

# The impact of public spending changes in Northern Ireland

Howard Reed (Landman Economics) and Jonathan Portes (Aubergine Analysis and Kings College London)

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# Executive Summary

## Introduction

The Northern Ireland Human Rights Commission (NIHRC) commissioned Landman Economics and Aubergine Analysis to undertake a Cumulative Impact Assessment (CIA) of the impact of changes in public spending in Northern Ireland between the 2010-11 and 2021-22 tax years. This report shows the projected distributional impact of changes in public spending on groups across a range of characteristics – including net income, gender and family demographics, age, ethnicity, disability status and (for the first time in a study of this type) religion. It also shows the combined impact of public spending changes and tax and welfare reforms on the final income of these groups (where final income is defined as net income plus the value of public services that can be allocated to households).

A previous report published by NIRHC in 2019 (Reed and Portes, 2019) performed a CIA of the changes to the tax and social security system in Northern Ireland since May 2010, including all reforms planned up to the 2021-22 tax year.

This report extends that analysis and assesses the cumulative distributional impact of changes to ‘in-kind’ public services – in particular health, social care, education, early years and preschool services, and public transport and housing.

This report takes account of policy issues and circumstances specific to Northern Ireland, in particular the fact that public spending per head is higher in Northern Ireland than the rest of the UK and the boost to public spending in Northern Ireland as a result of the confidence and supply agreement between the Democratic Unionist Party and the Conservative Party after the 2017 UK General Election. The analysis also takes account of the specific socio-economic circumstances of Northern Ireland, such as the relatively high economic inactivity rate, a higher average family size, a larger proportion of social housing properties with two or more bedrooms, and less support for childcare costs for families with pre-school children compared to other parts of the UK.

Note that this report does not include the distributional effects of additional spending specifically earmarked for Covid-19 in the Northern Ireland Department of Finance’s

Budget publications for 2020-21 and 2021-22. Instead, the economic impact and distributional implications of Covid-19 for Northern Ireland will be covered in a separate report to be published soon after this one.

## Methodology

This report uses the Landman Economics public spending model, which combines data on trends in aggregate public spending (broken down into different spending categories) with survey micro-data on the usage of public services by individuals and households.

Data on spending in the financial years 2010-11 to 2019-20 (inclusive) are supplied from HM Treasury's *Public Expenditure Statistical Analyses* (PESA) publication (HMT 2016, 2021). Spending plans for Northern Ireland for 2020-21 and 2021-22 are taken from the Northern Ireland Department of Finance's Budget documentation (DoF 2020, 2021).

This report analyses spending trends from 2010-11 up to 2021-22, with additional analysis of changes in public spending across three discrete time periods: (a) 2010-11 to 2016-17 (broadly speaking, the period of austerity, where public spending was falling in real terms); (b) 2017-18 to 2019-20 (the aftermath of the 2017 UK election and the deal between the Conservative Party and the DUP, and the associated boost to public spending in Northern Ireland); (c) 2020-21 and 2021-22 (post December 2019 UK election, covering the UK's departure from the EU).

Not all public services are included in the Landman Economics public spending model – only those which can reasonably be allocated to households based on survey data on service usage ('allocatable services'). These comprise health, social care, education (including schools, further education and higher education), early years services transport and social housing.

We have compared changes in spending per head on each public service with a baseline scenario in which spending on each service in case terms rises in line with the GDP deflator (an index measure of growth in prices across the whole UK economy, including producer as well as consumer prices).

The Landman Economics model uses the Understanding Society (USoc) dataset to measure service use by individuals and households across all the types of public services used in the model. Two other datasets, the Family Resources Survey (FRS) and the Living Costs and Food Survey (LCF) are used to provide data on the distributional impacts of changes to direct and indirect taxation, and benefits, tax credits and the rollout of Universal Credit, so that we can present a combined analysis of the distributional impact of tax, social security and other public spending changes.

This report presents distributional analysis according to the following characteristics of benefit units<sup>1</sup> in the micro-data:

- Quintile of net household income;
- Type of benefit unit (single working age adult without children, working age couple without children, lone parent, couple with children, single pensioner, couple pensioner);
- Number of children (no children, one, two, three or more);
- Average age of adults (18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75+);
- Ethnicity/nationality (White British, White Irish, Black and Minority Ethnic (BAME));
- Number of functional disabilities experienced by adults in the benefit unit (not included in the LCF data);
- Religious affiliation (Catholic, Presbyterian, Church of Ireland, Other/mixed Protestant, Other/mixed Christian, Other/no religion; not included in the FRS or LCF data).

### **Aggregate and comparative results**

This report compares public spending per head of population (both in aggregate, and by service category) in Northern Ireland with equivalent data for England, Scotland and Wales to show comparative trends across the four countries. The results show that:

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<sup>1</sup> A 'benefit unit' comprises a single adult or an adult couple plus any dependent children

- Overall public spending per head is higher in Northern Ireland than in England, Scotland and Wales. Since 2010 spending per head in Northern Ireland has fallen relative to Scotland and Wales, but not relative to England.
- Spending per head has also been more volatile in Northern Ireland over the period 2010-11 to 2019-20 than in the other three countries of the UK.
- Since 2010, health spending per benefit unit in Northern Ireland has increased by around 25 per cent. Most of this increase occurs after 2017-18, and planned increases for 2020-21 and 2021-22 are especially large. Note that the effects of Covid are not fully considered here, however.
- Overall patterns of social care spending in NI show a shift from elderly people to disabled (working age) people and families and children (especially looked-after children).
- Schools funding per benefit unit in NI was significantly below the levels for the other three UK countries for most of the 2010-20 period, but is planned to rise by around 20% between 2019-20 and 2021-22, which would return real-terms spending (allowing for changes in the number of schoolchildren) to approximately where it was in 2010-11.
- Over the last decade there has been a substantial decline in further and higher education funding per BU in Northern Ireland (as in England and Wales), consistent with a reduction in student support and increases in HE tuition fees in all three countries.
- There was a pronounced decline in social housing expenditure per BU in Northern Ireland between 2010-11 and 2019-20 (around 65%) - a worse outcome than for any other country in the UK.
- Analysis of transport spending in N Ireland shows higher road spending per head and lower rail spending than elsewhere in the UK.

### **Distributional aspects of changes to public spending in Northern Ireland between 2010-11 and 2021-22**

- Overall, average spending per benefit unit increased for all five net income quintiles, with the largest increase in the fourth (second to top) quintile (around £750 per year) and the smallest increase in the second from bottom quintile (around £80 per year). The main spending areas driving this overall impact are health spending (which increased substantially across the income

distribution) and spending on social housing (which decreased substantially, but this affected the bottom two quintiles more than the other quintiles, and had hardly any impact on the top quintile).

