The Economic Impact of a £1.50/hour increase in the National Minimum Wage

A report for Unite by Howard Reed (Director, Landman Economics)

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Acknowledgements

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Data from the Family Resources Survey 2011-12 (Department for Work and Pensions et al, 2012) are Crown Copyright and are provided courtesy of the ESRC's Economic and Social Data Service (ESDS) and distributed by the UK Data Archive.
Executive Summary

This report looks at the potential economic impact of an immediate increase in the National Minimum Wage (NMW) by £1.50 per hour in the UK – from its current rate of £6.31 per hour for workers aged 21 and over to £7.81 per hour, with an equivalent cash increase for younger workers. The analysis uses the 2011/12 Family Resources Survey and the IPPR/Landman Economics tax-benefit model to estimate the number of workers affected, the distributional impact on household incomes and net wages of the workers affected, and the impact of increasing the NMW on the public finances.

The results show that a £1.50 per hour increase in the NMW would benefit around 4.6 million workers, 60 percent of whom are women. The average gain in net income per worker from the minimum wage increase is £813 per year. Increasing the NMW is a progressive policy in distributional terms, with the largest percentage increases in net household income for households in the poorest decile, and much bigger percentage gains in the bottom 60 percent of the income distribution than in the top 40 percent. The impact on household income is particularly beneficial for low-income households containing people who work in the hospitality, retail and cleaning industries, which have large numbers of workers on very low pay rates. The distributional impacts are progressive across all ethnicities with particularly large net gains per hour worked for asian workers; migrant workers also make particularly large net gains per hour worked. Across the age distribution, average net gains from increasing the minimum wage are largest for younger and older workers, especially those aged under 25 and those aged over 65.

Increasing the NMW by £1.50 per hour would also benefit the public finances through increased income tax and National Insurance Contributions receipts, increased receipts from expenditure tax (due to higher consumer spending by workers with higher net wages) and lower in-work benefit and tax credit spending. Overall, this report estimates that the public finances would improve by around £2.1 billion as a result of the minimum wage increase.

While increases in the minimum wage are often opposed on the grounds that they would lead to job losses, the analysis in Section 5 of this report shows that once the potential stimulus effects of increasing the minimum wage are taken into account there is a potential for modest gains in employment – at least 30,000 jobs.

Overall, the analysis presented here makes a powerful economic case for an immediate increase in the National Minimum Wage of £1.50 per hour; it is distributionally progressive, would improve the public finances, and has the potential to create jobs through stimulating the economy.
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Introduction

Unite has commissioned Landman Economics to carry out an economic analysis of the potential economic impact of increasing the National Minimum Wage by £1.50 per hour in the UK. At the time of writing (September 2014) the current rates of the National Minimum Wage (NMW) are as follows:

- Workers aged 21 and over: £6.31 per hour
- Workers aged 18 to 20 inclusive: £5.03 per hour
- Workers aged 16 to 17: £3.72 per hour.

This report looks at the impact of increasing the National Minimum Wage by £1.50 per hour – from £6.31 per hour to £7.81 per hour for workers aged 21 and over, from £5.03 per hour to £6.53 per hour for workers aged 18 to 20 and from £3.72 per hour to £5.22 per hour for workers aged 16 to 17. The effects are analysed according to the following worker and job characteristics:

- men and women;
- age group (under 25, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 and over);
- ethnicity (white, asian, black, other, mixed);
- the specific impact on migrant workers;
- the effects on workers in specific industrial sectors (retail, hospitality, cleaning, agriculture, food manufacturing and care workers – including social care and childcare subsectors).

The impacts looked at comprise the following:

- the distributional impacts on household incomes;
- the impact on the public finances arising from higher receipts of income tax, National Insurance Contributions and expenditure taxes, lower spending on tax credits and in-work benefits, lower corporation tax receipts and a higher public sector wage bill;
- the impact on net wages of the workers affected by the increase;
- potential employment effects – including the multiplier effects of increased demand for goods and services arising from higher spending by workers whose wages have increased.

The report is structured as follows. Section 1 uses data from the UK Family Resources Survey, combined with the Annual Survey of Hours and Earnings, to estimate the number of workers in the UK who would be directly affected by a £1.50 increase in the hourly rate of the National Minimum Wage. Section 2 looks at the impact of increasing the NMW on the public finances and on net wages, while Section 3 looks at the distributional impacts of the minimum wage increase on net household incomes. Section 4 looks at the potential ‘microeconomic’ impacts of increasing the national minimum wage, drawing on a range of recent international research evidence on the employment effects of minimum wage increases. Section 5 estimates the potential for an increase in the National Minimum Wage to stimulate the UK economy by boosting demand for goods and services, and hence increasing employment. Section 6 concludes.
1: The incidence of low pay in the UK: evidence from the Family Resources Survey

The analysis in this report uses data from the UK Family Resources Survey [FRS] to identify the numbers of people in the UK who would be directly affected by a £1.50 per hour increase in the NMW and their characteristics. The FRS is an annual survey of around 20,000 UK households per year which contains information on employment, earnings and other income. The FRS is a reliable source of information on weekly earnings, but the hourly wage information is not fully reliable because the survey responses on the number of hours each person works per week in the survey, and the survey responses on weekly wages, are taken from different weeks in many cases. Because of this, the FRS hourly wage measure is an overestimate of the proportion of workers in the UK working at, or just above, the minimum wage. To address this problem, this analysis uses data from the Annual Survey of Hours and Earnings – a much bigger survey than the FRS which explicitly collects accurate hourly wage information – to recalibrate the hourly wage measures in the FRS so that the adjusted FRS offers a more accurate representation of the hourly wage distribution in the UK. Appendix A gives details of this procedure, and also of the procedure used to uprate the wages in the 2011/12 FRS to current (summer 2014) levels.

The groups in the various subcategories which the report is specifically looking at are identified as follows. For age, sex and ethnicity, the FRS data contain data on these characteristics for each person in the survey. Migrants are identified using the FRS variable on country of origin, with a ‘migrant’ being defined as someone whose country of origin is outside the UK1. Industry sector is identified using the 2-digit Standard Industrial Classification (SIC2007) variable in the FRS dataset; details of the industrial classifications used are given in Appendix B.

Table 1 gives details of the estimated number of people who would be directly affected by an immediate £1.50 per hour increase in the NMW – those earning between £6.31 and £7.81 per hour (for workers aged 21 or over) and the equivalent rates for younger workers.

1: using the variable CORIGNAN (anonymised country of origin) on the FRS public release dataset.
### Table 1. Number of people who would be directly affected by an increase of £1.50 per hour in the National Minimum Wage – estimates from the 2011/12 FRS

