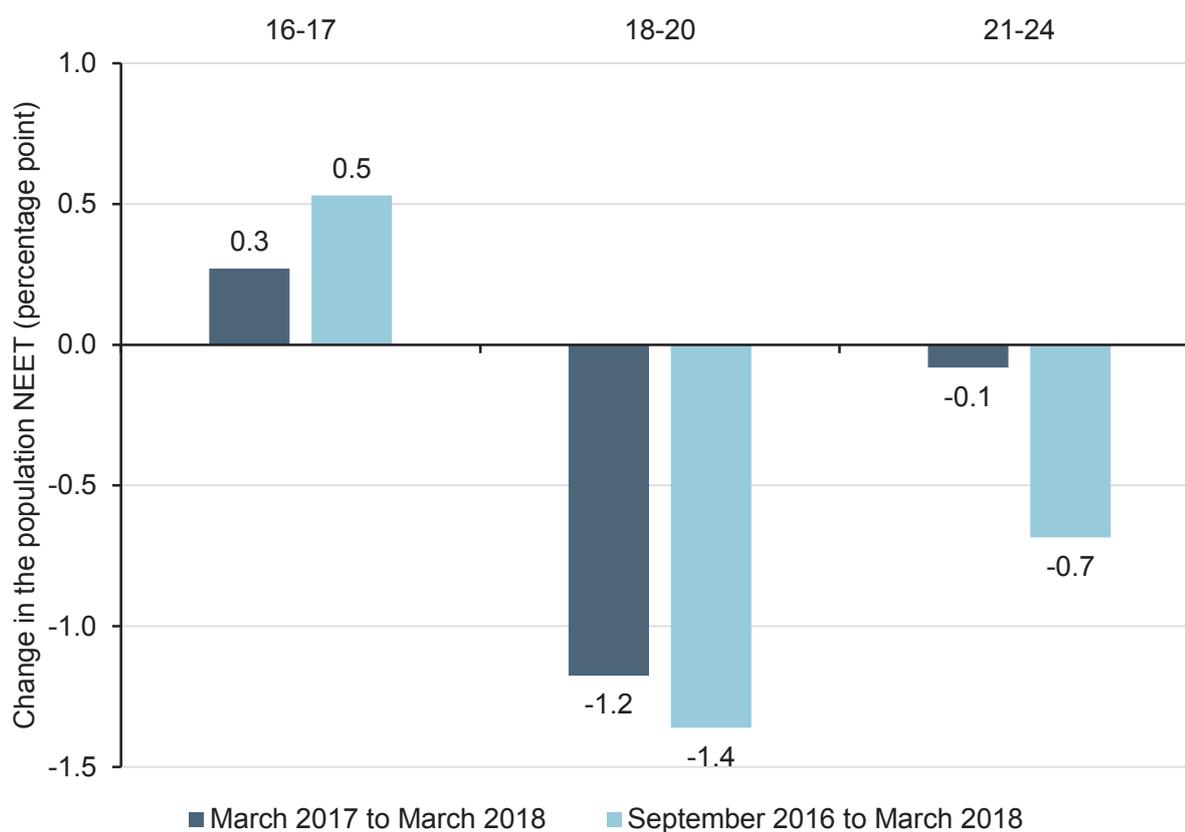
Figure 3.3: Change in unemployment rates (not in FTE), by age, UK, 2016-2018



Source: LPC estimates using LFS microdata, quarterly, four-quarter moving average, UK, Q4 2015-Q1 2018.

3.10 As with employment, data on the population not in education, employment or training (NEET), as shown in Figure 3.4, depicted a mixed picture over the 18 month period, with improvement for 18-20 year olds, a stable to improving picture for 21-24 year olds and a stable to worsening picture for 16-17 year olds.

Figure 3.4: Change in the proportion not in education, employment or training (NEET), by age, UK, 2016-2018



Source: LPC estimates using ONS data: People aged 16 to 17, 18 to 20 and 21 to 24, not in education, employment or training (NEET), quarterly, four-quarter moving average, UK, Q4 2015-Q1 2018.

3.11 Overall, the labour market data suggest that the October 2016 and April 2017 increases in the youth rates succeeded in meeting their aim, to raise young people's pay without harming their employment prospects. Employment, unemployment and NEET outcomes improved, or were stable, for 18-20 and 21-24 year olds. The fall in the employment rates for 16-17 year olds not in FTE may reflect compositional changes in this population. The increase in the percentage of 16-17 year olds NEET is more concerning, but must be balanced against the fall in the unemployment rate over the same period.

3.12 Deliberations on the forthcoming, April 2019, increases in the minimum wage took account of the latest available data. At the time of our deliberations, LFS microdata was available for the period up to June 2018. The next section considers that data.

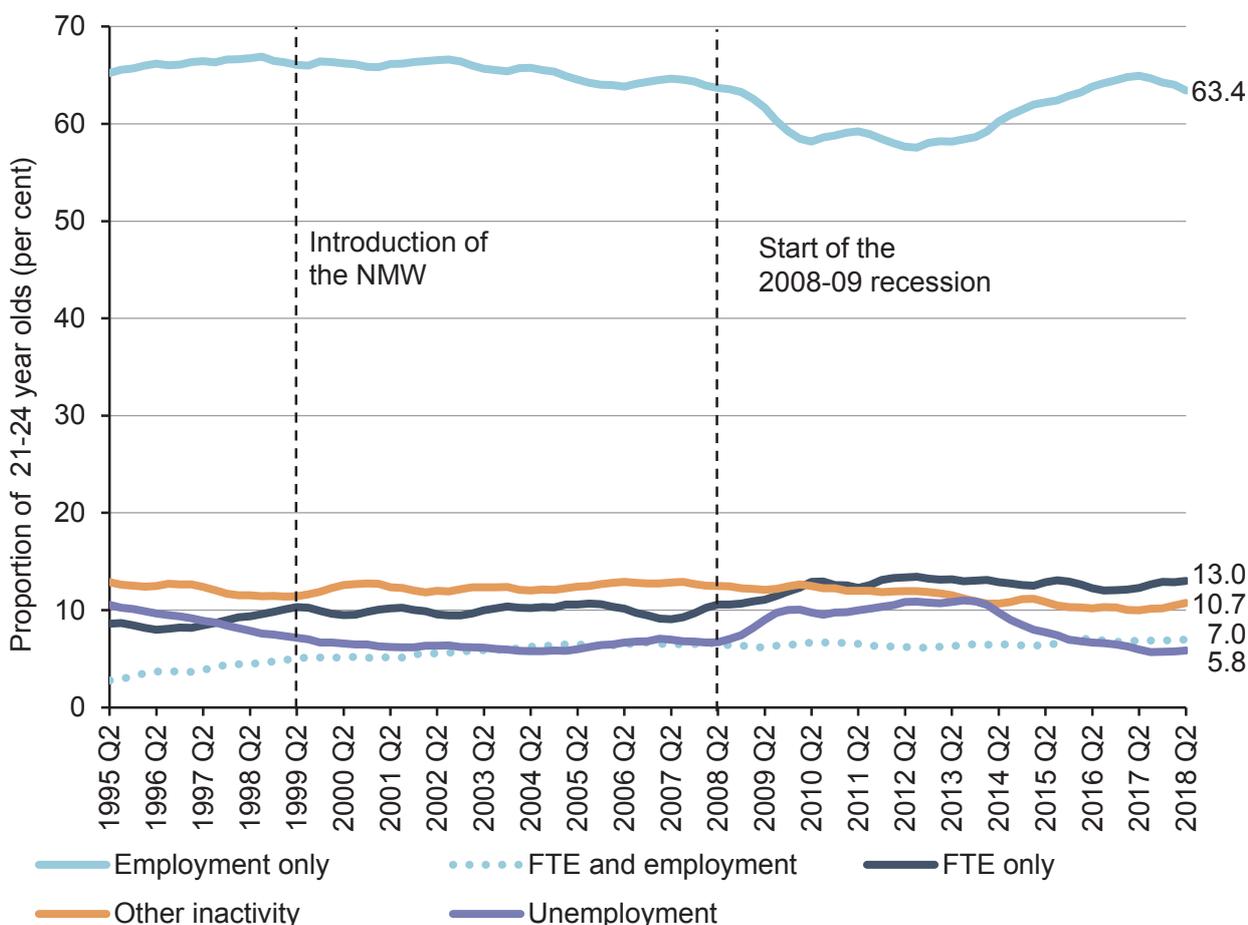
Youth labour market: the latest picture

3.13 The recent labour market picture has been of low, and falling, unemployment, and this is true for young people as well as adults. The fall in unemployment has continued over the last 12 months and unemployment proportions and rates for young people are now at their lowest recorded level (since consistent records began in 1992). Before turning to the latest employment and unemployment rates for our three youth populations, it is useful to look at their overall patterns of labour market, and educational, participation.

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3.14 In the second quarter of 2018, there were 3.36 million young people aged 21-24 in the UK, a fall of 24,000 over the year, from 3.39 million in the second quarter of 2017. Figure 3.5 shows that around two thirds of 21-24 year olds (63.4 per cent or 2.1 million) were solely engaged in employment, while one in five (20.0 per cent or 673,000) were in full-time education, one-third of whom (7.0 per cent or 236,000) were combining part-time work and full-time education. Over the year to the second quarter of 2018, the proportion of 21-24 year olds solely in employment fell 1.5 percentage points, alongside increases in FTE (up 0.7 percentage points to 13.0 per cent) and inactivity (up 0.8 percentage points to 10.7 per cent or 361,000). The proportion of 21-24 year olds that were unemployed, excluding students in FTE, fell 0.1 percentage points to its lowest recorded level (5.8 per cent or 196,000).

Figure 3.5: Economic activity of 21-24 year olds, UK, 1995-2018

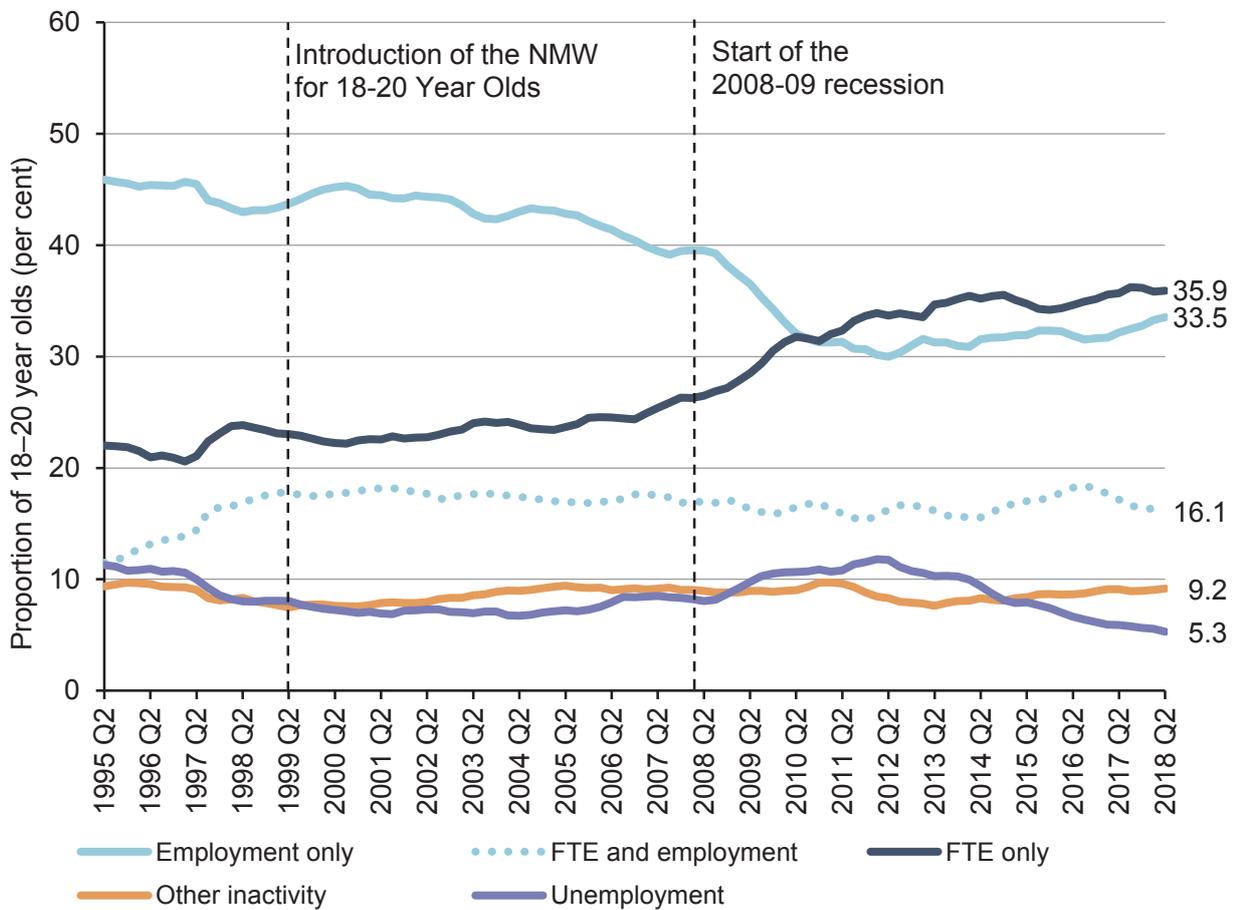


Source: LPC estimates using LFS microdata, quarterly, four-quarter moving average, UK, Q3 1994-Q2 2018.

3.15 Figure 3.6 shows economic and educational participation patterns for 18-20 year olds. In the second quarter of 2018, there were 2.28 million young people aged 18-20 in the UK, a fall of 34,000 over the year, from 2.32 million in the second quarter of 2017. One third were engaged solely in employment (33.5 per cent or 765,000), and slightly more were engaged solely in FTE (35.9 per cent or 820,000), while half as many combined part-time employment with full-time education (16.1 per cent or 368,000). Over the year to the second quarter of 2018, the proportion of 18-20 year olds in employment rose by 1.4 percentage points, while the proportion combining work and study fell by 1.1 percentage points. The proportion unemployed, excluding students, fell 0.6 percentage points to its lowest recorded level, since records began in 1992 (5.3 per cent or 121,000). A larger number

were not in FTE and inactive (9.2 per cent or 209,000), but this group was relatively stable over the year.

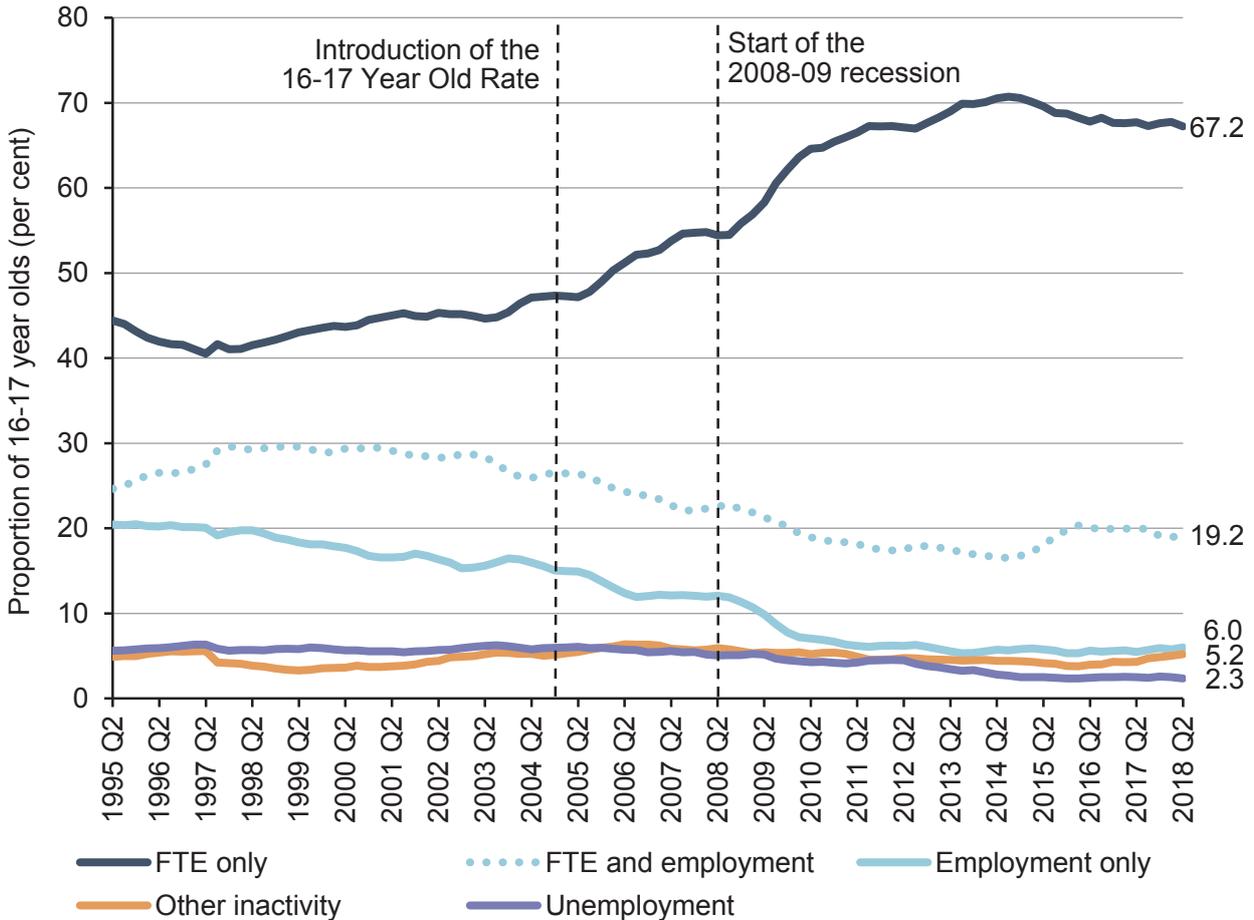
Figure 3.6: Economic activity of 18-20 year olds, UK, 1995-2018



Source: LPC estimates using LFS microdata, quarterly, four-quarter moving average, UK, Q3 1994-Q2 2018.

3.16 The 16-17 year old population is the smallest of the three youth rate populations. In the second quarter of 2018, there were 1.35 million 16-17 year olds in the UK, a fall of 28,000 over the year, from 1.38 million in the second quarter of 2017. Figure 3.7 shows that the economic activity patterns of 16-17 year olds are also very different to those of the two older rate populations. In the second quarter of 2018, nine in ten 16-17 year olds were either solely in FTE (67.2 per cent or 910,000) or combining FTE with employment (19.2 per cent or 261,000). Just 6.0 per cent (81,000) were solely in employment. A similar proportion were not in FTE and inactive (5.2 per cent or 71,000). Educational policy in England (Raising the Participation Age) requires all young people to remain in education or training (including an apprenticeship) until the age of 18; but rates of educational participation are as high, or higher, in the other nations of the UK. Activity patterns changed very little over the year to the second quarter of 2018, but the proportion unemployed, excluding students, fell to a historic low, at just 2.3 per cent, equivalent to 32,000 16-17 year olds.

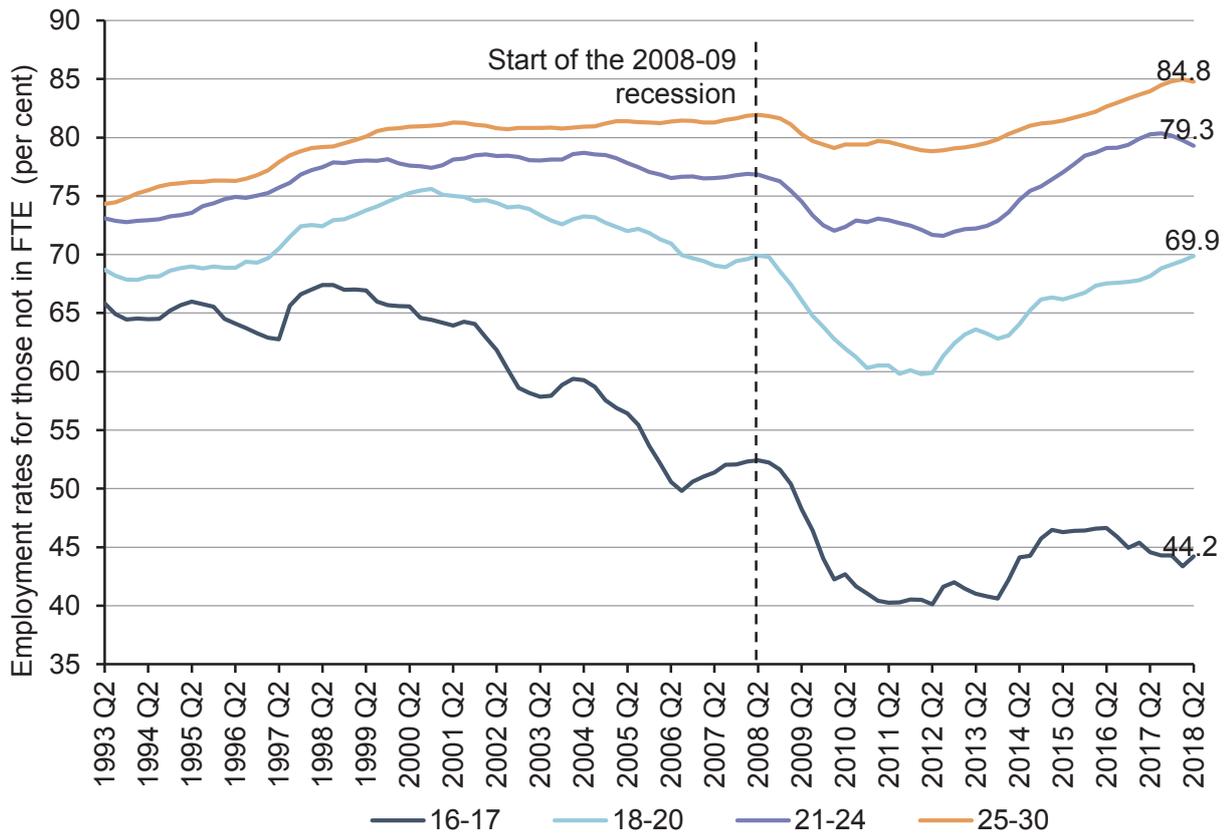
Figure 3.7: Economic activity of 16-17 year olds, UK, 1995-2018



Source: LPC estimates using LFS microdata, quarterly, four-quarter moving average, UK, Q3 1994-Q2 2018.

3.17 As discussed previously, the key group of concern for our deliberations are those young people that are not in full-time education (FTE). Figure 3.8 shows a mixed picture on employment rates for this group, with employment rates rising strongly for 18-20 year olds (up 1.7 percentage points, to 69.9 per cent), while falling for 21-24 year olds (down 1.0 percentage points, to 79.3 per cent) and, to a lesser extent, 16-17 year olds (down 0.3 percentage points, to 44.2 per cent). Employment rates for 25-30 year olds rose by 0.8 percentage points – from 84.0 per cent to 84.8 per cent – over the same period.

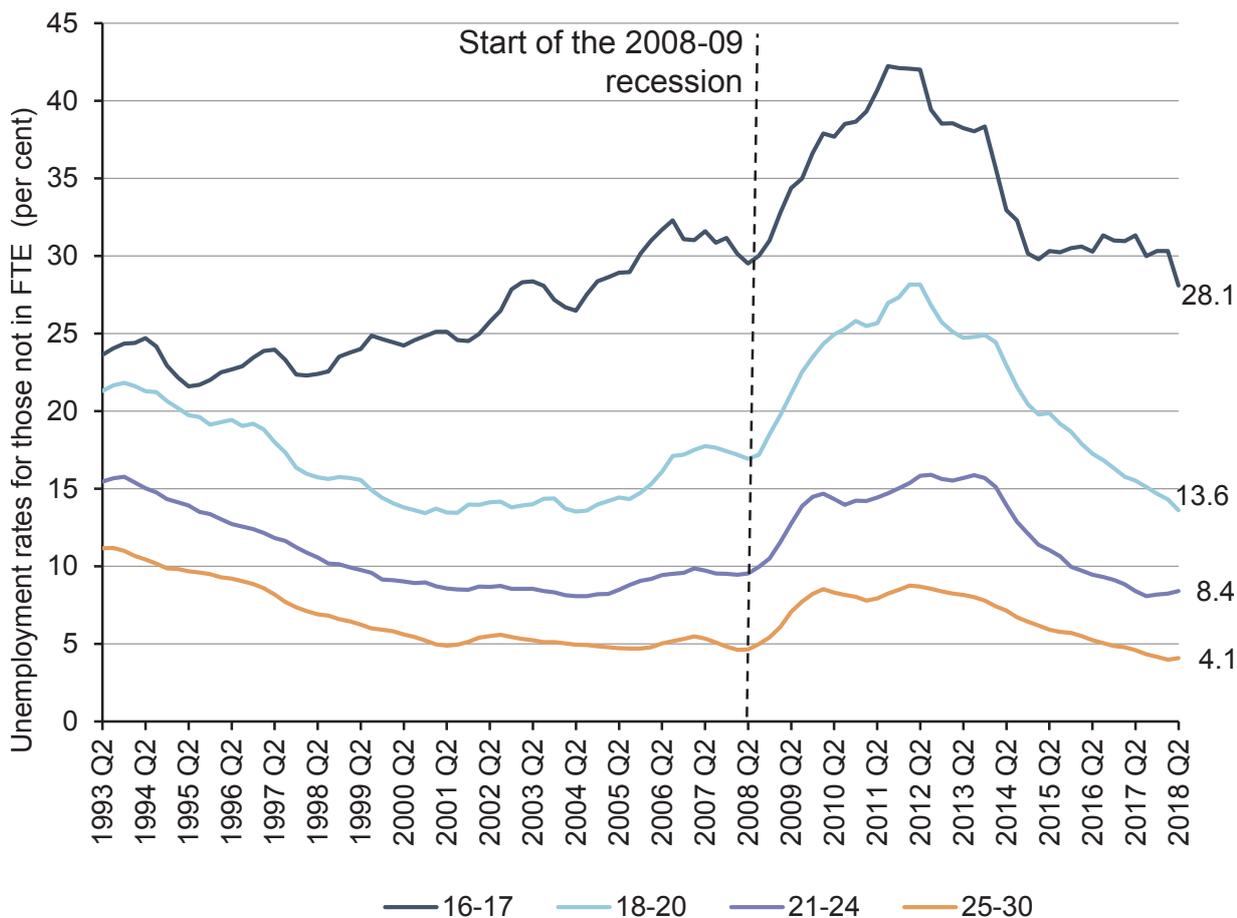
Figure 3.8: Employment rates for young people not in FTE, by age, UK, 1993-2018



Source: LPC estimates using LFS microdata, quarterly, four-quarter moving average, UK, Q3 1992-Q2 2018.

3.18 The pattern was different for unemployment rates, as shown in Figure 3.9, with 16-17 year olds seeing the greatest improvement over the year to the second quarter of 2018 (down 3.2 percentage points to 28.1 per cent). The unemployment rate also fell strongly for 18-20 year olds (down 1.9 percentage points to 13.6 per cent), while remaining stable for 21-24 year olds, at 8.4 per cent. Unemployment rates for 25-30 year olds fell by 0.5 percentage points – from 4.6 per cent to 4.1 per cent – over the same period.

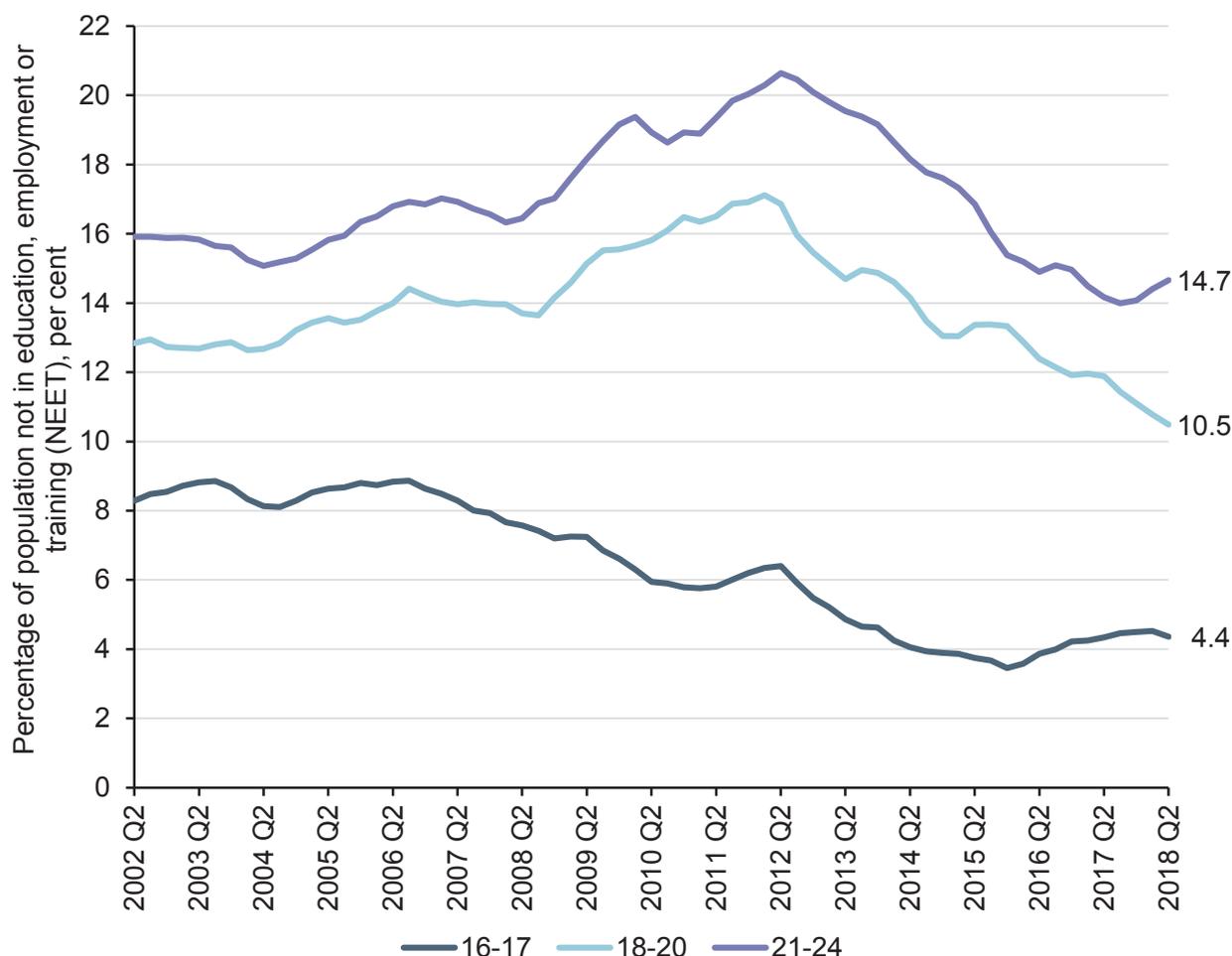
Figure 3.9: Unemployment rates for young people not in FTE, by age, UK, 1993-2018



Source: LPC estimates using LFS microdata, quarterly, four-quarter moving average, UK, Q3 1992-Q2 2018.

3.19 We also monitor the number of young people not in education, employment or training (NEET), as these young people are at greatest risk of long-term unemployment and scarring effects on their long-term attachment to the labour market. Figure 3.10 shows that, in the year to the second quarter of 2018, the percentage of 21-24 year olds NEET rose by 0.5 percentage points (13,000), from 14.2 per cent to 14.7 per cent (494,000). The majority of this group were inactive (9.2 per cent or 311,000), rather than unemployed (5.4 per cent or 183,000), and the increase over the year was largely driven by an increase in inactivity. The percentage of 16-17 year olds NEET was stable at 4.4 per cent (61,000) while the percentage of 18-20 year olds NEET fell 1.4 percentage points (36,000), from 11.9 to 10.5 per cent (240,000).

Figure 3.10: NEET population by age, UK, 2002-2018



Source: LPC estimates using ONS data: People aged 16 to 17, 18 to 20 and 21 to 24, not in education, employment or training (NEET), quarterly, four-quarter moving average, UK, Q3 2001-Q1 2018.

3.20 Another useful indicator for measuring the health of the labour market is the level of underemployment. This measures the number of employed people that were either looking for an additional (second) job, looking for a new job with longer hours, or wanted to work longer hours in their current job. Rates of underemployment are higher for young workers, but Table 3.1 shows that the underemployment rate fell over the year for all ages, with young people seeing the fastest falls. In the year to the second quarter of 2018, the underemployment rate fell by 10 per cent for 16-17 year olds, 5 per cent for 18-20 year olds and 6 per cent for 21-24 year olds.

Table 3.1: Underemployment by age, UK, 2017-2018

| Age | Underemployment rate | | | | | Annual change in underemployment | |
|--------------|----------------------|---------|---------|---------|---------|----------------------------------|------|
| | 2017 Q2 | 2017 Q3 | 2017 Q4 | 2018 Q1 | 2018 Q2 | ppt | % |
| 16-17 | 18.6 | 18.6 | 18.4 | 17.2 | 16.8 | -1.8 | -9.8 |
| 18-20 | 19.6 | 19.4 | 19.0 | 18.6 | 18.5 | -1.1 | -5.4 |
| 21-24 | 13.9 | 13.5 | 13.4 | 13.0 | 13.0 | -0.9 | -6.2 |
| 25-64 | 7.3 | 7.2 | 7.2 | 7.1 | 7.0 | -0.3 | -3.9 |

Source: LPC estimates using LFS microdata, quarterly, four-quarter moving average, UK, Q3 2016-Q2 2018.

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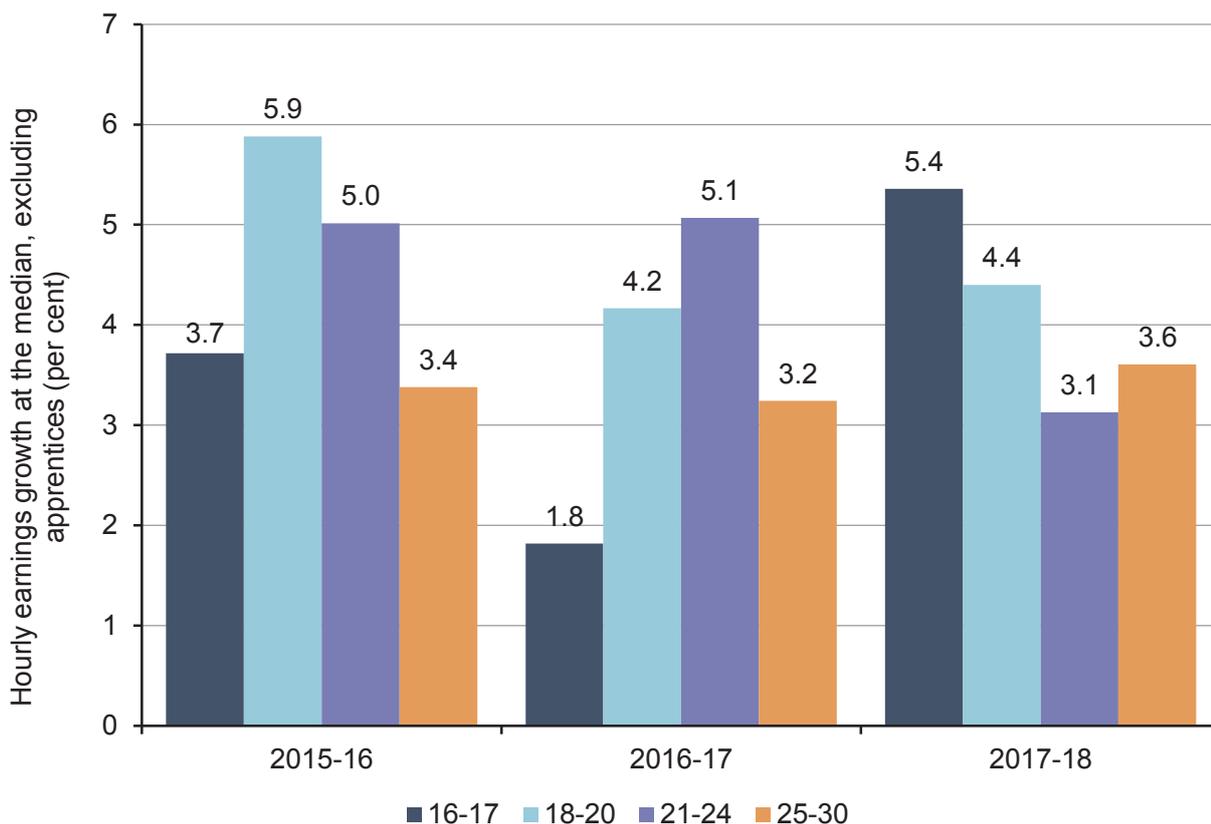
3.21 Overall, the labour market data available for the year to the second quarter of 2018 give no strong indication of any emerging employment, or unemployment, problem. Employment rates continue to improve for 18-20 year olds and are fairly stable for 16-17 and 21-24 year olds. Unemployment rates for young people not in full-time education are at historic lows, and continue to fall, albeit the unemployment rate for 21-24 year olds was unchanged over the year. Falling underemployment suggests that young people are finding it easier to find the work or hours that they want. There are some signs of rising inactivity among 21-24 year olds not in FTE, which we will continue to monitor, although the drivers of this are currently unclear.

3.22 At the time of our deliberations the quarterly LFS microdata were only available to the second quarter of 2018 so it was not possible to fully explore the employment impact of the April 2018 increases in the youth rates. We can, however, use earnings data from the ASHE to measure the impact of the 2018 increases on young peoples' pay. The next section uses ASHE to explore what happened to young people's pay in the year to April 2018, and to measure the effect on the bite and coverage of the minimum wage.

Earnings growth

3.23 Figure 3.11 shows hourly pay growth at the median for young people, excluding apprentices. In the year to April 2018, 16-17 year olds recorded the highest pay growth at the median (5.4 per cent), followed by 18-20 year olds (4.4 per cent). Median pay growth was much lower for 21-24 year olds (3.1 per cent), and – for the first time since the series began in 2013 – was below pay growth for 25-30 year olds (3.6 per cent). While 18-20 year olds have seen relatively high pay growth in recent years – including pay growth of 5.9 per cent in 2015-16 – 16-17 year olds typically see lower pay growth than their older counterparts. Table 3.2 explains the unusual out-turn this year.

Figure 3.11: Hourly earnings growth at the median, by age, UK, 2015-2018



Source: LPC estimates using ASHE, April 2015-18, standard weights, including those not on adult rates of pay, excluding apprentices, UK.

3.24 Table 3.2 shows that median pay for 16-17 year olds, excluding apprentices, was £5.60 in April 2017 and £5.90 in April 2018. This means that 16-17 year olds at the median of the pay distribution received the 18-20 Year Old Rate in both years. As such, the increase at the median reflected the April 2018 increase in the 18-20 Year Old Rate, of 5.4 per cent. Similarly, hourly pay at the median of the 18-20 year old pay distribution was £7.50 in 2017, and £7.83 in 2018, meaning that those at the median earned the National Living Wage (NLW), and received the increase in the NLW, of 4.4 per cent, in April 2018.

Table 3.2: Growth in median hourly pay and the National Minimum Wage, by age, UK, 2017-2018

| | Median hourly pay (£) | | 2017-2018 | | NMW/NLW (£) | | 2017-2018 | |
|--------------|-----------------------|-------------|-------------|------------|-------------|-------------|-------------|------------|
| | 2017 | 2018 | £ | % | 2017 | 2018 | £ | % |
| 16-17 | 5.60 | 5.90 | 0.30 | 5.4 | 4.05 | 4.20 | 0.15 | 3.7 |
| 18-20 | 7.50 | 7.83 | 0.33 | 4.4 | 5.60 | 5.90 | 0.30 | 5.4 |
| 21-24 | 9.09 | 9.38 | 0.28 | 3.1 | 7.05 | 7.38 | 0.33 | 4.7 |
| 25-30 | 11.74 | 12.16 | 0.42 | 3.6 | 7.50 | 7.83 | 0.33 | 4.4 |
| 25+ | 13.02 | 13.37 | 0.35 | 2.7 | 7.50 | 7.83 | 0.33 | 4.4 |

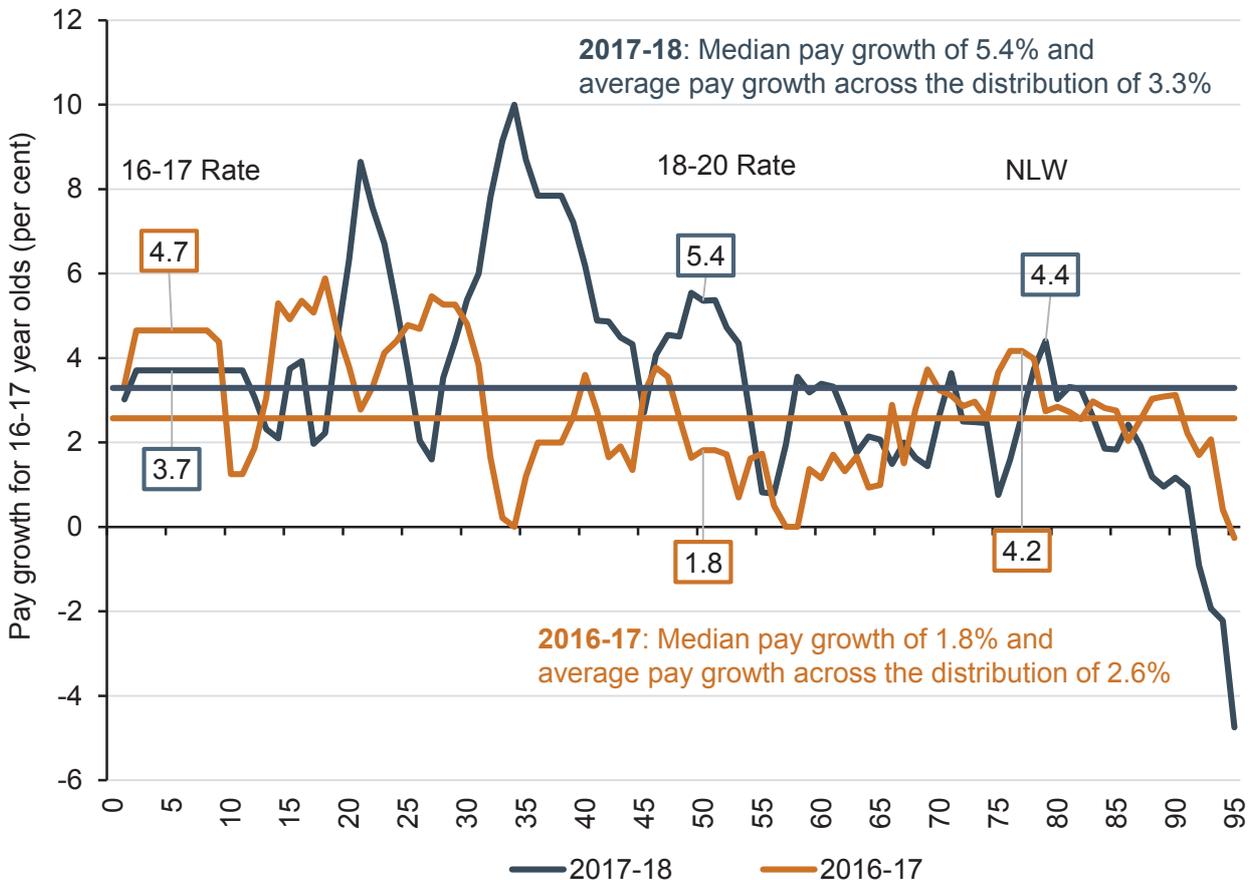
Source: LPC estimates using ASHE, April 2017-18, standard weights, including those not on adult rates of pay, excluding apprentices, UK.

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3.25 As 16-17 and 18-20 year olds at the median of the pay distribution were paid at minimum wage rates, albeit minimum wages above their age-applicable rate, the observed pay growth at the median is more representative of changes to NMW rates than pay setting more generally. To understand broader patterns of pay growth, it is useful to look at how pay has grown across the distribution.

3.26 Figure 3.12 shows pay growth for the past two years – 2016-17 and 2017-18 – across the full earnings distribution for 16-17 year olds. Hourly pay data are grouped into percentiles, from the lowest-paid to the highest-paid, and annual pay growth is calculated at each point of the distribution. The 16-17 year olds saw much higher pay growth this year compared with 2016-2017, including: at the median (5.4 per cent and 1.8 per cent respectively); on average across the distribution (3.3 per cent and 2.6 per cent respectively); and at various points of the pay distribution, particularly between the 30th percentile and 60th percentile. Over the last year, pay growth was greatest between the 16-17 Year Old Rate and the median. The highest pay growth was at the 34th percentile, where pay rose from £5.00 an hour to £5.50 an hour (10 per cent). Pay growth was lower above the median and pay fell at the very top of the earnings distribution, where workers were paid above the NLW. More broadly, Figure 3.12 demonstrates that the different rates are now highly influential right across the pay distribution for young workers, up to around the 80th percentile for 16-17 year olds, where workers were paid the NLW.

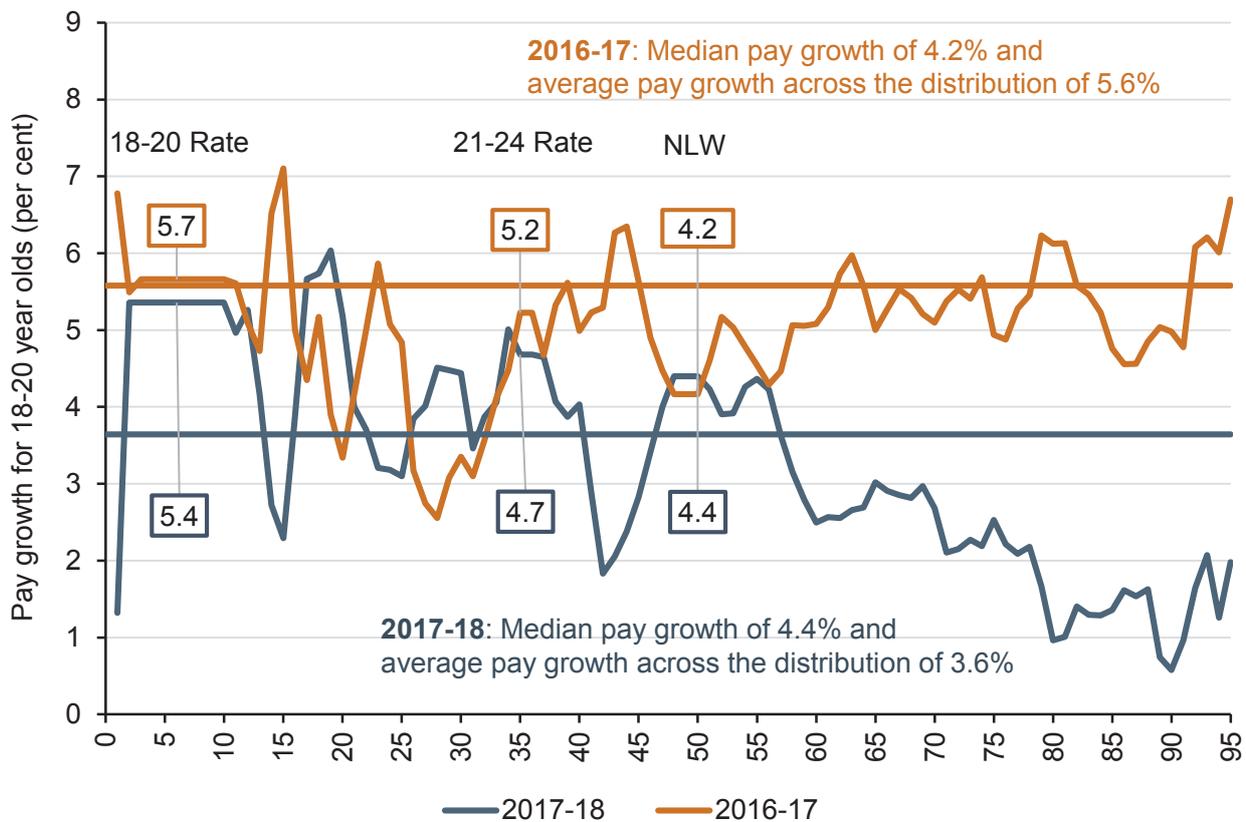
Figure 3.12: Earnings growth across the hourly pay distribution for 16-17 year olds (excluding apprentices), UK, 2016-17 and 2017-18



Source: LPC estimates using ASHE, April 2016-18, standard weights, including those not on adult rates of pay, excluding apprentices, UK.

3.27 Figure 3.13 shows pay growth for 18-20 year olds over the last two years. While the growth at the median was higher this year than last (4.4 per cent and 4.2 per cent respectively), growth across the distribution was lower this year than last (3.6 per cent and 5.6 per cent respectively). Over the year to April 2018, the highest pay growth was in the lower quintile, with pay growth at or close to 6 per cent in the 17th to 19th percentiles, and pay growth of 5.4 per cent at the bottom of the pay distribution, where the 18-20 Year Old Rate was paid. Compared with last year, growth above the median – the right hand side of Figure 3.13 – was much lower. More broadly, Figure 3.13 demonstrates that the different rates are now highly influential right across the pay distribution for young workers, up to the 50th percentile for 18-20 year olds, where workers were paid the NLW.

Figure 3.13: Earnings growth across hourly pay distribution for 18-20 year olds (excluding apprentices), UK, 2016-17 and 2017-18

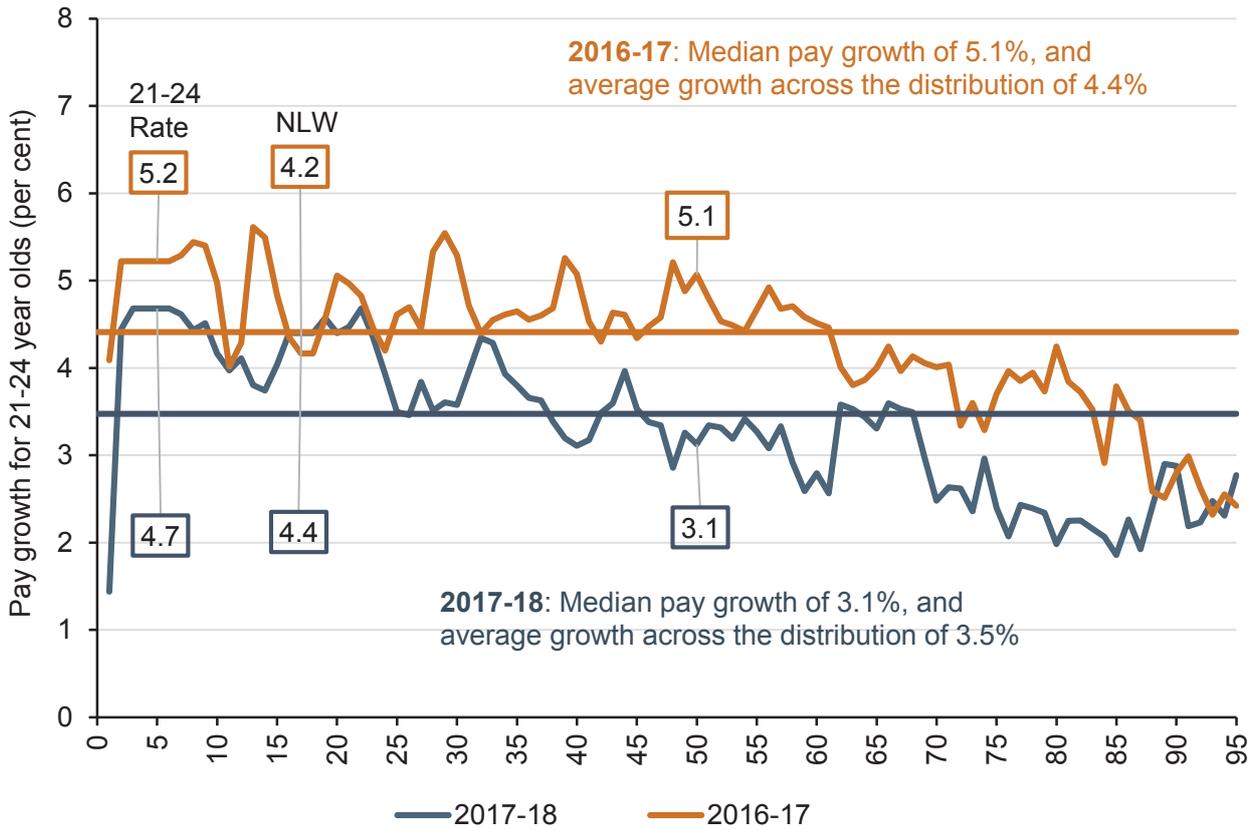


Source: LPC estimates using ASHE, April 2016-18, standard weights, including those not on adult rates of pay, excluding apprentices, UK.

3.28 Figure 3.14 shows the pattern for 21-24 year olds. As with 18-20 year olds, pay growth was generally lower this year than last, both at the median (3.1 per cent compared with 5.1 per cent); averaged across the pay distribution (3.5 per cent compared with 4.4 per cent); and at most points of the earnings distribution. Over the last year, pay growth was generally 3 per cent or more across most of the pay distribution, up to the 70th percentile, but the highest growth was in the bottom quartile, where workers received the 21-24 Year Old Rate and the NLW.

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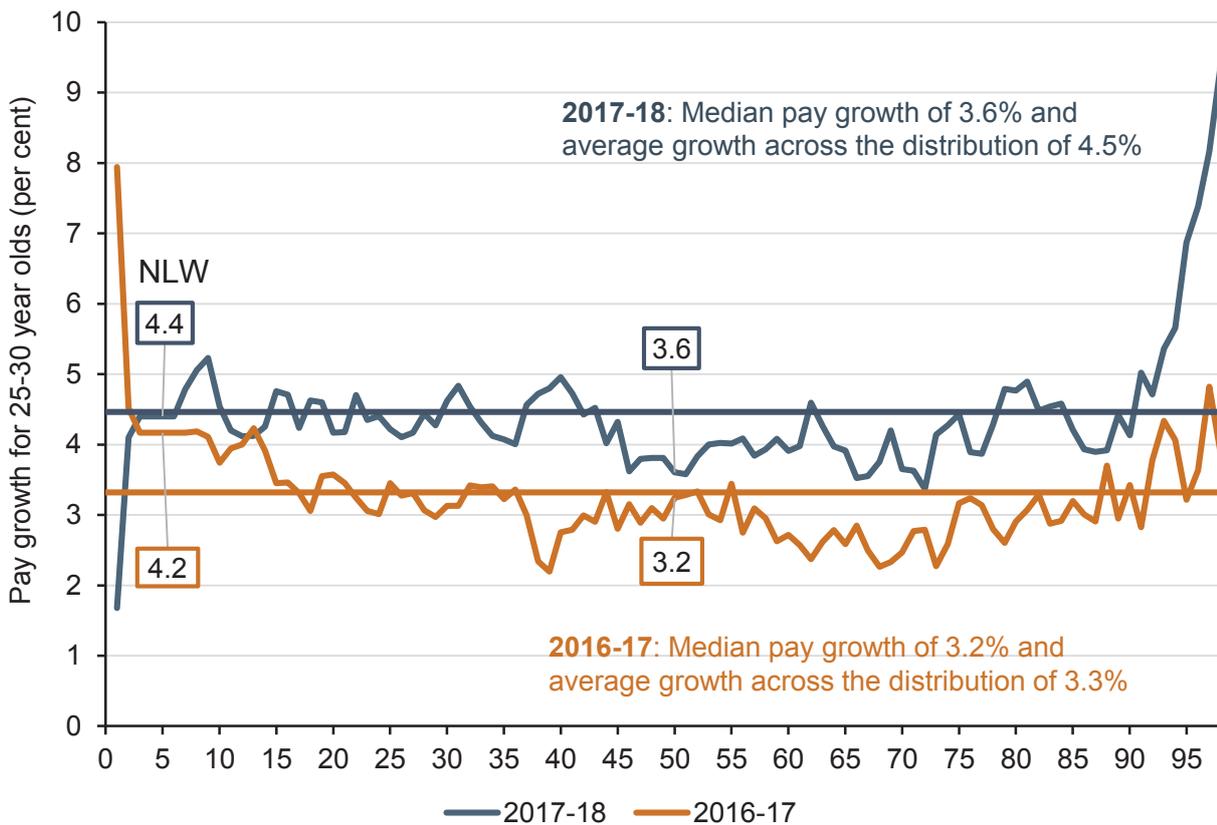
Figure 3.14: Earnings growth across hourly pay distribution for 21-24 year olds (excluding apprentices), UK, 2016-17 and 2017-18



Source: LPC estimates using ASHE, April 2016-18, standard weights, including those not on adult rates of pay, excluding apprentices, UK.

3.29 Figure 3.15 shows what happened to pay for 25-30 year olds over the two years. These workers, who are entitled to the higher NLW, saw stronger pay growth this year compared with last, both at the median (3.6 per cent and 3.2 per cent respectively); averaged across the pay distribution (4.5 per cent and 3.3 per cent); and at almost every point of the pay distribution. Chapter 2 discusses some of the possible drivers of this pay growth, but it is worth noting that they are compositionally very different to younger workers. In 2018, 31 per cent of 25-30 year olds worked in a low-paying job, compared with 47 per cent of 21-24 year olds, 78 per cent of 18-20 year olds and 90 per cent of 16-17 year olds. The proportion of 25-30 year olds working in a low-paying job also fell over the year (by 37,000 or 3 per cent).

Figure 3.15: Earnings growth across hourly pay distribution for 25-30 year olds (excluding apprentices), UK, 2016-17 and 2017-18



Source: LPC estimates using ASHE, April 2016-18, standard weights, including those not on adult rates of pay, excluding apprentices, UK.

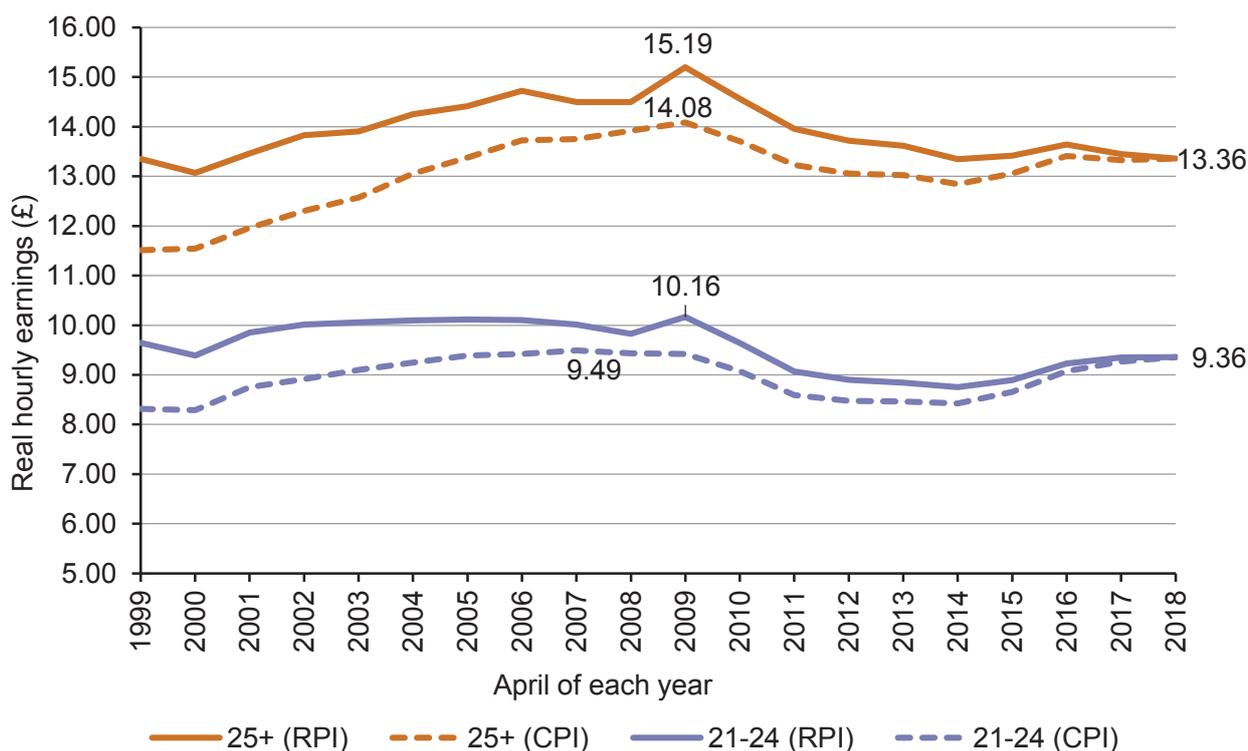
3.30 In summary, over the year to April 2018, the three youth groups saw similar levels of pay growth across the pay distribution, ranging from 3.3 per cent to 3.6 per cent, despite larger differences at the median. Pay growth was evident across the pay distribution, and often at levels above the minimum wage increases; but pay growth was lower this year than last year for 18-20 and 21-24 year olds, although not for 16-17 year olds (or 25-30 year olds).