- Spending changes between 2010-11 and 2017-18 had a negative impact, which was biggest in the lowest two quintiles of the income distribution and smallest in the top quintile. However, taken together the increases in spending between 2017-18 and 2019-20 and the planned spending increases for 2020-21 and 2021-22 outweigh the earlier spending cuts and lead to positive overall impacts of spending changes in real terms for each quintile.
- By benefit unit, the total gain from changes in spending is largest for male single pensioners (approximately £1,500 per year) and pensioner couples (around £1,300 per year). Lone parents are the only benefit unit type who lose out on average from spending changes between 2010-11 and 2021-22 (by around £300 per year).
- Overall, the total average impact of changes in spending is more positive the fewer children the benefit unit has. Childless benefit units gain an average of over £50 per year compared to around £400 for families with one child and £150 for two-child families. Families with three or more children lose around £70 per year from the spending changes on average. This pattern is mainly driven by substantial losses for families with three or more children between 2010-11 and 2017-18.
- The pattern of gains from spending changes by age group is mainly driven by health spending, which has a much bigger positive impact for pensioners than for young adults. Overall, benefit units where the average age of the adults is under 25 lose out from the combined spending changes (by around £600 per year on average) whereas benefit units where the average age of the adults is 65 or older gain (by around £1,100 per year on average).
- 18 to 24 year olds gain much less on average from spending increases after 2017-18 than other age groups do.
- The overall distributional impact of public spending changes by service category and by time period is very similar for benefit units who identify as White British and for those who identify as White Irish. The pattern of impacts by service category for BAME benefit units is different (although the overall impact is similar across all three groups).

- The pattern of distributional impacts by number of functional disabilities in the benefit unit is dominated by the increases in health spending. Benefit units with four or more functional disabilities have average gains of over £3,000 per year from the health spending increases compared to just over £500 per year for non-disabled benefit units. These differences arise because benefit units with a larger number of disabilities are more likely to use health services.
- The overall distributional impacts of changes in public spending for Catholic benefit units and the largest two Protestant denominations by sample size (Presbyterian and Church of Ireland) are very similar.

### **Combined distributional impacts of public spending and tax and social security measures**

It is important to note that the direct tax effects do not include the impact of the 1.25 percentage point increases in employee, self-employed and employer National Insurance Contributions announced in September 2021 because these will only take effect from April 2022. Our forthcoming report on the distributional impact of the Covid-19 pandemic and its consequences for public spending will include an analysis of the impact of these NICs increases.

Our main results are as follows:

- Spending on public services has a redistributive effect, narrowing the distribution of final income (which includes disposable income plus the value of public services received by households) compared to the distribution of disposable income on its own.
- Overall, the impact of tax and social security changes combined with other public spending changes is regressive across most of the income distribution. The second household income quintile loses just under 5 per cent of final income from the changes overall, while the fourth quintile sees average gains of around 1.5 per cent of final income. These effects are due to a combination of regressive changes to benefits and tax credits and an increase in regressive indirect taxation since 2010. Reductions in direct taxes have the biggest positive impact in the middle of the income distribution.

- Lone parents fare much worse from the combined changes to tax, social security and public spending than any other benefit unit type. Once Universal Credit is fully rolled out, they are forecast to lose just under 11% of final income on average. By contrast, couple pensioners and male single pensioners gain around 3 per cent of final income on average from the combined changes.
- The impact of changes to taxes and social security combined with other public spending is approximately zero for childless benefit units, with average losses increasing as the number of children in the family increases. Families with 3 or more children experience average losses of just over 6% of final income.
- The largest losses from the combined changes by age group are for the youngest group (average age of adults under 25), who lose over 5% of final income on average. By contrast, benefit units where the average age of adults is 65 or over gain around 1.5 per cent of final income on average.
- The overall impacts of the changes to tax, social security and other public spending are zero for White British benefit units, slightly negative for White Irish Benefit units (average losses of about 0.5 per cent) and more negative for BAME BUs (average losses of about 1.5 per cent).
- There is no strong relationship between the number of functional disabilities in the BU and the overall impact of the combined changes on final income. For disabled groups, the average increases in other public spending are approximately balanced out by average losses from changes to benefits and tax credits and the Universal Credit rollout.

### **Human rights implications of public spending changes in Northern Ireland**

The right to many of the specific public services featured in this report is protected by the ECHR and the international human rights system. The United Kingdom is a State Party to the International Covenant on Economic, Social and Cultural Rights (ICESCR), which includes references to the right to public services (including health, education and housing).

Overall, the two most disadvantaged groups from changes in spending since 2010 are lone parents, and younger adults (particularly those aged 18-24). While the

changes in spending have been skewed towards pensioners and away from young people, there are specific categories of spending where pensioners have lost out (particularly social care spending on the elderly, which has reduced per BU and per care recipient).

The analysis of changes in public spending in this report suggests that in some areas of public spending – particularly housing, social care for the elderly, and further and higher education – reductions in spending have reinforced the impact of the social security reductions, because the impact is disproportionately felt by groups who have already lost out from the effects of the tax and social security package, in particular lone parents and families with children. For other groups, for example people with disabilities, spending increases, particularly on health, may partially offset the impact of the cuts.

This raises significant human rights concerns, in that there does not seem to have been any assessment of the interaction between reductions in public services and reductions in social security payments, and the likelihood that some groups will be disadvantaged disproportionately by both. In particular, changes in both public spending and social security payments seem to have a pronounced age gradient; that is, they disadvantage younger households, particularly young adults and families with children, while protecting (in relative terms) those above pension age.

## Recommendations

### **Mitigating the negative impacts of public spending changes**

We recommend that the Northern Ireland Executive:

- Significantly mitigate the disproportionate negative impacts on poorer households and protected groups of changes to the tax and welfare system and cuts to spending on specific public services such as housing, transport and social care for the elderly.
- Focus mitigation measures particularly on groups that have been badly affected by the combined impact of tax, social security and other public

spending changes since 2010 – for example, lone parent families and adults aged under 25.

- Take into account in the future spending plans the likely impact on protected groups and the impacts for poorer households and protected groups who have lost out from changes since 2010.
- Require that future Budget plans from the Department of Finance are accompanied by an equality impact assessment (EIA). The EIAs should incorporate a CIA of the impact on protected groups, showing how distributional impacts vary across groups; analyse and explain any major disparities in outcomes that adversely impact protected groups; and take into account the impacts for poorer households of further changes in spending.
- Publish a detailed explanation of the process by which they will ensure that the Spending Review and spending plans are fully compliant with section 75 of the Northern Ireland Act 1998; demonstrating that any regressive measures are temporary, necessary, proportionate and non-discriminatory and do not undercut a core minimum level of protection and put in place any mitigating measures required to safeguard people's rights.
- Ensure that these analyses by each government are publicly accessible and subject to meaningful scrutiny by the Northern Ireland Assembly, the public and protected groups that may be adversely affected by the decisions.

### **Improving data for impact assessments of public spending changes**

In order to improve the quality of data for CIAs on public spending, we recommend that the Northern Ireland Executive (working with the UK Government where necessary):

- Makes available more information on the usage of various public services in Northern Ireland, including on social care services; Sure Start; legal aid services; publicly funded recreational facilities (for example, museums and galleries, parks etc.); and fire services.
- Improve the quality and availability of data on children's usage of health services.
- Publish more detailed analysis where data are collected on protected characteristics and take steps to redress this omission where they are not.

