

An Economic Analysis of the Living Wage in Northern Ireland

A Report for NICVA

**Centre for
Economic Empowerment
Research Report: eight**



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A Report for NICVA
by Oxford Economics

FOREWORD

One of the most troubling aspects of the long boom which preceded the 2008 crash was how low pay became more prevalent at the same time as profits flourished and wages soared at the top end of the labour market. This not only jarred with many people's sense of fairness and undermined bonds of social solidarity; it also contributed to rising economic inequality, a major cause of the recession and a source of various social and economic problems. Eradicating low pay is therefore a key element of creating a good economy.

The Living Wage is a key indicator of low pay. It is the hourly rate that would provide a full-time worker with a basic, but acceptable, standard of living. In Northern Ireland the Living Wage is currently £7.65; approximately one quarter of employees earn less than this benchmark.

While the ethical case for paying employees the Living Wage resonates widely, there is less agreement on the economic consequences. Higher labour costs could result in reduced profits and investment, as well as job losses and inflation. Others claim that raising wage levels would improve workers' productivity, boost consumer spending, and therefore employment. In this context the economic implications merit careful consideration.

This report, the eighth published by NICVA's Centre for Economic Empowerment, estimates the economic impact of raising the pay of all workers in Northern Ireland to the level of the Living Wage. The authors conclude that the Living Wage could be adopted without net economic detriment, and may even result in a net economic gain.

Given this positive appraisal it is interesting to note that many campaigners do not advocate raising the statutory Minimum Wage to the level of the Living Wage. Rather, they target specific employers who they believe can afford to pay their low-wage workers more. The findings of this report suggest that it is perhaps time for the Living Wage campaign to become more ambitious. At the very least, ensuring that every worker receives a decent wage should be adopted as a long-term goal.

Seamus McAleavey

NICVA Chief Executive

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EXECUTIVE SUMMARY

This report attempts to estimate the economic impact of introducing the Living Wage Foundation's Living Wage across all employers in Northern Ireland. Using labour market data from 2012 and the appropriate Living Wage figure for that year of £7.20 per hour, this study seeks to quantify the implications of the policy for the wider economy.

Who's earning less than the Living Wage?

It is estimated that **173,000 employees in Northern Ireland earned below the then Living Wage in 2012, some 23% of all employees in the region.** These workers were disproportionately young, part-time workers with low-skill levels working in the private sector, and female workers were more likely than males to be earning below the Living Wage.

The occupations with the highest proportion of workers earning below the Living Wage were sales and customer services (69%), and elementary occupations (57%) in which a clear majority of employees earned below £7.20. The industries with the highest proportions of low-paid workers included accommodation and food services (74%), agriculture (56%), and wholesale and retail trade (50%). In absolute terms, the largest group of workers earning below the Living Wage were employed in wholesale and retail trade (56,000), and accommodation and food services (28,000).

The proportion of full-time workers in the voluntary and community sector (VCS) earning less than the Living Wage was slightly higher than that for full-time workers in Northern Ireland as a whole, at 16%. The proportion of low-paid employees supported by public procurement was estimated to be 35%, higher than the Northern Ireland average owing to the pay of sectors from which the public sector tends to procure goods and services.

The economic impact of the Living Wage

Had a mandatory Living Wage been in effect in Northern Ireland in 2012, the 173,000 workers earning below the Living Wage would have received an **additional £221 million in gross wages** to bring them up to the new minimum of £7.20 per hour, assuming no other changes in the structure of the Northern Ireland economy. This increase equates to one per cent of Northern Ireland's total wage bill. Of this £221 million, the Exchequer would have received £88 million (around 40%), through increased direct taxes and reduced benefit and tax credit payments. After accounting for such Exchequer effects and a small degree of savings among recipients, it is estimated that the policy would have **boosted consumption in Northern Ireland by around £132 million (some 0.5%).**

On the best-case assumption that firms adjust to the higher minimum wage by boosting productivity, such an increase in economic activity would not be off-set by the negative impact of alternative adjustment channels, such as firms passing on higher prices to consumers or absorbing the wage costs in lower profits.

Using an input-output model of the Northern Ireland economy, it is estimated that this increase in demand would have generated up to an extra **£84 million gross value added contribution to the Northern Ireland economy and 2,500 local jobs.**

As part of that total impact estimate, if the Living Wage had been in force across all **public procurement** contracts in 2012, the aggregate gross wage among these employees would have increased by £16 million. After taxes and savings have been accounted for, it is estimated that this would have provided a £10 million consumption boost within the Northern Ireland economy. Taking account of the subsequent supply chain and wage consumption impacts, this spending would have supported a local gross value added contribution of over £6 million and employment for just over 180 people.

This study does not explicitly model the source of the funds used to pay the additional £221 million in aggregate wage increases across the Northern Ireland economy. However, it considers the empirical evidence on five potential channels of adjustment by which firms might bear these higher wage costs, and considers the degree to which the true economic impact of the Living Wage might ultimately be lower than the best-case scenario presented here. Rough estimates are presented of the potential impacts of some of these (e.g. job losses, higher prices, or reduced profits).

Ultimately, to the extent that the Living Wage would boost the productivity of affected firms, it could be expected to have a positive economic impact on the economy of Northern Ireland. However, the magnitude of such an effect is likely to be reasonably modest.

The table below summarises the economic impact under the best-case scenario and a more conservative alternative scenario, in which the wage increase results in some job losses, but still a net job gain overall.

Summary Table of Modelling Results

	Gross Wages (£m nominal)	Tax and benefit withdrawal (£m nominal)	Consumption (£m nominal)	Total GVA (£m nominal)	Employment gain	Employment loss	Total Employment (net increase)
Best-case Scenario	221	88	132	84	2,500	0	2,500
Sensitivity Scenario - employment loss	209	83	124	79	2,400	1,200	1,200

1. INTRODUCTION

The adult rate (for those aged 21 years and over) of the UK National Minimum Wage (NMW) has risen 75% since its introduction in 1999¹, growing faster than average earnings and prices over the same period. Today, the main adult rate stands at £6.31 per hour.

However, in recent years, prices (as measured by both the CPI² and the RPI³) have risen faster than the NMW, leading to a fall in the NMW in real terms. As shown in Figure 1.1, the CPI and RPI grew by 13% and 16%, respectively, from 2009 to 2013, whereas the UK adult NMW grew by 9% over the same period. Compared to changes in wages in the rest of the labour market in recent years, however, the picture is less bleak. The value of the NMW relative to average earnings was at its highest in October 2012 and remained close to this level in 2013. Consequently, the reduction in the real NMW wage reflects the wider squeeze on wages since the financial crisis.⁴

Figure 1.1 Annual percentage change of prices and the NMW in the UK from 2009 – 2013



Source: Oxford Economics, ONS, www.gov.uk

This has led to growing concerns about in-work poverty levels, with UNISON noting that “the gap between the NMW and the wage level necessary to reach a minimum income standard has widened in recent years.”⁵

It is important to note that not all low-wage employees are in poverty. Low pay is determined by an individual’s gross hourly earnings, whereas poverty relates to the net disposable income of a household. Several factors may mean that a low-paid individual is not in a poor household. Many low-wage employees are part of households that contain high-wage earners, receive significant support from the tax credits and benefit system, or have other sources of income. Some low-wage workers may simply work very long hours. Such households could have net disposable income sufficient to take them above the relative income poverty line. Nevertheless, a large proportion of the people in poverty are working, hence higher gross pay rates would play a role in alleviating poverty.⁶

¹ The NMW adult rate was £3.60 in 1999.

² Consumer Price Index.

³ Retail Price Index.

⁴ Low Pay Commission (2014) *The National Minimum Wage: Low Pay Commission Report 2014* page 46.

⁵ Low Pay Commission (2013) *The National Minimum Wage: Low Pay Commission Report 2013* page 47.

⁶ Living Wage Commission (2014) *Working for Poverty: The Scale of the Problem of Low Pay and Working Poverty in the UK*.

A recent report by the Joseph Rowntree Foundation stated that the NMW has risen “more slowly than headline inflation, but minimum living costs [have] rise[n] more quickly. The gap has widened especially fast for families with children in the past two years. Whereas in 2010 a couple with two children, with both parents working full-time, could reach an acceptable living standard with a wage about 30 per cent above the NMW, this has risen to over 50 per cent in 2012.”⁷

The rising cost of living has indeed put more pressure on the lowest paid. A recent Institute for Fiscal Studies report notes that that “on average, lower-income households had higher inflation rates over the last decade than higher-income households.”⁸ In particular, “the second-to-lowest income decile of the population experienced the highest average inflation rate of the period from 2000 to 2010, with a rate of 3.5%. This contrasts with the highest income decile, who experienced the lowest inflation, with a rate of 2.9%.”⁹

Concerns about stagnant wages and the growing cost of living have been magnified due to the substantial cuts to in-work financial support implemented since 2010, in order to cut the government’s budget deficit. With no prospect of these cuts being reversed, continued downward pressure on overall welfare spending and an aging population, working-age benefit spending is likely to continue to fall in real terms¹⁰ in the short-term at least.

The consequences of poverty are wide-ranging and long-lasting. A recent report by the Living Wage Commission¹¹ notes that low-income households, low pay and working poverty can lead to a number of negative outcomes. For those experiencing poverty these include: higher risk of health problems, more debt, and lower attainment for school-age children at each stage of their education. Finally, many low-wage workers do not progress up the wage hierarchy and risk being trapped in low-wage employment, something that may persist from generation to generation.¹²

As a result of these issues, there has been growing interest in the idea of using statutory minimum wages to help tackle growing levels of in-work poverty. In addition to helping the least well off in society, increasing minimum wages also has implications for the economy as a whole. In particular, it may boost economic activity by increasing overall consumption in the economy. Furthermore, increasing minimum wages will help reduce wage inequality. Within the UK as a whole, wage inequality – as measured by the ratio of incomes at the 90th and 10th percentiles of the wage distribution – rose rapidly in the 1980s and 1990s, and has remained elevated since then. Moreover, the gap between the very highest-paid individuals and the rest has continued to accelerate through the 2000s.

One policy measure that has gained wide support in recent years is the introduction of the Living Wage as advocated by the Living Wage Foundation (LWF), a group of communities, businesses, campaigners and faith groups who have come together to address working poverty in the UK. For this group, the Living Wage is defined as the amount an individual needs to earn to cover the basic costs of living within a region.¹³ Two separate wage levels are calculated – one for London and one for the rest of the UK (including Northern Ireland). In April 2012, the Northern Ireland Living Wage level was assessed at £7.20 per hour, some 18% above the adult NMW rate at that time. Of course, the concept of a ‘living wage’ is not new; it has been part of various labour movements within the UK since the 1870s. Each movement has had a similar goal, to ensure employees receive a wage that provides a socially acceptable standard of living.

Calculation of the LWF’s Living Wage is based on the Minimum Income Standard for the UK (a programme of work at Loughborough University) which regularly assesses how much income households need in order to afford an acceptable standard of living within the UK. The Centre for Research in Social Policy¹⁴ carries out this research, which is funded by the Joseph Rowntree Foundation. The uprating of the Living Wage figure each year takes account of rises in living costs and any changes in what survey respondents think of as an acceptable ‘minimum’. It also takes some account of general wage trends, to ensure that the Living Wage increases are in line with wider wage growth.¹⁵ The LWF campaigns to persuade employers who can afford to do so to pay at least the wage rates specified by the Foundation. The campaign is therefore for voluntary adoption of higher minimum pay levels by employers, rather than statutory adoption of a higher minimum wage level by government.

⁷ JRF (2012) *A Minimum Income Standard for the UK in 2012: Keeping up in Hard Times* page 32.

⁸ IFS (2011) *The Spending Patterns and Inflation Experience of Low-income Households over the Past Decade* page 1.

⁹ Ibid.

¹⁰ Both in overall and per capita terms.

¹¹ Living Wage Commission (2014) *Working for Poverty: The Scale of the Problem of Low Pay and Working Poverty in the UK*.

¹² Damian Grimshaw (2011) *What do we know about low wage work and low wage workers? Analysing the definitions, patterns, causes and consequences in international perspective*.

¹³ Source: <http://www.livingwage.org.uk/what-living-wage>

¹⁴ Source: <http://www.lboro.ac.uk/research/crsp/>

¹⁵ Source: <http://www.lboro.ac.uk/research/crsp/mis/>

In order to inform the debate around this campaign, this report tries to assess the impact of introducing a Living Wage as a minimum wage across all employers in Northern Ireland. This is in order to understand the different implications for various sectors and elements of the Northern Ireland economy.

The analytical steps of this report include:

- Determination of the incidence of a higher minimum wage across the broad sectors (including the public sector), procurement activity, and full-time employees in the VCS in Northern Ireland.
- Estimation of the static change in employers' labour costs and employees' gross wages that might arise with the adoption of an economy-wide Living Wage.
- Quantification of the implications of a higher minimum wage on the public finances through increased direct tax receipts and reduced benefit payments.
- Quantification of the impact on economic output in the Northern Ireland economy, using regional input-output tables for Northern Ireland.
- An assessment of cost implications of, and the economic impact from, the adoption of the Living Wage across public procurement and full-time employees in the VCS.
- Discussion of the possible microeconomic channels through which the impact of the Living Wage might be felt, and their implications for the net economic impact of the Living Wage on the Northern Ireland economy.