Real wages

3.31 Figure 3.16 shows that, despite relatively strong nominal pay growth at the median, real pay growth for young workers was muted. Over the year to April 2018, hourly pay for 21-24 year olds grew by 9 pence (1.0 per cent) at the median using the Consumer Price Index (CPI), and just 1 pence (0.1 per cent) using the Retail Price Index (RPI). Median hourly pay for 21-24 year olds has not yet recovered the ground lost since the 2008 recession. In 2018 prices, their pay remains 14 pence (1.4 per cent) below its 2007 peak value using CPI; and 81 pence (7.9 per cent) below its 2009 peak value using RPI. Those aged 25 and over saw less pay growth at the median than their counterparts aged 21-24, in nominal and real terms. Over the year to April 2018, real median pay for those aged 25 and over rose by just 3 pence (0.3 per cent) using CPI; and their pay fell, by 9 pence (0.6 per cent), using RPI. Real median pay for those aged 25 and over is still some way below its 2009 peak value in 2018 prices: by 72 pence (5.1 per cent) using CPI; and by £1.83 (12.1 per cent) using RPI.

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Figure 3.16: Real value of median hourly earnings for those aged 21-24 and 25 and over, by price index, UK, 1999-2018



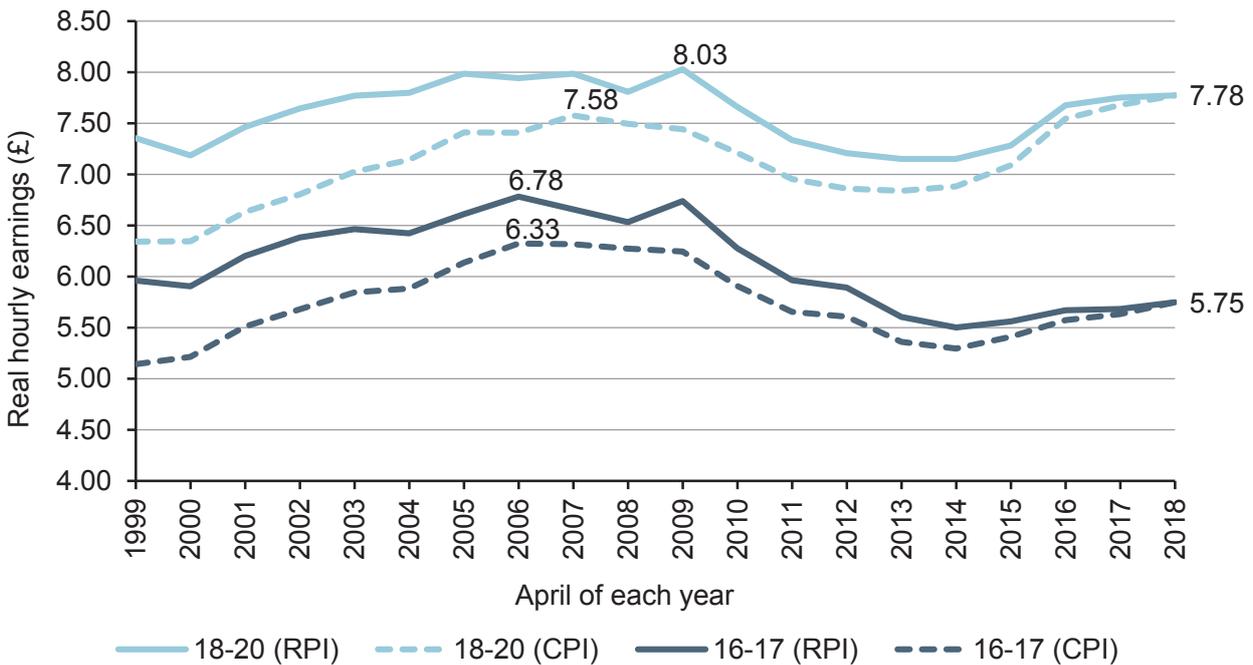
Source: LPC estimates using ONS data, CPI (D7BT) and RPI (CHAW), April 1999-2018, monthly, and ASHE: without supplementary information, April 1999-2004; with supplementary information, April 2004-06; 2007 methodology, April 2006-11; and 2010 methodology, April 2011-18, standard weights, including those not on adult rates, UK.

Notes:

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

3.32 The youngest workers saw the strongest nominal pay growth at the median which translated into real pay growth, albeit muted, after accounting for inflation. Figure 3.17 shows that, over the year to April 2018, median hourly pay for 18-20 year olds grew by 9 pence (1.2 per cent) using CPI, and 2 pence (0.3 per cent) using RPI. Their median pay is now at its peak real terms value in 2018 prices using CPI, but is still 26 pence (3.2 per cent) below its 2009 peak value using RPI. The youngest workers, aged 16-17, also saw strong nominal median pay growth, and real pay growth after inflation. Their median pay grew by 12 pence (2.1 per cent) using CPI and 7 pence (1.1 per cent) using RPI. However, their median pay remains 58 pence (9.1 per cent) below its 2006 peak value using CPI; and £1.03 (15.2 per cent) below its 2006 peak value using RPI.

Figure 3.17: Real value of median earnings for those aged 16-17 and 18-20, by price index, UK, 1999-2018



Source: LPC estimates using ONS data, CPI (D7BT) and RPI (CHAW), April 1999-2018, monthly, UK, and ASHE: without supplementary information, April 1999-2004; with supplementary information, April 2004-06; 2007 methodology, April 2006-11; and 2010 methodology, April 2011-18, standard weights, including those not on adult rates, UK.

Notes:

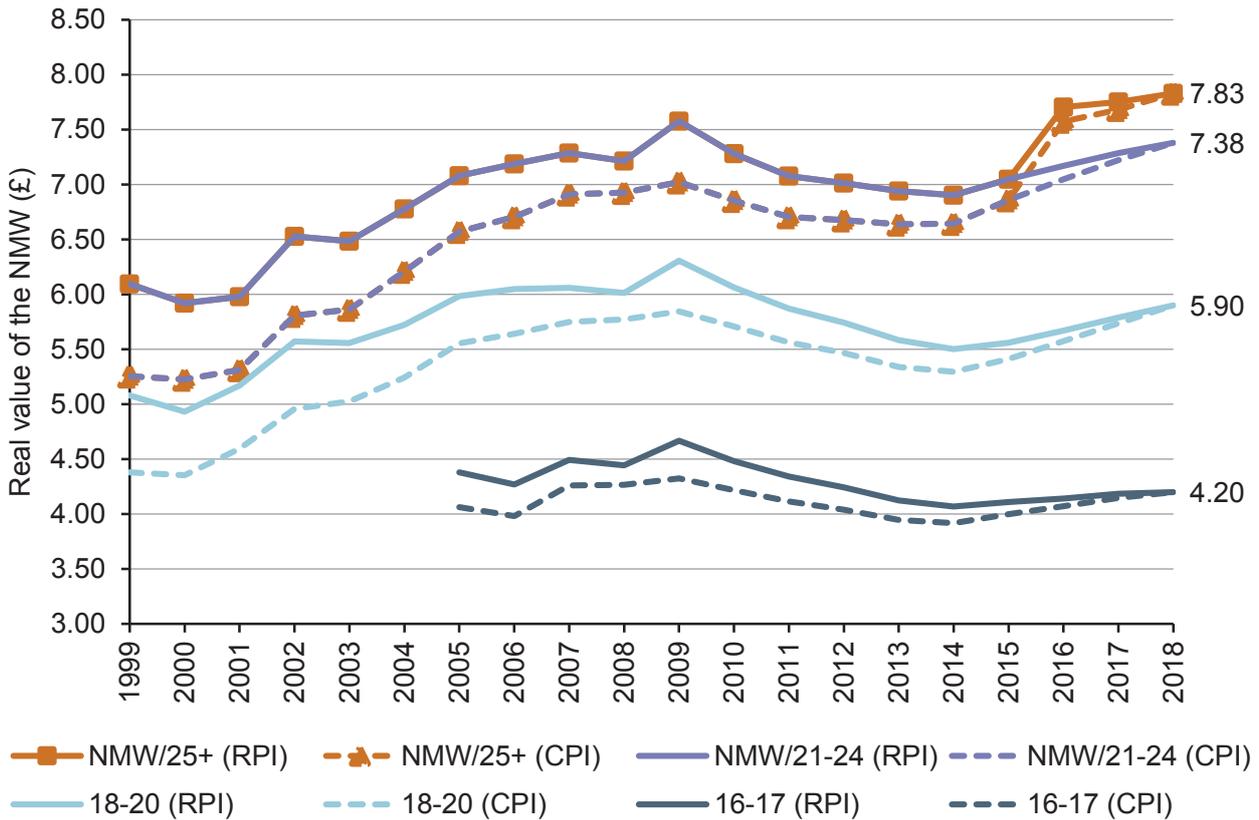
- Earnings data are adjusted for a consistent time series.
- Data include apprentices.

3.33 Figure 3.18 shows that, similar to median and average wages, the National Minimum Wage lost value from 2009, although much of the lost value has been restored if CPI is used as the measure of inflation. The NMW for 21-24 year olds is now at its real terms peak value using CPI, but remains below its 2009 peak value using RPI. The 21-24 Year Old Rate would need to increase by around 20 pence (2.6 per cent) to restore its lost value using RPI. Conversely, the NLW for those aged 25 and over is now at its highest real terms value using both CPI and RPI.

3.34 The 18-20 Year Old Rate has recovered its lost value using CPI, but remains below its 2009 peak using RPI. To restore its lost value in RPI terms would require an increase of around 41 pence an hour (6.5 per cent). The Commission has historically been more cautious about uprating the 16-17 Year Old Rate than the other rates, due to this groups' greater labour market vulnerability. As such, the 16-17 Year Old Rate has taken longer to regain its lost value and remains below its January 2009 peak value using both CPI and RPI. Restoring its lost value would require increases of around 13 pence (2.9 per cent) using CPI, and around 47 pence (10.0 per cent) using RPI.

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Figure 3.18: Real value of the National Minimum Wage, by price index, UK, 1999-2018



Source: LPC estimates using ONS data, CPI (D7BT) and RPI (CHAW), UK, April 1999-2018.

Bite of the youth rates

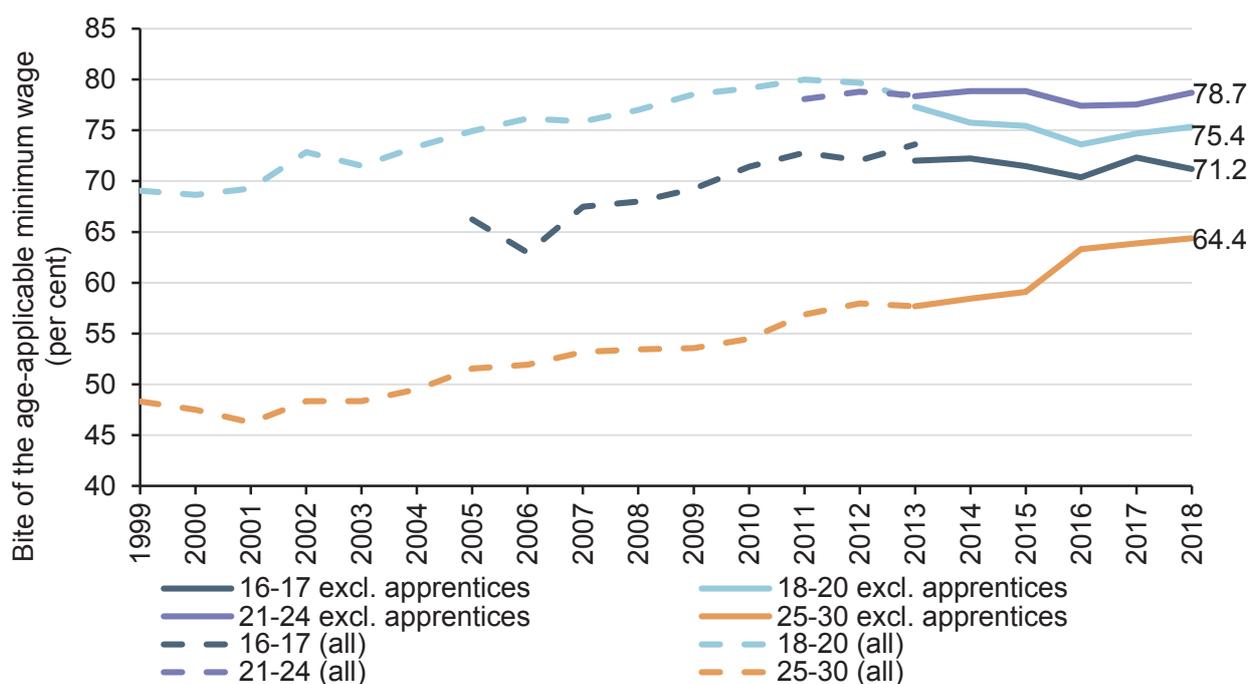
3.35 Figure 3.19 illustrates the historic path of the bite (its value relative to the median) since the NMW was introduced in April 1999. Our main interest is in the time series from 2013, when it became possible to exclude apprentices. We also need to note the implications of moving from an October uprating cycle to an April uprating cycle in 2017. The bite is now measured in the month of the uprating, rather than six months after the uprating (when median pay would have been higher, and the bite lower). All things being equal, this methodological change implies a higher measured bite from April 2017 onwards, compared with the mid-cycle bites measured on the October uprating cycle.

3.36 Figure 3.19 shows that the bites of the youth rates are highest for 21-24 year olds and lowest for 16-17 year olds. Over the year to April 2018, the bite rose for 21-24 year olds – by 1.2 percentage points to 78.7 per cent – and for 18-20 year olds – by 0.7 percentage points to 75.4 per cent. However, the big picture is the relative stability in their bites from 2013 onwards, despite ambitious increases in the youth minimum wages over that period. The bite for 21-24 year olds is currently just 0.3 percentage points above the (mid-cycle) bite in April 2013 (78.4 per cent); and the bite for 18-20 year olds is now 2.0 percentage points below the April 2013 bite (77.3 per cent).

3.37 The bite for 16-17 year olds fell 1.1 percentage points between 2017 and 2018, from 72.3 per cent to 71.2 per cent due to the unusually large increase at the median (driven by the increase in the 18-20 Year Old Rate). The fall in the bite brought it below the (mid-cycle) bite in 2013 (72.0 per cent).

3.38 For comparison, Figure 3.19 also shows the bite of the NLW for 25-30 year olds. The bite is always lower for older workers than younger workers as far fewer work in low-paying jobs; hence pay, including the median, is higher, and the bite at the median is lower. The bite has increased for 25-30 year olds since the introduction of the NLW, but remains much lower than the bites for young people. It should be noted that the bite for 25-30 year olds is higher than that for the whole group aged 25 and over.

Figure 3.19: Bite of the National Minimum Wage at the median of the hourly earnings distribution, by age, UK, 1999-2018



Source: LPC estimates using ASHE: without supplementary information, April 1999-2004; with supplementary information, April 2004-06; 2007 methodology, April 2006-11; and 2010 methodology, April 2011-18, standard weights, including those not on adult rates, UK.

Note: Earnings data are adjusted for a consistent time series.

Coverage of the rates

3.39 A key consideration for determining the scope to raise the minimum wage is the number and proportion of workers paid at the minimum wage. Our main focus is on the proportion paid at, or below, their age-applicable minimum wage. However, it should be borne in mind that while relatively few young workers are paid at their age-applicable NMW, many more are paid within the minimum wage structure – that is, between their age-applicable rate and the NLW. Correspondingly, very few of the youngest workers are paid above the NLW.

3.40 Looking first at the proportions paid at their age-applicable rates, Figure 3.20 shows that, in general, less than one in ten young workers were paid at the minimum wage; but young workers were more likely than their older counterparts to be paid at their age-applicable rates; and use of the rates has generally increased over time for young workers.

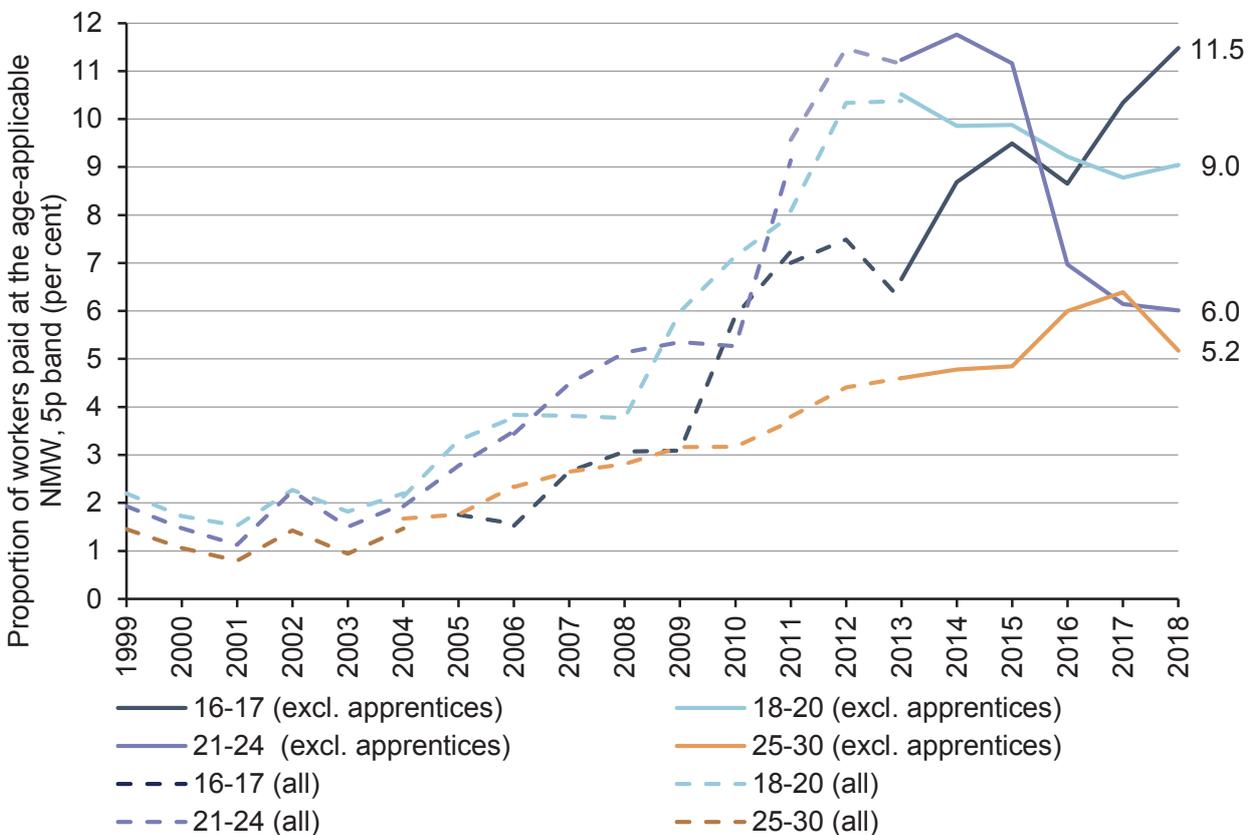
3.41 In April 2018, 6.0 per cent of jobs held by 21-24 year olds – equal to around 115,000 jobs – were paid at the 21-24 Year Old Rate, virtually unchanged on April 2017 (6.1 per cent). Use of the National Minimum Wage Rate for 21-24 year olds fell steeply when the NLW was introduced in April

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2016 (and the NMW became the 21-24 Year Old Rate); while employers were not required to pay the NLW to 21-24 year olds, many continued to treat 21 as the age of adulthood, paying the new adult rate – the NLW – from age 21. Around 9.0 per cent of jobs held by 18-20 year olds were paid at the 18-20 Year Old Rate (around 85,000 jobs) in April 2018, an increase over the year of just 0.2 percentage points, from 8.8 per cent. There was a different pattern for 16-17 year olds, where use of the 16-17 Year Old Rate rose by 1.1 percentage points, from 10.3 per cent to 11.5 per cent (around 34,000 jobs).

3.42 Just as the move to an April uprating cycle affects measurement of the bite, it also affects measurement of the numbers paid at and below their applicable minimum wage. There may be a short time lag before employees see the minimum wage uprating in their pay packets, so coverage of the youth rates from April 2017 onwards, measured at the time of the uprating, will have some error, and, on balance, will tend towards an overestimation.²

Figure 3.20: Percentage paid at their age-related minimum wage rate, by age, UK, 1999-2018



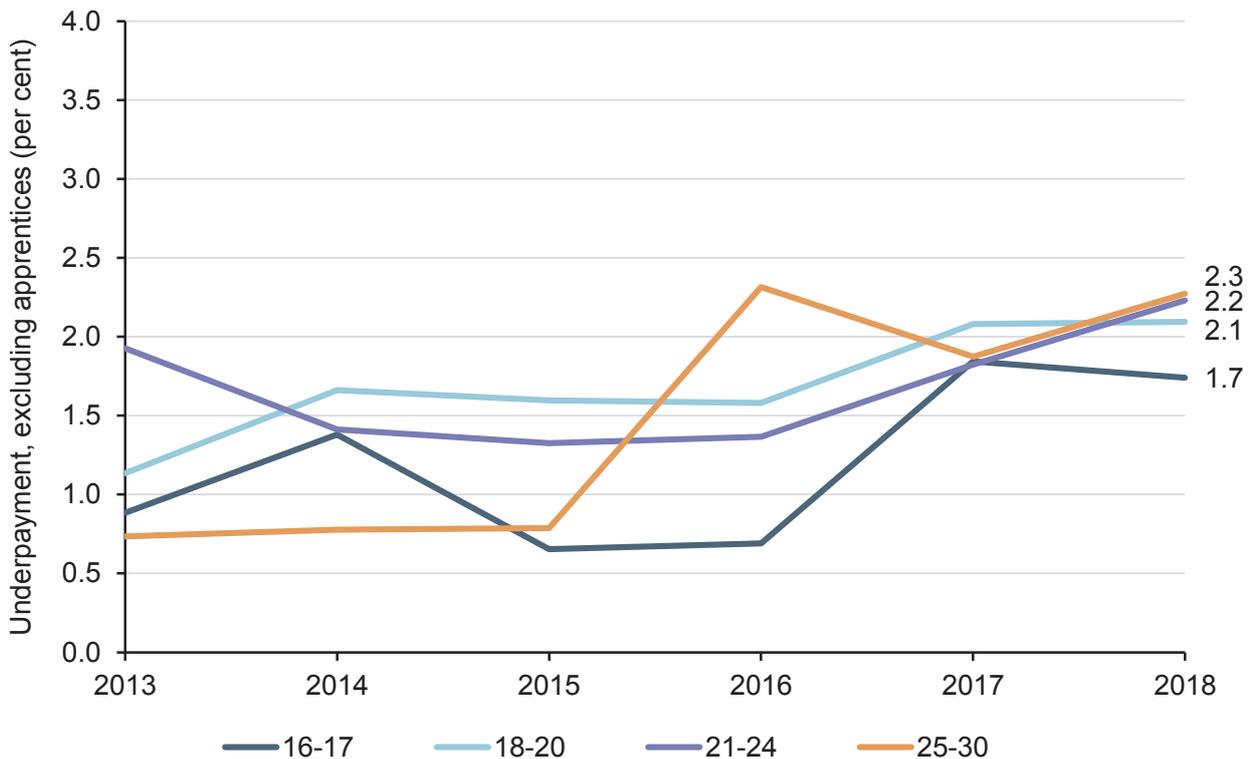
Source: LPC estimates using ASHE: without supplementary information, April 1999-2004; with supplementary information, April 2004-06; 2007 methodology, April 2006-11; and 2010 methodology, April 2011-18, low pay weights, including those not on adult rates, UK.

3.43 Turning to measured underpayment, Figure 3.21 shows that around 2 per cent of young workers were paid below their age-applicable minimum wage in April 2018, with very little change over the year. This equated to around 68,000 youth jobs, including: 5,000 16-17 year olds (1.7 per cent); 20,000 18-20 year olds (2.1 per cent); and 43,000 21-24 year olds (2.2 per cent). Around 70 per cent of these – around 47,000 jobs – were paid at least their April 2017 minimum wage rate (their legal pay floor up to and including 31 March 2018). ASHE may under-record the true scale of non-compliance as the lowest-paid workers may not pay tax and National Insurance and thus may

² For further explanation see Low Pay Commission 2017 Report, page 109.

not be in the HMRC database from which the ASHE sample is drawn. Much of this non-compliance is in the grey/black economy and is very difficult to measure. We will explore underpayment in more detail in our non-compliance report, in early 2019. The ASHE data do, however, provide some reassurance that the vast majority of employers are not struggling to pay the minimum wage to their workers; indeed, as the previous data showed, the vast majority of employers pay their young workers above their age-applicable minimum wage (but below the NLW).

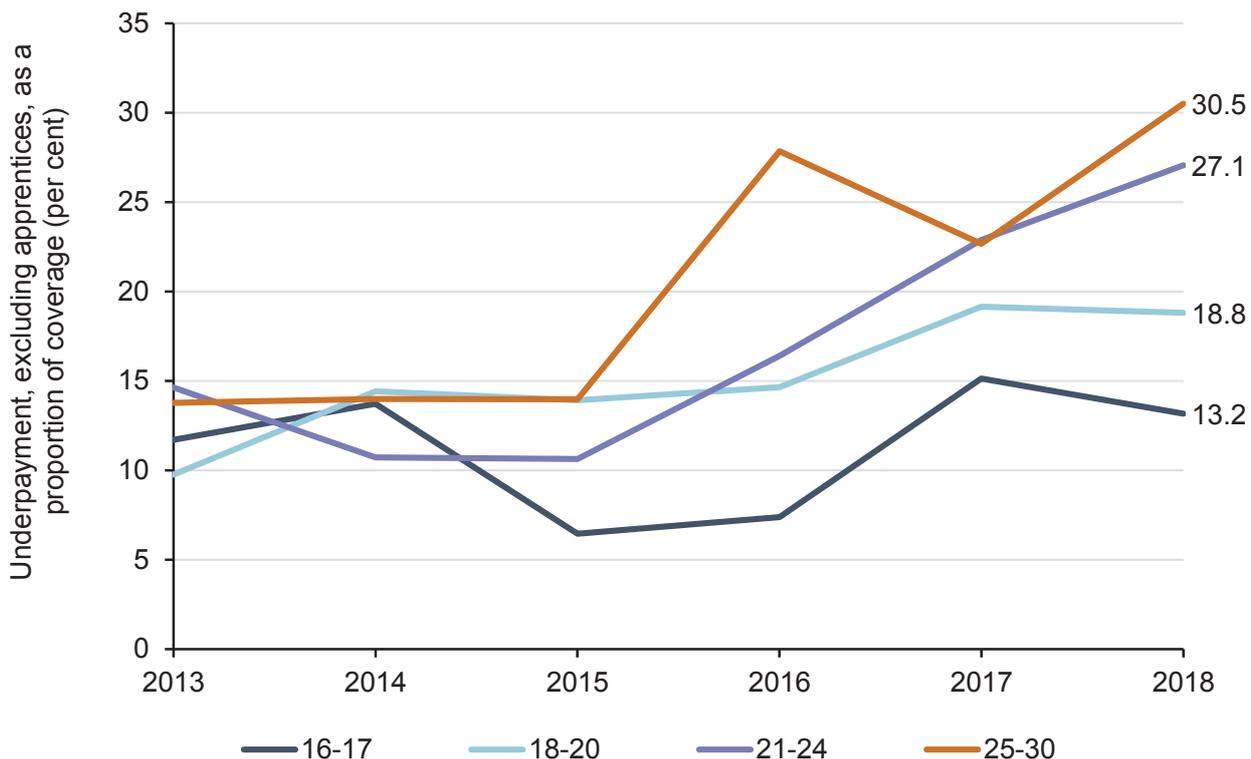
Figure 3.21: Percentage paid below their age-related minimum wage rate, by age, UK, 2013-2018



Source: LPC estimates using ASHE: 2010 methodology, April 2013-18, low pay weights, including those not on adult rates, excluding apprentices, UK.

3.44 While the proportion of workers paid below their age-applicable NMW appears relatively low, underpayment is higher when calculated as a percentage of coverage; that is, when calculated as a proportion of the combined numbers paid at or below the NMW – all of whom should, legally, have been paid at, i.e. covered by, the NMW. Using this measure, underpayment appears to be a greater problem for older workers, with around 30 per cent of 25-30 year olds (who should have been covered by the NLW) paid below the NLW, while just 13 per cent of 16-17 year olds (who should have been covered by their NMW) were paid below the 16-17 Year Old Rate. The difference is an artefact of the smaller proportion of 25-30 year olds paid *at* their NMW; hence those paid *below* the NLW form a larger proportion of the total (that should have been) covered. Underpayment as a proportion of coverage is lower for young workers, not primarily because a smaller percentage are paid *below* their NMW, but because more workers are paid *at* their NMW – hence the underpaid constitute a smaller proportion of total coverage.

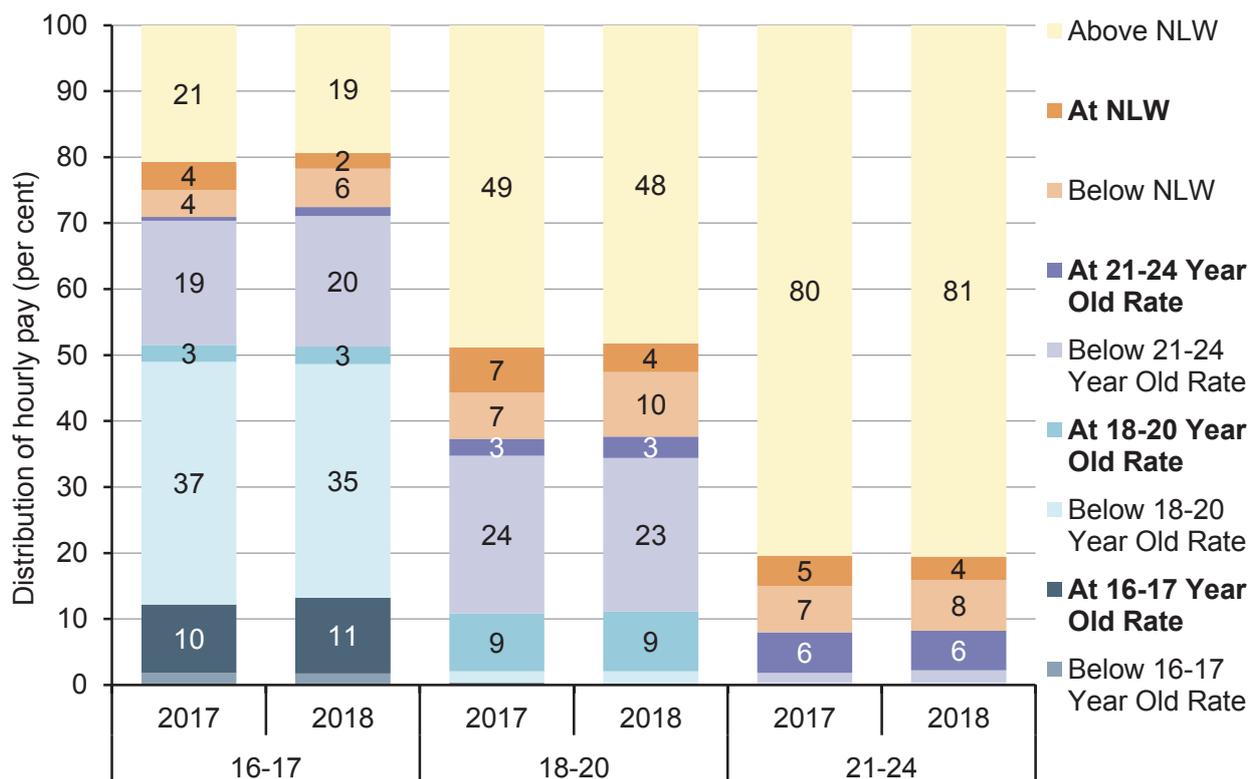
Figure 3.22: Underpayment as a percentage of coverage, by age, 2013-2018, UK



Source: LPC estimates using ASHE: 2010 methodology, April 2013-18, low pay weights, including those not on adult rates, excluding apprentices, UK.

3.45 While the majority of employers pay their young workers above their age-applicable minimum wage, they often set their pay within the minimum wage universe (at or below the NLW). Over the year to April 2018, the proportion of 16-17 and 18-20 year olds paid somewhere within the NMW universe increased – with fewer being paid above the NLW. Figure 3.23 shows that 19 per cent of 16-17 year olds were paid above the NLW in April 2018, down from 21 per cent in April 2017. Over the same period, the proportion of 16-17 year olds paid at the NLW halved, from 4 per cent to 2 per cent. 18-20 year olds were more likely than 16-17 year olds to be paid at, or above, the NLW, but again these proportions fell between 2017 and 2018. The proportion paid above the NLW fell from 49 per cent to 48 per cent, and the proportion paid at the NLW fell from 7 per cent to 4 per cent. The pattern was different for 21-24 year olds, with the proportion paid above the NLW rising by 1 percentage point in the year to April 2018 (81 per cent).

Figure 3.23: Distribution of hourly pay (excluding apprentices), by age, UK, 2017-2018



Source: LPC estimates using ASHE, 2010 methodology, April 2017-18, low pay weights, including those not on adult rates, excluding apprentices, UK.

Conclusion

3.46 Last year, in our 2017 Report, we noted divergent fortunes for 18-24 year olds and 16-17 year olds, with the younger group seeing less improvement in pay and employment. This year, the pattern was different. While 18-20 year olds continued to see strong pay and employment growth, outcomes for 21-24 year olds, and 16-17 year olds, were slightly weaker.

3.47 Over the year to the second quarter of 2018, employment rates for young people not in full-time education fell for 21-24 year olds (down by 1.0 percentage point, to 79.3 per cent), and fell (very slightly) for 16-17 year olds (down by 0.3 percentage points, to 44.2 per cent), while continuing to rise for 18-20 year olds (up by 1.7 percentage points, to 69.9 per cent). Unemployment has fallen across the economy, and the unemployment rate fell for both 18-20 and 16-17 year olds not in full-time education – down by 1.9 and 3.2 percentage points respectively – but was unchanged over the year for 21-24 year olds. Rates of underemployment were also positive, with falling underemployment for all three youth groups, including a 10 per cent fall in underemployment for 16-17 year olds.

3.48 In contrast, we observed increases in inactivity for 21-24 year olds over the year, both in the proportion in full-time education (up 0.7 percentage points to 13.0 per cent) and the proportion that were inactive for other reasons (up 0.8 percentage points to 10.7 per cent). We will continue to monitor this as part of our review into the youth rates – due in Spring 2019.

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3.49 Turning to pay, 21-24 year olds saw median pay growth of 3.1 per cent this year, below the growth they experienced last year (5.1 per cent). Their younger counterparts, aged 16-17 and 18-20, saw relatively strong pay growth at the median – 5.4 and 4.4 per cent respectively – where they were paid the 18-20 Year Old Rate and National Living Wage respectively. Given that their median pay growth this year reflected the April 2018 increases in the 18-20 Year Old Rate and National Living Wage, we looked across the pay distribution to produce a more representative estimate of average pay growth. Taking the average of pay growth across the percentile pay distribution, the three youth groups saw similar pay growth over the year, ranging from 3.3 per cent to 3.6 per cent. Whilst these compare favourably with pay growth across the economy (2.5 per cent for workers aged 16 and over), in general, 18-24 year olds experienced lower pay growth this year compared with last. By comparison, their counterparts aged 16-17 (and 25-30) experienced stronger pay growth this year compared with last.

3.50 On a more positive note, levels of minimum wage underpayment were stable over the year and employer's use of the rates was stable except for a small increase in use of the 16-17 Year Old Rate (up by 1 percentage point).

3.51 The overall picture – of historically low youth unemployment, falling youth underemployment and above-average pay growth – suggests that there is scope to raise the youth rates of the minimum wage without harming young people's employment. This is strengthened by analysis of the October 2016 and April 2017 increases, where we have, as yet, seen no clear evidence of negative employment effects.

Chapter 4

Apprentices

Introduction

4.1 This chapter discusses our considerations and recommendation in setting the Apprentice Rate, which applies to all apprentices aged between 16 and 18, and to those aged 19 and above for the first year of their apprenticeship only; after this they are entitled to the National Minimum Wage (NMW) rate appropriate for their age.

4.2 Since its introduction in 2010, the Apprentice Rate has been set at a lower rate than the main rates, to reflect the investment made by employers in training and improving their apprentices' skills. The LPC's remit here is the same as for other youth rates: to lift the rate as high as possible without damaging employment. In doing this, however, we need to take into account the differences between an apprenticeship and 'normal' work and the additional costs which high-quality training should entail.

4.3 In our 2017 report, we recommended increasing the Apprentice Rate from £3.50 to £3.70. The new rate was introduced in April 2018. This represented an increase of 5.7 per cent and was influenced by strong growth in the earnings of the group most affected by the rate – 16-18 year-old apprentices. At the same time, we noted the apparent impacts of significant policy reforms affecting the funding and content of apprenticeships. The most obvious impact was an overall fall in starts, concentrated at level 2.

4.4 In this chapter, we:

- recap the reforms to the apprenticeship programme and the latest developments in this area;
- look at the number of apprenticeship starts over the past year;
- assess trends in apprenticeship earnings and in the bite of the Apprentice Rate, using data from the Annual Survey of Hours and Earnings (our preferred data source, the Apprenticeship Pay Survey, was not available in time to support our analysis); and
- share feedback on the Apprentice Rate received from stakeholders in the course of our consultation.

Apprenticeship policy

4.5 In the past two years there have been significant reforms to the design and delivery of apprenticeships in England. In our 2017 report, we described in detail the new framework for apprenticeships which came into effect from May 2017. This includes the Apprenticeship Levy and

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the launch of the digital apprenticeship service for levy-paying employers; government co-investment arrangements for employers too small to pay the levy; the introduction of a new funding system for all apprenticeships; and the shift from frameworks to standards.

4.6 In the last twelve months changes have been more modest, centred on further refinement of the funding bands and the additional payments employers and providers receive for a variety of factors.

4.7 In comparison with other countries, there are a low number of apprentices employed in the UK. However, the current reform programme is intended to address not only the overall number of apprenticeships, but also the issues of apprenticeship quality and underinvestment by employers in workforce training. In oral evidence, the Department for Education (DfE) told us that although the introduction of the levy was the most visible of the changes introduced, other, quality-focused reforms were just as significant and likely to have an impact of equivalent magnitude on employer behaviour. Around half of apprenticeships started are now based on the new standards, and the government has recently reaffirmed its commitment to phase out apprenticeship frameworks by 2020.

4.8 There have been significant shifts in the volume and composition of apprenticeship starts since 2017, but more time may be needed to judge the reforms' lasting effects. For example, levy-paying employers have up to two years to spend the levied funds accrued in their digital service accounts; the first tranche of such funds will expire in May 2019. Until this point, we cannot take a final view on how employers have responded to the levy's intended incentives – which in any case may change as they adapt to the system.

4.9 It is also far harder to assess changes in apprenticeship quality than the number of starts. DfE told us that in coming years, they expect to use longitudinal datasets to track the impact of an apprenticeship on an individual's earnings over time.

4.10 Against this backdrop, it is challenging to single out the impact of increases to the Apprentice Rate. Most stakeholders agree that the current trends in starts are being driven by reforms rather than rate changes. We will continue to assess the impacts of reforms, and the structural changes they are driving in the market for apprenticeships, to understand the effects of our recommendations on the Apprentice Rate.

Apprenticeship volumes

4.11 This section examines the numbers of people starting apprenticeships over the previous year. We look at figures in England first, which has seen the greatest level of policy change and where the largest number of apprentices are based, before moving onto other nations.

Apprenticeship starts in England

4.12 A year ago, we noted the effect on starts of the Apprenticeship Levy's introduction: a sharp spike in starts in the quarter preceding the levy followed by a sudden fall in the next quarter to levels well below comparable periods in previous years. Since then, as Table 4.1 shows, overall starts have remained lower than in previous years across almost all categories. The largest falls have been in the

take-up of level 2 apprenticeships and in starts by people aged 25 or older. The only area where the number of starts has increased is in apprenticeships at level 4 or above, which remain a small proportion of the programme overall (around 12 per cent).

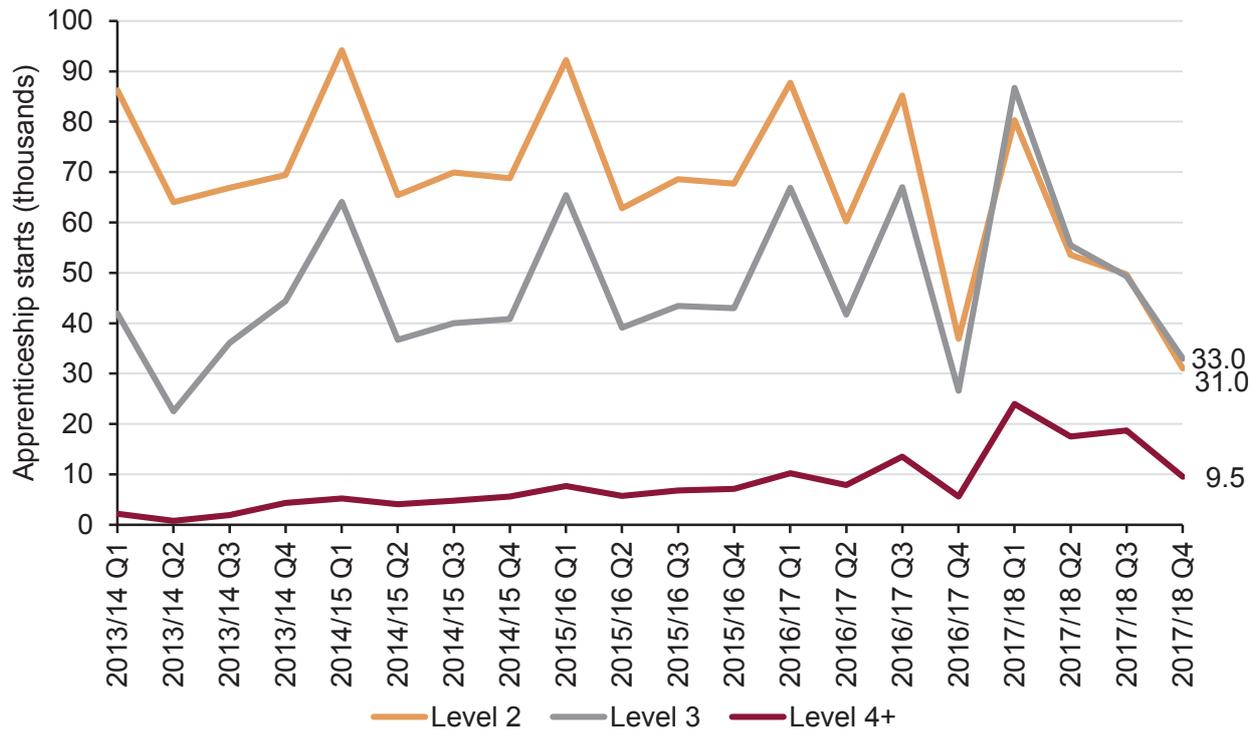
Table 4.1: Apprenticeship starts, by apprenticeship level and age, UK, 2015/16-2017/18

| | Aug 15-Jul 16 | Aug 16-Jul 17 | Aug 17-Jul 18 | Percentage change over 12 months | Percentage change over 24 months |
|--------------------------|---------------|---------------|---------------|----------------------------------|----------------------------------|
| Level 2 | 291,300 | 260,700 | 159,400 | -39 | -45 |
| Level 3 | 190,900 | 197,700 | 163,400 | -17 | -14 |
| Level 4 and above | 27,200 | 36,600 | 46,900 | +28 | +72 |
| Under 19 | 131,400 | 122,800 | 105,300 | -14 | -20 |
| 19-24 | 153,900 | 142,200 | 111,800 | -21 | -27 |
| 25 and over | 224,100 | 229,900 | 152,600 | -34 | -32 |
| Total | 509,400 | 494,900 | 369,700 | -25 | -27 |

Source: LPC estimates using statistics from Department for Education, Apprenticeship and levy statistics: September 2018 and Further education and skills: November 2017.

4.13 As Figure 4.1 shows, uptake of apprenticeships in the first quarter of the 2017/18 academic year – usually the year’s most prominent ‘spike’ - was noticeably lower than in previous years, and starts remained subdued throughout the rest of the year. Whereas in 2014/15 level 2 starts outpaced those at level 3 by around 30,000 each quarter, there are currently practically equal numbers of people undertaking these apprenticeships. The figures from the past twelve months suggest the composition of the apprenticeships programme shifting in favour of starts at level 3 and above – which could be viewed as reinforcing and accelerating trends already evident in previous years.

Figure 4.1: Apprenticeship starts, by level, England, 2013/14-2017/18

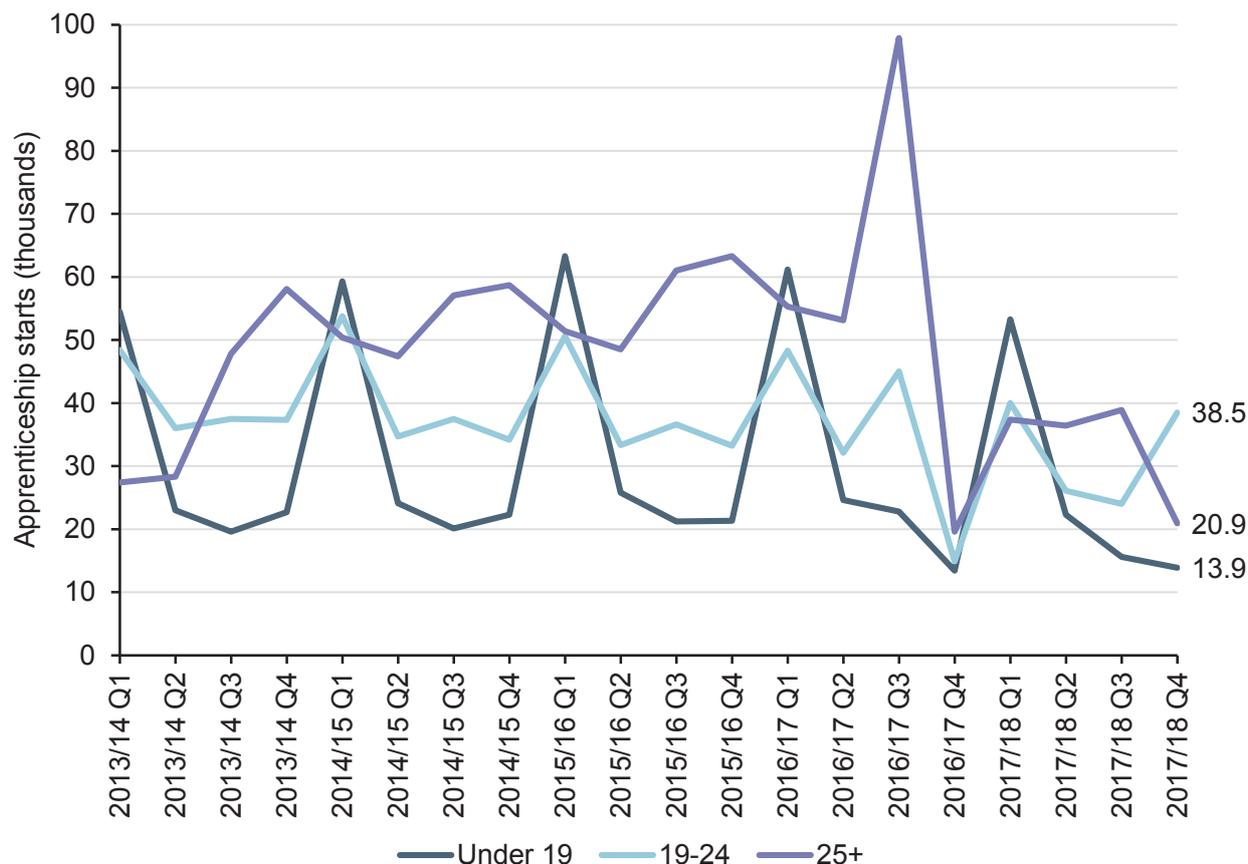


Source: LPC estimates using statistics from Department for Education, Apprenticeship and levy statistics: September 2018 and Further education and skills: November 2017.

Note: Data is produced in academic years.

4.14 When reviewing impacts across age groups, the same trends emerge. As Figure 4.2 shows, starts have decreased among all age groups, but this has been most pronounced for those aged 25 and over, who nonetheless continue to make up the greatest proportion of starts across the year. The uptake of level 2 apprenticeships among the over-25s has nearly halved since the levy’s introduction. Starts in level 3 apprenticeships by this group have also decreased but less dramatically, while after a dip level 4 starts have almost regained their pre-levy rate of growth.

Figure 4.2: Apprenticeship starts, by age, England, 2013/14-2017/18



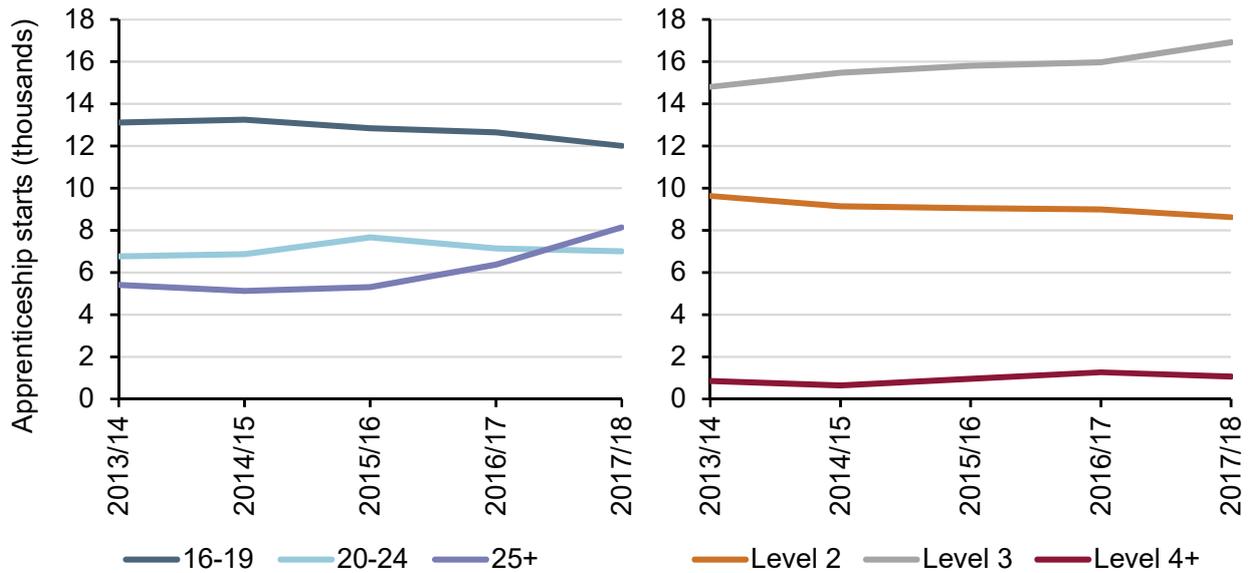
Source: LPC estimates using statistics from Department for Education, Apprenticeship and levy statistics: September 2018 and Further education and skills: November 2017.

Note: Data is produced in academic years.

Apprenticeship starts in Scotland, Wales and Northern Ireland

4.15 The reforms to apprenticeship policy associated with the levy have mainly affected England; probably in consequence, other nations have not seen comparable falls in start numbers. In Scotland (where data are collected by financial rather than academic year), apprenticeship starts have remained relatively constant over the last five years. In contrast with England, the majority of apprenticeships undertaken are at level 3, where numbers have risen in the past year. By age, the numbers of workers aged 25 and over beginning an apprenticeship have risen steadily in recent years, while other age groups have fallen.

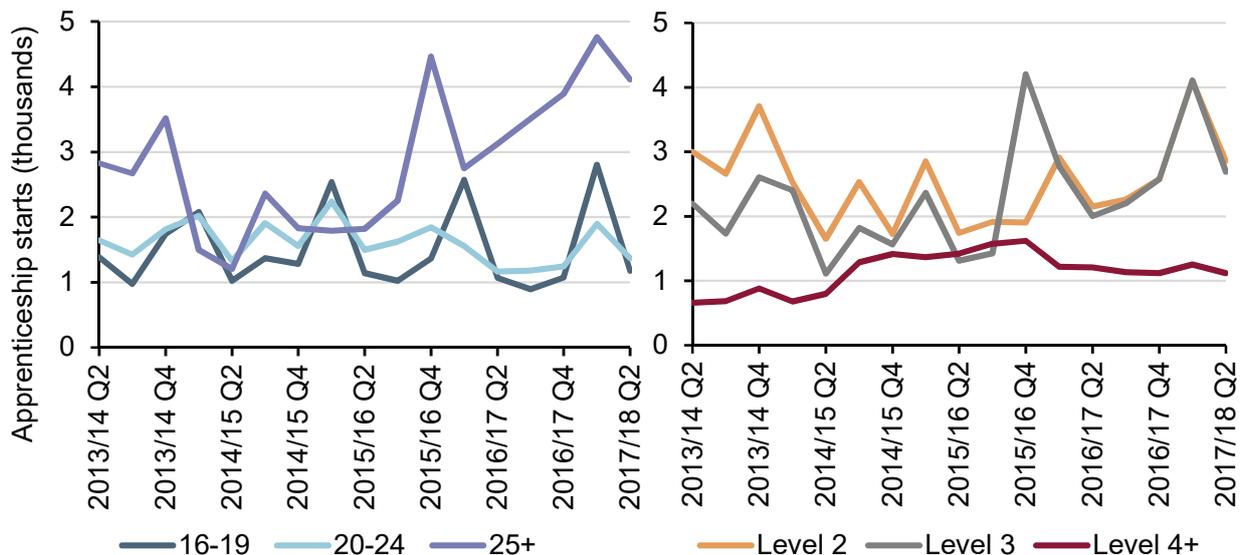
Figure 4.3: Modern apprenticeship starts, by age and level, Scotland, 2013/14-2017/18



Source: LPC estimates using statistics from Skills Development Scotland.
 Note: Data is produced in financial years.

4.16 The latest available data on apprenticeship starts in Wales are from the 2016/17 academic year – i.e. mainly before the introduction of the 2017 Apprentice Rate. A year ago, we noted a long-term shift in the balance of apprenticeship starts from level 2 to level 4 and above, anticipating the changes seen in England over the past year. However, in contrast to England, apprenticeship starts for those aged 25 and over have risen over the past two years, following a steep drop in 2014/15.

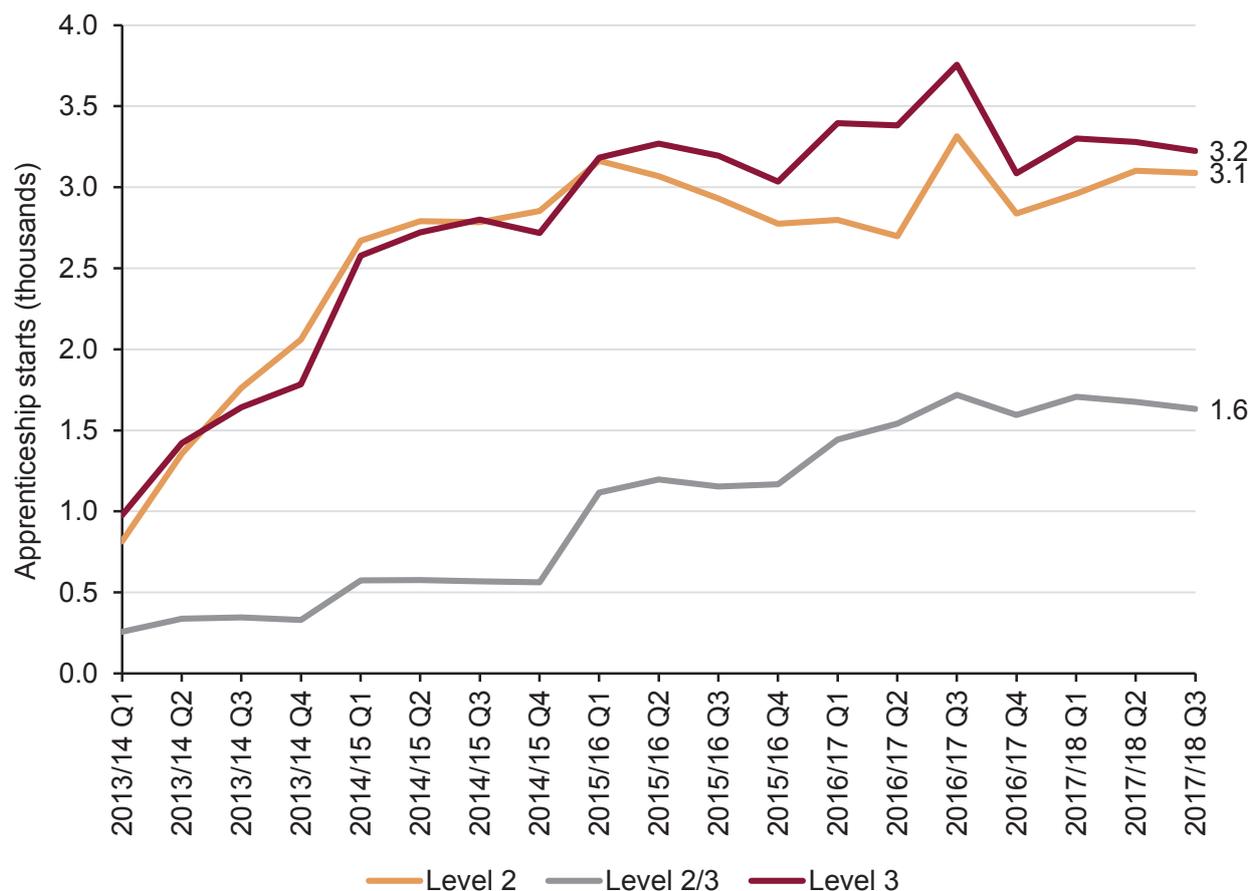
Figure 4.4: Apprenticeship starts, by age and level, Wales, 2013/14-2017/18



Source: LPC estimates using statistics from The Welsh Government (StatsWales).
 Note: Data is produced in academic years.

4.17 The latest data on starts in Northern Ireland extends to April 2018. Figure 4.5 shows that the number of starts across all levels, and the composition of the total number of starts, has remained steady over a number of years. An equivalent quarterly breakdown by age was not available.

Figure 4.5: Apprenticeship starts, by level, Northern Ireland, 2013/14-2017/18



Source: LPC estimates using statistics from the Department for the Economy, Northern Ireland Executive.

Note: Data is produced in academic years.

Apprentice earnings

4.18 The final section of this chapter considers apprentice earnings, a key consideration in assessing the impact of rate rises. The LPC's preferred source of evidence for apprentice earnings is the biennial Apprenticeship Pay Survey (APS); however, the most recent survey was in 2016 we will not have results from the 2018 survey until the new year. Instead we use the Annual Survey of Hours and Earnings (ASHE). It is important to note this survey's limitations in respect of apprentice earnings. In comparison with the APS, the ASHE records higher earnings and lower underpayment. Furthermore, the ASHE is a survey of employers and so obtaining information on apprentices is contingent on the employer being aware that they employ apprentices. In the past, Government evidence has shown that a substantial share of apprentice employers are unaware of this fact and so some apprentices may be identified as such in the ASHE (and will be included in the analysis of workers already covered in this document).