- Where data are lacking for particular groups, e.g. people from ethnic minorities in Northern Ireland, increase, boost or pool samples as necessary.

## 1 Introduction

The Northern Ireland Human Rights Commission (NIHRC) commissioned Landman Economics and Aubergine Analysis to undertake a Cumulative Impact Assessment (CIA) of the impact of changes in public spending in Northern Ireland between the 2010-11 and 2021-22 tax years. This report shows the projected distributional impact of changes in public spending on groups across a range of characteristics – including net income, gender and family demographics, age, ethnicity, disability status and (for the first time in this context) religion. It also shows the combined impact of public spending changes and tax and social security reforms on the final income of these groups (where final income is defined as net income plus the value of public services that can be allocated to households).

A previous report published by NIRHC in 2019 (Reed and Portes, 2019) performed a CIA of the changes to the tax and social security system in Northern Ireland since May 2010, including all reforms planned up to the 2021-22 tax year.

This report extends that analysis and assesses the cumulative distributional impact of changes to ‘in-kind’ public services – in particular health, social care, education, early years and preschool services, and public transport and housing. The authors previously conducted a similar analysis for the Equality and Human Rights Commission (EHRC) using data for England, Scotland and Wales (Reed and Portes, 2018) but this is the first time to our knowledge that distributional analysis of the impact of spending on public services has been performed in Northern Ireland.

The report is structured as follows. Chapter 2 gives background and context to changes in public spending in Northern Ireland since 2010-11. Chapter 3 explains the methodology behind the Landman Economics public spending model and how we model the distributional impact of changes to public expenditure, as well as the types of spending that are included. Chapter 4 presents some statistics on the overall size of changes to public spending in Northern Ireland and how the overall pattern of spending compares with the other countries of the United Kingdom. Chapter 5 looks at the detailed distributional impact of the public spending changes on households in Northern Ireland according to their position in the income distribution and a range of other characteristics such as ethnicity, disability, age and demographic type. Chapter 6 combines the distributional results from the previous

chapter with an updated analysis of the distributional impact of tax and social security reforms since 2010 to show the overall impact of all reforms on final income (defined as net income plus the value of public services received by each household). Chapter 7 looks at the implications of changes in public spending and taxation for human rights in Northern Ireland. Finally, Chapter 8 offers conclusions and policy recommendations for the Northern Ireland Executive and for the UK Government.

## 2 Context and Background

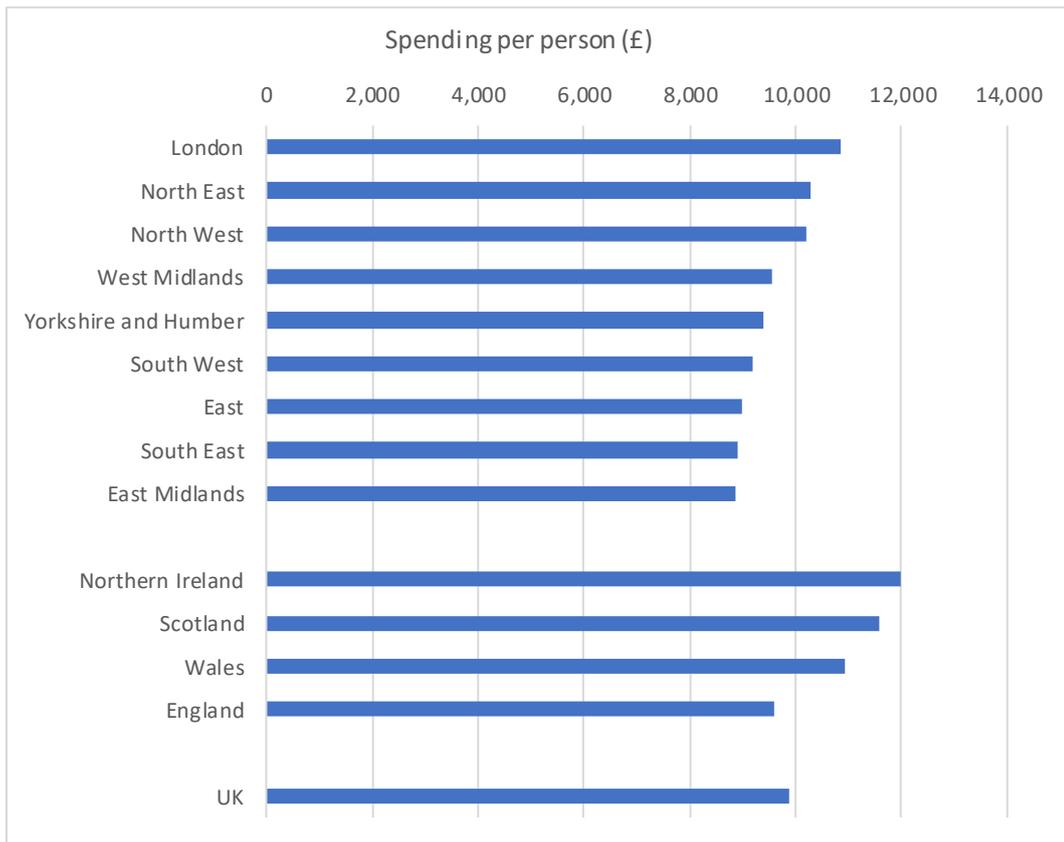
### 2.1 What is ‘cumulative impact assessment’?

As defined in the reports produced by Landman Economics and Aubergine Analysis for the EHRC (Portes and Reed 2018; Reed and Portes, 2018, Reed and Portes, 2019), “cumulative impact assessment” refers to a process for modelling the combined retrospective or forecasted impact of a range of tax, welfare and spending policies on households and individuals in a particular country or region using microsimulation modelling and survey data. Impact is measured in terms of changes in net income and/or the value of public services received by households and individuals. The word *cumulative* in the title refers to the consideration of the *combined* impacts of several reforms, policy changes, or increases or decreases in spending on specific services. However, the modelling techniques can also be used to look at the impact of any chosen subset of policy changes. Chapter 3 explains the methodology used in this report; Appendix A to the report includes full technical details of the modelling procedure.

### 2.2 The Northern Ireland Context

Northern Ireland differs from the rest of the UK in some key respects. In particular, it is both poorer than the UK average and, crucially, substantially more reliant on public spending than the rest of the UK. As shown Figure 2.1, in 2019-20 (that is, before the impact of the pandemic) identifiable public spending in Northern Ireland was higher than in any other UK country or region, and about 21% higher than the UK average (Brien, 2020).

**Figure 2.1. Total identifiable public spending per person, by country and region, 2019-20**



Source: HMT (2020), Table A.1b

The implication is that the impact on individuals and households of changes to public spending and social security has the potential to be larger in Northern Ireland than in most if not all of the rest of the UK. This subsection gives an outline of some of the key relevant features of the Northern Ireland socio-economic and policy context.

### Public spending in Northern Ireland

The majority of public spending in Northern Ireland is either incurred directly by central government (in particular, social security spending, which is the largest single component of government expenditure) or funded by the block grant provided by the central government under the Barnett formula, meaning that the amount is (broadly) fixed as a proportion of overall spending in England, but the Northern Ireland Executive has flexibility over the allocation of spending within that total. Despite this

flexibility, most of this spending is in fact allocated on broadly similar lines in all four countries, with health and education spending being by far the largest single component.