Defining the Living Wage for 2012

In this study, the Living Wage has been taken as £7.20. Although the UK Living wage was officially £7.45 in 2012, this wage was set late in the year (November 2012). Since the majority of wage data used in this study was collected in April 2012 the prevailing Living Wage rate at that time has been used, which would be the 2011 rate of £7.20.

2. THE LIVING WAGE IN NORTHERN IRELAND

2.1 Introduction

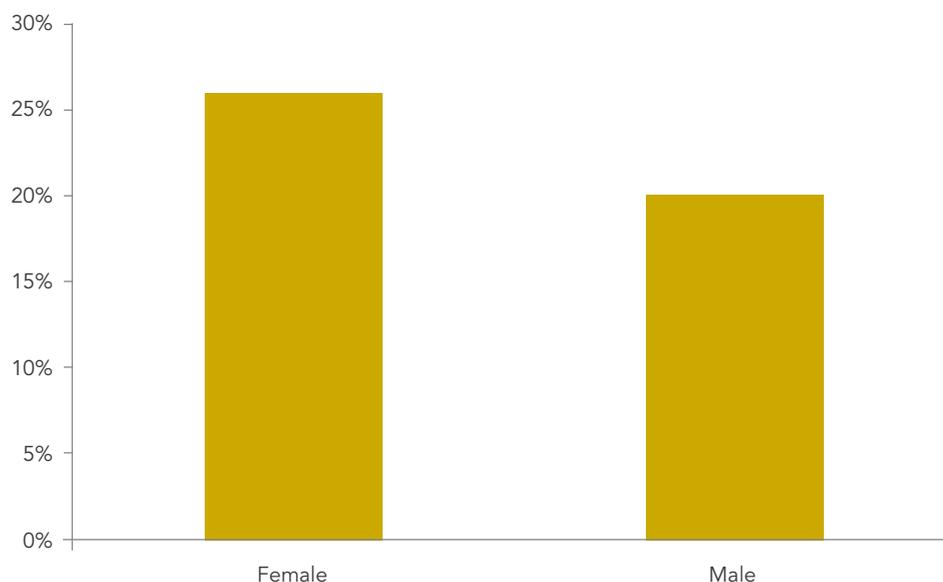
This chapter profiles the incidence of pay below the £7.20 Living Wage across Northern Ireland in 2012 along a number of dimensions: sex, age, industry, occupation, and residence. Second, it provides an estimation of the change in employers’ labour costs and employees gross wages that might arise with a widely adopted Living Wage. Finally, it estimates the incidence of pay below the Living Wage within Northern Ireland’s central government procurement contracts.

This analysis uses the Annual Survey of Hours and Earnings (ASHE), which is an annual survey of employee jobs based on a one per cent sample of all employees on HM Revenue & Customs’ Pay-As-You-Earn register, and a survey conducted by NICVA of pay levels in the VCS.¹⁶ Data on hourly pay rates at different points in the income distribution and for different groups of workers is readily available from ASHE. Oxford Economics then used linear interpolation to estimate pay rates at a finer level of detail, in order to derive a more accurate estimate of the numbers and proportions of employees on wages below £7.20 per hour. Finally, this information was used to estimate the static cost – assuming no change in behaviour by any party – of raising wages to the Living Wage rate.

2.2 Demographic characteristics of employees earning below the Living Wage

In 2012, an estimated 173,000 employees in Northern Ireland earned an hourly wage below the Living Wage, which accounted for 23% of all employees. Just over a quarter of all female employees earned below the Living Wage, compared to only 20% of all male employees (Figure 2.1).

Figure 2.1: % earning below the Living Wage by gender in 2012

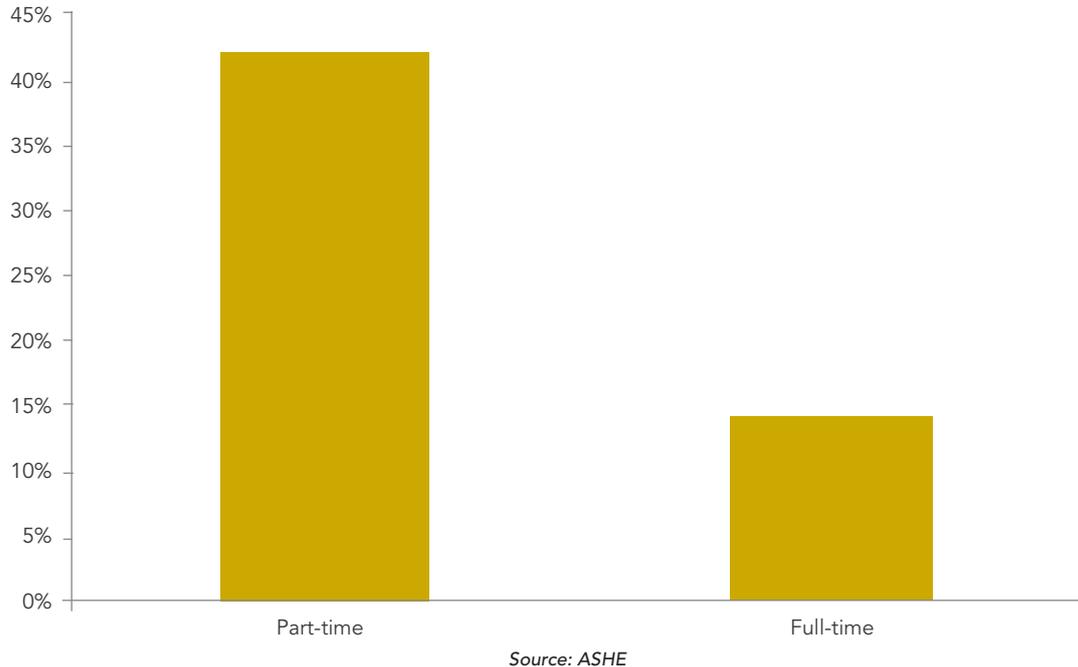


Source: ASHE

Of those employees in part-time employment, 42% earned an hourly wage below the Living Wage, whereas full-time employees who earned below the Living Wage made up 14% of the full-time employment workforce (Figure 2.2).

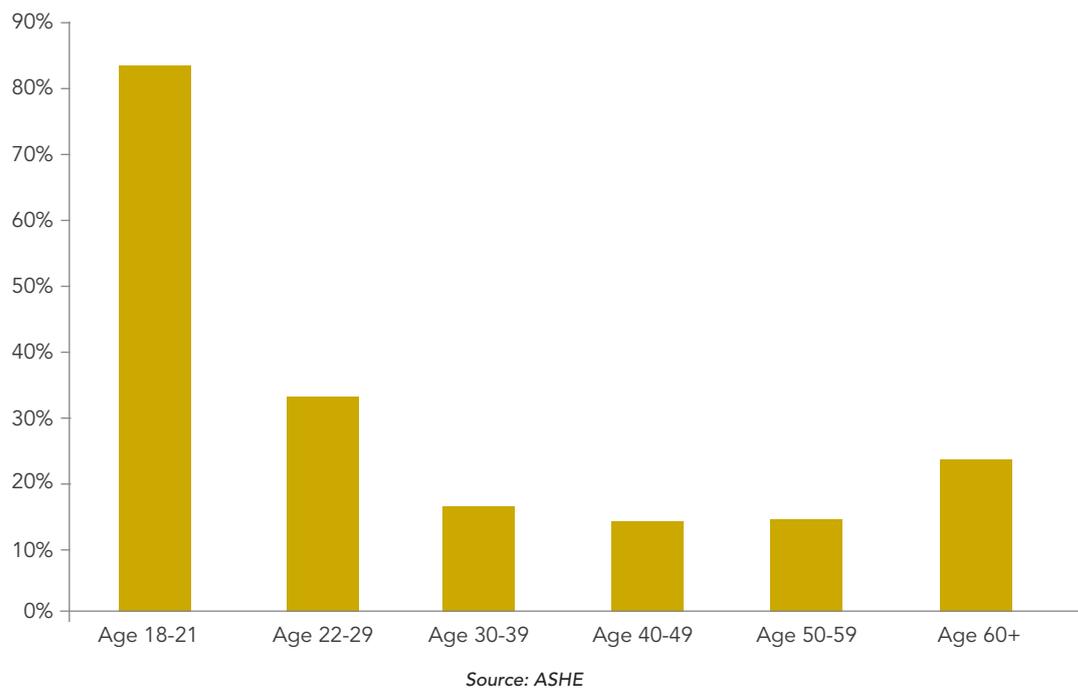
¹⁶ For more information on the methodology used for this analysis, please see Appendix 2.

Figure 2.2: % earning below the Living Wage by type in 2012



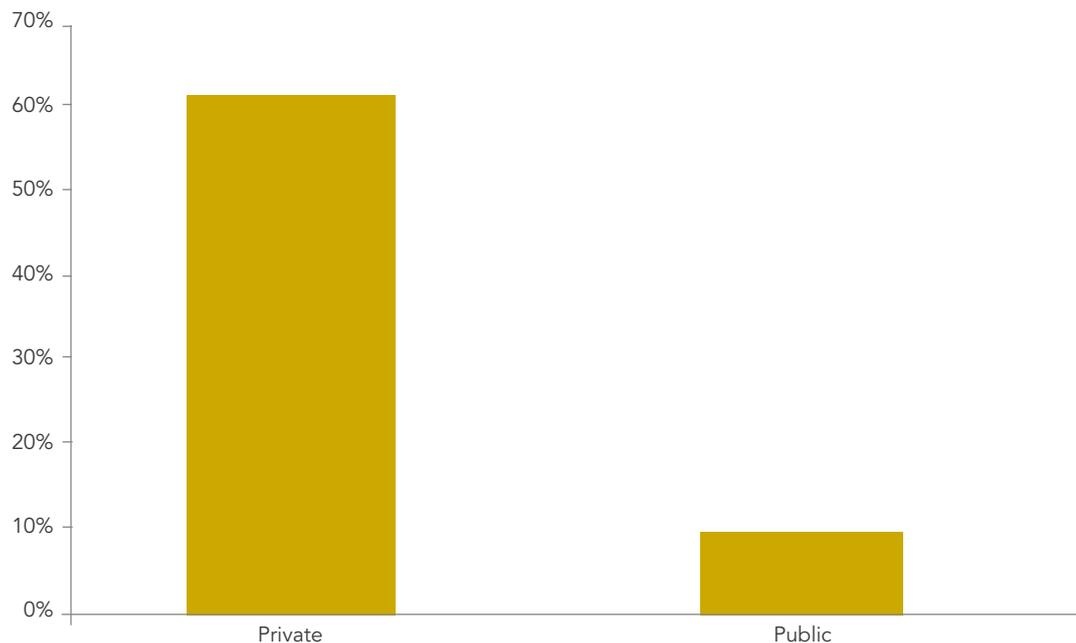
In 2012, the overwhelming majority (83%) of employees aged 18 to 21 earned a wage below the Living Wage. This proportion tends to dwindle for older workers due to their greater levels of work experience; a third of employees aged 22 to 29, and 16% of those in their 30s were paid below the £7.20 mark in 2012 (Figure 2.3). The slightly higher rate of low pay in the over-60s may reflect the higher prevalence of part-time employment for that age group.

Figure 2.3: % earning below the Living Wage by age in 2012



Analysis of the ASHE data indicates that no, or at least very few, full-time employees in the Northern Ireland public sector earned a wage below the Living Wage. However, splitting part-time employees by private sector and public sector reveals that ten per cent of part-time public sector employees earned a wage below the Living Wage (Figure 2.4).

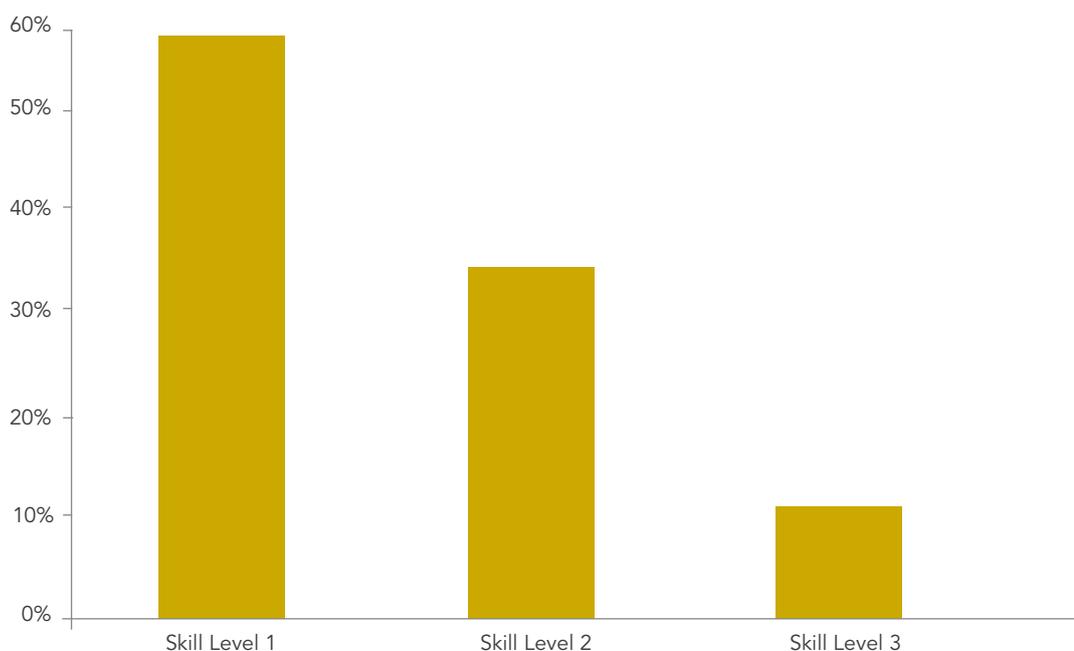
Figure 2.4: % of part-time employees earning below the Living Wage in 2012



Source: ASHE

As might be expected, in terms of skill level, the highest proportions of employees earning below the Living Wage were classified as skill level one,¹⁷ with 57% earning below the Living Wage in 2012. Just over a third and 11% of employees who were categorised as skill level two¹⁸ and three,¹⁹ respectively, earned below the Living Wage. No employees classified as skill level four earned a wage below the Living Wage (Figure 2.5).