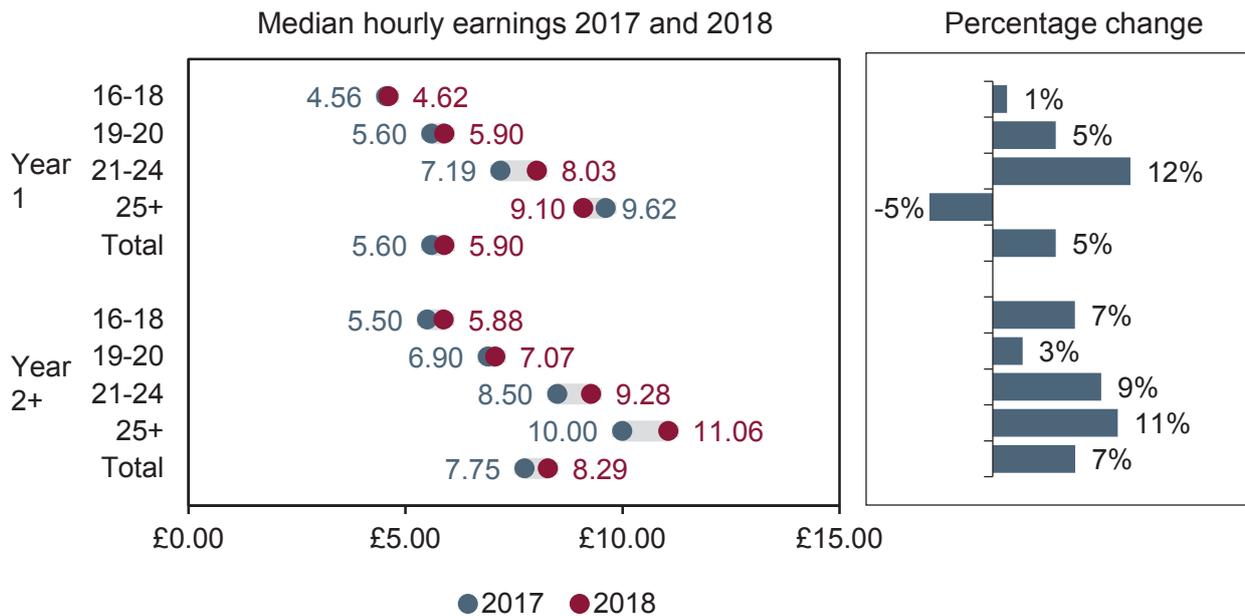
4.19 We look first at what happened to apprentice pay over the year, and the implications for the bite of the Apprentice Rate and the age-applicable minimum wage rates. We then turn to look at use of the Apprentice Rate, and how that varies by age and year of apprenticeship. Finally, we turn to estimated underpayment. As noted previously, ASHE produces far lower estimates of underpayment than the Apprenticeship Pay Survey, so the data should be treated with caution.

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4.20 Figure 4.6 shows a mixed picture on pay growth between April 2017 and April 2018. First year apprentices aged 21-24 saw pay growth of 12 per cent over the year, while 19-20 year olds saw pay growth of 5 per cent. But median hourly pay fell 5 per cent for their counterparts aged 25 and over. And pay growth was fairly flat, at 1 per cent for the youngest part of the cohort.

4.21 Among those in their second year of apprenticeship, the pattern was reversed, with those aged 25 and over seeing the highest pay growth, at 11 per cent, followed by those aged 21-24 (9 per cent), and those aged 16-18 (7 per cent). Their counterparts aged 19-20 saw the weakest pay growth over the year, at 3 per cent.

Figure 4.6: Hourly pay and pay growth, by age and year of apprenticeship, UK, 2017-2018



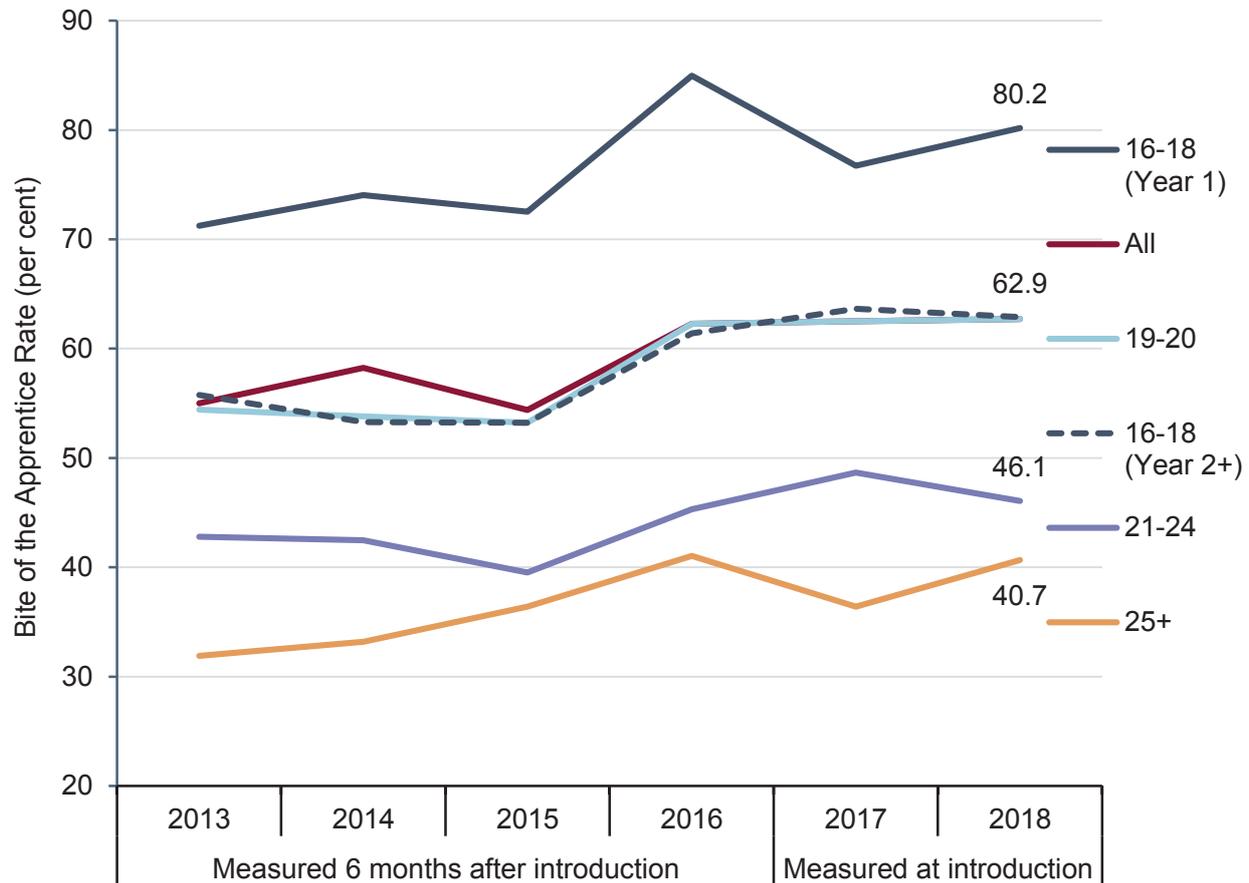
Source: LPC estimates using ASHE, April 2017-18, standard weights, including those not on adult rates of pay, UK.

4.22 Figure 4.7 shows the bite of the Apprentice Rate by age and year of those groups covered by the Apprentice Rate – that is, those aged 16-18 and those aged 19 and over in the first year of their apprenticeship. In April 2018, the bite – the Apprentice Rate as a percentage of median hourly pay – was 62.9 per cent, but it varied considerably by age of apprentice. The bite was highest for 16-18 year olds in their first year of apprenticeship (80.2 per cent). For first year apprentices aged 21-24 and 25 and over, the bite was much lower (46.1 per cent and 40.7 per cent respectively), reflecting their higher hourly pay.

4.23 Overall, the bite of the Apprentice Rate has remained fairly stable since 2016. This is despite a change to the uprating cycle in 2017, which exerted an upward pressure on the bite. Under the old uprating cycle, the NMW was uprated in October and the bite measured in April of the following year, allowing six months for pay to rise, so reducing the bite. Under the new cycle, the bite is estimated in the same month that the new minimum wage comes into force, before pay has had time to rise, so producing a higher bite. The stability of the bite following the changed cycle suggests that the bite would likely have fallen in 2017, were it not for the changed uprating cycle. Looking by age, the bite fell between 2016 and 2017 for 16-18 year olds and their counterparts aged 25 and over, despite the changed cycle.

4.24 However, over the year to April 2018, the bite rose for 16-18 year olds in their first year (up by 3.4 percentage points, to 80.2 per cent), and their counterparts aged 25 and over (up by 4.3 percentage points, to 40.7 per cent), while falling for 21-24 year olds (down by 2.6 percentage points, to 46.1 per cent) and 16-18 year olds in their second or third year (down by 0.8 percentage points to 62.9 per cent). Overall, and for 19-20 year olds, the bite was fairly stable, rising by just 0.2 percentage points over the year.

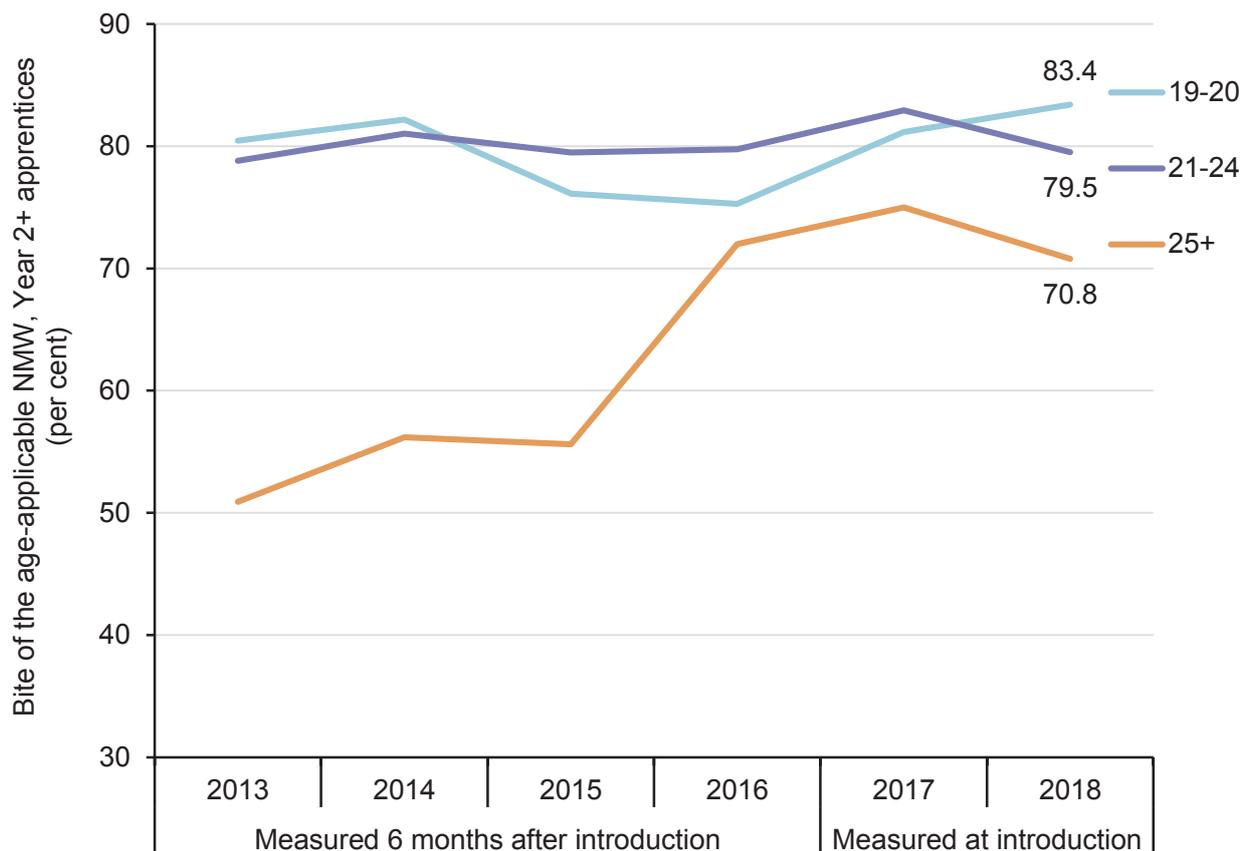
Figure 4.7: Bite of the Apprentice Rate, by age, UK, 2013-2018



Source: LPC estimates using ASHE, April 2013-18, standard weights, including those not on adult rates of pay, UK.

4.25 Figure 4.8 shows the bite of the age rates of the minimum wage for apprentices in their second or third year of apprenticeship and aged 19 or over. The bites are much higher than the bite of the Apprentice Rate, reflecting relatively low apprentice pay set against comparatively high youth and adult rates of the minimum wage. Over the year to April 2018, the bite fell for 21-24 year olds (down by 3.4 percentage points, to 79.5 per cent) and those aged 25 and over (down by 4.2 percentage points, to 70.8 per cent), while rising for 19-20 year olds (up by 2.2 percentage points, to 83.4 per cent).

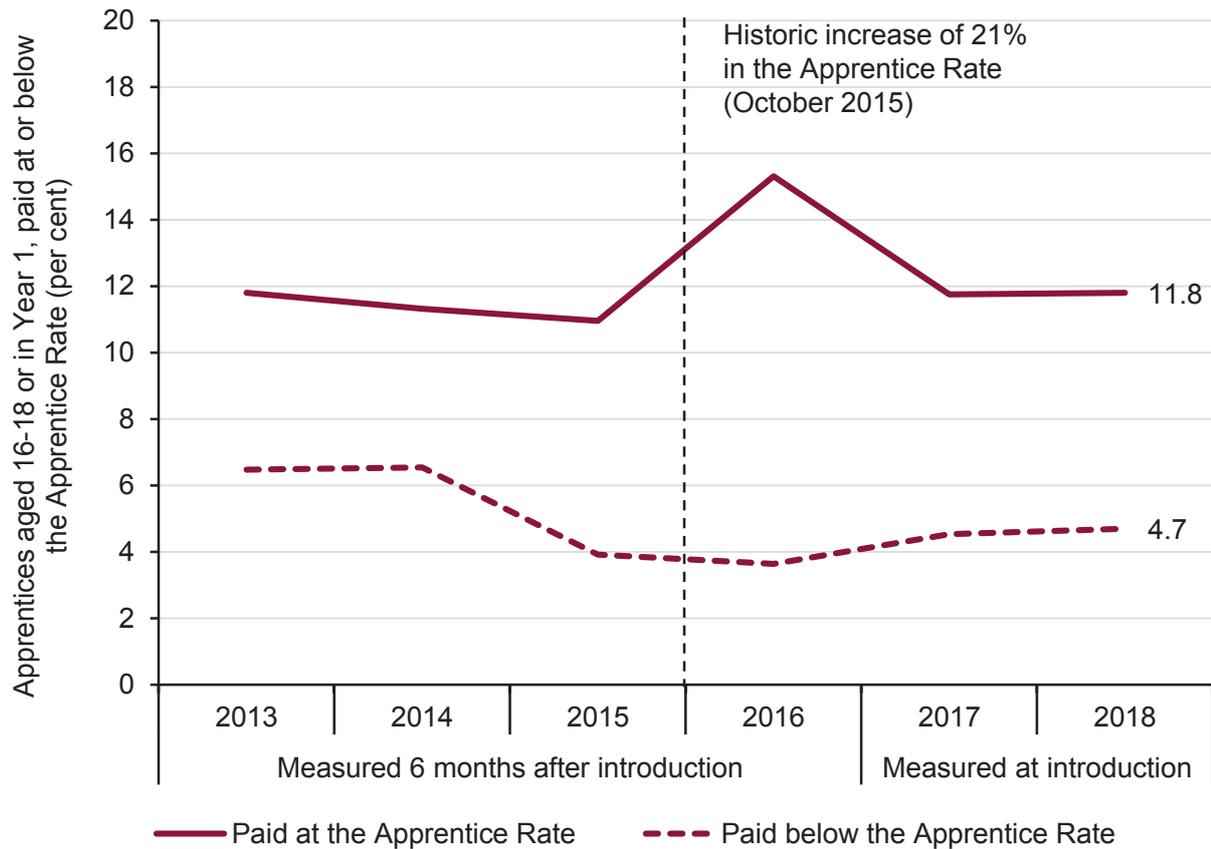
Figure 4.8: Bite of the age-applicable National Minimum Wage, by age, UK, 2013-2018



Source: LPC estimates using ASHE, April 2013-18, standard weights, including those not on adult rates of pay, UK.

4.26 Figure 4.9 summarises the overall use of the Apprentice Rate, and the level of underpayment, as estimated by the ASHE. ASHE suggests an upturn between April 2015 and April 2016 in employer’s use of the Apprentice Rate (from 11.0 to 15.3 per cent). This covers the period of the 21 per cent increase in the Apprentice Rate in October 2015, suggesting that apprentices previously paid above the Apprentice Rate were swept up by the increase. However, the proportion paid at the Apprentice Rate fell back again in April 2017, and remained stable in April 2018, at 11.8 per cent. The estimated proportion of apprentices paid below the Apprentice Rate is very low in ASHE, tending to hover around 5 per cent. Reported underpayment roughly halved between 2014 and 2016 – falling from 6.5 per cent to 3.6 per cent – but increased slightly thereafter, rising to 4.7 per cent in 2018. As mentioned previously, the ASHE estimate of underpayment should be treated with caution.

Figure 4.9: Use, and underpayment, of the Apprentice Rate, UK, 2013-2018

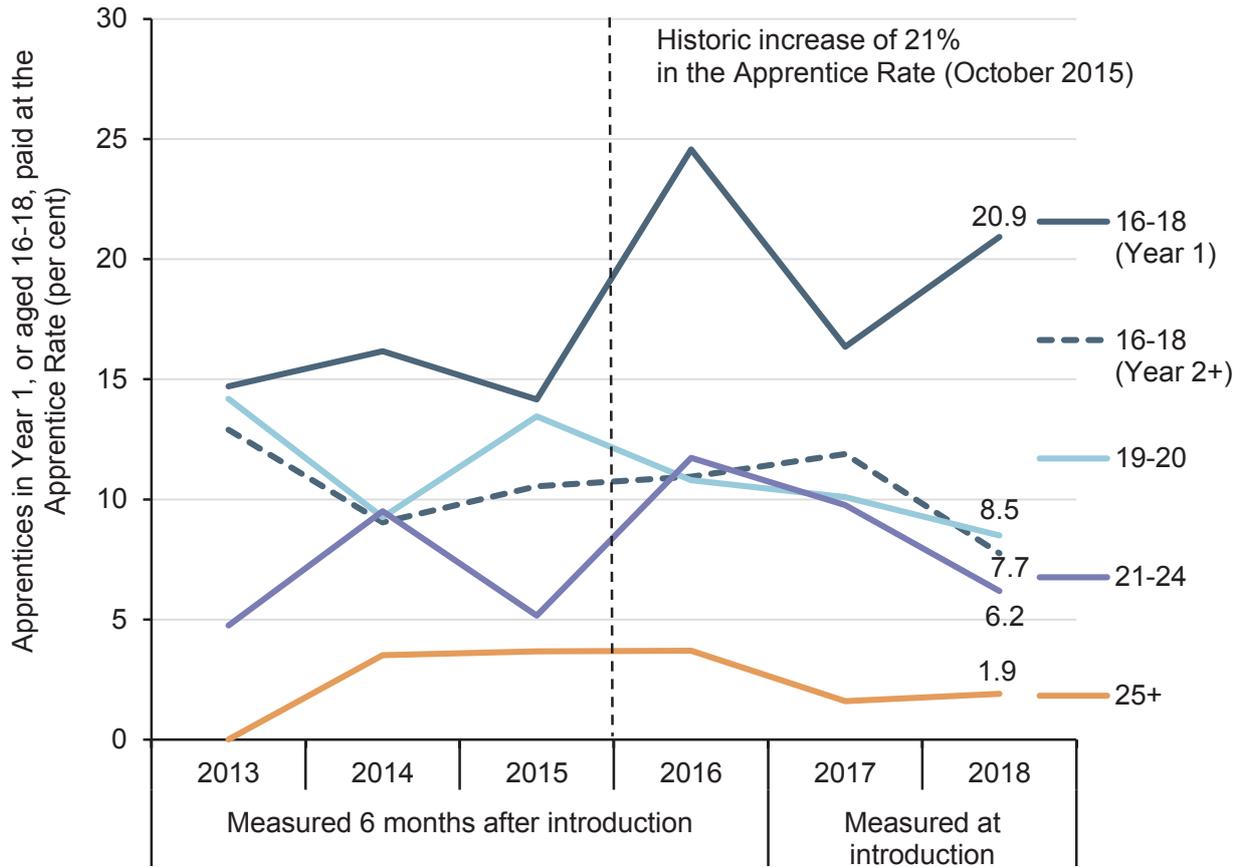


Source: LPC estimates using ASHE, April 2013-18, low pay weights, including those not on adult rates of pay, UK.

4.27 Figure 4.10 shows use of the Apprentice Rate broken down by age and year of apprenticeship. Apprentices aged 16-18 in their first year of apprenticeship are most likely to be paid at the Apprentice Rate, while their counterparts aged 25 and over are least likely. In 2018, the former, youngest, group were ten times more likely to be paid at the Apprentice Rate than the latter, oldest, age group (20.9 per cent and 1.9 per cent respectively). The data also show an upturn between 2015 and 2016 for 16-18 year olds and 21-24 year olds in their first year, but no apparent effect for other groups. Over the year to April 2018, use of the Apprentice Rate generally fell, or was stable, for all groups with the exception of 16-18 year olds in their first year, where use of the Apprentice Rate rose by 5 percentage points.

National Minimum Wage

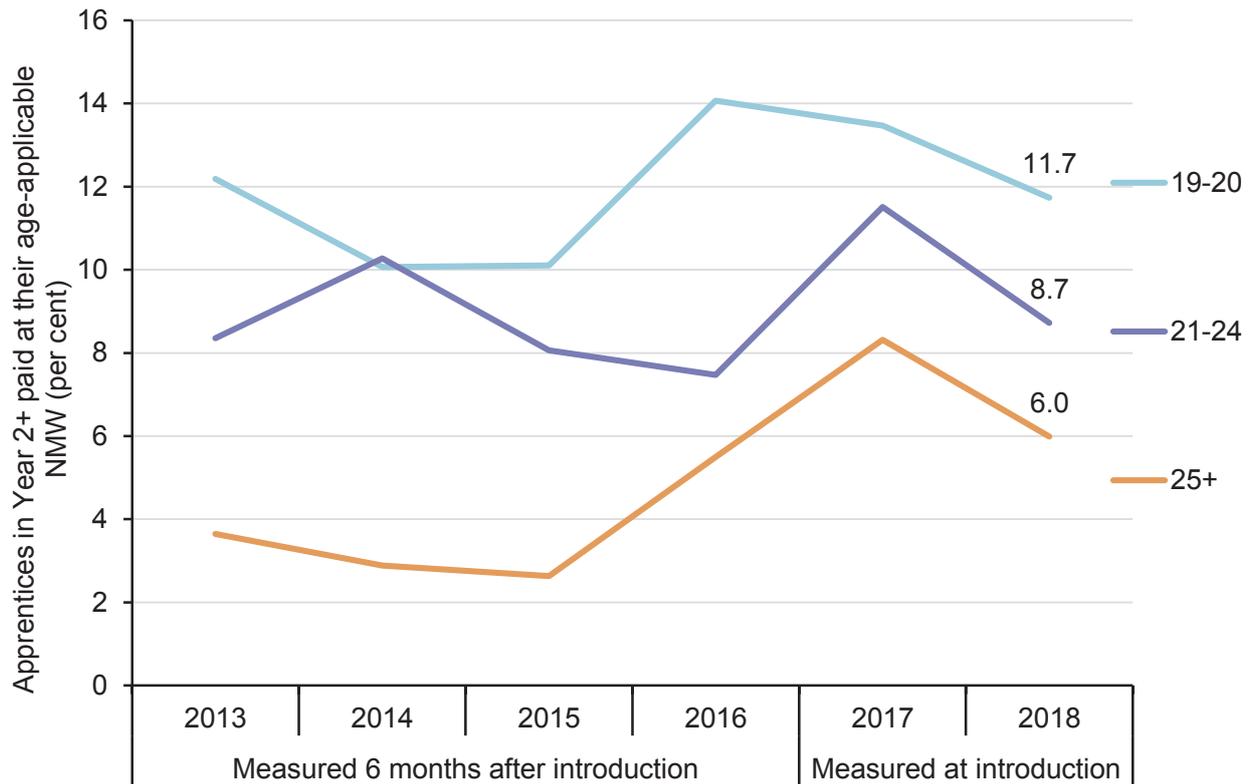
Figure 4.10: Use of the Apprentice Rate, by age, UK, 2013-2018



Source: LPC estimates using ASHE, April 2013-18, low pay weights, including those not on adult rates of pay, UK.

4.28 Second (and third) year apprentices aged 19 or over, are entitled to be paid their age-applicable minimum wage. Figure 4.11 shows that use of the age rates fell for all three age groups over the year to April 2018, reflecting relatively high earnings growth for apprentices in their second year or beyond.

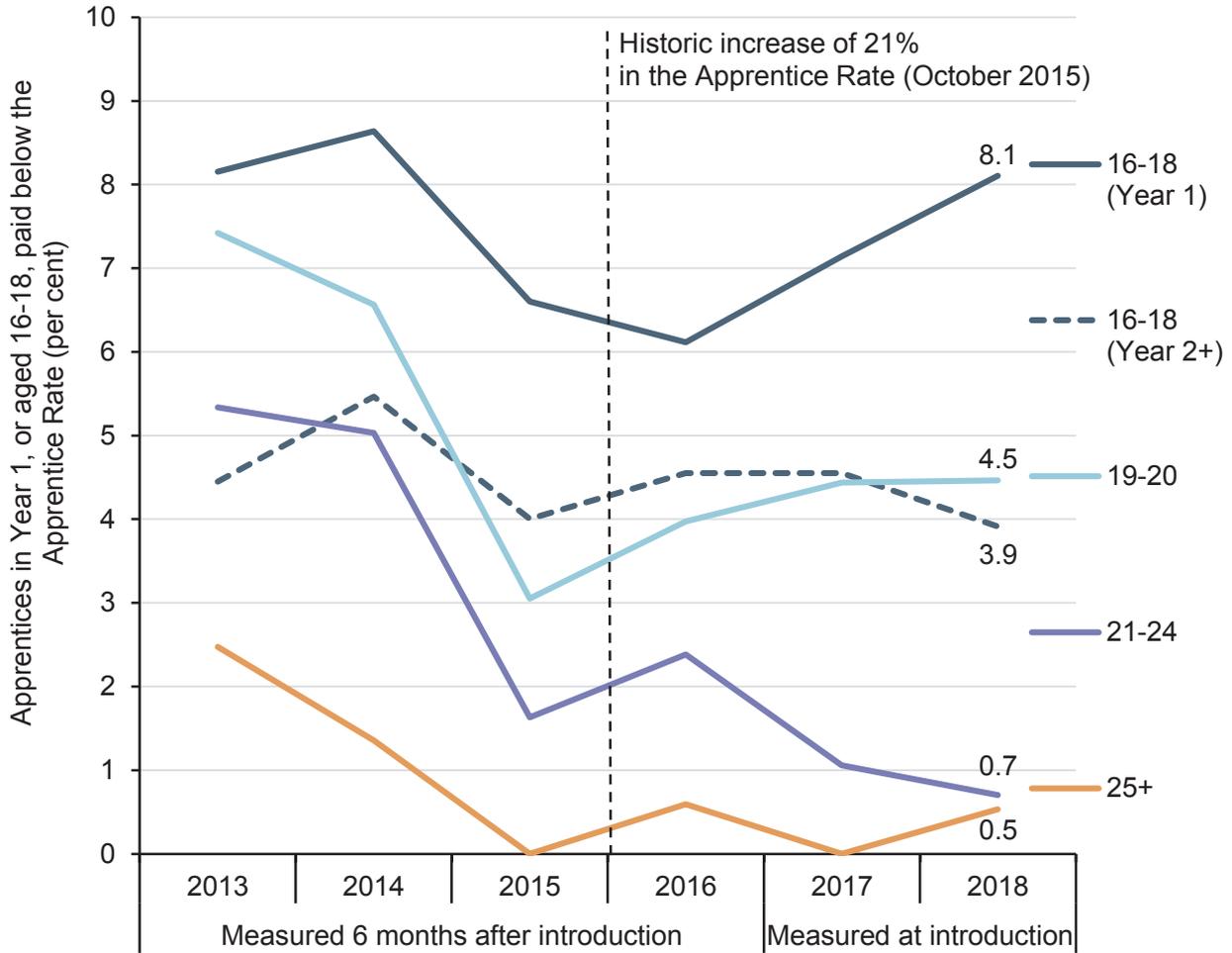
Figure 4.11: Use of the age-applicable National Minimum Wage, by age, UK, 2013-2018



Source: LPC estimates using ASHE, April 2013-18, low pay weights, including those not on adult rates of pay, UK.

4.29 Turning to underpayment, Figure 4.12 shows the percentage of apprentices paid below the Apprentice Rate. According to the ASHE, underpayment levels are below 5 per cent for older apprentices, and levels of recorded underpayment have fallen at most ages over the six years since the ASHE apprentice time series began. The exception is those aged 16-18 in the first year of their apprenticeship, where levels of underpayment are much higher (8.1 per cent), and have increased since 2016, including an increase of 1 percentage point over the year to April 2018. Some of the increase for this group from 2016 may be due to the changed uprating cycle in April 2017, with a short lag before they received the new minimum wage rates in the next pay period. Closer examination shows that of 16-18 year olds in Year 1 paid below the April 2018 minimum wage, four in five were paid at least the April 2017 minimum wage (the applicable minimum wage up to 31 March 2018). However, the increase in underpayment for this group between 2017 and 2018, measured on the new April uprating cycle, may indicate that non-compliance may be a worsening problem for the youngest apprentices.

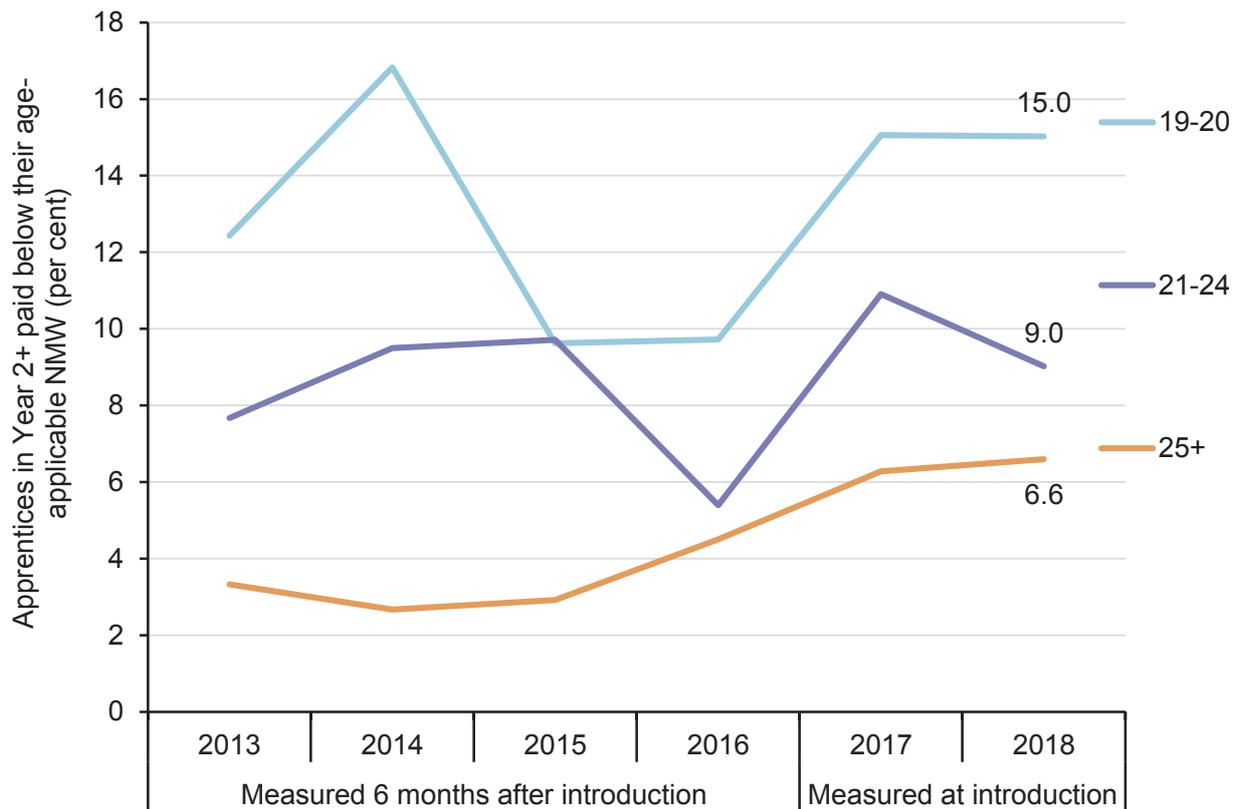
Figure 4.12: Measured underpayment of the Apprentice Rate, by age, UK, 2013-2018



Source: LPC estimates using ASHE, April 2013-18, low pay weights, including those not on adult rates of pay, UK

4.30 Previous research has suggested that underpayment is highest for those apprentices in their second year, where the age rates of the NMW should be paid. Consistent with this, ASHE records higher levels of underpayment for these apprentices. Figure 4.13 shows minimum wage underpayment levels of 15.0 per cent for 19-20 year olds (entitled to the 18-20 Year Old Rate); and 9.0 per cent for 21-24 year olds (entitled to the 21-24 Year Old Rate); falling to 6.6 per cent for those aged 25 and over (entitled to the National Living Wage, or NLW). Recorded underpayment increased for all three groups between 2016 and 2017, partly reflecting the change to the April uprating cycle, but over the year to April 2018, underpayment was relatively stable for apprentices aged 19-20 (down 0.1 percentage point) and 25 and over (up 0.3 percentage points), while it fell for 21-24 year olds (down 1.9 percentage points). Of those paid below their applicable age rate in April 2018, at least half were paid at or above the April 2017 minimum wage (the applicable minimum wage up to 31 March 2018). But the remainder – 40 to 50 per cent – were paid a clearly non-compliant rate, being paid less than the April 2017 minimum wage rate.

Figure 4.13: Measured underpayment of the age-applicable National Minimum Wage, by age, UK, 2013-2018



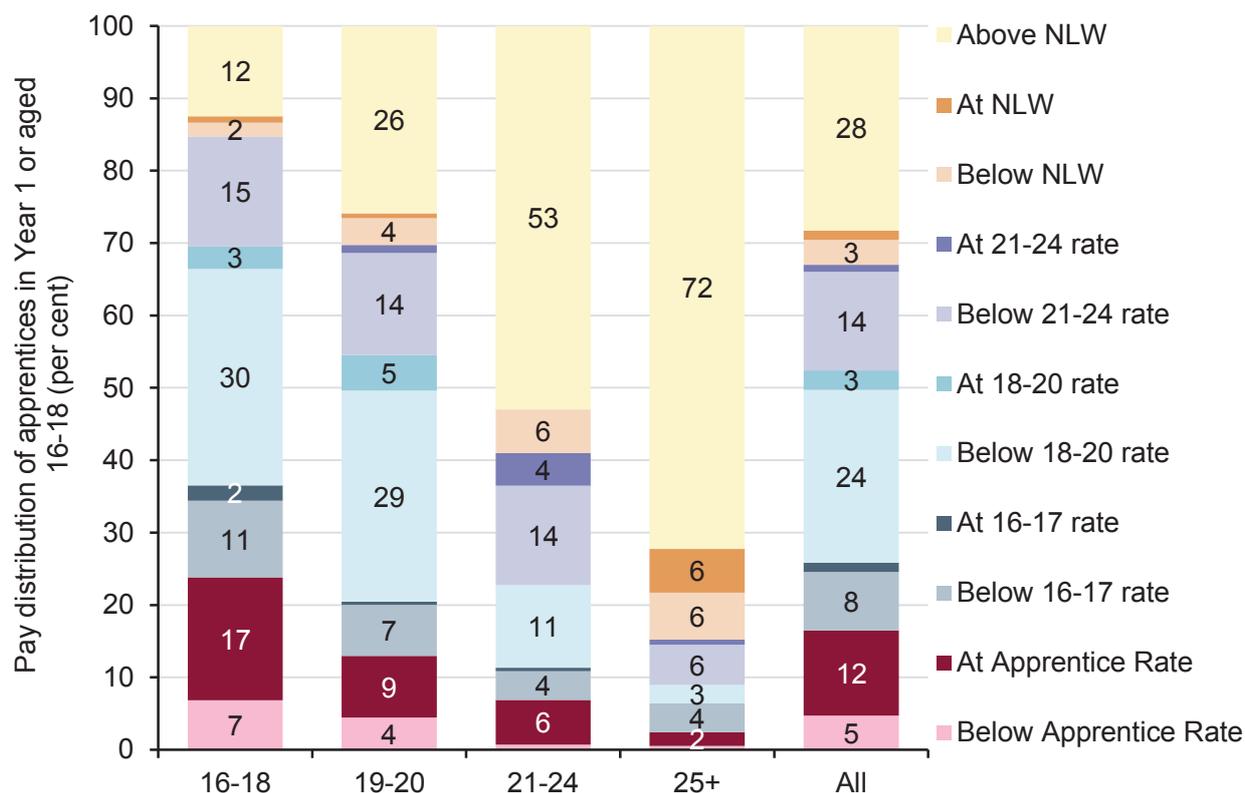
Source: LPC estimates using ASHE, April 2013-18, low pay weights, including those not on adult rates of pay, UK.

4.31 While we monitor use of the Apprentice Rate, there is also interest in the broader pay distribution for apprentices, and the extent to which employers use the other minimum wage rates to set apprentice pay. Figure 4.14 shows the full pay distribution for apprentices covered by the Apprentice Rate; that is, those aged 16-18 or in their first year of apprenticeship.

4.32 Overall, seven in ten of these apprentices were paid somewhere within the NMW universe in April 2018, with just 28 per cent being paid above the NLW. However, this rose to 72 per cent of those aged 25 and over and half (53 per cent) of those aged 21-24. Pay for 16-18 year olds and 19-20 year olds was commonly set somewhere between the 16-17 Year Old Rate and the 18-20 Year Old Rate, with three in ten of each age group being paid here.

National Minimum Wage

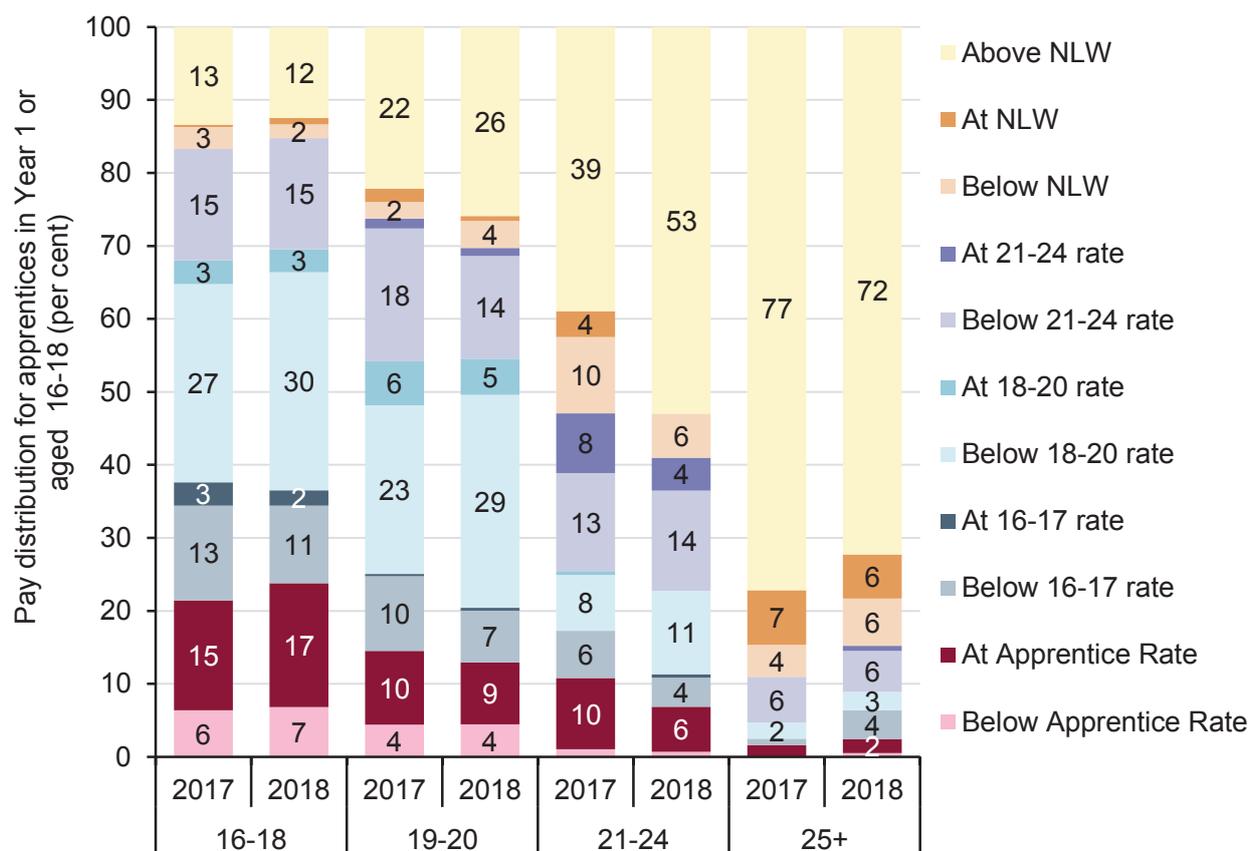
Figure 4.14: Pay distribution for apprentices aged 16-18 or in the first year of their apprenticeship, by age, UK, 2018



Source: LPC estimates using ASHE, April 2018, low pay weights, including those not on adult rates of pay, UK.

4.33 Figure 4.15 shows changes to the pay distribution between April 2017 and April 2018. The proportion of apprentices aged 21-24 paid above the NLW increased by 14 percentage points over the year, from 39 per cent to 53 per cent. There was a smaller increase for 19-20 year olds, with the proportion paid above the NLW increasing by 4 percentage points, from 22 per cent to 26 per cent. There was a different pattern for apprentices aged 25 and over, with the proportion paid above the NLW falling by 5 percentage points over the year, from 77 per cent to 72 per cent. There was very little change over the year for the youngest apprentices, aged 16-18.

Figure 4.15: Pay distribution for apprentices aged 16-18 or in the first year of their apprenticeship, by age and year, UK, 2017-2018.



Source: LPC estimates using ASHE, April 2017-18, low pay weights, including those not on adult rates of pay, UK.

Stakeholder views on the Apprentice Rate

4.34 In this section, we report the evidence received from stakeholders on the Apprentice Rate, via our written consultation, oral evidence sessions and conversations during regional visits.

4.35 A substantial proportion of respondents were in favour of narrowing or eliminating the gap between the Apprentice Rate and the youth rates of the NMW. There were several arguments made to support this:

- Some argued that the current rate was too low to support apprentices' living costs and made other forms of employment more attractive, so preventing young people from entering apprenticeships. The National Union of Students (NUS) and Young Women's Trust (YWT) both presented evidence and case studies to support this point. At oral evidence, the Young Women's Trust described the financial pressures created by low paid work and the difficult choices faced around, for example, travel costs.
- There was a related view, that a higher rate would improve retention and completion rates (the Trade Union Congress and Scottish Trade Union Congress).
- It was also felt that the rate encouraged employers to use apprentices solely as cheap labour and does not incentivise real investment in training (Intergenerational Foundation).

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4.36 UNISON presented a report by the New Policy Initiative stating the case for narrowing the differentials between the Apprentice Rate and other NMW rates. A key argument in this was that employers' chief motivation, in recruiting and training apprentices, was their assessment of the net costs and benefits of the apprenticeship rather than just the rate of pay. This was echoed in several other submissions, which pointed out the relatively low usage of the rate and argued that rate increases had not been a factor in recent changes in apprenticeship starts.

4.37 Among employers, a number advocated closing the gap between the Apprentice Rate and other NMW rates over time. The Federation of Small Businesses (FSB) supported this position, on the grounds that the rate did not function as a deterrent for small business owners taking on apprentices, as did the British Chambers of Commerce (BCC), which argued that such alignment would encourage more young people to take up high quality apprenticeships.

4.38 Employer bodies in a number of sectors noted that as very few of their members used the Apprentice Rate, previous increases had had limited impact (EEF – the Manufacturers' Organisation, British Retail Consortium, Food and Drink Federation) and the barriers to apprentice recruitment were elsewhere – in the candidate pool and problems with training provision.

4.39 In hairdressing, the National Hairdressers' Federation (NHF) reported much more widespread usage of the Apprentice Rate, meaning that rate rises had a significant effect on the sector. The NHF advocated extending the application of the rate into the second year of apprenticeships. UK Hospitality (UKH) and the UK Fashion and Textile Association (UKFT) also urged caution in considering the impact of future rate increases.

4.40 Apprenticeship quality was a common theme in all responses, generally stressed as a more important concern than rates of pay. Some respondents made the link between the two, arguing that a higher Apprentice Rate would help drive quality by increasing the prestige of the apprenticeship programme and attracting higher calibre candidates. The FSB noted that small businesses feel more concerned about the cost of an apprenticeship when the training provided does not offer value for money.

Conclusion

4.41 We noted last year the unprecedented flux in apprenticeship policy in England and the impact of changes on the volume and content of apprenticeships. A year ago, it was possible to read these changes as a temporary shock generated by reforms; now it looks like a more structural shift in the system. Stakeholder evidence, and the relatively stable numbers in Scotland, Wales and Northern Ireland, support the view that these are effects of policy reforms rather than anything to do with increases in the Apprentice Rate. In any case, overall apprenticeship numbers in England have shown little signs of increasing through the 2017/18 academic year. If current trends continue, the predominant model for an apprenticeship will be at level 3 or above rather than level 2, and the typical apprentice will be younger, as the proportion of those aged 25 or older declines.

4.42 The picture on apprentice pay is mixed. Pay continues to rise at the median for both first and second-year apprentices, but increases are not consistent across age groups, and weak for 16-18 year olds in particular. The use of the Apprentice Rate and measured underpayment are also rising for this group while they fall or remain stable for older apprentices. The increase in above-NLW pay

for 21-24 year olds may reflect a rise in degree apprenticeships at level 4 and above, but for apprentices older than 25 pay growth has been weak and the numbers of such apprentices paid at or above the NLW has fallen. And all of this has occurred in a context where the total number of starts has fallen sharply. We will closely review the Apprenticeship Pay Survey when it is available, to assess whether it supports our findings from ASHE, and to inform next year's review of the structure of youth and apprentice rates.

4.43 Stakeholders representing both employers and workers argued for narrowing or removing differentials between the Apprentice Rate and other NMW rates. Other evidence we heard suggests that use of the rate, and the consequent impact on employers of rate increases, varies considerably between sectors. It is clear, though, that the rate is not usually the main factor driving employer decisions on apprentice recruitment.

4.44 All sides – employers, workers and government – agree on the importance of encouraging quality apprenticeships. But the extent to which reforms overall are achieving this is not yet clear; and nor is the effect in this context of the Apprentice Rate. We will look in more detail at the operation and effectiveness of the rate as part of next year's youth rates review.

Chapter 5

Forward look: economic prospects and stakeholder views

Introduction

5.1 In contrast to the previous four chapters, which have looked backwards, this chapter takes more of a forward look. It sets out the economic prospects for the UK economy and our evidence from stakeholders on future rates and other regulatory costs facing business.

5.2 To maximise the information available to us, the meeting to agree the recommendations in this report was held in late October 2018, with deliberations based on data and information available up to 19 October 2018. This included the Bank of England August Inflation Report and the HMT panel of independent forecasts from October, as well as ONS labour market, wage and price inflation data. The most recent forecasts from the Office for Budget Responsibility (OBR) date from March. We had access to a pre-release of the Annual Survey of Hours and Earnings, which we are grateful to the ONS for making available to us. It was published on 25 October. The announcements in the Autumn Budget and the latest forecasts from the OBR were published on 29 October 2018, after our deliberations (and agreement to the recommendations contained within) but before publication of this report. As was the first quarterly estimate of gross domestic product (GDP) for the third quarter of 2018, which was released on 9 November 2018.

The prospects for the economy

5.3 As we noted in Chapter 1, GDP growth had weakened in the first quarter of 2018 as investment and consumer spending slowed, with trade also acting as a drag on growth and government spending contributing little. Consumer spending was stronger in the second quarter and into the third quarter with consumers buoyed by the royal wedding, England doing well in the World Cup, and the hot weather. However, investment and trade continued to perform poorly leading to GDP growth of just 0.4 per cent in the second quarter of 2018. On an annualised basis, GDP grew by just 1.4 per cent in the year to the end of June 2018.

5.4 In contrast to the weak output performance, the UK labour market has performed exceptionally strongly since the start of 2013 and this has continued to be the case into the late summer of 2018. Employment, employee jobs, hours worked, and vacancies are all at or close to record highs. The level of total employment in August 2018 (32.4 million) had already more than surpassed the forecast for the fourth quarter of 2020 made by the OBR in July 2015, when the Government announced its National Living Wage (NLW) policy. However, in contrast to recent years when the growth in the number of workforce jobs had exceeded the consensus forecasts, this year it was in line with those forecasts – with growth of 0.4 per cent.

National Minimum Wage

5.5 Despite employment growth slowing, the weak output performance had again produced lacklustre productivity growth. There were tentative signs that wage pressures had picked up, as the labour market tightened. However, the sharp increases in inflation at the end of 2017 meant that real wages fell between April 2017 and December 2017. As those inflationary pressures have waned, real wages have become positive again. Despite that, real wages (including and excluding bonuses) are still around 2-3 per cent below their levels in April 2008.

5.6 As we write this report, the date that the UK leaves the EU is only six months away. This change will likely have significant effects on the economy in the short, medium, and long term, particularly for migration, trade and investment. Our recommendations for minimum wage changes in this report cover the period after that exit point and were based on the forecasts we had at the time. These forecasts take no account of any future revisions to economic forecasts or actual outturns of any disruption from a Brexit without a transition period. With little hard evidence on the end settlement available, the situation remains one characterised by a high degree of uncertainty. However, the Prime Minister has recently stressed the importance of an agreed deal with a transitional period to enable businesses to adapt to the new arrangements. In its forecasts, the OBR (2018b) assumes that the UK leaves the EU in March 2019 – two years after Article 50 was invoked and that the transition will be agreed and smooth. It was in this context that we discussed the future rates of the NLW and the other minimum wage rates. However, were the trade negotiations to end differently, we would need to review the evidence on the economic impact of a different trade scenario, in order to inform our future recommendations.

5.7 In our 2014 Report, we identified four factors that we deemed necessary for real and relative increases in the National Minimum Wage. These were: sustained economic growth; continuing employment growth (particularly in low-paying sectors); increasing real average wage growth; and productivity improvements. When we were tasked, in July 2015, with recommending the path of the National Living Wage to reach 60 per cent of median hourly earnings by 2020, the Government (HM Treasury, 2015) emphasised that this was subject to sustained economic growth. This caveat has also been included in every terms of reference given to us by the Government since then, including this year. The OBR (2015a) estimated that the introduction and subsequent upratings of the NLW would cost between 20-110,000 jobs by 2020, the date it was expected to reach its 60 per cent target. We thus placed particular importance on the factors described here. Before considering the prospects for these, we highlight issues concerning those who are most likely affected by the rates we set and where they are most likely to work.

Variation in exposure to economic pressures across the low-paying sectors

5.8 The economic prospects for the whole economy will affect the pay and employment outcomes of the lowest-paid workers (including women, young workers, older workers, part-time workers, migrants, those with disabilities and those with limited educational qualifications). They will also influence the ability of firms to cope with minimum wage increases but are likely to differ across the economy and the low-paying sectors. We can consider these prospects for low-paying sectors grouped by variation to different economic pressures: those that are consumer-facing; those that are dependent to some extent on government funding; those that rely more on business-to-business transactions; and those that are more exposed to international trade.

5.9 In terms of employment, the largest low-paying sectors are those that depend on consumer spending – notably retail, hospitality and leisure. As we noted in Chapter 1, consumer spending has helped drive growth in recent years and has been a major contributor to the growth that has occurred so far in 2018. The outlook for consumer spending will affect the prospects for these consumer-facing industries. That will depend on expected real incomes and confidence about the future. Real incomes have changed little over the last two years as any gains in nominal income have been offset by increases in inflation, driven by currency depreciation and increases in oil prices. However, robust employment growth, low costs of borrowing and easy access to credit, along with a boost from net tourism (with sterling depreciation making the UK much cheaper for foreign tourists and going abroad more expensive for those living in the UK) have helped maintain consumer spending. This has also been accompanied by a running down of savings that may not be sustainable in the long run.

5.10 The next largest group of low-paying sectors, in terms of jobs, 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. In our previous reports we have noted the real pressures on childcare and social care employers in the private sector, the voluntary sector and the public sector. While this report was published after the 2018 Budget, our recommendations were made before it. This report will therefore not reflect any changes made regarding funding of childcare and social care.

5.11 A third group of low-paying sectors, including cleaning and employment agencies, are more dependent on business-to-business activity. Demand for these services is likely to be closely related to the general performance of the economy – with consumer spending, business investment, profitability, and government spending all playing key roles. It will also depend on the outsourcing and the contracting out of services. These have been instrumental in increasing demand in this sector in the recent past and those trends look set to continue, but there is anecdotal evidence that some companies have brought these services back in-house. Profitability of these sectors will also depend on the ability of companies to pass additional costs onto other businesses and ultimately, consumers.

5.12 The final group of low-paying sectors considered are those that are more exposed to international trade, such as textile manufacturing, agriculture, and food processing. As well as being determined by the general outlook for the economy, the prospects for these low-paying sectors will also depend on demand for their products overseas, as well as their price – the latter affected by exchange rate movements. Changes in the value of sterling will also affect domestic demand for UK products (as it changes the relative price of domestic products compared with those from overseas) and the cost of imported inputs. Prospects will therefore depend on the sterling exchange rate and the strength of global demand, especially in those areas in which the UK conducts most of its trade, such as the EU and the US.

5.13 The outlook in terms of the affordability of minimum wage increases in all 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, dominated by Brexit – an event that could have profound economic consequences for the UK economy in the short, medium and long term.

Output forecasts remain modest

5.14 GDP in the second quarter of 2018 was around 0.5 per cent higher than in the fourth quarter of 2017. Using its new monthly GDP series, ONS estimated that the economy grew by 0.7 per cent in the three months to August 2018. That strong growth was consumer-led as the hot weather and the World Cup boosted food and drink sales. The National Institute of Economic and Social Research (NIESR, 2018), using its monthly estimates of GDP series, estimated that GDP had grown by 0.7 per cent in the third quarter of 2018 but that it would weaken slightly in the fourth quarter to 0.5 per cent. This, it said, would give growth of around 1.5 per cent – a bit stronger than some other recent forecasts. It noted that the economy had recovered from the adverse weather-affected first quarter and was growing above potential. Growth in the third quarter had been helped by a strong performance in the production sector, with manufacturing growing at 0.8 per cent with strength across the board. However, Brexit uncertainties continued to drag on growth with investment spending particularly affected. It added that there were also other global risks, such as increased protectionism and trade tensions. Input costs for businesses were also rising.³

5.15 The latest median forecast for GDP growth by the HM Treasury panel of independent forecasts is 1.5 per cent in 2019 and 2020. Cumulative growth over the four years is now expected to be around 4.9 per cent, more than a third lower than expected by the forecasts made at the time of the NLW announcement in July 2015 (7.5 per cent). The latest Bank of England forecasts from August 2018 are for slightly stronger growth of 1.8 per cent in 2019 and 1.7 per cent in 2020. The Bank of England (2018a) expected GDP growth to be modest as the muted recovery in real household incomes subdued spending was offset by net trade – boosted by robust global growth and the continuing beneficial impact of the recent depreciation in sterling – and investment, as trade outweighed Brexit uncertainties.

Global economic growth remains robust but has weakened amid increased uncertainty and heightened trade tensions

5.16 The strengthening of the global economy since 2016 was expected to continue. Both the OECD (2018b) and the IMF (2018) reported that global economic growth remained robust at around 3.8 per cent in the first half of 2018 but noted that there were some signs that the expansion had peaked. Both projected the global economy to grow at around 3.7 per cent in both 2018 and 2019. However, both also highlighted that downside risks were intensifying and that these outweighed any upside surprises.

5.17 Strong job growth had continued across many advanced economies, but wage growth remained modest. Global inflation remained surprisingly low, but oil prices had risen with increased geopolitical tensions. Global stock markets were generally strong but had become very volatile.

5.18 They also noted that growth had become more unbalanced with growing differences by country and sector. Momentum had been maintained in the US but had weakened in the EU and in many emerging-market economies. Amid rising trade and geopolitical tensions, global trade had slowed from 5 per cent in 2017 to around 3 per cent in the first half of 2018. These tensions included: the escalation of trade tariffs between the US and China, the US move away from

³ On 9 November, in its preliminary estimate of GDP growth, the ONS confirmed that the UK economy had grown by 0.6 per cent in the third quarter of 2018.

multinational co-operation to a more bilateral approach; the uncertainty of the UK's future trade relationship with the EU; and continuing geopolitical risks – including Saudi Arabia in Yemen; the blockading of Qatar; Russia, the US, Turkey, and Iran in Syria; the US and Iran; Israel and Palestine; Russia in the Ukraine; Iraq; and Afghanistan, as well as the recent developments in Turkey involving the Saudis. Financial vulnerabilities had been particularly exposed in Argentina and Turkey – both countries running large trade deficits with much of their debt denominated in foreign currency – as increases in US interest rates had led to an appreciation of the dollar and sizeable currency depreciations.

5.19 Those geopolitical and trade tensions were heightening uncertainty, adversely affecting confidence and investment plans. More broadly, the recent increase in oil prices would lift the growth prospects of energy exporting countries but act as a drag on others. Future growth in the US – the UK's second largest trading partner after the EU – was revised down (but remained strong) amid uncertainty about the impact of the recently imposed tariffs on trade, and recent increases in interest rates. For the EU, there were additional concerns about financial markets and the resilience of banks in the euro area, particularly in Italy and those dependent on the Turkish economy. Brexit also loomed large on the horizon. Growth was thus expected to slow in the EU, although monetary policy remained accommodative and fiscal policy mildly expansive.

5.20 As a consequence of these developments, particularly the uncertainty around the future trading relationship between the UK and the EU, the IMF (2018) forecast the UK economy to grow by 1.4 per cent in 2018 and 1.5 per cent in 2019. The OECD (2018b) was more pessimistic – forecasting growth of just 1.2 per cent in 2018 and 1.3 per cent in 2019. It highlighted that the subdued pace of real income growth limited household consumption, while business investment was soft. Of the G7, only Italy and Japan were forecast to grow more slowly.

Brexit related uncertainty is ongoing and may have had real effects on the economy

5.21 After March 2019, the UK's relationship with the EU will begin to change, along with its relationship with the rest of the world. How those relationships change, and the time horizon over which they do, will depend on the ongoing negotiations and the eventual deal that is reached. Not only will this affect trade in goods and services, it will also have an impact on business decisions on investment (particularly its location) and on workers' decisions to migrate. The consensus of studies suggests that all three areas will be negatively affected but the magnitude of those effects will depend on the final agreement with the EU, and the ability of the UK to agree beneficial trade deals with other countries. These effects are likely to play out in the medium to long-term, beyond our judgement horizon. However, we have already seen effects in the short term, including on sterling, investment, migration and GDP.

5.22 Brexit-related uncertainty had led to sterling depreciating by around 15 per cent between the end of 2015 and the end of 2016. This had led to a sharp increase in inflation, but those effects were now waning. Investment, especially business investment, has slowed since June 2016, and was particularly weak in the first half of 2018. There was also evidence that the inflow of EU migrants had slowed, especially from the EU8 countries that had joined the EU in 2004 – mainly Eastern European countries.

5.23 OBR (2018b) noted that, before the EU Referendum, it had forecast growth of 4.4 per cent between the second quarter of 2016 and the second quarter of 2018 but that the UK had grown by only 3.2 per cent over that period. Global trade over this period had been stronger than expected suggesting that the loss of GDP may have been greater. Others, taking account of these effects, have estimated larger effects with the consensus around 2.0-2.5 per cent of GDP. That is line with some of the pre-Referendum estimates of the impact of Brexit.

5.24 Some commentators suggest that the full transition may take longer than ten years. OBR (2018b) thought the scope of trade deals with non-EU countries to offset negative effects was likely to be limited. Limiting migration was also likely to adversely affect future productivity growth and the public finances – EU migrants were currently net contributors to the UK exchequer. Were the negotiations to end with the UK relying on World Trade Organisation terms, various organisations have estimated that GDP was likely to be 2-7 per cent lower after ten years. This compares with: a hit of 2.8 per cent in the first quarter of 1974, as a result of the three-day week; and the shortfall in productivity of around 20.0 per cent in the ten years since the global financial crisis.