<table>
<thead>
<tr>
<th>Group</th>
<th>Estimated number of workers affected (thousands)</th>
<th>Affected workers as % of workers in group</th>
</tr>
</thead>
<tbody>
<tr>
<td>All workers</td>
<td>4,610</td>
<td>18.9</td>
</tr>
<tr>
<td><strong>Sex:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>1,850</td>
<td>15.0</td>
</tr>
<tr>
<td>Women</td>
<td>2,770</td>
<td>22.5</td>
</tr>
<tr>
<td><strong>Age:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 25</td>
<td>1,230</td>
<td>38.0</td>
</tr>
<tr>
<td>25-34</td>
<td>980</td>
<td>17.1</td>
</tr>
<tr>
<td>35-44</td>
<td>920</td>
<td>15.5</td>
</tr>
<tr>
<td>45-54</td>
<td>770</td>
<td>13.1</td>
</tr>
<tr>
<td>55-64</td>
<td>570</td>
<td>16.6</td>
</tr>
<tr>
<td>65 and over</td>
<td>150</td>
<td>32.7</td>
</tr>
<tr>
<td><strong>Ethnicity:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>4,040</td>
<td>18.2</td>
</tr>
<tr>
<td>Mixed</td>
<td>70</td>
<td>26.9</td>
</tr>
<tr>
<td>Asian</td>
<td>310</td>
<td>22.4</td>
</tr>
<tr>
<td>Black</td>
<td>120</td>
<td>20.2</td>
</tr>
<tr>
<td>Other</td>
<td>70</td>
<td>24.8</td>
</tr>
<tr>
<td>Migrants</td>
<td>840</td>
<td>24.5</td>
</tr>
<tr>
<td><strong>Industry sectors:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td>900</td>
<td>36.7</td>
</tr>
<tr>
<td>Hospitality</td>
<td>760</td>
<td>66.4</td>
</tr>
<tr>
<td>Cleaning</td>
<td>190</td>
<td>48.1</td>
</tr>
<tr>
<td>Agriculture</td>
<td>30</td>
<td>22.1</td>
</tr>
<tr>
<td>Food manufacturing</td>
<td>60</td>
<td>20.0</td>
</tr>
<tr>
<td>Care</td>
<td>440</td>
<td>26.5</td>
</tr>
<tr>
<td>Of which:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childcare</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Other social care</td>
<td>400</td>
<td></td>
</tr>
</tbody>
</table>

*Source: author's calculations using FRS data for 2011/12.*
Table 1 shows that around 4.6 million workers in total are likely to be directly affected by a £1.50 increase in the National Minimum Wage, based on the FRS estimates. Of those affected, around 60 percent (just under 2.8 million) are women. Women are more likely to be earning between the NMW and £1.50 above it than men; 22.5 percent of women are in this affected group compared with 15 percent of men.

In terms of the age breakdown, the youngest and oldest workers – those aged under 25 and over 65 respectively – are much more likely to be in the affected group than other workers. Black, Asian and mixed-race workers are also more likely to be in the affected group than white workers, with workers of mixed ethnicity being the most likely (27 percent of the sample). Migrant workers are also more likely than average to be low-paid, with just under a quarter of migrant workers are in the affected category.

The incidence of low pay varies markedly by industrial sector: 20 percent of workers in the food manufacturing sector are paid at NMW or up to £1.50 above the NMW, compared with 22 percent in agriculture, 27 percent in care industries, 37 percent in retail, 48 percent in cleaning and 66 percent in the hospitality sector. All of the industries featured in this report have proportions of workers affected by the increase of £1.50 per hour in the minimum wage which are higher than the national average of 18.9 percent. By contrast, the proportion of workers who would be affected by the minimum wage increase is much lower in certain other industries – further analysis of the FRS shows that 5 percent of workers in the financial and insurance activities sector, 8 percent in the information and communications sector, and 10 percent for the construction sector are paid at NMW or up to £1.50 above it.
2: The impact of increasing the National Minimum Wage on the public finances and net wages for workers

This section of the report estimates the impact of a £1.50 increase in the National Minimum Wage on net incomes and on the public finances using the IPPR/Landman Economics tax-benefit microsimulation model. The tax-benefit microsimulation model is set up to run on FRS data from 2011-12, which is the most up-to-date FRS data currently available. To ensure that the FRS modelling gives an accurate assessment of the impact of increasing wages for the public sector workforce as it currently stands, the FRS earnings data for 2011-12 are uprated to April 2014 earnings levels using information from the Annual Survey for Hours and Earnings (ASHE) on the rate of increase in wages for workers in the lower part of the wage distribution, by industrial sector. The FRS is used to calculate the increase in the gross wage bill arising from the increase in the minimum wage for those employees in the FRS who earn at the current minimum wage level or up to £1.50 per hour above current level (as shown in Table 1).

The 'grossing factors' in the FRS dataset are then used to scale the increase in the gross wage bill up to the national level, giving an estimate of what the increase in the gross wage bill would be if the NMW were raised by £1.50 per hour.

In addition to the increase in the gross wage bill, this section shows the following impacts of the increase in the NMW on the public finances (estimated using the IPPR/Landman Economics tax-benefit model):

- the increase in income tax paid by employees;
- the increase in employee National Insurance Contributions (NICs);
- the increase in employer NICs;
- the decrease in tax credit and benefit payments occurring because higher gross wages mean that some families on the taper for tax credits and/or benefits receive lower payments;
- the increase in the public sector wage bill resulting from higher wages for public sector workers;
the increase in expenditure tax receipts for the government resulting from higher consumer spending as a result of higher net wages. This is calculated using plausible values from recent research for the propensity of workers to consume extra income; the reduction in corporation tax payments arising from a shift from profits to wages. However, there is likely to be an impact on UK Government revenues from corporation tax, which is levied as a percentage of profits. In line with data from the ONS national accounts and HMRC for 2012, this report assumes that corporation tax receipts amount to 9 percent of total operating surplus in the UK economy.

The overall fiscal impact of increasing the NMW is therefore equal to:
- increased income tax receipts
- plus increased NICs receipts (employee and employer)
- plus reduced spending on in-work benefits and tax credits
- plus increased expenditure tax receipts
- minus reduced corporation tax receipts
- minus increased public sector wages.

Tables 2 to 5 below present these various components of the fiscal impact of increasing the NMW with a plus sign if they have a positive impact on the public finances (i.e. increased tax receipts or reduced spending), and a minus sign if they have a negative impact on the public finances (reduced tax receipts or increased spending).

The results also show the following statistics relating to the incomes of workers who benefit directly from the NMW:
- the total increase in net wages for workers directly affected by the increase in the NMW;
- the average net wage increase per worker affected by the increase;
- the average net wage increase per hour of work for the workers affected by the increase – this shows how much extra income employees affected by the increase are gaining per hour worked;
- the average marginal deduction rate (MDR) on the increase in gross earnings for each subgroup – defined as the proportion of gross wages that goes to the Government (via increased income tax and NICs, and/or reduced benefit and tax credit spending) rather than increasing household net incomes.

**Impacts overall and by gender**

**Table 2** presents results for the overall sample and for men and women separately.
Table 2. Fiscal and household income impacts of increasing the National Minimum Wage by £1.50 per hour (April 2014 prices): overall and by gender

<table>
<thead>
<tr>
<th></th>
<th>Whole sample</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total change in gross wages (£m)</strong></td>
<td>6,270</td>
<td>2,740</td>
<td>3,530</td>
</tr>
<tr>
<td><strong>Fiscal impact (£m):</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased income tax receipts</td>
<td>+900</td>
<td>+430</td>
<td>+470</td>
</tr>
<tr>
<td>Increased employee NICs</td>
<td>+490</td>
<td>+230</td>
<td>+260</td>
</tr>
<tr>
<td>Increased employer NICs</td>
<td>+620</td>
<td>+290</td>
<td>+330</td>
</tr>
<tr>
<td>Reduction in benefit and tax credit spending</td>
<td>+1,120</td>
<td>+480</td>
<td>+650</td>
</tr>
<tr>
<td>Increased expenditure taxes</td>
<td>+290</td>
<td>+120</td>
<td>+160</td>
</tr>
<tr>
<td>Reduced corporation tax (£m)</td>
<td>-560</td>
<td>-240</td>
<td>-320</td>
</tr>
<tr>
<td>Increase in public sector wage bill</td>
<td>-780</td>
<td>-170</td>
<td>-610</td>
</tr>
<tr>
<td><strong>Total improvement in public finances</strong></td>
<td>2,080</td>
<td>1,140</td>
<td>940</td>
</tr>
<tr>
<td><strong>Household incomes:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in net wages (£m)</td>
<td>3,760</td>
<td>1,600</td>
<td>2,150</td>
</tr>
<tr>
<td>Average net gain per worker per year</td>
<td>£813</td>
<td>£861</td>
<td>£776</td>
</tr>
<tr>
<td>Average net gain per hour worked</td>
<td>£0.57</td>
<td>£0.51</td>
<td>£0.62</td>
</tr>
<tr>
<td>Average MDR on additional income</td>
<td>40.2%</td>
<td>41.9%</td>
<td>39.2%</td>
</tr>
</tbody>
</table>

Source: author’s calculations using IPPR/Landman Economics tax-benefit model.
Note: in ‘fiscal impact’ rows, positive numbers show an improvement in the public finances, negative numbers show a deterioration.