This implies that aggregate spending trends in Northern Ireland have followed broadly similar trends to those elsewhere in the UK, with spending on social security driven primarily by changes to the UK-wide social security system, with the exceptions described below; and changes to the aggregate level of spending on other services driven by those in the UK as a whole, in particular, from 2010 onwards the government's austerity programme, which has seen substantial reductions over the first half of the 2010s in departmental spending in England (both in real terms and as a percentage of GDP) and therefore, through the operation of the Barnett formula, in Northern Ireland. The nature of the Northern Irish political system – which effectively mandates a coalition government representing Northern Ireland's different political traditions – also means that substantial reallocations of spending are rare.

However, spending has also been affected by political developments. Following the 2017 UK general election, the confidence and supply agreement between the Conservative government and the Democratic Unionist Party secured significant additional financial support from central government to Northern Ireland, boosting spending levels. At the same time, the suspension of the Northern Ireland Executive between January 2017 and January 2020 meant that decisions on the allocation of spending had to be taken by civil servants rather than democratically elected politicians, meaning that there was an element of policy stasis. More recently, there has been a rise in political tensions relating to the implementation of the Northern Ireland Protocol of the UK's Withdrawal Agreement with the EU.

## Socio-economic profile

Northern Ireland has specific socio-economic characteristics which distinguish it from the rest of the UK. The most important of these are as follows:

- The **employment rate** – the proportion of working age people in paid work – is significantly lower in Northern Ireland than in the rest of the UK, taken as a whole. Labour Force Survey (LFS) data for April to June 2021 show that the employment rate for adults aged between 18 and 65 (inclusive) for Northern Ireland was 72.2%, compared to 76.3% for the UK as a whole, and lower than any other UK country or region.
- The lower employment rate for Northern Ireland reflects not higher unemployment (unemployment is lower in Northern Ireland than the UK average) but high levels of economic inactivity. In particular, the **economic inactivity rate for disabled people** of working age is much higher in Northern Ireland than in the rest of the UK. The Summer 2021 LFS shows that for adults aged between 18 and 65 who are disabled according to the 2010 Equality Act definition of disability, the inactivity rate in Northern Ireland is 60.7 per cent compared to 42.5 per cent across the rest of the UK.
- The rate of **child poverty** in Northern Ireland, measured using the relative Before Housing Costs (BHC) or After Housing Costs (AHC) measures, is similar to that in Scotland, but lower than in England or Wales (Save the Children, 2021).
- The **average family size** is larger in Northern Ireland than in the rest of the UK. Office for National Statistics show that 21.4% of families in Northern Ireland have three or more children, compared to 14.7% of families in the UK as a whole (ONS, 2016a).
- Northern Ireland's **social housing stock** has a larger proportion of properties with two or more bedrooms than the rest of the UK. Analysis by the Northern Ireland Housing Executive (NIHE) found that 88% of NIHE properties, and 68% of other housing association properties, have two or more bedrooms.

Overall, less than a fifth (18%) of self-contained social housing stock in Northern Ireland has only one bedroom. However, single working-age applicants make up 45% of the social housing waiting list, and a similar proportion of housing applications (Northern Ireland Housing Executive, 2018). The social housing stock is also highly segregated by religious community background, with around 90% of social housing estates being single identity (Murtagh, 2016).

- Northern Ireland's broader **demographics** differ somewhat from the UK; the Northern Irish population is somewhat younger (and fertility rates are higher), and considerably less likely to have been born abroad. This has implications for demand for education and health services.

The combination of high levels of overall government spending, low levels of employment, high levels of disability, and a somewhat younger population has implications for how changes to spending, especially on social security and key public services, impact different groups.

### Policy context

There are also some specific features of the policy context in Northern Ireland which distinguish it from the rest of the UK:

- The equality duties framework in Northern Ireland is different from the rest of the UK, which is covered by the Public Sector Equality Duty (PSED) established by the Equality Act 2010. In Northern Ireland, the relevant legislation is section 75 of the Northern Ireland Act 1998 (Equality Commission for Northern Ireland, 2010). In particular, this has resulted in a lower level of protection for people who are disabled in Northern Ireland than is available elsewhere in the UK. The Equality Commission for Northern Ireland has recommended reform of disability equality legislation to address legislative gaps in protection for disabled people in Northern Ireland and

guarantee disabled people effective legal protection against discrimination (Equality Commission for Northern Ireland, 2012).

- Unlike the other UK countries, Northern Ireland does not as yet have an anti-poverty strategy currently in place. This was the subject of a UK High Court ruling following a judicial review of the Northern Ireland Executive's failure to publish a strategy (Judiciary NI, 2015)). The Executive commissioned an Expert Panel report to inform the development of such a strategy, which was published in December 2020 (DfC, 2020); the Executive is currently considering the report.
- There is less support with childcare costs for working families in Northern Ireland than in other UK countries. Although the Working Tax Credit (and where introduced, Universal Credit) systems provide support with childcare costs for low income working families, and Tax Free Childcare provides some childcare subsidy for higher income working families, Northern Ireland does not provide 30 hours of free childcare for working parents of 3 and 4 year olds (whereas England, Scotland and Wales do provide free childcare for these groups)<sup>2</sup>. Statistics from the Family Resources Survey show that 37% of households in Northern Ireland pay for the childcare they use compared to 25% in Wales, 33% in Scotland and 36% in England (NIC-ICTU 2019).

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<sup>2</sup> Box 4.1 in Chapter 4 of this report provides more detail on the differences in free childcare provision across the four UK countries.

## 2.4 Findings of the 2019 Report

In our earlier report (Reed and Portes 2019) we focused on the impact of changes to the tax and social security system. We analysed changes announced or legislated between May 2010 and March 2019 that were scheduled to be implemented by the financial year 2021–22.

In the report, we set out the key features of those changes for the UK as whole, noting that for the most part, the tax and social security systems in Northern Ireland operate in a similar fashion to England, Scotland and Wales. However, we also identified some features of the introduction of the reforms which are specific to Northern Ireland; and the package of mitigation measures agreed in 2015. Full details are set out in the report.

We analysed the impact of these changes by a number of characteristics: income (specifically, household income decile), disability, the presence of children in the household (and the number of children), the gender and age of adults in the household, and the employment status of adults in the household. Our key findings were:

- Changes to tax and spending were regressive across most of the household income distribution; the biggest average total losses from the reforms were in deciles 2 and 3 of the household income distribution (about £900 per year, 4% of net income for the second decile). There were average gains for households in deciles 7 to 9, and small losses in the top decile. The main driver was that poorer households are more reliant (on average) on benefits and tax credits – and these have been subject to substantial real terms cuts since 2010. Tax changes primarily benefited those on middle and upper incomes, except at the top of the income distribution.
- Households with at least one disabled child (according to the core FRS disability definition) experienced average losses from the reforms of around £2,000 per year. By contrast, households with adults and children but no disabled adults or children, lost an average of around £50 per year. Households with greater numbers of functional disabilities experienced greater average losses from the reforms.