Pound has been relatively stable over the last year, albeit with greater volatility

5.25 The pound has followed a similar path over the last two years when measured against the euro and a basket of trade-weighted currencies (the sterling effective exchange rate). As shown in Figure 1.7, the value of sterling on these two measures is now back to roughly where it was in the late summer of 2016. That, however, is still around 15 per cent below its value in December 2015.

5.26 Against the US dollar, the pound is pretty much back to its value at the time of our last report (around \$1.30). However, over that time, sterling appreciated by around 7 per cent for the first six months (to April 2018) before falling back. That compares with an average value of around \$1.60 between 2009 and 2014, and \$1.80-2.00 in the period leading up to the financial crisis. At the end of September 2018, the pound was still around 23 per cent lower against the US dollar than in June 2014.

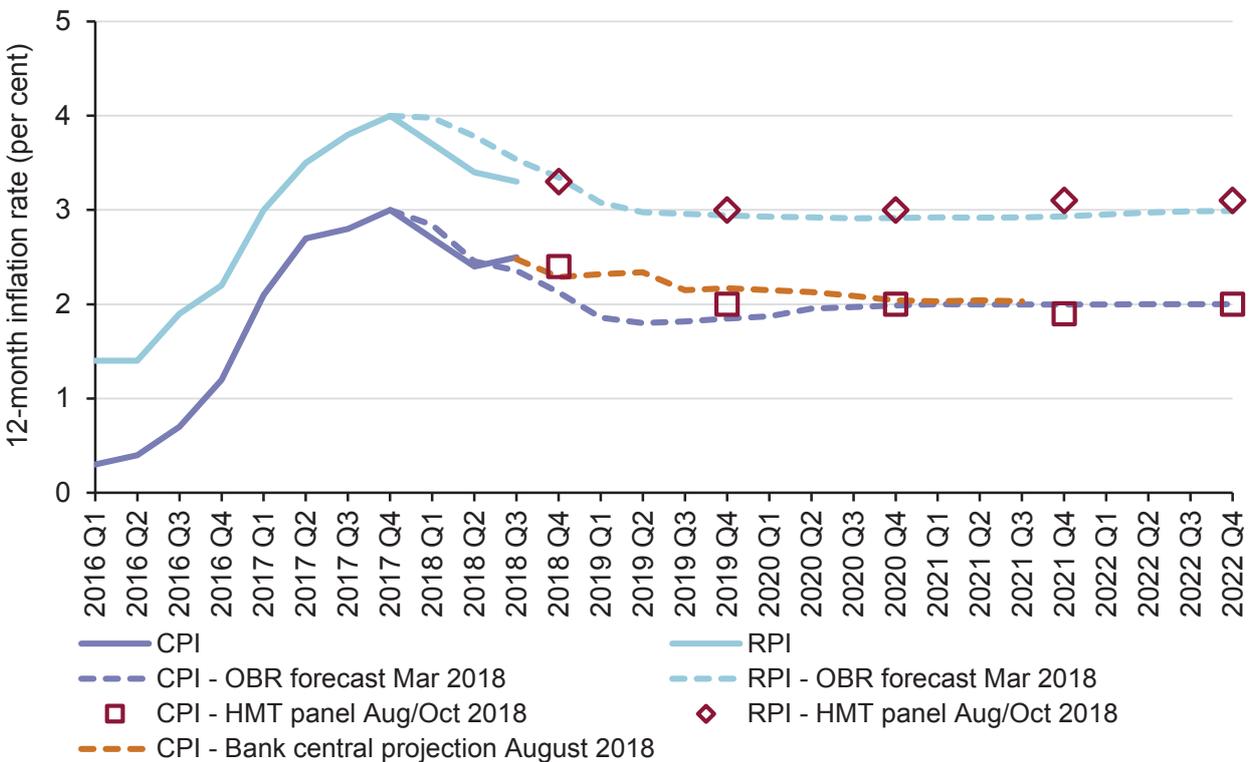
5.27 Although sterling has stabilised over the last two years, the previous large depreciation should still be helping trade: the value of sterling is still around 20 per cent less than it was three years ago. Exports are cheaper for foreigners to buy, while imports are more expensive. It takes time for UK firms to explore new markets and expand sales. Indeed, after the weak trade data in the first half of 2018, the latest trade data show that the real value of exports of goods and services in the three months to August 2018 had increased by 4.0 per cent compared with a year ago. In comparison, imports of goods and services had only grown by 0.9 per cent.

5.28 Sterling depreciation also makes the UK a more attractive destination for overseas tourists. As the pound fell, the UK became a more popular destination for tourists. In the year to August 2017, the number of overseas residents visiting the UK reached a record high of 39.7 million. That had a positive impact on spending in retail and hospitality in the UK. The latest data shows that the number of overseas visitors to the UK in 2018 has fallen back from that peak a year ago, but this was still higher than the number of visitors in either 2015 or 2016.

Inflation is expected to move slowly back to target with sterling stabilising

5.29 At the time of our last report, Consumer Price Index (CPI) inflation had peaked at 3.0 per cent, pushed up by the depreciation of sterling raising the price of imported goods. Since then, as shown in Figure 5.1, inflation has largely followed its expected fall – with CPI inflation down to 2.3 per cent in September 2018, as the price rises of a year earlier have fallen out of the twelve-month index. Retail Price Index (RPI) inflation has fallen by slightly more than expected, from 4.2 per cent in October 2017 to 3.3 per cent in September 2018, as only one of the expected interest rate rises has materialised (mortgage interest payments are included in the RPI but not the CPI).

Figure 5.1: CPI, RPI and forecasts of price inflation, UK, 2016-2022



Source: ONS, CPI (D7G7), RPI (CZBH), quarterly, not seasonally adjusted, UK, Q1 2016-Q3 2018; Bank of England (2018a); OBR (2018a); and HM Treasury panel of independent forecasts (2018a and b).

5.30 Consumer Price Index including housing costs (CPIH) inflation, which is now the official inflation statistic and includes a measure to reflect owner occupiers’ housing costs, fell from a peak of 2.8 per cent last autumn to 2.2 per cent in September 2018. The inflation rate for owner occupiers’ housing costs was at 1.0 per cent in September 2018, keeping the CPIH inflation rate below the CPI rate. CPIH is not forecast by the OBR, the Bank of England or included in the HMT panel of independent forecasters, so we are not able to take it into account in our forward look.

5.31 The forecasts for CPI and RPI expect inflation to continue its gradual path downwards, as the depreciation of sterling works its way out of the system – with the CPI inflation rate forecast to be around 2 per cent by the fourth quarter of 2019, and the RPI rate close to 3 per cent. This provides the opportunity for real wage growth across the economy. This benign inflation expectation has not, however, factored in any expectation of a hard Brexit that might lead to a further sterling

National Minimum Wage

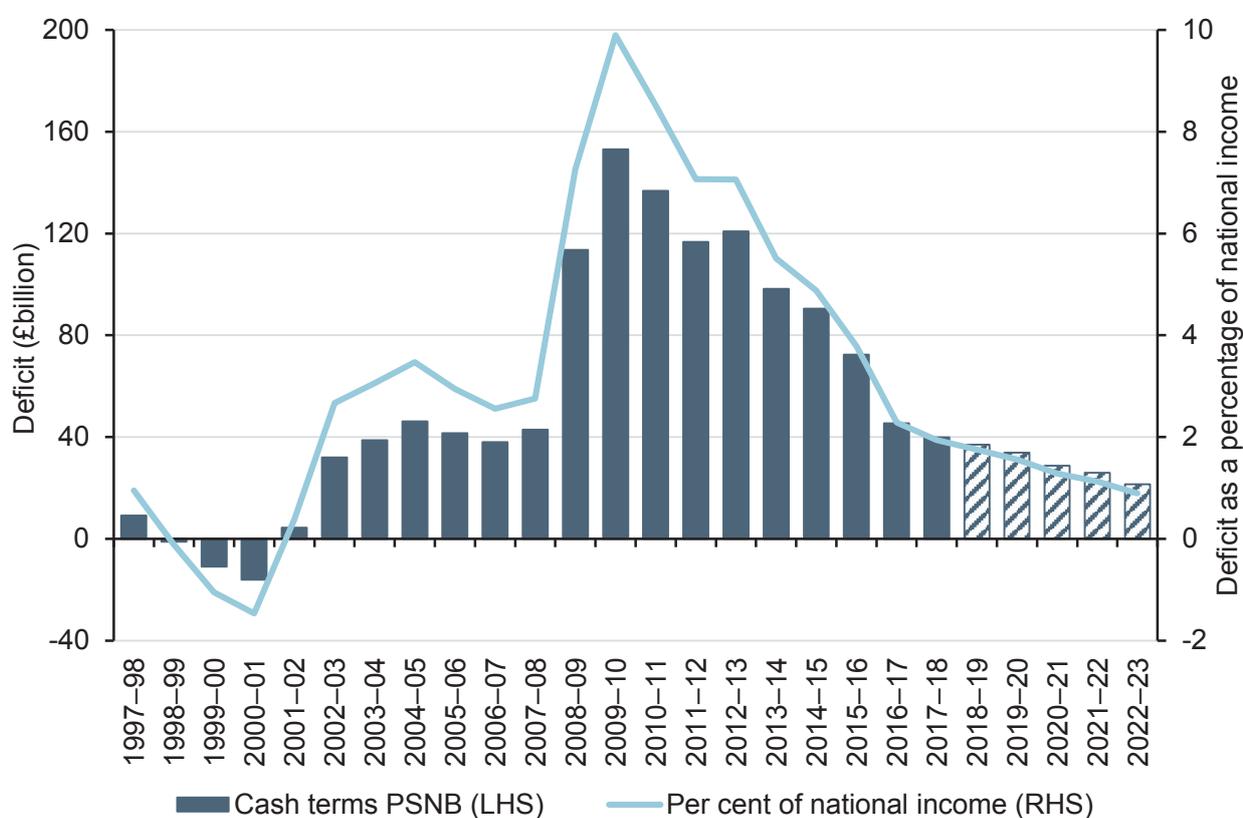
depreciation and rising inflation again over the second half of 2019. Potential future oil price rises pose a further risk to the UK's inflation environment.

Further austerity is expected to act as a drag on growth going forwards

5.32 Our deliberations on the prospects for the economy took place before Budget 2018. Thus, this narrative does not take account of any changes announced in Budget 2018 that affects the fiscal deficit or the distribution of the impact of tax and benefit changes.

5.33 After eight years of fiscal consolidation, the public sector deficit has finally fallen back below 2 per cent of national income. This is in line with its average over the immediate pre-crisis period from 2002-08, as shown in Figure 5.2. Emmerson, Farquharson and Johnson (2018) noted that at £40 billion, the deficit for 2017/18 was £18 million lower than forecast by OBR in March 2017. Tax revenues had been much stronger than had been expected given the relatively weak economic performance.

Figure 5.2: Public sector deficit, UK, 1997/98-2022/23



Source: Institute for Fiscal Studies estimates, Figure 3.1 in Emmerson, Farquharson and Johnson (2018).

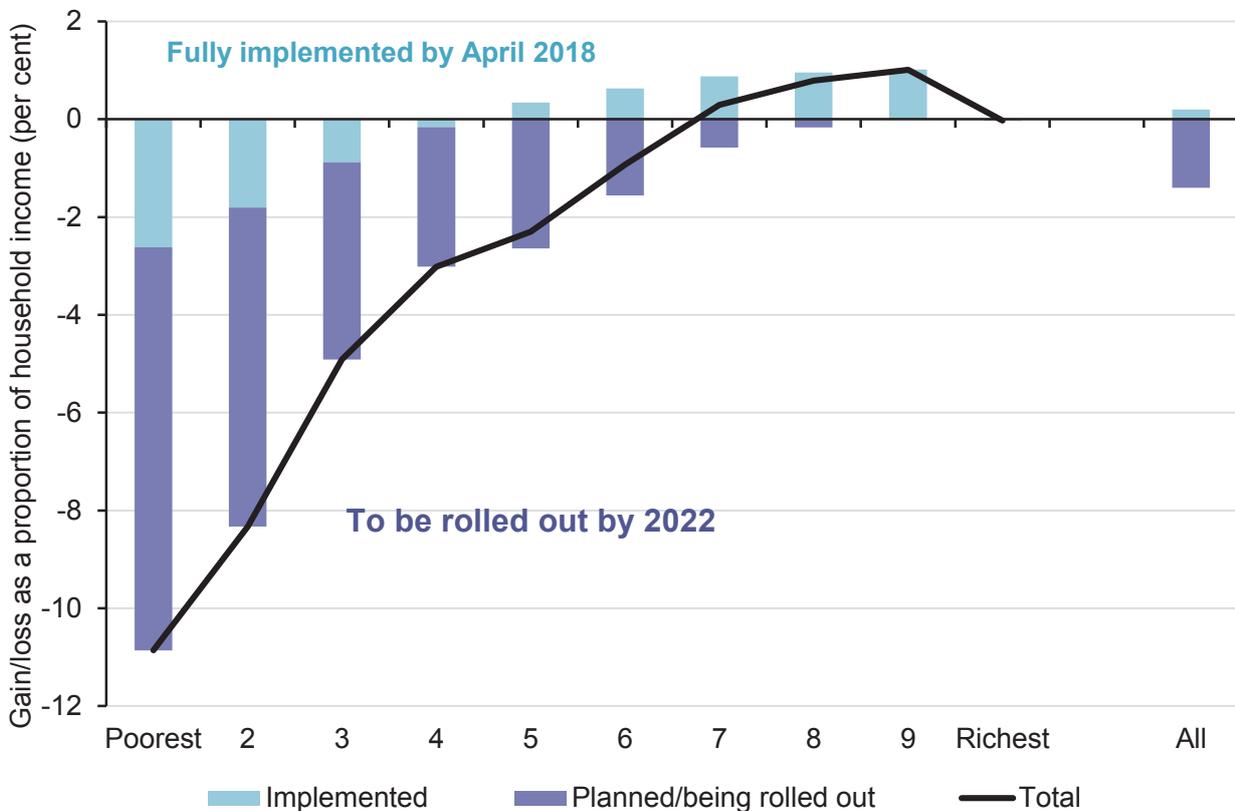
5.34 Developments since March 2018 also suggested an improved outlook. If those trends continued that would reduce borrowing by £6 billion in 2022/23. There is always a lot of uncertainty around forecasts for public sector finance, but these have been heightened by the additional uncertainty around Brexit.

5.35 Although the deficit is down to pre-crisis levels, the national debt is much higher than it was then. That requires stronger growth or higher tax revenues to reduce the level of debt as a share of national income. However, unless there are changes made in the Autumn 2018 Budget on 29 October, the deficit is expected to fall further as fiscal consolidation increases in the financial years 2018/19 and 2019/20, before weakening by the end of this Parliament (in 2022).

5.36 Further, analysis by Cribb, Norris Keiller and Waters (2018) suggested that the fiscal austerity measures announced since 2015 are likely to affect some households more than others. So far, the average impact of tax and benefit changes between May 2015 and July 2018 has been relatively small, though for some individuals these changes will have been significant. With reductions of around 2 per cent of income in the two lowest household income deciles. Many low-income households have been affected by the cash freeze in most working-age benefits. The impact was mitigated in 2015 and 2016 as inflation was low. However, with inflation rising from the end of 2016 and peaking at the end of 2017, this has amounted to a cut in real terms so far of over 6 per cent. The reduction in the benefit cap has affected fewer than 100,000. These benefit changes have been offset by the above-inflation increases in the income tax personal allowance (rising to £11,850 in 2018/19).

5.37 However, the long-run impact of tax and benefit changes that are now being rolled out or are planned by the Government is much greater. Three planned benefit cuts explain most of the large losses for low-income households: the continued freeze in most working-age benefit rates until March 2020 (the impact of which increases as inflation rises); cuts to the generosity of tax credits for families with children; and the roll-out of Universal Credit. The small number of tax measures due to be implemented in the coming years will have a very limited impact. Figure 5.3 shows that the overall impact is greatest on the poorest households and in those households with children. These adversely affected households will include many minimum wage workers. Pension households are likely to be affected the least. The generosity of the system will be reduced in the long-run but protections for existing claimants will prevent immediate losses of benefit income.

Figure 5.3: Long-run impact of tax and benefit reforms (including Universal Credit) on households, by income decile, 2015/16-2020/21



Source: Institute for Fiscal Studies estimates. Figure 6.11 in Cribb, Norris Keiller and Waters (2018).

National Minimum Wage

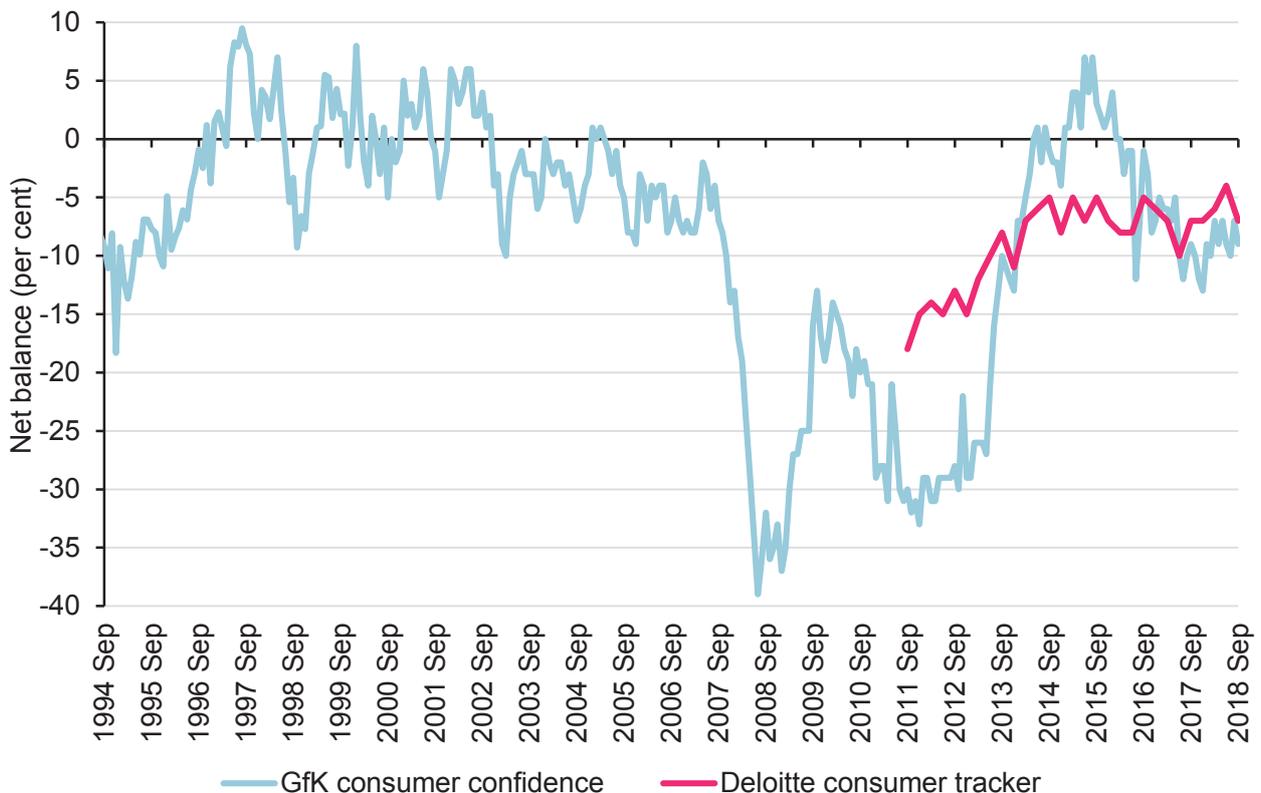
5.38 In contrast, Brewer and De Agostini (2017) showed that the incomes of minimum wage families (those families with at least one minimum wage worker) were likely to be higher in 2020/21 than in 2016/17. That is, for these families, the expected increase in the minimum wage (the NMW and the NLW) more than offsets any additional reductions in benefits after 2016/17. Indeed, they estimate that the real net incomes of minimum wage families will, on average, be around 1.5 per cent higher in 2020/21 than in 2016/17. However, those gains disappear when compared with 2010.

Consumer confidence has remained subdued

5.39 Figure 5.4 shows that consumer confidence has remained fairly subdued since the EU Referendum in June 2016 (averaging around -8 compared with +2 in the 18 months prior to that vote). But it has been slightly higher in 2018 (averaging around -8.6 in the nine months to September) than it was in the second half of 2017 (when it averaged -11). After the financial crisis, consumer confidence took a long time to recover – not reaching its pre-crisis levels until the middle of 2014. Throughout 2015 and prior to the lead up to the EU Referendum, it was at similar levels to the highs previously recorded between 1997 and 2004.

5.40 Despite the recent falls in inflation and some evidence of an acceleration of wage growth leading to real wages growing since December 2017, consumer sentiment has remained subdued. The uncertainty of Brexit and concerns about rising interest rates have led to a mood of despondency.

Figure 5.4: Consumer confidence, UK, 2005-2018



Source: GfK consumer confidence index, monthly, UK, 1994-2018; and Deloitte consumer tracker, quarterly, UK, 2011-18.

5.41 Another indicator of consumer confidence shown in Figure 5.4 – the Deloitte Consumer Tracker (2018b) – was a little more upbeat. It has only been running since the third quarter of 2011, but it reported a record high in the second quarter of 2018 – as consumers were heartened by England’s World Cup performance and the hot weather with a royal wedding also adding to the positive mood. However, with real wage growth still subdued and uncertainty about the future still elevated with Brexit only six months away, confidence declined in the third quarter of 2018.

5.42 Consumers appeared downbeat about their personal financial position, with confidence in the level of disposable income falling by 8 percentage points – its sharpest fall since the series began in 2011. Concerns about debt also increased as the Bank of England had raised interest rates in August and had suggested further rises would follow. The temporary increase in inflation in August had not helped the mood but this had already fallen back by October and was likely to continue to slow as the impact of the recent sterling depreciation waned.

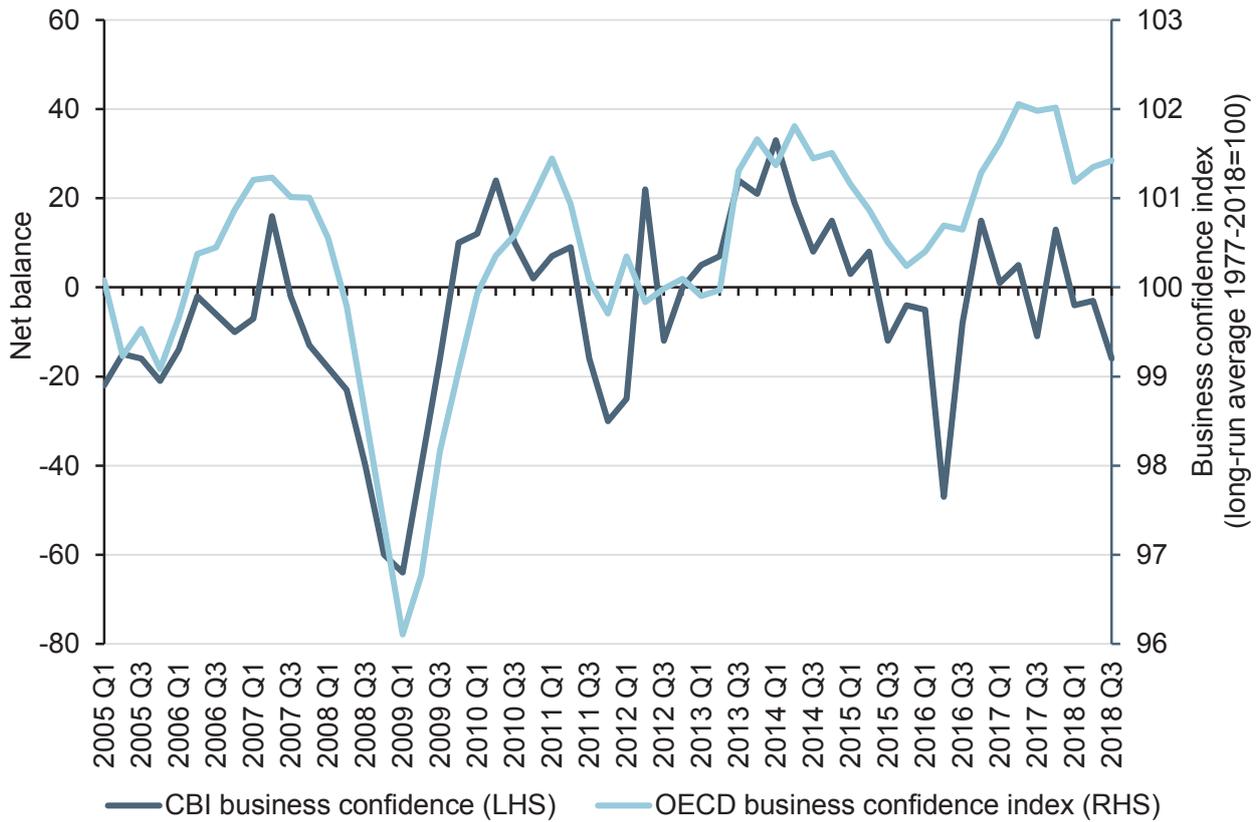
5.43 In contrast, consumers appeared much more confident about their job prospects. With unemployment low and many businesses reporting labour shortages, sentiment about job security and job opportunities remained stable.

Business confidence fell sharply after the Referendum, recovered in 2017, but has weakened again

5.44 In contrast to consumer sentiment, various business surveys have shown that business confidence bounced back quickly after the sharp falls in the middle of 2016 with business confidence higher in 2017 than it had been prior to the EU Referendum. Stronger than expected growth in the UK along with strengthening global trade helped improve sentiment. The depreciation of sterling had boosted exporters, including many manufacturers. Businesses had also felt more confident about passing on price increases and enhancing profit margins.

5.45 Figure 5.5 shows that CBI business confidence and the OECD business confidence index had followed these general trends. However, as we approach the March 2019 deadline for leaving the EU, there has been some weakening in sentiment.

Figure 5.5: Business confidence, UK, 2005-2018



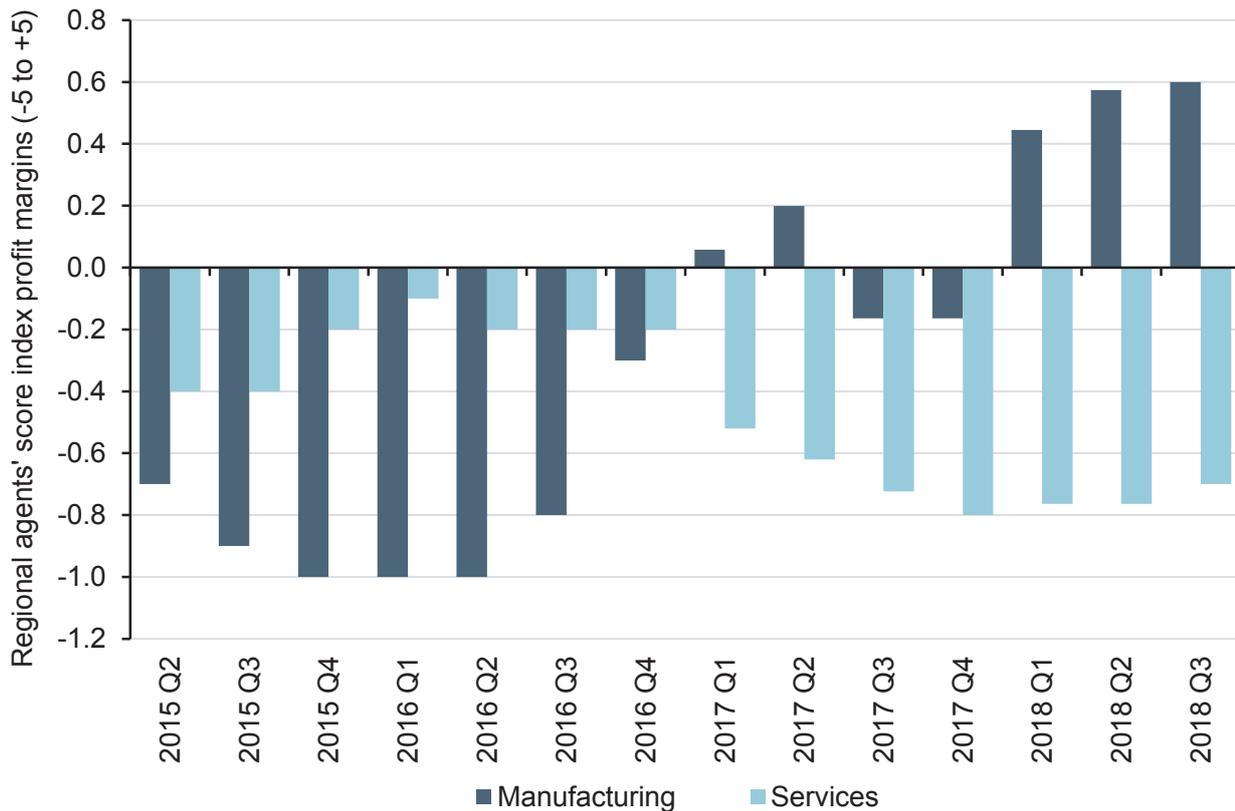
Source: CBI: business confidence index; and business output expectations score, monthly, UK, 2005-2018.

5.46 In its Quarterly Economic Survey, the British Chambers of Commerce (BCC, 2018) also showed a pick-up in domestic and exports sales with business confidence improving throughout 2017. However, that sentiment had weakened as 2018 progressed. It noted that domestic and overseas sales and orders were stagnating as consumer spending was no longer boosting domestic demand and the effects of a weaker currency had waned. Similar trends were also reported by the Deloitte Survey of Chief Financial Officers (2018a). However, it highlighted a significant decline in sentiment in the third quarter of 2018. Chief Financial Officers (CFOs) were more concerned about the negative effects of Brexit than at any time since the EU Referendum. It noted that the ‘disappointing pace of negotiations and growing speculation about a no-deal Brexit’ had weighed heavily on business confidence. Uncertainty had increased, and risk appetite remained below its long-term average. More expected higher inflation and higher interest rates than in the survey in the previous quarter.

Profit margins remain weak

5.47 Profitability is key to whether firms can afford increases in the minimum wage. It also enables funding of future investment. There is little timely information available on profit margins, however, the Bank of England’s regional agents do monitor them. They ask employers to score profit margins from -5 to +5. A negative score is not the same as making a loss. Figure 5.6 shows that service sector profit margins have fallen back since the end of 2016 and have shown little change in the last year. In contrast, profit margins do appear to have picked up in manufacturing. This is likely to have been helped by recent currency movements.

Figure 5.6: Profit margin score index, UK, 2015-2018



Source: Bank of England data: Agents scores, quarterly, UK, 2015-18.

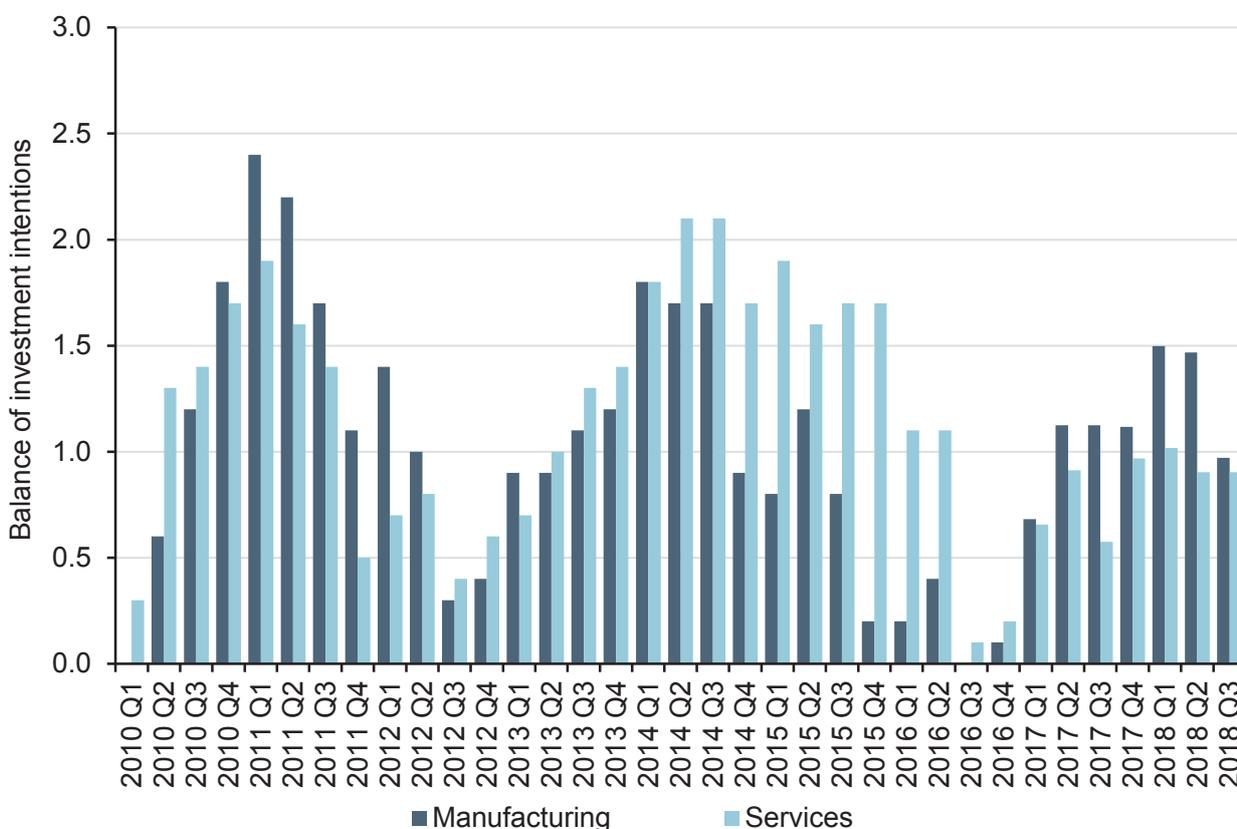
5.48 The Bank of England regional agents (2018b) reported that the depreciation of sterling may have boosted the profit margins of exporters. For a given foreign currency price, the value in sterling to the exporter would be higher. Indeed, in the first quarter of 2018, exporters reported higher profit margins than those businesses that were domestically focussed. The results also highlighted the importance of currency changes on profit margins from import costs. Exporters who did not import any goods or services had the highest profit margins, while domestically-focussed firms who only import had the weakest margins. Those firms that both import and export had similar profit margins to firms that did not import or export. Thus, the depreciation of sterling may have differential effects depending on the import or export-intensity of the business.

Investment intentions remain robust but have softened slightly

5.49 According to the ONS, total and business investment fell in the first two quarters of 2018. The Deloitte Survey of Chief Financial Officers (2018a) reported that, in the third quarter of 2018, around a half of those surveyed expected reductions in capital expenditure, merger and acquisition activity, and hiring over the next three years as a consequence of Brexit, with three-quarters expecting a deterioration in the overall business environment in the long term. The outlook for corporate revenues had slumped but the cost and availability of credit remained favourable. In contrast to that survey of Chief Financial Officers, investment intentions reported by the Bank of England's regional agents (2018b) appear to have only slightly softened in the third quarter of 2018. Figure 5.7 shows that these clearly slowed after the EU Referendum vote but picked up again in 2017. They have remained relatively strong in both manufacturing and services. However, investment intentions in services were weaker than before that vote.

5.50 Regional agents at the Bank of England (2018b) reported that investment intentions had softened as a result of increased economic and political uncertainty, especially those associated with the UK’s withdrawal from the EU. This had led some firms to delay or postpone investment, while a few others had diverted investment to other countries. Exporters and those with international supply chains were waiting for more clarity on future access to EU markets before committing to investment plans. Investment, however, was not completely on hold. Some companies were investing in contingency planning, such as alternative transport and logistics arrangements or building stocks of imported components. Few had started to implement them. Away from Brexit, investment continued for routine maintenance, enhancing security, and to meet regulatory or compliance standards. They also reported that investment in automation had been boosted by the tightening labour market.

Figure 5.7: Investment intentions, UK, 2010-2018



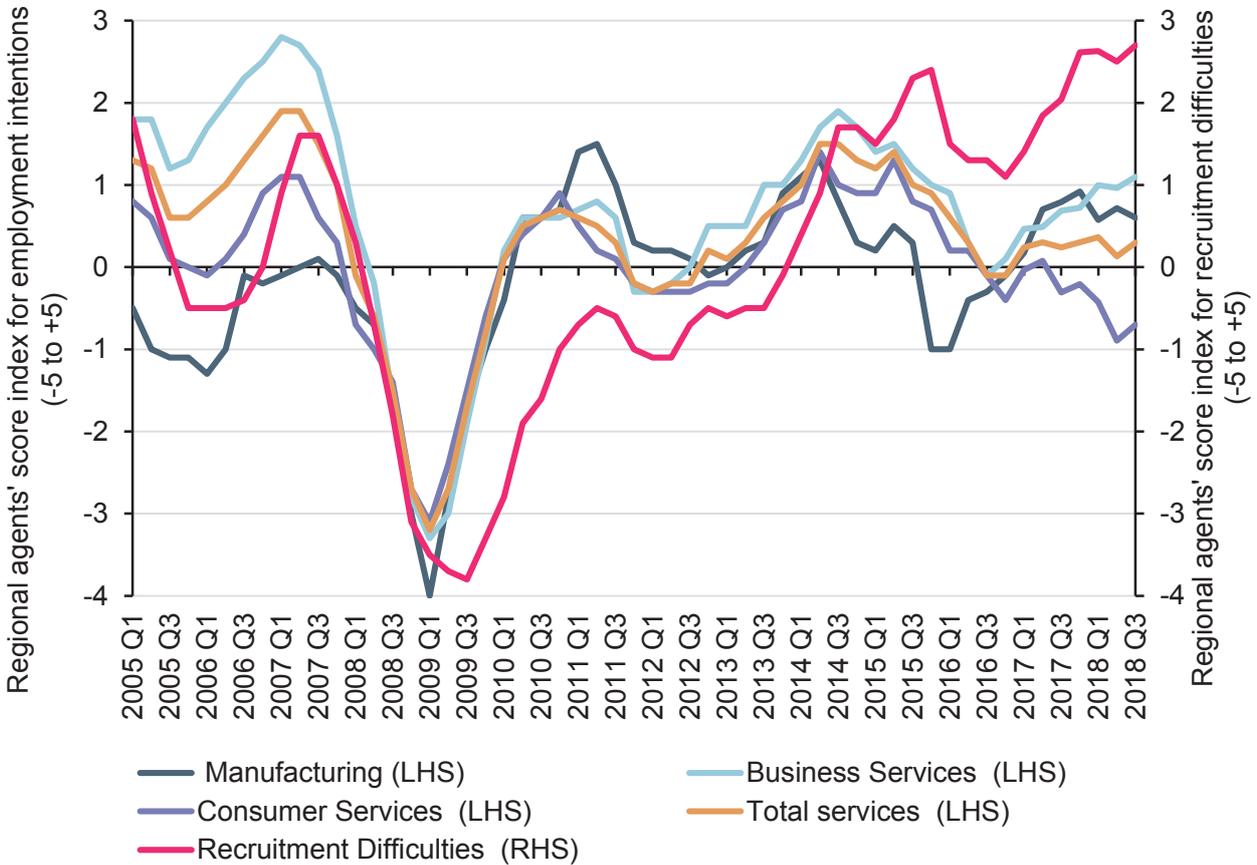
Source: Bank of England; Agents scores, monthly, UK, 2010-18.

Hiring intentions remain robust, except in consumer services

5.51 Bank of England regional agents also report employment intentions and recruitment difficulties across the economy. Figure 5.8 shows that employment intentions in services and manufacturing started to weaken in 2014 and continued to weaken until the end of 2016. Since then, employment intentions across the economy have rebounded – except for those in consumer services. That rebound has been strongest in business services and manufacturing. Employment intentions in consumer services, which covers the majority of minimum wage workers, have continued to weaken and are now lower than at any point since the recession. Although there had been growth in hospitality and tourism jobs, the Bank of England regional agents (2018b) reported that this had been offset by reductions in the headcount among retail staff.

5.52 An increasing number of employers were looking at the whole work package to attract and retain workers, including changes to working conditions and arrangements. In some cases, this had resulted in fewer hours worked. Firms also reported reducing hours as a way of containing overall labour costs or as a consequence of realising efficiency gains from automation.

Figure 5.8: Employment intentions and recruitment difficulties, UK, 2005-2018



Source: Bank of England; Agents scores, monthly, UK, 2005-18.

5.53 The BCC (2018) reported that employment expectations had slowed slightly in the third quarter of 2018 in both manufacturing and services. However, the net balance of employment expectations was similar to that reported before the crisis, and only slightly weaker than reported in 2015 – when employment growth was particularly strong. Firms in both sectors had also increased investment in training more strongly than in that immediate post-crisis period. However, it also reported that service sector recruitment was at its lowest level for 25 years and that this was weakest in London. Of those service sector firms that had tried to recruit, the percentage experiencing difficulties was higher than had ever been recorded since the survey began in 1989.

5.54 In its Report on Jobs, the Recruitment & Employment Confederation-IHS Markit (IHS Markit 2018) reported that permanent placements had continued to rise at the end of the third quarter of 2018, although it noted that the pace had softened but was still strong. Temporary placements also increased strongly. The number of vacancies for both permanent staff, and temporary and contract staff, across the UK continued to rise, albeit the growth in vacancies had slowed to a two-year low. Private sector vacancies grew more strongly than those in the public sector.

5.55 The Recruitment and Employment Confederation (REC, 2018), in their Jobs Outlook, found that despite confidence in the economy falling, firms remained confident in making hiring decisions in both the short term (the next three months) and the medium term (the next four to twelve months). These were stronger for permanent hires than temporary ones. Medium-sized firms (50-249 employees) were more optimistic than either larger firms (250 or more employees) or micro and small firms (0-49 employees) in their intentions to hire permanent staff, while micro and small firms were more likely than larger firms to hire temporary agency staff.

While employment intentions are robust, recruitment difficulties are a concern

5.56 The labour market has been tightening with total employment at record levels and continuing to grow, employment rates at or near record highs, and unemployment falling to its lowest levels for over 40 years. Three main sources have driven the increase in labour supply: migrants (both from the EU and elsewhere); those over the statutory retirement age; and those who were out of the labour market, particularly women with children. However, there are signs that the growth in these sources has slowed and may have peaked. After the end of the recession, the employment rate for all those aged 16 and over had fallen to 70.6 per cent – its lowest rate since January 1997 – but since then it has increased strongly reaching 75.7 per cent in May 2018. It had fallen back to 75.5 per cent in August 2018. But that was still historically high. Total employment was also slightly down on that May peak.

5.57 The Bank of England regional agents (2018b) reported that recruitment had become more difficult than at any time since 2001. Some cited labour market tightness in general. For those in agriculture, manufacturing and hospitality, skill shortages were exacerbated by continued reductions in the inflow of EU migrants. Recruitment difficulties were being addressed by upskilling existing staff, hiring less qualified and lower-skilled workers, taking on more apprentices, and investing in automation to improve productivity. Few firms had increased salaries across the board – average pay settlements were only a little higher than a year ago – although some had made ad hoc payments to retain key staff and others had been under pressure to maintain pay differentials in line with the National Living Wage.

5.58 Likewise, the REC (2018) found that staff availability continued to deteriorate among both permanent and temporary staff, and this had led to increased pressures on pay for both permanent and temporary workers. Its survey flagged employer concerns about the availability of candidates and skill shortages. Employers were particularly concerned about the availability of sufficiently qualified candidates for permanent health and social care jobs.

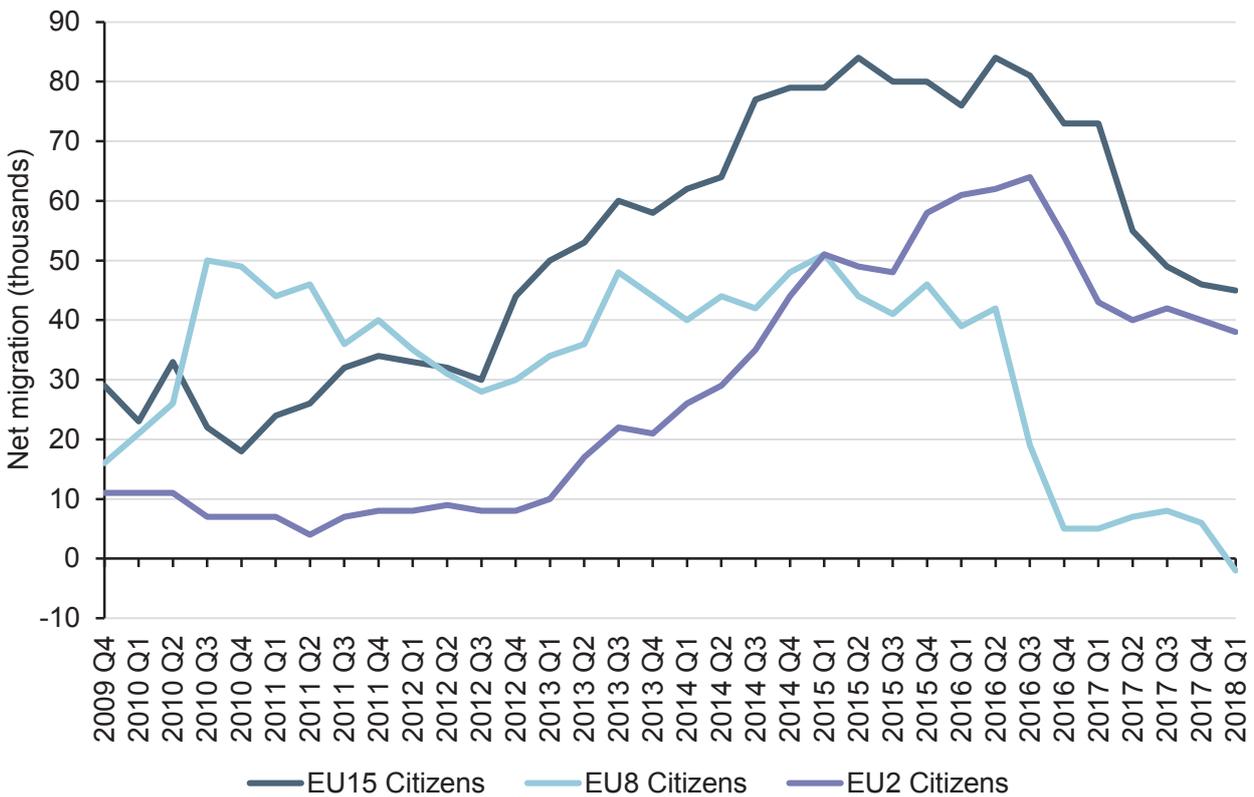
Migration has slowed

5.59 Between the third quarter of 2014 and the second quarter of 2016, net migration averaged around 325,000. Since the EU Referendum in June 2016, it has slowed and has since averaged around 275,000 (using adjusted data that accounts for unusual patterns among migrant students in 2016). The latest migration data, in the year to March 2018, found that net migration was 271,000. Around 614,000 people migrated to the UK, while 344,000 departed.

5.60 There is a clear difference in recent trends between EU and non-EU citizens. Net migration for EU citizens has fallen from an average of 177,000 between the second quarters of 2014 and 2016, to an average of 117,000 between the second quarter of 2016 and the first quarter of 2018. That compared with an increase in the average from 194,000 to 211,000 for non-EU citizens over those two periods. Net migration among British citizens was little changed over the same periods, increasing from an average of 47,000 to 53,000. In the first quarter of 2018, net migration was just 87,000 for EU citizens compared with 235,000 for non-EU citizens.

5.61 Figure 5.9 clearly shows the fall in net migration among EU citizens since June 2016. The largest reductions in net migration have been among those from the EU8 countries – those mainly Eastern European countries that joined the EU in 2004. Net migration fell from 42,000 in the second quarter of 2016 to -2,000 in the first quarter of 2018 – that is, 2,000 more left than entered the UK. The slowdown in net migration for Bulgarians and Romanians is also noticeable – down from 62,000 to 38,000. For those from the pre-2004 members of the EU, net migration is larger but there have also been large changes – falling from 84,000 in the year to June 2016 to 45,000 in the year to March 2018.

Figure 5.9: Net migration to the UK from the EU, 2009-2018



Source: LPC estimates using ONS data: Long-term international migration and international passenger survey, UK, Q4 2009-Q1 2018.

5.62 Migration, particularly from the EU, has also been an important component of the recent increase in the UK workforce. In the second quarter of 2018, there were around 5.6 million non-UK born workers in the UK, accounting for just over 17 per cent of the workforce. Of these, around 2.4 million were from the EU and they accounted for just over 7 per cent of the workforce. In December 2003, there were 2.6 million non-UK born workers in the UK accounting for just 9 per cent of the workforce, with the EU accounting for less than 3 per cent of the workforce. The number of non-UK EU-born workers more than tripled over this period from 0.75 million to 2.35 million.

National Minimum Wage

The largest increases came from the EU8 countries. The number of EU14-born workers increased by 394,000 between December 2003 and June 2018. That compared with an increase of 845,000 in the number of EU8-born migrants and 384,000 in the number of Romanians and Bulgarian-born workers. There has been a noticeable change since the result of the EU Referendum with the increase in numbers slowing. Indeed, between June 2017 and June 2018, the number of EU-born workers fell by 18,000, with the fall being 101,000 for those born in EU8 countries. There were small offsetting increases among other EU-born workers. A growing perception that migrant workers are not welcome, the depreciation of sterling and increases in domestic wages (particularly the large increases in minimum wages) in many of these former Eastern European countries may have reduced the attractiveness of the UK.

5.63 Concerns about the future workforce have been raised by business organisations in many low-paying sectors, as EU workers are disproportionately concentrated in agriculture, horticulture, food processing, hospitality, and warehousing and logistics. The alternatives to the use of EU labour include non-EU labour, UK-born labour, or automation. Given that the Government is committed to reducing migration, it seems unlikely that EU labour would be replaced by non-EU labour. The current visa system for non-EU nationals allows skilled workers to apply for vacancies not filled by EU nationals (including UK citizens), which have been identified by the Migration Advisory Committee as shortage occupations. There is a minimum income threshold of £30,000 required – well above any minimum wage. There do not appear to be any plans to encourage unskilled migrant workers to fill any jobs vacated by EU migrants.

5.64 The employment rates of UK-born and UK nationality workers are the highest they have been since the series began (in 1997) and medium-term forecasts for total employment imply that these are likely to remain at or close to these record levels. Those with employment rates that are currently lower – women, older workers, some ethnic minority workers and those with disabilities – have also experienced recent increases in their employment rates.

Labour market participation of older workers remains high

5.65 Between July 2009 and September 2016, the employment rate of those aged 65 and over increased from 7.6 per cent to 10.8 per cent. The numbers employed increasing by around 67 per cent from 0.74 million to a record of 1.23 million. However, employment then fell back. By July 2017, the employment rate for this age group had fallen to 10.0 per cent. Since then, there has been some rebound with the employment rate rising close to its previous high, at 10.7 per cent in July 2018, when total employment for this age group reached a new peak at 1.26 million. While male employment rates among this age group appear to have peaked in September 2016 at 14.4 per cent, those for women have continued to increase. They rose from 5.0 per cent in February 2009 to 7.6 per cent in September 2016 and to 7.9 per cent in August 2018, when the male employment rate had fallen back to 13.4 per cent. There are several factors that might help boost employment among this age group in the short to medium term: the increase in female participation as the equalisation of the state retirement age is rolled out; future increases to the state retirement age to 67; and the boost from the post-war baby boom (with employment rates for both males and females increasing among the 50-64 year old age group in recent years).

Labour market participation of women, particularly mothers, has reached record highs

5.66 The employment rates for women aged 25-49 have also increased strongly since July 2009 – rising from 70.9 per cent for those aged 25-34 to reach 77.2 per cent in August 2018, and from 75.9 per cent to 79.5 per cent for those aged 35-49. Conversely, their inactivity rates have also fallen sharply over the same period. ONS (2018h) reported how the employment of men and women aged 16-64 with and without children in England had changed over the last two decades. It noted that the most dramatic changes in employment rates had been among mothers. The employment rate for mothers (with dependent children) has increased from 61.9 per cent in 1996 (when comparable records began) to 74.0 per cent in June 2018. That compared with 69.7 per cent for women without dependent children. Prior to 2009, the employment rate for women without dependent children had consistently been higher than that for mothers. However, mothers generally work fewer hours than women with no dependent children. Only around half of mothers worked 30 hours or more in June 2018, compared with almost 70 per cent of women with no dependent children. In contrast, the employment rate for fathers has been significantly above that for men with no dependent children since these records began in 1996.

Labour market continues to be resilient but may weaken

5.67 After several years of strong labour market performance, job growth slowed in 2018 to 0.4 per cent. The forecasters expect job growth to remain around this level in the next year or so. The Bank of England (2018a) noted that output in 2017 and the first quarter of 2018 had grown broadly in line with expectations at the time of its February 2017 Report, but that employment had grown faster. That faster employment growth had led to the unemployment rate falling faster than expected. That, along with weaker wage growth, had forced the Monetary Policy Committee to revise its estimate of the equilibrium unemployment rate to 4¼ per cent in February 2008. It argued that this reduction was a result of increased labour market flexibility (which had reduced the flows into unemployment) and increases in the average age and educational attainment of the workforce. Although it projected unemployment to fall below the equilibrium rate in the second quarter of 2018 to 4.1 per cent, the Bank of England (2018a) argued that this was consistent with a tight labour market.

5.68 The Bank of England (2018a) also noted that employment intentions in most surveys were above historic averages and that tightness, as measured by the number of vacancies relative to the size of the labour force, continued to rise. Recruitment difficulties also appeared elevated in surveys across the economy. Further, job-to-job flows, which had fallen sharply during the crisis, had picked up towards those previous levels. In addition, it argued that there was no spare capacity among the inactive and that going forwards there was limited scope for participation to rise. The increased participation rates of older people in recent years would be offset in the aggregate by falling participation as the workforce aged. However, it did point to some slack in the labour market. Measures of those wanting to work more hours had fallen but were still above pre-crisis levels, as was the proportion of those working part-time but who wanted full-time jobs. It did add that this boost to hours may be offset by the structural downward trend in average hours as the workforce aged, with older workers tending to want fewer hours.

5.69 It thus suggested that, with little labour market slack, employment growth would be limited by the growth in population. Assuming population grows in line with the latest ONS population projections, which assumes slower growth than in recent years due to lower net migration, employment growth is expected to ease to 0.5 per cent in both 2019 and 2020. The HM Treasury panel of independent forecasts expects job growth of similar magnitude, 0.4 per cent, in 2019.

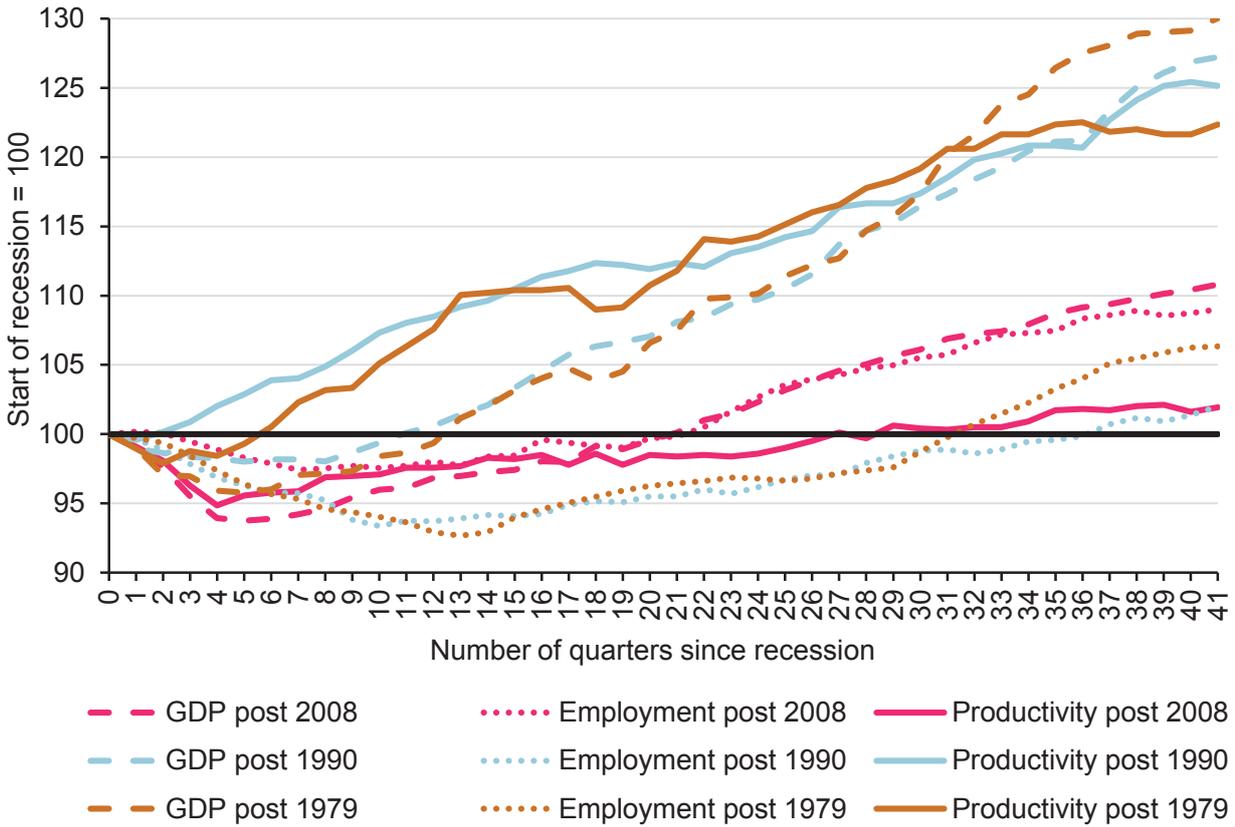
5.70 Despite that reasonable employment growth, the Bank of England (2018a) expects the unemployment rate to increase from 4.0 per cent in 2018 to 4.1 per cent in 2019 and remain at the new equilibrium rate in 2020. The median from the HM Treasury panel of independent forecasts has unemployment picking up to 4.2 per cent in 2019 and 4.4 per cent in 2020.

5.71 Although total employment has also shown strong growth over the year, growing by 289,000 or 0.9 per cent, it has plateaued in recent months. Total employment in the three months to August 2018 was the same as the equivalent figure for April. This may indicate some weakening. However, workforce jobs and employee jobs grew by 0.2 per cent between March and June 2018. In addition, unemployment has continued to fall. In the three months to August 2018, the headline unemployment rate was 4.0 per cent and that for the working age population was 4.1 per cent – the lowest since comparable records began in 1992.

Productivity growth continues to disappoint

5.72 As we noted in Chapter 1, the UK's productivity performance since the end of the 2008-9 recession has been weak. Productivity – whether measured as output per worker, per job or per hour – in the second quarter of 2018 was only around 2 per cent higher than in the second quarter of 2008. Prior to the financial crisis, productivity had grown by around 2 per cent a year on each of these measures. Figure 5.10 compares the recovery, in the ten years after the onset of the recession, from the latest recession with the two previous ones in the 1980s and 1990s. There are notable differences in output, employment and productivity performance. Ten years after the recessions in the 1980s and 1990s, output was around 27-30 per cent higher than at the start of the recession. Ten years after the latest recession, output is only 11 per cent higher. However, the employment performance has been much better. Job losses during the latest recession were less than in the previous two recessions, while subsequent job growth has also been stronger. Employment was 9 per cent higher in the second quarter of 2018 than in the second quarter of 2008. That compared with employment growth of 6 per cent in the ten years after the onset of the 1980s recession and just 2 per cent in the ten years following the 1990s recession.