Tables 2 shows that overall, the public finances improve by just under £2.1 billion as a result of the increase in the NMW. This is equal to around 33 percent of the increase of £6.3 billion in the gross wage bill. Workers affected by the increase are around £810 per year better off on average (the precise distributional effects of the minimum wage increase are shown in the next section of the report). Male workers gain slightly more from the increase in the NMW on average than female workers because men are more likely to be working full time, and full-time workers gain more from an increase in the hourly wage rate than part-time workers (other things being equal). However, in terms of net gain per hour worked, the pattern is reversed; women gain more per hour than men. Accordingly, the average marginal deduction rate on the increase in gross wages for men is 41.9%, slightly higher than for women (39.2%). The higher hourly gain (and lower marginal deduction rate) for women occurs because women are more likely to be working part time and hence more likely to be below the income tax personal allowance and the National Insurance thresholds, and hence not paying income tax or NICs on any marginal increase in incomes.
**Impacts by age group**

Table 3 shows the fiscal impacts of the minimum wage increase broken down by age group of the workers affected.

**Table 3. Fiscal and household income impacts of increasing the National Minimum Wage by £1.50 per hour (April 2014 prices): by age group**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Under 25</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total change in gross wages (£m)</td>
<td>1,580</td>
<td>1,470</td>
<td>1,250</td>
<td>1,010</td>
<td>800</td>
<td>160</td>
</tr>
</tbody>
</table>

**Fiscal impact (£m):**

- Increased income tax receipts
  - Under 25: +180
  - 25-34: +210
  - 35-44: +180
  - 45-54: +150
  - 55-64: +140
  - 65+: +30

- Increased employee NICs
  - Under 25: +130
  - 25-34: +130
  - 35-44: +100
  - 45-54: +90
  - 55-64: +50
  - 65+: *

- Increased employer NICs
  - Under 25: +150
  - 25-34: +150
  - 35-44: +120
  - 45-54: +110
  - 55-64: +80
  - 65+: +10

- Reduction in benefit and tax credit spending
  - Under 25: +160
  - 25-34: +320
  - 35-44: +300
  - 45-54: +200
  - 55-64: +150
  - 65+: *

- Increased expenditure taxes
  - Under 25: +90
  - 25-34: +60
  - 35-44: +50
  - 45-54: +40
  - 55-64: +40
  - 65+: +10

- Reduced corporation tax
  - Under 25: -140
  - 25-34: -130
  - 35-44: -110
  - 45-54: -90
  - 55-64: -70
  - 65+: -10

- Increase in public sector wage bill
  - Under 25: -110
  - 25-34: -170
  - 35-44: -190
  - 45-54: -170
  - 55-64: -110
  - 65+: -30

**Total improvement in public finances**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Under 25</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total improvement in public finances</td>
<td>460</td>
<td>570</td>
<td>450</td>
<td>330</td>
<td>280</td>
<td>10</td>
</tr>
</tbody>
</table>

**Household incomes:**

- Change in net wages (£m)
  - Under 25: 1,110
  - 25-34: 810
  - 35-44: 670
  - 45-54: 570
  - 55-64: 460
  - 65+: 120

- Average net gain per worker per year
  - £905
  - £828
  - £740
  - £741
  - £797
  - £801

- Average net gain per hour worked
  - £0.66
  - £0.55
  - £0.51
  - £0.50
  - £0.58
  - £0.80

- Average MDR on additional income
  - 29.7%
  - 44.7%
  - 45.8%
  - 43.6%
  - 46.4%
  - 23.1%

Source: author's calculations using IPPR/Landman Economics tax-benefit model.

Note: * denotes a positive number lower than £5 million (and hence rounding to zero)

Note: in 'fiscal impact' rows, positive numbers show an improvement in the public finances, negative numbers show a deterioration.

Table 3 shows that the total change in gross wages arising from the increase in the NMW is greatest for the youngest age group (workers aged under 25) and then is progressively smaller for older age groups. By contrast, the improvement in the public finances is greatest for the 25-34 age group, largely because low-paid workers in this group are more likely to be in receipt of tax credits or in-work benefits than the under-25s age group.
The average net gain per worker is highest for the under-25 age group, followed by the 25-34 age group, and lowest for the 35-44 age group. The average Marginal Deduction Rate on additional income is lowest for the over-65 age group (at around 23 percent), partly because this group are less likely to be claiming in-work benefits than any other group but also because people in this age group do not pay employee National Insurance Contributions.

**Impacts by ethnicity and for migrant workers**

Table 4 shows the fiscal and household income impacts of the minimum wage increase by ethnic group and for migrant workers.

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>white</th>
<th>mixed</th>
<th>asian</th>
<th>black</th>
<th>other</th>
<th>migrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total increase in gross wages (£m)</td>
<td>5,550</td>
<td>100</td>
<td>360</td>
<td>160</td>
<td>90</td>
<td>1,230</td>
</tr>
</tbody>
</table>

**Fiscal impact (£m):**

- Increased income tax receipts
  - white: +810
  - mixed: +20
  - asian: +40
  - black: +20
  - other: +10
  - migrants: +180
- Increased employee NICs
  - white: +440
  - mixed: +10
  - asian: +30
  - black: +10
  - other: +10
  - migrants: +100
- Increased employer NICs
  - white: +560
  - mixed: +10
  - asian: +30
  - black: +20
  - other: +10
  - migrants: +120
- Reduction in benefit and tax credit spending
  - white: +960
  - mixed: +20
  - asian: +70
  - black: +50
  - other: +20
  - migrants: +240
- Increased expenditure taxes
  - white: +260
  - mixed: *
  - asian: +20
  - black: +10
  - other: *
  - migrants: +60
- Reduced corporation tax
  - white: -500
  - mixed: -10
  - asian: -30
  - black: -10
  - other: -10
  - migrants: -110
- Increase in public sector wage bill
  - white: -680
  - mixed: -30
  - asian: -40
  - black: -10
  - other: -10
  - migrants: -120

Total improvement in public finances: 1,850

**Household incomes:**

- Change in net wages (£m): 3,340
- Average gain per worker per year: £825
- Average net gain per hour worked: £0.57
- Average MDR on additional income: 39.9%

Source: author’s calculations using IPPR/Landman Economics tax-benefit model.
Note: * denotes a positive number lower than £5 million (and hence rounding to zero)
Note: in ‘fiscal impact’ rows, positive numbers show an improvement in the public finances, negative numbers show a deterioration.
**Table 4** shows that around 89 percent of the increase in gross wages arising from the minimum wage increase goes to white workers – this reflects the fact that almost 90 percent of workers on hourly rates between the current NMW level and £1.50 above it are white (as shown in **Table 1**).

