Title: Amendment to the National Minimum Wage regulations 2021 **IA No:** BEIS003(F)-21-LM **RPC Reference No:** RPC-BEIS-5040(1) **Lead department or agency:** BEIS **Other departments or agencies:** N/A	**Impact Assessment (IA)** **Date: 26/01/2021** **Stage: Final** **Source of intervention:** Domestic **Type of measure:** Secondary legislation **Contact for enquiries:** hamza.nadeem2@beis.gov.uk

Summary: Intervention and Options

RPC Opinion: Green

Cost of Preferred (or more likely) Option (in 2019 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status**
-9.1	-428.4	217.9	435.8

What is the problem under consideration? Why is government intervention necessary?

The National Minimum Wage (NMW) was introduced in 1999, with the aim of increasing the wages of the lowest paid without damaging their employment prospects. The National Living Wage (NLW) was introduced in 2016 and is centred on equity, primarily around reducing wage inequality, with an aim to reach two-thirds of median earnings by 2024. The Low Pay Commission (LPC) has made recommendations to Government on the NLW and NMW rates that should apply from April 2021.

What are the policy objectives and the intended effects?

The objective of the NMW is to maximise the wages of low paid workers under the age of 23 (from April 2021) without damaging their employment prospects by setting it too high, whilst the aim of the NLW is to reach two-thirds of median earnings by 2024, subject to sustained economic growth. Last year's increase to the NLW meant the initial 2020 target of 60% of median wages was met. The NMW/NLW set a wage floor below which pay cannot fall ensuring protection for low-paid workers, while also providing incentives to work.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

This impact assessment considers changes to the NLW and NMW that should apply from April 2021.
The independent LPC makes recommendations on the NMW to Government, consulting extensively and undertaking substantial analysis. Details are contained in the 2020 report.
The Government has considered two options this year:

0. Do nothing - maintain current NMW/NLW rates and system
1. Implement the LPC recommended rate increases (preferred option)

The Government's preferred option is to implement the LPC's recommended rate increases. This is to ensure that the NMW continues to achieve its objective of maximising the wages of the low paid younger workers without damaging their employment prospects, and recognising the contribution of low-paid workers, inlcuding key workers, during the Covid-19 pandemic.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 11/2021

Does implementation go beyond minimum EU requirements?		N/A		
Is this measure likely to impact on trade and investment?		N/A		
Does this measure comply with our international trade and investment obligations, including those arising under WTO agreements, UK free trade agreements, and UK Investment Treaties?		N/A		
Are any of these organisations in scope?	**Micro** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** n/a	**Non-traded:** n/a	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: Paul Scully Date: 27 January 2021

Summary: Analysis & Evidence

Policy Option 1

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2020	PV Base Year 2021	Time Period Years 2	Net Benefit (Present Value (PV)) (£m)		
			Low: -277.4	**High:** 263.2	**Central Estimate:** -9.1

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	5.1		140.7	**286.2**
High	9.1		275.1	**558.5**
Best Estimate	9.1		210.0	**428.4**

Description and scale of key monetised costs by 'main affected groups'

Our central estimate of the overall impacts of the LPC NMW/NLW rate recommendations is a total cost of £428 million. This includes transition costs (£9.1m) and an increased labour cost to employers of £419 million (not discounted costs of £314m direct impacts and £129m indirect impacts). This is a transfer with a largely neutral net economic impact. It is made up of £377m (not discounted) of increased wages for employees, and £82m (not discounted) of increased non-wage labour costs, which are mainly employer pensions and national insurance contributions.

Other key non-monetised costs by 'main affected groups'

The evidence from the LPC report suggests that the NMW rates recommended by the LPC will not have any additional negative impact on employment prospects. The NLW may have macroeconomic impacts in the long-run. These are not formally quantified here as they are highly uncertain but could include negative employment impacts (previous estimates by the OBR of fewer people in employment due to NLW never materialised).

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0		140.7	**281.1**
High	0		275.1	**549.4**
Best Estimate	0		210.0	**419.3**

Description and scale of key monetised benefits by 'main affected groups'

Our central estimate of the overall benefits is for a total benefit to employees and the Exchequer of £419m. This is a transfer from employers with a largely neutral net impact. Employees benefit from £377m (not discounted) of increased wages, while employees and the Exchequer benefit from £82m (not discounted) of non-wage labour benefits, predominantly consisting of pension and National Insurance contributions. Using HMT Green Book methodology for distributional analysis, the total benefit to workers could increase up to £617m.

Other key non-monetised benefits by 'main affected groups'

Employers who provide accommodation are expected to benefit from an increased amount that can be offset against NMW/NLW pay. Workers can also benefit as these are often mutually beneficial arrangements. Take up of this is likely to be low. As above, there could also be macroeconomic benefits in the long-run (e.g. improved productivity, increased consumption, multiplier effects or marginal propensity to consume).

Key assumptions/sensitivities/risks **Discount rate (%)** 3.50%

The key assumption is on the counterfactual for how wages would change in the absence of minimum wage rises. We use a methodology recommended by independent experts (NIESR) and approved by labour market experts. For the value of the suitable counterfactual, we believe that the academic literature's majority view of spillovers reaching the 25th percentile to be the most appropriate. This is the lowest point in the distribution where we find workers to no longer be impacted by the minimum wage (directly or indirectly).

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 217.9	**Benefits:** 0	**Net:** 217.9	435.8

Contents

Impact Assessment Scope

1. The Low Pay Commission (LPC) has recommended increases in the National Living Wage (for those aged 23 and over from April 2021), the National Minimum Wage (for those aged 16-17, 18-20, 21-22, the apprentice rate for those aged under 19 or in the first year of an apprenticeship) and the accommodation offset. The Government has accepted these recommendations[1] in full and they will come into force on 1st April 2021, subject to parliamentary approval.

2. Almost all workers in the UK are eligible to be paid at least the minimum wage. Eligibility for specific rates is determined by a worker's age and, if they are an apprentice, when they started their Apprenticeship.

3. This Impact Assessment (IA) appraises the impacts of uprating the current National Living Wage (NLW) and National Minimum Wage (NMW) rates to the LPC's latest recommendations, as set out in their 2020 report[2]. This IA is a marginal appraisal, whereby we consider the impact of workers' wages increasing from the existing NLW/NMW to the proposed future NLW/NMW. This IA does not consider a scenario where the NMW/NLW is completely removed as, **in the hypothetical absence of an NMW/NLW uprating, the current minimum wage rates would remain legally binding.** Therefore, a counterfactual scenario where the wages of the lowest paid are reduced does not apply and is out of scope of this IA.

4. The Low Pay Commission continuously evaluate the impact of the NMW/NLW, as summarised in their annual Autumn Reports. Their assessment of the impact of the rates, and the state of the wider economy, are factored into the rates that they then proposed for the following year – this year, this includes the potential impacts of the Covid-19 pandemic. This Impact Assessment utilises the findings from their latest report. The LPC will undertake an assessment of the impact of the proposed 2021 minimum wage rates in Autumn 2021, which we welcome as a key contribution to the evidence base, and we will consider any relevant findings from their assessment into future Impact Assessments.

5. This year, the Government will be making a further legislative change in the relevant NMW Statutory Instrument. This pertains to the records that employers currently keep to ensure compliance with the minimum wage. These records currently have to be held for 3 years, however we propose on extending this to 6 years. We anticipate that this cost, in isolation, would be very small. As the proposed change is to be carried out in the same legislative vehicle as the change to the minimum wage rates themselves, we include our analysis within this IA for completeness. With the specific policy rationale for this extension in record keeping requirements differing specifically in the section titled "Extending the requirement for record-keeping".

Background to the Impact Assessment

Policy Context

6. The economic rationale for a statutory wage floor is to address the welfare loss caused by unequal bargaining power in the labour market. In a perfectly competitive labour market, equilibrium arises when the wage rate equates the demand for labour – based on the marginal

[1] https://www.gov.uk/government/publications/spending-review-2020-documents/spending-review-2020

[2] https://www.gov.uk/government/publications/low-pay-commission-2020-summary-of-findings

revenue product of labour – with the supply of labour. However, when employers have market power, a socially sub-optimal market outcome can occur with lower wages and lower employment. Annex A further describes the theoretical rationale for intervention.

7. The National Living Wage was introduced in April 2016 and had a specific target to reach 60% of median earnings by 2020, subject to sustained economic growth. Meeting this target was subject to the annual upratings recommended to Government by the Low Pay Commission. The Government has valued the work of the Low Pay Commission in coming to their recommendations on the minimum wage rates, and it is by taking into consideration their advice (provided in October 2019), that the target for the NLW was achieved by the increase that took place in April 2020.

8. The Government has set new targets to reach two-thirds of median earnings by 2024 (taking economic conditions into account) and for the NLW to apply to workers aged 21 and over by 2024. By doing this, the NLW has sought to ensure low paid workers aged 25 (23 from April 2021) and over are fairly rewarded for their contribution to the economy. Because the wage target is a proportion of median earnings rather than a pound value, there is flexibility as the target moves in line with the state of the economy, i.e., if forecast average earnings fall then so will the pound value of the NLW. Additionally, as set out in the LPC's remit, the Government asks the LPC to monitor the labour market, to advise on any emerging risks and – if the economic evidence warrants it – recommend that the Government reviews its target or timeframe.

9. The National Minimum Wage was introduced in 1999 to protect low-paid workers from 'extreme low pay'[3] whereby certain employers in the absence of government intervention may pay unacceptably low wages. Extreme low pay has now largely been stamped out, but the NMW continues to provide this protection for workers and it also helps to provide a level playing field for firms, preventing them from undercutting competitors with exploitative levels of pay. When uprating the NMW, the LPC is asked to recommend the rates such that they do not damage the employment prospects of younger workers.

10. The youth labour market is much more sensitive to economic shocks and young people can be exposed to longer-term scarring effects[4] from prolonged spells of worklessness, as well as facing a comparative disadvantage when entering the labour market due to a lack of work experience and less knowledge. As raised in the LPC Youth Rates report[5], 'young people enter the labour market with relatively limited experience and few skills, and so have lower productivity while they learn the job. In addition, employers may need to provide additional training. Any minimum wage structure needs to recognise the lower productivity and higher training costs of less experienced workers. Failure to do so could mean that some employers are unwilling to give young people those critical first opportunities. Consequently, the Government asks the LPC to recommend separate NMW rates by age band (16-17, 18–20-year-olds, and 21–22-year-olds).

11. The Apprentice National Minimum Wage (ANMW) was introduced in 2010 to ensure Apprentices previously exempt from the NMW received the legal protection of the NMW. It applies to those Apprentices who are aged under 19 or aged 19 or over and in the first year of their Apprenticeship. The level of the ANMW should provide a fair deal for Apprentices,

[3] Prior to the introduction of the NMW in 1999, a third of low-paid workers were in extreme low pay: More than a Minimum (2014)

[4] Bell D & Blanchflower D, 2011, Young people and the great recession, Oxford Review of Economic Policy, 27 (2), pp. 241-267

[5] https://www.gov.uk/government/publications/a-review-of-the-youth-rates-of-the-national-minimum-wage

protecting them from exploitation whilst at the same time not deterring businesses from taking them on and providing good quality training.

12. The LPC also make a recommendation for the value of the accommodation offset. The accommodation offset was introduced in 1999 and provides a mechanism to offset the cost of providing accommodation for workers against the NLW/NMW. Accommodation is the only benefit-in-kind that can count towards either the NLW or NMW as there are scenarios when the provision of accommodation can be mutually beneficial for both employer and worker. The offset arrangements provide protection to workers and give some recognition of the value of the benefit but are not intended to reflect the actual costs of provision.

13. As the decision on the appropriate rates is both empirical and based on extensive stakeholder engagement, the LPC report contains a large body of evidence and analysis on the impact to date of the NMW and NLW. The LPC considers the prospects for the UK economy by considering the latest available forecasts for growth, average earnings, inflation, employment and unemployment from the Office for Budget Responsibility, Bank of England and the HM Treasury panel of independent forecasters. They also have an extensive consultation period to include the views and analysis of a number of interested stakeholders. The LPC also commission external research to better inform them of the impacts of minimum wage policy. The evidence, research and data collected and produced by the LPC have been used to inform this IA.

Rationale for continued intervention

14. The economy and labour market today are markedly different to that of the late 90's when the NMW was first introduced: it has a higher participation rate, higher employment rates; the demographics of workers have evolved with more diversity in the workplace (for example, employment rate for women and disabled people are at near record highs), lower unionisation (from 30% of employees in unions in 1999 to 23.4% in 2018) and rates of '*extreme* low pay have essentially fallen to zero'[6]. Research by the Resolution Foundation shows that the number of people in low pay in the UK (defined as the number of people earning below two-thirds of median hourly pay) fell for the sixth consecutive year in 2019 – to 15.5%, the lowest rate since 1978[7]. These changes to the labour market have occurred in parallel with annual upratings of the NMW and the introduction of the NLW.

15. The economic rationale for continued intervention for the NMW is based on maintaining a wage rate for younger workers that is close to the competitive market equilibrium. The Government seeks to achieve this by giving the LPC a remit to recommend an NMW rate that does not damage the employment prospects of low paid workers.

16. The economic rationale for the NLW is broader, with its purpose centred on equity, primarily around reducing wage inequality and ensuring that low paid workers enjoy the benefits of economic growth. The two-thirds of the median target for the NLW for 2024 means that wages of the lowest paid will rise relative to the middle of the wage distribution. This will be the fifth annual uprating of the NLW, with the last uprating seeing the rate reach the 2020 target.

17. The economic rationale for continued intervention for both the NLW and the NMW in the context of the Covid-19 economic crisis is complicated but the core reasoning still stands. An additional justification for continued intervention highlighted by the LPC includes recognising the

[6] Resolution Foundation's Low Pay Britain 2016 report (p16). As a result, the Resolution Foundation have stopped calculating this measure for their latest reports: http://www.resolutionfoundation.org/app/uploads/2016/10/Low-Pay-Britain-2016.pdf

[7] https://www.resolutionfoundation.org/app/uploads/2020/09/Low-Pay-Britain-2020.pdf

contribution of low-paid workers during the crisis. Low-paid employees, which includes key workers, faced higher levels of risk due to the people-facing aspect of their work.

Policy Objective

18. The NMW and NLW set a legal minimum wage floor below which pay should not fall. This ensures protection for low-paid workers, whilst also providing incentives to work and reducing reliance on the State of topping up wages through the benefits system.

19. As mentioned previously, the objective of the NLW was to reach 60% of median earnings in 2020, subject to sustained economic growth. With this objective achieved, the Government has set new targets to reach two-thirds of median earnings by 2024, provided economic conditions allow, and to lower the eligibility age of the NLW to 21 by 2024. Meanwhile the aim when setting the NMW rates for workers under 23 is to raise the wages of the lowest paid young workers as much as possible, without damaging their employment prospects by setting it too high.

20. However, it should be noted that the LPC have taken a different approach to the NLW this year. As noted in their rates recommendation letter, the considerable uncertainty in the labour market currently and next year has led to Commissioners' recommending an NLW rate that minimises any "significant risk" to "employment prospects" as per their remit. They do not recommend a change to the target to reach two-thirds of median earnings by 2024 and hope to undertake a fuller review of the path to this target in their 2021 report.

Consultation

21. The NLW and NMW rates are underpinned by extensive consultation, analysis, and evidence-gathering carried out by the LPC. On top of its own expertise and analysis, the LPC consults with a wide range of stakeholders from across civil society. This year the LPC received 38 responses to their written consultation, with representatives from 26 various organisations attending their oral evidence sessions. Appendix 1 of their 2020 report provides a list of contributors to their consultation. The LPC makes recommendations on the future rates but the final decision on whether to accept them is made by the Government.

22. The LPC's work and the wider economic context, enable us to understand how the proposed rates may impact businesses and are summarised below:

    - Covid-19 and the subsequent impacts dominated the evidence received from stakeholders. Economic shocks were felt in all sectors and across supply chains. Stakeholders had bleak outlooks on the economy. Use of the Job Retention Scheme (JRS) was widespread and helped avoid employment losses.

    - Despite economic conditions, it was still rare for businesses to state that they reduced employment as a consequence of the NLW increasing, the same as previous years. There were more responses that suggested adjustments to hours and recruitment as a result of the NLW instead. This is in-line with findings from employer surveys and the latest econometric evidence, that is further summarised in Annex C.

    - Price increases and lower profits were amongst the most common responses from employers to the NLW this year. However, businesses are reportedly finding it difficult to pass on costs in price rises; some mentioned increased backlash by customers or competitive markets as explanations.

- The pandemic has had a mixed effect on productivity and investment. There were examples of employers of all sizes, across different sectors, investing in automation because of the pandemic. We explore this trend further in Box 3 (pg.34). On the other hand, some employers responded that planned investments were delayed or cancelled. Efforts to raise productivity have centred on work intensification (increasing worker effort).

- The NLW has raised pay at the bottom of the wage distribution with examples of pay rises above NLW in supermarkets to attract staff. Some employers expressed concern about the effect of reduced pay differentials on motivation and employee relations. There has been an increased reduction in overtime payments, bonuses and other aspects of pay and reward.

- The lowest paid workers were the most affected by the pandemic, with many key workers receiving low pay. Stakeholders cited to the LPC that lost income and job uncertainty remained issues for these workers, despite the Coronavirus Job Retention Scheme (CJRS) protecting jobs.

- At the time of LPC's consultation, many stakeholders argued for a 'cautious' increase for the 2021 NLW with few groups arguing for a freeze to protect employment. Despite having concerns on affordability, some employer groups supported an on-course NLW increase in principle.

23. In response to previous IAs, the RPC has commented on the suitability of the counterfactual we have used to estimate the direct wage cost to business/benefit to workers as a result of NMW/NLW upratings. Detailed discussion of this can be found in 2017's IA[8]. Annex H outlines the extensive work that has been carried out in ensuring that the methodology used in this Impact Assessment is fit for purpose, as identified by the RPC in their rating last year.

    - In 2017, we commissioned the National Institute of Economic and Social Research (NIESR) to research the most appropriate counterfactual for us to employ in this and future impact assessments (this is discussed in greater detail in our 2018 IA[9], with the full report published in 2018[10].

    - In 2018, following some comments from the RPC regarding NIESR's findings, we undertook further engagement with labour market academics to scrutinise our counterfactual methodology further. Summarised in greater detail in our 2019 IA[11], we once more found broad consensus for our approach, providing us with validation to proceed this year. In particular, the 'catch-up' concept (whereby we estimate the cost of the uprating by considering the point at which our counterfactual catches up to the minimum wage rate) was agreed to be the most appropriate method to assess the impact of the uprating. Additionally, most respondents disagreed that wage growth at the bottom of the pay distribution would be at, or close to zero, in the absence of a minimum wage uprating. There was agreement that an average uniform growth rate for all minimum wage workers should be used.

24. Where alternative proposals have been put forward, we have traditionally made efforts to consider this (see 2019 and 2020 IAs). We continue this in this IA, by revising how we estimate an alternative counterfactual (specifically a "shadow wage distribution") – this is described in

[8] Amendment to the NMW regulations 2017 Impact Assessment

[9] Amendment to the NMW regulations 2018 Impact Assessment

[10] https://www.niesr.ac.uk/publications/national-minimum-wage-and-national-living-wage-impact-assessment-counterfactual

[11] Amendment to the NMW regulations 2019 Impact Assessment

greater detail in Annex D. We continue to undertake an extensive exercise of sensitivity analysis to understand the impact of our assumptions, with this reflecting the uncertainties posed in this year's analysis.

25. Additionally, to ensure that our methodology remains appropriate following the impacts of the Covid-19 pandemic and/or has not been bypassed by developments in the academic community, we hosted an academic roundtable which was attended by several leading labour market specialists in November 2020. This, in addition to our own desk-based research and previous analysis (see Annex H), continue to lead us to conclude that our current approach is the most appropriate one. As always, we will continue to monitor this going forwards.

Options Identification

26. This Impact Assessment considers two options which will be assessed against the policy objectives set out above:

    - Option 0) Do nothing – maintain the existing NLW and NMW rates
    - Option 1) Implement the LPC recommended rate recommendations for April 2021, including the lowering of the NLW age threshold (to be eligible to workers aged 23 and over)

Option 0: Do nothing

27. If the LPC's rate recommendations are not implemented, then the status quo would prevail and the current NLW and NMW rates would continue to be the statutory pay floor that workers are legally entitled to.

28. Different to other years, some commentators have called for a freeze in the NLW/NMW rates in 2021 i.e., do nothing[12]. These articles cite the effects of Covid-19 on employers and the economy, however, as will be set out in this IA, the evidence on the impact of the NLW/NMW has previously suggested negligible effects on unemployment (in the UK), while the LPC have carefully considered the rates recommended to Government, such that they would have no significant effects on unemployment. Furthermore, the "do nothing" option would not achieve the policy objectives of the NMW and NLW rates. We believe that minimum wage workers would not see their pay increase relative to the middle of the pay distribution – with forecasts still suggesting wage growth in 2021 will be ~2%.

Option 1: Implement the LPC recommended rate recommendations

29. The LPC rate recommendations for April 2021, as outlined in their report, are as follows:

Table 1: Low Pay Commission NMW/NLW rate recommendations for April 2021

	LPC recommendation	Current rate	Annual percent increase
National Living Wage rate (23+)	£8.91	£8.72	2.2%
21-22-year-old rate	£8.36	£8.20	2.0%
18-20-year-old rate	£6.56	£6.45	1.7%
16-17-year-old rate	£4.62	£4.55	1.5%
Apprentice rate	£4.30	£4.15	3.6%

[12] Centre for Policy Studies and Capx

Accommodation offset (day rate)	£8.36	£8.20	2.0%

30. The LPC has extensively outlined in their 2020 report[13] the analysis, consultation and subsequent rationale behind its recommendations for the NLW and NMW rates which should apply from April 2021. The Government has considered this and subject to parliamentary approval will implement the LPC's recommendations in full. Below is a brief summary of the rationale for this. Further detail is available in the LPC's report. This IA appraises the impacts of the increase in the NLW and NMW from April 2021.

The Economy and Covid-19

31. The labour market was in a strong position in the second half of 2019. Employment rates were at record highs while the unemployment rates remained at a similar to level to the first half of 2019 and, before, not seen since the early 1970s. Pre-Covid-19, real wages had also returned to levels not seen since 2008.

32. The impact of coronavirus on the labour market over the first half of 2020 has been significant. The UK experienced two consecutive quarters of negative growth in GDP, with a sharp contraction in GDP in March and April. This recession has been much more severe than previous ones, GDP fell by 25% from February to April compared to a fall of 6% during the 2008/2009 financial crisis. A rebound in growth since April has meant that the UK recovered much of the lost GDP, leaving the economy 9.6% smaller in Q3 2020 compared to Q3 in 2019. However, both the Bank of England and OBR projections published in November estimate that restriction introduced in November, to reduce Covid-19 infection rates, will lead to a further decline in GDP in Q4 2020.

33. The effects on the labour market have seemingly been more muted. The latest ONS headline estimate of unemployment was 4.8 percent in July to September 2020 (albeit the highest level since 2016). This is in part due to the Coronavirus Job Retention Scheme (CJRS), which launched on 20 April 2020. With the number of employments supported by the scheme peaking at 8.9 million (on 8 May), workers were able to retain some form of attachment to a job. At the end of August, there were around 3.3 million jobs on the scheme, however, it is anticipated that this number will increase following the announcement that the CJRS has been extended until the end of April 2021.

34. With the headline employment and unemployment rate having adjusted less than commentators had forecast, greater scrutiny has been applied to other labour market indicators, which do suggest that there is evidence of substantial spare capacity. Redundancy data indicated the largest annual increase over the middle of 2020 since the financial crisis in 2009. Despite a recovery over the summer, the average number of hours worked per week still remain below expected levels. Survey evidence from the Resolution Foundation suggests that the unemployment rate amongst 18 to 24 years has risen by around 10 percentage points since February[14].

35. Demand for labour has remained significantly depressed, with 34 per cent fewer vacancies in August to October 2020 compared to pre-pandemic levels, although other sources indicate a more positive outlook with vacancies rebounding into the fourth quarter of 2020.