Figure 2.5: % earning below the Living Wage by skill level in 2012



Source: ASHE

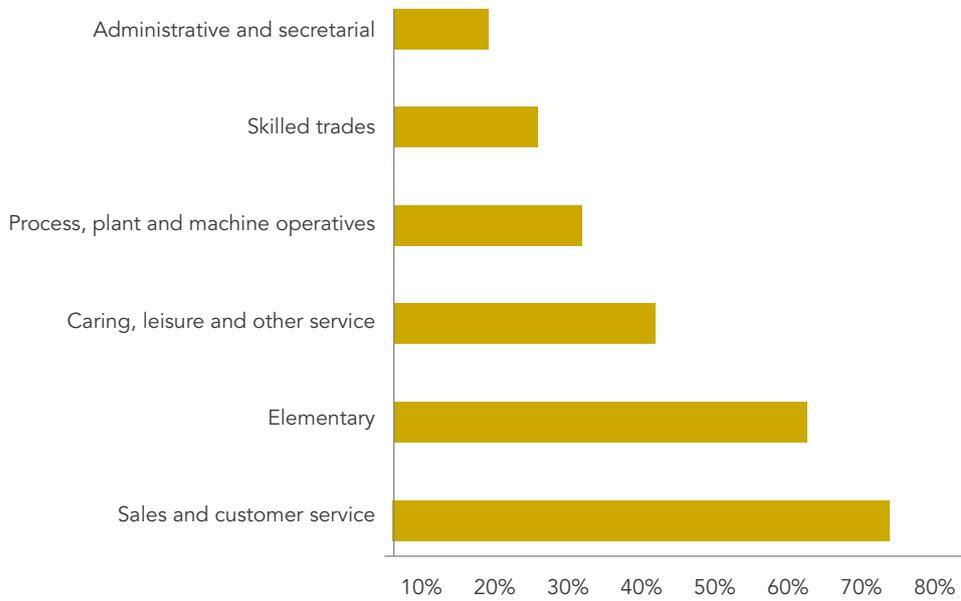
¹⁷ Broadly, skill level one is someone who has reached the level of GCSE grades D-G or National Curriculum level 5.

¹⁸ Broadly, skill level two is someone who has reached the level of GCSE grades A*-C.

¹⁹ Broadly, skill level three is someone who has reached the level of A grade at A-level.

Turning to the occupational distribution of low-paid employees, in 2012 a large majority (69%) of employees in sales and customer service occupations earned less than the Living Wage. Fifty-seven per cent of employees in elementary occupations, and 36% of employees in caring and leisure, earned below £7.20 (Figure 2.6).

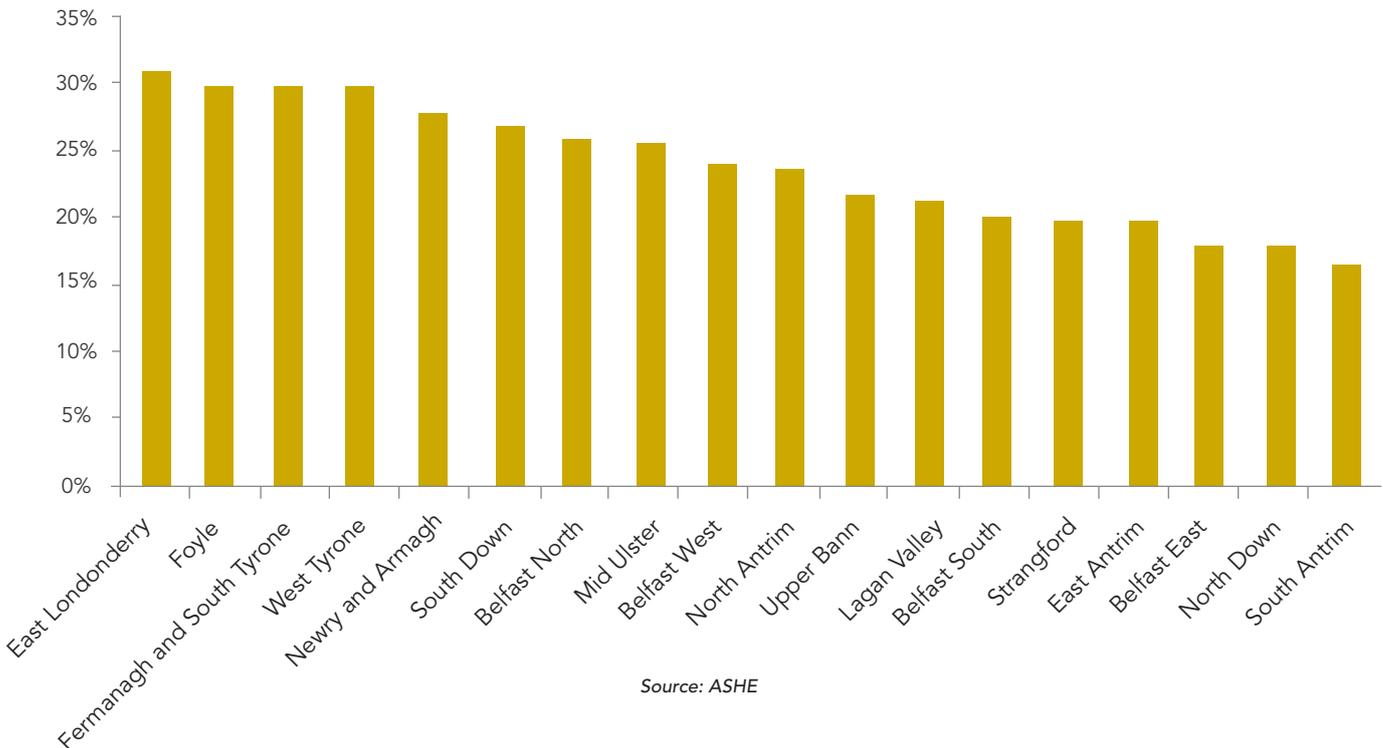
Figure 2.6: % earning below the Living Wage by occupation in 2012



Source: ASHE

In terms of employee residence, the proportion of residents paid below the Living Wage was highest in the East Londonderry Parliamentary Constituency (PC) at 31% and lowest in South Antrim PC (17%). At such a fine geographic breakdown, however, there is significant uncertainty around these figures and they should only be taken as broadly indicative (Figure 2.7).

Figure 2.7: % earning below the Living Wage by employee residence parliamentary constituency in 2012

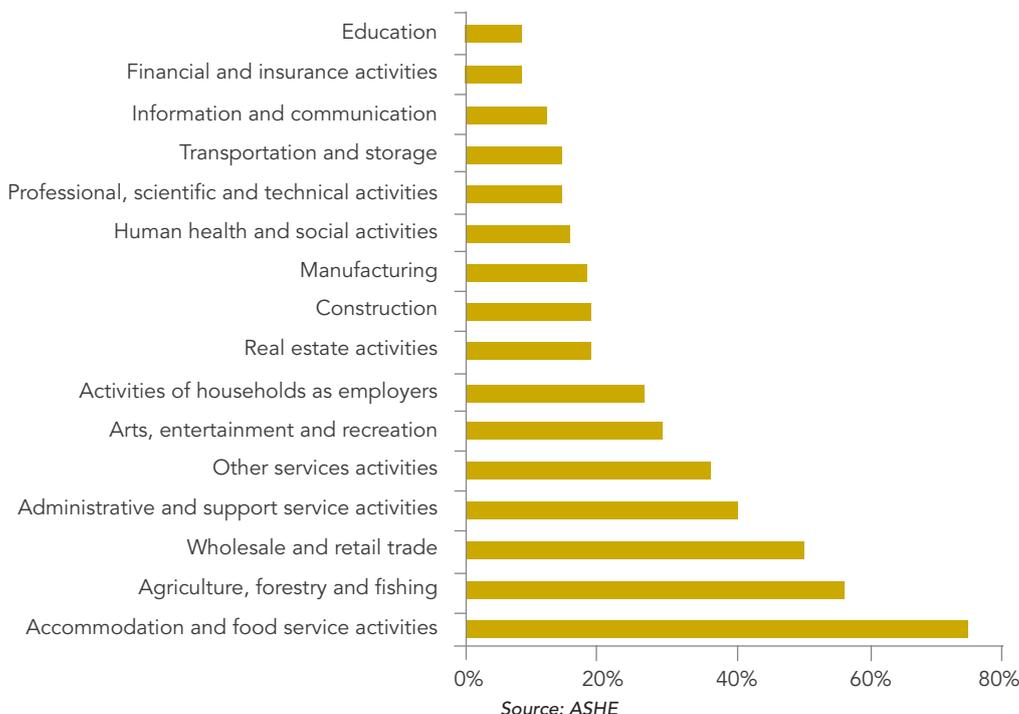


Source: ASHE

2.3 Incidence of pay below the Living Wage within Northern Ireland by industry

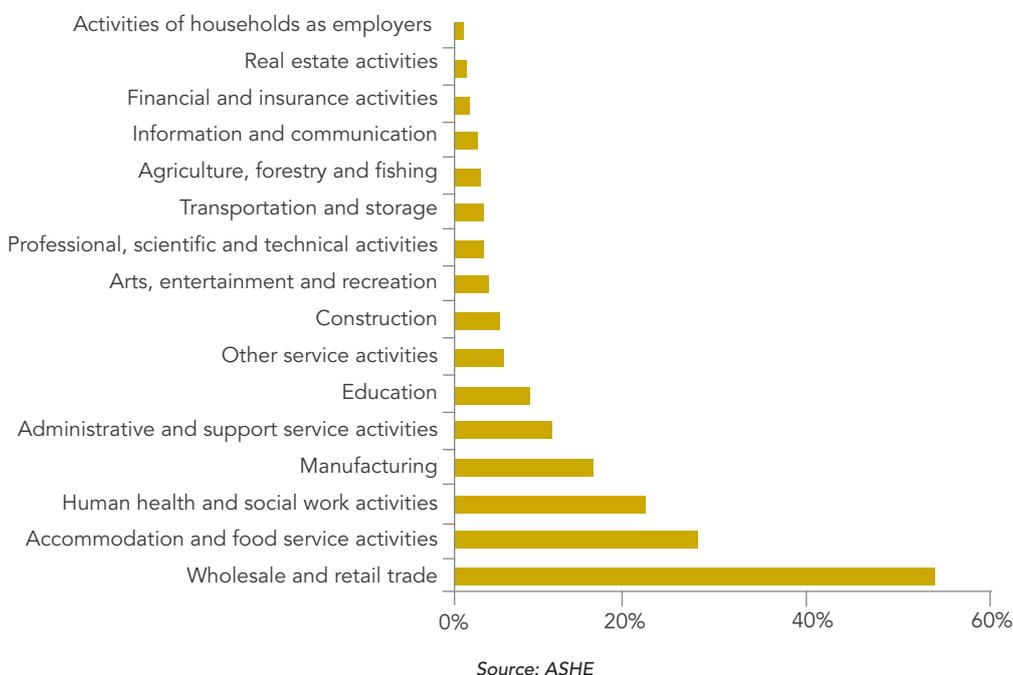
The industries with the highest proportion of employees earning below the Living Wage in Northern Ireland were accommodation and food services activities (74%), agriculture, forestry and fishing (56%), wholesale and retail trade (50%) and administrative and support service activities (40%) (Figure 2.8).

Figure 2.8: Proportion of employees earning below the Living Wage by industry in 2012



In levels terms, the wholesale and retail sector had the largest number of employees earning below the Living Wage (56,000); accommodation and food services activities contained the second largest (28,000); and human health and social work activities was third largest (22,000). Employees in manufacturing and administrative support activities had the fourth (16,000) and fifth (11,000) largest number of employees earning below the Living Wage respectively. The remaining 39,000 employees earning less than the Living Wage in Northern Ireland were spread across other industries.

Figure 2.9: Number of employees earning below the Living Wage by industry in 2012



2.4 Incidence of pay below the Living Wage for full-time employees within Northern Ireland's Voluntary and Community Sector

The incidence of low pay in the VCS is accounted for within the above analysis. Nevertheless, in this section we seek to isolate the incidence of low pay in the VCS specifically. However, this analysis has been restricted to only considering full-time employees, as the data required to perform robust analysis on part-time employees in the VCS was not available.