The next largest ethnic group is Asian workers, who comprise around 6 percent of the increase in gross wages. Around 12 percent of the improvement in the public finances arising from the NMW increase is due to increased wages for black, Asian and mixed-race workers and workers of other ethnicities, with 88 percent arising from increased wages for white workers. The biggest average net gain from increasing the minimum wage is for white workers (at £825 per year), followed by workers of ethnicity other than black, white, Asian or mixed-race (at £787 per year). The net gains for black and mixed-race workers are lower than for white workers largely because a higher proportion of black and mixed-race workers are in families claiming tax credits due to low family earnings, meaning that they face a higher MDR on additional earnings due to the tax credit taper.

This is reflected in the average MDRs for mixed race workers and black workers, which are higher (at 49 percent) than for other workers. For Asian workers, the average net gain to work is lower than for white workers largely because Asian workers work fewer hours per week on average. Average net gain per hour worked is just as high for Asian workers as it is for white workers (57 pence per hour).

Migrant workers comprise around 19 percent of the increase in gross wages arising from the increase in the NMW. **Table 1** shows that around 18 percent of workers affected by the minimum wage increase are migrants, so the increase in gross wages is roughly proportion to the number of migrants in the sample of low-paid workers. Around 22 percent of the improvement in the public finances arising from the NMW increase comes from increased tax payments and reduced tax credits and benefits for migrant workers – thus they contribute slightly more than average to the fiscal improvement arising from the increased minimum wage. The average gain per worker per year for migrants, at £850, is slightly higher than the average for all workers.

**Impacts by industrial sector**

Finally in this section, **Table 5** shows the fiscal impact of the NMW increase for the industrial sectors highlighted in this report.
Table 5. Fiscal and household income impacts of increasing the National Minimum Wage by £1.50 per hour (£m, April 2014 prices): for selected industrial sectors

<table>
<thead>
<tr>
<th>Industry sector</th>
<th>retail</th>
<th>hospitality</th>
<th>cleaning</th>
<th>agriculture</th>
<th>food</th>
<th>care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total increase in gross wages (£m)</td>
<td>790</td>
<td>1,080</td>
<td>220</td>
<td>40</td>
<td>80</td>
<td>600</td>
</tr>
<tr>
<td><strong>Fiscal impact (£m):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased income tax receipts</td>
<td>+80</td>
<td>+130</td>
<td>+30</td>
<td>+10</td>
<td>+10</td>
<td>-80</td>
</tr>
<tr>
<td>Increased employee NICs</td>
<td>+60</td>
<td>+90</td>
<td>+10</td>
<td>*</td>
<td>+10</td>
<td>+50</td>
</tr>
<tr>
<td>Increased employer NICs</td>
<td>+70</td>
<td>+100</td>
<td>+20</td>
<td>*</td>
<td>+10</td>
<td>+60</td>
</tr>
<tr>
<td>Reduction in benefit and tax credit spending</td>
<td>+170</td>
<td>+210</td>
<td>+60</td>
<td>+10</td>
<td>+20</td>
<td>+140</td>
</tr>
<tr>
<td>Increased expenditure taxes</td>
<td>+40</td>
<td>+50</td>
<td>+10</td>
<td>*</td>
<td>*</td>
<td>+30</td>
</tr>
<tr>
<td>Reduced corporation tax</td>
<td>-70</td>
<td>-100</td>
<td>-20</td>
<td>*</td>
<td>-10</td>
<td>-50</td>
</tr>
<tr>
<td>Increase in public sector wage bill</td>
<td>0</td>
<td>-40</td>
<td>-30</td>
<td>0</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total improvement in public finances (£m)</strong></td>
<td>350</td>
<td>440</td>
<td>80</td>
<td>20</td>
<td>40</td>
<td>260</td>
</tr>
<tr>
<td><strong>Household incomes:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in net wages (£m)</td>
<td>480</td>
<td>650</td>
<td>120</td>
<td>20</td>
<td>40</td>
<td>330</td>
</tr>
<tr>
<td>Average gain per worker per year (£)</td>
<td>£549</td>
<td>£855</td>
<td>£670</td>
<td>£835</td>
<td>£704</td>
<td>£738</td>
</tr>
<tr>
<td>Average net gain per hour worked (£)</td>
<td>£0.44</td>
<td>£0.67</td>
<td>£0.57</td>
<td>£0.40</td>
<td>£0.38</td>
<td>£0.51</td>
</tr>
<tr>
<td>Average MDR on additional income</td>
<td>37.6%</td>
<td>39.4%</td>
<td>42.3%</td>
<td>36.0%</td>
<td>42.3%</td>
<td>43.2%</td>
</tr>
</tbody>
</table>

Source: author's calculations using IPPR/Landman Economics tax-benefit model.

Note: * denotes a positive number lower than £5 million (and hence rounding to zero)
Note: In `fiscal impact` rows, positive numbers show an improvement in the public finances, negative numbers show a deterioration

Table 5 shows that hospitality, retail and care are the sectors with the largest gross increase in wages arising from the NMW increase. As shown in Table 1, this reflects the fact that these sectors have larger numbers of employees in the affected group than the other sectors. The biggest gain per worker arising from the increase in the minimum wage is in the hospitality sector, at £855 per worker – mainly because this is a sector which the FRS and ASHE data show has an extremely high incidence of very low pay. The hospitality sector also has the largest net gain per hour worked, at 67 pence per hour. The lowest net gain per hour worked is in the food manufacturing sector, at 38 pence per hour. Average MDRs from the NMW increase show some variation, with the lowest MDR being for agricultural and retail workers and the highest MDR being for workers in the care sector.
3: The distributional impacts of increasing the National Minimum Wage

This section of the report uses the IPPR/Landman Economics tax-benefit model to look at the distributional impact of a £1.50 per hour increase in the National Minimum Wage across the household income distribution. Once again, the analysis uses the Family Resources Survey. Households are ranked in terms of their equivalised\(^4\) net income in the FRS, and the distribution is then divided into ten equally sized deciles going from decile 1 (the poorest households) to decile 10 (the richest households).

**Impacts across all households**

**Figure 1a** shows the average impact of the minimum wage increase in cash terms, expressed as average gain per household per year. **Figure 1b** shows average gains per household as a percentage of household disposable income. Because households in the lower deciles have lower average disposable income than households higher up the distribution, this means that the percentage bars for households in lower deciles in **Figure 1b** are higher, relative to the richer households, than the cash bars in **Figure 1a**.

4: Equivalisation of income is a process used to adjust income for household size so that it is a better measure of living standards, on the basis that households with more adults and children in them need a higher income to reach an equivalent living standard to smaller households. The equivalence scale used to adjust net income in this report is the OECD equivalence scale which is the same scale used by the UK Department for Work and Pensions in its Households Below Average Income (HBAI) income distribution publication.
Figure 1a. Average impact of £1.50 per hour increase in the National Minimum Wage by household income decile: all households, annual cash terms

Source: author's calculations using IPPR/Landman Economics tax-benefit model.

Figure 1b. Average impact of £1.50 per hour increase in NMW by household income decile: all households, percentage terms
Figure 1a shows that the largest average cash gain from increasing the minimum wage is for households in the middle of the income distribution – deciles 5 and 6. The average cash gain for middle-income households is higher than for low-income households for two reasons: (a) many households at or near the bottom of the income distribution do not have any adults in work, and so cannot benefit from wage increases, and (b) some people earning at or just above the NMW are second earners in households where the primary earner is well-paid, and so household income is in the middle or upper reaches of the income distribution. Despite these factors, Figure 1b shows that on average the impact of the minimum wage increase is progressive as a share of net incomes; for households in the bottom decile the NMW increase raises net income by over 1 percent on average compared with 0.6 to 0.8 percent for deciles 2 through 6, and less than 0.2 percent for the top 2 deciles.