[13] https://www.gov.uk/government/publications/low-pay-commission-report-2019

[14] https://www.resolutionfoundation.org/publications/jobs-jobs-jobs/

36. The impact on pay has also varied over the Covid-19 pandemic. Pay growth, as measured by both the ONS' Average Weekly Earnings (AWE) and HMRC's Real Time Information (RTI) saw negative growth in the first few months of the pandemic – this reflected a decline in hours worked (as a consequence of business difficulties and the furloughing of workers). The more timely RTI data does suggest that median monthly pay had returned to pre-Covid levels by September – however, compositional effects have likely played a part in this. With survey evidence suggesting that lower-paid jobs are more likely to have been lost, removing these jobs out of the average pay measures will result in a "batting-average" effect and ultimately a higher average figure. As suggested in the Bank of England forecasts, more workers are expected to return to/be furloughed in November to March – this will subsequently have a temporary dampening effect on pay figures, as several furloughed workers will see 80% of their normal pay.

37. Forecasts for 2021 remain highly conditional on assumptions of the path of policy interventions that Government takes to respond to coronavirus. The latest available forecasts by the OBR were published in November 2020 and considered three economic scenarios. In the upside scenario, lockdowns and a rapid rollout of vaccines prove effective and output returns to its pre-virus levels by late 2021. In the central scenario, output recovers more slowly, recovering to its pre-pandemic peak by the end of 2022.

38. In the downside scenario, output recovers even more slowly with persistently high unemployment as the economy undergoes significant restructuring and only returns to its pre-virus level at the end of 2024. In the latter two scenarios, the OBR assumes that there are enduring scarring effects on output and the labour market. The OBR's central scenario anticipates a significant rise in unemployment to 7.5% in Q2 2021. The%. The Bank of England also published forecasts in November 2020, which indicate a similar impact to unemployment (slightly higher at 7.75% in Q2 2021, before declining gradually in the following years).

39. As previously mentioned, the state of the economy plays an important role in the LPC's minimum wage rate recommendations, and the Government's decision to accept them.

Table 2: Forecasts of selected economic variables

	2020			*2021*		
	OBR	BoE	HMT average	OBR	BoE	HMT average
GDP	-11.3%	-11.0%	-10.6%	5.5%	7.3%	5.7%
Employment growth	-0.3%	-3.0%	-0.9%	-2.4%	0.8%	-2.2%
Unemployment rate	4.4%	6.3%	6.5%	6.8%	6.8%	7.1%
Average earnings	1.2%	1.0%	0.4%	2.1%	2.3%	2.0%
Inflation	0.8%	0.5%	0.6%	1.2%	2.0%	1.9%
Sources	*a: OBR EFO, November 2020* *b:Bank of England November 2020 Monetary Policy Report* *c: HMT, Average of Independent Forecasts, November 2020 release*					

The National Living Wage

40. Influenced by the economic performance summarised above, the LPC has advised that the NLW should rise to £8.91. This is lower than their best estimate (£9.06) of the on-course rate for the indicative path to reach the Government's target of two-thirds of median earnings by 2024. This reflects the approach taken by Commissioners this year, to recommend rates "that minimise any significant risk to employment prospects".

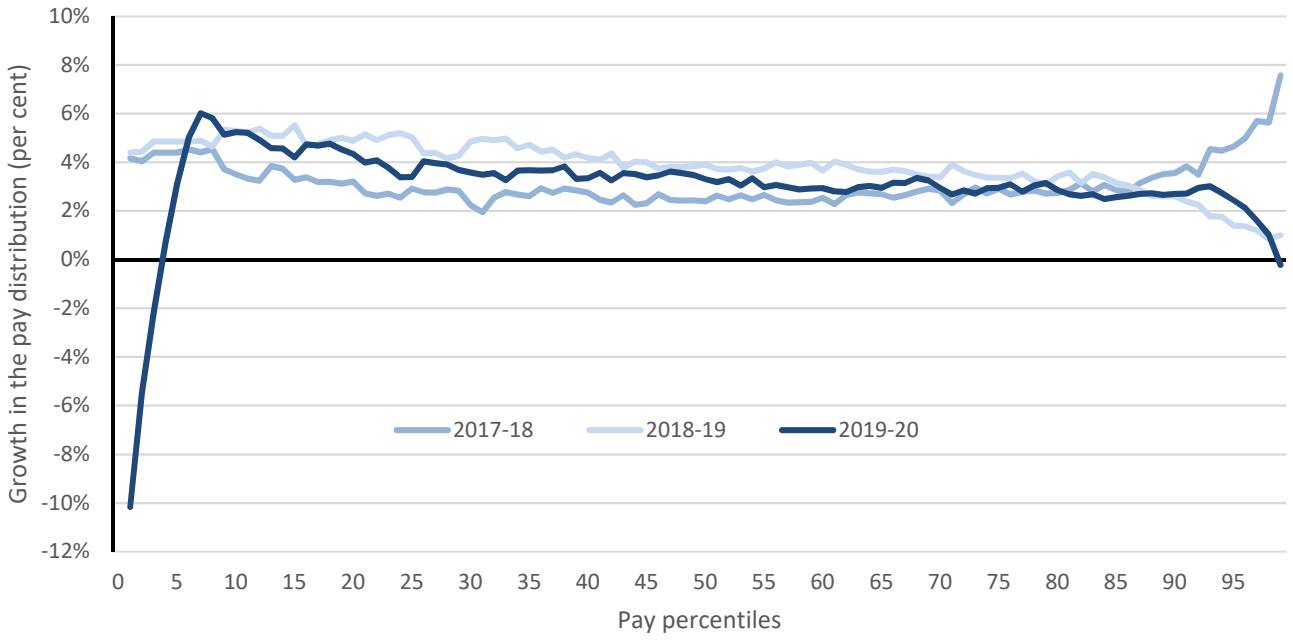
41. Evidence from the CIPD suggests that 32% of employers have responded to the NLW by absorbing the cost; 27% raised productivity; and 25% raised prices. The ongoing economic crisis could mean that employers are in a weaker position to respond to NLW increases without impacts on employment. On the other hand, the LPC acknowledged the importance of "recognising the contribution of low-paid workers during the crisis". Through stakeholder engagement, they also discovered that many employers agreed that low-paid workers deserved an increase for working through the pandemic at a time of intense pressure and risk for workers.

42. The recommendation of a small increase (2.2% compared to last year's increase of 6.2%) in the NLW rate reflects the current economic conditions. The proposed rise in the rate is just above expectations for inflation next year (~2% as per Table 2 above). This is done with the objective of ensuring low-paid workers' living standards are protected as they would receive a real-terms pay rise. Conversely, the LPC believes this increase will not present a significant additional risk to employment prospects, beyond the already challenging outlook.

43. The significance of the NLW in recent years is evident. Prior to the economic crisis, the NLW increased pay at the lower end of the labour market without harming employment. The increase in the NLW directly raised pay for around 1.6 million workers in 2019. Since 2015, the NLW has had a clear impact on pay and earnings, with hourly pay for the lowest paid growing significantly faster than for other workers.

44. Quantitative analysis on the actual impact of the 2020 NLW rates has proven to be challenging due to the impact of Covid-19 on our available data sources. This has led to the LPC placing emphasis on stakeholder evidence on the impacts of this year's increase. Findings from their consultation are summarised above (para 20), which corroborate what we have found through our own stakeholder engagement – the NLW increase was not reported to have resulted in job losses, with pay differentials having been squeezed. However, as evident in the LPC's short report, the impacts of Covid-19 have dominated employer behaviour and attributing the impact of the NLW within this has been a challenge.

Figure 1: Percentage growth in the hourly wage distribution for workers aged 23 and over, UK, 2017-2020



Source: BEIS analysis of ASHE 2020 methodology, standard weights, UK, 2017-2020.
Standard weights used in year 2017-2019. Variation used for 2020, as described in the Data Quality section of this IA. The negative pay growth seen in the 2019-20 line above corresponds to the inclusion of furloughed workers who say a loss in their pay, as per the CJRS

Lowering of the National Living Wage age threshold

45. In 2019, the Government accepted recommendations made by the Low Pay Commission, to lower the age threshold of the NLW, such that it is eligible to workers aged 23 and over in 2021, and then workers aged 21 and over by 2024. Currently, the NLW is eligible to workers aged 25 and over.

46. This recommendation was based on seven arguments set out by the LPC. With the Covid-19 pandemic having had a clear impact on the labour market, these seven arguments have been reviewed, to identify whether the proposed change should continue to be taken forward. Both BEIS and the LPC found the following:

    - Use of the 21-24-year-old NMW rate is low amongst that age group: This continues to be the case, with less than 100,000 workers aged 23–24-year-olds earning below the current NLW. This suggests that very few employers will incur a disproportionate pay increase

    - Moving this age group up to the NLW would result in a reasonable "bite" (the minimum wage as a proportion of the relevant age group's average earnings): While hindered by data limitations this year, the bite for 23–24-year-olds is still likely to be below the bite for 21–22-year-olds

    - 23–24-year-olds are similar to 25-year-olds across a range of indicators: While unemployment for 23–24-year-olds is increasing at a slightly faster rate than for 25-year-olds, the proportion of workers furloughed, and those returning to work, are similar, therefore we believe this still holds true.

    - Stakeholders agree that the NLW age threshold should be lowered: While the LPC report that stakeholders' views have understandably been more mixed this year, they found that the consensus remains that the age threshold should be lowered. This holds true across business and worker representatives.

    - Research evidence supports the change: In 2010, the then adult NMW saw the age threshold lowered from 22+ to 21+ year olds. Econometric analysis of this change showed no significant negative employment effects. This finding is particularly pertinent when considering the point in the business cycle was in 2010 (i.e., recovering from a recession), compared to where we will be in 2021/22.

    - Demographic changes in upcoming years will reduce risks: The size of the 21-24-year-old age group is projected to get smaller, suggesting that the size of the population affected by this change will decrease.

47. The final argument centred around the condition of the broader labour market. This has clearly deteriorated compared to 12 months prior. However, when taking into consideration all of the above arguments, it was judged that the evidence continues to support the lowering of the age threshold in the NLW to 23+ year olds in 2021. In particular, we take confidence in a) very few workers are currently paid below the NLW; b) stakeholder, notably employers/business

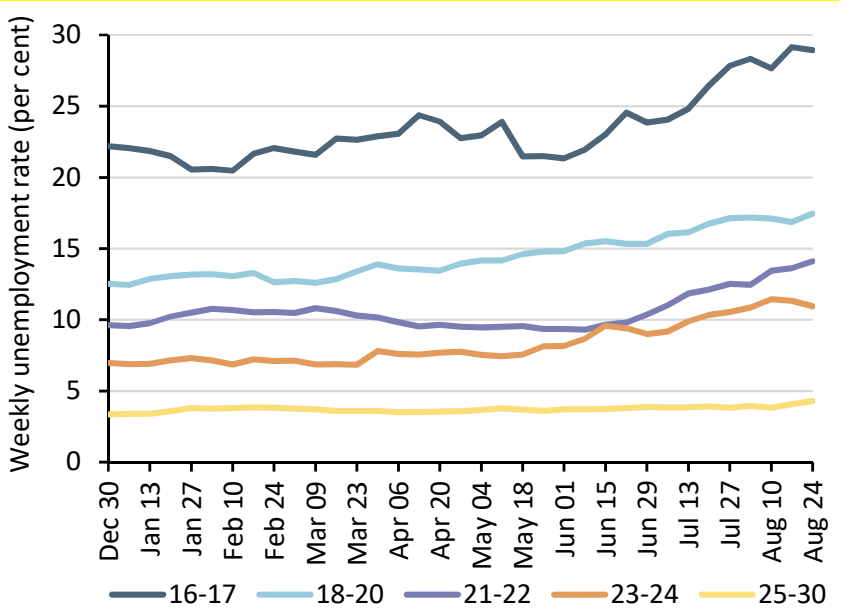
representatives, remain broadly in favour of the change; and c) the approach taken by the LPC this year with the NLW is an increase that minimises significant employment risks. We subsequently estimate the increase in pay to 23-24-year-olds within our measures for estimating the costs of the proposed increase in the NLW.

The National Minimum Wage

48. Pre-Covid-19, younger workers had seen stable employment coupled with robust growth in young people's pay, which has been the strongest for several years. However, as stated elsewhere in this IA, younger workers have seen some of the most negative impacts in the labour market this year, with higher unemployment rates and greater likelihood of being furloughed and away from work. This has factored into the recommendations made by the LPC – some of their reasons for their recommended rates, at the time of their deliberations, are:

- Young people are especially hard hit by any downturn because of their relative lack of experience and reliance on vacancies to find work (as most adults are already in work when a crisis strikes)
- During the crisis, the younger the worker, the more likely they were to work in shutdown sectors such as hospitality and leisure or be furloughed, and less likely to have their pay topped up by their employer or work in key worker jobs like social care or essential retail.
- The evidence suggests that 18-20- and 16-17-year-olds are more vulnerable still to the economic outlook, with more furloughed and more working in shutdown sectors. These age groups are also more likely to be in part-time employment and have seen these opportunities disappear.
- As shown in Figure 2, the unemployment rates increased over the course of the Covid-19 pandemic, to levels previously seen in 2015, across all age groups eligible for the youth rates.

Figure 2: Unemployment rate of young people by age, weekly data, UK, 2020



49. Subsequently, the LPC factored in the adverse impacts that many younger workers experienced during the pandemic, when making their recommendations for the 2021 NMW rates. For the newly created 21-22-year-old rate, the Government intends on implementing the LPC's recommendation of £8.36. This is a 2.0% increase (or 16 pence). This increase is lower than that for the NLW. With this group due to become eligible for the NLW by 2024, the proposed increase balances the need to not allow the gap to widen too greatly, while protecting against the greater unemployment risk that these workers face.

50. For 18-20-year-olds, a lower increase is proposed – a 1.7% increase (or 11 pence) to £6.56 – assumed to be broadly in line with inflation expectations at the time of the LPC making their recommendations. Noting that 16-17-year-olds are the group most vulnerable to unemployment, a smaller increase has been proposed – namely an increase to £4.62 (1.5% or 7 pence). These rate increases are specifically made so as to ensure as high a rate as possible for younger workers, without damaging their employment prospects.

The Apprentice NMW

51. As noted by the LPC, recruitment of apprentices decreased substantially during April to July 2020, akin to the rest of the labour market. Compared with 2019, apprenticeship starts in England fell by more than 50%, and in Scotland by more than 80%. The largest proportional falls were among the youngest apprentices. However, there were signs of a rebound during the summer.

52. The LPC have been undertaking an extensive review into the Apprentice Rate, to analyse whether the rate as currently constructed was still suitable. In particular, they asked stakeholders (via their consultation) whether it would be appropriate to raise the Apprentice Rate to the same level as the 16-17-year-old NMW rate. Both employer and worker stakeholders supported this change, however some did note that doing so in 2021 may not be prudent, due to the uncertainty in the apprentice labour market. Consequently, the LPC intend on aligning the Apprentice and 16-17 NMW rates in 2022, starting with a more cautious increase in 2021. For 2021, the Government will therefore increase the NMW by 15 pence to £4.30 (a 3.6% increase). The larger percentage increase seen for this rate reflects both the lower base of the rate *and* the conclusion from the LPC review. This acceptance of the LPC's rate recommendation also reflects the feedback provided via stakeholders in previous years, who noted that there was room for the Apprentice Rate to increase. This rate again balances providing as high a rate as possible, without harming apprentices' employment prospects.

Accommodation offset

53. There continues to be limited data available on how many employers use the Accommodation Offset and therefore both we and the LPC use stakeholder engagement to understand the impact of recent increases. The sectors most likely to use it are agriculture and horticulture, and to a lesser degree, the hotel sector, particularly in rural locations.

54. The rationale for recent increases in the rate has been to encourage the provision of higher-quality accommodation, and the NFU, the Association of Labour Providers and UK Hospitality welcomed these increases. In the LPC's survey, the NFU found that 31 per cent of horticulture farms made use of the offset. For other farm types, the proportion was smaller – for example 8% for poultry farms. They noted that these proportions had fallen in recent years. Of those using the offset, 51 per cent felt the current rate was sufficient. This corroborates with findings from the LPC's stakeholder visits to employers on farms who welcomed the increases in the offset.

55. Since 2013 the LPC's long term aim has been to match the Accommodation Offset with the 21–24-Year-Old Rate as long as that rate is rising in real terms so that the accommodation rate better reflects the cost of providing accommodation. They met this aim last year, therefore next April, they have recommended an increase in line with the 21-22 NMW rate (previously the 21-24 NMW rate) of 2% to £8.36.

Approach to the Appraisal: Wage Bill Impacts

Counterfactual

Finding the counterfactual

56. The core assumption in our analysis is the counterfactual: The profile of the counterfactual is both a function of i) the wage level low paid workers would receive in the absence of the policy; and ii) the wage growth they would have experienced over the course of the minimum wage uprating. The true counterfactual is unobservable and given the NLW and NMW are universally applicable across the UK; there is no pure control group to compare the policy intervention against.

57. In the US, academic studies benefit from natural control groups that arise from the presence of states with their own minimum wage, compared to states that rely solely on the federal minimum wage. Following the Dube Review, which summarises the literature on US minimum wages, we have also observed the US to identify what had happened to wage growth if a minimum wage rise had not increased (as has been seen in the federal minimum wage), to identify any trends that could be applied to our own counterfactual – see Box 1. This crude exercise indicated that counterfactual wage growth of 0% was unlikely in the US over the past decade, but that the counterfactual wage growth is indeed likely to be lower than increases seen in the minimum wage. While there are always constraints in applying findings across countries, we believe it is a useful addition to our evidence base.

Box 1: The USA as a comparative example

The United States is an example of a rich and industrialised nation covered by a variety of minimum wage regulations. The Federal minimum wage rate has been $7.25 an hour since 2010, with no increases seen since. Twenty U.S. states, representing 131 million Americans, have chosen to use this Federal minimum wage while the other thirty U.S. states, representing 198 million Americans, have chosen to implement their own minimum wages, with various increases in these rates having been experienced over the past decade. The median annual growth rate of the minimum wage among these thirty States is 3.8%.

Individuals in the bottom quartile (e.g., 25th percentile) of earnings in states reliant solely on the Federal minimum wage (i.e., which did not experience a minimum wage increase) saw average annual wage increases of 2.9%. The bottom quartile of earners in states which did raise their minimum wage experienced average annual wage growth of 3.7%.

While this exercise crudely identifies correlation (without specific controls for causation), it does suggest that if the minimum wage did not increase the bottom quartile of workers would not experience no wage growth. However, they would experience less wage growth than in the scenario where minimum wages did rise.

58. There are multiple approaches that have previously been considered to estimate the counterfactual – see Annex H for a list of previous work done on this subject. Because of its intrinsic nature, none can be proven or falsified i.e., we rely on making normative economic statements. Moreover, the actual cost to business/benefit to workers can vary between zero and infinity, whereby the wages of those impacted by the NMW/NLW could alternatively grow at an equal rate to the size of the uprating (resulting in no cost) or experience zero wage growth (a hypothetical ad infinitum cost).

59. As previously found by NIESR, it is not possible to prove or disprove the choice of counterfactual, as no new information could ever become available on the counterfactual, unless Government were to not increase the minimum wage. For this reason, a judgement is required on what is the most suitable counterfactual based on the available evidence. Our choice of this varied in previous years and the RPC has often commented on the evidence to support our chosen method, although the most recent approach, as suggested by NIESR's research, has now received three 'green' fit-for-purpose ratings by the RPC and we continue to check its validity each year with leading labour market academics.

Counterfactual for this IA

60. We continue to use our core NIESR-suggested methodology, with changes in assumptions made in line with their recommendations. One aspect of this methodology is to use the latest ASHE wage distribution as the starting point for the counterfactual, as further validated by academics in our 2018 questionnaire. As set out in the Data Quality section of this IA, ASHE 2020 posed challenges this year. We have subsequently undertaken sensitivity analysis using ASHE 2019 to estimate a wage distribution for future years.

Table 3: Options for quarterly nominal wage growth assumptions

Period covered in Labour Force Survey (or OBR)	*Quarterly growth rate at the 25th percentile*	*Annualised growth rate at the 25th percentile*
2001-2018 (Long term average)	0.81%	3.29%
2016-2018 (Short-term average)	1.12%	4.60%
2008-2010 (Great Recession period)	0.48%	1.92%
2020-2023 (OBR Nov median forecast)	0.53%	2.15%

61. The most suitable growth rate to use depends on how the economy is expected to perform over the appraisal period. The Government can use the OBR and other independent forecasts as a gauge in future years, albeit there are difficulties in practically predicting this. NIESR's 2017 report state that 'This choice will inevitably involve judgement on the current state of the business cycle, informed by independent forecasts of key institutions' (p74).

62. As set out previously, it is clear that the Covid-19 pandemic has had a fundamental impact on the UK economy. The UK experienced two consecutive quarters of negative growth in GDP, with a sharp contraction in GDP in March and April. A rebound in growth since April has meant that the UK recovered much of the lost GDP, but the economy is 9.6% smaller in Q3 2020 compared to Q3 in 2019.

63. Forecasts for 2021 remain highly conditional on assumptions of the path of policy interventions that Government takes to respond to coronavirus (such as business financing; the future of the CJRS; and continued restrictions). Last year's IA used a comparatively high counterfactual wage growth of 0.78% (at the 30th percentile), the long term (2001-2018) average growth rate. One of the sensitivities performed used an even higher growth rate of 1.09%, a recent short-term (2016-2018) average. These growth rates reflected the economic conditions and forecasts of the time. The stark difference in the current economic climate and forecasts has led us to believe that the counterfactual growth rate should be lower in this year's Impact Assessment.

64. The most recent comparative example we can consider that best replicates the business cycle the UK is currently in is the 2008/2009 financial crisis. During these years and in 2010, when the economy entered a weak recovery period, the quarterly wage growth rate for low-paid jobs averaged 0.48% - with stronger wage growth seen at the end of 2009/beginning of 2010, alongside GDP. However, we acknowledge that the current crisis in not directly comparable to the last. The economy currently faces high levels of uncertainty, so we also considered OBR forecasts to supplement our judgement. The OBR's latest forecasts for average quarterly wage growth in 2021-2023 is comparable to our preferred counterfactual rate (0.53% from the OBR compared to 0.48%). The years 2021-2023 reflects the medium term and the appraisal time period of this analysis.

65. There are contrasting expectations of how and when the economy will recover from the economic shock of the pandemic. The OBR's upside scenario forecasts a return to pre-Covid levels of output by the end of next year whereas the downside scenario forecasts that output won't return to that level until 2024.

66. While we judge that our chosen rate best reflects the business cycle that the UK is currently in (and may be in over the course of the appraisal period for this Impact Assessment), we undertake sensitivity analysis using growth rates. We use the long-term average of 0.78% to consider a scenario in which the economy bounces back stronger than expected. As set out in Annex D, we also considered a sensitivity in which there is zero (0.0%) wage growth in 2021 and then our preferred counterfactual wage growth (from the 2008-2010 period) for the following years. This sensitivity considers a scenario in which the adverse impact of the pandemic on the economy is more severe next year than anticipated.

67. Using higher growth rates results in lower overall costs and using lower growth rates results in higher overall costs. Using a higher counterfactual wage growth of 0.81%, the total cost falls to £198m. Assuming zero wage growth for 2021 and then 2008-2010 average growth rates leads to total cost rising to £593m. As will be shown, these are compared to our central estimate, in which we assume uniform wage growth of 0.48%, leads to a total cost of £459m.

68. Following extensive work done internally within BEIS and engagement with academics, we do not consider the scenario in which there is zero wage growth in 2021 for low-paid workers to be likely. Analysis of the wage growth forecasts mentioned above, in addition to empirical evidence of wage growth in downturns (and/or recoveries) and academic literature seemingly suggest weak but positive nominal wage growth next year.

69. There is mixed evidence on the relative ease for low-paid workers to switch between sectors, with some evidence suggesting it is easier to switch between roles in low-paid sectors. This means the differential in wages between low-paid sectors can't be too high if firms wish to still attract workers. There are also some expectations that the hospitality and retail sectors, which employ large numbers of low-paid workers, may experience a recovery next year, once Covid-19 restrictions are eased.