Figure 5.10: Output, employment and productivity growth, UK, 1979-2018

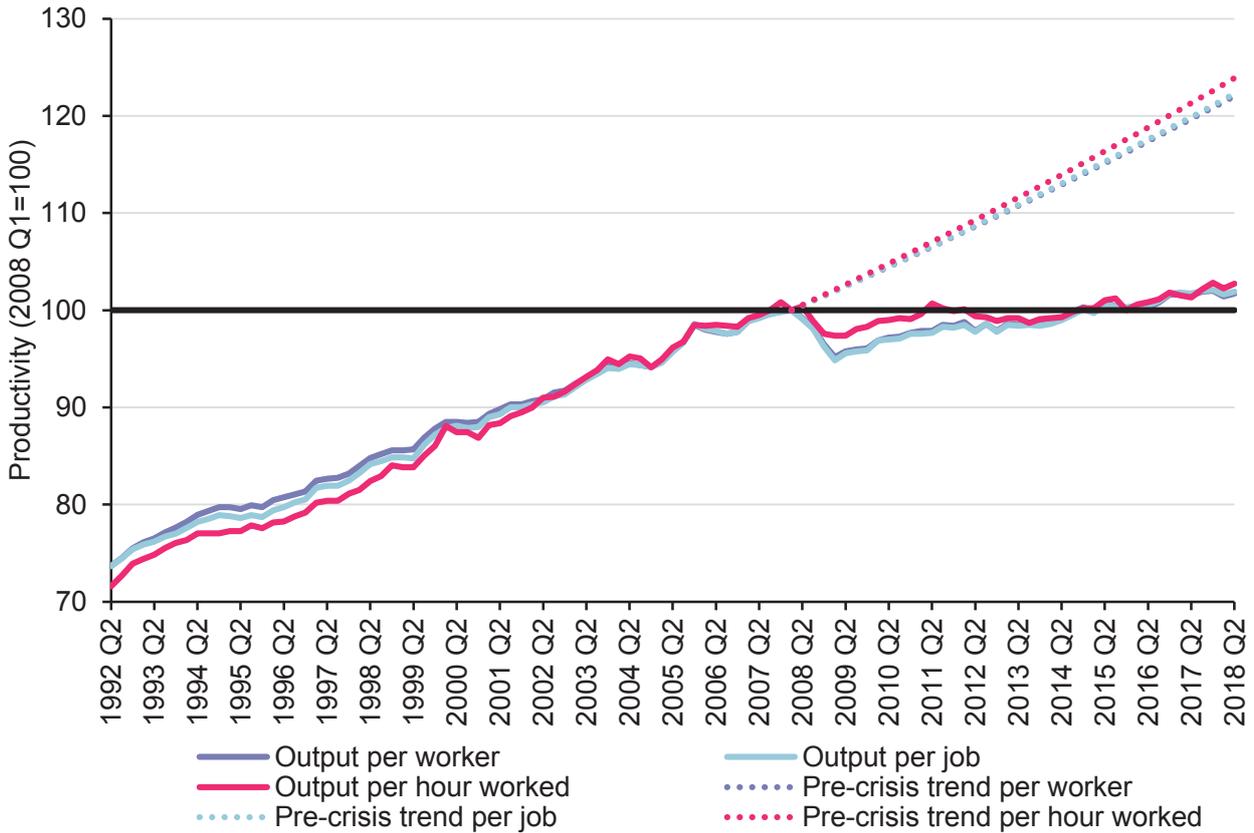


Source: LPC estimates using ONS data: GDP (ABMI); total employment (MGRZ); and output per worker (A4YM), quarterly, seasonally adjusted, UK, Q3 1979-Q2 2018.

5.73 That differing performance on output and employment has meant differing outcomes for productivity. With output growth weaker and job growth stronger than in the other two recessions, productivity growth has been much weaker since 2008 than it was after the 1980s and 1990s recessions. Productivity has grown by only 2 per cent in the last ten years. In the ten years after the 1980s and 1990s recessions, it had grown by 22 per cent and 25 per cent respectively.

5.74 In Chapter 1, we also noted that productivity had been growing by around 2 per cent a year in the pre-crisis period. Figure 5.11 looks at what would have happened if productivity growth had continued on those pre-crisis trends. Output per job and output per worker would now be 22 per cent higher than in 2008 – rather than less than 2 per cent higher – while output per hour would have been around 24 per cent higher instead of less than 3 per cent higher.

Figure 5.11: Productivity, UK, 1992-2018



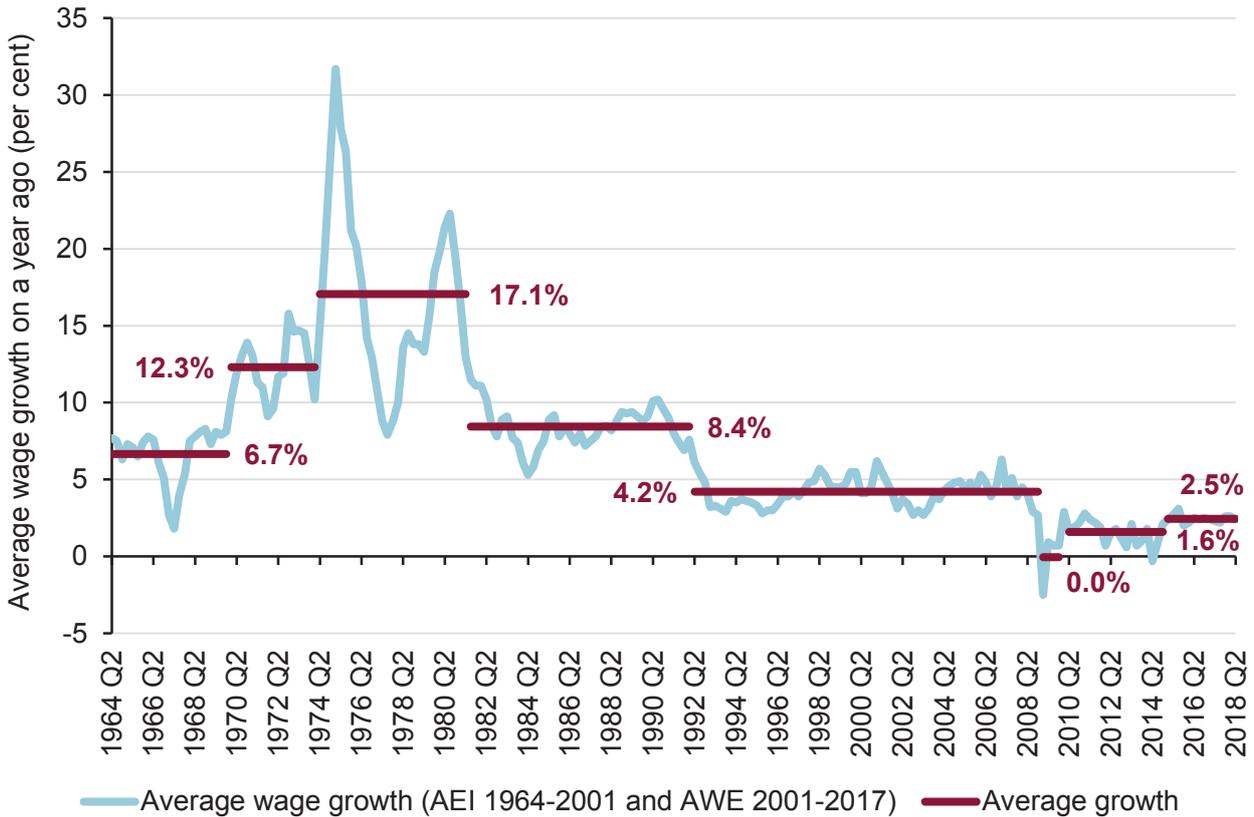
Source: LPC estimates using ONS data: output per worker (A4YM), output per job (LNNN), output per hour (LZVB), quarterly, seasonally adjusted, UK, Q2 1992-Q2 2018.

5.75 That would suggest that the level of productivity on all three measures is around 20 per cent lower than had those previous trends continued. The current slowdown in productivity is unprecedented. It is also expected to continue. The Bank of England (2018a) forecasts productivity to grow at just 1 per cent in 2018, rising slowly to around 1¼ per cent in 2019 and 2020. That implies that the gap between the pre-crisis trend productivity and actual productivity is set to increase further over the next few years.

Pay growth has picked up to a new norm around 2.5 per cent

5.76 Average earnings growth continued to be modest but has shown signs that it is picking up. As shown in Figure 5.12, between the end of 2014 and the second quarter of 2018, average earnings growth averaged around 2.5 per cent a year. That was an improvement on the anaemic wage growth experienced in the aftermath of recession – an average of around 1.6 per cent. However, in the period between the end of the 1990s recession and the onset of the financial crisis, average wage growth had averaged 4.2 per cent. That in turn was much lower than the nominal pay growth experienced in the 1960s, 1970s and 1980s but inflation in the immediate pre-financial crisis period was considerably lower.

Figure 5.12: Average earnings growth, GB, 1964-2018

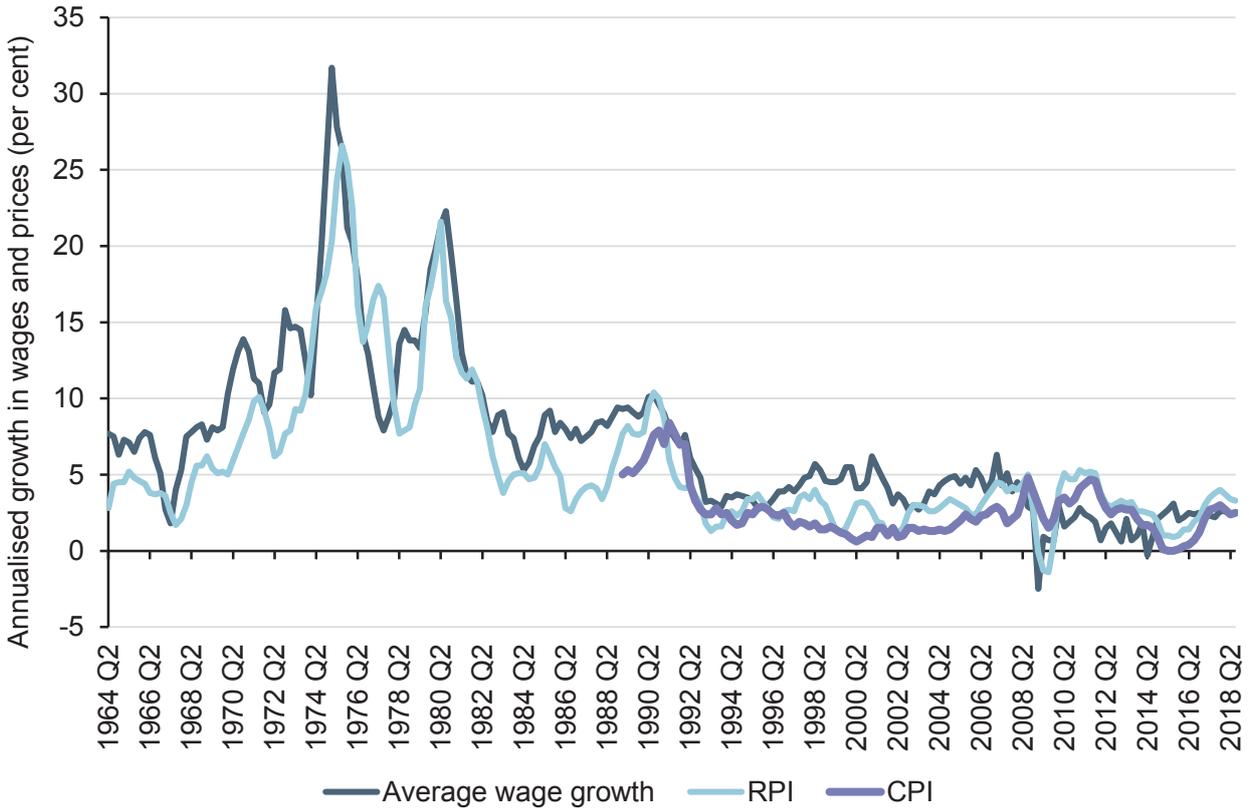


Source: LPC estimates using ONS data: Average Earnings Index including bonuses (LNNC), quarterly, seasonally adjusted, GB, 1964-2001; and Average Weekly Earnings total pay (KAB9), quarterly, seasonally adjusted, GB, 2000-2018.

The relationship between pay growth and inflation has become weak

5.77 The relationship between inflation and average earnings growth appears to have broken down since the financial crisis. Between 1964 and 2008, as shown in Figure 5.13, nominal average earnings growth was generally above inflation, heralding real wage increases, but there is evidence that wage increases moved in line with price rises, and in some instances that price rises followed wage increases. However, since 2008, that relationship appears to have considerably weakened. The large rises in inflation in 2010 and 2011, and in 2017 do not seem to have led to corresponding wage increases.

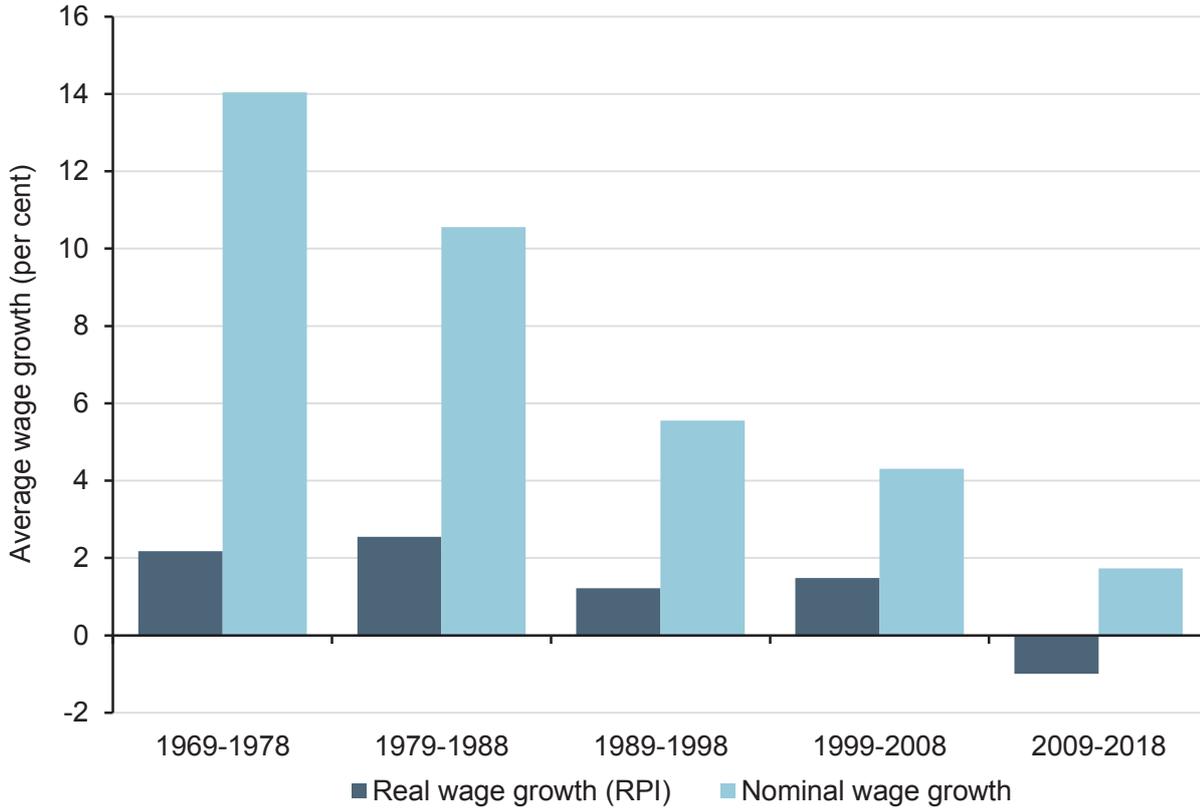
Figure 5.13: Average earnings growth and inflation, GB, 1964-2018



Source: LPC estimates using ONS data: AEI including bonuses (LNNC), quarterly, seasonally adjusted, GB, 1964-2001; AWE total pay (KAB9), quarterly, seasonally adjusted, GB, 2000-2018; and RPI (CZBH), quarterly, UK, 1964-2018.

5.78 Indeed, there appears to have been a significant change in the UK labour market with regards to the behaviour of real wages. Figure 5.14 clearly demonstrates the patterns observed in Figure 5.12, which had shown that nominal pay growth had fallen over time from the 1970s onwards. In the decade covering 1969-78, nominal average earnings growth was around 14 per cent a year. It then fell in subsequent decades to under 11 per cent in the 1980s, just over 5 per cent in the 1990s, and 4 per cent in the 2000s. Average earnings growth has grown by just 2 per cent a year on average since 2009. However, taking account of inflation, real wage growth was similar across the decades prior to the financial crisis – at around 2 per cent. It was slightly higher than that in the 1980s and a bit lower in the 1990s and 2000s. The period after 2009 is different and unprecedented. Between 2009 and 2018, real average earnings growth actually fell by 1 per cent each year on average.

Figure 5.14: Real and nominal average earnings growth, GB, 1969-2018

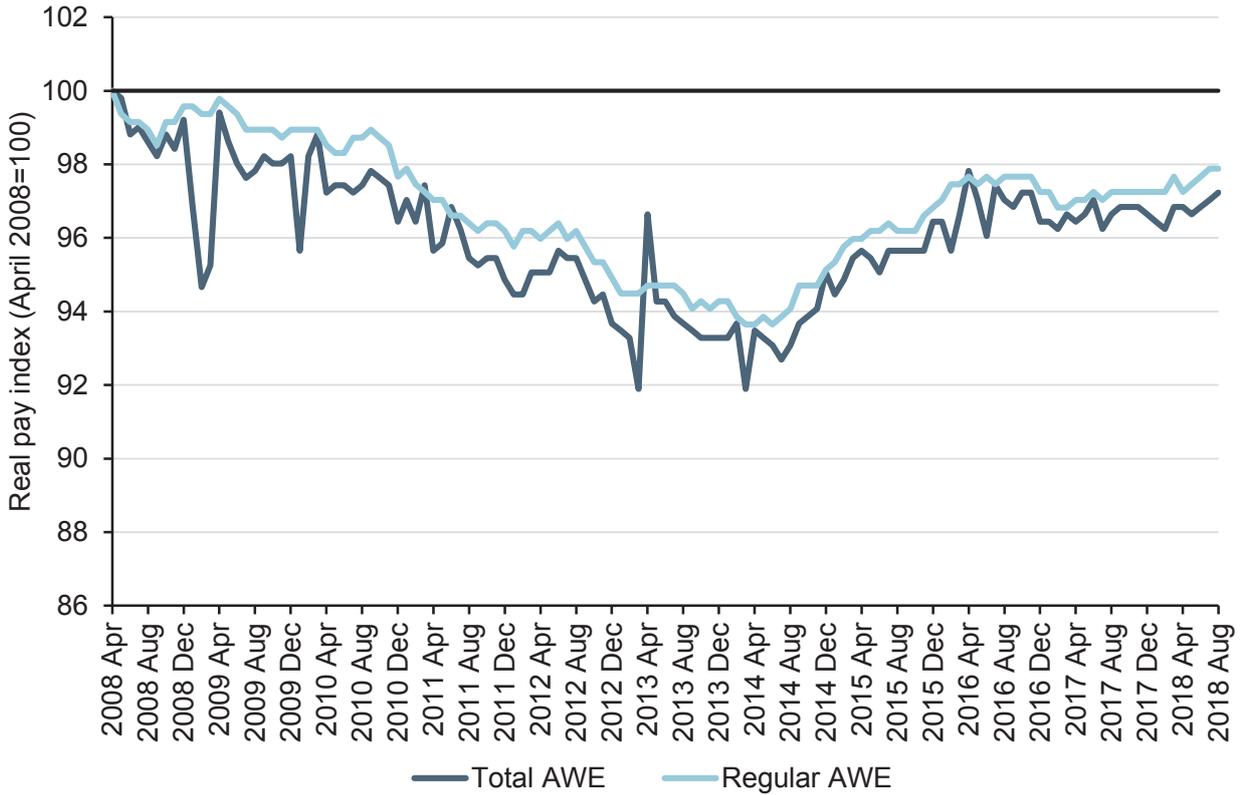


Source: LPC estimates using ONS data: AEI including bonuses (LNNC), quarterly, seasonally adjusted, GB, 1969-2001; AWE total pay (KAB9), quarterly, seasonally adjusted, GB, 2000-2018; and RPI (CZBH), quarterly, UK, 1969-2018.

5.79 That analysis above used the Retail Price Index as the inflation deflator as it is the only consistent measure of inflation that goes back to the 1960s. However, RPI inflation tends to be a bit higher than the current official measure, the Consumer Price Index including housing costs (CPIH). Thus, real wage growth will tend to be greater using CPIH. However, even on this measure, Figure 5.15 shows that real average weekly earnings (total pay) and real average weekly earnings (regular pay) are still 2 and 3 per cent below their levels in April 2008, when the financial crisis began to affect the labour market.

5.80 As we showed in Figure 1.33, the UK's performance on real wages has been particularly poor when compared with other countries over the last decade. Of OECD countries, only Mexico and Greece have suffered larger falls in real wages.

Figure 5.15: Real average earnings growth, GB, 2008-2018

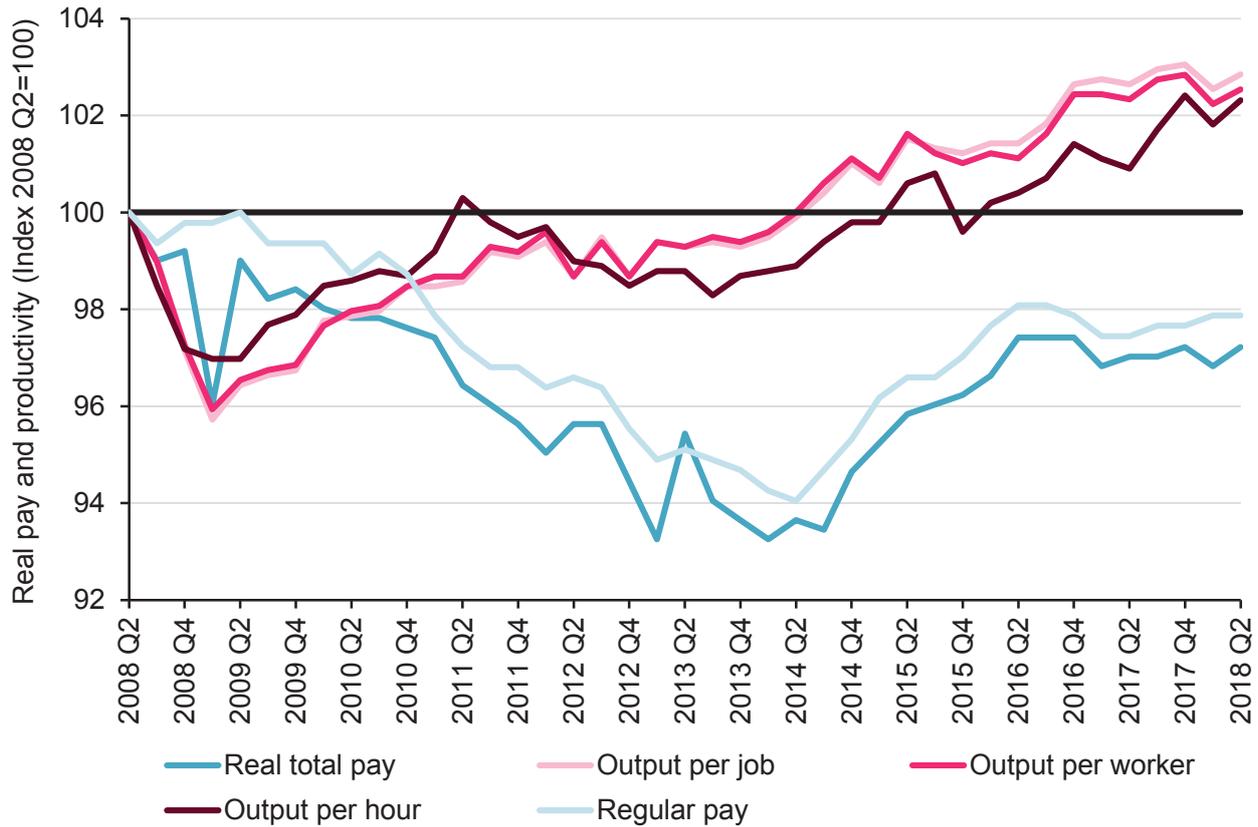


Source: LPC estimates using ONS data: Real AWE total pay (A3WX) and real AWE regular pay (A2FC), monthly, seasonally adjusted, GB, 2008-2018.

Since the recession, pay has not kept pace with productivity

5.81 As we have noted, most economic models expect nominal pay growth to track productivity growth plus inflation, at least in the long run. In other words, most forecasts expect real wages to track productivity growth. Figure 5.16 shows that has not been the case since the onset of recession. Despite the weakness in productivity growth in this period, real pay growth has not kept pace. Output per job, per worker and per hour all grew by around 2-3 per cent over the ten years between the second quarter of 2008 and the second quarter of 2018. In contrast, over the same period, real total average weekly earnings and real regular weekly earnings fell by around 2-3 per cent. That might indicate that there may be some scope for real wages to grow faster than productivity over the coming period.

Figure 5.16: Real average earnings growth and productivity growth, GB, 2008-2018

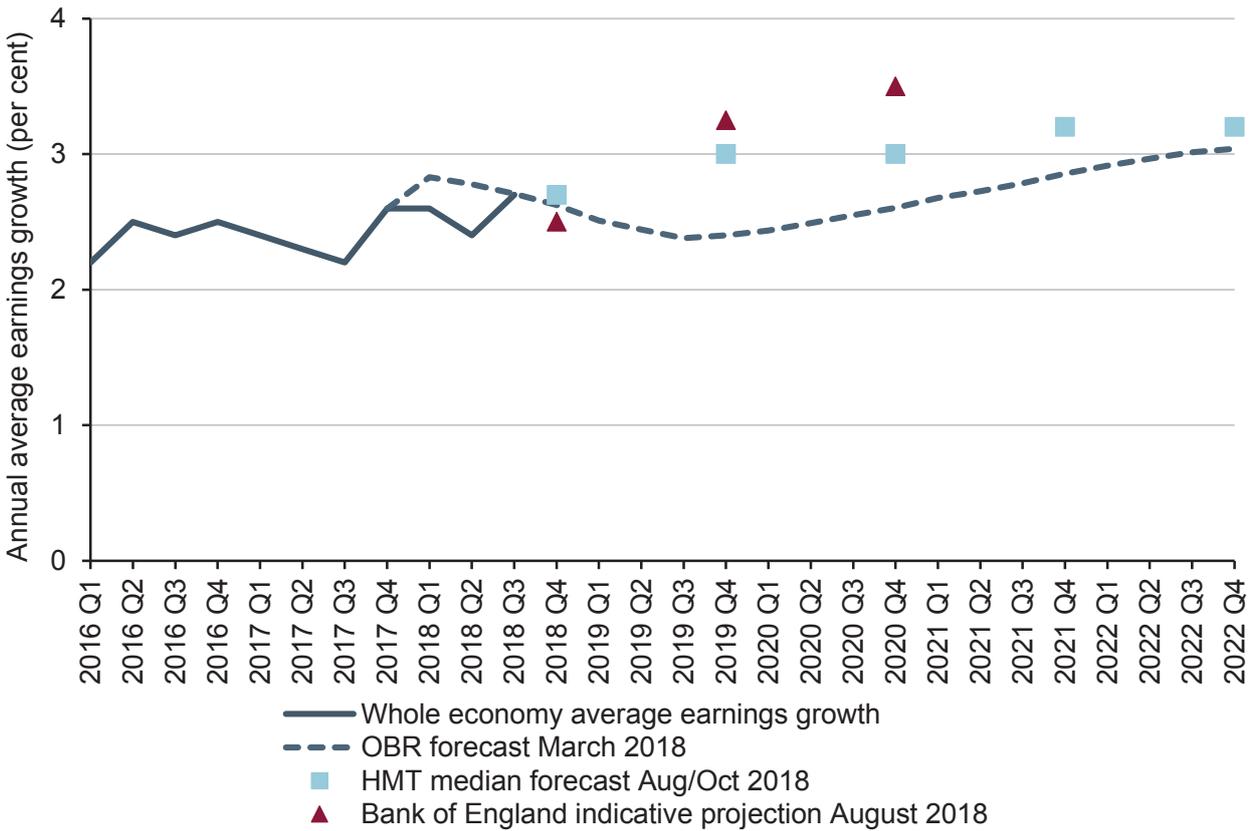


Source: LPC estimates using ONS data: Real AWE total pay (A3WX) and real AWE regular pay (A2FC), monthly, seasonally adjusted, GB, 2008-2018.

Independent consensus on earnings growth expects a modest pick-up in 2019, with real earnings growth at a post-recession high

5.82 Forecasts for annual average earnings growth from the Bank of England and the HM Treasury panel of independent forecasts suggest a continuation in the recent pick-up in average earnings growth to reach 3 per cent in 2019, as shown in Figure 5.17. The OBR (2018a) forecast from March 2018, which may now be a little dated, expected a pick-up in the first quarter of 2018 based on early data showing a rise in pay settlements, but a fall back in earnings growth in 2019 as this was not sustained. In August 2018, the Bank of England (2018a) was expecting higher average earnings growth of 3¼ per cent in 2019 and 3½ per cent in 2020 following an expected rise in productivity growth and a tighter labour market. Coupled with a further fall in inflation, this suggests real earnings growth of up to 1 per cent in 2019, which, while modest by long-term standards, would be the highest rate for a decade.

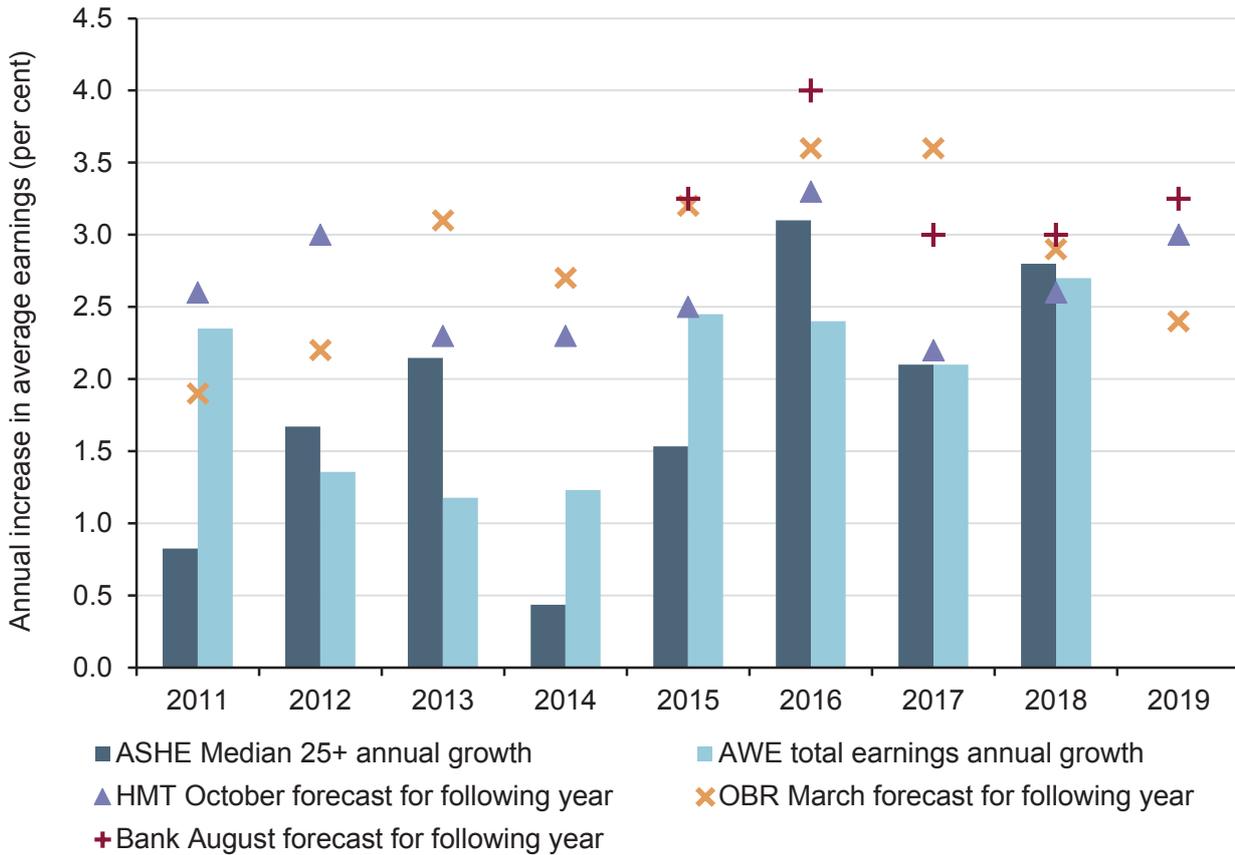
Figure 5.17: Average earnings growth and forecasts, UK, 2016-2022



Source: ONS, AWE total pay (KAC3), quarterly, seasonally adjusted, GB, 2016-2018; OBR (2018a); HM Treasury panel of independent forecasts (2018a and b), Bank of England (2018a) average weekly earnings projections.

5.83 Figure 5.18 shows that earnings forecasts persistently over-estimated the level of average earnings growth between 2011 and 2017. Most economic models expected earnings growth to encompass inflation on top of productivity growth. But recent years have seen unexpectedly low productivity growth, coupled with average earnings growth that has failed to keep up with inflation. Furthermore, it had been assumed that historic low levels of unemployment would provide an upward push to earnings, which has not yet proved to be the case. Last year lower earnings growth forecasts for 2018 in part reflected an adjustment of the underlying economic models to the reality of labour market out-turns, of low productivity growth, weak pay expectations, and a flexible labour supply, and have proved more accurate as a result.

Figure 5.18: Average earnings growth, forecasts and outcomes, 2011-2019



Source: LPC estimates using: ONS AWE total pay (KAB9) annualised, monthly, seasonally adjusted, GB, 2011-2018; ASHE, April 2011-18, standard weights, UK; HMT panel of independent forecasts, October 2011-18; OBR average earnings forecasts 2011-18; and Bank of England average weekly earnings projections, 2015-18.

Note: The data for 2018 is for January-August 2018, compared with January-August 2017.

5.84 In a recent survey of private sector pay expectations for 2019, conducted by XpertHR and published in October 2018, private sector employers predicted a 2.4 per cent median pay award over the year to August 2019, suggesting that the increase in pay awards seen in 2018 will be sustained, but there is not expected to be a further pick-up. The most common pay award expected was 2 per cent, with around a third of predictions at this level. The interquartile range of pay awards is expected to be 2.0 to 3.0 per cent, the same as in 2018. The latest quarterly survey of pay expectations by the Chartered Institute of Personnel and Development (CIPD, 2018c), published in August 2018, did not reflect this year’s pick up in pay awards. It found that employers expected a median basic pay increase of 2.0 per cent in the 12 months to June 2019. This figure has been consistently at 2.0 per cent in the private sector since 2012, but the latest survey saw a pick-up in public sector expectations from 1.0 to 1.5 per cent.

Summary of the economy

5.85 In summary, Table 5.1 shows that the forecasts for GDP growth in 2019 and 2020 are expected to be slightly higher than the growth in 2018 but in line with the growth in 2016 and 2017 (around 1.7-1.8 per cent). This would represent four years of below-trend growth using the trends from 1955-2007, 1992-2007 or even 2010-2016. Employment growth is expected to be more modest in 2019 at around 0.4 per cent – similar to that in 2018 but below the strong job growth experienced in 2016 and 2017 – but that is not considered enough to prevent unemployment rising slightly, albeit remaining historically low.

Table 5.1: Forecasts for 2018-22, 2018

| | OBR forecasts (March 2018) | | | | | Bank of England forecasts (August 2018) | | | Median of HM Treasury Panel (August/October 2018) | | | | |
|---|-------------------------------|------|------|------|------|---|------|------|--|------|------|------|------|
| | 2018 | 2019 | 2020 | 2021 | 2022 | 2018 | 2019 | 2020 | 2018 | 2019 | 2020 | 2021 | 2022 |
| GDP Growth (whole year) | 1.5 | 1.3 | 1.3 | 1.4 | 1.5 | 1.4 | 1.8 | 1.7 | 1.3 | 1.5 | 1.7 | 1.8 | 1.9 |
| Average Earnings AWE (whole year) | 2.7 | 2.4 | 2.5 | 2.8 | 3.0 | 2.5 | 3.3 | 3.5 | 2.7 | 3.0 | 2.9 | 3.0 | 3.0 |
| Inflation RPI (Q4) | 3.7 | 3.0 | 2.9 | 2.9 | 3.0 | | | | 3.3 | 3.0 | 3.0 | 3.2 | 3.2 |
| Inflation CPI (Q4) | 2.4 | 1.8 | 1.9 | 2.0 | 2.0 | 2.3 | 2.2 | 2.0 | 2.4 | 2.0 | 2.1 | 2.0 | 2.1 |
| Employment growth (whole year)³ | 0.6 | 0.4 | 0.4 | 0.3 | 0.3 | 1.3 | 0.5 | 0.5 | 1.0 | 0.4 | | | |
| ILO unemployment rate (Q4) | 4.4 | 4.5 | 4.6 | 4.6 | 4.6 | 4.1 | 4.0 | 4.0 | 4.1 | 4.2 | 4.4 | 4.5 | 4.5 |

Source: OBR (2018a); Bank of England (2018a); and HM Treasury panel of independent forecasts (2018a and b); GDP growth (ABMI), total employment as measured by workforce jobs (DYDC) and ILO unemployment (MGSC), quarterly, and AWE total pay (KAB9), monthly, seasonally adjusted; RPI (CZBH) and CPI (D7G7), quarterly, not seasonally adjusted, UK (GB for AWE).

Note: Bank of England forecasts of ILO unemployment rates are for the third quarters, 2018-20.

5.86 After peaking in the fourth quarter of 2017 at over 3 per cent, CPI inflation is expected to fall back towards the 2 per cent target in 2019. RPI inflation is expected to fall back towards 3 per cent, having peaked at over 4 per cent at the end of 2017. Wage growth is expected to pick up in 2019 and 2020. The Bank of England's forecasts for wage growth are again higher than the median of the HM Treasury panel of independent forecasts, with wage growth of 3¼ per cent in 2019 and 3½ per cent in 2020 compared with around 3 per cent for the panel in both years.

Implications for the NLW

5.87 We use our panel of wage forecasts made up of those that have contributed in the last four months to the monthly HM Treasury panel of independent forecasts. This panel consists of 26 organisations, who all contribute wage forecasts for 2018 and 2019. In addition, we use the medium-term forecasts made in the last four months from the HM Treasury panel of independent forecasts, available quarterly. Those wage forecasts cover five years (2018-22). Fewer forecasts are available for the medium term with just 16 contributing to 2020, and 15 to those in 2021 and 2022. In addition, we add the August wage forecasts from the Bank of England (2018a) for 2018-2020 to this panel.

5.88 Table 5.2 shows that the wage forecasts for 2019 range from 2.0 per cent (Goldman Sachs) to 3.5 per cent (Scotiabank) and widen a little in 2020 to range from 1.7 per cent (Liverpool Macro Research) to 3.5 per cent (Capital Economics). The median is 3.0 per cent in 2019, with a rounded interquartile range of 0.4 per cent (from 2.8-3.1 per cent). The median remains at 3.0 per cent in 2020, with a slightly wider interquartile range of 0.6 per cent (from 2.7-3.3 per cent). The median then increases to 3.2 per cent in both 2021 and 2022.

Table 5.2: Variation in forecast earnings, UK, 2018-2022

| Average wage growth forecasts | 2018 | 2019 | 2020 | 2021 | 2022 |
|-------------------------------|------|------|------|------|------|
| Median | 2.7 | 3.0 | 3.0 | 3.2 | 3.2 |
| Mean | 2.6 | 2.9 | 2.9 | 3.0 | 3.0 |
| Interquartile range | 0.1 | 0.4 | 0.6 | 0.7 | 0.6 |
| Lower quartile | 2.6 | 2.8 | 2.7 | 2.6 | 2.8 |
| Upper quartile | 2.7 | 3.1 | 3.3 | 3.3 | 3.3 |
| Range | 0.7 | 1.5 | 1.8 | 1.3 | 1.2 |
| Minimum | 2.2 | 2.0 | 1.7 | 2.2 | 2.3 |
| Maximum | 2.9 | 3.5 | 3.5 | 3.5 | 3.5 |
| Count | 27 | 27 | 17 | 15 | 15 |

Source: LPC estimates using forecast data from HM Treasury panel of independent forecasts (2018a and b) and Bank of England (2018a), UK, August-October 2018.

5.89 We make use of these wage forecasts to generate the NLW path to 60 per cent of median earnings in 2020 and beyond. The ASHE median for 2018 was £13.37. Table 5.3 shows the revised NLW path calculated on a straight-line bite basis, implying a figure of £8.62 in 2020 and an on-course rate in 2019 of £8.21. This is a similar path to that projected in both our Autumn 2016 Report and our 2017 Report. It is, however, much lower than the projected path and target in July 2015, when the NLW was first announced. Our initial projections then suggested a path of £8.74 in 2019 and £9.35 in 2020. These were lowered in our Spring 2016 Report, when we projected that the NLW path would be £8.61 in 2019, and £9.16 in 2020.

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Table 5.3: Updated paths for the NLW to 2022

| LPC estimates using: | | | Year | | | | | | |
|----------------------|--|----------------|------|-------------|-------------|-------------|-------------|-------------|-------------|
| ASHE (year) | Earnings forecast | Measure | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | |
| 2014 | OBR July 2015 | Median (April) | £ | 13.41 | 13.97 | 14.57 | 15.23 | | |
| | | NLW | £ | 7.68 | 8.19 | 8.74 | 9.35 | | |
| | | Bite (October) | % | 56.1 | 57.4 | 58.7 | 60.0 | | |
| 2015 | OBR November 2015 | Median (April) | £ | 13.31 | 13.83 | 14.37 | 14.96 | | |
| | | NLW | £ | 7.64 | 8.12 | 8.61 | 9.16 | | |
| | | Bite (October) | % | 56.3 | 57.6 | 58.8 | 60.0 | | |
| 2015 | OBR March 2016 | Median (April) | £ | 13.20 | 13.69 | 14.20 | 14.72 | | |
| | | NLW | £ | 7.60 | 8.05 | 8.50 | 9.02 | | |
| | | Bite (October) | % | 56.6 | 57.7 | 58.9 | 60.0 | | |
| 2016 | OBR March 2016 | Median (April) | £ | 13.24 | 13.73 | 14.25 | 14.77 | | |
| | | NLW | £ | 7.61 | 8.07 | 8.52 | 9.05 | | |
| | | Bite (October) | % | 56.5 | 57.6 | 58.8 | 60.0 | | |
| 2016 | HMT including the Bank (August/ October) | Median (April) | £ | 13.07 | 13.38 | 13.75 | 14.18 | | |
| | | NLW | £ | 7.50 | 7.84 | 8.22 | 8.65 | | |
| | | Bite (October) | % | 56.7 | 57.8 | 58.9 | 60.0 | | |
| 2016 | OBR March 2017 | Median (April) | £ | 13.05 | 13.44 | 13.88 | 14.38 | 14.93 | |
| | | NLW | £ | 7.50 | 7.89 | 8.30 | 8.79 | 9.13 | |
| | | Bite (October) | % | 56.6 | 57.7 | 58.9 | 60.0 | 60.0 | |
| 2017 | OBR March 2017 | Median (April) | £ | 13.03 | 13.41 | 13.85 | 14.35 | 14.90 | |
| | | NLW | £ | 7.50 | 7.88 | 8.29 | 8.77 | 9.11 | |
| | | Bite (October) | % | 56.7 | 57.8 | 58.9 | 60.0 | 60.0 | |
| 2017 | HMT including the Bank (August/ October) | Median (April) | £ | 13.03 | 13.33 | 13.70 | 14.12 | 14.59 | |
| | | NLW | £ | 7.50 | 7.83 | 8.20 | 8.61 | 8.89 | |
| | | Bite (October) | % | 56.9 | 58.0 | 59.0 | 60.0 | 60.0 | |
| 2017 | OBR March 2018 | Median (April) | £ | 13.03 | 13.42 | 13.76 | 14.11 | 14.51 | 14.94 |
| | | NLW | £ | 7.50 | 7.83 | 8.19 | 8.58 | 8.83 | 9.10 |
| | | Bite (October) | % | 56.2 | 57.6 | 58.8 | 60.0 | 60.0 | 60.0 |
| 2018 | OBR March 2018 | Median (April) | £ | 13.01 | 13.37 | 13.71 | 14.06 | 14.45 | 14.88 |
| | | NLW | £ | 7.50 | 7.83 | 8.17 | 8.55 | 8.80 | 9.06 |
| | | Bite (October) | % | 56.9 | 57.8 | 58.9 | 60.0 | 60.0 | 60.0 |
| 2018 | HMT including the Bank (August/ October) | Median (April) | £ | 13.03 | 13.37 | 13.74 | 14.15 | 14.58 | 15.05 |
| | | NLW | £ | 7.50 | 7.83 | 8.21 | 8.62 | 8.89 | 9.17 |
| | | Bite (October) | % | 56.9 | 57.8 | 58.9 | 60.0 | 60.0 | 60.0 |

Source: LPC estimates using ASHE April 2014-18, standard weights, UK; OBR (2015a, 2015b, 2016b, 2017a and 2018a) forecasts for hourly earnings; HMT panel of independent forecasts (2016b, 2016c, 2017a, 2017b, 2018a, and 2018b); and Bank of England (2016, 2017 and 2018a).

Notes:

- NLW paths estimated using OBR forecasts (at time of publication of OBR forecasts) are shaded in light grey.
- NLW paths published in our reports – Spring 2016, Autumn 2016, 2017, 2018 – are shaded in dark grey.
- NLW paths in white are those that would result if we had instead used the latest OBR forecast available.

5.90 In summary, the central path for the NLW to reach the target is £8.21 in 2019 and £8.61 in 2020. The Government has also committed to this target of 60 per cent of median hourly earnings until the end of this Parliament. That means the bite will remain at 60 per cent, implying that if the forecasts turn out to be accurate that the NLW will be £8.89 in 2021 and £9.17 in 2022.

5.91 However, as we noted in the discussions of the wage forecasts above, there is some divergence. Using the interquartile range of the available forecasts, Table 5.4 shows the central path of the NLW, with ranges to signify the degree of uncertainty around these measures. The range for 2020 is quite narrow – £8.58-£8.65 (narrower than the £8.55-£8.66 given in our 2017 Report), while the range for 2021 is now £8.80-£8.93 (previously £8.78-£8.96). The range for 2022 was not reported in our 2017 Report. We estimate it to be £9.04-£9.23.

Table 5.4: Forecast range for the NLW path, 2016-2022

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Lower quartile | | | | | £8.58 | £8.80 | £9.04 |
| Median | £7.20 | £7.50 | £7.83 | £8.21 | £8.62 | £8.89 | £9.17 |
| Upper quartile | | | | | £8.65 | £8.93 | £9.23 |

Source: LPC estimates using ASHE April 2018, standard weights, UK; HM Treasury panel of independent forecasts (2018a and 2018b); and Bank of England (2018a) average weekly earnings projections.

5.92 We now go on to discuss stakeholder views of the target rate.

Stakeholder views

5.93 In Chapter 2 we described the scale and nature of the effects of the NLW, and the actions stakeholders had taken in response to the large increases since 2016. The most common responses – accepting lower profits and raising prices – had remained the same since the introduction of the NLW. But it does appear that more employers have had to make some adjustments. Employer representatives reported that price increases had become more common, and more businesses were looking at wage differentials and wider benefit packages, and some were looking at reducing hours, and to a lesser extent jobs. There was little evidence of widespread productivity improvements, with employers having focused so far on increasing worker effort.

5.94 Unions we consulted thought that the NLW had been a positive step in terms of pay, and that businesses had coped so far and could tolerate a higher rate. Some recognised the responses business told us about, including effects on differentials and wider reward packages. The Trades Union Congress (TUC) thought that ‘the UK economy is strong enough to cope with significant increases to the NMW without generating any significant negative side effects’.

5.95 The Confederation of British Industry (CBI) thought that the path of the NLW to 2020 would be ‘challenging’ for all affected employers, and particularly for small businesses and certain sectors including retail, hospitality, agriculture, care and some sections of manufacturing. The CBI argued that ‘there is a limit to firms’ ability to afford increases through reduced profits’, and thought that price rises and other changes would become more widespread. At the same time, we heard from several employer organisations that knowing the path of the NLW helped businesses to plan.

5.96 Survey results and testimony from stakeholders suggested that more businesses would have to make changes to accommodate further NLW increases. Uncertainty around the terms on which the UK will leave the European Union featured prominently in stakeholders' views on the effects of future NLW increases, especially where they related to investment decisions.

Future responses to the National Living Wage

5.97 Accepting lower profits and raising prices seem likely to continue to be the most common responses taken by employers, followed by further effects on differentials and workforce structures. Many organisations talked about the importance of productivity improvements, but evidence on employers' plans was mixed. Stakeholder evidence, either backwards- or forwards-looking, can identify trends in behaviours but seldom quantifies the scale of any of these changes.

5.98 In the British Chambers of Commerce (BCC) survey of businesses' expected responses to future NLW increases, the results were similar to last year. The main change since the NLW's introduction was a fall in the proportion of businesses not expecting to be affected or to have to take action – in 2016 this was 46 per cent, compared with 35 per cent in both 2017 and 2018. Price increases were the most common intended response, chosen by 38 per cent of those surveyed. The CBI thought more firms would raise prices in response to future increases. In the BCC's survey profit reductions (a new option in the 2018 survey) were the next most common action. The CBI thought firms would be unable to sustain acceptance of lower profits.

5.99 Other employer representatives told us that more of their members will look to increase prices as the NLW continues to increase. In the British Retail Consortium's (BRC) survey, 57 per cent of retailers indicated they would look to increase prices in response to future cost pressures, up from 29 per cent in 2017. Conversely, suppliers in a variety of sectors had little faith that cost increases would be recognised by the supermarkets and shops that bought their products, even though the path of the NLW is known. Equally, sectors relying on Government funding such as adult social care and childcare worried that the pressures on providers' finances would not be alleviated.

5.100 The TUC, on the other hand, argued that 'the latest figures show UK corporations enjoying a very healthy rate of return, suggesting that a further increase in the minimum wage would be easily afforded'. In the context of Brexit, it thought that confidence in the NLW would have a role in bolstering investment and growth.

5.101 The TUC argued that further increases to the NLW would have positive effects, and that 'better wages are needed to boost consumer and investment confidence'. It thought that the minimum wage 'should be a vital component part of any strategy to boost confidence and stimulate the economy'.

5.102 On the other hand, reduced differentials can affect employee relations, morale and staff retention. We have heard from employers that this is a major concern. According to the CBI, 'maintaining the pay differentials that incentivise progression is becoming increasingly difficult'. Firms may respond by restructuring their workforce and removing management levels, and evidence suggested the latter approach had become more common this year; the CBI expected this to continue as the NLW rises, and some employers we spoke to thought that differentials had already reached the minimum acceptable level.

5.103 Around a quarter of respondents to the BCC survey were planning to ‘reduce the rate of basic pay growth for staff’, about the same proportion as last year but higher than in 2016, when only 15 per cent anticipated such an action. The BRC reported retailers reviewing pay structures, removing managerial roles and reducing differentials. The Food and Drink Federation (FDF) thought similar responses were likely in food manufacturing. Smaller firms, and those with very flat management structures, may find it more difficult to restructure in this way, argued the Association of Convenience Stores (ACS) and British Independent Retailers’ Association.

5.104 Some employer representatives told us that, while the NLW had not caused employment losses so far, they were more worried about future increases. The TUC, however, noted that ‘employment is predicted to continue growing throughout 2018 and 2019’.

5.105 The CBI thought retail could be susceptible to cost pressures, which ‘could lead to a negative impact on employment conditions’. This was reflected in the BRC’s survey results, which revealed a rise in firms planning to cut shop floor jobs in response to future cost increases. The BRC told us that signs of a reduction in employment in retail were due to ‘broader structural changes’ in the sector, and that the NLW was one of the factors driving this. Usdaw, on the other hand, said ‘there has been no indication of job cuts’; nor had it ‘seen any overall reductions in hours that could be attributed to [the NLW]’.

5.106 The BCC thought that for some firms, changes to employment levels could be a response to future cost increases, noting that the NLW was one of several. The proportion of firms that predicted having to reduce employment was higher in the BCC’s survey of future responses than in the Federation of Small Businesses’ (FSB) survey of actions businesses took this year. The BCC thought that any reductions were most likely to come through reduced recruitment or hours reductions, rather than redundancies. The National Farmers’ Union’s (NFU) surveys also found a higher proportion of respondents from the horticulture sector predicting employment reductions, but the NFU stressed the complex factors affecting farming businesses.

5.107 The REC told us that, for agencies, the NLW had so far not affected demand for staff from clients, who had absorbed the cost. The REC was concerned that future increases could affect employment and described clients as ‘nervous’ about the 2020 rates.

5.108 Both employer representatives and unions recognised the importance of increasing productivity, and thought businesses doing so would help them manage the increased cost of the NLW. The CIPD carried out a survey of responses to the NLW since 2016, from which it highlighted the lack of sustainable approaches to productivity. Businesses developing strategies beyond extracting greater effort from workers would be key to the success of a higher minimum wage, it argued. The TUC also recognised the importance of improving productivity. It argued, though, that there was a risk that any gains would not be passed on to workers, and that the minimum wage was ‘one important tool’ in ensuring that they were.

5.109 Large employers were looking to increase automation as the NLW increased, though the consequences for jobs and role of the NLW in this trend were unclear. A CBI survey found more firms increasing levels of automation – and noted it as the most common expected response to future increases. It is not clear whether such automation would reduce staff numbers, whether it is directly related to NLW increases or the scale of investment needed to achieve it. At the same time, the CBI warned of the risk posed by Brexit-related uncertainty to the investment needed to improve

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productivity – 87 per cent of businesses it surveyed said Brexit has had a negative impact on their investment decisions.

5.110 Small business representatives were less likely to report firms planning to invest in productivity improvements. In the BCC's survey, almost as many (13 per cent) said they would reduce investment as invest more in automation (16 per cent); 9 per cent of respondents planned to reduce spending on staff training.

5.111 In this vein, unions expressed concern over skills. GMB thought that businesses were investing less in training and development to keep costs low. The Scottish Trades Union Congress (STUC) also argued that investment in workers' skills was being neglected. The CBI thought that employers recognised that there was more to do to improve workers' skills and that this was an ambition shared by businesses. This was reflected in CBI's survey which suggested that firms were already investing more in training in response to NLW increases and would continue to do so in the future.

The National Living Wage

5.112 There was a general understanding in consultation responses of the relative target of the NLW. On our visits, it was also mainly understood that there was not a cash target but a relative target, with the ambition to reach 60 per cent of median earnings by 2020. Few organisations asked the LPC to limit NLW increases to below the projected path. Most told us that a straight-line path remained preferable, and several employer groups asserted that knowing the projected path was useful.

5.113 The FSB voiced concerns about uncertainty but thought that the on-course rate for 2019 would be manageable at the moment. UKHospitality favoured a continued straight-line approach but also noted economic 'headwinds' and a risk of adverse effects from the NLW. The FDF and Local Government Association (LGA) also backed the target and a straight-line path. The LGA told us that it had raised its recommended pay scales above the NLW, and that it supported the planned approach.

5.114 Some employer representatives, while supporting the principle of the NLW, urged caution, asking the LPC to keep a close eye on economic conditions and be guided by evidence rather than political considerations. Representatives of sectors reporting greater impacts from the NLW tended to call for smaller increases.

5.115 The REC stressed the importance of assessing economic conditions when making the NLW recommendations and asked the LPC to remain 'cautious'. The NFU told us it 'strongly supports' the principle of the NLW, but urged a 'cautious and balanced approach' to future increases. The ACS recommended that the LPC approach setting the NLW for 2019 with caution, but its survey revealed that 77 per cent of respondents did not want it to rise above inflation and 74 per cent wanted a freeze.

5.116 The CBI went further, arguing that the LPC should consider recommending a smaller increase in 2019, while remaining committed to the 2020 target. This recommendation was based on the uncertainty facing employers, it said.

5.117 The BCC thought the NLW should increase in line with CPI inflation and suggested that the target be pushed back to 2021. It thought that the range of cost pressures facing small businesses

coupled with uncertainty in the economy made this a suitable approach. The Federation of Wholesale Distributors and National Hairdressers' Federation (NHF) called for increases to be no higher than inflation to avoid negative consequences for employers and workers.

5.118 Most social care organisations supported the intended path in principle but asserted that increases needed to be reflected in Local Authority funding. The National Care Association thought that there was a risk that providers would not be able to pay future NLW rates, if necessary funding increases were not forthcoming. Likewise, the UK Home Care Association worried about the consequences of future increases and suggested it had little faith that they would be paid for by Local Authorities. Dimensions, a learning disability support charity, thought that NLW increases should be slowed and was the only organisation to argue for regional pay rates to be considered.

5.119 Unions argued that the NLW had not caused major problems for employers and could be raised more rapidly than the current trajectory. The TUC saw the NLW's path as a minimum but thought the target could be more ambitious, specifying £10 per hour 'as soon as possible', a target shared by Unite. The National Union of Rail, Maritime and Transport Workers (RMT) union supported uplifts above RPI inflation to all minimum wages.

5.120 Several unions thought living costs should be considered: the Communication Workers Union (CWU) argued the minimum wage should take into account cost of living calculations including food, household bills and accommodation. Likewise, GMB argued for rates 'to reflect a true "living wage" of £10 an hour that workers can live on without state support', saying this would benefit workers, public finances and small businesses. UNISON suggested pegging the NLW to male earnings, but with £10 per hour as an eventual target.

5.121 There were some calls for more certainty over post-2020 rates. The BRC said that knowing the trajectory was 'very helpful' but that there was concern about what happened after 2020. EEF (the Manufacturers' Organisation), FSB and Association of Labour Providers (ALP) took the same view and also asked for clarity on post-2020 rates as soon as possible.

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5.122 The majority of employer respondents were in favour of increases to the youth rates, with varying degrees of caution expressed. The CBI, for example, recommended caution on the youth rates, and thought the LPC should look carefully at potential employment effects given the uncertainty in the economy.

5.123 The FSB favoured gradual rises in the other NMW rates, but at the same time as the NLW is rising significantly, urged the LPC to 'ensure any significant changes to youth rates do not impact youth employment rates'. It asked the LPC to take wider cost pressures into consideration when recommending NMW rates.

5.124 The British Beer and Pub Association (BBPA) thought consistent increases across the rates would be appropriate. UKHospitality, however, described the importance of youth rates for some employers and the risk of 'excessive increases' leading to job losses.

5.125 The BCC thought CPI-linked increases were appropriate for the age rates, and that the Apprentice Rate should be raised to the level of the 16-17 rate over two years. The NHF advised limiting increases to the level of inflation.

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5.126 Unions favoured extending the NLW (or the higher rates they advocate) to younger workers as soon as possible. Unite, for example, thought that all the rates should be aligned to £10 over the next two years, while UNISON argued for a higher increase to close the differential which had opened during the recession. The TUC thought the NLW should be paid to workers from 21 immediately, and that the other rates should be 'substantially improved'. The STUC called the youth rates 'discriminatory'; they and the CWU asked for a 'real living wage' for all. The ALP also argued the youth rates amount to 'state-legalised age discrimination'.

Apprentice Rate

5.127 There were some specific views on the Apprentice Rate, almost all calling for it to be raised. Employer and worker representative bodies, including the TUC, EEF, FSB, BCC all thought it should be at the level of the 16-17 Year Old Rate. The FSB thought doing so would help create 'parity of esteem' with the academic route and encourage more young people into apprenticeships. Manchester City Council also favoured abolishing the separate Apprentice Rate. The Intergenerational Foundation, National Union of Students and Housing and Care 21, argued that raising the Apprentice Rate was important but did not specify a level.

The Accommodation Offset

5.128 Most employer organisations backed the LPC's approach to the accommodation offset (raising it towards the NMW/21-24 Year Old Rate when the real value of the minimum wage was increasing). In agriculture and hospitality, two of the sectors where use of the offset is most common, the main representative bodies were positive: the NFU 'welcomes recent increases' and UKH thought they had been 'beneficial'.

5.129 The NFU told us that offset increases help employers invest in higher standards of accommodation for workers, while UKHospitality argued that it is an efficient mechanism to provide housing to the benefit of both employers and workers. UKHospitality's view matched that of a hotel we visited near Windermere, where the benefit of having staff living on-site was recognised.

5.130 Some organisations and firms we met thought the offset was insufficient or should be re-evaluated. Other hoteliers, particularly in Scotland, thought the offset remained too low. Chartered Institute of Payroll Professionals members were also concerned that the offset does not cover employers' costs. The ALP argued that the offset was a blunt tool that encouraged poor-quality accommodation, and that it did not work in urban areas, though it acknowledged that recent increases had been positive for providers of on-farm accommodation.

5.131 Unite and RMT called for the LPC to consider scrapping the offset. Unite was opposed to any deductions for employer-provided accommodation, as it argued that it was to the employer's advantage to have workers on site. The RMT thought that the offset should not apply to seafarers, and that its existence could open them up to abuse, especially in the case of agency workers.