**Impacts by gender**

Figure 2 shows the percentage impacts of the minimum wage increase for men and women as a 'stacked column' chart, meaning that the percentage impacts on household income of the increase in the NMW for men's wages and for women's wages are shown separately, but added together to give the same totals as for Figure 1b.

In most deciles (with the exception of deciles 3 and 10), the increase in wages for women resulting from the NMW increase has a bigger impact on household incomes than the increase in wages for men. This is because, as shown in Table 1 above, 60 percent of the workers whose wages would increase as a result of a £1.50 increase in the NMW are women. Women's wages are a particularly large proportion of the household income increases in deciles 7 and 8, reflecting the fact that women are more likely than men to be second earners earning at or just above the minimum wage in a household where the primary earner is better paid.
Figure 2. Average impact of £1.50 per hour increase in the National Minimum Wage by household income decile: all households, annual cash terms

Figure 2. Average impact of £1.50 per hour increase in NMW by household income decile: men and women, percentage terms
**Impacts by age group**

Figure 3 shows the impact of the National Minimum Wage increase by age group (using the age of the “Household Reference Person” – the person who answers the main household questionnaire in the FRS - to allocate households to age groups), again as a stacked column.

The increase in the NMW has a particularly progressive impact on household income for workers aged under 25; the average increase in household net income for workers in this age group in the poorest decile is around 0.5 percent, compared with 0.25 percent or less for the other deciles. By contrast, for the 25-34 age group the percentage impact of increasing the minimum wage is highest in decile 6. The distributional impact for workers aged 35-44 is largest in the bottom three deciles, whereas for workers aged 55-64 the impact is largest in deciles 4 to 6. For workers aged over 65 the positive impact on household income is largest in the middle of the income distribution.

**Figure 3. Average impact of £1.50 per hour increase in NMW by household income decile: by age of Household Reference Person, percentage terms**

Source: author’s calculations using IPPR/Landman Economics tax-benefit model.

5: Note that this means that the ‘mixed’ category contains households containing adults of different ethnicities in addition to households where all the adults are mixed-race.
Impacts by ethnicity

Figure 4 shows the distributional impact of the minimum wage increase by household ethnicity, defined as “mixed” if adults in the household are of differing ethnicities, and according to the ethnicity of the adults in the household if all the adults in the household are of the same ethnicity. The distributional impact for white households similar to the impact for households as a whole shown in Figure 1b. For Asian households the impact of the NMW increase is more progressive than for white households, with especially large gains in the bottom decile. For black and mixed-race households the impact of increasing the NMW is also progressive, with larger gains for households in the bottom half of the distribution than the top half.

Source: author’s calculations using IPPR/Landman Economics tax-benefit model.
Impact for migrant workers

Figure 5 shows the distributional impact of increasing the NMW for migrant workers, again using a stacked column to show the impacts for migrant workers (in yellow) and non-migrant workers (in light blue). The specific impact of increasing the NMW for migrant workers is progressive across most of the income distribution except for a peak in decile 6.

**Figure 5. Average impact of £1.50 per hour increase in NMW by household income decile: migrant and non-migrant workers, percentage terms**

![Graph showing distributional impact of NMW increase](image)

Source: author's calculations using IPPR/Landman Economics tax-benefit model.

Impacts by industrial sector

Finally in this section, Figure 6 shows the distributional impact of increasing the minimum wage for the six specific industrial sectors looked at in this report. Again the results are shown as a stacked column graph, with a seventh ‘other industries’ category at the top of the graph for completeness.

The distributional impacts of the minimum wage increase are particularly progressive for retail and cleaning workers, whereas for care sector workers the distributional impact peaks across the middle of the household income distribution. For hospitality workers there are two peaks in the distribution, at the bottom and in the middle. For food manufacturing the average increase in net incomes is largest in the bottom decile but there are also peaks further up the distribution.
Figure 6. Average impact of £1.50 per hour increase in NMW by household income decile: by industry, percentage terms

Source: author's calculations using IPPR/Landman Economics tax-benefit model.
4: The microeconomic employment impact of increasing the National Minimum Wage

This section discusses the potential employment impact of increasing the National Minimum Wage, focusing on the 'microeconomic' impacts – not taking account, for the moment, of potential macroeconomic impacts on employment resulting from increased demand for goods and services in the economy. Section 5 below discusses potential macroeconomic impacts.

**Theoretical models of the effect of minimum wages on employment**

The predictions from economic theory about the potential employment effect of a wage floor depend on the assumptions made about the way the labour market works.

The most simplistic economic model of the labour market assumes ‘perfect competition’, whereby each worker is paid the value of what he or she produces. This model predicts that a minimum wage will either have no effect on the labour market whatsoever (if set at a level below what the lowest-paid worker in the labour market is paid) or will reduce employment (if set above this level). In this view, the higher the minimum wage is, the higher unemployment will be. Any worker for whom the minimum wage is greater than the value of their hourly productivity will lose their job when the minimum wage is introduced in this model.

Alternative models based on ‘imperfect competition’ in the labour market (e.g. Manning 2003) suggest that due to features of real-world labour markets such as employers’ market power and the costs to employees of moving jobs, it is quite possible that many workers are being paid less than the value of what they produce. In this situation, it is possible for a minimum wage to raise wages without having any adverse effect on employment. In fact, in certain models there may be a positive impact on employment (Card and Kreuger, 1995). There is still a certain critical level of minimum wage above which we would expect to encounter adverse employment effects, but it is an empirical question as to where that level is.

Kaufman (2009) suggests that there is an additional rationale for minimum wages that goes beyond arguments about the structure of the labour market. This is the inequality of bargaining power between workers and employers. Bargaining inequality arises partly from the fact that labour is a perishable good which cannot be inventoried like most other production goods. Most workers’ bargaining power in employment negotiations is limited by the fact that they cannot
afford to live for long without working – in other words they are likely to have ‘shallower pockets’ than employers. This is particularly the case for workers on very low wages who are unlikely to be able to save large amounts. Also, in countries with relatively weak employment protection, unskilled workers are easier to substitute with alternative sources of labour in the event of industrial action (because employers do not need to spend a lot on training up new workers if they dismiss the strikers). Hence, the particular conditions of low-wage labour markets tilt bargaining power in favour of employers and results in low-wage workers having to accept lower average wages than they would do if bargaining strength of employers and workers were equal.

**Empirical research on minimum wage employment effects**

Theory, then, suggests that the employment impact of a minimum wage is an open question. What does the empirical evidence suggest? The debate has swung wildly between defenders and opponents of minimum wages ever since 1995, when two eminent American labour economists, David Card and Alan Krueger, produced results from micro-studies on US data\(^6\) which seemed to overturn the standard orthodoxy, showing that the best estimate of the effects of the minimum wage on US employment using micro-data from the 1980s and early 1990s was zero (Card and Krueger, 1995). This conclusion has since been challenged: Neumark and Wascher (2007) argued, based on a meta-analysis of findings from micro-studies in the US and other countries, that there is a significant negative impact of increases in the minimum wage on employment, averaging across all studies.

However, more recent analysis by Doucouliagos and Stanley (2009) using a meta-study of 1,474 empirical estimates of the effect of minimum wages on employment from 64 studies using US data finds that the results of Neumark and Wascher – at least for the US – are entirely driven by publication bias. This is the tendency, well-documented in empirical academic publications in a host of subjects, for empirical research which produces an outcome of an intervention or policy significantly different from zero to be more “interesting”, and hence more likely to be published, than research which shows no effects of the policy or intervention (Sackett, 1979). In a minimum wage context, this gives two implications:

1. Studies which find a negative impact of minimum wages on employment are more likely to be published than studies which find no effects.