70. NIESR believe that their recommendation of growth at the lowest percentile where there are no spillovers detected from the minimum wage is the best estimator of the counterfactual growth rate. In the past, NIESR have recommended the spillover rate to be 20% (i.e., those up to the 20th percentile of the wage distribution will see some pay growth that can be indirectly attributed to the minimum wage increase). However, in their 2017 report stated, 'In future years, as the NLW may begin to cover a greater (or smaller) percentage of the workforce, the extent of spillovers might change'. Last year we chose the spillover rate to be 30%. Following updated evidence and different economic circumstances, we have chosen the spillover rate to be 25%

this year. We explain the lowering of the spillover rate to the 25th percentile, in the Spillovers section of this IA.

71. We also undertake additional sensitivity analysis here by adjusting our assumption of where the indirect effects of the minimum wage stop. This is to illustrate the potential magnitude of this assumption. We undertook sensitivities for both the 20th and 30th percentile to best reflect the range of potential spillovers.

72. This approach was agreed to be 'simple and transparent' by some respondents to our questionnaire in 2018. NIESR also specifically tested whether wages in low wage occupations which were affected by the NLW's introduction had been growing historically at a slower rate. If this were the case, then applying the average growth of the counterfactual for these groups would result in the counterfactual adjusting to minimum wage upratings too quickly potentially underestimating costs. Their modelling led them to conclude that using an average uniform growth rate is suitable because there was 'no significant evidence for differential growth in the data' (p. 79) across occupations and time. Consequently, we have used average uniform growth rates (as shown in Table 3).

73. Furthermore, NIESR argue that because of forecasting inaccuracies and bias due to asymmetries arising from forecast errors, they recommend we continue to apply the counterfactual growth rate to the current wage distribution (i.e., the existing minimum wage analogous to what we have done in previous IAs), and that this will result in an unbiased estimator of the cost to business/benefit to workers. This method has since been further validated during our academic engagement.

74. Finally, NIESR recommended that BEIS continue to use its current method of re-setting the counterfactual, so as to take the current level of the minimum wage as the starting point for the counterfactual analysis" (p. 59). We therefore maintain this method, applying the uniform counterfactual growth rate to the existing wage distribution. Using past counterfactuals and old data/forecasts will result in forecast accuracy issues (as associated with longer-term forecasts) and potential bias due to asymmetries arising from forecast errors. Pages 50-54 of the NIESR report explains these issues in further detail.

75. To implement NIESR's recommendation we estimate the cost to business/benefit to worker by calculating how long it takes for the counterfactual growth trajectory to 'catch-up' with the proposed NMW and NLW rates. Further detail of the arithmetic calculations on how the 'catch up' is estimated can be found in 2017's IA.

76. The second source of direct cost associated with the NMW/NLW upratings is associated with non-wage labour costs, such as pensions and employer National Insurance contributions. Therefore, we have uprated the employer wage bill impacts by 21.78% to account for these additional costs. This figure comes from Eurostat analysis for June 2020. NIESR have previously voiced concerns that it 'is likely to be an overestimate because it does not account for the fact that some workers do not meet the National Insurance contribution (NIC) threshold' (p. 50). Conversely, they do note that future auto-enrolment of pensions won't be included in this uplift. We continue to use the 21.8% uplift here, as we conservatively assume that any overestimates are likely to be balanced against potential underestimates.

Summary

77. The counterfactual is, by its very nature, unobservable. Previous findings from NIESR, where they have deployed advanced econometric techniques to attempt to estimate the counterfactual growth rate, found these models to have low predictive power. Since we are in a world of normative economics rather than positive economics, NIESR made a judgement of what the

available evidence dictates is the most suitable counterfactual, and it is one that we have continued to follow here.

78. Of the growth rates presented in Table 3, we have used the last financial crisis period average growth rate as our best case estimate as this best represented a rate of growth akin to where we believe the economy currently lies closest to in the business cycle and corroborates with our analysis of the OBR's November 2020 forecasts.

79. Based on the available evidence, NIESR believe this approach of utilising a uniform growth rate is unbiased and representative of the typical minimum wage worker. There is no positive evidence that the counterfactual wage level is different to the existing minimum wage, nor is it falsifiable. Similarly, evidence does not necessarily support a shadow wage curve argument that previous increases in the minimum wage will have had a base-raising effect on the wage distribution (see Annex D for a fuller description), although as above this cannot be proven or rejected.

80. Annex H lists all the previous work we have done on the counterfactual and as was done last year, we have implemented the recommendations of independent experts, due to the possible contentious nature of this counterfactual. We acknowledge that alternative approaches may exist (for example, the LPC use median earnings for their counterfactual when estimating future coverage, and RPC's proposed shadow wage curve). Indeed, previous NMW IAs have used slight variations in the counterfactual but all of these will be beset with similar issues previously outlined; and none have been shown to be more appropriate than the approach used in this impact assessment.

Appraisal period

81. The length of our appraisal period is how long it takes the counterfactual, on average, to catch up with the LPC rate recommendations. As we have a uniform counterfactual growth rate for all rates, which is what NIESR recommend in their report, and the percentage increase in the rates varies across the age bands, the appraisal period differs for each of the NLW and NMW rates.

82. We estimate that it will take the NLW and the 21-22-year-old NMW rate 5 quarters for our counterfactual to "catch-up" with the corresponding minimum wage. Given the smaller increases in the 18-20-year-old and 16-17-year-old rates, it will only take 4 quarters for the counterfactual to catch up. The appraisal period for the Apprentice rate is the longest at 8 quarters due to the slightly larger increase to the rate of 3.6%.

Spillovers

83. As conjectured in previous IAs, we make an assumption that the increase in the minimum wage has an impact on other parts of the wage distribution, not directly impacted by the increase in the NLW and NMW. The rationale for this is that as a higher wage floor is implemented, some employers will choose to either i) give pay rises to those paid above but near the new minimum wage; and/or ii) choose to increase the pay of some workers previously paid below the new minimum to a greater level than just bringing pay into line with the new statutory minimum. Employers do this out of a desire to maintain wage differentials between their employees to recognise different roles and responsibilities, maintaining a high employee morale.

84. In the past we have used evidence from NIESR and LPC to assume that spillovers last between the 20th and the 30th percentile of the earnings distribution, with the effect dissipating towards the upper end of that range.

85. There has been considerable research in this area, including Avram and Harkness (2019) and Georgiadis & Manning (2020) examining the effects of **previous** NLW increases on wage spillovers. The authors find significant spillovers up to the 30th percentile and 25th percentile respectively, after examining the potential effects at the 5th, 10th, 15th, 20th, 30th and 50th percentiles. The researchers found evidence of significant spillover effects, with peaks at the 15th and 20th percentiles. The models suggested that growth was similar across all quantiles they examined, apart from the 30th and 50th percentiles in some specifications. Overall, these findings are encouraging, as they are consistent with the assumptions made in our previous IAs.

86. However, theoretically, we would expect discretionary pay increases to be lower during economic downturns, as businesses are more constrained in their ability to increase pay. This aligns with the theoretical underpinning used in deciding our counterfactual growth rate. Feedback received during our Academic Roundtable from UK labour market experts suggested that it was reasonable to expect spillovers to be lower down the wage distribution next year

87. Additionally, some stakeholder employers reduced the differentials between staff levels. It was suggested that this could be due companies changing their pay structures or businesses not being able to afford to maintain similar levels of differentials due to the challenging environment for businesses created by the pandemic. This was reflected in pay settlement data, which suggests that smaller awards will be made next year. In discussions with pay industry experts, we were informed that they have heard more instances of firms saying they would increase pay in line with their statutory commitments (i.e., meet any minimum wage increases) with minimal increases elsewhere in the pay distribution.

88. Due to the uncertainty in finding the point in the wage distribution where spillovers end, we have decided to use a mixture of theoretical understanding, quantitative data and academic engagement to estimate that the spillovers from the 2021 NLW/NMW increases will extend to the 25th percentile, but no further. As a sensitivity, we examine the effects to the total cost figure by amending this spillover assumption. In the event that spillovers only reach the 20th percentile, we find that the total cost would decrease to £282 million. Conversely, if spillovers were assumed to reach the 30th percentile, the total cost would increase to £313 million.

Direct and indirect effects

89. To estimate the impacts of the NLW and NMW on the earnings distribution, we use the Annual Survey of Hours and Earnings (ASHE), from 2020, to conduct wage distribution analysis for each of the rates.

90. We appraise the direct impact of the NMW/NLW rates as the cost of increasing wages to the new statutory minimum (with the associated non-wage labour costs). We have classified the increase in labour costs caused by the spillover effect up the earnings distribution as an indirect impact. This distinction is appropriate because the only regulatory requirement on employers is to meet the new pay floor. The decision to raise wages of those earning above the new rates in order to maintain pay differentials is at the discretion of employers and not required by the regulation – in fact, some employers may choose to use the squeeze in wage differentials as a way of mitigating the overall labour cost impact of an increase in the NMW/NLW.

91. The RPC have commented in the past that our classification did not capture the possibility that some of the ripple effect may be non-discretionary because pay differentials are written into contracts. As argued in previous IAs, evidence from XpertHR and the LPC found that while the minimum wage has an impact on wider wage setting behaviour, employers tend not to set wages at *X*% above the rates, indicating that increases in pay differentials between employees is an indirect business response to the change in legislation. This is supported by qualitative evidence gathered by NIESR in 2017 which found that the overall wage budget in large firms is often set at senior/board level which includes considerations about percentage increases in the NMW/NLW. Decisions about allocation to groups of employees and individuals are then made after this. This was further corroborated in conversations with payroll experts this year.

Approach to the Appraisal: Non-wage Bill Impacts

Transition costs

92. The concept of annual minimum wage increases is fully embedded in the UK labour market; they have occurred regularly for the last 20 years. Employers, in particular those in low paid sectors, will generally expect the minimum wage to increase, following the trends of the last few years[15]. This awareness is, in part, thanks to extensive information on the Gov.UK webpages, targeted HMRC "Promote" awareness-raising activity, and an extensive communications campaigns in the lead up to past NMW/NLW upratings, which will run again for the April 2021's rates.

93. Businesses may need to take some time to familiarise themselves with the new rates to ensure they are compliant with this incoming legislation. Therefore, we estimate the opportunity cost of businesses familiarising themselves with the legislation in paragraphs 118-122.

Non-compliance

94. In line with previous Better Regulation guidance[16], 100% compliance is assumed unless there is evidence to the contrary. Consequently, we assume full compliance of the NLW and NMW because we do not have a reliable basis on which to make a robust estimate of the true level of non-compliance for future upratings.

95. ASHE data is able to estimate the number of jobs paid on hourly pay rates below the age applicable NMW and NLW. However, both the ONS and BEIS make clear that this should not be considered as a direct measure of NMW/NLW non-compliance as there are legitimate reasons for a job to be paid below the NMW (e.g., a deduction can be made for accommodation).

96. As part of the publication of ASHE 2020, the ONS provided some analysis with regards to non-compliance. In this commentary, they noted that 2,043,000 (7.2%) jobs were paid below the level of the NLW/NMW, compared to 409,000 in 2019. They acknowledged no conclusions should be made about the change, as the 2020 figure was naturally higher due to furloughed employees and approximately half of "employers not topping up pay beyond the 80% provided by the Coronavirus Job Retention Scheme (CJRS)". This 2 million estimate should not be considered as an estimate of minimum wage non-compliance as the majority of these jobs are likely to not be breaching Minimum Wage legislation. BEIS analysis of ASHE 2020 estimates

[15] https://www.gov.uk/government/publications/low-pay-commission-2020-summary-of-findings

[16] https://www.gov.uk/government/publications/better-regulation-framework

minimum wage non-compliance to be between 350,000 (excluding furloughed workers) to 750,000 (including furloughed workers) – further information on this will be published in our upcoming NMW Enforcement and Compliance report. It should be noted that the difference in BEIS' high estimate of 750,000 and the ONS' figure of 2 million will be due to the ONS' inclusion of furloughed workers who saw a loss in their pay due to furlough.

97. Irrespective of the presence of furloughed workers in our pay data, the pre-existing issues in measuring non-compliance lead to considerable uncertainty. We subsequently assume full compliance with the NMW and NLW. This is a conservative approach because including cases of potential non-compliance in our cost estimate will increase the total estimated direct cost to business as we assume non-compliant employers will increase wages in line with the new rates to comply with the law. We do not have comprehensive estimates of minimum wage non-compliance.

Data Quality

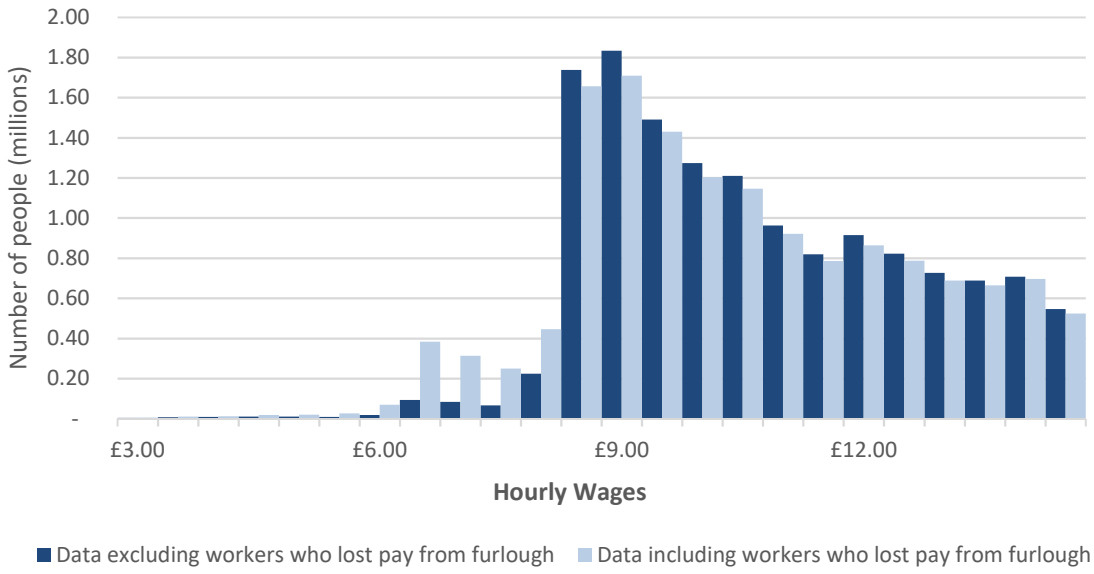
The dataset

98. Our estimates of the impact of rate increases are always based on the Annual Survey of Hours and Earnings (ASHE). ASHE is the official source of low pay data, and, as an employer-based survey, produces our most robust earnings data. The survey covers data for April of each year.

99. However, this year the furlough scheme has distorted the data. People who are furloughed and receiving e.g., 80% of their normal pay (for hours not worked) may be classified as earning below the NLW/NMW, when in fact their normal pay (i.e., 100% of their wage) is above the NLW.

100. There are different weights we use when handling the data, to account for this impact. One weight excludes workers who have experienced a loss of pay because of furlough and the other includes them. However, the weighting on the survey is such that the sample is weighted up to equal roughly the same population under either configuration of weights. In practice, this means that one weight produces a wage distribution with a disproportionate number of higher-paid jobs (as workers who have lost pay due to furlough are excluded from the sample); while the other produces a wage distribution with a disproportionate number of lower-paid jobs (as workers at e.g., 80% of their normal pay are included in the sample). Figure 4 illustrates the wage distribution generated by using either weight – notably, there is a larger frequency of workers at lower rates of pay in the series depicted by light blue bars (i.e., below the NLW)

Figure 3: ASHE 2020 NLW Wage Distributions



101. We can use both to produce a range of estimated workers on NMW/NLW, however the difference between the two values is substantial. Choosing either configuration of weights requires a considerable assumption to be made on whether we anticipate the labour market in 2021/22 to have a disproportionately low or high number of low-paid jobs in the UK economy. While there is some evidence already of the composition of jobs transitioning to high-paid jobs (as illustrated in the recent uptick in wage growth), the extent of the compositional change seems unlikely.

102. However, we believe that this is more plausible than a compositional shift whereby there's a disproportionate number of low-paid jobs in the economy The Bank of England, OBR and HMT Panel of independent forecasts have published forecasts that suggest unemployment will continue to rise in 2021, due to the ongoing impacts of the pandemic. Workers who have been furloughed without receiving a top-up in their wages are likely to work in the most severely hit sectors of the economy and are at greater risk of unemployment.

103. Identifying a suitable point in between these estimates is challenging, and at risk of spurious accuracy. Consequently, we have chosen to utilise a range of estimates this year, with the midpoint being taken as our central estimate. Specifically, we use the estimate that "excludes" workers who have lost their pay due to furlough as our low estimate; and use the estimate that "includes" workers who have lost their pay due to furlough as our high estimate. This is done, noting that our low estimate is likely to be an underestimate, and our high estimate is almost definitely an overestimate (due to the inclusion of data points where workers have received 80%-99% of their normal pay). However, these estimates benefit from being based on observed data points.

104. Other possible options we explored were making manual adjustments to the underlying data. However, these options were fraught with uncertainties. One example of this included manually adjusting the wages of individuals in the data (which included workers who saw a loss in pay due to furlough) by increasing the pay of 40%[17] of workers at any £-value, to estimate

[17] Data from the May iteration of the ONS' Business Impacts of Coronavirus Survey suggested that 60% of workers received a top-up in their wages, implying the remaining 40% did not see a top-up (i.e., would have been at 80% of their normal pay)

what their "normal pay" would look like. As an example, this method would move some of the workers observed at £8.00 in the data, to their assumed "normal pay" of £10.00. While this may seem an intuitive method/adjustment, there are practical difficulties that arise:

- The available data does not specify to what extent workers saw their wages topped-up. E.g., someone observed at £9.00 in the data may have a "normal wage" of £9.00 (i.e., topped up to 100%) or £10.00 (i.e., topped up to 90%). We made a simplifying assumption that all workers who received a top-up in their pay saw their pay topped up to 100%.

- The survey weights were not designed for our manual adjustments, therefore may lead to an unrepresentative population.

105. When running this iteration of the data, we observed business costs of £438 million (and a coverage estimate of 2.2 million). As will be shown, this unsurprisingly falls within our low and high estimates' range. However, for the two key reasons outlined above, we believe that our manual adjustments have introduced a level of spurious accuracy that renders the results not robust. We therefore do not use this in our main scenarios.

106. We also explored the potential of using ASHE 2019 data as our starting point i.e., the data used in last year's IA; and uprating it to produce a "2020" dataset. We utilised OBR estimates for pay growth in 2019/20 to uprate the ASHE 2019 data, and then run our modelling as normal. This produces a cost estimate of £596 million, with an estimated 2.8 million workers covered by the rates.

107. After deliberating on the merits (or otherwise) of utilising this uprated 2019 data, we have decided against using this as our central estimate. As will be shown later in this IA, the estimates produced from this 2019 dataset are similar to those produced in our high estimate (based off ASHE 2020), which we know to be a definite overestimate. Further interrogation of pay data seems to suggest that the estimates from the 2019 dataset are also an overestimate, likely due to the wage growth experienced by the lowest earners being stronger than the forecasts for average earnings – last year's 6.2% increase in the NLW typifying this assertion.

108. Subsequently, having reviewed the various options available, we believe that the most robust option is to utilise the observed data points from ASHE 2020, and to present a range of estimates – taking the midpoint as our central estimate. The difficulties in obtaining sensible estimates from this year's ASHE 2020 have resulted in the LPC themselves not producing coverage estimates this year. While noting this, we believe that our proposed approach is sensible for the purpose of this IA.

109. The Covid-19 pandemic hit the UK economy just as the ASHE 2020 survey was going into field. *Extensive conversations between BEIS, the ONS and the LPC over the course of 2020 aided efforts for ASHE 2020 to respond to the extent that it did to the challenges the Covid-19 pandemic posed* on data collection and quality. We will continue to progress these conversations to further aid the data quality of ASHE 2021.

Factoring in potential unemployment

110. In previous years we have utilised the OBR's Economic and Fiscal Outlook (EFO) data for employment forecasts as part of our modelling. At the time of undertaking our analysis, we have utilised Bank of England (BoE) forecasts from the Monetary Policy Report[18] published in November 2020. This has subsequently been corroborated with the latest OBR estimates

[18] https://www.bankofengland.co.uk/monetary-policy-report/2020/november-2020

(published 25th November), which forecasted unemployment to reach a peak of 7.5% in Q2 2021.

111. BoE forecasts unemployment will peak at 7.75% in Q2 2021 and we use this (marginally more conservative) estimate. To adjust for the expected rising levels of unemployment that are not taken into account in the 2020 ASHE data, we adjust the number of jobs downwards, in proportion with the BoE employment figures.

112. The highest given forecast for unemployment in 2021 from HMT's panel of Independent Forecasts was 9.6% from Investment Bank Société Générale. We utilise this as a sensitivity and find that assuming higher unemployment would lead to a slight decrease in our monetised total cost of our low estimate by £2m and in our high estimate by less than £1m. Not making this adjustment, and therefore assuming lower unemployment, would lead to a slight increase in the total cost for our low estimate by £13m and in our high estimate by £3m – suggesting that this assumption has a minor impact on our monetised costs. It should be noted that the variance in the number of unemployed people in these forecasts are due to wider economic uncertainty, rather than unemployment arising directly/indirectly from the NLW/NMW uprating.

113. This adjustment may be considered crude, as the employment rate forecast is economy-wide and not specific to low-paid sectors. In absence of detailed employment forecasts by low-paying sectors, in addition to the uncertainty about the nature of the economic recovery (including the level of the peak unemployment rate, and indeed when that materialises), we believe that our simplifying assumption is suitable for this analysis, with any further adjustments likely to lead to spurious accuracy. In the instance that job losses are concentrated in low-paid sectors, our costs figures will likely be over-estimates.

Apprentices

114. With regards to appraising the Apprentice NMW, ASHE data includes information on apprentices specifically (around 2,000 apprentices surveyed per year). An alternative data source, the Apprentice Pay Survey, has a larger sample of 10,000 apprentices and has more detailed pay information, broken down by bonuses, accommodation offset etc. The Apprenticeship Pay Survey is available for 2018 but (a) the information is reported by apprentices themselves, (b) the survey is not annual and (c) is not directly comparable with ASHE findings used for other employee job groups therefore has not been used here. This is in line with the LPC, when estimating coverage and bite of the NMW/NLW rates.

Use of the Labour Force Survey

115. To calculate the quarterly counterfactual growth rate, NIESR used the LFS which is a quarterly household survey. ASHE provides superior earnings data as it is employer reported rather than household. However, NIESR's preference was LFS as it provides more observations to calculate the mean growth rate. We continue to use the LFS for the specific analysis on the counterfactual growth rate, with some mitigation of this risk provided by using the 'hrrate' variable rather than 'hourpay'[19] - the latter is a derived variable and is considered less reliable. We believe that any error associated with using the LFS is likely to be minimal, especially when noting the close corroboration in our proposed counterfactual rate and the projections for future wage growth from the OBR.

[19] 'Hourpay' is derived from the individual's reported hours and earnings for all employees. It is considered to be less reliable than 'hrrate', due to greater measurement error in the derived variable.

Coverage

116. Coverage of the incoming rates is sensitive to when in the year it is measured and to the forecasted counterfactual. We have ASHE earnings data from April 2020, and we apply our counterfactual growth rate to forecast coverage in April 2021 when the rates will be introduced. The nature of our appraisal methodology means that coverage of the rates falls over the course of the appraisal period. Due to Covid-related complications with the data as discussed above, it is difficult to estimate a single figure for coverage, as evidenced with both the ONS' caveats in their ASHE publication, and the LPC's reticent to produce minimum wage coverage estimates themselves.

117. We estimate that 1.6-2.8 million workers will be covered by the incoming NMW/NLW rates. This includes private and voluntary sector workers and public sector workers. Table 4 contains our estimates of coverage for both estimates that either includes or excludes workers who have experienced a loss of pay because of furlough.

118. The wide range between our estimates emphasises the uncertainty associated with projecting coverage of the minimum wage, particularly this year, and therefore these figures are only indicative of what true coverage will be.