- Households with children experienced much larger losses as a result of the reforms than households without children. Losses are especially dramatic for lone parent households, who lose around £2,250 on average – equivalent to almost 10% of their net income.
- Households with three or more children were particularly badly affected by the benefit and tax credit reforms with overall average losses of around £2,575, compared to average losses of £50 for households with one child.
- Women lost more on average from the direct tax and social security measures than men, mainly because they are more likely to be receiving benefits and tax credits than men.

The key drivers of these changes were the benefit freeze, which has particularly large impacts for households with children, and especially lone parent households, and the two-child limit. Overall, our results imply an increase in relative child poverty (before housing costs) of eight percentage points and adult poverty by just over one percentage point. Unsurprisingly, given the discussion above, our results were qualitatively similar to those for England, Scotland and Wales, somewhat mitigated by the specific arrangements put in place for Northern Ireland and the mitigations package.

We also made a number of policy recommendations, directed at the Northern Ireland Executive, the UK Government and, in addition, specific recommendations concerning survey datasets in Northern Ireland. Our most important recommendations concerned a renewed and expanded mitigation package, to be introduced on the expiry of the original 2015 package in March 2020. Given political developments in Northern Ireland, our recommendations were not progressed, and instead the original mitigation package was extended; however, the impact of the pandemic and the government's response means that the current context has changed substantially.

## **2.5 Potential impact of Covid-19**

The detailed data covered in this report go up to 2019-20, and so feature the start of the first Covid-19 lockdown but do not cover most of the Covid-19 pandemic. Covid-19 has had a substantial impact on public spending and the public finances in Northern Ireland as elsewhere in the UK due to the introduction of the Coronavirus Job Retention Scheme (CRJS) (furlough) scheme, a Self-Employment Income Support Scheme (SEISS), and also the increase in spending on test-and-trace capacity, vaccines, protective equipment, and so on. There is also a potential indirect effect of Covid-19 via additional spending needs for health and social care, and perhaps other categories of spending as well, as a result of the impact of Covid-19 on population health in the short and long-term (e.g. increased hospitalisations, and “long Covid”).

As explained in Chapter 3, this report does not include the distributional effects of additional spending specifically earmarked for Covid-19 in the Northern Ireland Department of Finance’s Budget publications for 2020-21 and 2021-22. Instead, the economic impact and distributional implications of Covid-19 for Northern Ireland will be covered in a separate report to be published soon after this one.

### 3 Methodology and Data

The Landman Economics public spending model combines data on trends in aggregate public spending (broken down into different spending categories) with survey micro-data on the usage of public services by households. This chapter gives an overview of both these types of data and the methods used to model the distributional impacts of public spending using the data sources. We also consider the strengths and weaknesses of the modelling methodology.

#### 3.1 Aggregate Spending data

##### Data sources

The model uses aggregate public spending data from two sources, as follows:

- Data on spending in the financial years 2010-11 to 2019-20 (inclusive) are supplied from HM Treasury's *Public Expenditure Statistical Analyses* (PESA) publication (HMT 2016, 2021). For Northern Ireland, the particular tables used are Tables 10.4 and 10.8, which show identifiable expenditure on services by 'sub-function' in total, and per head of the population. The 'sub-function' classification is based on the United Nations' COFOG (Classifications of Functions of Government) definition and is explained in more detail below.
- Spending plans for Northern Ireland for 2020-21 and 2021-22 are taken from the Northern Ireland Department of Finance's Budget documentation for 2020-21 and 2021-22 (DoF 2020, 2021). Appendix A of this report includes more detail explaining how budget departmental settlements are mapped onto spending by functional area.

In addition to the spending data, the model uses data from the Office for National Statistics on population by age group (including recorded population changes between 2010 and 2020 and population projections for the years 2021 and 2022) to enable the adjustment of the spending plans for Northern Ireland from the PESA data to take account of changes in the relevant population in each country. Appendix

B of this report includes more detail explaining which population age subgroups are used to adjust spending per head in each functional area of spending.

### **Choice of timeframe**

This report produces estimates of distributional impacts up to 2021-22 (the current fiscal year at the time of writing). This reflects the current state of knowledge. The UK Government's autumn 2020 Spending Review published overall planned spending totals at the UK level for 2022-23 and 2023-24 but only provided detailed departmental spending plans for 2021-22. A full three-year spending review is planned for autumn 2021 but is not yet published. In line with the Westminster Government, The Northern Ireland Executive has published detailed spending plans for 2021-22 in its 2021 Budget but has not published plans for future years.

The analysis in this report looks at spending trends since 2010, with additional analysis of changes in public spending across three discrete time periods:

- (a) 2010-11 to 2016-17 (broadly speaking, the period of austerity, where public spending was falling in real terms);
- (b) 2017-18 to 2019-20 (the aftermath of the 2017 UK election and the deal between the Conservative Party and the DUP, and the associated boost to public spending in Northern Ireland);
- (c) 2020-21 and 2021-22 (post December 2019 UK election, covering the UK's departure from the EU).

### **Services included in the model**

Not all public services are included in the Landman Economics public spending model – only those which can reasonably be allocated to households based on survey data on service usage ('allocatable services'). The included services are as specified in Table 3.1 below.

**Table 3.1. Classification of the Functions of Government (COFOG) of services and inclusion status in the Landman Economics public spending model**

COFOG classification	Included in model	Not included
1. General public services*	None	All
2. Defence	None	All
3. Public order and safety	3.1 Police services**	3.2 Fire-protection services 3.3 Law courts 3.4 Prisons
4. Economic affairs	4.5 Transport	4.1 General 4.2 Agriculture, forestry, fishing and hunting 4.3 Fuel and energy 4.4 Mining, manufacturing and construction 4.6 Communication 4.7 Other industries
5. Environment protection	None	All
6. Housing and community amenities	6.1 Housing development	6.2 Community development 6.3 Water supply 6.4 Street lighting
7. Health	Medical services	Medical research Central and other health services
8. Recreation, culture and religion	None	All
9. Education	9.1 Pre-primary and primary education 9.2 Secondary education 9.3 Post-secondary non-tertiary education 9.4 Tertiary education	9.5 Education not definable by level 9.6 Subsidiary services to education

10. Social protection	Social service components of all sub-categories	Transfer payment components of all sub-categories***
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Note: table omits R&D and n.e.c. (not elsewhere classified) components of all COFOG categories to save space. None of these are included in the model.

\* “General public services” include expenditure on executive and legislative components of government (such as the Northern Ireland Executive) and foreign economic aid.

\*\* Police services are included in analysis of aggregate public spending in Chapter 4 but not distributional analyses in Chapter 5 because the police service use variable in the Understanding Society micro-data is not detailed enough to give an accurate picture of the distributional impact of police spending in Northern Ireland. See Section 3.2 for more details.

\*\*\* Note that transfer payments – which are a key component of social protection spending – are included in the Landman Economics tax-transfer model used in Reed and Portes (2019) rather than the Landman Economics public spending model. In Chapter 6 of this report, we include the distributional impact of changes to transfer payments (and changes to the tax system) alongside the impact of changes to other public spending, to show the overall impacts of tax and spending policies.