2. Where researchers conduct an empirical study which produces several different results\(^7\), there is a tendency to focus on the results which are statistically significant and different from zero, as this will make the paper more likely to be published (publication being the immediate objective of most researchers).

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\(^6\): In the US there is a national (federal) minimum wage but each individual state can choose to set a state-level minimum wage in excess of the national minimum. Most of the US studies are based on “difference-in-differences” estimates which look at the change in employment levels in a state or states where the minimum wage was increased and compare this with the change in employment levels in a state or state where the minimum wage was held constant. Often, the studies look at matched workplaces in each state (for example, fast food outlets).

\(^7\): Most empirical research, whether based on macro or micro data, produces several different estimates of the impact of the policy intervention being studied. The reason is that there are many different specifications that can be used for a regression (in terms of which variables are included and which are left out, the sample period, the particular econometric estimation technique used, etc.)
Once publication bias is controlled for using appropriate statistical techniques, the estimated average effect of minimum wages on employment in the United States from the meta-analysis is almost exactly zero.

The evidence from the UK is smaller in quantity but of comparable quality to the US. The Low Pay Commission (LPC) regularly commissions empirical work on the labour market effects of the UK’s National Minimum Wage (NMW). The two most recent major LPC studies are as follows:

- Dickens, Riley and Wilkinson (2009) use data from the UK Labour Force Survey (LFS) and the Annual Survey of Hours and Earnings (ASHE), and local area-level data to examine the impact of rises in the NMW between 2001 and 2006 on the wage distribution and on UK employment and unemployment. In terms of wage impacts, Dickens et al find little evidence of ‘spillover’ or ‘knock-on’ impacts on wages further up the wage distribution – the effects of the minimum wage are mainly confined to the lowest paid 10 percent or so of wage-earners. The impacts on employment are mixed, but small. There is some evidence of reductions in hours for adult men resulting from upratings of the NMW in 2001 and 2003, but these are small in magnitude. In general there is no statistically significant evidence of reductions in employment or increases in unemployment arising from the uprating of the minimum wage in the UK. This is consistent with earlier evidence on the initial introduction of NMW which found no employment or unemployment effects.

- Bryan, Salvatori and Taylor (2012) estimate the employment impact of the NMW during the recent recession using data from 2008 to 2011 and compare these results with impacts estimated for the years before the recession (1999 to 2007). The analysis uses two methods: (1) difference-in-difference (DID) methods applied to data from the UK Labour Force Survey (LFS), comparing workers earning the minimum wage with workers just above the minimum wage; (2) methods based on the extent to which the NMW affects earnings in different geographical areas, derived from the Annual Survey of Hours and Earnings (ASHE). This is based on the idea that the NMW has a large “bite” in low pay areas but a smaller bite in high pay areas. The results suggest that the NMW had no adverse effect on employment retention, hours worked or the probability of unemployed people finding a job either before or after the recent recession.

In summary, there is no evidence that the recent levels of minimum wage in the UK have produced any adverse effects on employment. This conclusion also tallies with recent evidence for the United States (where the most research on this topic has been done).

8: The techniques are based around the idea that in the absence of publication bias, the probability distribution of the estimated effects of a policy should follow a symmetric distribution around the average. If the estimated effects are asymmetrically distributed (as is the case for the minimum wage studies examined by Doucouligas and Stanley) then it is clear evidence of publication bias, and the "real" average effect has to be estimated from the "truncated" distribution.

9: Prior to the introduction of the NMW in 1999 there was some concern that it would prompt knock-on wage increases for workers further up the wage distribution in a bid to maintain differentials between the lowest paid workers and those slightly further up the distribution. However, this does not seem to have happened (for earlier evidence see Dickens and Manning (2004)).
Recent research on the potential employment effects of increased minimum wages

While there is no evidence that the minimum wage has caused adverse employment effects in the UK, a £1.50 increase would be particularly large in the context of recent increases in the level of the NMW. Is there any reason to expect a significant reduction in employment if a living wage were implemented across the board with immediate effect in the UK?

Recent research by the Institute for Public Policy Research and the Resolution Foundation (Lawton and Pennycook, 2013) used estimates from the the National Institute for Economic and Social Research (NIESR) – one of the UK’s leading independent macroeconomic forecasters – of how many jobs would be lost if the Living Wage were introduced across the board in the private and voluntary sectors. The current level of the Living Wage is £8.80 for workers in London and £7.65 for workers outside London. Compared to these levels, an increase in the National Minimum Wage to £7.81 would be slightly above the Living Wage rate outside London but well below the London Living Wage rate. The NIESR model estimated 160,000 job losses from the introduction of a minimum wage. Against overall UK employment levels of 29.8 million this implies a reduction of around 0.5 percent in overall UK employment – not a large impact, but not negligible. Given that the overall wage increase resulting from a £1.50 increase in the NMW is almost £1 per hour below the living wage level for London, and only just above the living wage level outside London, it seems reasonable to conclude that if NIESR had modelled the employment impact of a £1.50 per hour increase in the National Minimum Wage, their estimate of the employment impact would have been smaller than 160,000 jobs.

In any case, as the authors of the IPPR/Resolution Foundation report point out, the NIESR research should not be taken (and is not intended to be presented) as a definitive estimate of the employment impacts of introducing a statutory living wage, because:

“\textit{The analysis… only provides estimates of the impact of a wholesale move to the living wage pay floor on labour demand. This provides a valuable insight into the employment trade-offs associated with a move to a living wage economy but it is not a prediction of the direct employment effects of such a move… The labour demand effects calculated in the paper are conditional on both the scale of output, labour force participation and labour efficiency. This means that the labour demand effects discussed here do not necessarily provide estimates of the employment effects of the living wage… The modelling does not account for possible endogenous changes such as any increases in labour efficiency or a change in the scale of production that might occur as a result of a move to a living wage pay floor and is therefore not, and was not intended to be, indicative of a general equilibrium change in employment.”}

The key point to note from this research is that if a similar exercise had been conducted prior to the introduction of the National Minimum Wage in 1999 it would also have predicted significant job losses from the introduction of the policy. The NIESR estimates assume an orthodox model of the labour market where any kind of wage floor reduces employment (unless the wage floor is set so low that it is below the level of the lowest paid worker in the labour market). But, based on the evidence reviewed above on the employment impact of the minimum wage, there is no reason to believe that the UK labour market conforms to this paradigm.

This does not mean that the minimum wage could be raised to any arbitrary level without any adverse employment effects; even in alternative models of the labour market there is some level above which increases in the minimum wage would result in unemployment. But it is far from clear that a minimum wage level of £7.81 is sufficiently high to cause reductions in employment.

In addition, recent research from the UK\(^{11}\) and the US\(^{12}\) finds evidence of positive benefits in many cases where firms have increased wages for low-paid workers, including improved worker retention, and thus lower recruitment and training costs and lower absenteeism rates, as well as increased output per worker. These additional factors would also help mitigate any adverse employment effect.

Based on the LPC-commissioned evidence on the impact of the National Minimum Wage, and the IPPR/Resolution Foundation research reviewed in this chapter, it seems likely that – abstracting from any macroeconomic impacts (to be discussed in the next chapter) the employment reduction resulting from an increase in the NMW would be small - quite possibly zero, but in any case below 160,000 jobs.

\(^{11}\): For example, a study by the Greater London Authority found that more than 80 percent of employers believe that the living wage had enhanced the quality of work of their staff, while absenteeism had fallen by a quarter, two thirds of employers reported a significant impact on recruitment and retention (GLA, 2012). Reed and Lansley (2013) also present evidence of positive productivity effects following the adoption of the living wage by firms such as KPMG, PWC and Linklaters.