Table 4: Breakdown of coverage[20] across different NMW/NLW rates, April 2021

	Proposed rate	***Low estimate projected coverage (% of labour force)***	***High estimate projected coverage (% of labour force)***	***Central estimate projected coverage (% of labour force)***
NLW (23+)	£8.91	1,465,000 (5.6%)	2,516,000 (9.6%)	1,991,000 (7.6%)
21-22 NMW	£8.36	72,700 (0.3%)	157,000 (0.6%)	115,000 (0.4%)
18-20 NMW	£6.56	48,000 (0.2%)	134,000 (0.5%)	91,000 (0.3%)
16-17 NMW	£4.62	12,000 (<0.0%)	31,000 (0.1%)	21,000 (0.1%)
Apprentice NMW	£4.30	28,000 (0.1%)	38,000 (0.1%)	33,000 (0.1%)
Total		1,626,000 (6.2%)	2,876,000 (11.0%)	2,251,000 (8.6%)

Low estimate: labour costs

119. As discussed previously, our low-cost estimate is based on a quarterly counterfactual growth rate of 0.48% and uses a version of the ASHE 2020 that removes workers that have lost their pay due to being furloughed, and then weights this up to represent the total number

[20] Estimates the number of people who are directly likely to benefit.

of jobs in the UK labour market – as mentioned previously, this effectively predicts a labour market with fewer low-paid jobs and more high-paid jobs.

120. In this scenario the total cost to employers from implementing the LPC rate recommendations, and thus complying with the incoming legislation, is **£316 million**. This is a transfer from firms to workers, with some benefits for the exchequer (e.g., employer NICs) and therefore has a net neutral economic impact. It is made up of £259 million in increased wages and £56 million in additional employer NICs and pension contributions. Tables 5,6 and 7 provide a further breakdown, in constant prices.

121. The total benefits to workers and the exchequer are estimated to be **£316 million** – the same value as the total labour costs.

Table 5: Total labour costs in the low-cost estimate:

Low Estimate	Year 1			Year 2		
	Wage and Non-wage Impacts (£m)			Wage and Non-wage Impacts (£m)		
	Wage Costs	Non-wage Labour Costs	Total	Wage Costs	Non-wage Labour Costs	Total
NLW	£231.86	£50.50	£282.36	£10.56	£2.30	£12.86
Main	£8.13	£1.77	£9.90	£0.07	£0.01	£0.08
Development	£3.62	£0.79	£4.41	£0.00	£0.00	£0.00
Youth	£0.71	£0.15	£0.86	£0.00	£0.00	£0.00
Apprentice	£4.00	£0.87	£4.87	£0.97	£0.21	£1.19
Total	£248.32	£54.08	£302.40	£11.60	£2.53	£14.12

Table 6: Direct labour costs in the low-cost estimate:

Low Estimate	Year 1			Year 2		
	Wage and Non-wage Impacts (£m)			Wage and Non-wage Impacts (£m)		
	Wage Costs	Non-wage Labour Costs	Total	Wage Costs	Non-wage Labour Costs	Total
NLW	£118.00	£25.70	£143.70	£4.78	£1.04	£5.82
Main	£5.65	£1.23	£6.88	£0.04	£0.01	£0.05
Development	£3.62	£0.79	£4.41	£0.00	£0.00	£0.00
Youth	£0.33	£0.07	£0.40	£0.00	£0.00	£0.00
Apprentice	£3.57	£0.78	£4.35	£0.52	£0.11	£0.63
Total	£131.17	£28.57	£159.74	£5.34	£1.16	£6.50

Table 7: Indirect labour costs in the low-cost estimate:

Low Estimate	Year 1			Year 2		
	Wage and Non-wage Impacts (£m)			Wage and Non-wage Impacts (£m)		
	Wage Costs	Non-wage Labour Costs	Total	Wage Costs	Non-wage Labour Costs	Total
NLW	£113.86	£24.80	£138.66	£5.78	£1.26	£7.04
Main	£2.48	£0.54	£3.02	£0.02	£0.00	£0.03
Development	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
Youth	£0.38	£0.08	£0.47	£0.00	£0.00	£0.00
Apprentice	£0.43	£0.09	£0.52	£0.46	£0.10	£0.56
Total	£117.15	£25.52	£142.66	£6.26	£1.36	£7.62

High estimate: labour costs

122. We reproduce the analysis using the same counterfactual growth rate for our high-cost scenario. However, we instead use a version of ASHE 2020 that includes workers that have lost their pay due to being furloughed, resulting in more workers being "covered" by the NLW/NMW, as currently their pay has been reduced due to the CJRS. The cost to business and benefit to workers is inevitably higher than our low estimate above.

123. Overall, our high-cost estimate of the total labour costs is **£601 million**. This is split into wage bill impacts of £493 million and non-wage impacts of £107 million (numbers may not sum due to rounding). Tables 8,9 and 10 provide a further breakdown, in constant prices.

124. We believe that using this rate would not be appropriate – as outlined above, the rate would not appropriately reflect evidence-based forecasts of labour market outcomes. The justification for this is in more detail in paragraphs 97-100.

Table 8: Total labour costs in the high-cost estimate:

High Cost	Year 1			Year 2		
	Wage and Non-wage Impacts (£m)			Wage and Non-wage Impacts (£m)		
	Wage Costs	Non-wage Labour Costs	Total	Wage Costs	Non-wage Labour Costs	Total
NLW	£433.54	£94.42	£527.96	£19.17	£4.18	£23.35
Main	£21.13	£4.60	£25.73	£0.16	£0.03	£0.20
Development	£10.09	£2.20	£12.29	£0.00	£0.00	£0.00
Youth	£0.94	£0.21	£1.15	£0.00	£0.00	£0.00
Apprentice	£6.46	£1.41	£7.86	£1.86	£0.41	£2.27
Total	£472.15	£102.84	£574.99	£21.19	£4.62	£25.81

Table 9: Direct labour costs in the high-cost estimate:

High Cost	Year 1			Year 2		
	Wage and Non-wage Impacts (£m)			Wage and Non-wage Impacts (£m)		
	Wage Costs	Non-wage Labour Costs	Total	Wage Costs	Non-wage Labour Costs	Total
NLW	£343.90	£74.90	£418.80	£14.57	£3.17	£17.75
Main	£19.69	£4.29	£23.98	£0.15	£0.03	£0.18
Development	£10.09	£2.20	£12.29	£0.00	£0.00	£0.00
Youth	£0.66	£0.14	£0.81	£0.00	£0.00	£0.00
Apprentice	£6.31	£1.37	£7.69	£1.61	£0.35	£1.95
Total	£380.66	£82.91	£463.57	£16.32	£3.56	£19.88

Table 10: Indirect labour costs in the high-cost estimate:

High Cost	Year 1			Year 2		
	Wage and Non-wage Impacts (£m)			Wage and Non-wage Impacts (£m)		
	Wage Costs	Non-wage Labour Costs	Total	Wage Costs	Non-wage Labour Costs	Total
NLW	£89.63	£19.52	£109.16	£4.60	£1.00	£5.60
Main	£1.44	£0.31	£1.75	£0.01	£0.00	£0.02
Development	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
Youth	£0.28	£0.06	£0.34	£0.00	£0.00	£0.00
Apprentice	£0.14	£0.03	£0.17	£0.26	£0.06	£0.31
Total	£91.49	£19.93	£111.42	£4.87	£1.06	£5.93

Central estimate: labour costs

125. As discussed previously, the challenges with the data quality make assessing an appropriate mid-point challenging. While we anticipate that low-paid jobs in hospitality and retail will return in 2021/22, as Covid-19 restrictions begin to lift, the speed and composition of this recovery is unclear.

126. Overall, our best cost estimate of the total labour costs is **£459 million**. This is split into wage bill impacts of £376 million and non-wage impacts of £82 million (numbers may not sum due to rounding). Tables 11,12 and 13 provide a further breakdown, in constant prices.

127. HMT Green Book states that "when assessing costs and benefits of different options, it may be necessary or desirable to "weight" these costs and benefits, depending on which groups in society they fall on". This is based on the principle of the diminishing marginal utility of income, whereby the value on an additional pound of income is higher for a low-income recipient and lower for a high-income recipient.

128. If we were to crudely apply Green Book's estimate of the marginal utility of income (1.3, based on a review of international evidence), this would suggest that the *direct* benefits would be upwards of £617 million. We calculate this by dividing the median earner by the NLW earner (as proxied by their relative positions in the wage distribution, such that the median is equivalent to 100, and the NLW worker is 61 – the NLW's "bite") and raise this by 1.3 as set out above, to estimate the redistributive effect for an individual member of the group affected by the NLW.

129. However, we acknowledge that this marginal utility factor of 1.3 may not be applicable to the group that we believe will benefit from the proposed uprating, with different segments of this group likely to have varying marginal utilities – hence why the above figure is just for the direct effect and not those benefiting for any spillover effect. Furthermore, the uplift factor is the marginal utility of income for the median person/household. We believe that this would be a conservative estimate, as beneficiaries from the upratings will be in the bottom half of the distribution.

130. Our central cost estimate is considerably lower than it was last year (~£1.3bn). One of the key reasons for this is the much smaller increase this year (2.2%) compared to last year's increase of 6.2% - the most ambitious uprating of the NLW since its introduction in 2016. In addition to a smaller increase, we have assumed spillovers to affect up to the 25th percentile of the wage distribution, compared to the 30th percentile last year. A final key reason the cost is smaller this year is the higher anticipated unemployment rates. These factors combine to assume that less people will be affected by the uprating this year and those who are affected, will be affected to a lesser degree. One adjustment we've made that would provide counteracting upwards pressure is our use of a lower counterfactual wage growth rate of 0.48%.

131. The economic crisis has had a more severe effect on certain sectors, like hospitality and retail, than others. Lockdown measures have left these sectors the most exposed to adverse business impacts leading to greater losses of employment and hours worked. Our modelling is done uniformly across all sectors to calculate costs which would not take into account the likely distributional effects that may occur. Workers in retail and hospitality account for some of the highest levels of coverage of the NLW at 15% and 13% respectively (see Annex F for a detailed breakdown). These sectors are potentially the most exposed to the risks associated with the NLW and hence, we will look to closely monitor these particular sectors next year to evaluate the impacts.

Table 11: Total labour costs in the central-cost estimate:

Central Cost	Year 1			Year 2		
	Wage and Non-wage Impacts (£m)			Wage and Non-wage Impacts (£m)		
	Wage Costs	Non-wage Labour Costs	Total	Wage Costs	Non-wage Labour Costs	Total
NLW	£332.70	£72.46	£405.16	£14.87	£3.24	£18.10
Main	£14.63	£3.19	£17.81	£0.11	£0.02	£0.14
Development	£6.86	£1.49	£8.35	£0.00	£0.00	£0.00
Youth	£0.83	£0.18	£1.01	£0.00	£0.00	£0.00
Apprentice	£5.23	£1.14	£6.36	£1.42	£0.31	£1.73
Total	£360.24	£78.46	£438.70	£16.39	£3.57	£19.97

Table 12: Direct labour costs in the central-cost estimate:

Central Cost	Year 1			Year 2		
	Wage and Non-wage Impacts (£m)			Wage and Non-wage Impacts (£m)		
	Wage Costs	Non-wage Labour Costs	Total	Wage Costs	Non-wage Labour Costs	Total
NLW	£230.95	£50.30	£281.25	£9.67	£2.11	£11.78
Main	£12.67	£2.76	£15.43	£0.09	£0.02	£0.11
Development	£6.86	£1.49	£8.35	£0.00	£0.00	£0.00
Youth	£0.50	£0.11	£0.60	£0.00	£0.00	£0.00
Apprentice	£4.94	£1.08	£6.02	£1.06	£0.23	£1.29
Total	£255.92	£55.74	£311.65	£10.83	£2.36	£13.19

Table 13: Indirect labour costs in the central-cost estimate:

Central Cost	Year 1			Year 2		
	Wage and Non-wage Impacts (£m)			Wage and Non-wage Impacts (£m)		
	Wage Costs	Non-wage Labour Costs	Total	Wage Costs	Non-wage Labour Costs	Total
NLW	£101.75	£22.16	£123.91	£5.19	£1.13	£6.32
Main	£1.96	£0.43	£2.39	£0.02	£0.00	£0.02
Development	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
Youth	£0.33	£0.07	£0.40	£0.00	£0.00	£0.00
Apprentice	£0.28	£0.06	£0.35	£0.36	£0.08	£0.43
Total	£104.32	£22.72	£127.04	£5.57	£1.21	£6.78

Sensitivity analyses

132. Due to the increased uncertainty this year around a number of key variables involved in our analysis, we have performed extensive sensitivity analyses to try and isolate the impact of each assumption. These sensitivities are discussed at length in each relevant section but for ease of comparison, we have presented our full list of sensitivities and key results in Table 14 below.

Table 14: Sensitivity analysis used within this IA

Includes/Excludes workers who lost pay due to furlough*	Year of Data	Spillover percentile	Counter-factual wage growth	Unemp. adjustment	Total Cost (£millions)	Total Coverage (millions)
Excludes	2020	25	0.475% (2008-10)	Yes	£317m	1.63m
Includes	2020	25	0.475% (2008-10)	Yes	£601m	2.88m
Excludes	2019	25	0.475% (2008-10)	Yes	£677m	3.16m
Excludes	2020	30	0.560%** (2008-10)	Yes	£313m	0.86m
Excludes	2020	20	0.474% ** (2008-10)	Yes	£282m	1.63m
Excludes	2020	25	0.810% (2001-18)	Yes	£198m	0.72m
Excludes	2020	25	0% in Year 1, 0.475% thereafter	Yes	£593m	2.23m
Excludes	2020	25	0.476% (OBR proj.)	Yes	£316m	1.63m
Excludes	2020	25	0.475% (2008-10)	Yes – 9.6% peak	£314m	1.59m
Includes	2020	25	0.475% (2008-10)	Yes – 9.6% peak	£600m	2.87m
Excludes	2020	25	0.475% (2008-10)	No	£329m	1.70m
Includes	2020	25	0.475% (2008-10)	No	£603m	2.89m
Excludes	2019	25	0.475% (2008-10)	No	£705m	3.31m

* As described in the Data Quality of this IA, where we refer to “including” and “excluding” workers who have lost pay due to furlough, the weighting on the survey is such that the overall population numbers do not differ substantially between either iteration. The effects seen are compositional.

** These rates differ to the 0.475% seen elsewhere in the table, as these rates correspond to the wage growth seen in 2008-2010 by workers at the 20th/30th percentile, rather than that at the 25th

Transition costs

133. There are no official statistics that provide estimates of the number of businesses which are covered by the NMW and NLW increases examined in this IA. However, a number of surveys run by stakeholders provide some evidence. A CIPD survey of its members found that 51% are affected by the NMW/NLW. This is similar to that found by the Federation of Small Businesses, who found that half of micro businesses and all small and medium-sized businesses had been affected by what it classed as 'social policy-related costs', which include the NMW/NLW. Moreover BEIS' Small Business Survey 2016[21] (page 105) found that 54% of SME employers to be unaffected by the NLW, meaning 46% are affected (=100% minus 54%).

134. Naturally coverage will vary across sectors, and some representative organisations representing employers in specific low paid sectors found higher proportions. Recent surveys are in line with estimates used in last year's IA (46% - 52%).

135. Consequently, in this IA we take a range between 46% and 52% of employers who are affected by the proposed increase in the NMW/NLW. Using the 2020 Business Population Estimates (BPE)[22], we estimate that between 1,120,000 and 1,315,000 employers will be affected by the changes to the minimum wage.

Familiarisation costs

136. As the IA is assessing only the marginal costs of implementing new NLW and NMW rates, it is relatively straightforward for an employer to familiarise themselves with this change. It will involve either checking Gov.uk or calling the Acas helpline – traffic through these routes tend to increase around the implementation of new rates, as supported by evidence in the 2017 IA. Additionally, employers may also hear about the rates via official Government communications or through third party channels, such as the news. After the Government's communications campaign for the introduction of the NLW, 48% of those aware of the NLW reported that the source of their awareness was a TV programme or news, 22% cited TV advertising, 13% mentioned their accountant and 13% mentioned national newspaper advertisements.

137. We have previously assumed it will take employers 5 minutes to establish what the new rates are – which includes some time finding the right place to look for information. This assumption is based on the average duration of visits to the National Minimum Wage landing page on Gov.uk (~ 4 minutes) and the length of calls that Acas received regarding NMW/NLW issues (~ 5 minutes). Last year, we increased this to 10 minutes due to the announcement of the rates occurring later than normal (in December). This year, with the announcement of the new rates having occurred in November, this particular upwards pressure is not present.

138. However, following engagement with the payroll industry it was highlighted that companies who already have employees on the NMW are more likely to respond to surveys on the matter. In this instance, the views of companies who may newly be affected by the NMW are not collated. It is possible that it would take these companies longer than 5 minutes to establish what the new rates are as they may previously be unfamiliar with the process.

139. The Government has responded to numerous correspondence cases on the matter and aimed to keep businesses sighted of developments as much as possible. We will also be undertaking an extensive communications campaign to ensure businesses are appropriately ready for the April 2021 upratings. Despite this activity, we have taken a conservative approach to increase the familiarisation time in our best and high-cost estimates (doubling the time taken

[21] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/624580/small-business-survey-2016-sme-employers.pdf

[22] https://www.gov.uk/government/statistics/business-population-estimates-2020

to 10 minutes), to account for this adjustment. We continue to use 5 minutes in our low-cost estimate. This increase in the length of familiarisation time aims to capture instances where employers are affected by the changes in NMW for the first time and would spend more time establishing the appropriate rates consequently.

140. To calculate the burden, we estimate the opportunity cost of a HR Manager/ Director's[23] time by using the median hourly pay from ASHE 2020, uplifted for non-wage labour costs of 21.78%. Applying this to our estimate of businesses affected equates to a **one-off familiarisation cost of between £2.8m and £6.6m**. The former is our low-cost estimate, whilst the latter is our conservative best estimate. This estimate has not been adjusted to take into account the familiarisation cost to the public sector, which would be negligible considering that there are only 12,725 enterprises in this sector in the UK (according to the latest update of the BPE), and it constitutes a small proportion of total costs incurred by businesses.

Implementation costs

141. The NMW and NLW continue to follow the same cycle as last year. Using qualitative evidence from NIESR's 2017 report, we found that 'adjustments to comply with these rates had minimal implications for administrative resources because pay was adjusted annually in any case' (p. 37). Consequently, we believe that there is a negligible, if any, additional burden as a result of the changes to this legislation.

142. One potential source of increased implementation costs we considered was the change in age threshold for the NLW to 23+ from 25+. Following engagement with payroll industry representatives, it was concluded that due to the automated nature of payroll processes, the bulk of the effect of this change would be accounted for by software developers instead of companies themselves. This change was described as likely having minimal to negligible effects on costs.

143. We also engaged on the possible costs of changing employee contracts or tax codes but were again informed that these costs were likely to be minimal or negligible. Employee contracts often have NLW/NMW clauses embedded into them which would not be affected by an uprating. Changing of tax codes is also unlikely to be a significant cost as most employees affected by an uprating would not be earning enough to warrant a change in tax codes.

144. In light of this evidence, we do not monetise implementation costs as a result of uprating the NMW/NLW as we expect them to be either equal to or near zero for businesses.

Net cost to business

145. We separate the impact on the private, public and voluntary sectors in order to calculate the EANDCB for our central estimate. We do this by calculating what proportion of workers eligible for each rate are in the private and voluntary sectors, and then we multiply this by the overall cost and coverage estimates above. A full breakdown is provided in Annex E.

146. Using the IA Calculator, we estimate that the equivalent annual direct impact on business is net £217.9 million (over maximum appraisal period of two years). These are based on our central case scenario.

[23] https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/occupation4digitsoc2010ashetable14 (Table 14.5a)

Appraisal of Impacts: Non-monetised Impacts

147. Thus far we have monetised the direct and indirect impacts caused by an increase in the NMW/NLW. These have been a cost to business/benefit to workers as a result of an increase in employers wage bill. However, there are non-monetised impacts that may arise as a result of accepting the LPC rate recommendations, such as broader impacts on the macroeconomy and potential fiscal implications.

Macroeconomic Impacts

148. As part of their evaluation of the impact of the NMW/NLW, the LPC state the impact of the previous uprating to the NLW/NMW (chapters 2 and 3). Below we summarise this and supporting evidence that identifies broader second/third-order impacts that the proposed 2021 uprating may have. We have also summarised the most recent academic literature on possible impacts of the minimum wages in Annex C.

Employment

149. Economic theory predicts mixed effects on employment. One theory suggests that most prominent macroeconomic impact resulting from an increase in the minimum wage is higher unemployment if the minimum wage rate is set above the competitive market equilibrium. On the other hand, the Dube review suggests that a higher minimum wage could actually reduce vacancies and turnover in an imperfectly competitive labour market.

150. Due to the LPC's remit, we do not expect there to be any significant adverse employment effects as a result of the proposed NMW increases that are the purpose of this IA. They fulfil this remit by consulting broadly and analysing a thorough body of evidence. Moreover, LPC evaluations on the impact of the NMW (and it is one of the most evaluated policy interventions) have found no evidence that it has led to significant impacts on employment. Therefore, we believe our assumption here is justified. The LPC itself is made up of representations from employer and worker organisations too who have contributed to the recommendation of a rate that does not harm employment aspects.

151. The LPC once again found in their stakeholder engagement that it was still rare for stakeholders to say they have reduced employment in response to the NLW, despite the very challenging circumstances borne from the pandemic. Some stakeholders pointed to the NLW as an element in cumulative cost burden which has an effect. Adjustments to hours and recruitment remain more common responses than redundancies.

152. The OBR have previously reflected that there is limited evidence that previous increases in the NMW and NLW have had a significant impact on employment. They postulate that this is because some low-wage workers have little choice who to work for and their employers can exploit their market power to keep wages low. However, there appears to be some inconsistency in this particular argument, as the policy intervention aims to tackle this market power at the very bottom.

153. The OBR previously also forecasted that reaching the Government's 2020 target for the NLW to reach 60% of the median earnings would lead to an increase in unemployment. However, the OBR since indicated there is little evidence that this adverse effect on employment materialised.

154. The OBR have suggested that an increase in the NLW to the Government's target of two-thirds of median earnings by 2024 may lead to an increase in the unemployment rate. The OBR

have previously used a Minimum Wage Employment Elasticity of -0.4 which, according to the 2019 Dube review, is considerably higher than most other elasticity figures used in academia. The Dube review considers 439 estimated elasticates of employment or hours for various low-wage groups with respect to the minimum wage. The vast majority of these estimates are centred around zero with a median of -0.05. The OBR having a stronger than expected elasticity means the potential negative effects of a rise in minimum wages may be overstated in their modelling. The Dube review mentions "the authors conclude that it was unlikely that the minimum wage increases under study led to statistically or economically meaningful job losses". This, along with various other updated pieces of academic literature, of which more detail can be found in Annex C, continues to suggest that employment effects of the minimum wages are essentially negligible.

155. The OBR have since revised their elasticity down to -0.3 (equating to the NLW resulting in unemployment of 50,000 by 2024). However, they continue to note that this is higher than that suggested in the literature. They argue that this reflects the fact that the higher NLW will increasingly apply in sectors subject to conventional market pressures. However, considering the nature of the current labour market and the small increase in the NLW/NMW subsequently seen this year, we do not believe that this reasoning currently holds. We will continue to monitor this potential effect in future years, as the NLW increases more substantially relative to average earnings.

156. It is important to note that much of the academic literature on the subject has considered the last comparable economic situation of the 2008 financial crisis, during which the NMW also increased. Despite the economic downturn, there is limited evidence to suggest that the increase in NMW of 1.2% in 2009 and 2.2% in 2010 had a significant impact on employment. The LPC have similarly suggested a relatively modest increase of 2.2% this year to the NLW, compared to an average increase of 4.9% from previous years (2016-2020), to reflect the economic circumstances.

157. Some sectors feel particularly exposed, particularly in the social care, convenience and wholesale sectors. Research commissioned by the LPC, in addition to their extensive stakeholder engagement, found that the NLW does not currently point to significant employment effects. For example, the TUC argued that 'there is no sense that previous minimum wage increases have reduced employment in the low-paying sectors.' As mentioned in paragraphs 186-187, it is part of the LPC's remit to monitor, evaluate and review the effect of the rates on employment which it completes through extensive stakeholder engagement and econometric analysis.