Implications of other Government legislation for employer costs

5.132 Employer representatives acknowledged that the NLW was not the only issue they faced and was often not the largest. Commonly cited costs were auto-enrolment, Employers' National Insurance Contributions and the Apprenticeship Levy. We have heard several creative descriptions of the rising costs affecting businesses: 'perfect storm', 'cauldron of costs' and 'cocktail of costs'. We received requests that government consider the scope for action on some of these costs.

5.133 Business rates were the most commonly cited cost pressure – many businesses we spoke to told us they are more of an inflationary burden than the minimum wage and other costs. The FSB singled out retail as a sector particularly affected by business rate increases, as did the CBI, which also specified professional services, logistics and manufacturing. UKHospitality estimated that business rates had risen by 25 per cent over the last two years for an average business and the BBPA estimated the average cost of revaluations over the next 2-3 years at nearly £3,200 per pub. Conversely, the ACS thought that business rates relief had been helpful for its members, and that the NLW was therefore a relatively more significant cost pressure in the sector than elsewhere.

5.134 Some employers talked about the other policies that compounded the cost of the NLW. ACS members at a round table talked about sick pay as a major cost. The ALP named holiday and sick pay, National Insurance Contributions and pensions as other costs that have been increased by the 'accelerator effect' of the NLW. The Scottish Grocers' Federation quantified the effect of these employment costs. It estimated that an increase in the NLW to £8.20 would cost employers an extra 67 pence per hour, with auto-enrolment the major component of the extra cost.

5.135 Other specific costs were cited by some employer groups. In hospitality, the BBPA told us that a 12 per cent planned increase in beer duty would cost the sector £420 million by 2021, following a 3.9 per cent increase in 2017. The BCC told us that from April 2019, firms will need to absorb a rise in pensions auto-enrolment contributions, a further CPI-based increase in business rates, and the implementation costs of Making Tax Digital.

5.136 In adult social care, increases to a range of costs, mainly to do with employment, were cited. As described in Chapter 2, we heard that the ability of providers to meet these costs depended on commensurate funding increases. Representative bodies in the sector were worried that this would not happen, with some funding options becoming unavailable next year. According to the Association of Directors of Adult Social Services, the Social Care Precept (a temporary council tax increase to fund social care) was taken up either partially or in full by 97 and 96 per cent of councils in 2017/18 and 2018/19 respectively. But there was a cap of 6 per cent over three years, and 42 per cent of councils will be unable to raise any extra funds at all next year (just 2 per cent will be able to take the full 3 per cent precept).

Travel time and cost

5.137 It was clear from our visits that labour markets for low-paid workers can be affected by local geography and infrastructure. We repeatedly heard in rural locations that it is difficult for low-paid workers to access jobs, and that travel time, cost and practical constraints discourage people from taking work or moving jobs.

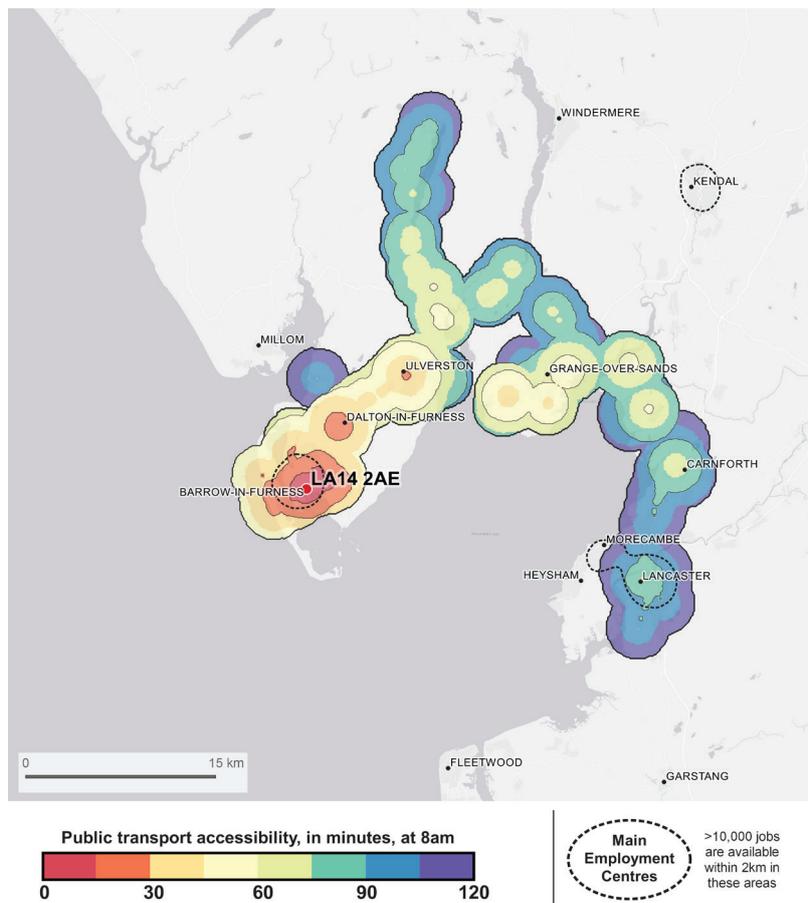
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5.138 Recent research (Crisp, Ferrari, Gore, Green, McCarthy, Rae, Reeve and Stevens, 2018) from the Joseph Rowntree Foundation (JRF) supported this anecdotal evidence – the maps it had produced showed that public transport from low-income areas to employment centres can be slow and expensive. JRF found that ‘Transport-related barriers to work facing individuals on low incomes are more practical than perceptual. There is little evidence of limited spatial horizons where localised, cultural outlooks constrain people’s perceptions of viable commutes.’

5.139 Employers were also affected and could find access to staff a problem – a trend we heard about in multiple sectors, and which was made more acute by transport difficulties in given locations.

5.140 In Kendal, we heard that a large manufacturer and retailer provided minibuses from larger urban centres such as Barrow. As Figure 5.19 shows, it would take over two hours to make the journey from Barrow to Kendal by public transport, leaving at 08:00 on a weekday. Hotels in the Lake District and rural areas in Scotland told us that it was common to provide accommodation for staff using the accommodation offset – those we met understood the benefit to the business of doing so as it was a major attraction for staff, especially given the otherwise high cost of housing in some areas. Low-paying jobs often being located in areas with high housing costs was a common theme on our visits, and led to the issues we saw around travel time and cost.

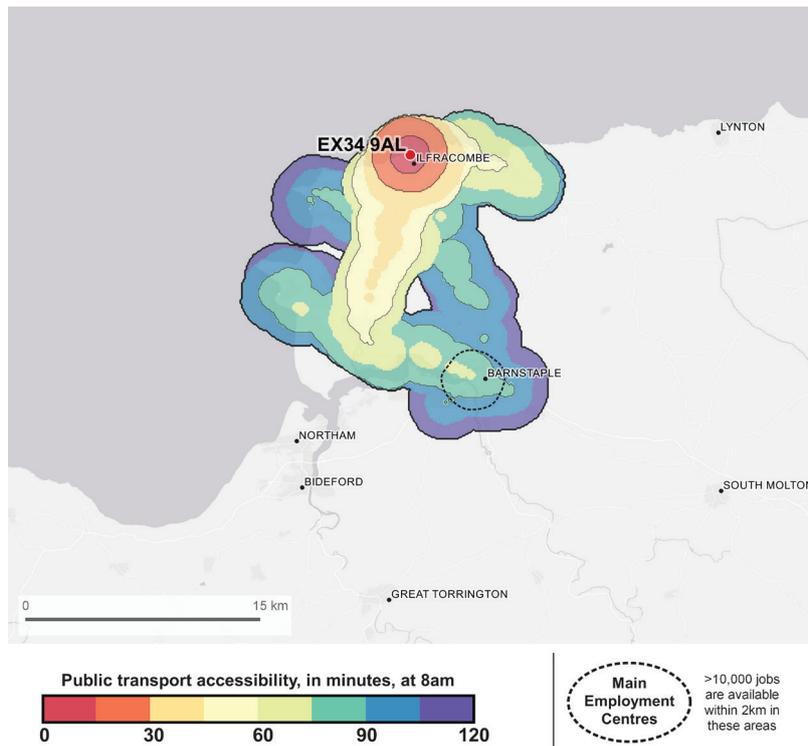
Figure 5.19: Public transport travel time from LA14 2AE, Barrow-in-Furness, leaving at 08:00, Monday-Friday



Source: Crisp, Ferrari, Gore, Green, McCarthy, Rae, Reeve and Stevens (2018). Supplementary maps.

5.141 On our visit to Barnstaple and North Devon, we repeatedly heard that travel time, and particularly cost, were an impediment to accessing low-paid work. As shown in Figure 5.20, according to the same JRF research study, it can take up to 90 minutes by public transport for someone living in Ilfracombe to reach Barnstaple for work. A bus pass for the area costs £4.70 per day for adults. Young people were particularly affected because have lower earnings and face higher car insurance costs – one apprentice we met was renting a property nearer work to save on travel time and cost.

Figure 5.20: Public transport travel time from EX34 9AL, Ilfracombe, leaving at 08:00, Monday-Friday



Source: Crisp, Ferrari, Gore, Green, McCarthy, Rae, Reeve and Stevens (2018). Supplementary maps.

5.142 This pattern was repeated for other the locations we visited, including urban areas: from low-income areas around Birmingham, it can take over an hour to reach the city centre, according to JRF mapping. This limited the range and make-up of jobs that were accessible.

5.143 Newry and Mourne Enterprise Agency told us on our visit to Northern Ireland that travel was a significant barrier to accessing better work for those on low pay. Public transport provision was poor, we heard, leaving people reliant on cars, though those on low pay often struggled to afford to maintain one.

5.144 We pay close attention to the effects of minimum wage increases in different areas of the UK, and these are issues we will continue to monitor and consult on. Views on access to work and access to workers will be particularly important as we review the youth minimum wage rates next year.

Conclusion

5.145 This chapter has assessed the prospects for the UK economy over the next year or so. Although there is clear evidence that GDP growth has weakened since the end of 2014, and there is considerable uncertainty around Brexit, the economy is still forecast to grow by around 1.5-2.0 per cent a year for next few years. This is much lower than the economy grew prior to the financial crisis but is also higher than the 1 per cent threshold for sustained economic growth. That growth forecasted is expected to be less dependent on the consumer, which may have some implications for those low-paying sectors reliant on household spending.

5.146 The labour market is expected to remain resilient, with employment projected to build on already record highs, and unemployment forecast to remain low. Even with the labour market tightening further, earnings growth is only expected to pick up slowly. However, with inflation forecast to fall back towards its 2 per cent target, that should result in real earnings growth. Productivity is forecast to pick up a little but remain weak.

5.147 These forecasts are predicated on a negotiated deal between the UK and the EU that results in a smooth transition albeit with less trade and a more restrictive migration regime. If that was not to be the case, then the prospects for the UK economy may look very different.

5.148 Taking account of new data since our 2017 Report and revised wage forecasts, our current projected path to 60 per cent of median earnings remains much the same as it was last year. The current on-course rate, £8.21, is a penny higher than we estimated last year but is within the range we gave (£8.17-£8.23) and the target NLW for 2020 is also a penny higher, at £8.62, again within the range given last year (£8.55-£8.66).

5.149 In our consultations we heard that employers in a wide range of sectors have increasingly had to make changes in response to the added cost of the NLW. The pattern of responses was similar to previous years, led by changes to profits and prices, but several responses appeared to be becoming more prevalent. Stakeholders told us they expect changes to workforce structures to become more common, as a reaction to the squeezing of differentials we have seen since 2016. There was a broad understanding that improving productivity would help businesses manage future increases, but we still heard relatively little evidence of concrete plans. Reports of adverse employment effects stemming directly from the NLW were rare, though there were continued warnings of a 'tipping point' approaching for employers in some sectors. As in previous years, we heard that the NLW was not the only rising cost for employers, and was therefore not the only factor in business decisions.

5.150 The recent stability of the projected path of the NLW has helped businesses plan, and most appeared to have managed better than they anticipated when the NLW was announced. Unions welcomed the positive effect the NLW has had on pay but thought it could and should go further. Few stakeholders called for the LPC to recommend increases below the projected path in 2019, and fewer still called for the target itself to be reconsidered. On the youth rates, unions argued for equalisation with the NLW, while some employers stressed the importance of protecting young people in the labour market.

Chapter 6

Recommended rates and implications

6.1 The chapters up to this point have set out the evidence that informed the recommendations for rates to come into effect in April 2019. In this chapter we present the rationale for those recommendations.

National Living Wage

6.2 For the National Living Wage (NLW), our remit is to make recommendations on the pace of increase towards a target: ‘The ambition is that it should continue to increase to reach 60 per cent of median earnings by 2020, subject to sustained economic growth’.

6.3 As with last year, the core decision for our report was whether the most recent economic evidence met the condition of sustained economic growth to enable the NLW to be uprated in line with the path to 60 per cent of median earnings. The latest Office for National Statistics (ONS) data for Gross Domestic Product (GDP) growth suggest that after slowing in the first quarter of 2018 – which was affected by severe cold weather conditions – GDP rebounded in the second quarter, growing at an annualised rate of 1.4 per cent. This was weaker than the growth experienced in 2017 – 1.7 per cent – but in line with the GDP growth forecasts (1.4-1.6 per cent) we had available from the Bank of England and the HM Treasury panel of independent forecasts, when we made our recommendations for the NLW in our 2017 Report. Further, the latest monthly GDP data show the economy growing by 0.7 per cent in the three months to August – helped by the World Cup and the hot summer. We judged that this met the condition of sustained economic growth. However, we also noted the unbalanced nature of that growth – reliant on consumer spending with both investment and trade acting as a drag – and the uncertainty about the medium term and the UK’s future trading relationship with the EU.

6.4 Importantly, the labour market has continued to perform well. While jobs growth slowed in comparison to last year, total employment remains at record highs in both rate and level. As with GDP, this performance also turned out in line with the forecasts by the Bank of England and the HM Treasury panel that we had available last autumn.

6.5 On the announcement of the NLW in 2015 the Office for Budget Responsibility (OBR) forecast in July 2015 that the UK economy would generate 1.1 million additional jobs by 2020, but this had already been exceeded by 2017 and we have seen employment continue to grow. Unemployment has continued to fall and is now at its lowest rate since the 1970s (4.0 per cent).

6.6 Earnings have increased faster this year than last, with hourly pay at the median increasing by 2.7 per cent between April 2017 and April 2018, up from 2.1 per cent last year. This was also in line with the forecasts available last autumn. While, those at the bottom end saw larger increases than the median, driven by increases in the NLW and the National Minimum Wage (NMW), these impacts

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have spread less far up the distribution than in previous years. This is perhaps indicative of pressure on pay differentials further up the pay chain. Over the course of the last twelve months, pay settlements have also picked up from around 2 per cent towards 2.5 per cent.

6.7 With inflation falling back, as forecast, after peaking at the end of 2017, the UK has experienced seven continuous months of real average earnings growth, having suffered real wage falls over the twelve months prior to that. However, real average wages still remain below their levels in 2008.

6.8 While the labour market has performed well and there is evidence that wages have started to outpace inflation, there were some macroeconomic indicators that gave us cause to be concerned. While growth in real household income has stalled since the end of 2015, consumer spending maintained its momentum, leading to the savings rate falling below pre-financial crisis levels, raising questions about sustainability. Trade has been weaker than expected, especially given the depreciation of sterling and the strengthening of the global economy in 2017 and 2018. Investment has also continued to underperform despite favourable credit conditions. Measures of profits have shown little change over the last year, although share prices – an indicator of future profits – have performed well.

6.9 With output having slowed and the labour market continuing to generate jobs, productivity growth measured per worker and per job has also been relatively stagnant. The number of hours worked has increased by less than the increase in employment, leading to productivity per hour performing better than the other measures but, even so, it has only grown by 1.5 per cent in the last three years.

6.10 Since the introduction of the NLW we have heard in our written and oral evidence sessions and visits that some employers have concerns, and this remains the case. With each year of the NLW we have seen that more employers need to act in response to increases in the rate. As the NLW increases more employers are affected, while the greater costs have a larger overall effect. Surveys from the Federation of Small Businesses (FSB) and the British Chambers of Commerce (BCC) show declining shares of employers taking no action. The most common responses are to absorb the extra costs through lower profits, to raise prices or to make savings elsewhere. Employers, particularly in the smallest firms, are concerned at the sustainability of repeated reductions in margins.

6.11 However, as with last year, the evidence from stakeholders suggested that employers have coped better with NLW increases than they originally anticipated, although some called for a move off the path.

6.12 While the extra costs for employers have been a concern, they have also told us that indicative future rates for the NLW have been helpful in aiding planning. Since the autumn of 2016 these have been consistently within a few pence of £8.20 and £8.60 for 2019 and 2020 respectively. Furthermore, these on-course rates are much lower than those anticipated when the NLW was first announced in 2015. The NLW's flexible nature means that it is automatically adjusted downward when earnings forecasts are lowered. These lower estimates of future rates remain more palatable for many employers, though some do still remain concerned.

6.13 Employee stakeholders welcomed the pay increases for workers and pointed to the continued strong labour market performance and high profitability levels as evidence that NLW increases were affordable. They called for (at a minimum) a recommendation for an on-course rate as a fair outcome, given strong employment, low unemployment rates and rising inflation.

6.14 The forecasts, available to us when we agreed our recommendations, suggested that economic growth would be sustained in the rest of 2018 and in 2019, just below its level in 2017. Employment was forecast to grow at 0.4 per cent in 2019, in line with similar growth in 2018, but below the strong job growth experienced in 2017. Unemployment was forecast to fall even further, having reached a 40 year low in 2018. The forecasts also suggested that average earnings growth would pick up from around 2.7 per cent in 2018 to 2.9-3.3 per cent in 2019. With inflation forecast to fall back towards target, this would result in further real average wage gains, recovering some of the ground lost since 2008.

6.15 We have weighed these considerations carefully and judged that the evidence available was consistent with the NLW remaining on its path to 60 per cent of median earnings by 2020. Having discussed whether to round to the nearest 5 pence, we judged that, as last year, we should stay on the on-course path, and we therefore recommend that the NLW should increase by 38 pence or 4.9 per cent to £8.21 an hour in April 2019. On balance, we felt unable to deny workers an additional penny an hour. This approach fulfils our remit, while also taking into account the issues raised by both employers and workers.

6.16 In line with our original intention, our recommendation for the NLW is the on-course rate using the median of available forecasts from the Bank of England and the HM Treasury panel of independent forecasts (we did not have access to the OBR's October forecasts). Our recommendation is close to the indicative on-course rate that we set out in our Autumn 2016 Report and 2017 Report, and thus continues to support employers in their forward planning.

6.17 To this end, using HM Treasury panel and Bank of England forecasts, we estimate that the NLW will reach its target of 60 per cent of median hourly earnings at an indicative on-course rate of £8.62 in 2020.

6.18 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.

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6.19 For the other rates of the NMW we are asked to recommend rates which 'help as many low-paid workers as possible without damaging their employment prospects'.

6.20 Last year we made recommendations for the largest increases in the youth rates for a decade. Those increases allowed a restoration of some of the value the youth rates lost during the recession and its aftermath. Those recommendations were based on strong employment and earnings growth for all young people at that time. This year we noted that while labour market conditions are still strong overall, they have softened slightly in some areas. This, combined with the fact that the evidence is not yet sufficient to understand the impact of these large increases, has led

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to a slightly more cautious approach – though all rates will still see real and relative (to average earnings) increases in value.

6.21 For 21-24 year olds labour market performance was weaker than last year. We noted that employment fell slightly for this group over the year, with inactivity increasing. This increase was evenly divided between those going into full-time education and those who were inactive for other reasons. The increase in inactivity is something we will consider further as part of their review into the youth rates – due in spring 2019.

6.22 However, on the positive side, the share of 21-24 year olds paid at the rate for their age remains low, as many employers choose to pay above this rate. Furthermore, the unemployment rate for those not in full-time education is at a historic low. A further consideration was the gap between the 21-24 Year Old Rate and the NLW. We were concerned about this gap widening, with the consequent risk of substitution between the age groups. On balance, the evidence led us to recommend a 4.3 per cent or 32p increase in the 21-24 Year Old Rate to £7.70.

6.23 Last year we recommended increases above 5 per cent for 18-20 year olds because of both strong earnings and employment growth. While employment has continued to increase and unemployment has continued to fall the earnings picture has slightly weakened across the distribution this year. For these reasons, we recommend an increase of 4.2 per cent or 25p to £6.15 for 18-20 year olds.

6.24 For 16-17 year olds our priority remains their effective entry into the labour market. They are the most vulnerable age group in the labour market due to their relative lack of experience. However, their labour market and earnings performance was in line with last year's positive trends. On this basis, we recommended an equivalent increase that is also above average earnings growth and inflation. We recommend the 16-17 Year Old Rate increase by 3.6 per cent or 15p to £4.35.

6.25 Making recommendations on the Apprentice Rate is challenging because of the ongoing impact of the policy changes taking place in England and the lack of a recent Apprenticeship Pay Survey (APS). Nevertheless, we did not get a sense from either worker or employer stakeholders that recent increases in the Apprentice Rate had affected the uptake of apprenticeships. On this basis we recommend an increase which is similar to last year's increase: by 5.4 per cent or 20p to £3.90 for apprentices. We will look in detail at the operation and effectiveness of the Apprentice Rate as part of the youth rates review.

6.26 Finally, in keeping with our aim to bring the Accommodation Offset up to the level of the 21-24 Year Old Rate as long as that rate is rising in real terms, we agreed to try and achieve this commitment over two years. We therefore recommend a 55 pence increase in the Accommodation Offset to £7.55 in 2019 and we aim to finally close the gap next year. This means the rate better reflects the costs of providing accommodation and helps the horticulture sector in particular.

Implications of the recommended rates

6.27 In this section we look how the rates we recommended, and which were subsequently accepted in the Budget on 29 October, will affect the bite of each minimum wage (its value relative to median earnings), how many jobs would be directly affected by the higher minimum wages, and the impact on post-tax and benefit income for workers aged 21 and over.

Estimated bite of the recommended rates

6.28 A way of measuring the ‘toughness’ of the various minimum wage rates is through analysing their bite, defined here as the ratio between the minimum wage and the median. Table 6.1 shows how we expect the bite to change by April 2019 based on our recommendations and assumptions around median earnings growth. We use wage growth forecasts based on the HM Treasury panel of independent forecasts, and those from the Bank of England. Assuming pay growth is in line with this (2.8 per cent) we anticipate that the bite will increase for all age groups.

6.29 Based on these forecasts, the bite for those aged 25 and over will increase from 58.6 per cent in April 2018 to 59.8 per cent in April 2019. For those aged 21-24, the bite will increase from 78.7 per cent to 79.9 per cent. The bite for those aged 18-20 will increase from 75.4 per cent to 76.4 per cent, the bite for those aged 16-17 will increase from 71.2 per cent to 71.7 per cent and the bite for apprentices will increase from 62.7 per cent to 64.3 per cent.

Table 6.1: Bite of the NMW/NLW and forecast after uprating, 2018-2019

| Rate | April 2018 | | | April 2019 forecasts (HMT Panel estimate) | | |
|-------------------|------------|-------------|----------|---|-------------|----------|
| | NLW/NMW | Median Wage | Bite (%) | NLW/NMW | Median Wage | Bite (%) |
| NLW | £7.83 | £13.37 | 58.6 | £8.21 | £13.74 | 59.8 |
| 21-24 | £7.38 | £9.38 | 78.7 | £7.70 | £9.64 | 79.9 |
| 18-20 | £5.90 | £7.83 | 75.4 | £6.15 | £8.05 | 76.4 |
| 16-17 | £4.20 | £5.90 | 71.2 | £4.35 | £6.06 | 71.7 |
| Apprentice | £3.70 | £5.90 | 62.7 | £3.90 | £6.06 | 64.3 |

Source: LPC estimates using ASHE 2010 methodology, low pay weights, UK, April 2018 and HM Treasury panel of independent forecasts for the UK economy (2018b) and Bank of England (2018a) average weekly earnings projections.

Estimated numbers directly affected by the recommended rates

6.30 We can examine the impact of the recommended increases in minimum wages by looking at the number of jobs that will be directly affected by the increased rates. This is the number of employees whose pay would have to grow faster than it otherwise would to stay above the pay floor. These estimates are therefore sensitive to our assumptions about the counterfactual earnings growth for workers. Our estimates are based on the number of employees in April 2018 and do not take into account any growth in employment since then. As shown in Chapter 2, minimum wages have an indirect spillover effect, pushing up wages above the new wage floor faster as firms try to maintain differentials. The estimates in this chapter do not take this into account.

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6.31 Table 6.2 shows the coverage of the rates in April 2018 and the number of jobs we estimate will be directly affected by the increases in April 2019. It assumes that, in the absence of increases in the NLW and the NMW, wages across the low-pay end of the pay distribution would grow in line with the average of the HM Treasury panel of independent forecasts (including the Bank of England) forecasts.

6.32 However, these measures – actual coverage and estimated numbers directly affected – should not be conflated. The latter is not an estimate of the former because it is difficult to estimate the spillover effects of each uprating – as Chapter 2 showed in paragraphs 2.46-2.48 these vary from year to year. In short, the spillover effect means that some workers receive a higher pay increase than needed to meet the NMW/NLW because firms choose to maintain a differential. Therefore, the measure of the number of directly affected workers should be taken as upper-bound estimates of the number of workers covered, with the actual outturn likely to be considerably lower.

6.33 On the other hand, these estimates form a lower bound for the number of jobs where pay will increase overall following an uprating. We know that there are spillovers from the NMW/NLW to jobs which would otherwise have still been ahead of the NMW/NLW, but whose employers choose to maintain a differential. In the year to April 2018, over 20 per cent of UK jobs received a higher pay increase than they otherwise would have done – around five million jobs.

6.34 The increase in the NLW to £8.21 would raise pay in at least 2.4 million jobs held by workers aged 25 or over (excluding first year apprentices), or 9.7 per cent of all jobs eligible for the NLW. For workers aged 21-24 (excluding first year apprentices) the increase to £7.70 will increase pay in up to 229,000 jobs – or 11.6 per cent of jobs performed by employees in this age band. For workers aged 18-20 the equivalent figures are 147,000 jobs, or 14.9 per cent of jobs.

6.35 For workers aged 16-17 (excluding apprentices) the increase to £4.35 will increase pay in at least 41,000 jobs – or 13.6 per cent of jobs performed by employees in this age band. For first year apprentices, and second year apprentices aged 16-18, we estimate that the increase to £3.90 will raise pay in at least 36,000 apprenticeships, around 18.6 per cent of these apprenticeships.⁴

Table 6.2: Coverage of the NLW and NMW and numbers directly affected by uprating, UK, 2018-2019

| Rates | April 2018 Coverage | | Estimated numbers directly affected by 2019 rate recommendations | |
|----------------------|---------------------|------------|--|------------|
| | (thousands) | (per cent) | (thousands) | (per cent) |
| National Living Wage | 1,604 | 6.5 | 2,396 | 9.7 |
| 21-24 Year Old Rate | 167 | 8.5 | 229 | 11.6 |
| 18-20 Year Old Rate | 119 | 12.0 | 147 | 14.9 |
| 16-17 Year Old Rate | 40 | 13.2 | 41 | 13.6 |
| Apprentice Rate | 32 | 16.5 | 36 | 18.6 |

Source: LPC estimates using ASHE 2010 methodology, low pay weights, UK, April 2018 and HM Treasury panel of independent forecasts for the UK economy (2018b) and Bank of England (2018a) average weekly earnings projections.

⁴ We believe that the Annual Survey of Hours and Earnings (ASHE) data we have used under-records the number of apprentices. In practice, we would therefore expect considerably more than 36,000 apprentices to get a pay rise as a result of our recommendations.

Impact on personal tax allowance and household income

6.36 On 29 October 2018, the Government announced that the personal tax allowance would rise by £650 (5.5 per cent) in April 2019, from £11,850 to £12,500. It will remain at £12,500 for 2020-2021, thereafter increasing in line with the Consumer Price Index (CPI).

6.37 For 21-24 year olds working 30 hours a week on the youth rates of the NMW, the raising of the personal tax allowance ensured their annual pay remained below the tax threshold. Older workers, working 30 hours a week on the NLW, will be liable for some income tax, but, taking account of both the April 2019 increase in the NLW and the increase in the personal tax allowance, their personal tax liability will fall by around £56 in 2019-2020, from around £398 to £342 a year.

6.38 After-tax earnings vary according to household circumstances, with tax credits or Universal Credit boosting the earnings of low-income households, particularly those with children. Modelling is sensitive to the precise assumptions, including whether the household is receiving 'legacy' benefits or Universal Credit. For simplicity, we assume that households are receiving Universal Credit.

6.39 Table 6.3 shows that, before any adjustment for tax and benefits, an NLW worker working 30 hours a week will see an increase of £11.40 in their weekly pay when the NLW increases, from £7.83 to £8.21, in April 2019. Using HM Treasury estimates, a single NLW worker with no children will keep most of the 4.9 per cent increase in the NLW. After adjusting for tax and benefits, their weekly household income will rise by 4.8 per cent, or £10.73 a week, in April 2019. Their equivalent hourly income will rise by 36 pence, from £7.49 to £7.85.

6.40 A married-couple household, with two children and only one working parent, in receipt of Universal Credit, would see their weekly income rise in cash terms by more than the £11.40 increase in weekly pay due to the NLW. Due to the other changes in the Budget, in particular the increase in the personal tax allowance and work allowances in Universal Credit, their weekly household income, after adjusting for tax and benefits, would increase by £17.39 in April 2019, reaching £426.65. This is equivalent to an hourly rate of £14.22 an hour and represents an increase in their net income of 4.2 per cent. This stands in stark contrast to the picture over recent years, where a family household on Universal Credit kept very little of the increase in the NLW, after adjustment for tax and benefits. In our 2017 Report, we estimated that the 4.4 per cent increase in the NLW would translate into an increase of just 0.8 per cent in household income, after tax and benefits adjustments; similarly, our Autumn 2016 Report estimated an increase in household income of just 1.1 per cent after tax and benefits.

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Table 6.3: Impact of Personal Tax Allowance and benefit changes on household income of NLW workers, UK, 2018/19-2019/20

| NLW worker, 30 hour week | 2018/19 | 2019/20 | 2018/19 to 2019/20 | |
|--|--------------|--------------|--------------------|------------|
| | £ | £ | £ | % |
| Pre-tax hourly rate | 7.83 | 8.21 | 0.38 | 4.9 |
| Annual pay | 12,248 | 12,842 | 594.40 | 4.9 |
| Tax threshold | 11,850 | 12,500 | 650.00 | 5.5 |
| Taxable pay (annual) | 397.69 | 342.08 | -55.60 | -14.0 |
| Weekly pay before tax/NICs/Tax Credits | 234.90 | 246.30 | 11.40 | 4.9 |
| Single, no children | | | | |
| Weekly household income after tax/NICs/Tax Credits | 224.62 | 235.35 | 10.73 | 4.8 |
| Post-tax/benefit change (£) | -10.28 | -10.95 | | |
| Post-tax/benefit change (%) | -4.4 | -4.4 | | |
| After-tax hourly rate | 7.49 | 7.85 | 0.36 | 4.8 |
| Married couple, one working, 2 children | | | | |
| Weekly household income after tax/NICs/Tax Credits | 409.26 | 426.65 | 17.39 | 4.2 |
| Post-tax/benefit change (£) | 174.36 | 180.35 | | |
| Post-tax/benefit change (%) | 74.2 | 73.2 | | |
| After-tax hourly rate | 13.64 | 14.22 | 0.58 | 4.2 |

Source: LPC estimates using HM Treasury data, October 2018.

Notes:

- Estimates assume that the household is in receipt of Universal Credit with no housing costs.
- Estimates exclude Council Tax Support.

6.41 Table 6.4 shows the same analysis for a worker on the 21-24 Year Old Rate. Before any adjustment for tax and benefits, a 21-24 year old working 30 hours a week on the 21-24 Year Old Rate, will see an increase of £9.60 in their weekly pay when the 21-24 Year Old rate increases from £7.38 to £7.70 (4.3 per cent) in April 2019.

6.42 After adjusting for tax and benefits, a single worker with no children will keep most of the 4.3 per cent increase in the 21-24 Year Old Rate, with their weekly household income rising by 4.2 per cent, or £8.93 a week, equivalent to an after-tax hourly rate of £7.44 an hour. However, this is less than the increase in weekly household income for a married couple household, with two children and only one working parent, in receipt of Universal Credit.

6.43 The family would see their weekly income rise in cash terms by more than the £9.60 increase in the NMW; caused by the increase in the work allowances in Universal Credit, and increases in the personal tax allowance. After adjusting for tax and benefits their weekly income would increase by £16.81 a week – representing a 4.4 per cent increase in net income. This equates to an increase of 56 pence in their post-tax and benefits hourly rate, from £12.70 to £13.26 an hour.

6.44 As with the family on the NLW, discussed previously, the anticipated post-tax and benefits increase in household income in April 2019 is far greater than in recent years. In our 2017 Report, we estimated that the 4.7 per cent increase in the 21-24 Year Old Rate would translate into an increase of just 0.9 per cent in household income, after tax and benefits adjustments; similarly,

our Autumn 2016 Report estimated that the 1.4 per cent increase in the 21-24 Year Old Rate would translate into an increase in household income of just 0.4 per cent after tax and benefits.

Table 6.4: Impact of Personal Tax Allowance and benefit changes on household income of NMW workers aged 21-24 years, UK, 2018/19-2019/20

| 21-24 Years, 30 hour week | 2018/19 | 2019/20 | 2018/19 to 2019/20 | |
|--|--------------|--------------|--------------------|------------|
| | £ | £ | £ | % |
| Pre-tax hourly rate | 7.38 | 7.70 | 0.32 | 4.3 |
| Annual pay | 11,544 | 12,044 | 500.54 | 4.3 |
| Tax threshold | 11,850 | 12,500 | 650.00 | 5.5 |
| Taxable pay | 0.00 | 0.00 | 0.00 | 0.00 |
| Weekly pay before tax/NICs/Tax Credits | 221.40 | 231.00 | 9.60 | 4.3 |
| Single, no children | | | | |
| Weekly household income after tax/NICs/Tax Credits | 214.27 | 223.20 | 8.93 | 4.2 |
| Post-tax/benefit change (£) | -7.13 | -7.80 | | |
| Post-tax/benefit change (%) | -3.2 | -3.4 | | |
| After-tax hourly rate | 7.14 | 7.44 | 0.30 | 4.2 |
| Married couple, one working, 2 children | | | | |
| Weekly household income after tax/NICs/Tax Credits | 381.00 | 397.81 | 16.81 | 4.4 |
| Post-tax/benefit change (£) | 159.60 | 166.81 | | |
| Post-tax/benefit change (%) | 72.1 | 72.2 | | |
| After-tax hourly rate | 12.70 | 13.26 | 0.56 | 4.4 |

Source: LPC estimates using HM Treasury data, October 2018.

Notes:

- Estimates assume that the household is in receipt of Universal Credit with no housing costs.
- Estimates exclude Council Tax Support.

6.45 On an annual basis, the April 2019 increases in the NLW and 21-24 Year Old Rate will deliver a net change in annual income of £559 for a single person NLW household, and £466 for a single person household on the 21-24 Year Old Rate. For a married-couple household, with two children and only one working parent, net annual household income will increase by £907 for a household on the NLW, and £876 for a household on the 21-24 Year Old Rate.

Conclusion

6.46 We have based our recommended rates for the NLW and the other rates of the minimum wage on careful scrutiny of the outlook for the economy and the labour market, as well as consideration of stakeholders' views. On the basis of the evidence, we have recommended remaining on a straight-line path for the NLW. On the youth rates, the context of low youth unemployment, falling underemployment and above average pay growth have led us to once more recommend real-terms increases, albeit smaller than last year due to slightly weaker labour market conditions for young people. We have made recommendations that we consider appropriate for the current state of the economy; we will continue to monitor this over the coming year, particularly in light of the outcomes of Brexit negotiations.

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6.47 We estimate that over 2.8 million people will benefit directly from the rates we have recommended. Changes to the tax and benefit system mean that many of these workers will keep more of the gains than last year.

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.

Anglesey Sea Zoo
Association of Convenience Stores
Association of Directors of Adult Social Services
Association of Labour Providers
Athena Care
Barnstaple Chamber of Commerce
Better Than Zero
Blackmore Retail
British Beer & Pub Association
British Chambers of Commerce
British Independent Retailers Association
British Institute of Facilities Management
British Retail Consortium
Broadway Premier
Care England
Castle Green Hotel
CBI
Chartered Institute of Payroll Professionals (CIPP)
Chartered Institute of Personnel and Development
Citizens Advice
Citizens Advice Scotland
Clyde Carers
Coleg Menai
Colliers International
Communication Workers Union
Cumbria Chamber of Commerce
Cumbria Tourism
Cygnet Care (Devon) Ltd
Dimensions

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EEF, the manufacturers' organisation
Employment Lawyers Association
English Lakes Hotels
Equity
Ernst and Young LLP
Eutopia
Extraman Ltd
Fair Hospitality
Federation of Small Businesses
Federation of Small Businesses Wales
Federation of Wholesale Distributors
Flame Urban Spa Ltd
Food and Drink Federation
FSB Cumbria
FSB Devon
GMB
Greater Birmingham Chambers of Commerce
Henry Scrope
Hft
HM Government
Housing and Care 21
Incomes Data Research
Institute for Fiscal Studies
Intergenerational Foundation
International Transport Workers' Federation
JMK Solicitors
Jobcentre Plus
Joseph Rowntree Foundation
Kanes Foods
Kilmorey Care
Labour Research Department
Lakeland Limited
Living Wage Foundation
Local Government Association
Low Incomes Tax Reform Group
Manchester City Council
National Care Association
National Care Forum
National Day Nurseries Association (NDNA)
National Farmers' Union
National Farmers' Union Scotland

National Federation of Retail Newsagents
National Hairdressers Federation
National Institute of Economic and Social Research
National Union of Rail, Maritime and Transport Workers' (RMT)
National Union of Students
Newry & Mourne Co-operative and Enterprise Agency
Newry Chamber of Commerce & Trade
Perth Citizens Advice Bureau
Petroc
Place UK Ltd
Pre-school Learning Alliance
Recruitment & Employment Confederation
Research and Innovations Group
Resolution Foundation
Retail NI
Royal Mencap Society
Scottish Grocers' Federation
Scottish Trades Union Congress
Sense
Sodexo UK and Ireland
Southern Regional College
South Lakes Citizens Advice
SPAR Luncarty
St. Columba's Day Centre
Swallowfield
The Management Centre
Trades Union Congress
Tre Ysgawen Hall Country House Hotel & Spa
UK Cinema Association
UK Fashion & Textile Association
UKHospitality
UKHospitality (Scotland)
Union of Shop, Distributive and Allied Workers
UNISON
Unite the Union
Unite, NI
Unite, Scotland
United Kingdom Home Care Association
Universities and Colleges Employers Association
Usdaw, NI
Wallis Events

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Welsh Government

Whitbread Plc

Winander Leisure Ltd

Windermere Lake Cruises

XpertHR

Young Devon and Space PSM Youth Club

Young Women's Trust

Your Accounts Squared Ltd

Youth Employment UK

Appendix 2

Research summary for the 2018 Report

1. Since the Low Pay Commission (LPC) was established in 1997, research has played a vital role in informing us about the impact of the National Minimum Wage (NMW). This continues to be the case. Indeed, the importance of research has been given an added boost 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 until 2020. In both our commissioned research and that conducted independently, we have sought to use the findings to better understand the impact of the minimum wage in the UK and how it might affect the labour market and economy more generally.

2. For this report, and in addressing our terms of reference, we commissioned a comprehensive programme of eight research projects; four concerned with the impact of the minimum wage (NLW and NMW), and four with a focus on the additional items in our remit (the review of the ‘Taylor Premium’ and the review of youth rates). Four of these projects – two on the impact of the minimum wage and two on Taylor-related issues – have reported in full and covered the following areas:

- an investigation of the impact of the NLW on pay, employment and hours;
- an assessment of the impact of the UK minimum wage on automation and offshoring;
- an assessment of the use of zero-hours and minimum-hours contracts and the volatility of those hours and its impact on earnings; and
- an overview of what other countries do to tackle insecurity of work (and earnings).

3. There are four ongoing research projects:

- an investigation of the impact of the NLW on employment and hours, including on young people;
- an assessment of the impact of the NLW on earnings, differentials and progression;
- an investigation of the factors affecting employers’ pay-setting for young people; and
- an assessment of the impact of the minimum wage on young peoples’ decisions to enter the labour market.

4. These research projects were also supplemented by in-house research investigating the impact of the NLW. The focus this year, unlike the previous two years, has been on more econometric studies. Various qualitative studies have been carried out by other organisations throughout the year, for example, CIPD (2018c) and a range of business organisations (such as the Federation of Small Businesses, Association of Convenience Stores, the National Hairdressers Federation, the National Farmers’ Union, the British Retail Consortium and the British Chambers of

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Commerce), as well as a survey of trade union members (Usdaw, 2018). The findings from the external research that are relevant to the impact of the NLW are summarised in Chapter 2.

5. We start our summary by considering the impact of the minimum wage (the NMW and the NLW) on pay, employment and hours. The role of minimum wages in advancing automation and offshoring is then considered. We conclude this appendix by noting the key findings from the projects informing our work on the 'Taylor Premium' and reviewing preliminary findings from research commissioned to provide insights into our review of the youth rates. The research informing the review of youth rates will be published alongside our youth review in the spring of 2019, while that relevant to the Taylor Review will accompany our report on Taylor that will be published soon.

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6. In 2016, we commissioned the National Institute of Economic and Social Research (NIESR) to conduct an econometric analysis of the impact of the NLW on earnings, employment and hours. Recognising the limited data available when the research started, this study was conducted over a longer time period than usual with interim findings delivered for our 2017 Report. Building on the difference-in-difference methods used in previous studies, such as Dickens, Riley and Wilkinson (2015), this research attempted to identify the impact of the NLW. That is, it identified a treated group (those directly affected by the NLW) and a similar 'untreated' or 'control' group that were not affected (by the increases in the NLW). It then compared the outcomes of the treated group with those of the control group between the pre-treatment period (pre-2016) and the post-treatment period (after 2016). Three definitions of the treated group were used: all workers earning between the initial minimum wage and the forthcoming one; only workers earning at or very close to the initial minimum wage; and a 'wage gap' (a measure of the gap between the individual wage and the forthcoming minimum wage).

7. In the United States, with varying state and city minimum wages, the control group can be relatively easy to identify. This is harder in the UK as the minimum wage is national. The researchers made use of two different ways to identify a control group. First, as in much of the previous UK literature, they identified workers who prior to each increase in the NLW were already paid just above the new NLW and thus not directly affected by the increase. Second, they made use of the fact that the NLW increases did not apply to those aged 21-24 – comparing the outcomes of those aged 25 and over with that of the younger age group.

8. The interim report – Aitken, Dolton, Ebell and Riley (2017) – using the Annual Survey of Hours and Earnings (ASHE) up to 2016 and the quarterly Labour Force Survey (LFS) up to the second quarter of 2017, had found that the introduction of the NLW in April 2016 had led to large increases in real wages for NLW workers, particularly for those that had previously been paid the NMW. These initial results also pointed to some evidence of potentially substantial negative effects on employment from the introduction of the NLW. However, considering the statistically strong placebo effects in some of the specifications, the researchers suggested that the initial results did not provide conclusive evidence of an impact of the introduction of the NLW on employment retention.

- 9.** As part of the research programme, additional quasi-experimental specifications were explored using different baseline specifications. The researchers examined placebo effects in years prior to the introduction of the NLW to see whether there were similar effects of an imaginary NLW introduced in previous years. The final report – Aitken, Dolton and Riley (2018) – concluded that these were supportive of the analysis (in that there were no significant placebo effects) using some specifications based on the standard identification methodology. However, the placebo tests were generally less supportive of the age-based approach to identification.
- 10.** The researchers also highlighted concerns about using data from ASHE to identify the effects of the NLW, as its introduction in April 2016 occurred at roughly the same time as the annual survey was conducted, thereby potentially covering different minimum wage years depending on the length of the pay reference period. To address this, they considered the quarterly LFS to isolate the effects of the NLW from the NMW. But, as in much previous work, analysis using the LFS did not yield significant effects of increases in the wage floor on wage growth. Using the ASHE, the researchers also looked in more detail at particular industries, occupations and regions. The researchers again compared the outcomes of the treated group with those of the control group.
- 11.** Taking these caveats into account, Aitken, Dolton and Riley (2018) found that – using the ASHE – real hourly wages for the treated group increased by around 4-7 percentage points more than they otherwise would have done, at the time of the NLW’s introduction. In addition, the NLW uprating in 2017 added a further 0.8-1.3 percentage points. These effects were evident across all regions, and all low-paying industries and occupations.
- 12.** However, considering all employees, they found no conclusive evidence of any significant impact on employment retention or hours when using the approach of Dickens, Riley and Wilkinson (2015). They looked for effects separately for males working part and full-time and for females working part and full-time. Using ASHE, they found little evidence of negative effects, except for women working part-time. For this group, employment retention fell by 1.5-2.6 percentage points. This was similar to the findings of Dickens, Riley and Wilkinson (2015) on the impacts of the introduction of the NMW. Analysing the LFS, no such effects were found for women working part-time, but the LFS also did not identify significant wage effects. The method comparing those aged 25-26 with those aged 22-23 found no significant effects on employment retention. The results suggested that wages increased for both groups at the time of the introduction of the NLW, with little differential change in employment retention between these two age groups.
- 13.** Using the ASHE data, and considering low-paying occupations and industries, the researchers generally found no evidence of any significant employment retention effects except in retail. There was some evidence of a negative effect on employment retention for women working part-time in the lowest-paying retail occupations, and in the retail industry. But they found no significant negative effects on hours for women working part-time in retail. Looking at the regions and countries of Great Britain, negative employment retention effects for women working part-time were only found in the North East. There was also some evidence of a reduction in hours among low-paid women working part-time in London.

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14. Aitken, Dolton and Riley (2018) concluded that the NLW had been a significant intervention in the labour market, raising the wages of the lowest paid, but that it had so far had little adverse impact on overall employment retention. However, consistent with previous evidence such as Dickens, Riley and Wilkinson (2015), they also found some evidence of small adverse effects on the employment opportunities of women working part-time. This study also found negative effects on employment retention in the retail sector. These negative findings were dependent on model specification and the data source used. It should also be noted that, apart from the exceptions noted, although their point estimates consistently cannot reject the null hypothesis that the NLW has had no impact, the confidence intervals are wide, meaning that large negative or positive effects cannot be ruled out.

15. In newly commissioned research that is due to report in full next autumn, Capuano, Cockett and Gray (2018) builds on and complements the work conducted by Aitken, Dolton and Riley (2018) in looking at the impact of the NLW on employment and hours, including on young people. They will look at how effects might vary for men and women working full-time and part-time, as well as assessing how the NLW has affected those aged 16-17, 18-20 and 21-24.

16. Their analysis uses ASHE and the LFS but, in contrast to that previous study (Aitken, Dolton and Riley, 2018), this research uses the five-quarter Longitudinal Labour Force Survey (LLFS), instead of the quarterly LFS. They identify three methods to investigate the impact. First, they define the treatment group as those who earned less than the forthcoming minimum wage. They then compare outcomes on employment retention and hours worked with a comparison group (who earned more than 10 per cent above the forthcoming minimum wage, or an alternative group earning 10-20 per cent above the forthcoming minimum wage). They compare outcomes from 2011-15 with those after 2016.

17. Second, they use age (those aged under 25 and those aged 25 and over) and wage (those aged 25 and over earning less than the forthcoming minimum and those earning more) comparison groups. They argue that the difference between the two relative effects better identifies the true impact of the introduction of the NLW.

18. Third, to address methodological issues raised in Brewer, Crossley and Zilio (2015) and refined in Brewer, Crossley and Joyce (2018), they will report confidence intervals for their estimates, focus on economic rather than statistical significance and report minimum detectable effects (which gives a better idea of how large effects would need to be).

19. In very preliminary analysis of the first method (the simple difference-in-difference) using the longitudinal LFS, they found that, although the coefficients on employment retention were negative, they were largely statistically insignificant and, in economic terms, small. The effects on hours were also negative but were insignificant in statistical and economic terms.

20. The third project that assesses the impact of the minimum wage is an investigation of its effects on earnings, pay differentials and wage progression. As above, it is a longer-term project that will conclude in autumn 2019 and consists of two parts. Avram and Harkness (2018) provide new evidence on progression out of minimum wage jobs using data from a longitudinal survey of UK households, Understanding Society (the UK Longitudinal Household Survey, which replaced the British Household Panel Study), that covers 2009-2016. They focus on those aged 25 and over. Over the next year, they will extend this to cover 2017. The second part of the project will use ASHE

from 2008-2017 to improve the existing evidence on the impact of the UK minimum wage on the distribution of hourly and weekly earnings.

21. The first element of the project, and the focus of the report, examines how individual, job and employer characteristics affect transitions out of minimum wage jobs, as well as any evidence that the level of the minimum wage (NMW/NLW) has had an impact on the probability of transitioning. Theory is ambiguous on how minimum wage increases affect wage progression. On the one hand, increases in the minimum wage might lead to bunching and squeezed differentials with fewer incentives for progression. On the other, it may lead to increased training and work re-organisation, making progression easier.

22. Previous research had shown the introduction of the NMW had significantly increased pay at the bottom without affecting employment. Compliance was found to be generally high and spillovers limited. However, there had been increased bunching at the NMW/NLW with an apparent squeeze on differentials. Previous studies in the UK had focused on the period prior to 2010. Whereas the existing literature convincingly shows that the minimum wage has boosted wage growth at the bottom of the distribution, there is limited evidence on its impact on wage progression. Cai, Mavromaras and Sloane (2018) and Jones, Jones, Latreille, Murphy and Sloane (2013) using UK data found no effects on low wage dynamics, while Rinz and Voorheis (2018) using US data found that minimum wages had increased earnings mobility at the bottom of the wage distribution. The focus of this research so far had been on progression out of minimum wage jobs and the role of the minimum wage level as well as that of individual and job characteristics, using Understanding Society data covering the period 2009-2016 – a period when the minimum wage increased considerably relative to median pay and coverage increased from around 4 per cent to 7 per cent of workers.

23. Using seven waves of Understanding Society data from 2009-2016 and focussing on those aged 25 and over, they study transitions between four pay states over time and across low and high wage areas (defined using travel-to-work area geographies). Using a competing risks discrete time model, they estimate the probability of leaving a minimum wage job to a low-pay job, a high-pay job or non-employment. They found that mobility out of minimum wage jobs was quite high with around a half leaving for higher paid jobs each year, but most of these (around four-fifths) were to higher-paying low-wage jobs rather than to high-paying jobs. Transitions over three years were slightly higher. These findings are consistent with the earlier studies – Bryan and Taylor (2006) and Jones, Jones, Murphy and Sloane (2004) – that had looked at the introduction of the NMW.

24. Consistent with another previous study – Jones, Jones, Letreille, Murphy and Sloane (2013) – they also find considerable variation across geographies in the transitions out of minimum wage jobs. Investigating the impact of the level of the minimum wage on transition probabilities, they compare low and high wage areas over time. If the minimum wage does affect transition probabilities, it is expected that as the bite increases low-wage areas would be more affected than high-wage areas. They found that transition probabilities from minimum wage jobs to higher-paying low-wage jobs were similar across areas with different wage levels, whereas the transition probability to a high-paid job (paying more than two-thirds of median hourly earnings) increased as the area wage level increases. They note, however, that this result does not take account of differences in workforce characteristics across areas with different wage levels.

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25. They also use a competing risks discrete time model to investigate the impact of changes in the minimum wage on the probabilities of moving out of a minimum wage job, by comparing how transitions in high and low wage areas change as the minimum wage bite increases. It is expected that low wage areas would be more affected than high wage areas. They find no evidence that transition probabilities in low wage areas are more affected by changes in the minimum wage bite than those in high wage areas. The estimated differences are both statistically insignificant and close to zero in substantive terms.

26. They conclude that there is no evidence, in the period studied, that increases in the NMW or NLW have had a negative or positive effect on wage progression. These results are in line with two other studies that have examined low pay dynamics – Cai, Mavromaras and Sloane (2018) and Jones, Jones, Latreille, Murphy and Sloane (2013). Using different data sources, they also found no effects of minimum wages on transition probabilities.

27. However, Avram and Harkness (2018) did find that individual and job characteristics were important determinants of transitions out of minimum wage jobs. The transition to higher pay was associated with higher qualifications; working in large firms or the public sector; and working on temporary contracts. Negative influences were from being female; working part-time; working in hospitality (accommodation and food services) or in the manufacture of food, beverages or textiles; previous unemployment; and duration in a minimum wage job. Thus, there was some evidence consistent with scarring from minimum wage persistence (although the data do not allow the researchers to control for unobserved heterogeneity). This finding is also consistent with the previous literature on the minimum wage – Bryan and Taylor (2006) – and low pay dynamics more generally – Stewart (2007) and Cappellari and Jenkins (2008). Avram and Harkness (2018) also found similar individual and job characteristics associated with transitions to both higher-paying low-paid employment and high-paid employment.

28. The second element of the research will build on previous work by Stewart (2002) and Butcher, Dickens and Manning (2012). They will use difference-in-difference techniques to examine the impact of minimum wage upratings on earnings distributions. They will also look at changes in earnings distributions by making use of the geographic variation in wages, comparing the impacts in low-wage areas (those most affected by the NMW and NLW) with those in higher-wage (less affected) areas. They will report these findings in time for our 2019 Report.

29. In summary, Avram and Harkness (2018) concluded that there was substantial mobility out of minimum wage jobs but that most transitions were short-range (and workers continued to be low paid). There also appears to be no impact of minimum wage increases on wage progression probabilities.

30. To complement our commissioned research, we have also conducted some in-house analysis. Dickens and Lind (2018) assessed the impact of the recent introduction and subsequent increases of the NLW on a range of labour market outcomes. In contrast to the other two studies investigating the impact of the NLW on employment and hours, that used individual data to compare individuals affected by the minimum wage with those not affected, this study made use of the geographic variation in wages. Unlike the other two studies, this approach should capture all employment change (entry and exit) and not just employment retention (exit).

31. They constructed quarterly data from the first quarter of 2013 to the first quarter of 2018 for 218 travel to work areas (TTWAs) in Great Britain.⁵ They derived measures of employment, unemployment, inactivity, youth employment, self-employment and hours from the LFS, and earnings measures from ASHE. They defined low and high wage areas in two ways – by bite (the NMW/NLW as a proportion of median earnings) and by coverage (the proportion paid below £7.20) in spring 2015. They then compared outcomes across low and high wage areas as the NLW was introduced and then raised to £7.50 an hour. They used a difference-in-difference approach to conduct these comparisons.

32. They found strong and significant wage effects, with the largest increases at the bottom of the pay distribution. These wage effects were stronger for women than men. Unsurprisingly, the effect in 2017 was smaller than in 2016. In contrast, the effects on employment appear stronger in 2017 than in 2016. They found a statistically significant but modest negative effect on employment in 2017 but no effect in 2016. That negative finding on employment was not reflected by an increase in unemployment but in inactivity and there was no significant effect found on hours worked. Although they noted that the data was volatile (due to smaller sample sizes), they also found no effect on the employment of young people. They did find some positive but not robust effects on self-employment in both 2016 and 2017.

33. They then tested for robustness of the common trends assumption and in the choice of area. Using 418 local authorities, they again found some evidence of negative effects in 2017, but not in their preferred specification. They concluded that there were large relative increases in the minimum wage in 2016 and 2017 and that they had found some evidence of some job loss in 2017, particularly for women.

34. The authors acknowledge that further work was needed to address some reservations about the methodology used and the robustness of the findings. These included: using the bite as a measure of wage variation (when it is driven by changes in the median); a larger employment impact in 2017 than in 2016; the sensitivity of the results to weighting; the potential role of Universal Credit; and the large elasticities implied by some of the estimates.

Impact on automation and offshoring

35. The fourth research project that we commissioned for our 2018 Report looked at whether increases in the minimum wage changed the employment probabilities of low-skilled workers who are reliant on automatable jobs or jobs that could reasonably be offshored. This was a longer-term project that had reported interim findings for our 2017 Report. Building on recent US studies and taking account of the definitions used previously in the US, but utilising the UK Skills and Employment Survey series, Lordan (2017) distinguished occupations that were automatable (and those that were not) and those that were offshorable (and those that were not). But first, we give a brief summary of the findings from those US studies.

36. Lordan and Neumark (2017) investigated the impact of minimum wages on automatable jobs – those that employers find easier to substitute with machines – in the US over the period 1980-2015. Using pooled monthly samples from the Current Population Survey (CPS) and matching

⁵ Disaggregated data at that geographic level is not available for Northern Ireland.

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them to monthly state-level data on minimum wages, they found that minimum wage increases significantly decreased the share of automatable employment held by low-skilled workers and increased the likelihood of unemployment for those low-skilled workers in automatable jobs. The effects were larger for older, low-skilled workers in manufacturing.

37. In complementary work, Aaronson and Phelan (2017) – again using the CPS – also analysed the impact of minimum wage hikes on the susceptibility of low-wage employment to technological substitution. They found evidence that minimum wage increases led to reductions in employment of cognitively routine tasks but found no evidence of reductions in manually-routine or non-routine low-wage occupations. The effects appeared small due to concurrent growth in other low-wage jobs, but workers previously employed in cognitively routine jobs did experience relative wage losses.

38. Using quarterly Labour Force Survey data from 1997-2017, Lordan (2017) calculated employment shares for automatable and offshorable jobs. She then used individual-level data to estimate whether increases in the minimum wage increased the likelihood of those in automatable or offshorable employment losing their jobs in the next period. She also considered the impact on hours.

39. She found that minimum wage increases had been followed by falls in the employment shares of automatable or offshorable jobs but that, in aggregate, these effects were modest. They were larger for manufacturing, particularly for automation, but remained modest. Larger effects were also found for low-skilled males, older workers and black low-skilled workers.

40. In her analysis at the individual level she found that, following a minimum wage increase, low-skilled workers in automatable or offshorable employment were less likely to keep their jobs in the next period than those in non-automatable or non-offshorable jobs. They also worked fewer hours. The effects were again modest, but they were greater for manufacturing, males and older workers.

41. Following a minimum wage increase, those in automatable or offshorable employment were also more likely to switch jobs to non-automatable or non-offshorable jobs in the next period. On aggregate, these effects were again small. Significant but modest effects were also found when using shares of hours in automatable or offshorable employment. These were again larger for males, older workers and Black workers.

42. Lordan (2018) updates this research by drawing on an alternative dataset, ASHE, that was not available to her when conducting the previous analysis. The earnings data in ASHE is considered as more reliable and precise than that derived in the quarterly LFS. The treatment and control groups should thus be more reliably defined. However, data on ethnicity is not recorded in ASHE, so the new research focused on age and gender.

43. Overall, she found that the analysis investigating the impact of the minimum wage on the shares of automatable employment were consistent with the findings using the quarterly LFS. That is, that there was some evidence of significant negative employment effects. Indeed, she found significant effects in many more industries, although the most substantive effects were still in manufacturing. In contrast, the analysis of minimum wage effects on offshorable jobs found the effects were insignificant and centred around zero.

44. In assessing the impact by age and gender, Lordan (2018) also found that the oldest and youngest workers were the most affected by minimum wage increases on the shares of automatable employment; and that women were substantially more affected than men. However, as with the aggregate analysis, she found no significant impacts of the minimum wage on offshorable jobs across all the demographics investigated.

45. She concluded her econometric analysis by noting that the effects she had found in the UK so far were smaller than those found in the US.

46. Lordan (2018) also speculated about the future of automatable and offshorable jobs. She thought that the classification of offshorable jobs was unlikely to change in the short to medium term but considered that the definition of automatable jobs was evolving. She identified three classifications of low-skilled jobs that were useful in thinking about the future. First, those where the jobs were unlikely to be fully automatable as they required some human interaction, such as childcare and hairdressing. Second, those where human interactions are not always required but where they may be preferred, such as waiting and bar staff. These jobs are to some extent automatable and it is likely that there will be some polarisation in these occupations between robots and humans. Third, there are those jobs where customers do not care whether the service is delivered by a human or a robot, and where innovation has been advancing. These are jobs that have a high risk of disappearing completely and might include drivers, delivery jobs and security. She summarised this section by noting that jobs would be lost to automation but that new jobs would be created that require different skills. In the past, the jobs lost had been more than replaced by new jobs. However, that did not mean that would happen in the future and we needed to be prepared.