\(^{12}\): See, for example: evidence from the US which suggests that a living wage can boost productivity, not by firms substituting higher-skilled for lower-skilled employees, but by raising work effort following higher wages (Brenner, 2005; Chapman and Thompson, 2006).
5: Macroeconomic impacts of increasing the National Minimum Wage

This section discusses the potential for a £1.50 per hour increase in the NMW to result in increases in employment through the stimulus impact of increased demand in the economy. To estimate the impacts of increasing the NMW on the UK macroeconomy it is necessary to make assumptions about the size of the fiscal multiplier. The relevant multiplier for the current report is a number capturing the extent to which increases in net incomes and the improvement in the government’s fiscal balance arising from the increase in the minimum wage feed through into increases in GDP through increased economic activity among UK-based companies and workers.

A £1.50 per hour increase in the National Minimum Wage has three potential multiplier impacts on UK GDP:

- The wages impact: the increase in net incomes arising from the increase in gross wages should lead to increased consumer demand which has a positive multiplier impact on GDP.
- The profits impact: the reduction in net incomes arising from a decrease in profits may lead to reduced consumer demand which would have a negative multiplier impact on GDP.
- The public finances impact: the increase in income tax, expenditure tax and NICs receipts and the reduction in benefit and tax credit spending leads to an improvement in the public finances even after taking into account increases in the public sector wage bill and reductions in corporation tax revenue. This means that government spending does not need to be cut as badly as current plans suggest. If the improvement in the public finances is matched by an increase in government departmental and investment spending – so that the overall government fiscal position is unchanged – then there should be a positive multiplier impact on GDP.

The UK’s Office of Budget Responsibility makes the following assumptions about the size of the multiplier in the UK in its economic forecasting model13, with the size of the multiplier depending

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13: The OBR model is the same model that HM Treasury uses.
on where the increase (or decrease) in demand comes from. Table 6 below shows the OBR’s multiplier assumptions. In general the multiplier impact of increases in public spending is higher than the multiplier impact of tax cuts or benefit increase, largely because consumers tend to save rather than spend a portion of the extra disposable income which they gain from the tax cut, which reduces the multiplier effects.

Table 6. OBR multiplier assumptions

<table>
<thead>
<tr>
<th>Source of demand increase (decrease)</th>
<th>Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction (increase) in VAT</td>
<td>0.35</td>
</tr>
<tr>
<td>Reduction (increase) in personal tax and NICs</td>
<td>0.3</td>
</tr>
<tr>
<td>Increase (reduction) in benefit/tax credit spending</td>
<td>0.6</td>
</tr>
<tr>
<td>Change in government spending on departments</td>
<td>0.6</td>
</tr>
<tr>
<td>Change in government capital investment spending</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Source: HM Treasury (2010), Table C8

The calculation of macroeconomic effects of a £1.50 increase in the National Minimum Wage in this report proceeds in two stages. Firstly I estimate the change in GDP arising from all three of these channels using the OBR multipliers. Secondly I examine recent criticism of the OBR’s multiplier assumptions from the International Monetary Fund (IMF) and re-estimate the change in GDP using the IMF’s alternative assumptions which imply that the true multipliers are larger than those used by the OBR.

The wages impact: As explained previously the increase in the NMW leads to an increase in net incomes for low-paid workers of around £3.75 billion. In terms of the multiplier effects, these are likely to depend to a large extent on how much the income of poorer households is boosted compared to richer households. Recent research from the Bank of England (Bank of England, 2012, pp338-339) suggest that the marginal propensity to consume out of income is higher for lower income households than for high income households. Meanwhile, the distributional results from Figure 1a show that the cash impact of increases in the minimum wage is highest for households in the middle of the income distribution.

The OBR multiplier estimates suggest that increases in demand arising from income tax and National Insurance Contribution cuts have a multiplier effect of 0.3 whereas increases in demand arising from benefit and tax credit increases have a multiplier effect of 0.6. Given that the distributional effect of increasing the NMW is more progressive than the effect of income tax and

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14: Specifically, the Bank of England research (based on a household survey carried out by NMG Consulting for the Bank) suggest that the reduction in consumption for a negative income shock is around 78 pence for every pound by which income reduces for households with gross incomes of less than £9,500 compared with 45 pence for every pound of reduced income for households with gross incomes of more than £50,000 per year. These estimates of the marginal propensity to consume cannot be applied directly to estimate the impact of the living wage on consumption because the Bank of England estimates apply to falls in income rather than increases in income and also the survey includes both temporary and permanent changes in income (economic theory suggests that the effect of a temporary change in income on consumption should be lower than the effect of a permanent change in consumption.)
NICs cuts but less progressive than the impact of benefit and tax credit increases, it makes sense to use a value for the multiplier impact of minimum wage increases that is somewhere in between the OBR’s multiplier estimates for tax cuts and its estimates for benefit increases. Therefore, I assume that the multiplier impact of increasing the National Minimum Wage is 0.45.

This means that, using the OBR estimates, the multiplier impact of increased net wages is 0.45 x £3.75bn = £1.7bn (to the nearest £100 million).

The profits impact: the impact of reduced profits on consumer demand is likely to be relatively minor, at least in the short run. A proportion of profits is paid out to shareholders as dividends and it is likely that reductions in profits will result in reduced dividend payments. However, most company shares are held by institutional investors such as pension funds; in most cases there will be a considerable time lag between the dividends being paid and the accumulated pension funds being used by the relevant policyholder to purchase an annuity. Furthermore, a substantial proportion of UK company shares are held by institutions or individuals who are not based in the UK. For these two reasons, I have assumed here that the short-run impact of reduced profits on consumer demand is zero.

The impact of improved government finances: as shown in Table 2 above, a £1.50 per hour increase in the NMW results in an improvement of around £2.1 billion in the public finances (receipts minus expenditure). If this extra income is used to increase public spending relative to current government plans, according to the OBR the multiplier impact depends on what the extra resources are spent on. I assume here that half of the improvement in the public finances is spent on capital investment (e.g. infrastructure) with the other half being used to increase other aspects of departmental spending\(^\text{15}\). This implies a multiplier impact of 0.9 (halfway between the OBR’s estimate for investment spending and its estimate for other departmental spending) which means that the overall increase in GDP resulting from the improvement in the public finances arising from the increase in the NMW is equal to: £2.1bn x 0.9 = £1.9 billion.

This implies that an increase of £1.50 per hour in the National Minimum Wage results in a total GDP increase (via multiplier effects) of £1.7bn (wages impact) + £1.9bn (public finances impact) = £3.6bn.

How many jobs is this macroeconomic stimulus likely to lead to? The most recent currently available estimates of the share of wages in GDP suggest that it is around 54 percent – implying that the increase in the total wage bill arising from the macroeconomic stimulus provided by the increase in the NMW is around £1.95 billion. Given current average (full-time) wages of around £26,500 per year\(^\text{16}\), this implies (£1.95 billion / 26,500) = approximately 73,500 extra full-time equivalent jobs.

\(^{15}\): Another option would be for some of the improvement in the public finances to be used to reduce net government borrowing, but the recent IMF evidence on the size of the fiscal multipliers in the post-2008 global economic downturn suggests that this would be a poor use of the extra government funds because the negative impact of spending reductions is so much higher in a period of economic depression like the current situation than in normal economic circumstances. See Weldon (2012) and Reed (2013) for more on this.

\(^{16}\): Using the estimate of £502.20 per week for mean wages across all employees in ASHE 2013 and allowing for wage inflation of between 1 and 2% during 2014.
However, 73,500 jobs is likely to be an underestimate of the overall macroeconomic impact of increasing the NMW because the OBR multiplier estimates do not take any account of the general state of the macroeconomy. There is good evidence from the International Monetary Fund that multiplier effects are larger – and perhaps much larger – when national economies are operating well below full employment (which is likely to be the case in the UK’s current situation, despite the improvement in the economy from 2013 onwards).