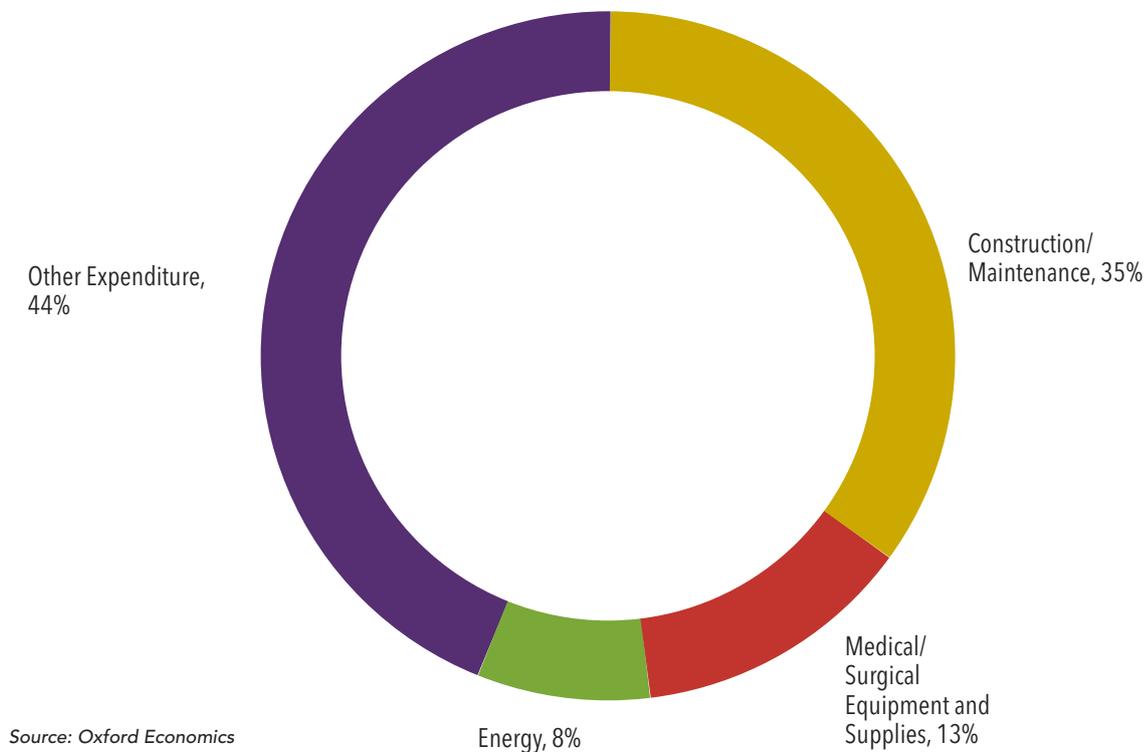
The VCS is defined as: "A range of institutions which occupy the space between the state and the private sector. These include small community and voluntary groups, registered charities both large and small, foundations, trusts and the growing number of social enterprises and cooperatives."²⁰

The assessment of the incidence of pay below the Living Wage is based on a 2012 NICVA survey, which provided wages data on just over 1,700 full-time employees in Northern Ireland's VCS.²¹ This analysis should be treated as indicative as there is some uncertainty relating to the quality of the data.²² Based on this analysis, it is estimated that 16% of full-time employees in the VCS earned a wage below the Living Wage. As such, full-time VCS employees have a similar incidence of pay below the Living Wage to the total Northern Ireland full-time employee workforce (14%).

2.5 Incidence of pay below the Living Wage within Northern Ireland's central government public procurement

In 2011-2012, government departmental²³ procurement expenditure in Northern Ireland amounted to £2.6 billion. The largest area of expenditure was construction and maintenance, which accounted for 35% of all departmental procurement expenditure. The second largest area of expenditure was medical supplies (13%) followed by energy (8%). The remaining expenditure was spread across a variety of areas, as shown in Figure 2.10.

Figure 2.10 Areas of Procurement Expenditure by Category in Northern Ireland 2010-12



²⁰ PWC (2013) *A Survey of Northern Ireland's Third Sector and its Potential to become More Enterprise Driven*.

²¹ NICVA (2012) *Salary Survey 2012*. Note that NICVA's survey excludes housing associations and co-operatives.

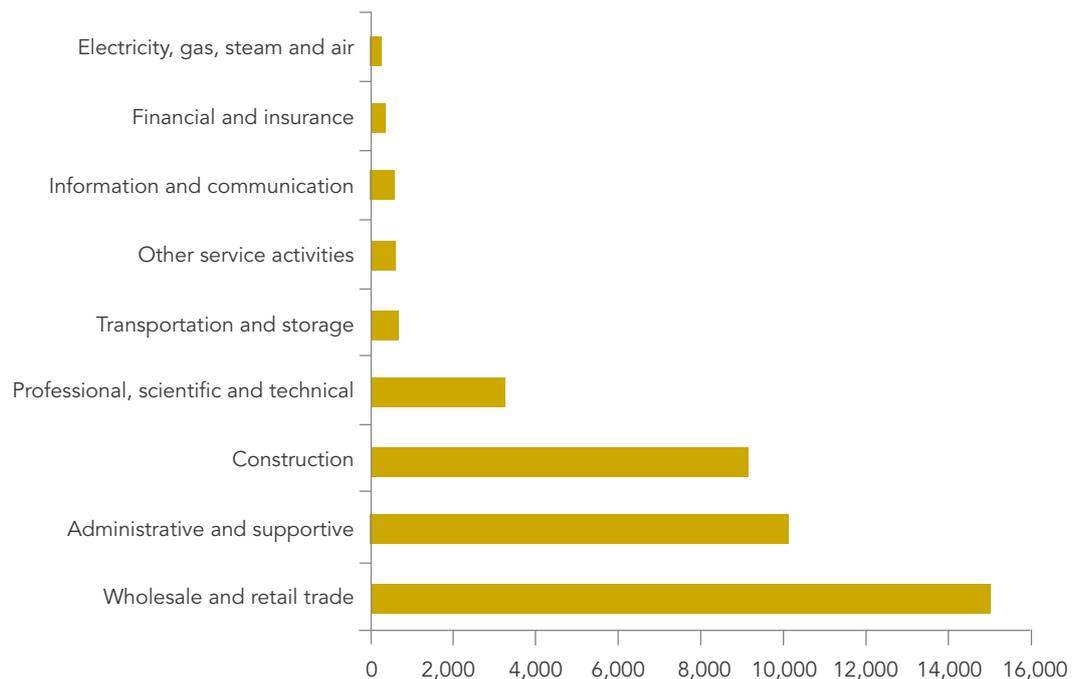
²² Specifically, a sample of 4,000 voluntary and community organisations was generated to take part in the NICVA wages survey and a response rate of 19.4% was achieved.

²³ In this report, the term 'department' refers to departments, agencies, non-departmental public bodies and public corporations covered by the Northern Ireland Procurement Policy.

The average number of jobs sustained by public procurement can be estimated using ONS Output-to-GVA ratios and productivity estimates. Specifically, ONS Output-to-GVA ratios were used to convert procurement spend into gross value added contribution estimates for each procurement category. Following this, productivity data for each of the broad sectors²⁴ in Northern Ireland were used to estimate how many jobs each procurement spend category sustained.

In 2012, it is estimated that public procurement activity in Northern Ireland supported just over 40,000 jobs. The majority (86%) of the jobs sustained were in the wholesale and retail, administrative and support, and construction sectors (Figure 2.11).

Figure 2.11 Numbers of jobs sustained by public procurement spend in 2012



Source: Oxford Economics

If it is assumed that the wage distribution among these procurement jobs is the same as the wage distribution in these sectors as a whole, then of the 40,000 jobs sustained by the public sector, around 14,000 (35%) earned less than the Living Wage in 2012. This represents slightly less than one twelfth of the aggregate number of workers paid below the Living Wage across Northern Ireland.

²⁴ Sourced from Oxford Economics Local Model.

2.6 Assessing the aggregate static impact of the Living Wage

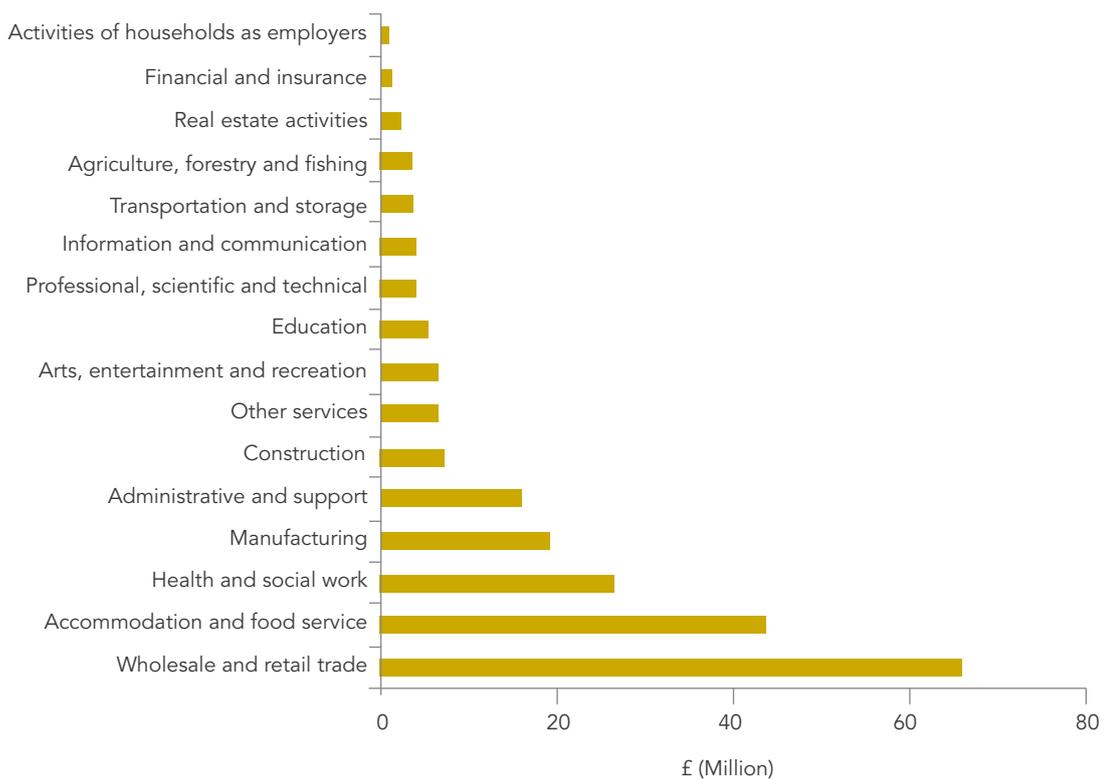
The foregoing discussion has illustrated the distribution of low-paid employment across different parts of the Northern Ireland workforce. Using the ASHE data on all groups of workers in Northern Ireland, Oxford Economics has been able to make an assessment of the aggregate increase in gross annual pay implied by imposing a mandatory £7.20 Living Wage for all employees.

That analysis suggests that had £7.20 been the hourly wage floor in 2012, some 173,000 employees would have been paid an average of £1,300 more over the course of the year. It is estimated that if all low-paid employees' wages were raised to the level of the Living Wage, and in the absence of any behavioural effects elsewhere, there would be a £221 million increase in gross wages paid to Northern Ireland's workers.

Of this, £66 million would have been paid to employees in the wholesale and retail trade sector. Employees in the accommodation and food service activities would have accounted for the second largest increase in gross wages (£44 million). The third largest source of higher wages would have been in human health and social work activities, which would have received £27 million. Employees in manufacturing and administrative support activities would have received the fourth and fifth largest increase in gross wages, receiving £19 million and £16 million respectively. The remainder (£44 million) of additional gross wages would have been accrued to employees in other industries within Northern Ireland (Figure 2.12).

Overall, this increase equates to one per cent²⁵ of Northern Ireland's total wage bill. The next chapter goes on to explore the economic impact of such an increase in gross pay.

Figure 2.12 Gross Wages generated by introducing the Living Wage in Northern Ireland, by sector, in 2012



Source: Oxford Economics

²⁵ Calculated using Northern Ireland ASHE data.

3. THE ECONOMIC IMPACT OF THE INTRODUCTION OF THE LIVING WAGE IN NORTHERN IRELAND IN 2012

3.1 Introduction

Chapter 2 estimated that a £221 million increase in aggregate gross wages would have been paid to Northern Ireland's employees in 2012, had a mandatory Living Wage of £7.20 per hour been in force and employee and employer behaviour remained unchanged. This chapter investigates the economic impact that would flow from that higher income, under a number of simplifying assumptions.

Section 3.2 lays out the methodological approach to the analysis, and its underlying assumptions. Section 3.3 explores five channels through which employers might adjust to the higher wage bill they face and the likely knock-on effects. Section 3.4 outlines the extent to which the Exchequer would benefit from the wage boost caused by the introduction of the Living Wage. Section 3.5 presents the results of the baseline impact analysis, and the chapter finishes by exploring the economic impact associated with the adoption of the Living wage for full-time VCS employees and across public procurement contracts.