Analysis of Table 10.4 of the PESA data shows that in Northern Ireland, these ‘allocatable services’ accounted for around 75% of total public spending in the 2019-20 tax year when combined with the transfer spending payments included in the Landman Economics tax-transfer model used for the cumulative impact assessment of tax and social security reforms in Reed and Portes (2019). The remaining 25% was composed of services such as defence and environmental protection, the benefits of which cannot be straightforwardly assigned to particular types of household. To the extent that most of the non-allocated spending, like defence, can reasonably be assumed to be general “public good” spending, benefiting all citizens, this exclusion is unlikely to affect the results materially.

### The choice of baseline scenario

We have compared changes in spending per head on each public service with a baseline scenario in which spending on each service in cash terms rises in line with the GDP deflator. The GDP deflator is an index measure of growth in prices across the whole UK economy, including producer as well as consumer prices. Thus, the baseline scenario in this model is a scenario in which spending per head on public services stays constant in real terms. The model measures the distributional impact of increases – or cuts – in spending against that baseline.

It is important to note here that a baseline scenario where spending on public services stays constant in real terms is a much lower rate of growth than the long-run historical average over the last 70 years, which is for total public spending to rise roughly in line with real GDP (with some short-term variations)<sup>3</sup>. Most of the time, real GDP is growing (ie nominal GDP grows faster than the GDP deflator. This in turn means that the long-run tendency is for public spending to *increase* in real terms. For example, over the time period we are focusing on in this report, real GDP is forecast to grow by just over 20% between 2010-11 and 2021-22 (OBR, 2021).

Measured against a baseline scenario where spending on services is constant as a share of GDP, our analysis would show large-scale cuts to most services (and therefore large losses to individuals and households). From a long-run historical perspective, this would be the most appropriate comparison. However, we have chosen the constant real-term spending benchmark for this analysis since it is consistent with our treatment of the baseline scenario for benefit levels and tax thresholds in our previous CIA study of the cumulative impact of tax and social security reforms in Northern Ireland (Reed and Portes, 2019), which assumed that benefit levels and tax thresholds were held constant in real terms in the baseline scenario. Our earlier analysis of the distributional impact of public spending changes for England, Scotland and Wales (Reed and Portes, 2018) also used a constant real-terms spending baseline. The use of an alternative baseline such as nominal GDP growth would not change the relative impacts between different groups; it would simply show larger losses (or smaller gains) for all groups.

### **3.2 Survey data on service use**

The Landman Economics public spending model uses survey data at the individual and household level on the use of various public services to establish the pattern of use of those services across the household income distribution and various protected characteristics. Previous versions of the Landman Economics public spending model used a range of different datasets to measure service use across

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<sup>3</sup> The table on 'Public Finances since 1900' produced by the Office for Budget Responsibility (OBR, 2021) shows that spending was between 34% and 47% of GDP in every year between 1946-47 and 2019-20 inclusive. In 2020-21 spending rose to 52% of GDP, mainly due to the temporary sharp fall in GDP during the Covid-19 pandemic.

different public services, including the Family Resources Survey, Health Survey for England and the National Travel Survey. The latest version of the Landman Economics model uses the **Understanding Society** (USoc) dataset to measure service use across all of the types of public services included in the model. This avoids the need to use regression-based methods to impute service use for health and transport services, which were not included in the FRS and had to be matched from other datasets using regressions from health surveys for each country and the National Travel Survey respectively. It also allows us to analyse how impacts vary between households of different religious backgrounds (this is an improvement on the FRS, which does not include a religion variable in the standard version of the dataset). Appendix A of this report provides full details of the service use variables used in the USoc dataset.

The analysis in this report uses the most recent two waves of USoc (Waves 9 and 10). Only two waves are used because prior to Wave 9, some of the most important service use variables (such as health and social care) had not been introduced into the USoc dataset.

### 3.3 Protected characteristics of benefit units

The primary unit of analysis for the distributional analysis in this report is the *benefit unit*. Each benefit unit in the USoc data comprises a single adult or an adult couple aged 18 or over, together with dependent children aged 0 to 18 years old (if any). This is the same definition that the UK Department for Work and Pensions uses as the unit of assessment for Universal Credit and other means-tested transfer payments.

The distributional analysis of the impacts of public spending in this report uses seven different breakdown variables:

1. **Position of benefit unit in the household income distribution:** using quintiles of the equivalised net household income distribution.
2. **Benefit unit type:** dividing benefit units into single adults and adult couples, working age adults and pensioners, and whether the benefit unit includes

dependent children or not. Single adult benefit units are also divided into men and women.

3. **Number of children in the benefit unit:** divided into childless benefit units, one-child families, two-child families, families with three or more children.
4. **Age group:** based on the age of the adult in the benefit unit (for one-adult benefit units) or the average age of the couple (for two-adult benefit units). Categories: under 25, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 and over.
5. **Ethnicity/nationality of the adults in the benefit unit:** White British, White Irish, and Black and Minority Ethnic (BAME)<sup>4</sup>.
6. **Number of functional disabilities among adults in the benefit unit:** the USoc data has information on 12 types of functional disabilities that adults might have<sup>5</sup>. For each benefit unit in USoc, we sum the number of functional disabilities for the adult (or adults) in the benefit unit to produce a disability ‘score’ classification ranging from no disabilities up to five or more disabilities. This is used as a proxy for severity of disability and allows a more detailed analysis of the distributional effects of public spending by disability status than a binary “disabled/non-disabled” classification would do.
7. **Religious affiliation of adults in the benefit unit:** This is categorised using a five-way classification as follows:
  - a) Catholic;
  - b) Presbyterian;
  - c) Church of Ireland;
  - d) Other/mixed Protestant (including other Protestant denominations, plus couples where one adult is Presbyterian and the other adult is Church of Ireland);
  - e) Other/mixed Christian (including couples where one adult is Catholic and the other adult is Protestant);

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<sup>4</sup> Benefit units with an adult couple where one adult identifies as White British and the other identifies as White Irish are allocated to the White Irish group. Couple benefit units where one adult identifies as BAME and the other adult identifies as White British or White Irish are allocated to the BAME group.

<sup>5</sup> The twelve functional disabilities in the USoc questionnaire are: mobility (moving round at home and walking); lifting, carrying or moving objects; manual dexterity (using your hands to carry out everyday tasks); continence (bladder and bowel control); hearing (apart from using a standard hearing aid); sight (apart from wearing standard glasses); communication or speech problems; memory or ability to concentrate, learn or understand; recognising when you are in physical danger; physical co-ordination (e.g. balance); difficulties with own personal care; and other health problem or disability.

- f) Other (including other religions and adults who do not identify as religious).

Unfortunately it is not possible to provide a more detailed breakdown for non-Christian religions because the sample size of adults in the USoc Wave 9 and 10 data for these categories is too small.