The IMF’s *World Economic Outlook 2012* gives estimates based on the IMF’s own empirical research across countries suggests that fiscal multipliers (taking an average of the multipliers for public spending changes and tax and benefit changes) averaged around 0.5 in advanced economies in the three decades leading up to 2009. However, in the current global economic downturn which followed the financial crisis of 2008 and the subsequent weak recovery, the IMF’s new research suggests that multipliers are much higher: between 0.9 and 1.7 (IMF, 2012: see also Weldon, 2012).

Taking an average of the OBR’s tax and public spending multipliers as shown in Table 7 shows that they are similar to the IMF’s pre-2009 estimate of 0.5. If instead we scale up the OBR’s multiplier estimates to be in line with the IMF’s new estimates, the estimated positive GDP impact of the increased minimum wage is much higher, and the estimates of number of jobs created correspondingly higher as shown in Table 7 below.

**Table 7. Estimates of number of jobs created by stimulus impact of increasing the NMW: OBR estimates compared with new IMF estimates**

<table>
<thead>
<tr>
<th>Multiplier estimates</th>
<th>OBR</th>
<th>IMF lower bound</th>
<th>IMF upper bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP impact (£bn)</td>
<td>(0.5)</td>
<td>(0.9)</td>
<td>(1.7)</td>
</tr>
<tr>
<td></td>
<td>3.60</td>
<td>6.48</td>
<td>12.24</td>
</tr>
<tr>
<td>Increase in wage bill (£bn)</td>
<td>1.95</td>
<td>3.51</td>
<td>6.63</td>
</tr>
<tr>
<td>Number of jobs created</td>
<td>74,000</td>
<td>132,000</td>
<td>250,000</td>
</tr>
<tr>
<td>(at average full-time wage) – to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nearest thousand</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This implies that even if the microeconomic jobs impact of increasing the minimum wage were as severe as 160,000 jobs lost (the NIESR estimate based on introducing a statutory living wage), based on the recent multiplier estimates from the IMF the macroeconomic impact is likely to at least offset this. The midpoint of the lower and upper bound IMF estimates is an increase in employment of 190,000, which would result in a net increase in employment from the stimulus impact of increasing the minimum wage even if the microeconomic effects produced a reduction in jobs. Any job losses in certain low-paying industrial sectors would be more than compensated for by employment gains in higher-paying sectors. Overall, it looks likely that under current economic conditions increasing the National Minimum Wage by £1.50 per hour would lead to an employment increase of at least 30,000 jobs – and quite possibly an even larger increase than that.
6: Conclusions

This report has shown that an immediate increase of £1.50 per hour in the National Minimum Wage would result in an average net gain of £813 per year (£1,400 gross) for around 4.6 million workers currently paid either at the National Minimum Wage level or less than £1.50 per hour above it. The public finances would also improve by at least £2.1 billion. The distributional impacts of the increase in the minimum wage are progressive as a percentage of net income.

While increases in the minimum wage are often opposed on the grounds that they would lead to job losses, the analysis in Section 5 of this report shows that once the potential stimulus effects of increasing the minimum wage are taken into account there is a potential for modest gains in employment. Taken together with the distributional and fiscal effects shown in Sections 2 and 3, the analysis presented here makes a powerful economic case for an immediate increase in the National Minimum Wage of £1.50 per hour.
References


Appendix A: Adjustment of hourly wages in the Family Resources Survey using the Annual Survey of Hours and Earnings

The FRS is a reliable source of information on weekly earnings, but the hourly wage information is not fully reliable because the survey responses on the number of hours each person works per week in the survey, and the survey responses on weekly wages, are taken from different weeks in many cases. Because of this, the FRS hourly wage measure is an overestimate of the proportion of workers in the UK working at, or just above, the minimum wage.

To address this problem, the analysis in this report uses data from the Annual Survey of Hours and Earnings – a much bigger survey than the FRS which explicitly collects accurate hourly wage information – to recalibrate the hourly wage measures in the FRS so that the adjusted FRS offers a more accurate representation of the hourly wage distribution in the UK.

The recalibration of the FRS hourly wage distribution is achieved by using published statistics from the Annual Survey of Hours and Earnings for 2012 (ONS, 2013) which show various percentiles of the hourly wage distribution for workers, disaggregated by 1-digit industrial sector using the SIC07 industrial classification (giving 20 industrial sectors from A (agriculture, forestry and fishing) to T (activities of households as employers). These percentile points are then compared with percentile points in the FRS distribution of hourly wages, and hourly wages for low paid workers (below £8 per hour) are adjusted upwards so that the distribution of adjusted hourly wages for low-paid workers in the FRS matches the distribution of hourly wages for low-paid workers in ASHE. Table A overleaf gives an example of this process for a particular industry sector (section N – administration and support service activities, which contains 2-digit SIC code 81, cleaning, which is one of the sectors featured in the main report.)
After these adjustments, the new FRS hourly wages for each sector are also uprated from 2012 to 2014 prices. This is done by comparing wages at various percentile points in the 2013 ASHE data with the 2012 ASHE data, and calculating the annual uprating factors for each industry sector at each point in the hourly wage distribution. Because ASHE data for 2014 has not yet been released the uprating factors from 2012 to 2013 are assumed to continue through to 2014 to give 2 years of uprating.
Appendix B: Identification of industry sectors in the Family Resources Survey

The FRS SIC variable (which is defined using the 2-digit SIC07 classification) was used to identify the industrial sectors used in the analysis of the impact of increasing the minimum wage for specific sectors as explained in Table B opposite.

**Table B. Sectors used for industry analysis: 2 digit codes and description**

<table>
<thead>
<tr>
<th>Industry</th>
<th>2-digit SIC07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail</td>
<td>47: retail trade, except of motor vehicles and motorcycles</td>
</tr>
<tr>
<td>Hospitality</td>
<td>55: accommodation</td>
</tr>
<tr>
<td></td>
<td>56: food and beverage service activities</td>
</tr>
<tr>
<td>Cleaning</td>
<td>81: services to buildings and landscape activities</td>
</tr>
<tr>
<td>Agriculture</td>
<td>1: crop and animal production, hunting and related service activities</td>
</tr>
<tr>
<td></td>
<td>2: forestry and logging</td>
</tr>
<tr>
<td></td>
<td>3: fishing and aquaculture</td>
</tr>
<tr>
<td>Food manufacturing</td>
<td>10: manufacture of food products</td>
</tr>
<tr>
<td>Care (childcare and social care)</td>
<td>87: residential care activities</td>
</tr>
<tr>
<td></td>
<td>88: social care activities without accommodation</td>
</tr>
</tbody>
</table>

**Social care and childcare**

The original intention in this report was to look separately at the impact of raising the minimum wage in the social care and childcare sectors. However, childcare work is only specifically defined at the 4-digit SIC level (code 88.91) and so it is not possible to use the FRS data to isolate the impact of increasing the NMW on childcare workers. An analysis of the Labour Force Survey (which has industry data at the 4-digit level) showed that within the broadly defined care sector (SIC codes 87 and 88), around 10 percent of employees were in the childcare subsector. The distribution of hourly earnings for childcare workers in the LFS appears to be similar to wages for other forms of care work. It seems reasonable therefore to assume that the distributional and fiscal impacts of an increase of £1.50 per hour in the NMW for childcare workers are approximately equal to a one-tenth scaling of the distributional effects for the whole of the care sector.