3.2 Methodological approach

The first step in the analysis is to estimate the amount of additional spending that would have been engendered by the £221 million wage increase, after accounting for increased net taxes and savings. Because low-wage workers often receive tax credits or other in-work benefits, which are withdrawn as their income increases, they face a relatively high 'effective tax rate' which means that households only take home a proportion of the gross pay rise. The remainder goes back to the Exchequer in the form of savings on tax credits and benefits, and higher Income Tax and National Insurance receipts. Section 3.4 discusses these assumptions in greater detail.

After tax deductions and benefit withdrawals are taken into account, low-wage workers are estimated to have a relatively low marginal savings rate out of their disposable income (based on assumptions drawn from the ONS Family Spending Survey). Taking account of each of these factors allows an assessment to be made of the amount of new spending in the Northern Ireland economy as a result of the Living Wage.

This increase in spending is assumed to be spent in the Northern Ireland economy in proportion to general consumer spending patterns (see section 3.5.1). The ultimate economic impact of this increased spending is then estimated using an Input-Output model of the Northern Ireland economy, under strong simplifying assumptions about how the aggregate wage rise is funded. Finally, Chapter 4 goes on to look at what the empirical literature suggests about the different microeconomic channels through which higher wage floors can have their effect, and describes the effect these would have on the baseline results.

3.3 How would the Living Wage be paid for?

The analysis of Chapter 2 quantified the aggregate uplift in workers' wages on a static basis. It did not explore where the resources to pay those increased wages would ultimately come from. In general, whatever underlying model of the labour market one assumes, increases in the minimum wage impose costs on firms that must be borne in some way. Identifying who ultimately pays for the wage increase for lower-paid workers is central to the assessment of the economic impact of the policy since the positive economic effects of the pay rise could be offset.

Firms could accommodate the increased wage cost associated with the Living Wage through several channels. The main ones include the following:²⁶

1. Firms may reduce employment to cut their wage bill.
2. Firms may reduce labour costs in other ways, such as by reducing hours, non-wage benefits, or training; or by cutting the wages of higher-wage workers.
3. Firms may suffer reduced profits as they absorb the costs of the Living Wage, cutting returns to their owners.
4. Firms may pass the costs of a higher pay bill on to consumers in the form of higher prices.
5. Productivity may increase as a result of a higher minimum wage, for a variety of reasons.

In what follows, each of these channels is explored in turn.

²⁶ This list is adapted from Low Pay Commission (2014) *The National Minimum Wage: Low Pay Commission Report 2014* chapter 2; and John Schmitt (2013) *Why Does the Minimum Wage have No Discernible Effect on Employment?* Center for Economic and Policy Research.

3.3.1 Reduction in employment

The most obvious possible consequence of imposing a minimum wage floor in the labour market, or raising an existing one, is that it might be expected to reduce the demand for labour and hence reduce the level of employment. If the £221 million increase in aggregate wages were to be funded through employers' savings from making redundant a proportion of their staff, this negative effect would all but offset the economic boost from the Living Wage.

3.3.2 Other reductions in labour costs

Alternatively, while employing the same number of workers, firms may reduce labour costs by other means. Most directly, firms may reduce non-wage benefits (e.g. holiday time or pension contributions) for low-wage workers; however, such workers typically receive few non-wage benefits to begin with.²⁷

Additionally, some firms may respond to higher pay for low-wage workers by reducing the pay of some higher-paid workers.²⁸ Alternatively, firms may increase the pay of workers previously earning above the new minimum wage in order to maintain some pay differentials, so-called 'spill-over' effects.²⁹ Overall, either effect is likely to be small, and the net combined effect smaller still, relative to the direct effects on workers previously earning below the Living Wage.

Firms may also reduce labour costs simply by reducing the number of hours each worker works. In our framework, there is little distinction between a reduction in the number of workers and a reduction in the number of hours per worker. Thus, some of the reduction in labour demand in the form of job losses discussed in 3.3.1 above could instead occur as a reduction in hours per worker. However, it is worth noting that the job loss and gain numbers reported in the present study implicitly assume no change in the number of hours worked per employee.

3.3.3 Reduced profits

A third channel through which the costs of a mandatory Living Wage could be accommodated is that firms may absorb the costs directly through reduced profits. In this case, just as low-wage workers will spend more in the Northern Ireland economy as a result of their higher wage income, firm owners would be expected to spend less in the Northern Ireland economy as a result of their now lower capital income.³⁰ Additionally, reduced profits may have long-run impacts, reducing the rate at which new firms enter the market, and speeding up the rate at which other firms leave.

A simple approximation of the magnitude of this effect can be obtained by assuming that a certain proportion, P , of the salary costs of the minimum wage is born in the form of reduced corporate profits, and that a certain fraction of the lost capital income, D , would otherwise accrue to owners who consume primarily in Northern Ireland (think of D as the fraction of domestic ownership). Under the assumption that firm owners face similar effective tax rates (40%) as low-wage workers, and that they spend (and save) their money in similar ways, a correction for reduced firm profits would involve scaling down the economic impact estimates presented in this study by P multiplied by D .

Over time, standard economic theory suggests that reduced firm profits should lead to increased firm exit (i.e. ceasing operations) and reduced firm entry, which may result in greater job losses in the long run than the short run as a result of the minimum wage. This effect would be expected to be larger for firms that compete directly in global markets and thus are least able to pass increased costs on to consumers through higher prices. As with most potential effects of the minimum wage, the empirical evidence for firm exit over the long run is highly equivocal, and the magnitude of the effect is likely to be small at the scale of minimum wage changes typically under consideration (see Chapter 4).

3.3.4 Price rises

A fourth alternative is that firms may pass on their higher labour costs to their consumers in the form of higher prices. In this case, the costs of the minimum wage will be borne broadly by consumers. If the higher costs of the Living Wage were entirely passed through to Northern Ireland consumers, the beneficial effects of the aggregate wage increase would be offset as higher prices reduce the spending power of all consumers. Of course, not all prices would be equally affected – firms that most intensively use domestic low-wage labour would be more likely to see their prices rise. Meanwhile firms selling tradable goods, and hence competing with other jurisdictions that do not impose a Living Wage minimum, would have the least scope to pass on costs.

²⁷ But they do receive some; see Low Pay Commission (2013) *The National Minimum Wage: Low Pay Commission Report 2013* paragraphs 2.76-2.80. The LPC found few employers had reduced non-wage benefits as a result of the NMW.

²⁸ See Barry Hirsch, Bruce Kaufman, and Tetyana Zelenska (2013) 'Minimum Wage Channels of Adjustment'. Forthcoming in *Industrial Relations*.

²⁹ Mark Stewart (2011) *Testing for Spill-over Effects of the National Minimum Wage*. Low Pay Commission.

³⁰ Although the marginal propensity to consume is likely to be lower among better-off firm owners, resulting in a net positive impact on aggregate demand.

3.3.5 Productivity improvements

The final major channel through which a Living Wage could be funded is through higher workforce productivity. Productivity may increase in response to the Living Wage for a number of reasons. Higher wages may lead to reduced worker turnover, resulting in lower recruitment and training costs, as well as deeper levels of firm-specific skills across the workforce. Firms may also find it more worthwhile to invest in worker training as a result of reduced worker turnover. Each of these things would represent a 'win-win' outcome for employees and employers.

In response to a Living Wage, firms may also choose to pursue greater efficiencies, or to invest more in physical capital (which of course would impose additional costs on firms). Additionally, workers may work harder in response to higher wages (either out of a sense of reciprocity or because they face greater competition for scarce positions because of job shortages), so called "efficiency wage" effects. Finally, the minimum wage may attract higher skilled or ability workers into the labour market.

Unlike each of the other channels described here, if the Living Wage were to be funded entirely through productivity improvements, there would be no off-setting negative economic impact to be concerned about.

3.3.6 Baseline assumption

The baseline results reported below assume that once the Exchequer impact of the Living Wage is accounted for, there are no negative offsetting economic effects. It therefore implicitly assumes that the cost of the Living Wage is precisely offset by increased worker productivity.

There is a fair amount of evidence from the empirical literature that productivity increases result from higher minimum wage floors. The OECD, for example, has concluded that an increase in the ratio of the minimum wage to the median wage by ten percentage points can boost productivity by almost two percentage points.³¹ Nevertheless, this evidence does not preclude the possibility that some of the other adjustment channels discussed above may be stimulated, with attendant negative economic effects to varying degrees.

The baseline assumptions are therefore plausible, but should be viewed as a best-case scenario of the economic impacts of the minimum wage. It is not possible to say how likely this scenario is. For this reason, Chapter 4 goes on to consider the effect of varying these baseline assumptions about the cost of the Living Wage.

3.4 Exchequer impact of the Living Wage

Under any scenario, a portion of the additional gross wages that employees receive from the Living Wage would be offset by increased tax and National Insurance liabilities and/or reduced entitlement to means-tested benefits and tax credits. Since the tax credit and benefit system depends upon the family circumstances of the employee, the Exchequer impact of a given gross pay increase varies from person to person, according to their family circumstances and personal and household earnings.

For example, a single childless employee, working part-time and earning below the Living Wage, could well have an annual income less than the Income Tax personal allowance. Unlikely to be claiming any benefits, such a person might keep the full value of any gross pay rise from the introduction of a Living Wage.

The situation would be very different however for a second earner in a low-income family with children, working full-time on the minimum wage. For every extra pound of gross income stemming from the Living Wage, this person would typically lose 20 pence in Income Tax, 12 pence in National Insurance Contributions, and 41 pence in reduced tax credit entitlement.³² As a result they could expect to take home just 27 pence for each pound of their pay rise – an 'effective tax rate' on the additional income of 73%. In practice, among the people benefiting from increased gross pay, some will have a so-called marginal effective tax rate (METR) of zero, others will have a METR of 73% or perhaps higher, and many will have a METR somewhere in between.

³¹ OECD (2007) *Employment Outlook* page 57.

³² This will change under Universal Credit, but the broad response of household earnings to changes in pay rates will remain, even if withdrawal rates are adjusted slightly.

Consequently, by estimating an average METR for employees who receive a pay increase from the introduction of the Living Wage, the change in those employees' tax contributions and benefits payments – the Exchequer impact – can be calculated.³³

In 2009, The Low Pay Commission³⁴ commissioned research that detailed the distribution of METRs for NMW recipients for both primary and secondary family earners for the UK as a whole. This distribution allows a weighted-average METR to be developed for those currently on or near the NMW and that average figure is used in this analysis as a proxy for the average METR of those employees who would have received a wage increase had the Living Wage been introduced in Northern Ireland in 2012. By this approach, it is estimated that, on a static basis, the Exchequer would have received a net gain of £88 million from the introduction of the Living Wage.³⁵

The above analysis models the static Exchequer impact (i.e. the direct implications of an increase in the minimum wage rate on tax receipts and welfare spending, assuming no wider economic impacts). However, a recent report by the Department for Business Innovation & Skills presents both a static and dynamic tax impacts of an increase in the NMW. Dynamic impacts take into account a wider range of fiscal determinants including price rises, which would lead to increases in social security spending through higher uprating costs, and reduced profits for firms, which would lead to reduced Corporation Tax. The report considered three different scenarios of these impacts and based on an assessment of all three concluded that *"dynamic effects have a material impact in this type of analysis and it is unlikely that there will be any large positive fiscal impacts from increasing the NMW."*³⁶ However, these negative dynamic impacts do not occur if the only channel of Living Wage adjustment is through higher productivity. Nevertheless, varying these assumptions, as we explore in the next chapter, would likely have a large impact on the outcome of the fiscal analysis.

3.5 Baseline economic impact results

3.5.1 Estimating the spending impact from the uplift in wages

After deductions in the form of increased taxes and lower benefits, the introduction of the Living Wage in Northern Ireland would have boosted households' disposable income by £133 million in 2012. Assuming that just one per cent of this money was saved implies that the pay increase would have boosted consumption by around £132 million, raising total consumption in Northern Ireland by 0.5% in 2012.

The additional spending would have been accounted for by a range of goods and services. The ONS Family Spending Survey³⁷ details the average proportions of household spending within Northern Ireland in 2012. Five expenditure areas make up the majority of consumption and account for roughly equal shares of expenditure: transport, food and non-alcoholic drinks, recreation and culture, housing fuel and power and restaurants and hotels (Figure 3.1).

If the above expenditure pattern is applied to the additional spending associated with the introduction of a Living Wage in Northern Ireland, it can be estimated that the direct gross value added contribution would have been £68 million in 2012, which would have created over 2,000 jobs.

Turning to indirect impact (i.e. that associated with the supply chain servicing household consumption), it is estimated³⁸ that this scale of increased spending activity would have resulted in an £8 million gross value added contribution to the Northern Ireland economy. This impact would have been accompanied by a further 210 jobs in the relevant supply chain sectors (e.g. manufacturing, transport and storage and professional, scientific and technical services etc.).

Furthermore, an additional round of induced benefits would have accrued to the local economy as the wages of people employed in households' supply chains are spent. With the above quantum of direct and indirect employment, it is estimated that the induced effect would have generated a gross value added contribution of £9 million to the Northern Ireland economy. This would have created 250 additional jobs.