### **3.4 Strengths and weaknesses of the modelling methodology**

In our view, the methodology used in the Landman Economics public spending model has the following strengths:

- Spending data for the period 2010-11 to 2019-20 are based on actual PESA spending information from Tables 10.4 and 10.8, while the data on planned spending for 2020-21 and 2021-22 are based on the Northern Ireland Department of Finance's budget documentation.
- Service use is based on actual survey data on usage.
- For the first time, the estimates from the model are based on a single dataset (Understanding Society) rather than several different datasets. This avoids issues which can cause problems when using more than one dataset in models (for example, when definitions of protected characteristics vary across datasets).

The model has the following methodological issues and potential weaknesses:

- The model assumes that the distributional impact on service users of a change in spending on a given public service is equal to the change in spending per head on that public service allocated to that group of service users. In other words, public services are valued by end users according to the amount being spent on the service. This ignores changes in the value of public services to the user that result from factors other than the amount spent. For example, in health the range of treatments available, or the way a given service is delivered, might have impacts on the quality of the service which are not necessarily driven by spending. An alternative approach would be to measure changes in public service quality using metrics that are more directly related to the end user experience of using the service (such as data

on user satisfaction, or measures of service quality). However, this alternative approach is not possible in the UK because user satisfaction and/or service quality measures are not typically available in survey-based micro-data.

- Some services which could in principle be allocated to households are omitted from the model due to a lack of micro-data on service use (e.g. fire services, legal aid).
- For some services in England, Scotland and Wales, decisions about the precise mix and extent of services are made at local council level. It is not possible to include local council-level spending decisions in the model for two reasons. First, the Understanding Society dataset does not contain local council identifiers; and second, we do not have a database of spending categories and amounts at local council level (which would be very time-consuming to construct). However, this is less of a problem in Northern Ireland because service areas such as education, social care and housing are administered by Northern Ireland-wide bodies outside the jurisdiction of local councils.
- The model does not distinguish between current spending (i.e. day-to-day spending on running services such as the wages of public sector employees, administration costs and so on) and capital spending (i.e. investment in buildings and equipment), which may have very different time paths in terms of their impact on service users.
- Most of the results from the model are presented at the benefit unit level (which is the same as the household level for most benefit units). For the most part, it would be technically possible to use micro-data to model the use of public services at the individual rather than the benefit unit level. However, there are two problems with this approach. First, there are conceptual problems concerning how to divide spending between individuals: for example, should the adult or the child be modelled as benefiting from childcare services? Second, the USoc survey data on receipt of public services for children are not as detailed as for adults for some services (particularly health, social care for disabled children, and transport) and this makes it difficult to produce accurate allocations of these services.

Despite the methodological issues, we are confident that the public spending model used in this report gives as accurate a picture of the distributional impacts of public spending changes as is possible given currently available data.

### 3.5 Data used for distributional analysis in Chapter 6

Chapter 6 of this report presents results showing the distributional impact of changes to spending on public services combined with the distributional impact of reforms to the tax and social security systems in Northern Ireland since 2010. The tax and social security results are an updated version of those published in the 2019 report for NIHRC, *Cumulative impact assessment of tax and social security reforms in Northern Ireland* (Reed and Portes, 2019). As with the 2019 report, the tax and social security analysis uses the Family Resources Survey to model the impact of reforms to direct taxes and social security, and the Living Costs and Food Survey to model the impact of indirect tax reforms. While the Understanding Society data does contain the information on incomes, labour market status and personal characteristics necessary to model direct tax and social security measures, the Landman Economics tax-transfer model is not currently set up to use the USoc data in modelling<sup>6</sup>.

#### Family Resources Survey

The Family Resources Survey (FRS) is an annual survey of around 20,000 households per year in the UK, collected on a tax-year basis (UK Data Archive, 2017). The FRS is a repeated cross-sectional survey rather than a panel survey: it interviews a new set of households each year rather than conducting repeat interviews with the same set of households over a number of years.

The FRS is widely acknowledged as the best source of data on individual, family and household gross incomes and disposable incomes (incomes after payment of direct taxes and transfer payments) in the UK. For this reason, the FRS is used for the UK Government's detailed statistics on the income distribution (*Households below average income*, or HBAI) (DWP, 2021).

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<sup>6</sup> The next major update of the Landman Economics tax-transfer model, scheduled for 2022, will include Understanding Society as one of the supported datasets.

## **Living Costs and Food Survey**

The Living Costs and Food Survey (LCF) is an annual survey of households (Bulman, 2017) which has been conducted on a tax-year basis since 2015–16 (prior to 2015, the survey was conducted on a calendar-year basis). Like the FRS, the LCF is a repeated cross-sectional survey rather than a panel survey, involving interviews of a new set of households each year rather than repeat interviews with the same set of households over a number of years. The LCF also contains data on individual, family and household gross incomes and disposable incomes. The LCF also collects data on expenditure on goods and services at the household level, using a combination of individual expenditure diaries completed over the two-week survey period, and additional questions about recurring regular expenditures (for example, utility bills, rent and mortgage payments). This means that the LCF is suitable for modelling the distributional effects of indirect taxes (for example VAT and excise duties).

## **Sample size and data pooling**

Because of the relatively small size of the Northern Ireland data samples in the USoc, FRS and LCF datasets it is necessary to pool more than one wave of data to produce a usable sample size for the analysis. Table 3.2 shows a comparison of the number of waves used in each dataset, the time period that the waves cover, the number of household observations in each dataset, the outcome variables which each dataset is used for, and the protected characteristics variables included in each dataset. USoc is the only dataset which includes the full set of protected characteristics used in the analysis in this report. The FRS does not include religious affiliation, while the LCF does not include disability, British/Irish national identity or religious affiliation data.

**Table 3.2. Comparison of sample size and protected characteristics:  
Understanding Society, Family Resources Survey and Living Costs and Food  
Survey**

<b>Dataset</b>	<b>USoc</b>	<b>FRS</b>	<b>LCF</b>
Number of waves used	2	3	8
Time period covered (inclusive)	2017-2019	2016/17 to 2018/19	2011/12 to 2018/19
Number of observations: households	2,547	5,868	1,972
Outcome variable	Public spending	Direct taxes, social security	Indirect taxes
Breakdown characteristics included:			
Household net income	Yes	Yes	Yes
Benefit unit type	Yes	Yes	Yes
Number of children	Yes	Yes	Yes
Age group	Yes	Yes	Yes
Ethnicity	Yes	Yes	No*
Disability	Yes	Yes	No
Religious belief	Yes	No	No