158. Other impacts on employment have also been posited in the RPC's 2019 opinion. For example, the minimum wage may have an impact on staff churn/turnover. Empirical evidence of this effect is limited, while stakeholders have offered differing views – the CBI told the LPC that reducing pay differentials (where used by some firms to mitigate with the increasing NLW/NMW) can have a potential negative effect on staff turnover; whereas the Living Wage foundation argued strongly that high pay could have a positive effect.

Prices

159. Evidence from stakeholders suggests their preferential mechanisms to cope with the increased wage bill are to raise prices or absorb the higher costs by lowering profits, although survey data does not allow quantification of these impacts and there is no conclusive evidence in the official data.

160. In the LPC's consultation, there were more reports of employers using price rises to offset the cost of the NLW compared with previous years. Raising prices was the most common planned response in business surveys from the British Chamber of Commerce (BCC). In their survey, the proportion of respondents affected by the NLW who planned to raise prices grew from 30% in 2019 to 32% in 2020.

161. Many stakeholders note to the LPC that raising prices is difficult under the current challenging circumstances, especially in price-taking or highly competitive sectors. For example, internationally facing firms, and those directly affected by Government funding such as childcare and social care. This is due to their limited pricing power. These firms face reduced profits, but this was already the case for the majority of stakeholders due to the pandemic, with organisations having had to remain shut for prolonged periods of time.

Productivity

162. The increase in the NMW/NLW is universal for all workers of the same age and workers cannot be paid below the pay floor that the NMW/NLW provides. It may be argued that it is unlikely that increases to the NLW would give rise to a widespread increase in labour productivity, as might be predicted by the efficiency wage theory at an individual firm level. Efficiency wage theory is the theory that increasing wages leads to higher efficiency and higher profits consequently, as workers are more motivated at higher wages. Conversely, while most efficiency wage theories are predicated on labour market equilibrium (which we will not be due to the Covid-19 pandemic), the premise of workers placing greater value in their jobs during economic downturns may lead to greater production.

163. Increasing productivity is possible with the NLW (and to an extent NMW) as employers seek to increase the marginal product that each unit of labour produces in order to offset the increased labour cost. Firms could do this by increasing capital investment which can often complement labour rather than substitute for it. Alternatively, firms could invest in human capital to raise worker's skills, which may also improve motivation and retention both of which increase labour productivity.

164. Evidence from the CIPD's 2020 Labour Market Outlook suggests that 27% of firms respond to the NLW by improving productivity (an increase from the previous year's 24%). When looking at SMEs, however, this was marginally smaller at 25%, compared with 30% for large employers. Notably, this gap has narrowed since the 2019 survey (where 19% of SMEs reported productivity increases, compared to 29% of large employers).

165. Evidence from 2019 suggested that some firms sought to increase productivity by focusing on increasing worker effort (23% of private sector firms affected by the NLW and 30% in the public sector). Respondents also reported giving staff extra tasks (25%), requiring more flexibility on hours (23%), tightening restrictions on absenteeism (9%) and increasing the pace of work or raising performance standards (14%). More encouragingly, the CIPD found that 21% have sought to build on the morale boost of higher pay by trying to improve motivation and 18% have improved business practices.

Box 3: Automation

Earlier this year work undertaken by NIESR, for the LPC, found evidence that only a relatively small proportion of employers, around 1 in 10, had responded to increases in the NLW by automating production. Since then, the global coronavirus pandemic has dramatically changed the economic conditions that inform employer's decisions on automation.

A report from the RSA (2020) expressed the view that the pandemic was likely to stimulate a surge in automation as lockdown measures led the proportion of online sales out of all retail to surge from 20 to 29%, growing in a few months as much as in the preceding five years.

The ONS Business Impact of Coronavirus Survey (BICS) found that a third of businesses had increased their online services since the start of the pandemic. This move towards online services has occurred in tandem with the rise of remote working. The RSA postulate that these trends represent a potential threat to the employment prospects of high-street retail workers, as well as those in security transportation, maintenance, and catering who rely on commuters and office workers. While the desire of customers for a 'human touch' once acted as a countervailing force to automation, the desire to minimise sources of infection has stimulated interest in the automation of customer facing roles. In October, the International Federation of Robotics reported that global sales of professional service robots had risen by 32%.

Employer-based surveys, as presented to the LPC, have pointed towards a more mixed picture. Some surveys of employers suggest that firms of all sizes and across all sectors are investing in automation as a response to the pandemic (BRC, UKH, BBPA, IWFM). However, other surveys (FSB, CIPD, NCA) are finding that economic uncertainty caused by the pandemic is acting as a brake on investment, and thereby slowing the capital investment that underwrites automation.

While it may appear like the pandemic is accelerating the pace of digitisation and automation, the full extent of the employment effects and the extent to which wage levels play a role in this has yet to be determined. Subsequently, we are unable to monetise any indirect effect that the NLW/NMW increases have on capital investment.

166. Overall, the economy has seen poor productivity growth over the past decade. This is a result of output increasing at a slower pace compared to the relatively strong labour market that has experienced quicker wage growth. However, despite this, some of the lower paying sectors such as textiles and clothing, and retail, have seen productivity grow faster than the pay growth.

Other macroeconomic impacts

167. Other potential macroeconomic impacts include increased consumption as low paid workers have higher levels of disposable income. This will depend on individual household preferences and their marginal propensity to save. In the short term if consumption increases it will lead to increased aggregate demand, whereas in the longer-term output may increase if individuals choose to save their increased income.

168. All of the macroeconomic impacts mentioned here would not be first round effects, in some cases they would be third or fourth round as a result of the direct impact from uprating the NMW/NLW. Therefore, we do not quantify or monetise these impacts in this impact assessment, although as mentioned above the OBR have in the past sought to model the impacts of the NLW on employment and productivity. Academic literature has also attempted to do this, which we summarise in Annex C.

169. Overall, LPC find the impact of the policy on macroeconomic factors such as employment to be benign in almost all cases. They found that some stakeholders mentioned several channels to dissipate the impacts of the policy such as raising prices and increasing productivity and investment. However, economic studies did not back this theory up. This could in part be

due to difficulties in discerning changes to profits and prices in official data. The LPC will continue to monitor this.

Fiscal impacts

170. In 2015 the OBR estimated that the total effect on net borrowing of introducing the NLW would be -£0.2 billion in 2020-21, with reductions in tax credits and housing benefits being offset by forecasted higher unemployment and lower profits. Their estimates then can be found in Table B.3 of the OBR's July 2015 EFO.

171. The OBR have since published new forecasts, in relation to the target for the National Living Wage to reach two-thirds of median earnings by 2024, provided economic conditions allow. These findings, as taken from the OBR's March 2020 EFO, are presented in Table 15.

Table 15: OBR estimates of the fiscal effects of increasing the NLW, March 2020

	£ billion			
	Forecast			
	2021-22	2022-23	2023-24	2024-25
Welfare spending	-0.1	-0.1	-0.1	0.0
Earnings effects	*-0.1*	*-0.3*	*-0.4*	*-0.5*
Uprating effects	*0.0*	*0.1*	*0.3*	*0.4*
Unemployment effects	*0.0*	*0.1*	*0.1*	*0.2*
Income tax and NICs receipts	-0.4	-0.8	-1.1	-1.5
Corporation tax receipts	0.1	0.1	0.2	0.2
Other receipts	0.0	0.0	0.0	-0.1
Debt interest	0.2	0.2	0.2	0.2
Total effect on net borrowing	**-0.3**	**-0.6**	**-0.9**	**-1.2**

Source: OBR Economic and Fiscal Outlook March 2020, table C (pp.49)[24]

172. The OBR forecast that the largest effect will be on income tax and NIC receipts, which increase by up to £1.5 billion a year by 2024/25. This is of course predicated by the OBR estimating a path for the NLW, which is inherently uncertain as the Government is advised by the independent LPC (who are guided by our target in their remit) each year for the following year's rate. This is noted by the OBR in their EFO (page 47), and for the purposes of their forecasting, they assume that the NLW will rise smoothly to reach the desired level in 2024.

173. These estimates were published prior to the Covid-19 pandemic taking full effect on the UK labour market and the subsequent response by Government and the recommended rates by the LPC. The proposed NLW/NMW rates will likely have a lower total effect on net borrowing than the figures (for the NLW by 2024) in Table 12. However, the following mechanisms should hold:

- An increase in income tax receipts and NICs
- Small decrease in corporation tax receipts (due to a squeeze on profit margins); and higher VAT/excise duty (due to higher consumer spending)

[24] http://budgetresponsibility.org.uk/docs/dlm_uploads/July-2015-EFO-234224.pdf

- A broadly net zero effect on welfare spending – reduced means-tested benefits are likely to offset any potential increase in Universal Credit claims

174. The OBR note significant modelling uncertainties regarding these estimates. In particular, a series of challenging assumptions were made over how workers and wages react to minimum wages, including judgements over the extent to which firms absorb the costs through changing employment, or prices and profits. As discussed in paragraphs 151-154, we consider the OBR to overestimate their minimum wage employment elasticity.

175. We have not estimated the net fiscal impacts in more detail than this because of the uncertainty associated with estimating the potential impacts listed above and stated in the OBR's report – some of which will be third or fourth round effects of the direct impact of the proposed increases in the NMW/NLW.

176. However, while our estimates of non-wage labour costs used in this IA (on both direct and indirect wage impacts) include a range of costs, they are largely made up of employer NICs, which will go to the exchequer in the first instance. Indirectly these exchequer benefits are also for employees - a proportion of NIC receipts are paid into the National Insurance Fund and go towards the state pension.

177. Moreover, we have estimated the wage costs on public sector employers. A fuller depiction of this is provided in Annex E, but in summary 6% of the total cost in this IA is estimated to be borne by public sector employers; in present value terms, this is equivalent to £15.1m over the appraisal period in our central case scenario, however only £10.7m is a direct cost as a result of the proposed NMW/NLW rates. The remaining £4.4m is an indirect cost and will depend on behavioural responses of public sector employers. Increases to the NLW and NMW rates are expected to be met from within departments' existing budgets.

Policy Interactions

178. In addition to the channels alluded to above, the Covid-19 pandemic and Government's response to it, have raised two new channels through which the NLW/NMW will have an impact – the Kickstart Scheme, and the Coronavirus Job Retention Scheme (CJRS).

179. The Kickstart Scheme provides funding to employers to create new job placements for 16- to 24-year-olds on Universal Credit who are at risk of long-term unemployment. Expected to create more than 250,000 placements, employers of all sizes can apply for funding which covers:

- 100% of the relevant NLW/NMW rate for 25 hours per week for a total of six months
- Associated employer National Insurance contributions
- Employer minimum automatic enrolment contributions

180. It may be argued that, as the Government will be subsidising the pay of these potentially minimum wage jobs, that this cost should be subtracted from the private sector cost estimated in this Impact Assessment. However, we make the assumption that the job placements funded under the Kickstart Scheme are 100% additional, as in line with the policy aim for the scheme (to create new placements for those currently unemployed). Consequently, we do not adjust our costing for any interaction with the scheme. This is a conservative approach, as any adjustment we would make would reduce the direct cost to business.

181. With regards to the CJRS, employers could furlough workers, receiving a grant from Government to cover 80% of their usual monthly wage costs for *unworked hours.* As articulated in the data quality section of this IA, the scheme was such that some workers will have received 80% of their pay, which was based upon their pay received pre-April 2020 (i.e., before the 2020 NLW/NMW upratings took effect). This would mean some workers will have legitimately received furlough pay in relation to the 2019 NLW/NMW, as reflected in the ASHE 2020 wage distribution.

182. Therefore, it is feasible that some workers, furloughed at a rate of pay equivalent to the 2019 NLW/NMW rate (albeit for hours not worked), may be brought back to work for their employer in April 2021. At that point, these workers will be due the proposed 2021 NLW/NMW rates for hours worked (i.e., potentially seeing their pay jump from £8.21 * 80% to £8.91). For the purpose of our calculations, these workers are treated in the same manner as other workers earning below the current NLW/NMW – namely they receive the relevant NLW/NMW increase, as set out in the Non-Compliance section of this Impact Assessment.

183. Additionally, at the November 2020 Spending Review, the Chancellor announced that public sector workers on low pay (those who earn less than median earnings of £24,000) will receive a pay increase of at least £250 (at least over 1%), or the NLW if eligible – depending on which increase is higher. While this policy measure will not directly impact our private sector business costs, it may affect the total coverage estimates that are quoted throughout this Impact Assessment.

Enforcement

184. Her Majesty's Revenue and Customs (HMRC) enforce the NLW/NMW on behalf of the Government. HMRC responds to 100% of worker complaints and also conducts proactive, targeted enforcement of at-risk employers. HMRC also carry out awareness-raising activity to prevent non-compliance in the first place and therefore reduce the need for enforcement action. If HMRC investigate an employer that is breaking the NMW law and issues a Notice of Underpayment (NoU) containing details of the underpayments, the period to which they relate, and the workers affected. Once issued with an NoU, the employer will have to pay back the arrears owed to workers, face a financial penalty, and can be publicly named and shamed under the NMW Naming scheme, unless it successfully appeals against the NoU. Generally, a broad base of analysis suggests that non-compliance is mostly through mistake, not malice.

185. 2,043,000 jobs were paid below the NMW or NLW in 2020, a massive increase from 2019, according to the latest ASHE survey .However, no conclusions should be made about this rise as the figure was naturally higher due to furloughed employees. 2,043,000 jobs were paid below the NMW or NLW in 2020, a massive increase from 2019, according to the latest ASHE survey .However, as explained previously, no conclusions should be made about this rise as the figure was naturally higher due to furloughed employees. Whilst the 2 million estimate is factually correct, the majority of these jobs are likely not to be breaching Minimum Wage legislation. BEIS analysis estimates minimum wage non-compliance to be between 350,000 (excluding furloughed workers) to 750,000 (including furloughed workers).

186. In any instance, these figures do not measure non-compliance very well, as there can be legitimate reasons why a job may be paid below the minimum wage (e.g., when accommodation is provided by the employer). HMRC enforce the NMW and NLW on behalf of BEIS. We have increased resources to enforce the minimum wage – almost doubling the budget from 2015/16 to 2019/20. There were record enforcement results in 2019/20: nearly £21m of arrears

identified, benefitting over 260,000 workers as well as a record £18m in penalties issued in 2019/20.

The impact of NLW/NMW on international trade

187. The RPC have proposed that we undertake an assessment of the impact of the NLW/NMW uprating on international trade, with specific reference to the competitiveness of UK businesses ahead of trade negotiations with the EU.

188. The LPC have found that one of the most common responses to the NLW since 2016 has been raising prices. While it appears intuitive that price increases could have a negative effect on the UK's international competitiveness, to understand the impact of minimum wages on international trade it is instructive to look at economic theory.

189. The best-known model of the impact of minimum wages on international trade comes from Brecher (1974) and expanded by Schweinberger (1978) and Neary (1985). In this model the introduction or raising of a minimum wage floor has the effect of unevenly increasing costs, with more labour-intensive industries feeling more pressure than skills and capital-intensive industries. The long-term effect is to encourage specialisation in the production of skilled labour and capital-intensive exports at the expense of low-skilled labour-intensive exports.

190. Government research has shown that the UK's highly skilled labour force and sophisticated technology are major sources of the UK's competitive advantage[25]. Economic theory may then suggest that a minimum wage for a country such as the UK could further the specialisation in skills and capital-intensive exports without undermining overall export competitiveness. However, noting the limited empirical evidence and that macro effects such as trading terms, exchange rate, UK productivity are likely to have more substantive impacts on international trade, we believe it is proportionate to assess that the NLW/NMW will have a negligible impact on international trade.

[25] Department for Business, Innovation and Skills- October 2012- "Benchmarking UK competitiveness in the global economy", BIS Economics Paper No.19

Small and Micro Business Assessment

Impact on small and micro businesses

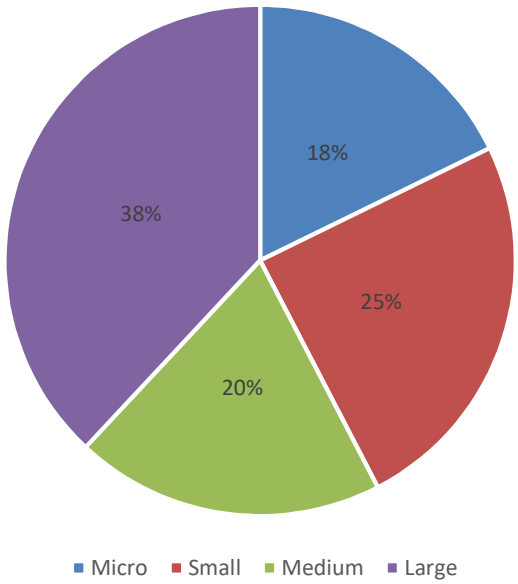
191. Table 15 contains our estimates of projected coverage of workers on the NMW/NLW at the start of our appraisal period (April 2021) and our central estimate of the total costs corresponding to each business size, over the course of the appraisal period.

Table 16: Coverage of NMW/NLW workers by business size, Q2 2021

Business size	Micro		Small		Medium		Large	
Rate	Coverage	Total Cost (£m)	Coverage	Total Cost (£m)	Coverage	Total Cost (£m)	Coverage	Total Cost (£m)
NLW (23+)	433,621	£60.42	476,669	£83.49	361,986	£69.00	715,907	£134.19
Main (21 - 22)	24,281	£2.69	36,966	£4.83	19,565	£2.38	37,405	£5.27
Others	30,645	£3.86	49,968	£4.49	29,137	£2.45	40,696	£3.92
Total	**488,546**	**£66.97**	**563,603**	**£92.80**	**410,688**	**£73.83**	**794,008**	**£143.38**

Source: BEIS calculations using ASHE 2020. Note: Coverage and cost estimates by business size may not match total costs and coverage exactly due to rounding and sampling error when data is disaggregated

Figure 4: Total Cost by business size pie chart



192. As the pie chart above shows, we expect 43% of the costs of this policy to be borne by small and micro businesses. According to ASHE 2020, 47% of workers are employed in small and micro businesses. Therefore, relative to the UK average proportion of small and micro businesses, the burden is expected to fall more on small and micro businesses compared to larger firms, although we do not expect them to be significantly disproportionately affected by the changes to this legislation. Paragraphs 193-195 188-190 explain why it is not feasible to exempt these businesses.

193. The FSB found that half of micro businesses and all small and medium-sized businesses had been affected by what it classed as 'social policy-related costs', which include the NMW/NLW as well as National Insurance and pension auto-enrolment. However, it is notable that over the period studied, costs increased less overall in key low-paying sectors. Wholesale and retail saw a 10 per cent increase (all since 2015) while transportation and storage, and

accommodation and food services saw little increase. This suggests that there have been some offsetting tax and regulatory savings for these sectors.

The possibility of exempting small and micro businesses

194. There are both equity and economic reasons why small and micro businesses are not exempt from the NMW/NLW. Firstly, an exemption would undermine the objectives of the policy because a significant proportion of NMW/NLW workers work in small and micro businesses and so an exemption would significantly undermine the ability of the minimum wage to address the possibility of employers exploiting the vulnerability of certain workers to pay them unacceptably low wages and undercut their competitors. Moreover, the cost imposed on small and micro businesses is equal to the benefits that the workers receive. Consequently, exempting small and micro firms would mean a significant proportion of the expected benefits from this proposal would not be realised.

195. There are also economic reasons against an exemption. Exempting small and micro businesses would enable them to avoid the increase in labour costs associated with raising the wages of the lowest paid. This would create economic inefficiencies through several effects. Firstly, it would create a distortion in the market by distorting cost-competitiveness at the expense of medium and large businesses which would undermine competition. Secondly, it would create a disincentive for businesses to grow – if they were to expand sufficiently to be classified as a medium sized business, they would be obliged to raise wages for all their employees to meet the NLW/NMW rates, thereby introducing a significant cost of expansion at the threshold between small and medium sized businesses.

196. The annual NMW/NLW increases are fully embedded in the UK labour market with rate changes being made for over 20 years. The majority of employers are aware of the increasing minimum wage, in particular the NLW, with good knowledge among businesses that the rates had changed in April (the Government communication campaigns suggest that as high as 92% of employers were aware of the NLW). Given the success of previous communications campaigns, there will be employer targeted communications activity and guidance to ensure small and micro businesses are aware of the NMW/NLW changes. Moreover, rates are pre-announced before the legislation has gone through Parliament to maximise adjustment time for businesses. This combined with the communications campaigns will seek to mitigate the burden placed on small and micro businesses. Government have also put in additional measures such as reducing business rates with reforms announced since 2016 which help to further mitigate these costs to small and micro businesses. Additionally, small and micro businesses will benefit from being exempt from the Apprentice Levy as only firms with a pay bill over £3 million each year need to pay it, which amounts to under 2% of all businesses in the UK.

Specific Impact Tests

Equalities impact and Family Test

197. Section 149 of the Equality Act 2010 requires BEIS to have due regard to promoting equality of opportunity, eliminating discrimination, and fostering good relations between groups. The impact of the NLW and NMW increases on equalities considerations is considered in full in Annex G. In summary, the evidence suggests that there will be disproportionate positive wage impacts on protected groups as a result of the proposed increase in NMW/NLW, and we have found no evidence of the potential for any negative impacts. There is emerging evidence that

the employment outcomes of part-time women were affected by the introduction of the NLW; however, findings in other studies suggest this finding is not fully conclusive. We will monitor this in future years.

Sector impact

198. Low-pay sectors will be impacted disproportionately by the NMW/NLW rate increases. Annex F provides a detailed estimate of the coverage of the NLW and NMW rates for a range of low-pay sectors, as defined by the LPC such as social care, retail, and hospitality. A sector breakdown for some individual rates is not provided because of sample size issues.

Implementation

199. The changes to the NMW and NLW regulations will be made through secondary legislation and will come into force on 1st April 2021.

Monitoring and evaluation

200. The remit for the LPC will continue to include the requirement to monitor, evaluate and review the levels of the different minimum wage rates. Historically, the LPC's report has included extensive discussion of the impacts of the NMW rates on a range of considerations, and this year's report builds upon the evidence base on the impact of the introduction of the NLW. In making future recommendations for NMW rate increases, the LPC will carry out extensive monitoring and evaluation of the current rates.

201. The Government has pledged for the NLW to reach two-thirds of median earnings within the next five years, provided economic conditions allow. There is an additional target for the NLW age eligibility to be lowered to 21 by 2024. Further details on this (and the consequent monitoring and evaluation steps for the LPC) will be provided in the LPC's remit for 2021/2022.

Extending the requirement for record-keeping

Policy Context

202. Employers are legally required to keep sufficient records to show that they are meeting their National Minimum Wage obligations and paying their workers at least the NMW/NLW.

203. Records for NMW do not have to be kept in any particular format – for example, they can be kept on paper or on computer. However, the records are required to be kept in a form which enables the information kept about a worker in respect of a pay reference period to be produced in a single document. The record must be retained by the employer for a minimum of 3 years.

204. However, under the National Minimum Wage Act 1998, the period of liability that HMRC can enforce for is 6 years. This difference between the potential period of liability and the legal minimum period for which records can be kept has generated an inconsistency that has led to isolated instances of employers not providing 6 years' worth of records in HMRC NMW enforcement investigations, either willingly or otherwise.

205. Consequently, this inconsistency culminated in a recommendation in the 2019/20 Director of Labour Market Enforcement (DLME) Strategy report, that the time period for which employer record must be kept, should be extended to align with the period of liability under the National Minimum Wage Act 1998 (i.e., 6 years).

Proposed Legislation and Objectives

206. The Government accepted this part of their recommendation. The Government recognises that the current legislation is out of step with the period of liability for NMW, potentially leaving firms vulnerable to being unable to prove their compliance for longer than the three years minimum

207. While current legislation requires the employer to keep and retain records, it does not stipulate exactly what type of records must be kept. As long as the records can show that workers have been paid at least the NMW for the time that they have worked, the employer can choose to keep their records in any way they so wish. The proposed legislation does not look to amend this.

208. By amending NMW legislation on the length of time records are kept for, we aim to provide clarity to employers; remove an inconsistency that will aid HMRC investigations (and their ability to access records for the full period of potential liability); and ultimately enable underpaid workers to receive the money they are legally owed, as soon as possible.