³³ In practice, the dynamic exchequer impact will differ from this since subsequent economic effects may raise or lower this static impact. For example, higher consumption might increase VAT receipts, while if the costs of the wage increase affect firm profits, the corporation tax take could be reduced. On balance, the static effect here offers a reasonable first approximation of the total impact.

³⁴ Mike Brewer, Richard May and David Phillips (2009) *Taxes, Benefits and the National Minimum Wage*.

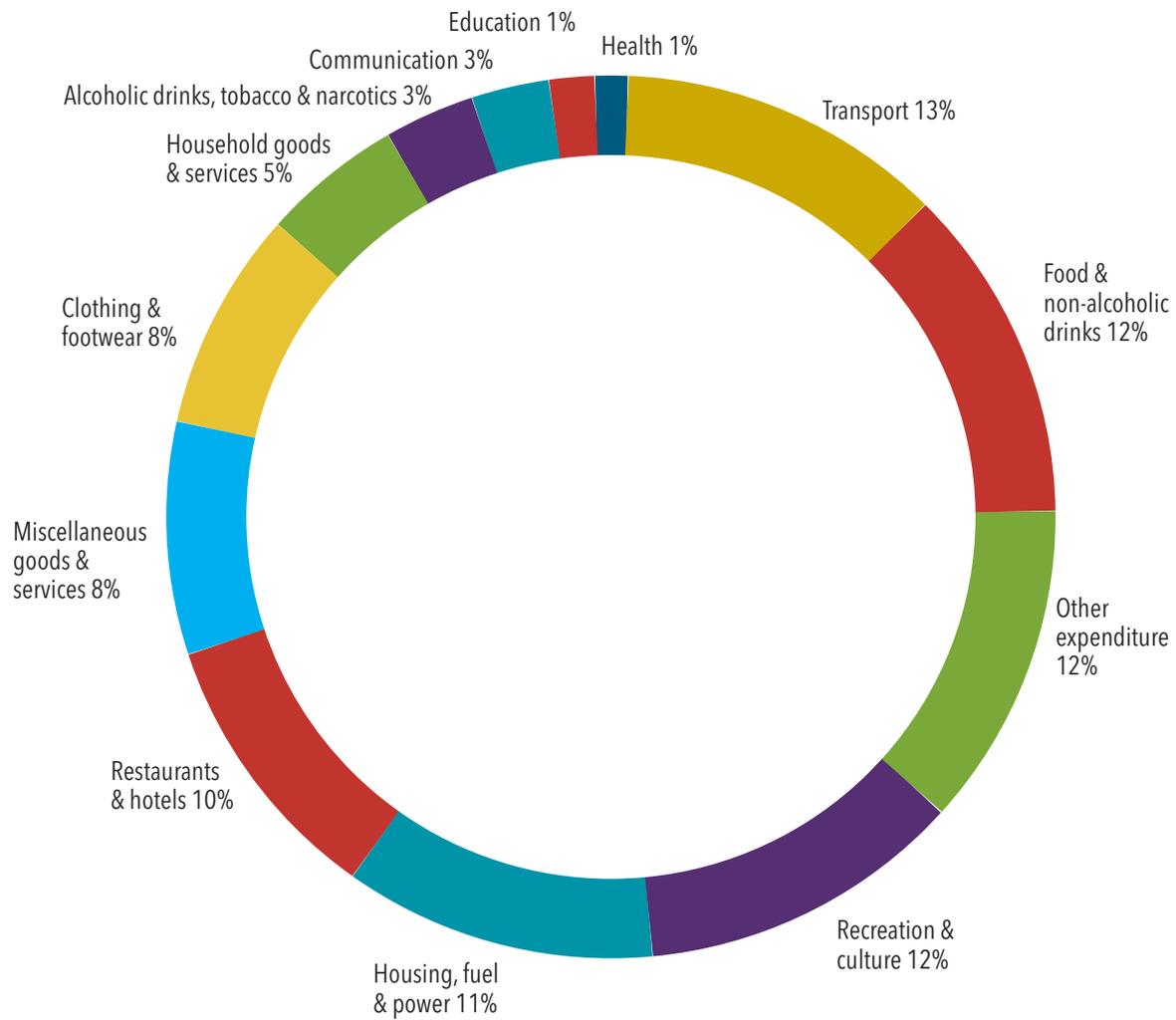
³⁵ However, this does not take account of additional tax benefits that would have been accrued from the increase in net spending in the economy as a result of the introduction of the Living Wage.

³⁶ DBIS (2014) *National Minimum Wage: Government Evidence for the Low Pay Commission on the Additional Assessment* page 18.

³⁷ Source: <http://www.ons.gov.uk/ons/rel/family-spending/family-spending-2012-edition/index.html>

³⁸ Using Northern Ireland Input-Output tables.

Figure 3.1 Breakdown of household expenditure in Northern Ireland Economy in 2012

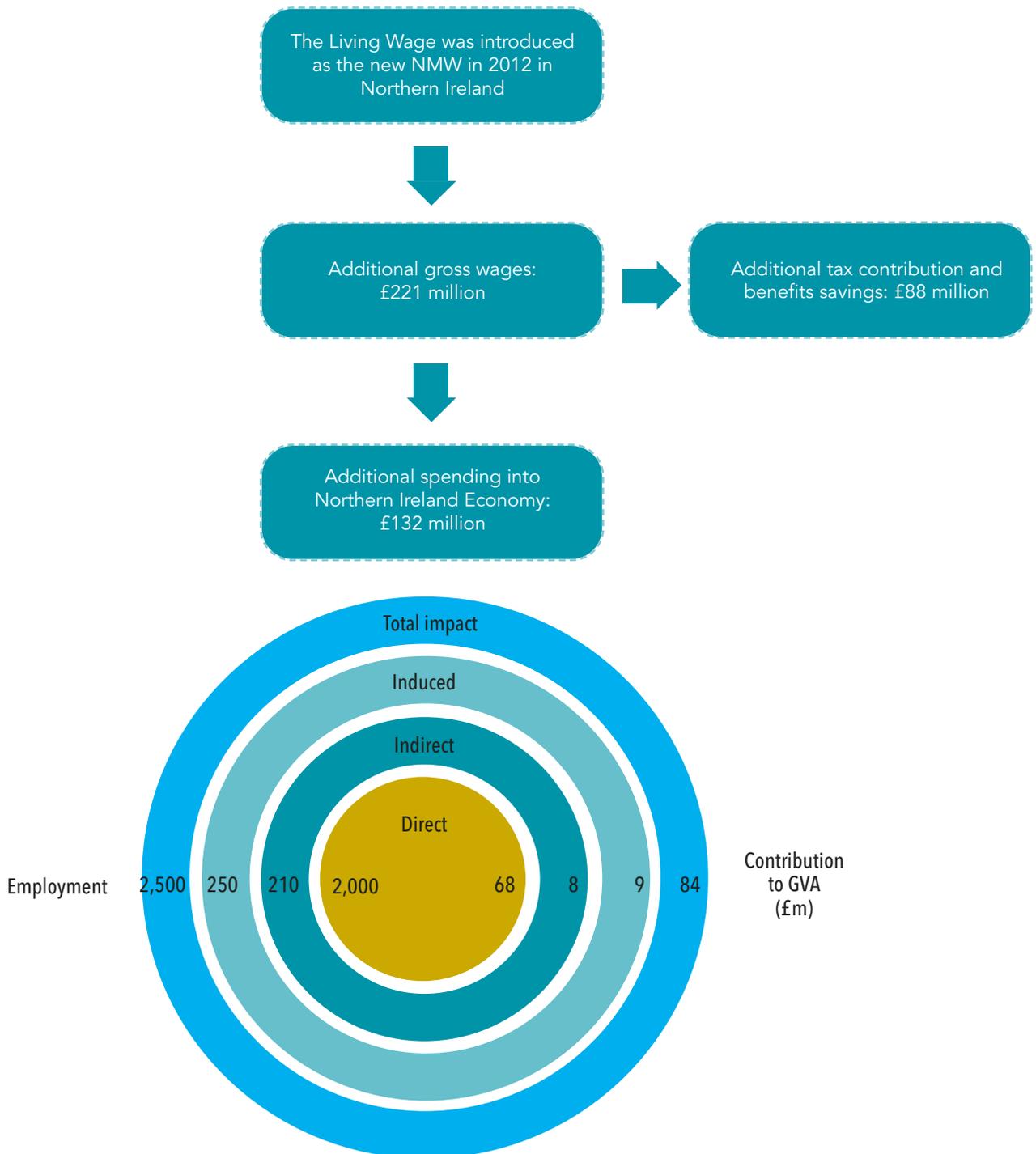


Source: Oxford Economics

3.5.2 Summary of findings from the baseline analysis

The introduction of the Living Wage in 2012 – on the assumption that the pay rise would have been accommodated by increased productivity – would have generated additional gross wages of £221 million for Northern Ireland’s low-paid employees. Of this, the Exchequer would have received £88 million, through the increased taxes and reduced benefit expenditure. After taxes, benefits and savings have been accounted for, it is estimated that the Living Wage would have yielded a consumption boost to the Northern Ireland economy of around £132 million. This, in turn, would have created an additional £84 million contribution to Northern Ireland’s gross value added as well as some 2,500 additional local jobs (Figure 3.2).

Figure 3.2 Summary of baseline findings



3.6 Economic impact through the Voluntary and Community Sector and public procurement

Having analysed the impact of the Living Wage at the Northern Ireland level, this section presents more detail on the economic impact stemming from adoption of the Living Wage for full-time employees in the VCS and government procurement activities.

3.6.1 The impact for full-time employees in the VCS from the introduction of the Living Wage

Using the same methodology as applied to the baseline analysis, it is estimated that increasing the NMW to the level of the Living Wage in 2012 would have generated additional gross wages of £10 million for full-time employees within the VCS. After taxes and savings have been accounted for it is estimated that this would have boosted consumption by VCS full-time employees by £6 million in 2012 – approximately five per cent of the economy-wide boost calculated above.

When all of the subsequent supply chain and wage consumption impacts are considered, the additional spending of the full-time employees in the VCS would have generated a gross value added contribution of £4 million for the local economy and would have created employment for 110 individuals. However, as noted on page 14, analysis relating to the VCS should be treated as indicative.

3.6.2 The impact of introducing the Living Wage as a public procurement requirement

If the Living Wage had been in force across all public procurement contracts in 2012, the aggregate gross wage increase would have been £16 million. After taxes and savings have been accounted for it is estimated that this would have provided a £10 million consumption boost within the Northern Ireland economy.

Taking account of the subsequent supply chain and wage consumption impacts, this spending supported a local gross value added contribution of over £6 million and employment for just over 180 people.

4. EVIDENCE FOR THE EFFECTS OF THE MINIMUM WAGE

Chapter 3 quantified the economic impact of the introduction of the Living Wage on the basis of some plausible simplifying assumptions about the way the economy – and employers in particular – might adjust to the higher wage floor. This could be thought of as the best-case scenario in that it represents a win-win for employees, employers and the public coffers. In reality, however, the picture is likely to be more complex. This chapter explores the evidence on other adjustment channels and considers their implications for the impact of the Living Wage.

This chapter draws heavily upon evaluation literature for past increases in minimum wage levels in the US and UK. The results of these studies do not necessarily read directly across to the possible impact of a Living Wage in Northern Ireland specifically. In particular, the Living Wage would entail a larger rise in the wage floor than most studies have examined in the past, and a rise to a higher level, hence the effects may differ from those observed to date. Nevertheless, this body of literature offers the best indication of the likely effects of such a change.

Just as a higher Living Wage benefits its recipients, so it imposes increased labour costs on firms that employ low-wage labour. These costs must be borne in some way. Section 3.3 outlined five channels through which firms may adjust to the costs of the minimum wage:

1. Firms may reduce employment to cut their wage bill.
2. Firms may reduce labour costs in other ways, such as by reducing hours, non-wage benefits, or training; or by cutting the wages of higher-wage workers.
3. Firms may suffer reduced profits as they absorb the costs of the Living Wage, cutting returns to their owners.
4. Firms may pass the costs of a higher pay bill on to consumers in the form of higher prices.
5. Productivity may increase as a result of a higher minimum wage, for a variety of reasons.

Literally hundreds of studies over the past two decades have empirically investigated the various microeconomic impacts of increases in the minimum wage.³⁹ Many of these studies focus primarily on the first of these channels: the question of whether increases in the minimum wage lead to job losses by low-wage workers. However, many explore other potential effects as well.

These five adjustment channels are not mutually exclusive, and different firms are likely to respond to the costs of the minimum wage increase in different ways. For example, firms that produce mostly non-traded goods and services, because their competitors are impacted by the minimum wage as well, are more likely to be able to pass costs on to their customers through higher prices (adjustment channel 4). Firms that produce goods for export or that compete with imports, in contrast, are more likely to have to find some other way to absorb the costs of the higher minimum wage: lower profits, lower employment levels or higher productivity.

It is important to note that this discussion of how firms bear the costs of a higher minimum wage is not meant to suggest that the overall costs of the minimum wage to society as a whole are equal to the costs to firms. For example, if firms were to respond to the minimum wage mainly by laying off workers, this would impose large additional costs on the workers affected, and these costs could easily exceed the social benefits from increased spending by workers earning a higher minimum wage.