47. Cribb, Joyce and Norris Keiller (2018), in a research report for the Institute for Fiscal Studies, also looked at the impact of minimum wages on automation. They argued that the small or negligible employment effects of the minimum wage found to date may not apply as the National Living Wage increases to a rate of over £8.50 an hour in 2020. In 2015, around 4 per cent of workers aged 25 and over were covered and this was set to rise to 12 per cent by 2020. As well as covering many more jobs in 2020, the minimum wage will likely cover very different jobs. They noted that many of the jobs covered by the minimum wage in 2015 were in personal service occupations, such as workers in hospitality, and these jobs were not readily doable by machines.

48. However, they found that jobs set to be covered by the NLW in 2020 were more than twice as likely to be in the top decile of the most 'routine occupations', such as retail cashiers and receptionists, as those directly affected by the minimum wage in 2015. They found that ease of automation increases with wages up to around the 25th percentile – a quarter of the way along the earnings distribution – but then falls back as wages rise further. They concluded that it was unclear what the net employment effects would be. As technology replaces some jobs, new jobs can be created that are complementary to that new technology. Minimum wage workers may just end up doing different jobs rather than losing employment altogether.

Additional research projects for the 2018 Report and beyond

49. The four other research projects commissioned this year related to the two reviews that we have been conducting – the review of the Taylor recommendation that hours worked beyond those contracted should be subject to a minimum wage premium, and the review of youth rates. These will be covered in more detail when the respective reviews are published – the one on the Taylor Premium and one-sided flexibility in the autumn and the other on the youth rates in spring 2019.

Additional research: Informing our review of the Taylor recommendation on a premium for non-guaranteed hours

50. The next two research projects were devoted to research to help the Commission in its deliberations on the recommendation from the Taylor Review of Modern Work Practices that the Low Pay Commission consider a premium for hours worked above those contracted.

51. The first of these projects – Incomes Data Research (2018) – gathered evidence from employers on the extent to which low-paid workers work beyond their contracted hours, and the degree of volatility in those hours from week to week. The information was gathered from HR managers and other HR professionals using an electronic survey of around 40 questions, supplemented by semi-structured telephone interviews with a sub-sample of respondents. Respondents ranged from micro firms to large retailers covering many low-paying sectors, including many household names. It focused on firms that use some form of minimum-hours contract (MHC) or zero-hours contract (ZHC) for workers paid less than £10 an hour.

52. Among respondents, ZHCs appeared to be more prevalent (widespread across companies) than guaranteed MHCs but tended to cover fewer staff. They also found that staff were generally not given a choice over the type of contract. The number of hours guaranteed under an MHC varied with individual circumstances with four and six-hour contracts common. Responses suggested that typical hours per week (around twelve) were similar for staff on ZHCs and MHCs with a minimum of four hours for MHCs and only 90 minutes for ZHCs. Staff were also working virtually full-time (up to 41.4 hours a week for MHCs and 38.4 hours a week for ZHCs) on both contract types. Around a fifth of respondents reported that these contracts were reserved for certain jobs such as sales assistants, housekeepers and cleaners.

53. Respondents reported using these contracts to mainly manage demand and cope with temporary and seasonal increases in demand. Around two-thirds of respondents did not provide a minimum shift length. Those that did generally used 4-5 hours. Few firms used app-based software for shift scheduling with most respondents using phone calls, texts or a rota published on notice boards. The most common notice period for shifts was 2-4 weeks, but there was a high degree of variation around this. Hardly any respondents provided compensation for cancelled shifts. Employers provided ZHC staff with more flexibility to turn down or request an alternative shift than those on MHCs.

54. Incomes Data Research (2018) concluded that the research had identified a wide range of scenarios for the use of variable hours contracts. This made it difficult to develop policies that would tackle some of the worse examples of poor employer behaviour without having unintended consequences on other practices. MHCs seemed to have more one-sided flexibility and more volatile hours than ZHCs. Further, variations in working hours appeared to be more seasonal than weekly, although employers did attempt to smooth earnings in various ways.

55. The other Taylor Review-related commissioned research project – D’Arcy and Rahman (2018) – took on a more international perspective and investigated how other countries addressed insecurity of income for low-paid workers. Debates about atypical work have emerged amid a restructuring of typical working relationships across industrialised countries. Atypical work covers a wide range of employment relationships and involves different terminology across countries. While part-time work, ZHCs, temporary contracts and self-employment are all terms used to describe atypical work in the UK, elsewhere other terms can be used to describe very similar working relationships: on-call work, just-in-time scheduling, if-and-when contracts.

56. International comparisons were not straightforward as the context varied by country, including: institutional frameworks; the industrial composition of the economy; the broader strength of the labour market; the extent of collective bargaining; labour market regulation; and enforcement.

57. In many countries, governments had introduced policy changes to enable both the increased flexibility required by firms and the security required by workers. This generally required a move away from the framework provided by the ‘typical working relationship’. These can be broadly grouped into four types of responses: boosting legal protection for insecure workers; increasing the cost of insecure work; ensuring the social safety net catches such workers; or allowing market forces and tightening labour markets to resolve the issues.

58. First, the most common approach was boosting legal protection. This included bans on ZHCs with some exceptions (as in France); or imposing a minimum number of hours at the minimum wage which must be paid (as in the Netherlands). Others had adopted restrictions on overtime and non-guaranteed hours. These included: needing to register and apply at the employment department (as in Luxembourg); imposing a maximum number of hours of overtime per year (as in Spain); restricting coverage to certain age groups (as in Italy) or certain sectors (as in Hungary); limiting the proportion of staff that can be employed on ZHCs (as in Norway); enabling transition from ZHCs to guaranteed hours after a period of time (as in Italy); imposing minimum shift notification periods (as in Germany); allowing workers the freedom to refuse hours without retribution (such as in New Zealand and New Hampshire, USA); imposing a minimum number of shifts (as in San Francisco, USA) or a minimum number of median hours offered (as in Seattle, USA); giving the right to request extra shifts, hours and timings (as in Emeryville, California, USA); or ensuring that additional hours must be offered to existing staff before new employees can be hired (as in San Jose, USA).

59. A second approach taken was to try and increase the cost of insecure work. Examples included: casual loading premia (which are 25 per cent in Australia); enforcing an overtime premium linked to base wage (as in Austria) or the minimum wage (as in Newfoundland and Labrador, Canada, where there is a percentage premium on the minimum wage). The latter was the closest example to the Taylor Premium (a higher minimum wage for non-guaranteed hours), that we had found anywhere in the world. Other examples included imposing ‘call-in’ pay for unscheduled or cancelled

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shifts (as in New York); and raising non-wage costs (such as varying social security contributions in Slovenia or introducing a flat rate for mini-jobs in Germany)

60. The third approach identified was ensuring the social safety net catches such workers. These included: in-work benefits, such as tax credits, to offset the risk to workers of not working enough hours; a strong safety net to make insecure work less appealing; amendments to the treatment of the self-employed and others to broaden coverage within social security systems to cover insecure work; special protections for non-standard employment (some countries such as Belgium and Sweden have introduced such measures); and enabling collective bargaining agreements to enhance legal protections where they did not currently exist in law (as in Belgium).

61. The fourth and final approach had been to not intervene and let the tightening labour market resolve any issues. However, that was not guaranteed to produce the desired outcomes.

62. There was limited evidence so far on the effectiveness of any of the four approaches but there were some lessons on complexity and enforcement.

63. D'Arcy and Rahman (2018) concluded with some reflections for the UK. They noted the very different environments, legal structures and collective agreements that existed among countries and the consequent difficulties in applying insights to the UK context. Insecure work appeared to be a growing issue across many countries, with legal restrictions the most common approach adopted to tackle insecurity of work (and earnings). No other country had an existing premium that replicates Matthew Taylor's proposal exactly. The premium in Newfoundland and Labrador, Canada was probably the closest existing equivalent.

64. These two Taylor Review-related research reports will be published this autumn, along with our response to the issues of one-sided flexibility raised in the Taylor Review.

Review of the youth rates

65. The final two projects are not due to report until the new year. The first is exploring how employers set pay for young people, while the second is looking at the labour market choices of young people.

66. Hudson-Sharp, Manzoni, Runge and Rolfe (2018) are undertaking research that attempts to improve our understanding of how employers set pay for young people. It looks to: establish whether employers use youth rates and the reasons behind that decision; investigate whether practices have changed in light of the recent introduction of the NLW and the 21-24 Year Old Rate; and understand how the wider policy framework affecting young people's engagement with the labour market has changed over time, and whether that has affected employers' pay-setting decisions.

67. The research addresses these issues in two parts. First, conducting a review of the policy framework affecting employer behaviour in setting pay for young people to establish the context. Second, using qualitative research with employers, employer organisations and trade unions, they investigate how employers set pay for young people in practice.

68. The first stage of the project assesses how the landscape for employment of young people has changed since the NMW framework was first introduced in 1999. There have been changes in education and training policy, including the raising of the participation age in England from 16 to 18. There have also been changes to: financial support for young people (including student loans and fees); financial support for training and apprenticeships; benefit entitlement; tax, national insurance and pension contributions; legal frameworks linked with age restrictions; employment practices; and the labour market (for example, the increased use of migrants and older workers).

69. Official quantitative data sets, such as LFS and ASHE, do not provide sufficient information to understand employer responses to the complex economic and political landscape when setting pay for young people. However, they do provide some evidence that there have been some spillover effects from the NLW to younger age groups. Little is known about how employers set pay for young people. This research attempts to address that by conducting qualitative research.

70. To understand how employers set pay rates for young people, the study conducts semi-structured interviews with the head of HR or Chief Executive Officer of twelve employers of young people in four low-paying sectors (retail, hospitality, cleaning and childcare) across Great Britain. The employers interviewed represent a range of locations, sizes and practices with regards to the age-related rates of the NMW. The interviews cover the importance of young workers to the sector, the jobs they do, their work patterns, factors covering local supply, and how pay rates are set. They also include the use of age rates (and how that may have changed since 2016), the variation across regions, the costs of employing young people, and productivity differences. These interviews are supplemented with interviews with some employer bodies. The findings will be reported in time to inform our review of the youth rates.

71. The second project informing the review of youth rates – Cerqua, Di Pietro and Urwin (2018) – investigates whether the minimum wage has affected the labour market choices of young people aged 16-24. Using a novel administrative data set (Longitudinal Education Outcomes, LEO), it seeks to model the impact of local labour market conditions on the outcomes of young people and then assess whether the NMW or NLW has affected those outcomes.

72. The LEO data links administrative data sets on individuals, including data from the National Pupil Database (NPD), the Individual Learner Record (ILR), Higher Education Statistics Agency (HESA), HMRC employment data (P14 and P45), and DWP Benefits (mainly the National Benefit Database). The study follows young people from Key Stage 4 (at age 15) onwards. The researchers have access to cohorts from 2001/02 through to 2008/09. Although the data covers the whole population, it does have some drawbacks: incomplete work histories (missing data if self-employed, inactive or overseas); no information on hours; and no family background characteristics. However, the data available is sufficient for the needs of this project.

73. The first part of the research builds on previously commissioned research by Crawford, Greaves, Jin, Swaffield and Vignoles (2011), which had used the Longitudinal Survey of Young People in England, the LFS and ASHE, and that by De Coulon, Meschi, Swaffield, Vignoles and Wadsworth (2010), which had also used LSYPE and ASHE, as well as the National Pupil Database. It uses a linear probability model with standard errors clustered at the school level to look at the impact of the local labour market on the outcomes of young people, separately for those aged 17, 18 and 19.

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74. The second part of the research then assesses whether the minimum wage affects those labour market choices. Building on the methodology used by Dickens, Riley and Wilkinson (2010 and 2014) to analyse the impact of the change in age thresholds, they will use a regression discontinuity design (RDD) to investigate the impact of the introduction of the NLW in April 2016. Its findings will also inform our review of youth rates.

75. Both of the research projects related to the youth review will be finalised prior to the publication of our review of youth rates. It is anticipated that we will report to the Government in spring 2019 on these issues.

Summary and Future Research

76. In summary, the findings of the initial econometric research on the NLW can be summarised as that the NLW had led to a large increase in wages for the lowest paid, but had not led to any significant negative effects on employment or hours. However, there were some findings of negative employment effects for some groups, sectors and regions under certain specifications. But these negative findings were not robust and should be seen against a backdrop of record employment levels and rates. We will continue to closely monitor these effects and assess their robustness.

77. Instead of reducing jobs or changing hours, firms appear to have coped with the introduction of the NLW and its initial upratings by: a limited squeezing of differentials; a reduction in non-wage benefits; increasing prices; and accepting a squeeze in profits. These findings are similar to those found when the NMW was introduced. Future research will continue to monitor and assess the impacts of all the minimum wage rates on a variety of economic outcomes.

78. We will commission further research for our 2019 Report to complement the ongoing research that we have already in progress.

- **The impact of the minimum wage on employment and hours, including on young workers** – Stella Capuano, James Cockett, and Helen Gray (Institute for Employment Studies).
- **The NMW/NLW and progression out of minimum wage jobs in the UK** – Silvia Avram and Susan Harkness (Institute for Social and Economic Research, University of Essex)
- **Understanding employers' use of the National Minimum Wage youth rates** – Nathan Hudson-Sharp, Chiara Manzoni, Heather Rolfe and Johnny Runge (National Institute of Economic and Social Research).
- **Does the minimum wage impact labour market choices of young people aged 16 to 24?** – Augusto Cerqua, Giorgio Di Pietro and Peter Urwin (University of Westminster).

Table A2.1: Low Pay Commission Research Projects for the 2018 Report

| Project title and researchers | Aims and methodology | Key Findings |
|--|--|---|
| <p>Impact of the introduction of the National Living Wage on employment, hours and wages</p> <p>Andrew Aitken, Peter Dolton, and Rebecca Riley</p> <p>(National Institute of Economic and Social Research)</p> | <p>This project was an extended 18-month study investigating the impact of the National Living Wage on wages, employment and hours. It investigated the impact of the introduction of the National Living Wage in April 2016 and the subsequent uprating in April 2017.</p> <p>This study adopted a difference-in-difference econometric approach to assess the impact of the NLW on wages, employment retention and hours. It used:</p> <ul style="list-style-type: none"> the standard wage-based differences-in-differences approach, as previously used by Stewart (2004a, 2004b), Dickens and Draca (2005), Dickens, Riley and Wilkinson (2012), and Bryan, Salvatori and Taylor (2013). They compared a treated group (NLW-affected workers) with a control group (of workers aged 25 and over unaffected by the NLW); and alternative difference-in-difference approaches, which exploited the fact that workers aged 21-24 were not entitled to the NLW. <p>This approach and the way that the results are presented (with confidence intervals and minimum detectable effects) were intended to address some of the criticisms of the difference-in-difference methodology outlined in Brewer, Crossley and Zilio (2015).</p> <p>The study used the Annual Survey of Hours and Earnings (ASHE), although the timing of ASHE may affect the identification of minimum wage effects in April 2016 and, to a lesser extent in April 2017.</p> <p>The analysis was conducted separately for males and females, working part-time and full-time. It also covered low-paying occupations and industries, as well as regions and countries across Great Britain.</p> | <p>The key findings were:</p> <ul style="list-style-type: none"> The introduction of the NLW was a significant intervention, raising the hourly pay of minimum wage workers aged 25 and over by over 10 per cent in the year to April 2016. There was clear evidence of faster real wage growth for NLW workers compared with the control groups. The NLW raised real pay by an additional 4.0-7.0 percentage points in 2016 and by an additional 0.8-1.3 percentage points in 2017. These effects were evident in all low-paying industries and occupations and in all regions and countries of Great Britain. There was no conclusive evidence of an impact of the introduction of the NLW and its subsequent uprating in 2017 on overall employment retention or hours. However, consistent with previous research, they found evidence in some of their specifications of adverse employment retention effects on women working part-time. There was some evidence of a negative effect on employment retention for some of the lowest-paid workers in the retail industry. When considering hours using ASHE, they found no evidence of reductions in hours for treated workers following the introduction of the NLW or the uprating in 2017. The placebo tests gave some reassurance that the real quasi-experimental results were not spurious. |

| Project title and researchers | Aims and methodology | Key Findings |
|--|--|---|
| <p>Impact of the minimum wage on employment and hours: interim report</p> <p>Stella Capuano, James Cockett, and Helen Gray</p> <p>(Institute for Employment Studies)</p> | <p>This project is an extended 18-month study investigating the impact of the NMW and the National Living Wage on employment and hours, including on young people. It will investigate the impact of the introduction of the National Living Wage in April 2016 and the subsequent upratings in April 2017 and April 2018. It will build on and complement the study by Aitken, Dolton and Riley (2018).</p> <p>It will address the following areas:</p> <ul style="list-style-type: none"> • The impact of the introduction of the NLW and subsequent upratings on employment and hours for those aged 25 and over. • The impact of the introduction of the NLW and subsequent upratings on employment and hours for those aged under 25. • Whether the impact has differed by working hours (part-time and full-time) and age (16-17, 18-20 and 21-24). • Whether the impact has varied by type of worker and employer. <p>They propose using two methodological approaches:</p> <ul style="list-style-type: none"> • The standard difference-in-difference approach comparing outcomes one year apart of a treatment group (those affected by the policy) with a comparison group (similar workers not affected) – falling before and after the introduction or uprating of the NMW/NLW. • A difference-in-difference-in-differences model that also exploits two comparison groups: an age comparison group (those aged under 25 and ineligible for the NLW, but earning less than the forthcoming NLW); and a wage comparison group (those aged 25 and over earning slightly more than the forthcoming NLW). <p>They will also attempt to address several methodological issues, including reporting confidence intervals and minimum detectable effects, and placing greater emphasis on the economic significance of the results</p> <p>The study will use the five-quarter longitudinal Labour Force Survey and the Annual Survey of Hours and Earnings (ASHE). To avoid the effects of the financial crisis, the study will focus on the years from 2011 onwards.</p> <p>This interim report presents early findings from the analysis using the LFS.</p> | <p>Preliminary findings were:</p> <ul style="list-style-type: none"> • The only two years when the NMW/NLW upratings had any discernible effect on employment retention were 2014 and 2016. • The uprating of the NMW in 2014 was associated with an increase in employment retention. This positive effect was found across all specifications. • The introduction of the NLW in 2016 was associated with a reduction in employment retention. However, that finding was not robust. • The researchers suggest that this finding may be as a result of small sample sizes rather than reductions in employment retention for those directly affected. • The levels of statistical significance are generally low. • The results suggest that the upratings of the NMW and the introduction of the NLW have had little economic impact. • The small sizes of the estimated coefficients mean that even if the findings were statistically significant, the workers directly affected would still have a high probability of being employed after a minimum wage increase. • None of the upratings of the NMW or the introduction of the NLW have had any discernible effect on hours in any of the specifications. • It should be noted that the impact estimates are sensitive to changes in specification due to the small sample sizes. • Future analysis will focus on subgroups, such as women working part-time, and replicating the analysis using ASHE. |

| Project title and researchers | Aims and methodology | Key Findings |
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| <p>The NMW/NLW and progression out of minimum wage jobs in the UK</p> <p>Silvia Avram and Susan Harkness (Institute for Social and Economic Research, University of Essex)</p> | <p>This project assesses the impact of the NLW on earnings, pay differentials and wage progression. It is an 18-month project that will present its final findings in time for our 2019 Report.</p> <p>This interim report presents preliminary analysis investigating the wage progression of minimum wage job holders between 2009 and 2016. Its aims are:</p> <ul style="list-style-type: none"> to examine whether the increases in the minimum wage rate during this period affected progression out of minimum wage jobs; and to investigate which individual and job characteristics are associated with progression out of minimum wage jobs. <p>The research uses Understanding Society (the UK Longitudinal Household Survey, which evolved from the British Household Panel Study in 2009) – a survey of around 40,000 households providing information on individual characteristics, current job and employer, and previous work history (including periods out of work).</p> <p>They use an imputation procedure to derive an hourly pay measure for those not paid by the hour. This creates an earnings distribution that better matches that for hourly workers. They use this measure to define minimum wage jobs (those paid at or around the minimum wage and below the forthcoming minimum), low-paid jobs (those above the forthcoming minimum wage but below two-thirds of median hourly earnings), and higher-paid jobs (those paid more than two-thirds of the median).</p> <p>It focuses on the job transitions of those aged 25 and over.</p> <p>Future research will extend this analysis to cover 2017, and also undertake the second element of the research project. This will use difference-in-difference techniques to examine the impact of minimum wage upratings on earnings distributions.</p> | <p>Preliminary findings were:</p> <ul style="list-style-type: none"> Over the period under consideration, the minimum wage increased considerably relative to median pay. The share of workers covered by the minimum wage increased from around 4 per cent in 2009 to around 7 per cent in 2016. Consequently, the share of workers earning below the low pay threshold (two-thirds of median earnings) but above the minimum wage fell. In any given year, around a half of minimum wage workers left their jobs for higher pay. But four-fifths of these moved into higher-paying low-paid jobs. Only a fifth moved into higher-paid jobs. This finding is consistent with previous UK research on minimum wage transitions. They found considerable variation in transition rates across geographies. Whereas transitions from minimum wage jobs to higher-paying low-paid jobs varied little across areas, transitions to higher-paid jobs increased as the area-level wage increased. They found no evidence that transition probabilities out of minimum wage jobs were affected differently by changes to the bite when comparing low-wage areas with high-wage areas. They found no evidence that minimum wage increases had affected wage progression in the period under study. They found that individual and job characteristics were important determinants of transitions out of minimum wage jobs. The transition to higher pay was associated with higher qualifications; working in large firms or the public sector; and working on temporary contracts. Negative influences were from being female; working part-time; working in hospitality (accommodation and food services) or in the manufacture of food, beverages or textiles; previous unemployment; and duration in a minimum wage job. Spending longer periods in a minimum wage job decreases the likelihood of progression. |

| Project title and researchers | Aims and methodology | Key Findings |
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| <p>The impact of the recent increases in the minimum wage on the UK labour market: An area-based analysis.</p> <p>Richard Dickens and Kieran Lind (University of Sussex)</p> | <p>This research uses the geographic variation in wages across Great Britain to assess the impact of the introduction of the National Living Wage in 2016 and its initial uprating in 2017 on wages, employment, unemployment, inactivity, hours of work, and self-employment.</p> <p>It makes use of the fact that the minimum wage has greater impact and coverage in some areas than others.</p> <p>Unlike some of the approaches that follow individuals over time, this approach can capture all employment change (including new entrants) and not just job retention.</p> <p>They constructed a quarterly data series, from the first quarter of 2013 to the first quarter of 2018, for 218 travel-to-work areas across Great Britain. Measures of employment, unemployment, self-employment, inactivity and hours of work were derived from the LFS. ASHE was used for the earnings measures.</p> <p>They defined high and low-impact areas using the bite of the minimum wage (its value relative to the area median) in spring 2015, along with an alternative measure based on coverage.</p> <p>The research then compared outcomes across these areas using a difference-in-difference methodology.</p> <p>As robustness checks, it investigated the common trends assumption and whether the findings were robust to geographic definitions (using local authorities as an alternative).</p> | <p>The key findings were:</p> <ul style="list-style-type: none"> ● They found strong and significant wage effects from both the introduction in 2016 and the uprating in 2017. ● Significant spillover effects were found up to the 40th percentile of the area wage distribution in 2016 but only up to the 20th percentile in 2017. ● The wage effects were stronger for women; going up to the median in 2016 and the 30th percentile in 2017. For men, the spillover effect was only evident in 2016 – reaching the 30th percentile. ● They found some significant negative effects on employment rates in 2017, but not in 2016, despite the wage effects being stronger in 2016. ● The employment effects found were larger and more robust for women than men. ● They were also largely robust to geographic definition. ● They found no evidence of effects on unemployment but some increases in inactivity. ● They also found no significant effects on hours of work or on youth employment. ● They did however, find some positive significant, but not robust, effects on self-employment. ● Their study requires some further robustness checks in order to have full confidence in the findings. Ongoing work will examine the sensitivity of the results to a range of factors. |

| Project title and researchers | Aims and methodology | Key Findings |
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| <p>Minimum wage and the propensity to automate or offshore</p> <p>Grace Lordan</p> <p>(London School of Economics)</p> | <p>The main aim of this research project was to provide a deeper understanding of how minimum wage policies have affected automation and offshoring, focusing on the impact on those workers with low or no qualifications.</p> <p>This research extends that of Lordan (2017) by replicating her analysis using ASHE. That had followed a similar approach to Lordan and Neumark (2017), and Aaronson and Phelan (2017) looking at similar issues in the United States.</p> <p>This research project was the first study to focus on the impact of the UK minimum wage on automation and offshoring. It:</p> <ul style="list-style-type: none"> explored whether increases in the minimum wage affected the employment possibilities for low-skilled workers relying on automatable employment; assessed whether firms substituted their production process with cheaper labour from a different geographic location following a minimum wage increase; and gave a full picture of any labour-market adjustment by industry and a variety of demographic groups to uncover differential responses. <p>The Occupational Information Network (ONET) and the Employers Skills Survey were used to distinguish between occupations that were high in automatable and offshorable tasks by drawing on UK data to re-create accepted definitions from the US. These were then matched to the relevant occupation codes in the quarterly Labour Force Survey (LFS) using a consistent coding system as described in Lordan and Pischke (2016). The measure of routine task intensity (automation) was provided by Autor and Dorn (2013) while offshorability was derived using ONET.</p> <p>The main analysis was conducted using UK data from the quarterly Labour Force Survey (QLFS) from 1992-2017 and supplemented by analysis using the Annual Survey of Hours and Earnings (ASHE).</p> <p>The analysis was restricted to low-skilled workers and looked at effects by age and gender. Using LFS, it also assessed differences by ethnicity.</p> | <p>The key findings were:</p> <ul style="list-style-type: none"> Minimum wage increases were followed by decreases in the shares of offshorable and automatable employment, but these effects were modest. A £1 increase in the minimum wage led to a .24 percentage point decline in the share of automatable employment (an elasticity of -0.055 if evaluated at the current NLW of £7.50). A £1 increase in the minimum wage led to a 0.15 percentage point decline in the share of offshorable employment (an elasticity of -0.034 if evaluated at the current minimum wage of £7.50). There were larger effects in manufacturing, particularly on automation. A £1 increase in the minimum wage led to a 0.58 percentage point decline in the share of automatable jobs and 0.34 percentage point decline in offshorable employment. Low skilled males and older workers are the demographic groups affected the most, with larger effects also evident for Black low-skilled workers. Low-skilled workers in automatable or offshorable employment are less likely to keep their jobs in the next period as compared with similar workers in non-automatable and non-offshorable jobs. They are also more likely to work fewer hours. The findings on automatable employment were robust to replication in ASHE. Those on offshoring were not. <p>It concluded by speculating about the future of jobs, suggesting that some low-skilled jobs would continue (social care, childcare and hairdressing) while others may disappear completely (delivery drivers and security).</p> |

| Project title and researchers | Aims and methodology | Key Findings |
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| <p>Minimum and zero hours contracts and low-paid staff</p> <p>Claire de Bond, Katherine Heffernan, Ken Mulkearn, Lois Wiggins and Louisa Withers</p> <p>(Incomes Data Research)</p> | <p>This research addressed some of the issues raised by the Taylor Review of Modern Working Practices (2017), which had explored issues around the flexibility of employment, including variable hours contracts. It recommended that the Low Pay Commission consider a higher minimum wage (the Taylor Premium) for hours worked beyond those contracted.</p> <p>This research examined variations in working time for low-paid workers on non-standard contracts – specifically those working on variable hours contracts (including minimum hours and zero hours contracts).</p> <p>Its objective was to gather information from employers on:</p> <ul style="list-style-type: none"> ● the extent to which low-paid workers work beyond their contracted hours; and ● the degree of volatility in those hours from week-to-week. <p>The research was based on information provided to the researchers by HR managers and other HR professionals. They used an electronic survey with around 40 questions, supplemented by semi-structured telephone interviews with a sub-sample of respondents.</p> <p>They surveyed 40 employers of low-paid workers who used variable hours contracts. These employers had a combined workforce of around 460,000 people. The smallest firm employed 30 people, while the largest employed 73,000. Around three-quarters of respondents had at least 1,000 staff. The median headcount was 4,776. It covered firms across the economy, including in hospitality, retail, social care, manufacturing and the public sector.</p> <p>The organisations surveyed had, on average, around 54 per cent of their workforce paid £10 or less. This ranged from an average of 28 per cent in the public sector to 80 per cent in retail and wholesale.</p> | <p>The key findings were:</p> <ul style="list-style-type: none"> ● Employers often did not distinguish zero hours contracts from minimum hours contracts but regarded both as flexible contracts. ● Zero-hours contracts seem to be more widespread than minimum hours contracts but covered fewer workers. Zero-hours contracts were common in hospitality, while minimum hours contracts were more prevalent in retail and among large firms. ● The most common roles carried out by staff on minimum and zero hours contracts were retail assistants, waiting/restaurant staff, administration staff, leisure assistants, cleaners and support staff. ● Most of the surveyed employers did not provide a choice regarding the type of contract on which staff are employed. ● Employers’ responses suggested that actual working hours for staff on zero hours contracts varied more than for those on minimum hours contracts. ● Minimum hours contracts were more likely to fluctuate on a seasonal rather than weekly basis. ● The vast majority considered responding to fluctuations in demand (including seasonal variations) as the main driver for the use of zero hours or minimum hours patterns. ● The use of technology for scheduling shifts was not widespread but where it was used, it was typically used in retail and hospitality, and mainly in the largest firms in these sectors. ● Most employers did not specify a minimum shift length. For those that did, it tended to be 4-5 hours. ● Advanced notice varied considerably – from 12 hours to more than a month. ● Employers generally provided 24 hours’ notice when cancelling shifts. Around 40 per cent provided compensation (but that was generally the offer of an alternative shift). The rest did not. |

| Project title and researchers | Aims and methodology | Key Findings |
|---|--|---|
| <p>Atypical approaches: Options to support workers with insecure incomes</p> <p>Conor D’Arcy and Fahmida Rahman (Resolution Foundation)</p> | <p>This research also addressed some of the issues raised by the Taylor Review of Modern Working Practices (2017), which had explored issues around the flexibility of employment.</p> <p>It had three primary aims:</p> <ul style="list-style-type: none"> • To explore the extent to which atypical work, one-sided flexibility and income insecurity arising from such work had been a feature of labour markets in other advanced economies of late. • To assess the policies in place in a variety of countries that provide a framework for the labour market. The research focused on policies that would be most likely to affect those working non-guaranteed hours but also considered wider approaches to insecure work. • To review the evidence on the impact of policies that were already in place. <p>This research project was based upon a literature review, alongside analysis of labour market data from a range of countries.</p> <p>The literature review sought to identify: the discussions around these issues internationally; the kinds of policies that may act to counter concerns arising from their use; and, where available, evaluations of the effectiveness of such responses.</p> <p>Relevant research was identified using a rapid evidence review, as well as contacting labour market experts in a range of countries and in international organisations to highlight policies of note.</p> <p>Analysis of data from Eurostat, the OECD and the ILO were used.</p> <p>First, to estimate the extent of non-standard work across countries. Second, as a means of testing whether such policies were associated with lower rates of non-standard work.</p> | <p>The key findings were:</p> <ul style="list-style-type: none"> • Experience in other countries varied. In some, particularly those most affected by the financial crisis from 2007 onwards, there had been steep increases in forms of involuntary part-time work. In others, this increase has been much less notable. • In some countries, zero-hours or on-call contracts have received much focus. In others, temporary or fixed-term contracts, agency working, or self-employment have been discussed more. • Countries had adopted three broad categories of approach. <ul style="list-style-type: none"> • First, and the most common response, was to restrict atypical working and non-guaranteed hours through employment law: <ul style="list-style-type: none"> • Banning zero-hours contracts. • Restrictions on overtime and non-guaranteed hours. • Second, and most closely related to the Taylor Review recommendation on a minimum wage premium for hours worked above those contracted, were policies that raised the cost of using non-guaranteed hours: <ul style="list-style-type: none"> • Casual loading. • Premium for overtime. • Payment for unscheduled or cancelled shifts. • Social security costs. • Third, were policies that provided some form of protection against undesirable outcomes from atypical work or non-guaranteed hours through less direct means: <ul style="list-style-type: none"> • Including atypical workers in social security systems. • Trade unions or collective agreements providing protection. • They concluded that the international evidence provided a variety of approaches. Responses were often specific to the legal, enforcement, industrial relations, political and labour structures that existed in each country. |

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 2017 Report. We use three main sources of data 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). We use 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 wide 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 any revisions that ONS have made to GDP estimates.

Annual Survey of Hours and Earnings

3. 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. The sampling frame consists of 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.

4. Employees not on an adult rate of pay are excluded from the headline ASHE earnings estimates produced 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 2018 ASHE was based on approximately 185,000 returns and related to the pay period which included 18 April.

5. From 2011, ASHE data have been reweighted to SOC 2010 codes. Thus, earnings estimates for 2011 onwards are not directly comparable with those prior to 2011.

6. 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

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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. Analysis of the 2014 ASHE by ONS (2016a) 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.

7. 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 minimum wage relative to the median or mean) for that period.

Revisions to data

8. ASHE data for the latest year used in our report is always provisional and therefore subject to revision. Final data is received a year later and used within subsequent reports i.e. for this report we received 2017 final data at the same time as receiving provisional 2018 ASHE.

9. ONS advised us of some substantive revisions to the 2017 final data which had implications for the low-paid. During data processing for 2018 ASHE a coding error was identified that had implications for last year's provisional 2017 data. The impact of this was an underestimate in our 2017 Report on the number of workers paid below the NLW. We gave the figure as 282,000 – corrected final data for 2017 show that there were 339,000 workers paid below the NLW.

10. ONS stated that there was minimal impact on any median or mean calculations.

Apprentices

11. 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 their apprenticeship had commenced. The 2013 data were not fully validated and were not been published by ONS. In the 2014 ASHE the apprentice questions were fully validated by ONS. The 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.

12. Drew, Ritchie and Veliziotis (2015 and 2016) compared estimates of apprentice earnings from ASHE with estimates from the 2014 BIS Apprentice Pay Survey. Their findings suggested that ASHE data may produce an upper-bound estimate of apprentice pay and, correspondingly, a lower-bound estimate of non-compliance.

13. 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 can produce three distinct time-series: an adjusted time series from 1997 onwards, including both workers and apprentices; a series from 2013 onwards for non-apprentice workers only; and a series from 2013 onwards for apprentices only.

NLW alignment

14. 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. Previously, new minimum wage rates were introduced in October, 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. In April 2017 all minimum wage rates were updated to ensure alignment with the NLW. This introduced a break in the time series, with a jump in estimates of both the bite and underpayment.

15. 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 but 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, the results of which are shown in the variable 'ppstart'. However, the timing of the ASHE survey largely determines the number affected by this variable.

16. In 2016 the ASHE survey used a pay reference period which included 13 April 2016, just two weeks after the introduction of the NLW. This 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 latest 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'. In 2017 only 32,000 flagged individuals were identified. There were many fewer in this category in 2017 as the later pay reference period date for the ASHE survey of 26 April meant that most employees had already received pay for a pay period following the uprating. A move in 2018 back to a slightly earlier survey date of 18 April has again meant more cases captured by this flag, around 124,000.

17. From 2017 ONS have provided an additional variable which is related to both the pay period and how the hourly pay variable is derived. The 'pcflag' variable identifies those employees who have a monthly pay period that should have a derived rate of exactly the NMW or NLW but are slightly different because the employer/payroll provider has calculated the rate based on exactly 52 weeks per year rather than 52.18 (365.25/7) as used by ONS. A further addition to the dataset was the variable 'hrpayx' which is the derived hourly rate used by both ONS and ourselves for low-pay estimates.

18. An additional consequence of the change in our reporting cycle has been the impact on the timing of the publication of ASHE. In 2016 and 2017, to enable us to report to the Government in October as requested, ONS brought forward the release of the ASHE from mid-November to

26 October. This year following the decision to hold the 2018 budget on the 29 October and to enable public access to the data prior to the budget, ONS brought forward their planned release date for ASHE to 25 October. We continue to be grateful for its pragmatic approach and co-operation.

Average Weekly Earnings

19. 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 growth results from changes in employment across sectors. The AWE estimates do not just measure pay, they also reflect compositional changes within the workforce.

20. There have also been some changes to the data resulting from the reclassification of major employers between the private and public sectors, mostly in the aftermath of the 2008 financial crisis.

21. 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. 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.

22. Further AWE revisions were carried out in 2017 following a review of the methodology used to calculate estimates of earnings of employees in small businesses. Businesses with fewer than 20 employees are excluded from the Monthly Wages and Salaries Survey which is largely used for the calculation of the AWE. To compensate for this omission, pay is estimated using a factor derived from ASHE which does cover small businesses. Changes were announced that aim to better reflect earnings of employees in small businesses as well as reflecting improvements to the coverage of small businesses on the main sampling frame, the Inter-Departmental Business Register.

23. The results of this review were released by ONS on 29 March 2017. They showed that while at the whole economy level (between July 2010 and December 2015) the trend in earnings remained similar, total pay levels had decreased by between £7 and £10 (1.6-1.9 per cent). At the sectoral level there were two distinct phases to the changes: the first covered July 2010-July 2015 (the last time the small business factors were modified) with the second covering the period post-July 2015. This step-change occurred due to inconsistencies introduced at the point at which the small business factors were last modified compared with the revised historical estimates.

24. For the first phase (July 2010-June 2015), in terms of total, regular and bonus pay levels, the finance and business services industry sector was the most affected, with the construction industry

sector also notably affected, while wholesaling, retailing, hotels and restaurants industry sector was the least affected. For the second phase (July 2015 onwards), the construction industry sector was the most affected for both total and regular pay. Construction was particularly affected due to the sector having a relatively high proportion of small businesses.

25. In the first phase construction saw differences of between -0.8 and +0.4 percentage points, with larger negative effects in the second phase of up to 4 percentage points. Manufacturing and finance and business services saw the largest upwards revisions with other sectors slightly revised upwards. While these revisions specifically affected the period from July 2010 onwards, the discontinuity introduced led to the whole series back to 2000 being revised.

26. In 2017 ONS (2017a) released an article on ASHE and AWE that presented an overview of both measures, highlighted which source was better for certain types of analysis and analysed the movements of the whole economy series between 2005 and 2016. The article explained the differences in the headline measures and outlined the reasons for a divergence between the headline series in 2011 that continues thereafter.

Labour Force Survey

27. The Labour Force Survey (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.

28. In this 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. In our analyses, we generally use the four-quarter moving average of these outputs to take account of seasonality, which is different to the seasonal adjustment method used by ONS. Consequently, our analyses based on LFS Microdata may produce estimates of levels that differ from the headline aggregates published by ONS.

29. ASHE contains limited personal characteristic details – there is 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 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.

30. For some workers, a stated hourly rate of pay is available in the LFS. For these workers, hourly pay is similar to that 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

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workers. This methodology reduces the differences between hourly earnings estimates from the LFS and ASHE.

31. We use this revised LFS imputation methodology in Chapter 2 when we estimate coverage of the NLW by worker characteristics. This differs slightly from the methodology we have used in previous reports in that during the data cleaning stage more individuals are excluded. If we were to compare levels, we would see a reduction when using the revised methodology. However, when looking at proportions of workers (as we do in Chapter 2) both methods produce very similar results.

Employee Jobs

32. 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.

33. 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

34. 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. In our analyses, we have used two main inflation measures: the Consumer Prices Index (CPI), and the Retail Prices Index (RPI).

35. 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 that 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.

36. Our 2017 Report detailed the chronology from 2013 onwards concerning the push for ONS to make CPIH its main measure of inflation. This included its removal and re-designation of National Statistic status.

37. We concluded by stating that until CPIH or another measure of inflation becomes as widely used, and as commonly forecast, as RPI, we will continue to use RPI, along with CPI, as our main measures of consumer price inflation. CPIH has however, been included in some of our analyses of

current price inflation and is used as the deflator for the real weekly earnings series, based on AWE, published by ONS covering the period from January 2005.

Gross Domestic Product

38. 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.

39. In July 2018 ONS introduced a new publication model for GDP, reducing the number of published estimates of quarterly GDP from three to two. The new model, supported by both The Barker-Ridgeway National Statistics Quality Review and Sir Charles Bean's Independent Review of Economic Statistics, seeks to balance timeliness with accuracy of GDP estimates, with the aim of reducing the likelihood and frequency of revisions. The model will also enable the publication of monthly estimates of GDP.

40. Quarterly GDP: The new First quarterly estimate of GDP will now be published 40 days after the quarter to which it refers. This is two weeks after the previous model's preliminary estimate (but in line with other G7 release schedules) and so will contain higher quality output data. It will also contain information from the income and expenditure approaches two weeks earlier than the previous model although data for these measures will be lower than the former second estimate. A comprehensive (second) estimate of GDP will continue to be released as part of the Quarterly National Accounts, available 85 days after the end of the reference quarter as previous.

41. Monthly GDP: ONS will bring forward the Index of Services release by two weeks, which, alongside the Index of Production and the Index of Construction will form a Short-term economic indicators theme day. These combined data will allow production of a monthly estimate of GDP on the same day using the output measure, the timeliest of the three GDP measures, and the only one available on a monthly basis.

42. The new publication model hopes to achieve a balance between timeliness and accuracy. The previous model gave greater weight to output data in the early estimates as they are the timeliest and therefore provide the best short-term picture. The new model will still be balanced to the output estimate but will benefit from using more robust data from that source as a result of a two-week delay. This time lag also enables the measure to incorporate both income and expenditure data to quality assure the output GDP measure, ensuring a more reliable initial estimate.

Blue Book 2018 changes

43. Each year, the publication of The Blue Book provides ONS with an opportunity to make methodological changes to the National Accounts, on top of the normal quarterly process of incorporating new information into its estimates of economic activity. A full list of this year's changes can be found in The Blue Book 2018 (ONS 2018c).

44. This year's changes had little overall impact on the paths of real and nominal GDP. The cumulative effect of revisions to nominal GDP has left the level 0.5 per cent higher by the fourth quarter of 2017 than in the Quarterly National Accounts for that quarter.

Definitions of low-paying sectors

45. Throughout this report we refer to the low-paying sectors. We define these as occupations or industries which contain a high number or large 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. These definitions are used when conducting detailed analysis of low-paying sectors using ASHE or the LFS. Some sectors thought of as low-paying e.g. retail and hospitality will tend to include higher paid roles such as buyers and managers when looking at on an industry basis. On the other hand, there are some low-paying occupations i.e. cleaning which are found across different industries.

46. We undertook a review in 2017 of the low-paying classifications to identify new low-paying sectors arising from the NLW, considering the 2020 NLW target of 60 per cent of median pay for workers aged 25 and over. As a result, we added two new groups to the industry classification: security and wholesale food (including agents), both of which included above average proportions of low-paying workers. Small changes were also made within the cleaning and maintenance, and social care groups. We also added two new groups within the occupation classification: security and enforcement, and call centres. As with the industry classification we also made several small changes within some of the other occupational groups.

47. Our 2017 Report provides full details on the review including new definitions of each low-paying occupation and industry based on the latest Standard Industrial Classification (SIC) 2007 and Standard Occupation Classification (SOC) 2010 codes. Table A3.1 shows our revised list of low-paying sectors defined by SIC 2007 and SOC 2010 respectively.

Table A3.1: Definitions of low-paying industries and occupations, by SIC 2007 and SOC 2010

| Low-paying industry/ occupation | Current industry definition | Old industry definition | Current occupation definition | Old occupation definition |
|--|--------------------------------|-------------------------|---|--|
| | (SIC 2007) | (SIC 2007) | (SOC 2010) | (SOC 2010) |
| Retail | 45, 47, 77.22, 95.2 | 45, 47, 77.22, 95.2 | 1254, 5443, 7111,7112,7114, 7115, 7123-7125, 7130, 7219, 925 | 1254, 5443, 7111,7112,7114, 7115, 7123-7125, 7130, 7219, 925 |
| Hospitality | 55, 56 | 55, 56 | 5434, 5435, 9272-9274 | 5434, 5435, 9272-9274 |
| Social care | 86.10/2, 87, 88.1, 88.99 | 86.10/2, 87, 88.1 | 6145, 6146, 6147 | 6145, 6147 |
| Employment agencies | 78.10/9, 78.2 | 78.10/9, 78.2 | – | – |
| Cleaning and maintenance | 81, 96.01 | 81.2, 96.01 | 6231,6232, 6240, 9132, 9231, 9233-9236, 9239 | 6231,6240, 9132, 9231, 9233-9236, 9239 |
| Leisure, travel and sport | 59.14, 92, 93 | 59.14, 92, 93 | 3413, 3441, 3443, 6131, 6139, 6211, 6212, 6219, 9275, 9279 | 3413, 3441, 3443, 6131, 6139, 6211, 6212, 6219, 9275, 9279 |
| Food processing | 10 | 10 | 5431-5433, 8111, 9134 | 5431-5433, 8111, 9134 |
| Wholesale food incl. agents | 46.1, 46.2, 46.3 | – | – | – |
| Childcare | 85.1, 88.91 | 85.1, 88.91 | 6121-6123, 9244 | 6121-6123, 9244 |
| Agriculture | 01, 03 | 01, 03 | 5112-5114, 5119, 9111, 9119 | 1213, 5112-5114, 5119, 9111, 9119 |
| Security | 80.1 | – | 7122, 9241, 9242 | – |
| Textiles and clothing | 13, 14 | 13, 14 | 5411, 5414, 5419, 8113, 8137 | 5412-5414, 5419, 8113, 8137 |
| Hairdressing | 96.02, 96.04 | 96.02, 96.04 | 622 | 622 |
| Office work | – | – | 4129, 4133, 4216, 7213, 9219 | 4129, 4216, 7213, 9219 |
| Non-food processing | – | – | 8112, 8115-8116, 8119, 8121, 8125, 8127, 8131, 8134, 8139, 9120, 9139 | 5211, 5441, 8112, 8114- 8116, 8125, 8131, 8134, 8139, 9120, 9139 |
| Storage | – | – | 9260 | 9260 |
| Transport | – | – | 5231, 8135, 8212, 8214 | 5231, 8135, 8212, 8214 |
| Call centres | – | – | 7113, 7211 | – |

Note: '–' denotes not applicable.

48. 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 the SIC 2007 codes used to define low-paying sectors in our analysis of the ONS employee jobs series.

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Table A3.2: Definitions of low-paying industries for ONS employee job series, 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

The limitations of international minimum wage comparisons

When making international comparisons, there are several factors to take into account.

These include:

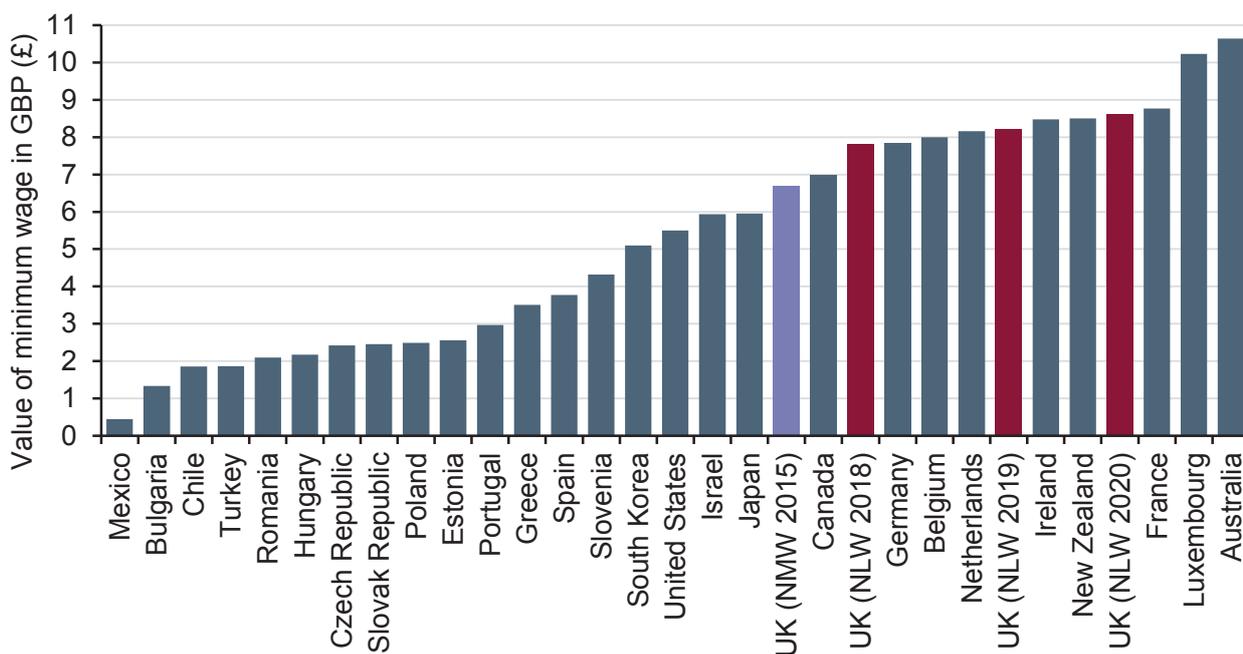
- The relevant pay period for minimum wages is defined differently (hourly, daily, monthly) between countries and may not be readily convertible into an hourly rate for comparative purposes. For example, in Europe many minimum wages are defined on a monthly basis.
- Definitions of minimum wage eligibility differ between countries, particularly with regards to the age and experience of those workers covered.
- In the UK, nearly all workers are entitled to the minimum wage irrespective of contract status but in some countries the minimum wage is limited to blue collar workers, or permanent and full-time workers. It 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 questions the accuracy of comparisons at a point in time.
- It is difficult to compare the value of minimum wages across countries because exchange rates and the cost of living fluctuate. Purchasing power parities (PPPs) attempt to address this problem but these also have considerable weaknesses.
- The cost 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.

1. For this report, we update our analysis of the value of the UK National Living Wage (NLW) when compared with the equivalent minimum wage in other countries. We look at nominal and purchasing power adjusted levels of minimum wages in countries that are part of Organisation for Economic Co-operation and Development (OECD) and the European Union (EU). We also look at changes to minimum wage rates since our 2017 Report. Following on from this analysis, we discuss the current trends in minimum wage setting in relevant countries, and changes since 2015 (the year before the NLW was introduced). We conclude by summarising recent research conducted on the effects of new and increasing minimum wages in Germany and the United States.

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2. Despite the depreciation of the pound relative to the euro and other currencies since the introduction of the NLW, the UK's minimum wage has continued to increase relative to those in other comparable countries in nominal sterling terms (adjusted for exchange rate changes). Figure A4.1 shows that the sterling value of the UK's minimum wage is now virtually equal to Germany's and close to those of Ireland, France and the Benelux countries. These countries are likely to see their minimum wages increase, but none are currently expected to do so at the same rate as the NLW. The nominal value of the NLW in sterling terms should therefore be similar to or higher than these comparators by 2020. These comparisons of the nominal value of minimum wages are particularly susceptible to exchange rate fluctuations, so future changes will depend also be influenced by this.

Figure A4.1: Nominal value of the minimum wage, by country, July 2018



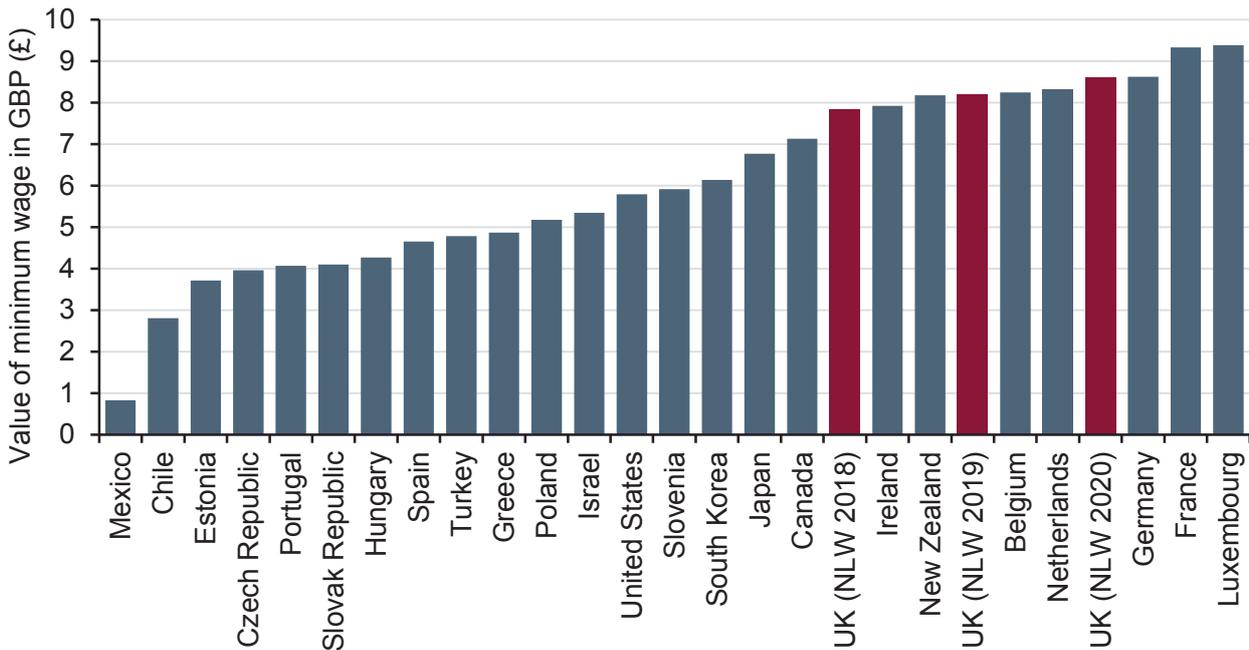
Source: LPC estimates using individual country data, July 2018.

Notes:

- Data are converted to GBP (£).
- Exchange rates are July 2018 monthly averages.

3. Exchange rate comparisons of minimum wages do not fully 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 (OECD, 2018a), we can attempt to address this issue. PPPs attempt to take account of the cost of living in each country, allowing us to more accurately compare the real value of minimum wages across countries. Figure A4.2 shows that using PPPs also puts the UK in the group of high-minimum wage countries. We would expect the UK to move further into line with this group the NLW rises, but by how much depends on relative inflation rates, exchange rates and other countries' minimum wage increases. It is also worth noting that the range of minimum wage values is not as pronounced when adjusted in this way.

Figure A4.2: Purchasing power parity of the minimum wage, by country, July 2018



Source: LPC estimates using OECD (2018a) and individual country data, July 2018.

Notes:

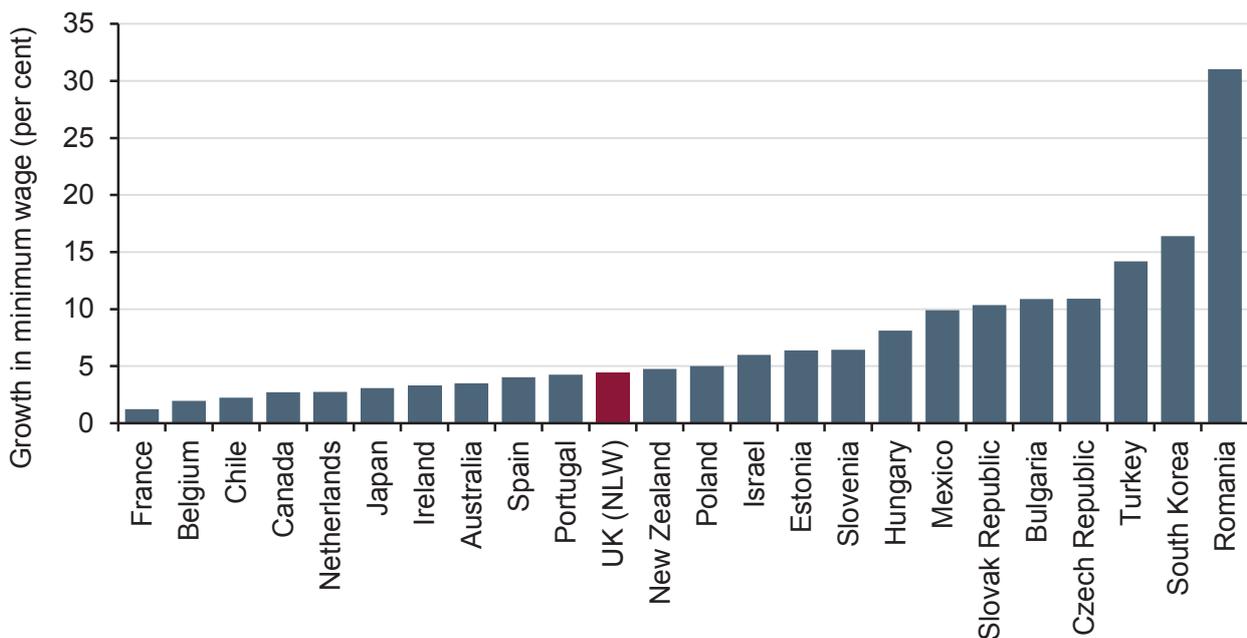
- Data are converted to GBP (£).
- Exchange rates are July 2018 monthly averages.
- PPP estimates calculated using OECD July 2018 comparison ratios (OECD, 2018a).
- Bulgaria and Romania are not part of the OECD so are not included in this comparison.

4. Last year we projected that the UK would move above Ireland and New Zealand in terms of minimum wage PPP value. However, inflation in the UK has been higher than in most OECD countries. In the year to the second quarter of 2018, inflation was 2.2 per cent in the UK, according to the OECD, compared with 0.1 per cent in Ireland and 1.5 per cent in New Zealand. As a result, the real increase in the UK's minimum wage was diminished relative to the comparator countries.

5. The UK had faster growth in its minimum wage in the last year than most countries with similar or higher minimum wages (New Zealand being the exception), as demonstrated by Figure A4.3. Countries with lower nominal minimum wages have tended to experience higher levels of growth in their minimum wages. Table A4.1 shows the values of the most recent increases.

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Figure A4.3: Annual change in minimum wage rates, 2017-2018



Source: LPC estimates using individual country data.

Table A4.1: Selected recent changes in nominal adult minimum wages, by country, 2017-2018

| Country | Previous hourly rate ^a | New hourly rate | Date of uprating | Percentage change |
|-----------------------|-----------------------------------|-----------------|---------------------|-------------------|
| UK | £7.50 | £7.83 | 1 April 2018 | 4.4 |
| Australia | \$AU 18.29 | \$AU 18.93 | 1 July 2018 | 3.5 |
| Belgium ^b | €8.84 | €9.01 | 1 June 2018 | 2.0 |
| Bulgaria | BGN 2.65 | BGN 2.94 | 1 January 2018 | 10.9 |
| France | €9.76 | €9.88 | 1 January 2018 | 1.2 |
| Ireland | €9.25 | €9.55 | 1 January 2018 | 3.2 |
| Japan ^c | JPY 848 | JPY 874 | August 2018 | 3.1 |
| Netherlands | €8.95 | €9.20 | 1 July 2018 | 2.8 |
| New Zealand | \$NZ 15.75 | \$NZ 16.50 | 1 April 2018 | 4.8 |
| Portugal ^d | €3.21 | €3.35 | 1 January 2018 | 4.3 |
| Romania | RON 8.37 | RON 10.96 | 1 February 2018 | 31.0 |
| South Korea | KRW 6,470 | KRW 7,530 | 1 January 2018 | 16.4 |
| Spain ^d | €4.08 | €4.25 | 1 January 2018 | 4.0 |

Source: LPC estimates.