Options Identification and Consultation

209. When considering different options to address the policy issue, a "Do Nothing" option was considered. This would mean that existing legislation (and the supporting guidance) prevails, and employers will continue to be required to maintain records for a minimum of 3 years. In assessing this, we noted stakeholder feedback (such as that leading to the DLME's recommendation) that the inconsistency mentioned previously will remain. Not resolving this may hinder HMRC's NMW enforcement activity, thus would not meet our policy objectives.

210. Alongside the consultation process undertaken by the DLME in coming to their recommendation, we have undertaken further engagement with HMRC as the relevant enforcement body, and with employer representatives. This identified a lack of quantitative data on the number of businesses who do not information for six years. However, qualitative intel

from HMRC did indicate that the vast majority of employers held the data for at least six years. Intelligence from Business Leads in HMRC NMW Enforcement did suggest that some employers were proactively using the current legislative requirements to not provide records beyond three years (as the legal minimum requirement). While this would not ultimately stop HMRC's enforcement investigation, it would require HMRC to enforce through an "obstruction" route, potentially delaying their investigation.

211. While this policy proposal places no direct obligation on workers themselves, as set out above, the aim of this policy is to further assist efforts for workers to receive the pay they are legally owed. As such, worker representatives we have spoken to in late 2020 have further welcomed this change.

Appraisal of costs and benefits

212. We assume our counterfactual to be that employers are compliant with existing legislation, that is they keep records for a minimum of three years. As referenced in the Non-Compliance section of this IA, we are unable to robustly estimate the number of non-compliant employers, therefore we revert to the Better Regulation Guidance and assume full compliance. Engagement with HMRC indicated that the instances of employers holding records for less than 6 years currently was minimal, therefore we believe our full compliance assumption is appropriate.

213. As a consequence of this counterfactual, we anticipate only very specific and minor costs to be incurred as a consequence of this legislative change, to require records to be kept for a minimum of 6 years instead of 3:

- Familiarisation costs – related to understanding the proposed change. **Monetised**
- Implementation costs – the additional cost of data storage such that records can be maintained for an additional 3 years. **Non-monetised/negligible**

214. We are unable to quantify the benefits that arise from this policy change. However, as alluded to previously, we anticipate that the proposed policy will assist HMRC's ability to obtain records for the full period of potential minimum wage liability. This will consequently benefit low-paid workers who have been underpaid the NLW/NMW. Furthermore, by addressing this inconsistency, we hope to provide greater clarity to employers. Businesses who currently hold records for at least 6 years will also benefit from a level-playing field.

Familiarisation Costs

215. As with the change in the minimum wage rates, we anticipate that businesses will require to spend time familiarising themselves with the change in legislation and understanding what this will mean for their business. Noting that the policy change is solely on the length of time records are being kept for and no changes are being suggested on what records are kept, we anticipate this policy change to be fairly intuitive to understand.

216. Findings in the 2008 Employment Law Administrative Burdens Survey identified that the time spent by employers on familiarising themselves with the NMW record-keeping policy was 4.6 minutes. This included the broader aspects of what records to keep i.e., greater detail than the point regarding keeping records for a minimum of 3 years.

217. We round this estimate up to 5 minutes. A counterpoint is presented in the Admin Burdens Survey, from a PwC 2005 survey, which found that the familiarisation time with NMW record-keeping policy at the time took 15 minutes. However, further investigation of this figure found that this estimate was heavily influenced by surveyed employers using external services rather than payroll software – with the time of these external services then captured within their

familiarisation estimate. The 2008 Survey adjusts for the change in practice (of greater software use) and therefore is likely to be more reflective of today's practices.

218. We also note that the findings of the 2008 survey are perhaps dated. Through conversations with payroll experts, we were able to corroborate the sentiment that the proposed policy change here is sufficiently straightforward and would not take much time.

219. We consequently utilise the same number of businesses who will familiarise with the increases in the NLW/NMW (1.1m for our low estimate; 1.3m in our central/high estimate), and the estimated wage for a HR Manager/Director (£24.82) who would undertake this familiarisation exercise, to estimate the total familiarisation cost. This would be a one-off cost.

Low: £2.6 million. Central/High: £3.0 million

Implementation Costs

220. As mentioned previously, the proposed change will not increase the requirement on what data employers should be collecting to prove NMW compliance. Therefore, employers will not be required to spend additional time collating records, as these records will already need to be collated under current NMW legislation. The proposed change will affect data storage.

221. Through engagement with HMRC, we understand that it is only a small minority of employers (that HMRC have investigated for NMW-compliance) who do not maintain records for 3 years. We have been unable to quantify the number of employers who do not hold records for six years, however, as indicated through our engagement with HMRC, the issue concerning employer records is more likely to arise with regards to employers not providing HMRC the records, rather than not having the records for those additional three years. Furthermore, pay records taking up megabytes (MB) of data, rather than anything larger. As such, we believe that any **implementation costs from this policy are negligible**.

222. We have however undertaken illustrative sensitivity analysis to identify the maximum potential costs. Table 17 identifies the total number of businesses we have previously estimated as being impacted by the NLW/NMW (see Familiarisation Costs). We use assumptions developed for proposals relating to payslips and holiday pay reference periods (which are based on evidence from the 2008 Admin Burdens Survey) to estimate the cost associated with updating businesses pay-roll systems to store records for an additional three years. We believe that payroll methods are likely to vary by employer size – micro businesses predominantly utilise free payroll software, small and medium businesses are predominantly likely to use off-the-shelf software, while large businesses will utilise bespoke software to process payroll and store their pay records. The low costs reflect the relatively small quantity of data stored.

Table 17: Maximum potential costs – if all employers do not keep records for 6 years currently

Business Size	Total # Businesses	One-off payroll software cost	Total Cost (one-off)
Micro	861,000	£0	£0 million
Small	231,000	£7.38	£1.7 million
Medium	18,000	£7.38	£0.1 million
Large	4,000	£29.18	£0.1 million
Total	1,114,000		£2.0 million

As mentioned previously, the intelligence we have gathered from both HMRC, employer representatives and the payroll industry indicates that a negligible number of employers hold pay records for less than 6 years. Therefore, we continue to assume negligible implementation costs.

223. Consequently, we estimate that the total, one-off, cost from this policy is equivalent to the familiarisation cost – namely:

Low: £2.6 million. Central/High: £3.0 million

Wider Impacts and Transfers

224. It is feasible that this change in legislation may result in employers amending how they keep records due to concerns that their current record-keeping is "insufficient". Costs associated with this practice have not been accounted for here, in line with the Better Regulation Framework, as insufficient record-keeping is currently non-compliant with minimum wage legislation – i.e., such practice is currently illegal. Therefore, we do not monetise costs associated with employers changing practices to comply with existing legislation.

225. Indirect transfers may result from this policy, as HMRC may identify pay arrears owed to the worker (which would transfer from businesses). However, we believe that these arrears would have materialised in the counterfactual, with the difference post- policy change being that workers would receive these arrears in a timelier manner. This is due to HMRC not having to pursue more stringent and time-consuming routes to access records.

Impacts on Small Business

226. As set out in the SAMBA for the NLW/NMW rates increases, the majority of UK's workforce are employed by small and micro businesses. However, the costs associated with the change in record-keeping requirements are not anticipated to accrue disproportionately on these businesses. The time spent on familiarisation is assumed to be the same across all businesses.

227. Previous evidence from the Low Pay Commission has highlighted that low paid workers are more likely to be underpaid by micro and small businesses, compared to larger businesses. Conversely, anecdotal insights from HMRC suggest that where enforcement officers have not immediately been able to obtain records for a period over three years ago, this has been more likely to have been from large businesses – suggesting that low-paid workers in large businesses will benefit. However, we acknowledge that this later assertion is based off enforcement officers' intel and is unquantified.

228. As illustrated in our maximum potential costs (Table X), the payroll software costs associated with storing additional data are likely to be greater for larger businesses compared to micro/small employers. This leads us to further believe that the proposed policy will not disproportionately impact small and micro businesses.

Equality analysis

229. Annex G sets out in greater detail the characteristics of minimum wage workers. While we anticipate this proposed policy to benefit all workers, evidence suggests that women, ethnic minorities and those with disabilities are disproportionately likely to be on the minimum wage. Therefore, we would anticipate this policy to aid those groups of workers further.

Annex A: Theoretical Rationale for Intervention

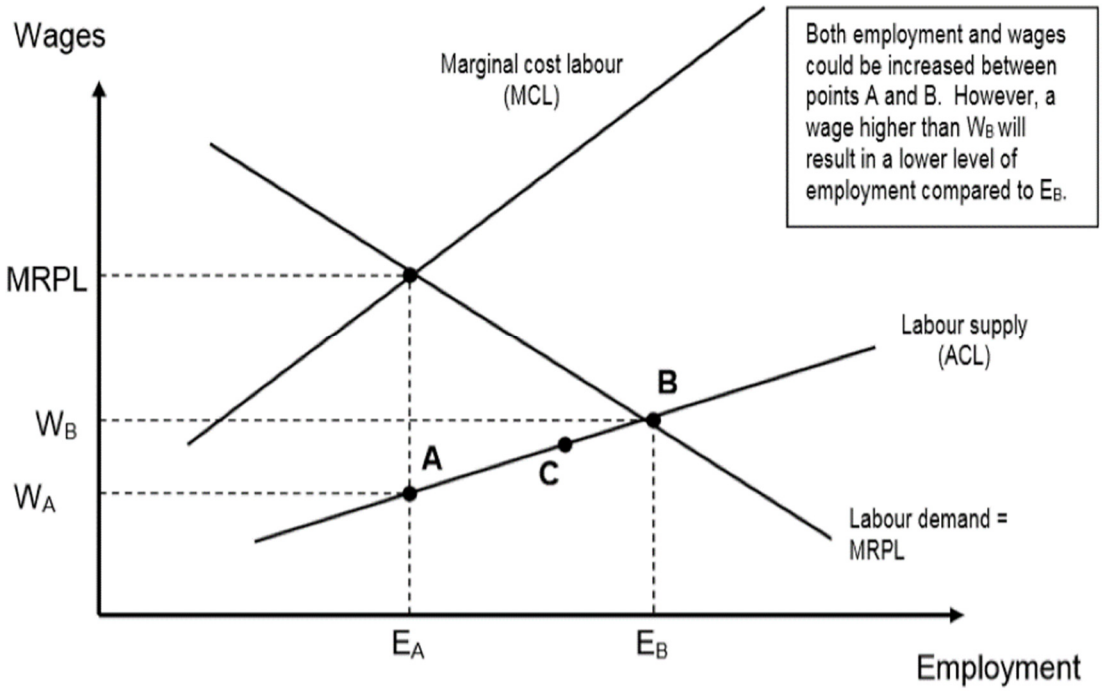
230. This section describes what market failure the minimum wage addresses and how the rationale of this policy can be illustrated by economic theory. In the standard model of a 'perfectly competitive' market wages and employment are determined by the interaction of supply and demand. This model predicts that competition between employers for employees should drive wages up to be equal with the 'marginal revenue product of labour', so that labour is paid in perfect proportion to its contribution to production. Any deviation from this wage would lead to an extension or contraction of market demand which would lead back to the market equilibrium. According to this model, government-interventions to increase the minimum wage would push the cost of labour above what it is worth to employers, leading to a contraction of demand and the creation of unemployment.

231. However, if the market is not 'perfectly competitive' and we assume the existence of firms with market power, then wages are not determined solely by the forces of supply and demand. In such a scenario there is no guarantee that wages will be equal to the value of labour's contribution to production, meaning that some workers may be paid an exploitatively low wage.

232. This is illustrated in Figure 5 which details the case of a labour market monopsony, where a one single employer and many actors wishing to sell their labour. The monopolist will try to entice additional employees by paying higher wages, but it must pay this new higher wage to all its current employees as well. Consequently, the marginal cost of labour is greater than the average cost, as captured by the gap between the MCL curve and the ACL curve.

233. The employer will maximise profits when the marginal cost of labour equals the marginal revenue product. This is illustrated by point A in the diagram below: This equilibrium has lower wages and lower employment than the perfectly competitive equilibrium at point B. A statutory wage floor of between W_A and W_B can address this market power and bring the market equilibrium closer to the efficient, perfectly competitive outcome – such as point C. A minimum wage of W_B is the point where the highest amount of labour can be employed with the highest wages. Any wage higher than this would reduce the amount of labour and any lower amount would mean a lower wage. Theoretically, attempting to set a minimum wage more than W_B should result in unemployment. However, as detailed in Annex C, the empirical evidence suggests that there is no evidence that the NMW/NLW rates are close to this theoretical limit.

Figure 5: A labour market characterised by market power for low paid workers



234. In practice, evidence suggested to the LPC and that found by NIESR previously indicated that it is unlikely that this stylised pure market structure is representative of competition in low paying sectors today. However, even in the absence of pure examples of monopsony econometric studies such as Abel et al (2018)[26] have established that higher measures of market concentration in certain industries are correlated with lower pay for workers in that industry. Even in relatively competitive industries, an overabundance of workers lacking bargaining power, or the existence of search frictions[27] which prevent employees from moving to higher paying jobs can enhance the market power of employers and thereby depress wages. Asymmetries in bargaining power between employers and employees result in socially sub-optimal outcomes, a trend seen in the US. This concept of monopsony power is the rationale for the NMW/NLW; to correct the market failure and ensure that weak bargaining power does not lead to exploitatively low wages.

[26] Abel, W., Tenreyo, S., Thwaites, G. 2018- *Monopsony in the UK*: *A Review.* CFM Discussion Paper Series- Centre for Macroeconomics, London, UK

[27] Manning, A. 2003. 'Monopsony in Motion'

Annex B: Previous cost estimates from minimum wage upratings

235. This Impact Assessment once more appraises the impact of uprating the National Minimum Wage rates and amending the NMW Act 1998 (via secondary legislation). As set out in paragraphs 3 and 4 of this document, this IA considers the impact of moving away from the current legally binding minimum wage rate.

236. In 2015, the Government announced an ambition for the top minimum wage rate to reach 60% of median earnings by 2020 subject to economic conditions, through the introduction of the National Living Wage in 2016. With this ambition set to the Low Pay Commission in their annual remit, the LPC consequently advised Government on whether economic conditions were being met and what the subsequent year's minimum wage rates should be.

237. Last year's set of recommendations from the LPC, and Government's acceptance of them, resulted in an NLW that was indeed 60% of median earnings. The 2020 impact assessment and the LPC's 2019 report summarise the evidence of impacts from the introduction (and upratings) of the NLW. To build upon this, the table below summarises the costs to business that each of our Impact Assessments have estimated over the course of the past five years, in the form of the EANDCB.

238. Alongside this, we present the appraisal period of each annual cost figure and the methodology used in those respective IAs. Following the feedback, we have received both from the RPC and the wider academic community, we have continuously refined the methodology used to estimate business impacts. This does mean that the EANDCBs listed below may not be comparable year-on-year.

239. It should also be noted that the uprating in the NLW/NMW was previously exempt from the Business Impact Target prior to 2019. Subsequently BIT scores have not been provided below. The BIT score for the 2020 uprating was £616.7m. However, with Covid-19 having affected both the number of jobs in the economy *and* the pay of workers (disproportionately for low-paid workers) through the CJRS, it is anticipated that the 2020 estimate is an overestimate.

Table 18: Previous cost estimates from minimum wage upratings and the methodology used (2016-2020)

Year	EANDCB	Appraisal Period	Methodology
2016	£820.97mn	1 year	Single year appraisal period is used intentionally. The counterfactual wage growth is in line with OBR average earnings projections. Spillovers taper down by the 25th percentile, in line with the OBR methodology.
2017	£131.6mn	2 years	Counterfactual wage growth is taken as a midpoint of the inflation rate and average earnings. Spillovers taper down by the 25th percentile, in line with the OBR methodology.
2018	£76.6mn	3 years	After taking on board NIESR's research, the counterfactual wage growth is obtained by taking historic wage growth at the first point in the wage distribution which is not affected by the minimum wage. With the help of

			independent forecasts, we judge where the UK lies on the business cycle to inform over what period we should consider when taking that historic wage growth. The wage growth is the same across all groups. We use NIESR's estimate of spillovers to stop by the 20th percentile.
2019	£151.8mn	2 years	The counterfactual wage growth is obtained by taking historic wage growth at the first point in the wage distribution which is not affected by the minimum wage. With the help of independent forecasts, we judge where the UK lies on the business cycle to inform over what period we should consider when taking that historic wage growth. The wage growth is the same across all groups. We estimate spillovers to end by the 20th percentile, which is consistent with the LPC.
2020	£205.6mn	3 years	The counterfactual wage growth is obtained by taking historic wage growth at the first point in the wage distribution which is not affected by the minimum wage. With the help of independent forecasts, we judge where the UK lies on the business cycle to inform over what period we should consider when taking that historic wage growth. The wage growth is the same across all groups. We use the LPC's estimate for spillovers to end by the 30th percentile.

Note that in 2017, BEIS commissioned NIESR to research the most appropriate counterfactual for us to employ in this and future impact assessments. ***The methodology therefore changed significantly in the 2018 IA and has remained consistent since.***

Annex C: Recent Literature

240. Last year Professor Arindrajit Dube published a government commissioned report into the international evidence base on the impact of minimum wage regulation on employment and wages. The report reviewed more than 50 empirical studies on the impacts of minimum wage and found that there is little evidence that minimum wage increases reduce overall employment by a significant extent. This annex summarises some of the recent studies commissioned by the LPC since the Dube review, as well as studies produced by academia.

241. While some conclusions vary from study to study, the vast majority find negligible impacts on employment or hours worked. However, concerns about pay differentials were uncovered, suggesting that the feasibility of spillover effects increasing seem unlikely:

Butcher, Dickens & Manning (2012)

242. This study used the Annual Survey of Hours and Earnings (ASHE) and its predecessor dataset, to explore the impact of the introduction of the NMW in 1999. The study found evidence for spillover effects onto higher wage groups at the 25th percentile of the wage distribution. This finding is considered within NIESR's work on the counterfactual that informs this approach.

Georgiadis & Manning (2020)

243. This study uses the UK's Monthly Wages and Salaries Survey high-frequency monthly data to investigate the impact of national minimum wage changes on wages and employment.

244. One finding of the study is that a rise in the NMW leads to a rise in average earnings. It was also determined that past the 25th percentile of earners the spill-over effect of a rise in the NMW is not significantly different from zero. The impact of the NMW on employment was also found to be indistinguishable from zero.

Butcher & Dickens (2020)

245. This study took a difference-in-difference approach to estimate the effect of the minimum wage on employment. It did so by comparing outcomes across different sections of the UK labour market, divided up by age, gender and geography, to compare the employment outcomes of those affected by a change in minimum wages. This study relied on ASHE for hourly earnings and LFS data to define employment outcomes of the groups.

246. The study found that increases in the NLW had a significantly positive impact on median earnings. The study found no significant negative impacts on employment or on hours worked from NLW increases, nor were any significant impacts found with respect to self-employment or zero-hour contracts. The study did find that NLW increases boosted labour market participation by reducing economic inactivity, but without increasing unemployment.

Wilson & Bailey (2020)

247. Frontier Economics researchers Wilson and Bailey used a difference-in-difference approach drawing on a combination of data from ASHE and the Business Structure Database. Firms are either assigned to 'treatment' and 'control' groups depending on the extent to which they were exposed to the minimum wage, and according to the proportion of labour costs as part of total costs. Firms that pay below the incoming minimum wage are assigned to the treatment group, allowing researchers to compare the effect of minimum wage increases against the control group of firms.

248. The study found that firms in the treatment group experienced 2-3% lower employment growth, after controlling for firm and worker characteristics using regression analysis. The effects are concentrated in the retail and food-service sectors and in smaller workplaces. With regards to the impact of NLW increases on prices the authors found that inflation is higher in months when the NMW is uplifted, but that this effect is relatively muted and adds just 0.1-0.6 percentage points to the normal inflation rate of 2.7% per year.

Giupponi et al. (2020)

249. This research by the Institute for Fiscal Studies investigated the impact of the NLW on employment hours and earnings. The methodology used involved comparing regions of the UK which have a higher or a lower NLW "bite" but are otherwise broadly comparable. The data used is drawn from ASHE and the Annual Population Survey data sets.

250. The results of the study suggest that there were zero net employment effects from the 2016-2019 NLW increases on average.

Income Data Research (2020)

251. Through the use of semi-structure telephone interviews with employers, Income Data Research undertook a study into future National Living Wage targets. They found that pay differentials/wage compression were already an issue before the latest NLW increase; however, the move to £8.72 in addition to Covid-19 has exacerbated this.

252. Employers reported potentially considering more substantial changes in the future, such as overhauling pay structures, technology-based efficiencies and multi-skilling staff.

253. We will monitor whether such changes materialise in the future.

Oliver Bruttel (2020)

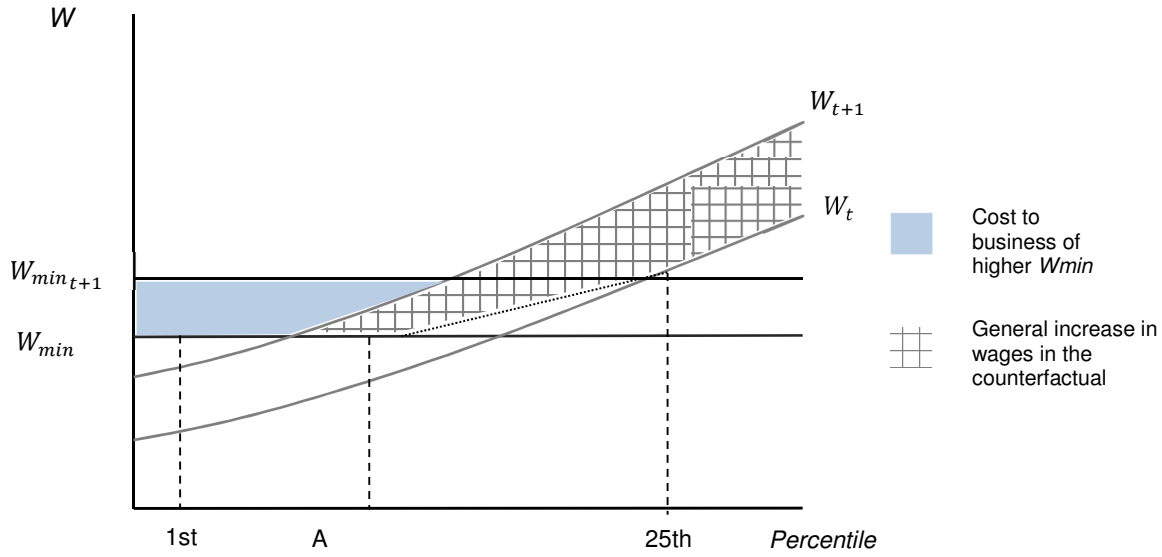
254. This study of German minimum wage regulations draws on a survey of employees and employers collected by the Federal Statistical Office and Federal Employment Agency. The study also summarises the findings of 14 studies conducted using difference-in-difference approaches.

255. The findings of the study suggest that there is no statistically significant effect of rises of the minimum wage on unemployment. The study found evidence that minimum wage increases boosted hourly wages at the bottom of the wage distribution. However, the impact on monthly earnings was partially offset by a decrease in contractual working hours.

Annex D: Shadow wage curve as an alternative counterfactual

257. The RPC have previously proposed a framework whereby a significant proportion of workers at the very bottom of the wage distribution would likely experience zero wage growth in the counterfactual in the absence of an NMW/NLW uprating. This could be due to the cumulative effects of minimum wage increases over time. This is based on figure 6 below.

Figure 6: A labour market characterised by market power for low paid workers



258. Figure 9 shows the *people* earning the current minimum wage, W_{min}. The 'shadow wage curve', W_t, shows what people would have been earning in the absence of the NMW policy and that there would be some workers earning less than the minimum wage (along W_t beneath W_{min}). The following year, the NMW increases to $W_{min\ (t+1)}$, and the whole distribution also experiences wage growth to the new theoretical shadow wage curve W_{t+1}.

259. Under this wage growth assumption (roughly uniform across the shadow distribution in the diagram above), it is suggested that some workers earning the NMW would have counterfactual wage growth of zero (e.g., those at the 1st percentile) in the absence of an uprating, before later catching up with the new rate. This is because W_{min} still lies above the shadow wage curve, W_{t+1}, at this point. However, people at point A for instance, who were previously on W_{min} will see an increase in their wages from W_{min} to W_{t+1}. This increase will be less than for the distribution to the right of point A, but more than those who remain on W_{min}.