Which of the five channels of adjustment dominates in practice is a very open question. There is little consensus in the economics literature about which of these effects is most significant, except that if job losses do occur (channel 1), they are relatively small in magnitude. In practice, most of the real world changes that have occurred because of minimum wage rates have been quite small. The effects of any one of the channels of adjustment have therefore proven hard to measure against a background of constantly changing macroeconomic conditions and long-term trends in the regional and industrial makeup of the economy. Nevertheless, the rest of this chapter briefly reviews the empirical evidence on past increases in minimum wages, both in the UK and elsewhere, to get a sense of the importance of each of the five channels of adjustment in turn.

³⁹ For summaries, see David Neumark and William Wascher (2006) *Minimum Wages and Employment: A Review of Evidence from the New Minimum Wage Research*. National Bureau of Economic Research WP 12663; and John Schmitt (2013) *Why Does the Minimum Wage have No Discernible Effect on Employment?* Center for Economic and Policy Research.

The adjustment mechanisms explored here do not represent a comprehensive list of all potential economic effects of the minimum wage, merely of how firms might adjust to the costs of a minimum wage increase. For example, some studies have found evidence that increases in the minimum wage may increase labour force participation among relatively well-off groups (e.g. college students and stay-at-home parents), and that such workers may displace relatively disadvantaged groups (e.g. minorities and young people not in school). In such a situation, overall employment would be unchanged, but some individuals would still experience involuntary job loss. While this is a very real economic impact with important social implications, it would not affect this study's estimates of the overall increase in economy-wide wages, and thus of increased demand in the Northern Ireland economy, and so this effect is not modelled.⁴⁰

4.1 Reductions in employment

Economists typically measure the sensitivity of job losses to the size of any increase in wages in the form of an elasticity, defined as the percentage of jobs lost for every percentage point of increase in workers' wages:

$$\text{Elasticity } (\epsilon) = \frac{(\% \text{ of jobs lost})}{(\% \text{ increase in wages})}$$

$$(\% \text{ of jobs lost}) = \text{Elasticity } (\epsilon) * (\% \text{ increase in wages})$$

Thus, for example, if the elasticity were 0.1, and a group of 1,000 workers saw their wages rise by 20% (say from £6.00 to £7.20 per hour) because of an increase in the minimum wage, 2% (= 20% * 0.1) of them, or twenty overall, would be expected to lose their jobs as a result of the change.

As mentioned above, this topic has received more study than any other in the minimum wage literature. It is generally accepted that, in the range of minimum wage increases usually under consideration, the magnitude of any potential job losses is small. There is still some disagreement, however, as to whether there are any job losses at all. In one survey of the literature, Neumark and Wascher conclude "*nearly two-thirds [of the studies examined] give a relatively consistent ... indication of negative employment effects of minimum wages*"⁴¹ while in another, Schmitt concludes "*the weight of [the most recent] evidence points to little or no employment response to modest increases in the minimum wage.*"⁴²

Studies focusing on the UK have tended to find no overall job losses from the National Minimum Wage.⁴³ The 2014 LPC report "*found little evidence of employment loss except in those sectors, such as agriculture, textiles and food processing, which have been shedding labour for a period that started well before the introduction of the minimum wage.*"⁴⁴ This lack of evidence for employment effects in the UK relative to the United States (US) may result partly from the fact that many of the US-based studies consider increases in the minimum wage in a single state, and such increases may displace some low-wage jobs to nearby states. By contrast, the UK minimum wage has been implemented nationwide, limiting the potential for displacement. There are many other possible explanations, however, including that there is in fact no job loss effect in the US either, as many authors have found.

The question of whether the minimum wage causes job losses is complicated by potentially countervailing effects. It is possible, for example, that the minimum wage may cause job losses in firms directly impacted (i.e. those employing large numbers of low-wage workers), while at the same time increasing employment across firms because of positive demand effects (see Conclusion). In this case, the net effect on employment in the region would be less negative than the effect on firms employing low-wage workers, or even positive overall. Empirical studies might measure no job losses, even if some firms did shed workers.⁴⁵

⁴⁰ Of course, since these different workers would have different effective tax rates and saving/spending patterns, there would be some effect, but homogenous tax rates and spending patterns among low-wage workers are assumed as an abstraction.

⁴¹ David Neumark and William Wascher (2006) *Minimum Wages and Employment: A Review of Evidence from the New Minimum Wage Research*. National Bureau of Economic Research WP 12663. Page 121.

⁴² John Schmitt (2013) *Why Does the Minimum Wage have No Discernible Effect on Employment?* Center for Economic and Policy Research.

⁴³ Neumark and Wascher discuss a number of UK studies. See also David Metcalf (2007) *Why Has the British National Minimum Wage Had Little or No Impact on Employment?* Center for Economic Performance Discussion Paper No 781.

⁴⁴ Low Pay Commission (2014) *The National Minimum Wage: Low Pay Commission Report 2014* paragraph 2.114.

⁴⁵ Empirical studies measure employment effects in a variety of ways. Some measure aggregate employment in a region, while others measure employment rates within specific low-wage industries or among specific classes of generally low-wage workers. As the overall effects measured in such studies are generally small and often statistically insignificant, there is no robust difference in results between these strategies that would resolve this issue empirically.

Although the evidence for job losses from increases in minimum wage levels is mixed, as a conservative alternative scenario, the effects of a 0.05 elasticity of job losses are presented here. This is in line with estimates used recently by the US Congressional Budget Office in its assessment of the likely impacts of an increase in the US minimum wage.⁴⁶ Note that this implies that workers at different wages before the imposition of the Living Wage are affected differently by the change. Among those whose wages must rise 10% (i.e. those earning £6.55 an hour), 0.5% are assumed to lose their jobs; while among those whose wages must rise only 1% (i.e. those earning £7.13 an hour), only 0.05% are assumed to lose their jobs.

Under this scenario, the positive economic impact of the Living Wage, modelled in Chapter 3, is reduced slightly. The change would have generated additional gross wages of £209 million within the Northern Ireland economy in 2012, some £12 million less than in the case where productivity improvements (channel 5) accommodate the full cost of the Living Wage. Of this figure, the exchequer would have received £83 million through the increased taxes and reduced benefit payments. The consumption boost to the local economy under this alternative scenario would have amounted to £124 million. This would have created an additional £79 million contribution to GVA, and 1,200 additional local jobs once the unemployment effect of the introduction of the higher minimum wage has been taken into account. Of course, under this scenario the costs of adjustment to the Living Wage would be concentrated on the small group of people whose jobs are lost.

Clearly then, if it were to be assumed that firms' adjustment to the Living Wage would occur through a combination of slightly reduced employment and productivity improvements, the likely effect would still be strongly positive.

4.2 Other reductions in labour costs

Turning to the second channel of adjustment, there is little evidence that firms are able to realise significant cost savings through reduced labour costs per worker in response to increases in the minimum wage. This is likely because non-wage benefits are relatively small for low-wage workers. The Low Pay Commission (LPC) concluded that such benefits represent only about three to five per cent of low-wage workers' overall reward package.⁴⁷ This figure has not fallen significantly in response to recent increases in the NMW.

Firms may also reduce the wages of those paid above the minimum wage in an attempt to reduce the costs of a higher minimum wage. Conversely, firms may increase the wages of those earning above the minimum wage in order to maintain pay differentials. The LPC found some evidence for both effects, but each was of small magnitude.⁴⁸

Finally, there is some evidence that, at least in the short-run, firms reduce their labour demand in terms of hours per worker in response to increases in the minimum wage, even if they do not actually make headcount reductions. Such an effect would clearly offset some of the positive impact of the Living Wage modelled in Chapter 3, although the evidence suggests that such changes are relatively small.⁴⁹ Moreover, in the context of the framework of this study, such a change is not meaningfully different from a reduction in employment modelled in section 4.1.

4.3 Lower profits

The third channel of adjustment is that firms may absorb the costs of increases in the minimum wage directly through reduced profits. Given that this is the most direct means by which firms might accommodate increased wage costs, surprisingly few researchers have investigated whether there is evidence of this effect. In a study of the first round of the National Minimum Wage, however, Mirko Draca et al. found that *"minimum wages... significantly reduce profitability (especially in industries with relatively high market power). This is consistent with a simple model where wage gains from minimum wages map directly into profit reductions."*⁵⁰

⁴⁶ CBO (2014) *The Effects of a Minimum-Wage Increase on Employment and Family Income*. For its estimate of the effect of raising the minimum wage to \$10.10, the CBO assumed a 0.10 baseline to 0.20 high-end elasticity of employment for teenage workers, and a third of that for adult workers.

⁴⁷ Low Pay Commission (2013) *The National Minimum Wage: Low Pay Commission Report 2013* paragraph 2.78.

⁴⁸ *Ibid* paragraphs 2.81-2.84.

⁴⁹ See Low Pay Commission (2013) *The National Minimum Wage: Low Pay Commission Report 2013* paragraphs 2.142 and 2.145. See also Kerry Papps and Paul Gregg (2014) *Beyond the Wage: Changes in Employment and Compensation Patterns in Response to the National Minimum Wage*. Research Report for the Low Pay Commission.

⁵⁰ Mirko Draca, Stephen Machin, and John Van Reenan (2011) Minimum Wages and Firm Profitability. *American Economic Journal: Applied Economics* 3(1) 129-151. Page 129.

As noted in section 3.3.3, reduced firm profits would be expected, over time, to lead to increased firm exit and reduced firm entry. This could result in lower job creation in response to the minimum wage over longer time horizons than typically measured (or typically possible to be measured) in empirical studies. Draca et. al. found some evidence of *“longer term adjustment to the minimum wage through falls in net entry rates.”*⁵¹ The LPC has found that the number of firms in low-wage sectors of the economy has fallen relative to the overall share of firms in the British economy since the adoption of the NMW; however, it is not possible to infer causation.⁵²

Conceivably, reduced firm profitability could give rise to some negative offsetting effects on aggregate demand, as firm owners in Northern Ireland reduce their consumption and investment in response to lower capital income. However, it is very difficult to make a quantitative assessment of how significant such an effect might be in terms of the baseline impact model.

4.4 Increased prices

Attempts to measure the fourth channel of adjustment – firms passing on their higher low-wage labour costs to consumers in the form of higher prices – have found little evidence of large price effects, which is unsurprising given that low-wage labour makes up a relatively small share of the cost of most goods. In a 2008 survey of the literature, Sara Lemos concluded that *“a 10% US minimum wage increase raises... overall prices by no more than 0.4%.”*⁵³ Increases in the price of goods and services that use low-wage labour more intensively (e.g. fast food) would, of course, be larger.

The LPC, reviewing evidence for NMW-related price increases in the UK, concluded that since the adoption of the NMW, *“prices in restaurants and cafes; canteens; hairdressers; and dry cleaners have all increased faster than CPI. Similarly, the prices of restaurant, canteen, and takeaway meals; wine and beer; and personal services have all increased faster than the general level of RPI. In contrast, prices for many business-to-business minimum wage goods and services have typically increased much less than general price rises.”*⁵⁴

To the extent that firms pass through the costs of the minimum wage, this will result in these costs being borne widely by consumers. It may also result in a small shift away from low-wage intensive goods and services in consumer purchases.

Note that in addition to increased prices, firms might also decrease the quality of their services while charging the same prices. For example, a fast food restaurant might tolerate longer lines while charging the same price for its food, resulting in a worse consumer experience.

It is beyond the scope of this study to model the price impact that might derive from imposition of the Living Wage across the Northern Ireland economy. As a simple approximation, however, the £221 million aggregate wage boost resulting from the Living Wage represents an increase of approximately one per cent in the total economy-wide wage bill, and approximately 0.8% of Northern Ireland GVA. This provides a rough upper limit to the average price rise expected if the costs of the minimum wage were fully passed on to consumers in the form of higher prices. In the unlikely event that the full cost were to be passed on to local consumers, as noted in section 3.3.4, this would reduce the spending power of consumers across the board, negating the positive effects outlined in Chapter 3.

⁵¹ Ibid.

⁵² Low Pay Commission (2013) *The National Minimum Wage: Low Pay Commission Report 2013* paragraphs 2.167-2.171.

⁵³ Sara Lemos (2008) A Survey of the Effects of the Minimum Wage on Prices. *Journal of Economic Surveys* 22(1): 187-212. Page 208.

⁵⁴ Low Pay Commission (2013) *The National Minimum Wage: Low Pay Commission Report 2013* paragraphs 2.158-2.159.

4.5 Increased productivity

The fifth possibility – productivity improvements – is assumed to be the only channel of adjustment in operation under the modelling in Chapter 3. So how reasonable is this assumption? There is evidence of reduced worker turnover in response to increases in the minimum wage; Arindrajit Dube et al. find *“striking evidence that separations, new hires, turnover rates for teens and restaurant workers fall substantially following a minimum wage increase.”*⁵⁵ However, it is difficult to estimate the degree to which this reduces employer costs.

Schmitt’s review of the evidence on operational efficiencies and efficiency wages finds that few studies have investigated either.⁵⁶ About 90% of fast food managers surveyed by Barry Hirsch et al. about their planned response to minimum wage increases reported an intent to increase performance standards, such as *“requiring a better attendance and on-time record, faster and more proficient performance of job duties, taking on additional tasks, and faster termination of poor performers.”*⁵⁷ Again, it is difficult to estimate the actual cost savings that resulted.