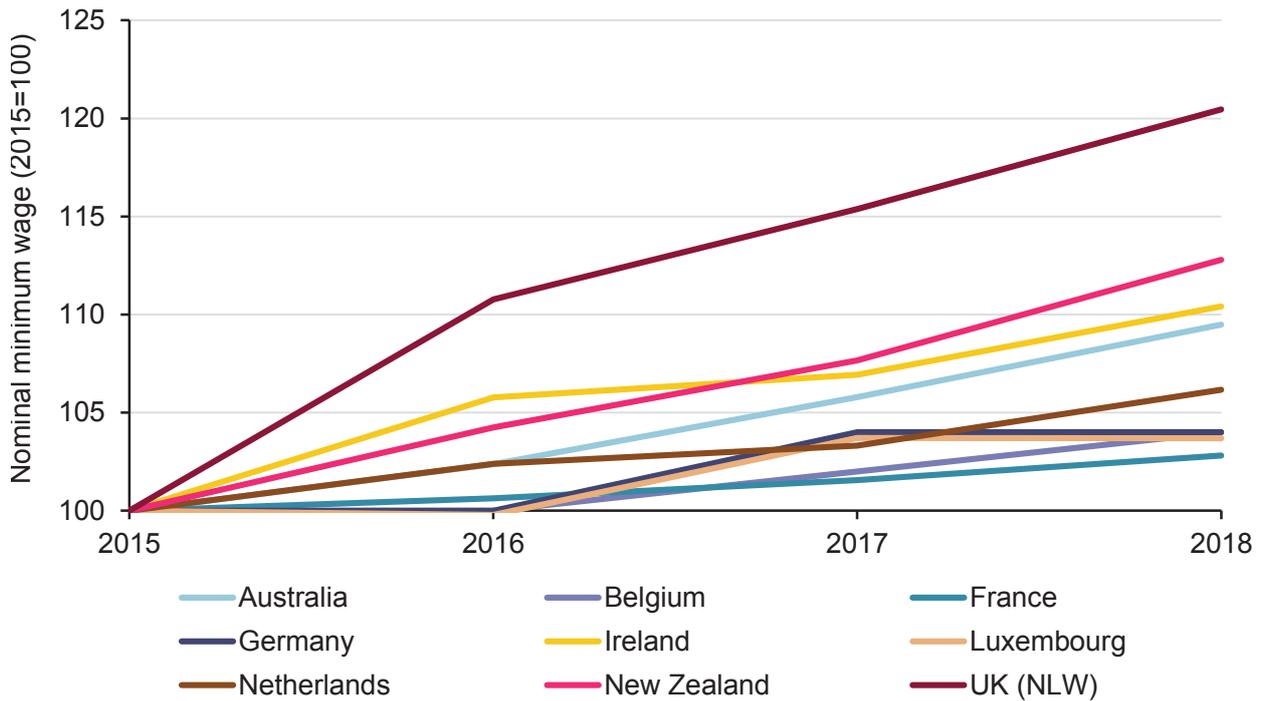
Notes:

- 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.
- Rate for workers aged 18 and over with no experience.
- Data for Japan are mean of prefectural (regional) rates.
- Not including annual supplementary payment of two months of salary for full-time workers.

- 6.** Eurofound (2018) reported that in most EU countries with a national minimum wage, social partnership bodies had a role in recommending or ratifying rates, but the exact role and form of consultation varied. In the low-minimum wage countries, most were tripartite bodies comprising the government, unions and employers. Higher-minimum wage countries were more likely to have an expert committee that was separate from government, as in the UK, or to have an index-linked minimum wage-setting procedure, or some combination of the two.
- 7.** In some countries that have seen large minimum wage upratings, social partnerships were unable to agree rates or refused to support increases announced by the Government. According to Eurofound, the large increases in Bulgaria caused controversy, with employer groups unhappy. In Slovakia, the rate was determined by the Government, which awarded a 10.3 per cent increase, after the social partners were unable to agree. Eurofound reported similar outcomes in the Czech Republic, Poland, Portugal and Slovenia.
- 8.** In Hungary and Romania, increases of 8.1 per cent and 31 per cent respectively were supported by tripartite social partnerships, with the important proviso that they were accompanied by decreased employer tax contributions. In Romania, initial proposals for the minimum wage were opposed by the official social partnership body, before revised plans, including tax changes, were approved.
- 9.** Eurofound reports that in some of the countries mentioned above – Bulgaria and Romania, as well as Spain – there had been a move to involve social partners more in the setting of minimum wages.
- 10.** Away from Europe, the South Korean Government set a target for the minimum wage of 10,000 won by 2020 (it is currently 7,530 won). Despite a 16.4 per cent increase this year, unions expressed concern that the minimum wage would not hit this target. Employers, on the other hand, protested at the successive large increases, and threatened to refuse to recognise the rate.
- 11.** Expanding on Figure A4.3, Figures A4.4 and A4.5 show recent growth in minimum wages in high minimum wage and low minimum wage countries. The NLW target path meant that the UK's minimum wage had grown faster than those of comparable countries since 2015. However, countries with lower minimum wages had seen considerable growth in the period 2015-2018. Increases in countries with similar levels of the minimum wage were generally not expected to be as fast as in the UK over the next few years, with the exception of New Zealand, where the Government had set a target of \$NZ 20.00 by 2020 (the current rate is \$NZ 16.50). We will follow developments there closely.

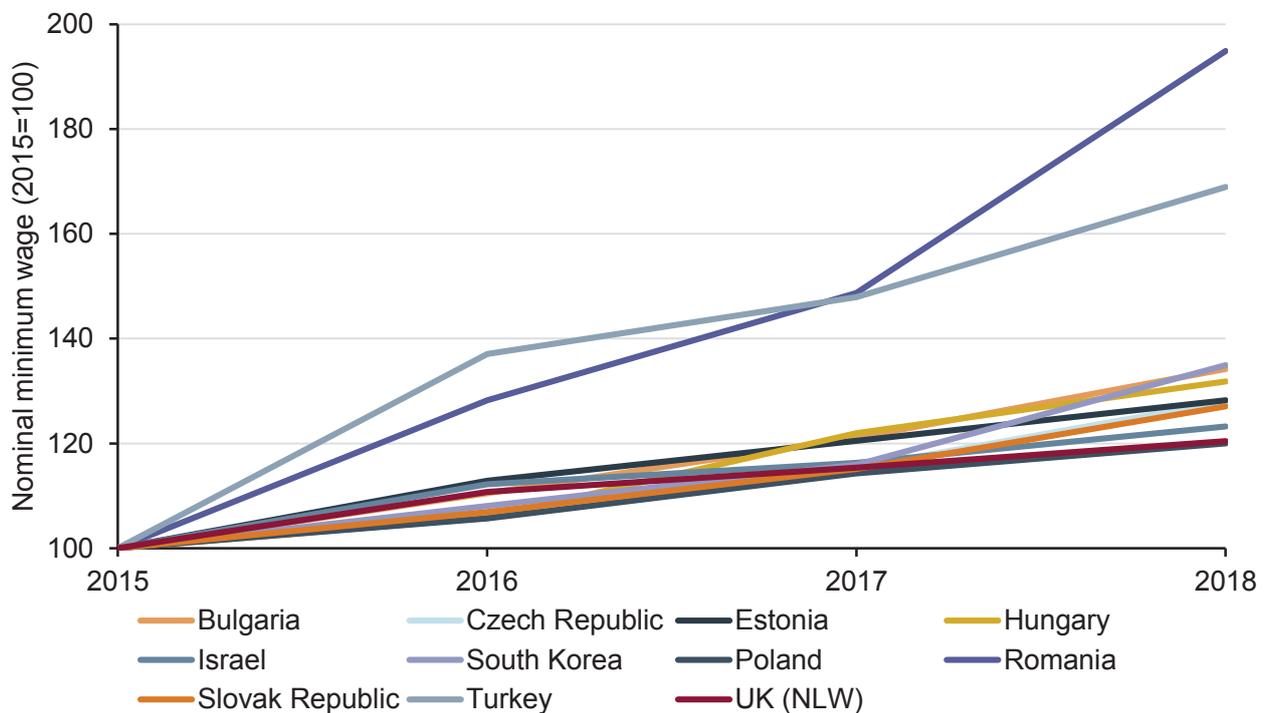
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Figure A4.4: Minimum wage increases in the UK and other high-minimum wage countries, 2015-2018



Source: LPC estimates using individual country data.

Figure A4.5: Minimum wage increases in the UK and low-minimum wage countries, 2015-2018

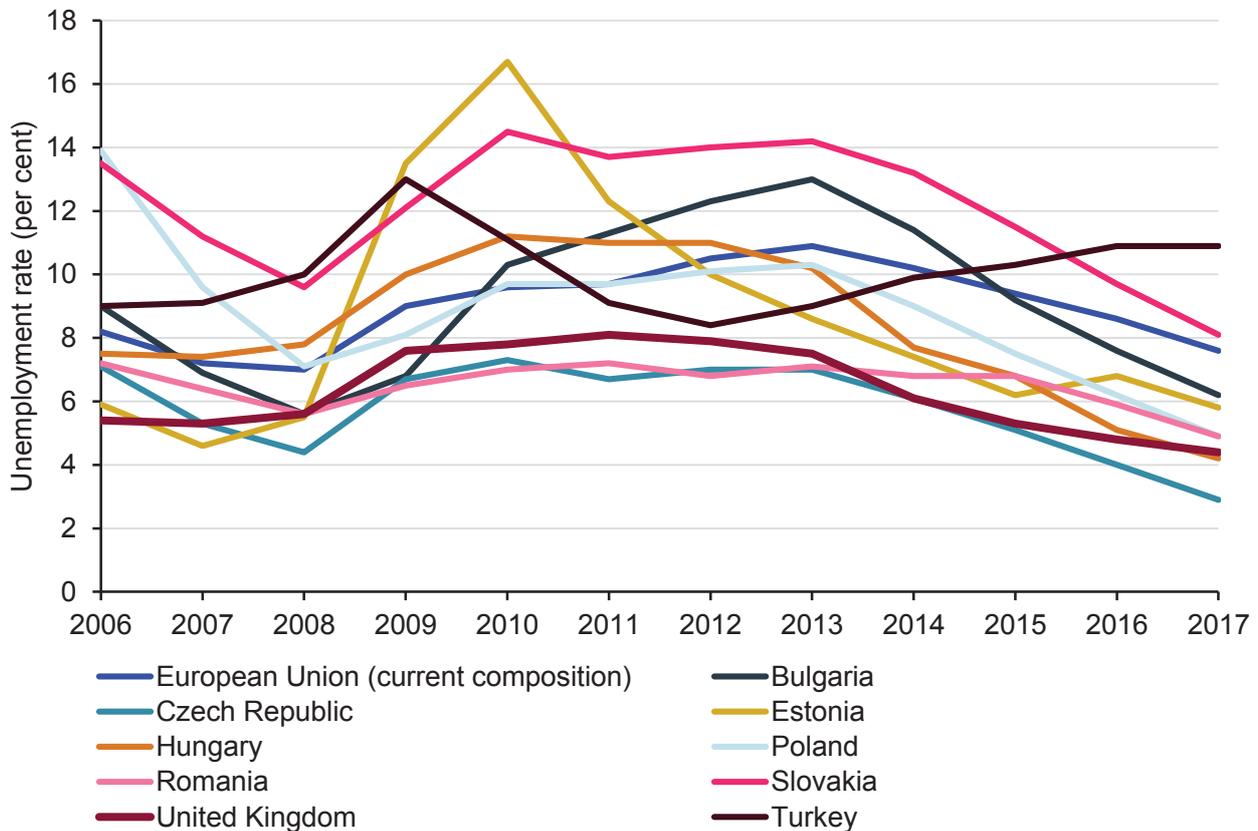


Source: LPC estimates using individual country data..

12. The impact of successive large increases across lower minimum wage countries was not entirely clear. Eurofound (2018) reported that in Bulgaria, coverage was around 17.7 per cent, and in Romania was as high as 40 per cent – in the latter the number covered has tripled since 2011. However, the estimated bite of the minimum wage was not particularly high in either country

(39.5 per cent in Bulgaria in 2016 and 44.5 per cent in Romania in 2017). Coverage was not as high in other countries that have had rapid minimum wage increases. In none of the countries in Figure A4.5 had these large minimum wage increases led to an obvious increase in the unemployment rate; in fact unemployment rates had trended downwards over the last three to four years in most, as Figure A4.6 shows.

Figure A4.6: Unemployment rates in low-minimum wage countries, 2006-2017



Source: LPC estimates from Eurostat (2018) data.

13. Further research concerning the employment effects of the introduction of a minimum wage in Germany in 2015 (initially set at EUR8.50) has now been published, including the German Minimum Wage Commission's second evaluation report (Mindestlohnkommission, 2018). The introduction of the minimum wage in Germany in 2015 resulted in a significant increase in hourly wages at the bottom of the wage distribution, though the effect on monthly wages was much weaker. Contractually agreed working hours were reduced in some cases, but the effect on actual hours worked was not clear. Also noted were decreased wage differentials at the lower end of the wage distribution, as well as some spillovers, as we have seen in the UK at the introduction of both the NMW in 1999 and the NLW in 2016.

14. Commissioned research has also been published by the German Minimum Wage Commission. A study by Caliendo, Fedorets, Preuss, Schroder and Wittbrodt (2017) confirms previous findings by Garloff (2016) and Bossler and Gerner (2016) that the minimum wage had not significantly affected regular employment but had led to a reduction in 'mini-jobs' (which were a form of marginal employment paid no more than EUR450 per month). The research did not find a pronounced effect on regular (full-time and part-time) employment in most specifications, although some estimations yielded a small significant reduction amounting to around 78,000 (roughly 0.3% of

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all regular jobs)'. The number of mini-jobs fell by 180,000, equivalent to 2.4 per cent of such engagements. This was higher than estimated in previous studies, but still below the predictions made before the minimum wage was introduced. In another study, Ahlfeldt, Roth and Seidel (2018) found that the federal minimum wage had led to 'spatial wage convergence', with wages in low-wage areas rising more rapidly than in high-wage areas, as expected. They concluded that this shift 'did not come at the expense of significant job loss in low-wage regions (relative to high-wage regions)'.

15. Recent minimum wage rises in US cities and states continue to attract attention, both in the media and among academics. Allegretto, Godoey, Nadler and Reich (2018) studied six cities where the minimum wage exceeded \$10 per hour in 2016, the last year analysed: Chicago, District of Columbia, Oakland, San Francisco, San Jose and Seattle. In San Francisco and Seattle, the rates had reached \$13. The study focused on the food services industry, identifying a 1.3-2.5 per cent increase in earnings from a 10 per cent increase in the minimum wage, and did not detect any significant employment effects. The study estimated employment effects of a 10 percent increase in the minimum wage that ranged from a 0.3 percent decrease to a 1.1 per cent increase, on average.

16. The researchers argued that their study 'casts further doubt' on the University of Washington (Jardim, Long, Plotnick, van Inwegen, Vigdor, and Wething, 2017) researchers' findings that Seattle's minimum wage increase had led to fewer hours and jobs for low-wage workers. Jacob Vigdor, one of the authors of the University of Washington report, did not challenge the findings of the study, but questioned its approach of only looking at the food service sector. A later study by researchers at the University of Washington, including Vigdor (Jardim, Long, Plotnick, van Inwegen, Vigdor, and Wething, 2018), found using longitudinal panels that the Seattle minimum wage has significant positive effect on hourly wages and negative effect on hours. According to the study, weekly earnings gains (an average of \$8-\$12 per week) were concentrated among the most experienced workers. It also found an 8 per cent reduction in job turnover rates. Zipperer (2018) responded by noting the positive findings but questioned the assertion that less experienced workers have not benefited, noting that the study did not cover workers at chain restaurants.

17. Cengiz, Dube, Lindner and Zipperer (2018) examined employment effects of minimum wage increases by using a 'bunching estimator' to compare the number of excess jobs paying at or slightly above the new minimum wage to the missing jobs paying below it. They found that 'the overall number of low-wage jobs remained essentially unchanged over five years following the increase'. The research also found that minimum wage increases had spillovers up to around the 23rd percentile of the earnings distribution. Rinz and Voorheis (2018) used high-quality administrative data to show similar effects.

References

- Aaronson, D. and B. Phelan**, 2017. *Wage Shocks and the Technological Substitution of Low-Wage Jobs*. Upjohn Institute Working Paper. 17-266. February. (Upjohn Institute for Employment Research.)
- Ahlfeldt, G., D. Roth and T. Seidel**, 2018. *The Regional Effects of a National Minimum Wage*. CESifo Working Paper Series. 6924. February. (CESifo Group Munich.)
- Aitken, A., P. Dolton, M. Ebell and R. Riley**, 2017. *Impact of the Introduction of the National Living Wage on Employment and Hours*. Interim Research Report for the Low Pay Commission. November. (National Institute for Social and Economic Research.)
- Aitken, A., P. Dolton, and R. Riley**, 2018. *The Impact of the Introduction of the National Living Wage on Employment, Hours and Wages*. Research Report for the Low Pay Commission. November. (National Institute for Social and Economic Research.)
- Allegretto, S., A. Dube, M. Reich, and B. Zipperer**, 2013. *Credible Research Designs for Minimum Wage Studies*. Institute for Research on Labour and Employment Working Paper. 148-13. September. (University of California, Berkeley.)
- Allegretto, S., A. Godoey, C. Nadler and M. Reich**, 2018. *The New Wave of Local Minimum Wage Policies: Evidence from Six Cities*. Institute for Research on Labour and Employment paper. September. (University of California, Berkeley.)
- Allegretto, S., K. Jacobs, C. Montialoux and M. Reich**, 2016. *The Effects of a \$15 Minimum Wage in New York State*. Center on Wage and Employment Dynamics, Institute for Research on Labor and Employment, University of California, Berkeley. Policy Brief. 10 March. (University of California, Berkeley.)
- Allegretto, S., and M. Reich**, 2018. Are Local Minimum Wages Absorbed by Price Increases? Estimates from Internet-based Restaurant Menus. *ILR Review*. 71 (1): 35-63. January.
- Association of Convenience Stores**, 2018. *Local Shop Report 2018*. 11 September.
- Association of Directors of Adults Social Services**, 2017. *ADASS Budget Survey 2017*. June.
- Association of Directors of Adults Social Services**, 2018. *ADASS Budget Survey 2018*. March.
- Autor, D. and D. Dorn**, 2013. The Growth of Low-Skill Service Jobs and the Polarization of the US Labor Market. *American Economic Review*. 103 (5): 1553-97. August.
- Avram S. and S. Harkness**, 2018. *The NMW/NLW and Progression Out of Minimum Wage Jobs in the UK*. Interim Report. Research Report for the Low Pay Commission. November. (University of Essex.)
- Bangham, G. and S. Clark**, 2018. *Counting the Hours: Two Decades of Changes in Earnings and Hours Worked*. Resolution Foundation Briefing. 15 January. (Resolution Foundation.)

National Minimum Wage

Bank of England, 2016. *Inflation Report*. August.

Bank of England, 2017. *Inflation Report*. August.

Bank of England, 2018a. *Inflation Report*. August.

Bank of England, 2018b. *Agents' Summary of Business Conditions*. Q3 2018. 13 September.

Bank of England, 2018c. *Monetary Policy Summary and Minutes of the Monetary Policy Committee Meeting Ending on 12 September 2018*. 13 September.

Bank of England, 2018d. *Statistical Interactive Database: Interest & Exchange Rates Data*. October.

Bank of England, ongoing. *Agents' Summary of Business Conditions*. Monthly.

Bank of England, ongoing. *Credit Conditions Survey*. Quarterly.

Bank of England, ongoing. *Inflation Report*. Quarterly.

Bank of England, ongoing. *Minutes of the Monetary Policy Committee Meeting*. Monthly.

Bell, B. and D. Blanchflower, 2018a. *The Lack of Wage Growth and the Falling NAIRU*. National Institute Economic Review. 245. August. (National Institute for Economic and Social Research.)

Bell, B. and D. Blanchflower, 2018b. *Underemployment in the US and Europe*. NBER Working Paper Series. 24927. August. (National Bureau of Economic Research, Cambridge, Massachusetts.)

Bell, B. and S. Machin, 2016. *Minimum Wages and Firm Value*. Institute for the Study of Labor (IZA) Discussion Paper. 9914. April. (Forschungsinstitut zur Zukunft der Arbeit, Bonn.)

Bell, T. and D. Tomlinson, 2018. *Is Everybody Concentrating? Recent Trends in Product and Labour Market Concentration in the UK*. Resolution Foundation Briefing. 26 July. (Resolution Foundation.)

Belman, D. and P. Wolfson, 2014. Does Employment Respond to the Minimum Wage? A Meta-analysis of Recent Studies from the New Minimum Wage Research. Chapter 4 in **Belman, D.**, *What Does the Minimum Wage Do?* (The Upjohn Institute.)

Bentham, E., F. Macdonald and J. Malone, (2018). Wage Theft, Underpayment, and Unpaid Work in Marketised Social Care. *The Economic and Labour Relations Review*. 29 (1): 86-90. 22 February.

Bewley, H. and D. Wilkinson, 2015. *The Impact of the National Minimum Wage on Employment and Hours*. Research Report for the Low Pay Commission. February. (National Institute of Economic and Social Research.)

Bishop, J., 2018. *The Effect of Minimum Wage Increases on Wages, Hours Worked and Job Loss*. Reserve Bank of Australia Research Discussion Paper. RDP 2018-06. May. (Reserve Bank of Australia.)

Blanchflower, D. and S. Machin, 2016. *The Current 2% UK Wage Growth Norm*. Centre for Economic Performance Real Wage Update. CEPRWU005. March. (Centre for Economic Performance, London School of Economics and Political Science.)

Blanchflower, D. and S. Machin, 2017. *The Return of Falling Real Wages*. Centre for Economic Performance. May. (Centre for Economic Performance, London School of Economics and Political Science.)

Bossler, M. and H-D. Gerner, 2016. *Employment Effects of the New German Minimum Wage: Evidence from Establishment-level Micro Data*. Institute for Employment Research (IAB) Discussion Paper. 10/2016. 17 March. (Institut für Arbeitsmarkt- und Berufsforschung the Research Institute of the Federal Employment Agency, Nuremberg, Germany.)

- Bowman, S. and B. Southwood**, 2017. *Against the National Living Wage: Why 2017 is Not 1997*. Adam Smith Institute Briefing Paper. 24 February.
- Brewer, M., T. Crossley and R. Joyce**, 2018. Inference with Difference-in-Difference Revisited. *Journal of Econometric Methods*. 7 (1). 6 September. (De Gruyter.)
- Brewer, M., T. Crossley and F. Zilio**, 2015. *What Do We Really Know about the Employment Effects of the National Minimum Wage? An Illustration of the Low Power of Difference-in-difference Designs*. Paper presented at the Fourth Society of Labor Economists/European Association of Labour Economists in Montreal. June. (Institute for Social and Economic Research, University of Essex.)
- Brewer, M. and P. De Agostini**, 2013. *National Minimum Wage: a Focus on Universal Credit*. Research Report for the Low Pay Commission. February. (Institute for Social and Economic Research, University of Essex.)
- Brewer, M. and P. De Agostini**, 2017. *The National Minimum Wage, the National Living Wage and the Tax and Benefit System*. Research Report for the Low Pay Commission. October. (Institute for Social and Economic Research, University of Essex.)
- British Chambers of Commerce**, 2018. *Q3 2018 Quarterly Economic Survey*. 8 October.
- British Retail Consortium**, ongoing. *BRC Retail Employment Monitor*. Quarterly.
- British Retail Consortium and KPMG**, ongoing. *BRC-KPMG Retail Sales Monitor*. Monthly.
- Brown, J. and F. Mor**, 2018. *Workers Underpaid the Minimum Wage*. House of Commons Library Briefing Paper. 8235. 1 June.
- Browne, J. and A. Hood**, 2016. *Living Standards, Poverty and Inequality in the UK: 2015-16 to 2020-21*. Institute for Fiscal Studies Report. R114. 2 March. (The Institute for Fiscal Studies.)
- Bryan, M., A. Salvatori and M. Taylor**, 2012. *The Impact of the National Minimum Wage on Earnings, Employment and Hours Through the Recession*. Research Report for the Low Pay Commission. February. (Institute for Social and Economic Research, University of Essex.)
- Bryan, M., A. Salvatori and M. Taylor**, 2013. *The Impact of the National Minimum Wage on Employment Retention, Hours and Job Entry*. Research Report for the Low Pay Commission. February. (Institute for Social and Economic Research, University of Essex.)
- Bryan, M. and M. Taylor**, 2006. *Identifying the Patterns of National Minimum Wage Receipt in Britain 1999–2004*. Research Report for the Low Pay Commission. (Institute for Social and Economic Research, University of Essex.)
- Burauel, P., M. Caliendo, A. Fedorets, M. Grabka, C. Schröder, J Schupp and L. Wittbrodt**, 2017. Minimum Wage Not Yet for Everyone: On the Compensation of Eligible Workers Before and After the Minimum Wage Reform from the Perspective of Employees. *DIW Economic Bulletin*. 49: 509-522. (Deutsches Institut für Wirtschaftsforschung (German Institute for Economic Research), Berlin.)
- Butcher, T.**, 2005. The Hourly Earnings Distribution Before and After the National Minimum Wage. *Labour Market Trends*. 113(10): 427-435.
- Butcher, T., R. Dickens and A. Manning**, 2012. Minimum Wages and Wage Inequality: Some Theory and an Application to the UK. *CEP Discussion Paper*. 1177. October. (Low Pay Commission; University of Sussex; and London School of Economics and Political Science.)

National Minimum Wage

Cai, L., K. Mavromaras and P. Sloane, 2018. Low Paid Employment in Britain: Estimating State Dependence and Stepping Stone Effects. *Oxford Bulletin of Economics and Statistics*. 80 (2): 283-326. April.

Caliendo, M., A. Fedorets, M. Preuss, C. Schroder and L. Wittbrodt, 2017. *The Short-Run Employment Effects of the German Minimum Wage Reform*. IZA Discussion Paper. 11190. December.

Capellari, L. and S. Jenkins, 2008. Estimating Low-pay Transition Probabilities Accounting for Endogenous Selection Mechanisms. *Applied Statistics*. 57 (2): 165-186.

Capuano S., J. Cockett and H. Gray, 2018. *The Impact of the Minimum Wage on Employment and Hours: Interim report*. Research Report for the Low Pay Commission. November. (Institute for Employment Studies.)

Card, D. and A. Krueger, 1995. *Myth and Measurement: The New Economics of the Minimum Wage*. (Princeton University Press.)

Carreras, O., M. Ebell, S. Kirby, J. Meaning, R. Piggott, and J. Warren, 2016. *The Long and the Short of it: What Price UK Exit from the EU?* 12 May. (National Institute of Economic and Social Research.)

CBI, ongoing. *Distributive Trades Survey*. Monthly.

CBI, ongoing. *Industrial Trends Survey*. Monthly.

Cengiz, D., A. Dube, A. Lindner, and B. Zipperer, 2018. *The Effect of Minimum Wages on Low-Wage Jobs: Evidence from the United States Using a Bunching Estimator*. Centre for Economic Performance Discussion Paper. 1531. February. (Centre for Economic Performance, London School of Economics.)

Cerqua, A., G. Di Pietro, and P. Urwin, 2018. *Does the Minimum Wage Impact Labour Market Choices of Young People Aged 16-24*. Research Report for the Low Pay Commission. Forthcoming. (University of Westminster.)

Chadha, J., P. Johnson and J. Van Reenen, 2016. *Leaving the EU Would Almost Certainly Damage Our Economic Prospects*. Institute for Fiscal Studies Observations. 20 June. (The Institute for Fiscal Studies.)

Chartered Institute of Personnel and Development, 2018a. *The Road to Good Work*. CIPD Discussion Paper. 11 April.

Chartered Institute of Personnel and Development, 2018b. *UK Working Lives*. 24 April.

Chartered Institute of Personnel and Development, 2018c. *Labour Market Outlook*. Summer. 3 September.

Chartered Institute of Personnel and Development, ongoing. *Labour Market Outlook*. Quarterly.

Chartered Institute of Personnel and Development, ongoing. *UK Working Lives*. Quarterly.

Clark, S., 2017. *Get A Move On? The Decline in Regional Job-to-job Moves and its Impact on Productivity and Pay*. Resolution Foundation Briefing. 15 August. (Resolution Foundation.)

Clark, S. and P. Gregg, 2018. *Count the Pennies: Explaining a Decade of Lost Pay Growth*. Resolution Foundation Briefing. 9 October. (Resolution Foundation.)

Crawford, J., E. Greaves, W. Jin, J. Swaffield and A. Vignoles, 2011. *The Impact of the Minimum Wage Regime on the Labour Market Choices of Young People*. Research Report for the Low Pay Commission. December. (Institute for Fiscal Studies; University of York; and Institute of Education.)

- Cribb, J., R. Joyce and A. Norris Keiller**, 2018. *Will the Rising Minimum Wage Lead to More Low-paid Jobs Being Automated?* IFS Observation. 4 January. (Institute for Fiscal Studies.)
- Cribb, J., A. Norris Keiller and T. Waters**, 2018. Living Standards and the National Living Wage. Chapter 6 in *Living Standards, Poverty and Inequality in the UK: 2018*. June. (Institute for Fiscal Studies.)
- Crisp R., E. Ferrari, T. Gore, S. Green, L. McCarthy, A. Rae, K. Reeve and M. Stevens**, 2018. *Tackling Transport-related Barriers to Employment in Low-income Neighbourhoods*. August. (Joseph Rowntree Foundation.)
- Cronin, E. and M. Thewlis**, 2004. *Qualitative Research on Firms' Adjustments to the Minimum Wage*. Research Report for the Low Pay Commission. November. (Industrial Relations Services.)
- D'Arcy, C.**, 2016. *Industrial Strategies? Exploring Responses to the National Living Wage in Low-paying Sectors*. Research Report for the Low Pay Commission. October. (Resolution Foundation.)
- D'Arcy, C.**, 2018. *Low Pay Britain 2018*. Resolution Foundation Report. 18 May. (Resolution Foundation.)
- D'Arcy, C. and A. Corlett**, 2015. *Taking up the Floor: Exploring the Impact of the National Living Wage on Employers*. Resolution Foundation Report. 15 September. (Resolution Foundation.)
- D'Arcy, C. and G. Davies**, 2016. *Weighing Up the Wage Floor – Employer Responses to the National Living Wage*. Resolution Foundation Policy Report. 24 February. (Resolution Foundation and the Chartered Institute of Personnel and Development.)
- D'Arcy, C. and D. Finch**, 2017a. *The Great Escape? Low Pay and Progression in the UK's labour market*. Resolution Foundation Report. 19 October. (Resolution Foundation.)
- D'Arcy, C. and D. Finch**, 2017b. *Calculating a Living Wage for London and the Rest of the UK*. Resolution Foundation Report. 6 November. (Resolution Foundation.)
- D'Arcy, C. and G. Kelly**, 2015. *Analysing the National Living Wage: Impact and Implications for Britain's Low Pay Challenge*. Resolution Foundation Briefing. 10 July. (Resolution Foundation.)
- D'Arcy, C. and F. Rahman**, 2018. *Atypical Approaches: Options to Support Workers with Insecure Incomes*. Research Report for the Low Pay Commission. November. (Resolution Foundation.)
- D'Arcy, C. and M. Whittaker**, 2016. *The First 100 Days: Early Evidence on the Impact of the National Living Wage*. Resolution Foundation Briefing. 11 July. (Resolution Foundation.)
- Datta, N., G. Giupponi and S. Machin**, 2018. *Zero Hours Contracts and Labour Market Policy*. Paper for Economic Policy. 68th Panel Meeting. 4-5 October. Vienna.
- Davis, A., D. Hirsch, M. Padley and C. Shepherd**, 2018. *A Minimum Income Standard for the UK 2008-2018: Continuity and Change*. Report for the Joseph Rowntree Foundation. 2 July. (Joseph Rowntree Foundation.)
- De Coulon, A., E. Meschi, J. Swaffield, A. Vignoles and J. Wadsworth**, 2010. *Minimum Wage and Staying-on Rates in Education for Teenagers*. Research Report for the Low Pay Commission. January. (Institute of Education, University of London; University of York; and Royal Holloway, University of London.)
- De Linde Leonard, M., H. Doucouliagos and T. Stanley**, 2014. Does the UK Minimum Wage Reduce Employment? A Meta-regression Analysis. *British Journal of Industrial Relations*. 52 (3): 499-520. September.

National Minimum Wage

Deloitte, 2018a. *Deal or No Deal – That is the Question, The Deloitte CFO Survey: 2018 Q3*. 8 October.

Deloitte, 2018b. *Loss of Momentum: The Deloitte Consumer Tracker Q3 2018*. 17 October.

Deloitte, ongoing. *The Deloitte CFO Survey*. Quarterly.

Deloitte, ongoing. *The Deloitte Consumer Tracker*. Quarterly.

Department for Business, Energy and Industrial Strategy, 2016. *National Minimum Wage: Calculating the Minimum Wage*. BEIS/16/30. 10 October.

Department for Business, Energy and Industrial Strategy, 2017. *Business Population Estimates for the UK and Regions 2017*. 30 November.

Department for Business, Energy and Industrial Strategy, 2018. *Longitudinal Small Business Survey 2017: SME Employers (Businesses with 1-249 Employees)*. 24 May.

Department for Education, 2017. *Further Education and Skills (SFR53/2017)*. November 2017.

Department for Education, 2018a. *Employer Skills Survey 2017*. August 2018.

Department for Education, 2018b. *Apprenticeship and Levy Statistics*. October 2018.

Department for Education, ongoing. *Apprenticeship and Levy Statistics*. Monthly.

Dhingra, S., G. Ottaviano, T. Sampson, and J. Van Reenen, 2016. *The Consequences of Brexit for UK Trade and Living Standards*. Centre for Economic Performance Discussion Paper. CEPBEXIT02. March. (Centre for Economic Performance, London School of Economics.)

Dickens, R. and P. Dolton, 2011. *Using Wage Council Data to Identify the Effect of Recessions on the Impact of the Minimum Wage*. Research Report for the Low Pay Commission. April. (University of Sussex; Centre for Economic Performance, London School of Economics; and Royal Holloway, University of London.)

Dickens, R. and M. Draca, 2005. *The Employment Effects of the October 2003 Increase in the National Minimum Wage*. Research Report for the Low Pay Commission. February. (Centre for Economic Performance, London School of Economics.)

Dickens R. and K. Lind, 2018. *The Impact of the Recent Increases in the Minimum Wage on the UK Labour Market: An Area-based Analysis*. Research Report for the Low Pay Commission. November. (University of Sussex.)

Dickens, R., R. Riley and D. Wilkinson, 2010. *The Impact on Employment of the Age Related Increases in the National Minimum Wage*. Research Report for the Low Pay Commission. January. (University of Sussex and Centre for Economic Performance, London School of Economics; and LLAKES Centre, Institute of Education, and National Institute of Economic and Social Research.)

Dickens, R., R. Riley and D. Wilkinson, 2012. *Re-Examining the Impact of the National Minimum Wage on Earnings, Employment and Hours: The Importance of Recession and Firm Size*. Research Report for the Low Pay Commission. January. (University of Sussex and National Institute of Economic and Social Research.)

Dickens, R., R. Riley and D. Wilkinson, 2014. *The UK Minimum Wage at 22 Years of Age: A Regression Discontinuity Approach*. *Journal of the Royal Statistical Society*. 177 (1): 95–114. (Royal Statistical Society.)

Dickens, R., R. Riley and D. Wilkinson, 2015. *A Re-examination of the Impact of the UK National Minimum Wage on Employment*. *Economica*. 82 (328): 841–864. October. (John Wiley & Sons, Ltd.)

- Dolton, P. and C. Rosazza Bondibene**, 2011. *An Evaluation of the International Experience of Minimum Wages in an Economic Downturn*. Research Report for the Low Pay Commission. March. (Royal Holloway, University of London.)
- Draca, M., S. Machin and J. Van Reenen**, 2011. Minimum Wages and Firm Profitability. *American Economic Journal: Applied Economics*. 3 (1): 129-151.
- Drew, H., F. Ritchie and M. Veliziotis**, 2015. *The Measurement of Apprentice Pay*. Research Report for the Low Pay Commission. February. (University of the West of England, Bristol.)
- Drew, H., F. Ritchie and M. Veliziotis**, 2016. *Understanding Apprentice Pay*. Research Report for the Low Pay Commission. August. (University of the West of England, Bristol.)
- Dube, A., T.W. Lester and M. Reich**, 2014. Minimum Wage Shocks, Employment Flows and Labor Market Frictions. IRLE Working Paper. 149-13. October. (Institute for Research on Labor and Employment, Berkeley, University of California.)
- Dustmann, C., T. Frattini and I. Preston**, 2016. The Effect of Immigration Along the Distribution of Wages. *Review of Economic Studies*. 80: 145-173. (Oxford University Press.)
- EEF**, ongoing. *Pay Bulletin*.
- Emmerson, C., C. Farquharson and P. Johnson**, 2018. *IFS Green Budget: October 2018*. 16 October. (The Institute for Fiscal Studies.)
- Emmerson, C., P. Johnson and I. Mitchell**, 2016. *The EU Single Market: The Value of Membership versus Access to the UK*. Institute for Fiscal Studies Report. R119. 10 August. (The Institute for Fiscal Studies.)
- Eurofound**, 2017. *Statutory Minimum Wages in the EU 2017*. February. (Eurofound, Dublin.)
- Eurofound**, 2018. *Statutory Minimum Wages 2017*. European Foundation for the Improvement of Living and Working Conditions. 12 April. (Publications of the European Union. Luxembourg.)
- Eurostat**, 2018. *Unemployment by Sex and Age – Annual Average*. September. (Eurostat, Luxembourg.)
- FairWork Commission**, 2018. *Annual Wage Review 2017-18*. C2018/1. 1 June. (Sydney, Australia.)
- Frontier Economics**, 2017. *Estimating the Impact of the October 2015 Increase in the Apprentice Rate*. Research Report for the Low Pay Commission. October. (Frontier Economics.)
- FSB**, ongoing. *FSB Voice of Small Business Index*. Quarterly.
- Gardiner, L. and P. Gregg**, 2017. *Study, Work, Progress, Repeat? How and Why Pay and Progression Outcomes have Differed across Cohorts*. Resolution Foundation and Intergenerational Commission Fifth Report. 23 February. (Resolution Foundation and Intergenerational Commission.)
- Garloff, A.**, 2016. *Side Effects of the New German Minimum Wage on (Un-)Employment: First Evidence from Regional Data*. Institute for Employment Research (IAB) Discussion Paper. 31/2016. 11 October. (Institut für Arbeitsmarkt- und Berufsforschung, The Research Institute of the Federal Employment Agency, Nuremberg, Germany.)
- GfK**, ongoing. *Consumer Confidence Index*. Monthly
- Giupponi, G., A. Lindner, S. Machin and A. Manning**, 2016. *The Impact of the National Living Wage on English Care Homes*. Research Report for the Low Pay Commission. October. (Centre for Economic Performance, London School of Economics; and University College London.)

National Minimum Wage

Giupponi, G. and S. Machin, 2018a. *Changing the Structure of Minimum Wages: Firm Adjustment and Wage Spillovers*. CEP Discussion Paper. 1533. April. (Centre for Economic Performance, London School of Economics).

Giupponi, G. and S. Machin, 2018b. Care Homes: Effects of the National Living Wage. *CentrePiece*. 23 (2). Summer 2018. July. (Centre for Economic Performance, London School of Economics).

Gregg, P. and E. Tominey, 2004. *The Wage Scar from Youth Unemployment*. Centre for Market and Public Organisation Working Paper Series. 04 (097). February. (University of Bristol.)

Haldane, A., 2018a. *The UK's Productivity Problem: Hub No Spokes*. Speech given to Academy of Social Sciences Annual Lecture, London. 28 June. (Bank of England.)

Haldane, A., 2018b. *Pay Power*. Speech given to Acas 'Future of Work' Conference, Congress House, London. 10 October. (Bank of England.)

Hirsch, B., B. Kaufman, and T. Zelenska, 2015. Minimum Wage Channels of Adjustment. *Industrial Relations*. 54 (2). April.

HM Treasury, 2010. *Budget 2010*. HC 61. June. (The Stationery Office.)

HM Treasury, 2015. *Summer Budget 2015*. HC 264. July. (The Stationery Office.)

HM Treasury, 2016a. *HM Treasury Analysis: The Long-term Economic Impact of EU Membership and the Alternatives*. CM 9250. April. (The Stationery Office.)

HM Treasury, 2016b. *Forecasts for the UK Economy: A Comparison of Independent Forecasts*. August.

HM Treasury, 2016c. *Forecasts for the UK Economy: A Comparison of Independent Forecasts*. October.

HM Treasury, 2017a. *Forecasts for the UK Economy: A Comparison of Independent Forecasts*. August.

HM Treasury, 2017b. *Forecasts for the UK Economy: A Comparison of Independent Forecasts*. October.

HM Treasury, 2017c. *Autumn Budget 2017*. HC 587. 22 November. (The Stationery Office.)

HM Treasury, 2017d. *Impact on households: Distributional Analysis to Accompany Autumn Budget 2017*. PU 2110. 22 November.

HM Treasury, 2018a. *Forecasts for the UK Economy: A Comparison of Independent Forecasts*. August.

HM Treasury, 2018b. *Forecasts for the UK Economy: A Comparison of Independent Forecasts*. October.

HM Treasury, ongoing. *Forecasts for the UK Economy: A Comparison of Independent Forecasts*. Monthly.

Hudson-Sharp, N., H. Rolfe, C. Manzoni, 2018. *Understanding Employers' Use of the National Minimum Wage Youth Rates*. Research Report for the Low Pay Commission. Forthcoming. (National Institute of Economic and Social Research.)

Incomes Data Research, 2016. *Impact of the National Living Wage*. Research Report for the Low Pay Commission. October. (Incomes Data Research.)

- Incomes Data Research**, 2017. *The National Living Wage: Employers' Responses to the 2017 Increase*. Research Report for the Low Pay Commission. October. (Incomes Data Research.)
- Incomes Data Research**, 2018. *Minimum and Zero Hours Contracts and Low-paid Staff*. Research Report for the Low Pay Commission. October. (Incomes Data Research.)
- Incomes Data Research**, ongoing. *Pay Climate*. Quarterly.
- Insolvency Service**, ongoing. *Insolvency Statistics*. Quarterly.
- Institute for Fiscal Studies**, 2015. *An Assessment of the Potential Compensation Provided by the New 'National Living Wage' for the Personal Tax and Benefit Measures Announced for the Implementation in the Current Parliament*. IFS Briefing Note. BN175. September.
- International Labour Organisation**, 2008. *Global Wage Report 2008/09: Minimum Wages and Collective Bargaining: Towards Policy Coherence: Wages and Income Inequality*. November. (International Labour Office, Geneva.)
- International Monetary Fund**, 2018. *World Economic Outlook, October 2018. Challenges to Steady Growth*. 8 October. (International Monetary Fund, Washington, US).
- Irish Low Pay Commission**, 2018. *Recommendations for the National Minimum Wage 2017*. LPC 9. July.
- Jardim, E., M. Long, R. Plotnick, E. van Inwegen, J. Vigdor, and H. Wething**, 2017. *Minimum Wage Increases, Wages, and Low-Wage Employment: Evidence from Seattle*. National Bureau of Economic Research (NBER) Working Paper. 23532. June.
- Jardim, E., M. Long, R. Plotnick, E. van Inwegen, J. Vigdor, and H. Wething**, 2018. *Minimum Wage Increases and Individual Employment Trajectories*. National Bureau of Economic Research (NBER) Working Paper. 25182. October.
- Jones, M., R. Jones, P. Latreille, P. Murphy and P. Sloane**, 2006. *Further Analysis of Flows Into and Out of the National Minimum Wage*. Research Report for the Low Pay Commission. October. (University of Wales, Swansea.)
- Jones, M., R. Jones, P. Latreille, P. Murphy and P. Sloane**, 2013. A Regional Analysis of Flows Into and Out of the UK National Minimum Wage. *Applied Economics* 45 (21): 3074-3087. June.
- Jones, M., R. Jones, P. Murphy and P. Sloane**, 2004. *The Analysis of Flows Into and Out of The National Minimum Wage*. Report to the Low Pay Commission. (University of Wales, Swansea.)
- Koning, P. and M. Marimpi**, 2018. Youth Minimum Wages and Youth Employment. *IZA Journal of Labor Policy*. 7 (5). 29 March.
- Labour Research Department**, ongoing. *Labour Research*. Monthly.
- Local Government Association**, 2018. *Moving the Conversation on: LGA Autumn Budget Submission to HM Treasury*. September.
- London Economics**, 2015. *The Impact of Minimum Wages on Young People: Final Report*. Research Report for the Low Pay Commission. January. (London Economics.)
- Lordan, G.**, 2017. *Minimum Wage and the Propensity to Automate or Offshore*. Research Report for the Low Pay Commission. October. (London School of Economics and Political Science.)
- Lordan, G.**, 2018. *Minimum Wage and the Propensity to Automate or Offshore*. Research Report for the Low Pay Commission. November. (London School of Economics and Political Science.)

National Minimum Wage

Lordan, G. and D. Neumark, 2017. *People Versus Machines: The Impact of Minimum Wages on Automatable Jobs*. National Bureau of Economic Research Working Paper. 23667. August.

Low Pay Commission, 1998. *The National Minimum Wage. First Report of the Low Pay Commission*. Cm 3976. June. (The Stationery Office.)

Low Pay Commission, 1999. *The National Minimum Wage. Second Report of the Low Pay Commission*. Cm 4571. December. (The Stationery Office.)

Low Pay Commission, 2001a. *The National Minimum Wage. Third Report of the Low Pay Commission. Volume One*. Cm 5075. March. (The Stationery Office.)

Low Pay Commission, 2001b. *The National Minimum Wage. Making a Difference: The Next Steps. Third Report of the Low Pay Commission. Volume Two*. Cm 5175. June. (The Stationery Office.)

Low Pay Commission, 2003. *The National Minimum Wage. Building on Success. Fourth Report of the Low Pay Commission*. Cm 5768. March. (The Stationery Office.)

Low Pay Commission, 2004. *Protecting Young Workers. The National Minimum Wage. Low Pay Commission Report 2004*. Cm 6152. March. (The Stationery Office.)

Low Pay Commission, 2005. *National Minimum Wage. Low Pay Commission Report 2005*. Cm 6475. February. (The Stationery Office.)

Low Pay Commission, 2006. *National Minimum Wage. Low Pay Commission Report 2006*. Cm 6759. March. (The Stationery Office.)

Low Pay Commission, 2007. *National Minimum Wage. Low Pay Commission Report 2007*. Cm 7056. March. (The Stationery Office.)

Low Pay Commission, 2008. *National Minimum Wage. Low Pay Commission Report 2008*. Cm 7333. March. (The Stationery Office.)

Low Pay Commission, 2009. *National Minimum Wage. Low Pay Commission Report 2009*. Cm 7611. May. (The Stationery Office.)

Low Pay Commission, 2010. *National Minimum Wage. Low Pay Commission Report 2010*. Cm 7823. March. (The Stationery Office.)

Low Pay Commission, 2011. *National Minimum Wage. Low Pay Commission Report 2011*. Cm 8023. April. (The Stationery Office.)

Low Pay Commission, 2012. *National Minimum Wage. Low Pay Commission Report 2012*. Cm 8302. March. (The Stationery Office.)

Low Pay Commission, 2013. *National Minimum Wage. Low Pay Commission Report 2013*. Cm 8565. April. (The Stationery Office.)

Low Pay Commission, 2014. *National Minimum Wage. Low Pay Commission Report 2014*. Cm 8816. March. (The Stationery Office.)

Low Pay Commission, 2015. *National Minimum Wage. Low Pay Commission Report 2015*. Cm 9017. March. (The Stationery Office.)

Low Pay Commission, 2016a. *National Minimum Wage. Low Pay Commission Report Spring 2016*. Cm 9207. March. (The Stationery Office.)

Low Pay Commission, 2016b. *National Minimum Wage. Low Pay Commission Report Autumn 2016*. Cm 9272. November. (The Stationery Office.)

- Low Pay Commission**, 2017a. *Non-compliance and Enforcement of the National Minimum Wage*. September. (Low Pay Commission.)
- Low Pay Commission**, 2017b. *National Minimum Wage. Low Pay Commission Report 2017*. Cm 9536. November. (The Stationery Office.)
- Manning, A.**, 2016. *The Elusive Employment Effect of the Minimum Wage*. Centre for Economic Performance Discussion Paper. 1428. May. (London School of Economics.)
- Manpower**, 2018. *Manpower Employment Outlook Survey UK, Q4 2018*. 11 September. (ManpowerGroup.)
- Manpower**, ongoing. *Manpower Employment Outlook Survey UK*. Quarterly. (ManpowerGroup.)
- Marshall, E., J. Rutter and S. Sims**, 2012. *The "S" Factors: Lessons from IFG's Policy Success Reunions*. January. (Institute for Government.)
- Mavromaras, K., P. Sloane, and R. Zhu**, 2016. *An International Comparison of Minimum Wages and Labour Market Outcomes*. Research Report for the Australian FairWork Commission. 1/2016. January. (National Institute of Labour Studies, Flinders University.)
- McGuinness, S., D. McVicar and A. Park**, 2017. *Employment and Hours Impacts of the National Minimum Wage and National Living Wage in Northern Ireland*. Research Report for the Low Pay Commission. November. (Economic and Social Research Institute, Dublin; Queen's University Belfast; and University of Ulster Economic Policy Centre.)
- Migration Advisory Committee**, 2018. *EEA Migration in the UK: Final Report*. 18 September.
- Mindestlohn Kommission**, 2018. English Summary of the Second Evaluation Report by the Minimum Wage Commission. 26 June. (Coordination and Information Office, Mindestlohn Kommission (German Minimum Wage Commission), Berlin.)
- National Institute for Social and Economic Research**, 2018. *October 2018 GDP Estimates*. 10 October. (National Institute for Social and Economic Research.)
- Neumark, D., I. Salas and W. Wascher**, 2013a. *Revisiting the Minimum Wage-Employment Debate: Throwing Out the Baby with the Bathwater?* National Bureau of Economic Research Working Paper. 18681. January. (Cambridge, Massachusetts.)
- Neumark, D., I. Salas and W. Wascher**, 2013b. *Revisiting the Minimum Wage-Employment Debate: Throwing Out the Baby with the Bathwater?* IZA Discussion Paper. 7166. January. (Institute for the Study of Labor, Bonn.)
- Neumark, D. and W. Wascher**, 2008. *Minimum Wages*. (Cambridge MIT Press.)
- Nickell, S. and J. Salaheen**, 2015. *The Impact of Immigration on Occupational Wages: Evidence from Britain*. Bank of England Staff Working Paper. 574. December. (Bank of England.)
- Office for Budget Responsibility**, 2010. *Pre-Budget Forecast*. PU1008. June.
- Office for Budget Responsibility**, 2015a. *Economic and Fiscal Outlook*. Cm 9088. 15 July. (The Stationery Office.)
- Office for Budget Responsibility**, 2015b. *Economic and Fiscal Outlook*. Cm 9153. November. (The Stationery Office.)
- Office for Budget Responsibility**, 2016a. *Supplementary Forecast Information Release. Number of Employees Paid the National Living Wage*. January.

National Minimum Wage

Office for Budget Responsibility, 2016b. *Economic and Fiscal Outlook*. Cm 9212. March. (The Stationery Office.)

Office for Budget Responsibility, 2016c. *Forecast Evaluation Review*. 11 October. (The Stationery Office.)

Office for Budget Responsibility, 2016d. *Economic and Fiscal Outlook*. Cm 9346. November. (The Stationery Office.)

Office for Budget Responsibility, 2017a. *Economic and Fiscal Outlook*. Cm 9419. 8 March. (The Stationery Office.)

Office for Budget Responsibility, 2017b. *Economic and Fiscal Outlook*. Cm 9530. 22 November. (The Stationery Office.)

Office for Budget Responsibility, 2018a. *Economic and Fiscal Outlook*. Cm 9572. 13 March. (The Stationery Office.)

Office for Budget Responsibility, 2018b. *Brexit and the OBR's Forecasts*. Discussion Paper. 3. October. (Office for Budget Responsibility.)

Office for Budget Responsibility, ongoing. *Economic and Fiscal Outlook*. (The Stationery Office.)

Office for Budget Responsibility, ongoing. *Forecast Evaluation Review*. (The Stationery Office.)

Office for National Statistics, 2010a. *UK Standard Industrial Classification of Economic Activities 2007*. (Palgrave Macmillan.)

Office for National Statistics, 2010b. *UK Standard Occupational Classification 2010 Volume 1: Structure and Descriptions of Unit Groups*. (Palgrave Macmillan.)

Office for National Statistics, 2014. *UK Wages Over the Past Four Decades – 2014*. 3 July.

Office for National Statistics, 2015. *Understanding Average Earnings for the Continuously Employed: Using the Annual Survey of Hours and Earnings 2014 (Latest Release)*. 15 May.

Office for National Statistics, 2016a. *Analysis of the Distribution of Earnings Across the UK Using Annual Survey of Hours and Earnings (ASHE) Data: 2016*. 26 October.

Office for National Statistics, 2016b. *Analysis of Factors Affecting Earnings Using Annual Survey of Hours and Earnings: 2016*. 26 October.

Office for National Statistics, 2017a. *An Overview of and Comparison Between Annual Survey of Hours and Earnings (ASHE) and Average Weekly Earnings (AWE)*. 14 September.

Office for National Statistics, 2017b. *Earnings and Low Pay: Distributions and Estimates from the Labour Force Survey*. 25 September.

Office for National Statistics, 2017c. *Business Demography, UK: 2016*. 21 November.

Office for National Statistics, 2018a. *Contracts that do not Guarantee a Minimum Number of Hours: April 2018*. 23 April.

Office for National Statistics, 2018b. *Reconciliation of Estimates of Jobs: June 2018*. 12 June.

Office for National Statistics, 2018c. *UK National Accounts, The Blue Book: 2018*. 31 July.

Office for National Statistics, 2018d. *GDP First Quarterly Estimate, UK: April to June 2018*. 10 August.

Office for National Statistics, 2018e. *Labour Market Flows: August 2018*. 14 August.

Office for National Statistics, 2018f. *Migration Statistics Quarterly Report: August 2018*. 23 August.

- Office for National Statistics**, 2018g. *Analysis of Real Earnings and Contributions to Nominal Earnings Growth, Great Britain: September 2018*. 11 September.
- Office for National Statistics**, 2018h. *Families and the Labour Market, England: 2018*. 3 October.
- Office for National Statistics**, 2018i. *Economic Well-being, UK: April to June 2018*. 8 October.
- Office for National Statistics**, 2018j. *UK Trade: August 2018*. 10 October.
- Office for National Statistics**, 2018k. *Overseas Travel and Tourism, Provisional: April to June 2018*. 11 October.
- Office for National Statistics**, 2018l. *UK Labour Market: 2018*. 16 October.
- Office for National Statistics**, 2018m. *Employee Earnings in the UK: 2018*. 25 October.
- Office for National Statistics**, 2018n. *Gender Pay Gap in the UK: 2018*. 25 October.
- Office for National Statistics**, 2018o. *Low and High Pay in the UK: 2018*. 25 October.
- Office for National Statistics**, ongoing. *Annual Business Survey*. Annually.
- Office for National Statistics**, ongoing. *Business Demography*. Annually.
- Office for National Statistics**, ongoing. *Business Investment*. Quarterly.
- Office for National Statistics**, ongoing. *Consumer Price Inflation*. Monthly.
- Office for National Statistics**, ongoing. *Consumer Price Inflation Detailed Briefing Note*. Monthly.
- Office for National Statistics**, ongoing. *Economic Well-being, UK*. Quarterly.
- Office for National Statistics**, ongoing. *GDP First Quarterly Estimate, UK*. Quarterly.
- Office for National Statistics**, ongoing. *GDP Monthly Estimate, UK*. Monthly.
- Office for National Statistics**, ongoing. *GDP Quarterly National Accounts, UK*. Quarterly.
- Office for National Statistics**, ongoing. *Index of Production*. Monthly.
- Office for National Statistics**, ongoing. *Index of Services*. Monthly.
- Office for National Statistics**, ongoing. *Index of UK Labour Costs Per Hour, Experimental*. Quarterly.
- Office for National Statistics**, ongoing. *Labour Market Flows*. Quarterly.
- Office for National Statistics**, ongoing. *Labour Productivity, UK*. Quarterly.
- Office for National Statistics**, ongoing. *Migration Statistics Quarterly Report*. Quarterly.
- Office for National Statistics**, ongoing. *Overseas Travel and Tourism*. Quarterly.
- Office for National Statistics**, ongoing. *Producer Price Inflation*. Monthly.
- Office for National Statistics**, ongoing. *Profitability of UK Companies*. Quarterly.
- Office for National Statistics**, ongoing. *Retail Sales*. Monthly.
- Office for National Statistics**, ongoing. *Services Producer Price Indices*. Quarterly.
- Office for National Statistics**, ongoing. *UK Labour Market*. Monthly.
- Office for National Statistics**, ongoing. *UK Trade*. Monthly.
- Office for National Statistics**, ongoing. *Young People Not in Education, Employment or Training (NEET)*. Quarterly.
- Organisation for Economic Co-operation and Development**, 1998. Making the Most of the Minimum: Statutory Minimum Wages, Employment and Poverty. *OECD Employment Outlook*. Chapter 2. June. (OECD Publishing.)

National Minimum Wage

Organisation for Economic Co-operation and Development, 2015. *Minimum Wages After the Crisis: Making Them Pay*. May.

Organisation for Economic Co-operation and Development, 2018a. *Main Economic Indicators: Comparative Price Levels*. July.

Organisation for Economic Co-operation and Development, 2018b. *OECD Economic Outlook Interim Report September: High Uncertainty Weighing on Global Growth*. 20 September. (OECD Publishing.)

Ormerod, C. and Ritchie, F., 2007. Measuring Low Pay: The Importance of Timing. *Economic & Labour Market Review*. 1 (4): 18-22. (Office for National Statistics.)

RAND Europe, 2016. *The Impact of the National Minimum Wage on Employment: A Meta-analysis*. Research Report for the Low Pay Commission. October. (RAND Europe.)

Recruitment and Employment Confederation, 2018. *JobsOutlook*. 19 September.

Recruitment and Employment Confederation, ongoing. *JobsOutlook*. Monthly.

Recruitment and Employment Confederation-IHS Markit, 2018. *Report on Jobs*. 5 October.

Recruitment and Employment Confederation-IHS Markit, ongoing. *Report on Jobs*. Monthly.

Reed, H., 2018. *The Economic Impact of Increasing the National Minimum Wage and National Living Wage to £10 Per Hour*. A Report for Unite. June. (Landman Economics.)

Reich, M., S. Allegretto, and A. Godoey. 2017. *Seattle's Minimum Wage Experience 2015–16*. Center on Wage and Employment Dynamics Policy Brief. June, (Institute for Research on Labor and Employment, University of California, Berkeley.)

Resolution Foundation, ongoing. *The RF Earnings Outlook Quarterly Briefing*. (Resolution Foundation).

Rinz, K. and J. Voorheis, 2018. *The Distributional Effects of Minimum Wages: Evidence from Linked Survey and Administrative Data*. CARRA Working Paper Series 2018-02. 27 March. (Centre for Administrative Records Research and Applications, US Census Bureau. Washington DC.)

Salaire Minimum Interprofessionnel de Croissance, 2017. *Rapport du Groupe d'Experts*. 5 December.

Stewart, M., 2002. Estimating the Impact of the Minimum Wage Using Geographical Wage Variation. *Oxford Bulletin of Economics and Statistics*. 64 (1): 583–605.

Stewart, M., 2004a, The Employment Effects of the National Minimum Wage. *The Economic Journal*. 114: C110-C116.

Stewart, M., 2004b. The Impact of the Introduction of the UK Minimum Wage on the Employment Probabilities of Low Wage Workers. *Journal of the European Economic Association*. 2 (1): 67-97.

Stewart, M., 2007. The Interrelated Dynamics of Unemployment and Low-wage Employment. *Journal of Applied Econometrics*. 22 (3): 511-531.

Stewart, M., 2009. *Testing for Spill-over Effects of the National Minimum Wage*. Research Report for the Low Pay Commission. December. (University of Warwick.)

Taylor Review, 2017. *Good Work: The Taylor Review of Modern Working Practices*. July. (Department for Business, Energy and Industrial Strategy.)

Union of Shop, Distributive and Allied Workers, 2018. *Time for Better Pay*. September.

- XpertHR**, 2018a. *Review of Pay Awards 2018: Basic pay Awards*. 27 September.
- XpertHR**, 2018b. *Review of Pay Awards 2018: Hotels, Catering and Leisure*. 11 October.
- XpertHR**, 2018c. *Review of Pay Awards 2018: Private-sector pay*. 11 October.
- XpertHR**, 2018d. *Review of Pay Awards 2018: Retail and Wholesale*. 11 October.
- XpertHR**, 2018e. *Forecasts for Pay Awards in 2018*. 25 October.
- XpertHR**, ongoing. *Pay Awards*. Monthly.
- Zipperer, B**, 2018. *Six Reasons Not to Put Too Much Weight on the New Study of Seattle's Minimum Wage*. Economic Policy Institute Working Economics Blog. 22 October. (Economic Policy Institute.)
- Zipperer, B. and J. Schmit**, 2017. *The "High Road" Seattle Labor Market and the Effects of the Minimum Wage Increase: Data Limitations and Methodological Problems Bias New Analysis of Seattle's Minimum Wage Increase*. Economic Policy Institute. 26 June. (Washington DC.)