260. **In summary, the framework postulates that if the minimum wage had never been implemented, the wage distribution in present time would extend below the current value of the minimum wage (i.e., some workers would be earning less than the minimum wage) – referred to as the 'shadow wage curve/distribution'.**

261. This cannot be observed because compliance with minimum wage legislation is high. The existence of a shadow wage curve extending below the current minimum wage level cannot be falsified because the counterfactual is unobservable. However, NIESR have previously concluded in their report that the counterfactual may not extend below the current minimum wage and that 'resetting' the counterfactual is the most suitable method to appraise the impacts of NMW/NLW upratings.

262. As noted in previous IAs, the majority of academics we have questioned, have disagreed with the premise that 'in the absence of a minimum wage uprating, wage growth at the bottom of the pay distribution would be at, or close to zero'. Furthermore, we have not seen any

empirical evidence that would suggest zero wage growth (see Box 2, page 71 of NIESR's report).

263. However, as stated throughout this IA, we acknowledge the impact that Covid-19 has had on the labour market, and the considerable uncertainty the pandemic poses on the future labour market and wages. Anecdotal evidence received through BEIS stakeholder engagement on pay settlements suggests that a minority of firms would seek to meet their statutory pay obligations in 2021 and not undertake any further pay increases i.e., meet the NLW/NMW for the relevant workers and freeze pay for the rest of their workforce – evidence we have used to partially inform our decision this year on where spillovers extend up the wage distribution. This tallies with some forecast pay awards data for 2021, whereby the most common estimate provided for the hospitality and retail sector is 0% (median of 1% for the entire private sector).

264. This pay award data a) is not specific to employers of minimum wage workers; b) is an average across the entire of firms, masking considerable variability within sectors (for example between "essential" and "non-essential" retailers; and c) differs to the forecasts for average earnings growth. Furthermore, in further discussions with the pay experts, they noted that this did not necessarily mean that pay growth would otherwise be zero if not for the NLW/NMW – firms may choose to more evenly spread their pay awards across the distribution. Nevertheless, we use this to inform the sensitivity analysis set out in this section.

Approach

265. Below we undertake calculations to suggest the order of magnitude of costs and benefits if an approach to model a shadow wage distribution was based on pre-minimum wage data.

266. However, this year, we have adjusted our methodology. Noting feedback from the Regulatory Policy Committee that a clearer explanation is needed, we have looked to simplify the illustrative exercise set out in this Annex by taking two key facets and analysing both separately, to identify the impact of the various assumptions. Namely, we separately estimate:

- The impact if minimum wage workers saw zero counterfactual wage growth in the first year of the uprating – by utilising our normal methodology set out in the main body of this IA
- The impact of base-raising effects that have arisen from the existence of the NMW (since its introduction in 1999) – by constructing a "shadow" wage distribution derived from the pre-NMW wage distribution

Zero counterfactual wage growth in year one

267. As set out earlier in this IA, we have attempted to model what would occur if counterfactual wage growth was zero (0.0%) in Year 1, resulting in workers seeing a pay freeze, before wages grow by our best estimate of wage growth for low-paid workers in absence of a minimum wage increase. This concept would lead to a total cost of £593m (compared to our central estimate of £459m). Assuming that the period of zero wage growth is longer (e.g., more than 1 year) will lead to larger costs. However, as set out in the Counterfactual section of this IA, historical evidence, the latest forecasts and economic theory all suggest that zero wage growth is unlikely to occur in absence of the NLW/NMW uprating.

Base-raising impacts of the NMW's introduction

Constructing a 'shadow wage distribution'

268. We then consider the theoretical exercise of the NMW's introduction in 1999 having had a base-raising effect on the wage distribution. Given that the minimum wage has been in force since 1999 we cannot observe the shadow wage distribution. We would expect that all points on the shadow wage distribution would see some change over time, reflecting underlying trends in wage inequality which in turn would be driven by labour market and exogenous factors (for example technological progress and underlying labour market trends). The profile of the counterfactual will be a function of the shape of the shadow wage distribution and the wage growth that would tend to happen at each point of its distribution.

269. Under this framework, for jobs on the shadow wage distribution hypothetically paid below the current minimum wage rate, the current rate is theoretically still 'binding' on these jobs. And as long as the current rate remains binding, the additional wage costs/benefits would be counted as *direct* costs/benefits under the better regulation framework. With respect to a minimum wage uprating; all else equal (specifically wage growth), jobs on the shadow wage distribution below the current minimum wage will take more time to grow sufficiently to equal the incoming rate and therefore for these jobs the costs and benefits will endure for a longer period of time.

Challenges

270. Applying this framework means overcoming several significant analytical challenges, given that the shadow wage distribution can never be observed. In order to estimate a shadow wage distribution, a base wage distribution of some form must be used. Any effects from the minimum wage will be present in any wage distribution from 1999 onwards. One option is to use pre-minimum wage data. However, there are several reasons why this may not be appropriate. These are discussed in NIESR's counterfactual research report (p. 11). In summary:

- There is significant uncertainty over whether a wage distribution from 20 years ago is an appropriate input to a model seeking to estimate impacts for 2019 onwards.
- There are significant reasons to believe that the shape and evolution of the (shadow) wage distribution would have been considerably different to trends observed pre-1999. Specifically:
    - Considerable changes to the population and labour supply (number and composition).
    - Considerable changes to labour market institutions, including trends in unionisation and individual employment rights. Many of these would have impacted on participation and wage setting.
    - Wider structural economic changes, for example significant innovations (e.g., process automation) which would affect how labour and capital are substituted.
    - Societal changes, for example consumer transparency which would increase societal pressure to increase wages (the voluntary 'Living Wage' campaign for example).
- Projecting a wage distribution from 1998 would require forecasting over a long time-horizon. NIESR explain in their report (pp. 56-57) how the uncertainty associated with forecasting is magnified as the time horizon grows – over 20 years in this instance.
- Furthermore, NIESR find that the impact of forecast errors is asymmetric – estimates of counterfactual wage growth that are too low lead to larger overestimates of the costs to business than vice versa, as the period it would take for the counterfactual to catch up to

incoming levels would be prolonged (the RPC's proposed method exacerbate the issue to a greater extent than if the counterfactual is reset each year)

Approach

271. Despite the limitations outlined above, we undertake the following steps to derive a distribution:

- We first take the April 1998 distribution of hourly earnings excluding overtime for workers aged 25+. (Due to data constraints and simplifying modelling assumptions, this group includes apprentices, who would otherwise be eligible to a lower minimum wage)
- We then project this distribution forward for the years through to 2021/22. We use the percentage increase at the 25th percentile (the percentile where we assume spillovers to go up to), in each year between 1998 and 2019.
- Noting the challenges in the 2020 wage data, to forecast beyond 2019, we have applied the counterfactual growth rate used as our best estimate in this IA of 0.481%. **It is important to note that this growth rate is lower than that which NMW/NLW workers actually experienced due to the minimum wage uprating in 2020.**

Box 4: Inputs and assumptions

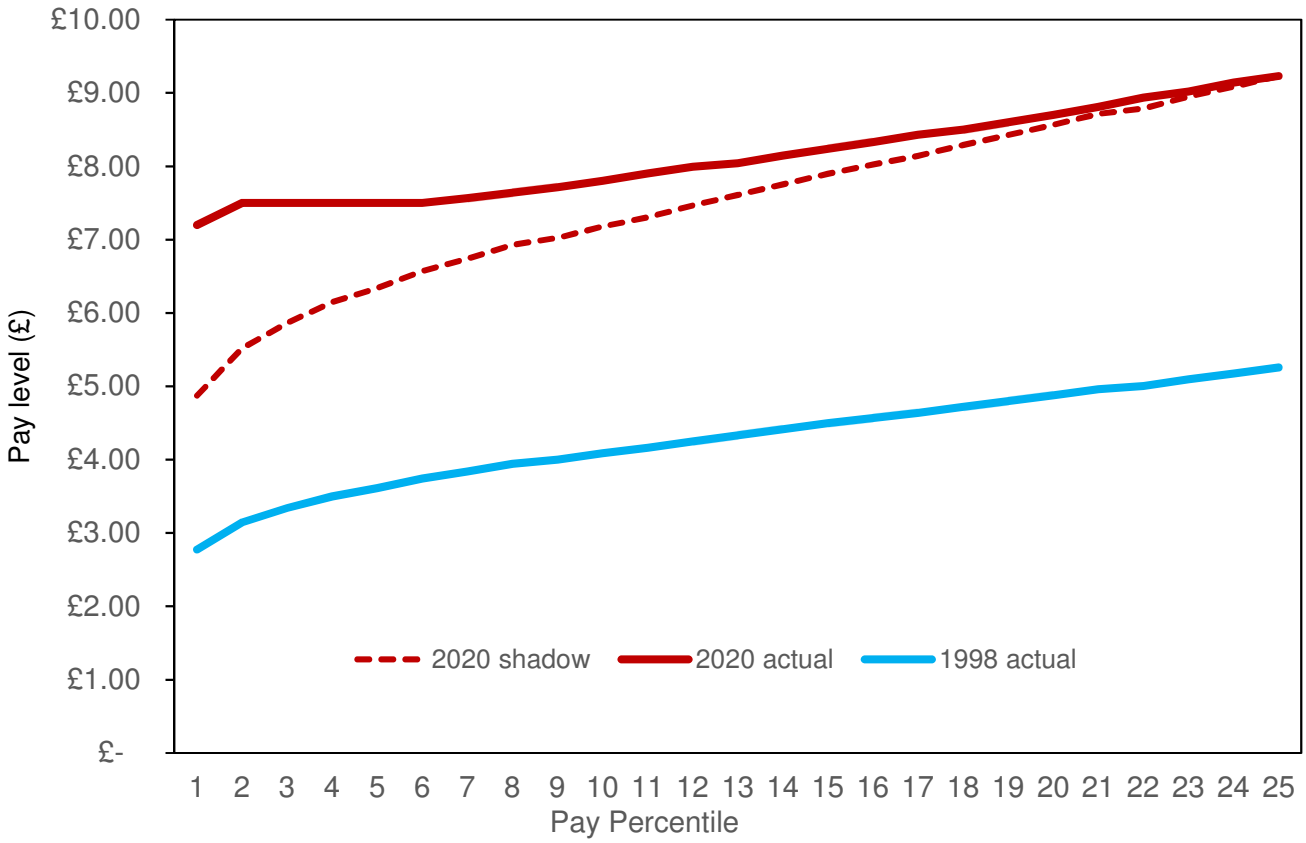
- For the approach below we have used the 1998 wage distribution from ASHE/NES. This is the most recent year of data from before the introduction of the minimum wage in 1999. It is possible that employers may have sought to pre-empt the introduction of the minimum wage by increasing wages of the lowest paid in 1998. It is not possible to adjust for this potential anticipation effect.
- Our key assumption is that percentiles 1 to 24 of the wage distribution would grow at the same rate as the 25th percentile. We choose the 25th percentile as this is akin to the point where we assume spillover effects from the 2020 minimum wage increase went up to. This again differs to last year, due to the difference in spillover assumption.
- **In theory, we should estimate the point of the distribution at which the 'ripple effect' of the minimum wage stops for each year and use growth of the percentile just above. However, we do not have estimates of this for every minimum wage uprating.**

Results

272. Figure 10 shows the outcome of the approach described above and compares the resulting shadow wage distribution with the original 1998 distribution and the actual 2020 distribution[28]. For reference, the 2020 £8.72 NLW rate cuts in around the 14th percentile of the 2020 shadow wage distribution. In the actual 2020 distribution the NLW hits at around the 6th percentile.

Figure 7: Distribution of hourly earnings (exc. Overtime), UK, workers 25+; 1998, 2020 and estimated 'shadow wage distribution'

[28] As described in the main body of this IA, we have used a midpoint of two possible distributions available in the 2020 ASHE data, for our central estimate. We once more utilise this "midpoint" distribution in this Annex' analysis



Source: BEIS analysis of Annual Survey of Hours and Earnings and New Earnings Survey. Hourly earnings excluding over time (HEXO)

273. As outlined above and in previous IAs, in order for the above distribution to be an accurate reflection of the *true* shadow wage distribution there would have had to have been no significant changes to underlying wage inequality over the previous 22 years. This is unlikely given some of the significant shifts in the labour market in the last 22 years (two considerable recessions, population changes, automation, changes to employment law, improved transparency on business practices etc.)

274. Projecting the shadow wage distribution forwards gives an indication of when, in the future, percentiles of the distribution below the current minimum wage level might 'catch-up' with that level based on our assumed growth rate under this framework.

Potential application

275. The preceding steps are broadly consistent with the approach we undertook last year. However, this year we have simplified our arithmetic calculations, to bring this more in line with depiction set out in Figure 6, as recommended by the RPC.

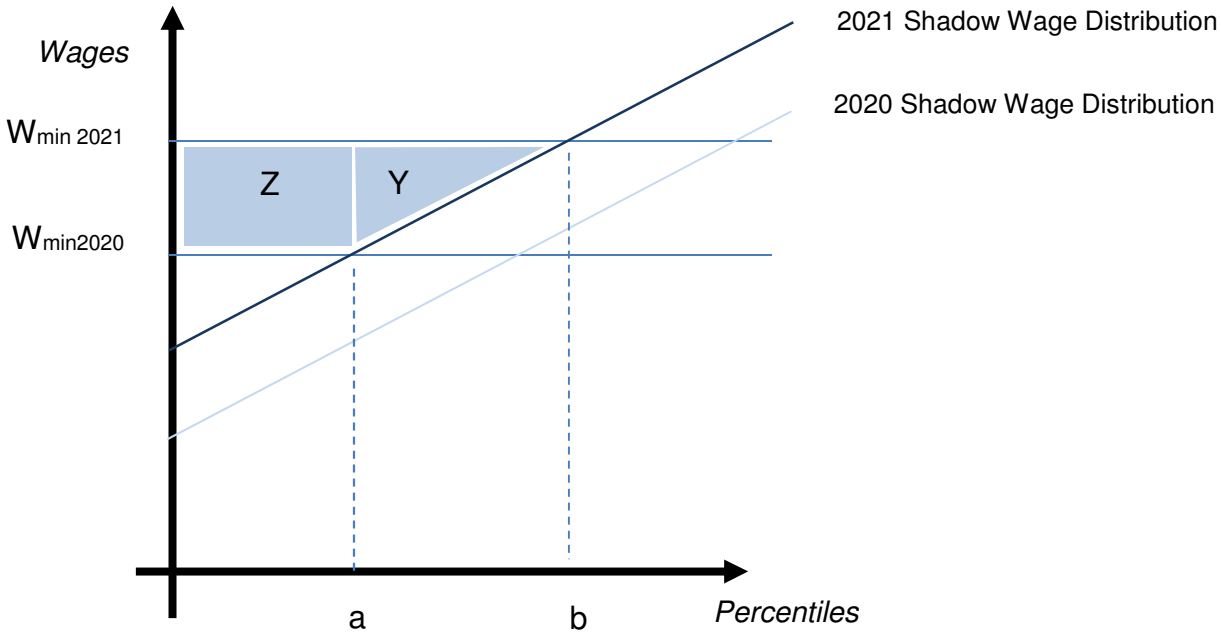
276. Last year, we took the average length of time taken for those earning below the proposed minimum wage in the shadow wage, to catch up with the proposed minimum wage. We then used this period of time as a proxy for the length of time that low-paid workers may face zero wage growth, before they then see their wages increasing to reach the new NLW/NMW. While we believe this method is consistent with the theory posited by the RPC, we acknowledge that the description and calculations underpinning this can become unwieldy. As a consequence, we have revised the way in which we calculate the potential cost, by focusing specifically on mirroring the theoretical diagram in Figure 9 (as stylized below in figure 10), consequently focusing on the base-raising impacts of the NMW's introduction.

277. We use our constructed shadow-wage distribution (i.e., a wage distribution for 2021 derived from the 1998, pre-NMW wage distribution) and estimate the cost that arises from moving from the 2020 NLW to the 2021 NLW.

278. In practice, we do the following calculations:

- Estimate point a, which corresponds to the percentile in the shadow wage distribution where the current NLW ($W_{min2020}$) reaches
- Estimate point b, which corresponds to the percentile in the shadow wage distribution where the proposed NLW ($W_{min2021}$)reaches
- For each £-value in between point a and point b, multiply the difference between $W_{min2021}$ and that £-value, by the number of people at that £-value (area Y)
- Sum area Y and area Z (the latter is equivalent to the difference between $W_{min2021}$ and $W_{min2020}$, multiplied by the number of people up to percentile *a*) to obtain a total cost

Figure 8: Stylised shadow wage distribution calculations



279. This stylised example illustrates the maximum cost that this methodology would estimate – a cost of £1.0 billion, that reflects the idea that the introduction of the NMW in 1999 will have had a base-raising impact on today's wage distribution. As suggested above in para 261, the calculation of our shadow wage distribution is inherently flawed.

280. **As such, it's important to stress that we do not believe this approach will accurately estimate the true cost to business/benefit to workers** for the reasons outlined above and explained by NIESR in their report (section 4.3) and boxes 1 and 2 in their report provide evidence why the shadow wage curve framework may not necessarily hold. Specifically, NIESR's research did not uncover positive evidence supporting this approach, and engagement with academics continues to support the approach we have taken in the main body of this IA, as both appropriate and unbiased.

281. We continue to welcome the RPC's thoughts and feedback on this Annex and the stylised analysis undertaken here, in particular on whether the clarifications set out here are beneficial. However, with the feedback received through our academic engagement over previous years providing little justification that this theoretical exercise will materialise in practice, in addition to the data challenges set out above, we will be reviewing the utility of replicating this analysis in any future iterations of the impact assessment.

Annex E: Public/Private/Voluntary sector cost breakdown

282. This annex breaks down our best, highest and low-cost scenario estimates of costs by public, private and voluntary sectors. We have done this by estimating the proportion of public, private and voluntary sector workers who are projected to be affected by each of the rates in April 2021, using ASHE 2020, and then applied these proportions to the total costs estimated previously in the impact assessment.

283. When calculating the EANDCB we combine the private and voluntary sectors. The proportion of workers who we expect to be affected in these sectors for the NLW is 94%, whilst for the 21-22, 18-20, 16-17 and Apprentices NMW rates the proportions are 96%, 97%, 100% and 86% respectively. Please note that these values are presented in constant prices, with figures rounded to two decimal places.

Public sector (£m)

High estimate	Direct		Indirect		**Total**
	Wage Costs	Non-wage Labour Costs	Wage Costs	Non-wage Labour Costs	
NLW (23+)	£11.88	£2.59	£3.12	£0.68	£18.27
Main (21-22)	£0.31	£0.07	£0.02	£0.00	£0.40
Development (18 - 20)	£0.09	£0.02	£-	£-	£0.10
Youth (16 - 17)	£-	£-	£-	£-	£-
Apprentice	£0.74	£0.16	£0.04	£0.01	£0.94
Total	£13.01	£2.83	£3.18	£0.69	£19.72

Low estimate	Direct		Indirect		Total
	Wage Costs	Non-wage Labour Costs	Wage Costs	Non-wage Labour Costs	
NLW (23+)	£7.42	£1.62	£7.23	£1.58	£17.85
Main (21-22)	£0.21	£0.05	£0.09	£0.02	£0.38
Development (18 - 20)	£0.10	£0.02	£-	£-	£0.12
Youth (16 - 17)	£-	£-	£-	£-	£-
Apprentice	£0.59	£0.13	£0.13	£0.03	£0.87
Total	£8.32	£1.81	£7.46	£1.62	£19.22

Central estimate	Direct		Indirect		Total
	Wage Costs	Non-wage Labour Costs	Wage Costs	Non-wage Labour Costs	
NLW (23+)	£7.97	£1.74	£3.54	£0.77	£14.03
Main (21-22)	£0.20	£0.04	£0.03	£0.01	£0.28
Development (18 - 20)	£0.06	£0.01	£-	£-	£0.07
Youth (16 - 17)	£-	£-	£-	£-	£-
Apprentice	£0.56	£0.12	£0.06	£0.01	£0.75
Total	£8.79	£1.91	£3.63	£0.79	£15.13

Private sector (£m)

High estimate	Direct		Indirect		Total
	Wage Costs	Non-wage Labour Costs	Wage Costs	Non-wage Labour Costs	
NLW (23+)	£321.84	£70.10	£84.60	£18.43	£494.97
Main (21-22)	£18.43	£4.01	£1.35	£0.29	£24.08
Development (18 - 20)	£9.60	£2.09	£-	£-	£11.70
Youth (16 - 17)	£0.64	£0.14	£0.27	£0.06	£1.11
Apprentice	£6.49	£1.41	£0.33	£0.07	£8.30
Total	£357.00	£77.75	£86.55	£18.85	£540.15

Low estimate	Direct		Indirect		Total
	Wage Costs	Non-wage Labour Costs	Wage Costs	Non-wage Labour Costs	
NLW (23+)	£105.80	£23.04	£103.10	£22.45	£254.39
Main (21-22)	£4.98	£1.08	£2.19	£0.48	£8.73
Development (18 - 20)	£3.35	£0.73	£-	£-	£4.08
Youth (16 - 17)	£0.29	£0.06	£0.34	£0.07	£0.78
Apprentice	£3.22	£0.70	£0.70	£0.15	£4.77
Total	£117.65	£25.62	£106.33	£23.16	£272.76

Central estimate	Direct		Indirect		Total
	Wage Costs	Non-wage Labour Costs	Wage Costs	Non-wage Labour Costs	
NLW (23+)	£216.04	£47.05	£96.01	£20.91	£380.01
Main (21-22)	£11.85	£2.58	£1.84	£0.40	£16.67
Development (18 - 20)	£6.53	£1.42	£-	£-	£7.95
Youth (16 - 17)	£0.48	£0.10	£0.32	£0.07	£0.97
Apprentice	£4.92	£1.07	£0.52	£0.11	£6.63
Total	£239.81	£52.23	£98.69	£21.49	£412.23

Voluntary sector (£m)

High estimate	Direct		Indirect		Total
	Wage Costs	Non-wage Labour Costs	Wage Costs	Non-wage Labour Costs	
NLW (23+)	£24.75	£5.39	£6.51	£1.42	£38.07
Main (21-22)	£1.10	£0.24	£0.08	£0.02	£1.44
Development (18 - 20)	£0.40	£0.09	£-	£-	£0.49
Youth (16 - 17)	£0.02	£0.00	£0.01	£0.00	£0.04
Apprentice	£0.70	£0.15	£0.04	£0.01	£0.89
Total	£26.98	£5.88	£6.63	£1.44	£40.93

Low estimate	Direct		Indirect		Total
	Wage Costs	Non-wage Labour Costs	Wage Costs	Non-wage Labour Costs	
NLW (23+)	£9.55	£2.08	£9.31	£2.03	£22.97
Main (21-22)	£0.50	£0.11	£0.22	£0.05	£0.87
Development (18 - 20)	£0.18	£0.04	£-	£-	£0.22
Youth (16 - 17)	£0.03	£0.01	£0.04	£0.01	£0.09
Apprentice	£0.28	£0.06	£0.06	£0.01	£0.41
Total	£10.53	£2.29	£9.63	£2.10	£24.55

Central estimate	Direct		Indirect		Total
	Wage Costs	Non-wage Labour Costs	Wage Costs	Non-wage Labour Costs	
NLW (23+)	£16.62	£3.62	£7.38	£1.61	£29.23
Main (21-22)	£0.71	£0.15	£0.11	£0.02	£1.00
Development (18 - 20)	£0.28	£0.06	£-	£-	£0.34
Youth (16 - 17)	£0.02	£0.00	£0.01	£0.00	£0.03
Apprentice	£0.53	£0.11	£0.06	£0.01	£0.71
Total	£18.15	£3.95	£7.56	£1.65	£31.31

Low estimate	Direct		Indirect		Total
	Wage Costs	Non-wage Labour Costs	Wage Costs	Non-wage Labour Costs	
NLW (23+)	£9.55	£2.08	£9.31	£2.03	£22.97
Main (21-22)	£0.50	£0.11	£0.22	£0.05	£0.87
Development (18 - 20)	£0.18	£0.04	£-	£-	£0.22
Youth (16 - 17)	£0.03	£0.01	£0.04	£0.01	£0.09
Apprentice	£0.28	£0.06	£0.06	£0.01	£0.41
Total	£10.53	£2.29	£9.63	£2.10	£24.55

Annex F: Coverage of the NMW/NLW (April 2021) by low paying sector and region

284. The tables below list coverage of the NLW and the NMW rates by region, area and low paying sector, as defined by the RPC. The choice of counterfactual assumption is crucial for determining coverage in April 2021. The figures below are based on our central estimate scenario of 0.48% quarterly counterfactual wage growth. Using our high or low scenario assumptions will result in significantly different coverage estimates. Note figures may not sum due to sampling variability and rounding.