The LPC found little evidence of systematically higher productivity in low-wage intensive sectors of the economy since the adoption of the NMW.⁵⁸ However, as outlined in section 3.3.6, the OECD concludes that higher minimum wages appear to have significant positive effects on productivity through one or other of a variety of channels. While it is unlikely that such improvements could account for the economy’s entire adjustment to a higher minimum wage, they may well account for a large part of it.

⁵⁵ Arindrajit Dube, T. William Lester, and Michael Reich (2012) *Minimum Wage Shocks, Employment Flows and Labor Market Frictions*. Berkeley, CA: Institute for Research on Labor and Employment. Page 2

⁵⁶ John Schmitt (2013) *Why Does the Minimum Wage have No Discernible Effect on Employment?* Center for Economic and Policy Research.

⁵⁷ Barry Hirsch, Bruce Kaufman, and Tetyana Zelenska (2011) *Minimum Wage Channels of Adjustment*. IZA Discussion Paper No. 6132. Germany: Institute for the Study of Labor.

⁵⁸ Living Wage Commission (2014) *Working for Poverty: The Scale of the Problem of Low Pay and Working Poverty in the UK* paragraphs 2.172-2.174.

CONCLUSION

Increases in the minimum wage put more money into the hands of low-wage workers, who will then spend those wages. This spending in turn generates increased demand in the economy. The premise that low-wage workers spend more in response to increased wages, and that this spending generates the direct, indirect, and induced impacts estimated in the present study, is broadly accepted.

What is less clear is whether this spending represents new, rather than simply shifted, economic activity. For example, if firms merely pay higher minimum wages out of reduced profits, then firm owners may curb their own spending in response to reduced capital income, offsetting (some of) the increased demand by low-wage workers.⁵⁹ Meanwhile if the cost is loaded on to consumers in the form of higher prices, the spending power of consumers who do not get a pay rise will be reduced. Overall, given the likely small effects on labour demand, the immediate net effect of the Living Wage is likely to be positive if it raises the productivity of the economy to some degree, albeit somewhat smaller than the best-case scenario modelled here.

As higher wages are likely to result in a reduction in in-work benefits and tax credits, the UK Exchequer is potentially a major beneficiary of the introduction of the Living Wage within Northern Ireland. However, it is important to note that this increase in government revenues would not directly translate into increased public spending within Northern Ireland, as the level of public spending in Northern Ireland is primarily determined through the Block Grant, which is calculated via the application of the Barnett Formula.⁶⁰

However, this should not take away from the fact that, under the baseline model, the introduction of the Living Wage raises the level of GVA and employment within Northern Ireland, at least in the short- to medium-term. Moreover, as the earnings proportion of employees' net income increases and the benefits and tax credits element decreases, employee work incentives become stronger and hence more closely aligned with activities that promote economic growth.

Linked to this, the introduction of the Living Wage in Northern Ireland would reduce regional wage inequality. Within the UK as a whole wage inequality rose sharply in the 1980s and early 1990s according to ONS data on the ratio between wage rates for people at the 90th and 10th percentiles of the earnings distribution. Wage inequality on this "90:10" measure has stabilised at that higher level since then.⁶¹

However, on inequality measures that take account of the increase in salaries among the top one percent of the income distribution, the picture is less benign, as economist Thomas Piketty's recent analysis has shown. Income inequality (dominated by wage trends) has continued to accelerate since the 1990s, with the top one percent in the UK almost tripling their share of national income between the late 1970s and today.⁶² For many people a reduction in such inequality is intrinsically desirable, while for others it could have material benefits in terms of people's life outcomes.

The analysis of this report has modelled the Living Wage as if it were a uniform statutory minimum for all employers in Northern Ireland. In practice, the Living Wage is generally promoted as a voluntary regime, where employers who 'can afford' to pay the higher minimum are asked to do so. Unfortunately, it is hard to objectively determine which firms can afford to pay such a wage. This is difficult for a number of reasons. For example, a firm's short-term profitability may be a poor reflection of longer-term returns, and owners or lenders receiving apparently high returns may in fact be being compensated for making a risky investment.

Moreover, profitability may not be a very good indicator of what would happen were a Living Wage to be introduced. Even if some firms do enjoy 'supernormal' profits, this does not offer guidance as to whether the cost of introducing the Living Wage would be incident on their bottom line rather than, say, the prices they charge consumers. For similar reasons, barely profitable industries may in fact be able to afford the Living Wage if they can fund it from something other than profits.

⁵⁹ It is worth noting, of course, that firm owners may live (and consume) abroad, they may have a lower marginal propensity to consume, and they may face lower effective net tax rates. Each of these would reduce the demand-depressing impact of reduced profits relative to increased wages.

⁶⁰ In simple terms Northern Ireland receives a population-based share of changes in funding for comparative spending programmes in England. Source: http://www.northernireland.gov.uk/revised_budget_-_website_version.pdf.

⁶¹ ONS (2012) Earnings in the UK over the past 25 years, 2012.

⁶² Thomas Piketty (2014) Capital in the 21st Century page 316.

Whether a sector or firm 'can afford' to implement the Living Wage therefore depends on much more than their raw profitability. Factors such as their scope to raise the productivity of their workforce, the ease with which they may substitute capital for labour if labour costs rise, and the degree to which they can pass higher costs on to consumers, all play a role and make any external assessment problematic. On the last of these, for example, exporting firms who face competition from lower wage jurisdictions would be less able to pass on the cost of the Living Wage than firms involved in the Northern Ireland hospitality industry.

In the long run, there is a macroeconomic question of whether the increased economic activity this demand generates is sustainable. In standard macroeconomic theory, aggregate demand and aggregate supply in an economy must balance, with the overall price level adjusting to bring this into effect. If an increase in the minimum wage were to stimulate demand in a full-employment economy without increasing the ability of the economy to supply this output, this would result in an increase in the overall price level over the long run, such that any additional economic activity would dissipate. On the other hand, if an increase in the minimum wage were to boost productivity in the economy, as assumed in the baseline model presented above, this would allow for permanently higher economic output resulting from the imposition of a Living Wage.

Finally, it should be remembered that, even under the best-case scenario, the macroeconomic effects of an increase in the minimum wage are likely to be modest. The increase in GVA estimated from demand-side effects of adopting a Living Wage estimated in the present study, for example, is £84 million, or roughly 0.3% of Northern Ireland GVA. Equally, the introduction of a Living Wage is unlikely to result in a net economic cost.

APPENDIX A: TECHNICAL NOTE ON CHAPTER 2

Calculations for the incidence of pay below the Living Wage within Northern Ireland were based on data from the 2012 Annual Survey of Hours and Earnings (ASHE). The sample used comprises approximately one per cent of all employees in Northern Ireland who were covered by Pay As You Earn (PAYE) schemes, and therefore is subject to an associated level of sampling error.

ASHE data provides information on hourly, weekly and annual earnings by gender, work patterns, industry and occupation, including public versus private sector pay comparisons. The median, mean and percentile bands of wages are detailed for each of the above breakdowns, presenting a picture of the distribution of earnings within the same. However, the percentile bands presented range from 5-10 and do not indicate the number of employees contained within each band.

Oxford Economics interpolated the wage levels between the ASHE percentile bands to give a wage distribution for 100 percentiles. The minimum wage paid within each wage distribution was capped at the NMW, unless the wage presented in ASHE's 10th percentile band was lower than the NMW. If that was the case, the 10th percentile wage was assumed to be constant going back to the first percentile.

In order to calculate the employment level of each percentile, a linear trend between the 1st and 100th percentile was assumed, this is consistent with recent analysis conducted by NERI and KPMG. In particular, the KPMG analysis⁶³ did not find any employment clustering across the percentile bands and as a consequence deemed a linear trend assumption as viable.

Following this, the number of workers above and below the Living Wage threshold for each breakdown was estimated.

Annual salaries for the hourly wages below Living Wage and the Living Wage for each breakdown were estimated by assuming that each employee worked the mean hours indicated for that breakdown and for 52 weeks of the year.

The difference between the annual salary for the Living Wage and the annual salary for the wage below Living Wage was calculated to give the net increase in gross wages.

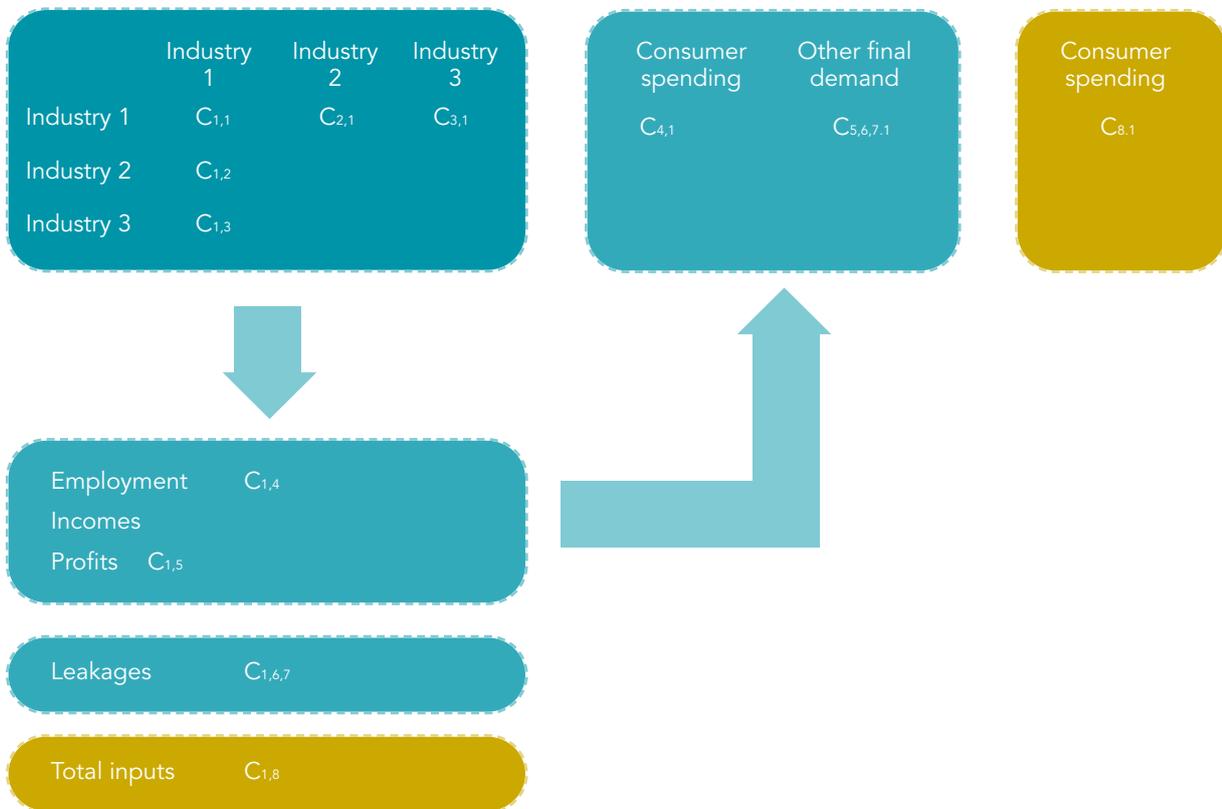
⁶³ Markit Economics (2012) *Living Wage Research for KPMG: current trends in household finances and structural analysis of hourly wages*.

APPENDIX B: INPUT-OUTPUT TABLES

Input-output tables are designed to give a snapshot of an economy at a particular time, showing the major spending flows. This includes “final demand” (i.e. consumer spending, government spending and exports to the rest of the world); intermediate spending patterns (i.e. what each sector buys from every other sector – the supply chain); how much of that spending stays within the economy; and the distribution of income between employment income and other income (mainly profits).

The idea behind the input-output table is that the economy can be divided into a number of producing industries, and that the output of each industry is either used as an input into another industry, or in final consumption. For example, grain produced by the farm sector becomes an input into flour milling; flour produced by the milling sector becomes an input into the baking sector, and so on. In essence an input-output model is a table that shows who buys what from whom in the economy.

Figure B.1: A simple input-output model



Reading across horizontally illustrates the distribution of each industry’s output, split between intermediate demand from other industries (used as an input to production) and final demand (consumer spending, exports and other government consumption). Therefore, Industry 2 in figure C.1 purchases an amount, $C_{2,1}$ from Industry 1 as an input to their production process. Thus, reading down vertically indicates what each industry purchases from other industries in the national economy by way of inputs which, when combined with imports from abroad (leakages), employment costs, operating surplus and any additional taxes or subsidies to production, give total inputs, which will equal total outputs. In the simple model illustrated in Figure C.1, $C_{8,1}$ will equal $C_{1,8}$.

A primary application of domestic use input-output tables is to create multipliers that are used to illustrate how an increase in demand in one sector affects the whole economy:

- **Type I multiplier** – estimates the impact on the whole economy of £1 spent in a given industry, through its supply chain.
- **Type II multiplier** – includes the Type I multiplier, but also includes the effect of spending by households as a results of the additional employment generated by the additional £1 spend.