Region	***Coverage of all NLW and NMW rates - projected number of workers paid at or below in April 2021***	
	NLW	**NMW rates**
North East	90,408	13,222
North West	239,132	27,140
Yorkshire & Humber	196,258	27,332
East Midlands	162,591	24,854
West Midlands	197,494	23,716
South West	185,672	29,508
East	176,285	24,475
London	180,175	17,591
South East	245,482	37,794
Wales	100,846	11,595
Scotland	130,248	16,570
Northern Ireland	86,097	14,864
Total	1,990,689	268,662

Area	*Coverage of all NLW and NMW rates - projected number of workers paid at or below in April 2021*	
	NLW	**NMW rates**
Tees Valley and Durham	47,326	6,921
Northumberland and Tyne and Wear	52,963	9,477
Cumbria	22,053	5,099
Greater Manchester	103,311	9,450
Lancashire	57,876	9,751
Cheshire	26,625	4,386
Merseyside	43,953	6,797
East Yorkshire and Northern Lincolnshire	40,835	5,970
North Yorkshire	29,133	4,567
South Yorkshire	59,745	9,075
West Yorkshire	84,637	13,184
Derbyshire and Nottinghamshire	77,145	16,600
Leicestershire, Rutland and Northamptonshire	66,540	11,469
Lincolnshire	32,717	4,839
Herefordshire, Worcestershire and Warwickshire	49,276	6,461
Shropshire and Staffordshire	60,429	13,979
West Midlands (county)	99,677	11,936
East Anglia	91,342	15,036
Bedfordshire and Hertfordshire	40,493	8,456
Essex	50,683	7,929
Inner London – West	13,912	2,224
Inner London – East	56,061	5,645
Outer London – East and North East	45,491	5,297
Outer London – South	24,381	3,090
Outer London – West and North West	48,636	3,839
Berkshire, Buckinghamshire and Oxfordshire	58,969	7,671
Surrey, East and West Sussex	76,210	12,583
Hampshire and Isle of Wight	54,119	10,856
Kent	59,337	11,334
Gloucestershire, Wiltshire and Bristol/Bath area	80,057	15,215
Dorset and Somerset	44,926	7,902
Cornwall and Isles of Scilly	25,982	4,852
Devon	44,773	11,560
West Wales and The Valleys	73,822	12,123
East Wales	35,361	5,481
North Eastern Scotland	14,630	1,353
Highlands and Islands	8,985	1,292
Eastern Scotland	50,423	9,149
West Central Scotland	35,169	4,611
Southern Scotland	27,071	4,850
Total	2,137,903	355,342

Low paying sector	*Coverage of all NLW and NMW rates - projected number of workers paid at or below in April 2021*	
	NLW	**NMW rates**
Agriculture	28,446	4,242
Food processing	74,110	1,636
Textiles	13,695	988
Retail	292,953	38,148
Hospitality	263,103	81,961
Security and enforcement	15,127	448
Cleaning and maintenance	234,501	4,971
Social care	97,701	2,900
Childcare	77,036	12,841
Leisure	30,014	8,837
Hair & beauty	33,145	10,288
Office work	77,325	6,066
Non-food processing	69,327	5,421
Storage	86,608	7,853
Transport	82,614	7,416
Call centres	8,323	1,057
Non-low paying sectors	506,660	74,029
Total	1,990,689	269,103

Annex G: Specific Impact tests

Equality Analysis

285. Under the Equality Act 2010 the Department for Business, Energy and Industrial Strategy, as a public authority, is legally obligated to have due regard to equality issues when making policy decisions. Specifically, the Public Sector Equality Duty (PSED) sets out:

- Eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act;
- Advance equality of opportunity between people who share a protected characteristic and those who do not; and
- Advance equality of opportunity between people who share a protected characteristic and those who do not; and
- Foster good relations between people who share a protected characteristic and those who do not.

286. The protected characteristics consist of nine groups: age, race, gender, disability, religion or belief, sexual orientation, gender reassignment, pregnancy and maternity, marriage and civil partnership. This Equality Analysis considers the potential equality impacts of the National Minimum Wage and National Living Wage upratings.

287. The increase in the NMW and NLW have universal coverage for workers aged 16 and over working in all sectors and regions of the United Kingdom. The policy aims to protect workers and all employers are legally obliged to pay at least the statutory minimum hourly rate.

Estimating pay rates by personal characteristics

288. Our statistical information is sourced from Annual Survey of Hours and Earnings (ASHE) and Labour Force Survey (LFS) data from the Office for National Statistics (ONS). There are two key challenges when analysing the effects of the rate increases on protected groups in the labour market.

- Firstly, ASHE does not include data that enables us to analyse earnings by ethnicity, religion, disability status, marital status, sexual orientation, gender reassignment pregnancy and maternity.
- Secondly as set out previously in this IA, pay variables in LFS are less robust than ASHE.

289. The Labour Force Survey does, however, provide information relating to ethnicity, nationality and disability status and earnings. Using an imputation method to boost responses, ONS are able to more accurately report earnings data by personal characteristics. We have replicated their findings for the latest quarter of available data and present the findings below.

Age

290. Figure 9 shows estimated coverage of different age groups by the NMW/NLW in 2020. The bars represent coverage among the population including workers who have lost pay due to furlough. We have also undertaken the same analysis excluding workers who have lost pay due to furlough and observed the same trends described below.

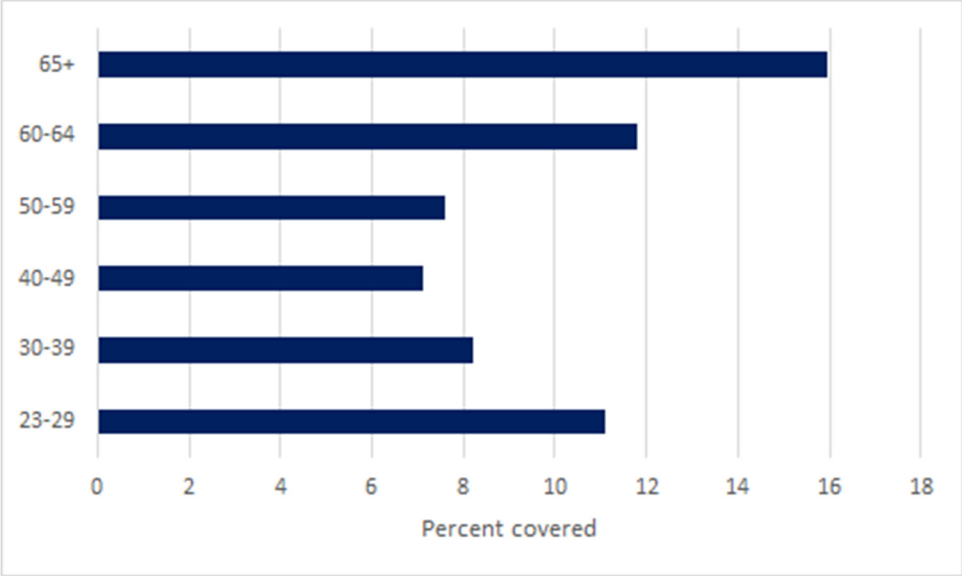
291. The coverage rate is highest for the oldest workers, with the section aged 65 and above having a particularly higher rate of coverage. The age group with the second highest level of coverage is the 60-64 cohort with a coverage rate of 11.8% followed closely by the 23-29-year-old cohort which has a coverage rate of 11.1%. The group with the lowest share of workers

covered by the NLW is the 30-59 cohort. However due to its size, the 30-59 cohort has four times as many workers covered by the NMW/NLW than the other age cohorts combined.

292. As discussed in paragraph 10, the youth labour market is much more sensitive to economic shocks and young people can be exposed to longer-term scarring effects from prolonged spells of worklessness, as well as facing a comparative disadvantage when entering the labour market due to a lack of work experience and less knowledge. As raised in the LPC Youth Rates report, 'young people enter the labour market with relatively limited experience and few skills, and so have lower productivity while they learn the job. In addition, employers may need to provide additional training.

293. Any minimum wage structure needs to recognise the lower productivity and higher training costs of less experienced workers. Failure to do so could mean that some employers are unwilling to give young people those critical first opportunities. Consequently, the Government asks the LPC to recommend separate NMW rates by age band (16-17, 18–20-year-olds, and 21–22-year-olds) to protect the employment prospects of younger workers and enable them to take that valuable first step into work.

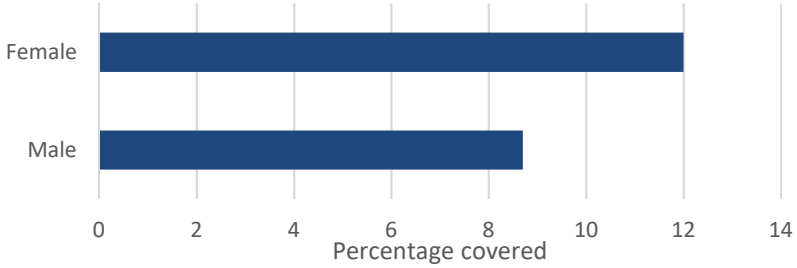
Figure 9: NLW/NMW coverage by age group, including workers who have lost pay due to furlough, ASHE 2020



Gender

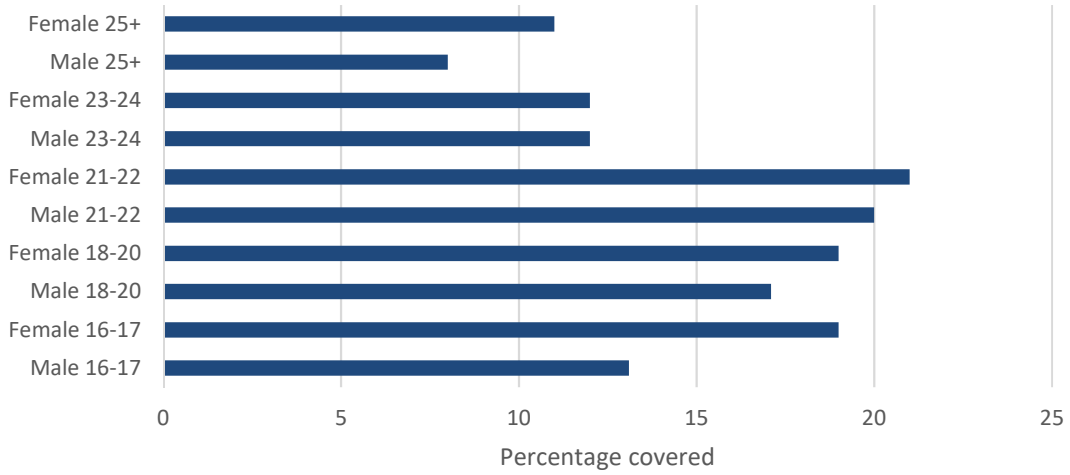
294. Figure 10 shows how NMW coverage rates vary by sex in the year 2020. Female workers continue to be disproportionately more likely to be on the NLW/NMW. This holds true when considering data including and excluding workers who lost pay due to furlough. However, the gap in coverage rises from 2.6 percentage points to 3.3 percentage points when furloughed workers are included.

Figure 10: NLW/NMW coverage by gender, including workers who have lost pay due to furlough, ASHE 2020



295. Figure 11 breaks down NLW/NMW coverage by the sex and age of respondents in the ASHE dataset. The 16-17-year-old cohort sees the largest variance in NLW/NMW coverage by gender (5.9 percentage points higher among women). The gender gap in coverage falls to zero for the 23-24 age cohort and then rises in the 25+ age cohort to 3 percentage points, irrespective of whether furloughed workers are included in the population.

Figure 11: NLW/NMW coverage by age and gender, including workers who have lost pay due to furlough, ASHE 2020



296. The higher rate of coverage among women indicates that they would benefit disproportionately from future increases in the NMW/NLW. We have also found no evidence that increases in the NMW/NLW rates cause gendered impacts on employment, with employment rates rising for women by 0.58 percentage points between Q1 2019 and Q1 2020, while employment rates fell by 0.37 percentage points for men over the same period.

297. Econometric studies have previously found that there is weak evidence that the introduction of the NLW did have small negative impacts on part-time women and their employment prospects (Capuano et al. 2019). However, the literature is not fully conclusive, with findings for 2018 then showing no negative retention effects by any group of employees considered; while other studies (Dickens and Lind, 2018) suggest negative impacts on part-time women were not seen in 2016 but were in 2017 – Dickens and Lind suggest that those who would have been in employment without the higher minimum wage are economically inactive instead. Capuano et al. also finding that private-sector part-time women in 2018 saw a positive employment retention effect on part-time women in 2018. While this paints a somewhat complex picture, we will continue to liaise with the LPC and academics to monitor whether any adverse impacts are observed on part-time women, as a consequence of the latest uprating in 2019 and 2020.

Disability

298. Analysis by the LPC shows that employees who have a disability have a rate of NMW/NLW coverage which is 3.7 percentage points higher compared to employees without a disability. This is represented in Figure 12.

299. There again remains no evidence that increases in the NMW/NLW reduces employment for disabled people. Between Q1 2019 and Q1 2020, despite a significant rise in the NLW the employment rate for disabled workers increased by 1.8 percentage points, compared to a decrease of 0.5 percentage points for non-disabled employees over the same period.

300. While this trend may be correlation rather than causation, we believe that these findings suggest that there are no large adverse effects of last year's increases on individuals with disabilities. If the proposed NMW/NLW rate increases are implemented, there are likely to be disproportionate positive impacts felt among employees with a disability.

Ethnicity

301. In 2020 the coverage rate for ethnic minorities is 10.2%, two percentage points higher than the coverage rate for those with White heritage, as seen in Chart 3.

302. While the higher rate of NLW coverage among ethnic minority employees indicates that they benefit disproportionately from rises in the NLW, there is no evidence to suggest that such rises negatively impact the employment rates of ethnic minorities. As detailed in chart 4, most ethnic minority groups experienced a rise in employment rates between Q1 2019 and Q1 2020, with those from White, Indian and Pakistani ethnic backgrounds proving the exception by experiencing fall in their employment rates.

303. There is no evidence to suggest that the NLW rise in 2019 had any adverse effect on the employment prospects of ethnic minority workers. However, due to their higher rates of NLW coverage it is likely that they would experience disproportionate benefits from further rises in the NLW.

Figure 12: NLW coverage for workers, aged 25 and over, by worker characteristic and workplace size, Labour Force Survey 2019-20

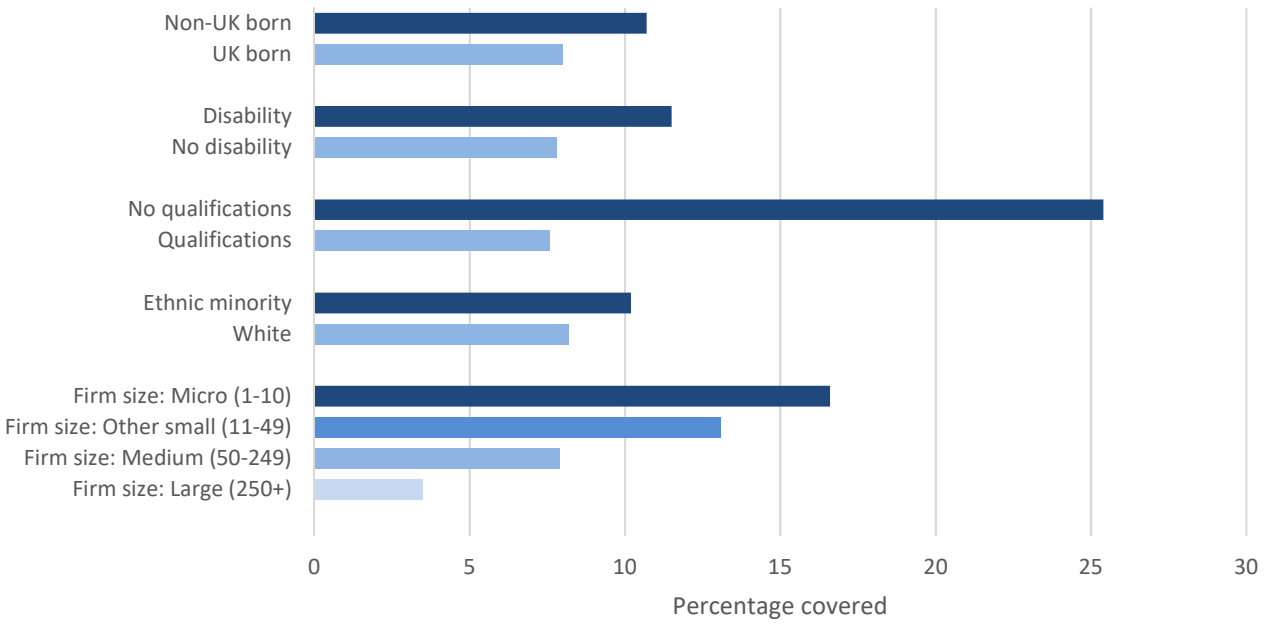
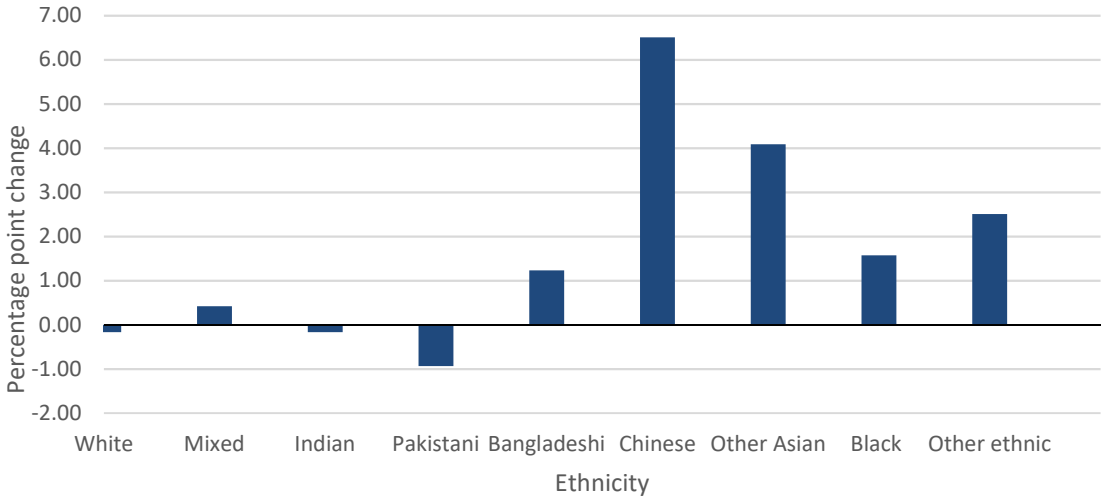


Figure 13: Change in employment rate by ethnicity, Q1 2019 to Q1 2020, Labour Force Survey 2019-20



Summary.

304. The pandemic's economic effect on labour markets has been broad and variated, with impacts being felt differently across various protected groups. There is no evidence that the falls in employment experienced by some of these groups are in any way related to rises in the NMW/NLW, and there is no evidence that further raises in the NMW/NLW would increase the economic distress felt by these groups. However, we recognise that this is an important issue and will continue to monitor developments in the labour market outcomes of these groups.

305. In summary, the evidence suggests that there will be disproportionate positive wage impacts on protected groups as a result of the proposed increase in NMW/NLW, and we have found no evidence of the potential for any negative impacts. Evidence of weak negative impacts on part-time women due to the introduction of the NLW in 2016 do not seem to have materialised in subsequent uprating.

306. The Public Sector Equality Duty (PSED) requires the Department to have due regard to the need to advance equality of opportunity between people who share a protected characteristic and those who do not.

307. The NMW and NLW policy is designed to have a positive impact on all workers in low paid sectors regardless of their personal characteristics. The NLW is expected to protect the equality of opportunity of those aged under 25. While their opportunity may be impacted by not receiving the new statutory pay floor that over 25's receive, this is balanced by (i) protecting the employment prospects of younger workers given their tougher labour market conditions and the importance of skills and experience; and (ii) possibly improving the attractiveness of younger workers for employers.

Eliminating discrimination and other prohibited conduct

308. The PSED requires BEIS to have due regard to the need to eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act. The design of the NMW reflects provisions in the Act which allow the minimum wage rates to vary depending on age up to age 25. Some firms do not use pay structures based on age-related rates, negating risks of increased discriminatory recruitment policies.

Fostering good relations

309. The PSED requires to have due regard to the need to foster good relations between people who share a protected characteristic and those who do not. The NMW/NLW has national coverage, paid to all workers of any social characteristic. This should retain the diversity in the

workforce; from skills to ethnicity to social background. Workplace relations should remain positive with workers benefiting from a higher wage floor.

Family test

310. We consider the increase in the NMW/NLW rates will provide a net benefit to families, by making work pay. This policy results in a transfer from employers to employees, increasing the wage of the lowest paid.

311. Statistics produced by the ONS (2019) suggest that employment has grown more quickly for single parents and hence the effect of the proposed increases in the NMW/NLW rates is therefore likely to have a disproportionally positive effect on this group. We therefore believe that this policy will have a positive impact on families coping with couple separation.

312. Additionally, analysis conducted by Brewer and De Agostini (2017) shows that forecast increases in the NMW and the NLW by 2020-21 will increase net real incomes of minimum wage families by, on average, about 1.5 per cent [31].

313. Finally, the LPC provide some analysis in Chapter 9 of their 2019 report, highlighting how a married couple household, with two children and only one working parent, would see their weekly income rise in cash terms by £10.73 due to the NLW (assumes 30 hours worked a week). Once adjusting for tax and benefits, assuming the household is in receipt of Universal Credit, the LPC estimate that their after-tax pay would increase by 2.5%. They also find that similar hypothetical households on the 21-24-year-old NMW rate would benefit from the proposed uprating, with a weekly income rise in cash terms of £15. We therefore believe that this policy will have a positive impact on family members' ability to play a full role in family life, as well as positively affecting families going through key transitions such as becoming parents.

Annex H: Past analysis on the counterfactual

314. The Department has undertaken a range of research and analysis to inform its judgement on the counterfactual and appraisal approach over the last few years. This is listed below and can be found in detail in previous impact assessments. The RPC has also fed in at various points including commenting on discussion materials and on the research specification:

- Engagement with labour market experts seeking views on how to model an appropriate counterfactual, including whether assumptions of zero wage growth were appropriate.
- Discussions with business representative organisation exploring how the wages of the lowest paid may develop in the absence of a minimum wage uprating.
- Analysis of economy, labour market and wage data to examine underlying trends.
- Descriptive analysis of ASHE microdata to explore different percentiles of the wage distribution as appropriate control groups.
- Longitudinal analysis of ASHE, supplemented by evidence from the Bank of England's Wage Dynamics Survey to explore the wage dynamics of low paid workers between years.
- Examined historic wage distributions to identify trends from before the NMW was introduced.
- Explored the literature, including previous LPC reports.
- Explored sensitivities, including CPI inflation and average earnings growth as a counterfactual, with zero wage growth scenarios considered as a single year.
- Made changes to the approach to determining the appraisal period and revisited previous appraisals to align our approach to this revised methodology.
- Commissioned NIESR to independently recommend an appropriate counterfactual (latest). This included an extensive literature review, consultation with labour market and regulatory experts and structured in-depth qualitative interviews with employers, employer trade bodies and trade union representatives. Their full report can be found at: https://www.gov.uk/government/publications/national-minimum-wage-evaluation-counterfactual-research
- Questionnaire to labour market academic experts on NIESR's findings – further details of this can be found in Annex B and throughout this IA.
- Held an academic roundtable attended by leading labour market specialists who offered their views on future wage growth in the context of the Covid-19 pandemic, and suitable counterfactuals for this Impact Assessment.