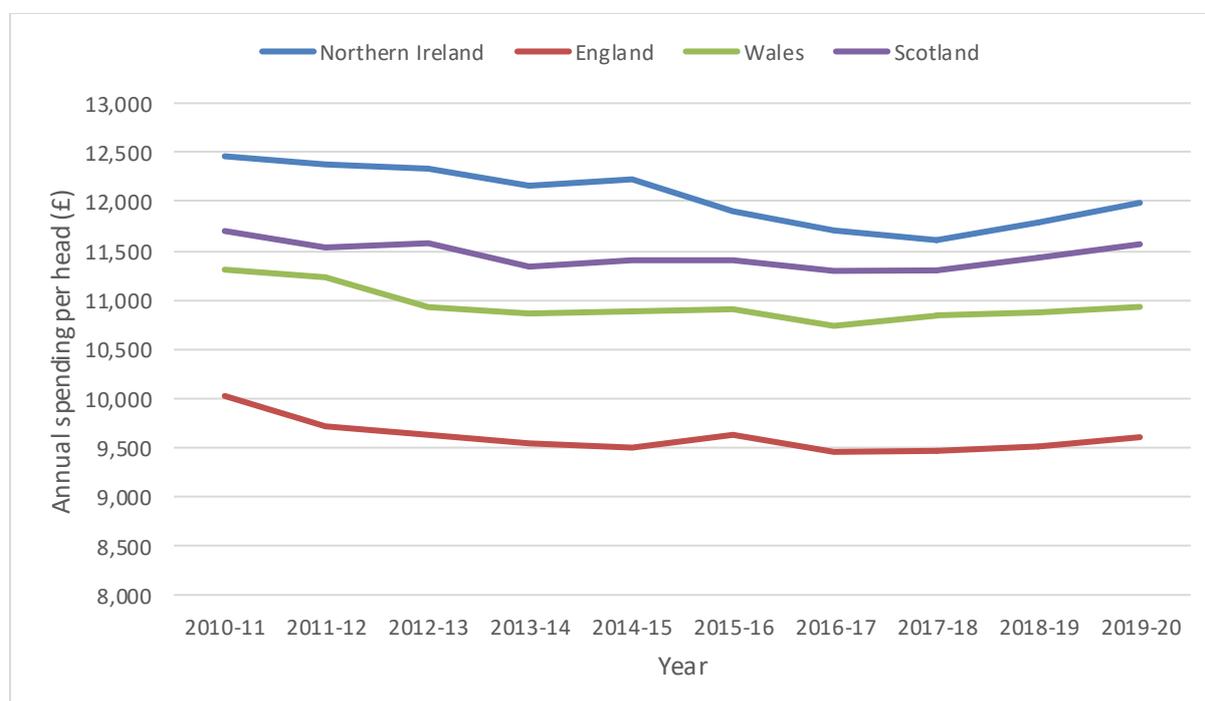
Notes: \* LCF does include an ethnicity variable but it does not include a British /Irish national identity question

## 4 Aggregate and comparative results

This chapter compares public spending (both in aggregate, and by service category) in Northern Ireland with equivalent data for England, Scotland and Wales to show comparative trends across the four countries. Because the four countries have different population size, trends are shown per head of population (in Section 4.1) and then per benefit unit (in subsequent sections) to make comparisons between countries easier.

### 4.1 Overall spending per head

**Figure 4.1. Average annual spending per head for the countries of the UK, 2010-11 to 2019-20**



Source: Landman Economics analysis of HMT PESA data (2010-11 to 2019-20)

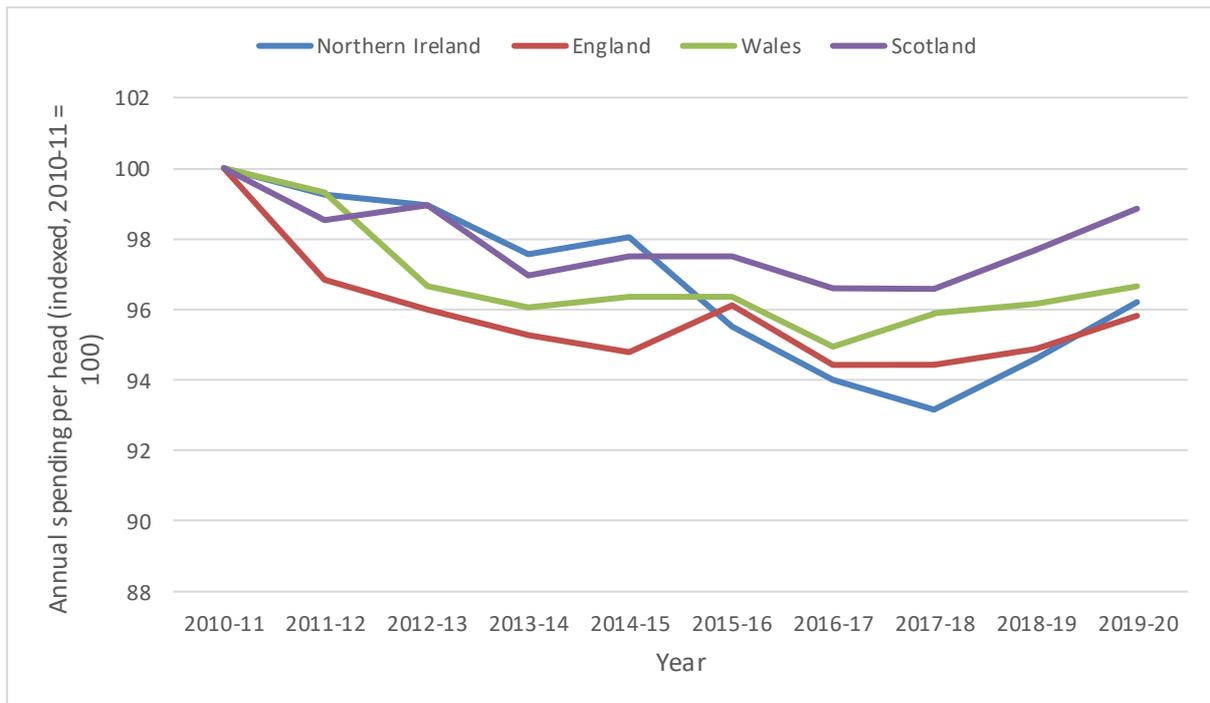
Figure 4.1 shows that total public spending per head in Northern Ireland is higher than Scotland, which is in turn higher than Wales, with spending per head in England substantially lower than in the other three countries of the UK. In 2010-11 spending per head in Northern Ireland was approximately 24 per cent higher than in England, 10 per cent higher than in Wales, and 6.5 per cent higher than in Scotland. By 2019-20 the gap between Northern Ireland and Scotland was much smaller, with spending

per head only 3% higher in Northern Ireland than in Scotland. The gap between Northern Ireland and Wales had also closed slightly (to 8 per cent) but the gap between Northern Ireland and England remained around 24 per cent.

Figure 4.2 shows average annual spending per head for each country indexed so that spending is equal to 100 in 2010-11 for each country. This makes it easier to see changes in spending per head for each country from a common starting point. The figure shows that spending per head in Northern Ireland fell by just over 2 per cent between 2010-11 and 2013-14, recovered slightly in 2014-15 and then fell at a faster rate between 2014-15 and 2017-18. At the lowest point, in 2017-18, spending per head in Northern Ireland was 7 per cent below the 2010-11 level. After 2017-18 spending per head increased. This increase corresponds with the additional resources for Northern Ireland agreed between the Democratic Unionist Party and Theresa May's Conservative Government following the June 2017 UK General Election which produced a hung parliament and led to a 'confidence and supply' agreement between the Conservative Party and the DUP. However it is worth noting that spending per head increased in all four UK countries after 2017-18, although the increase in spending was fastest in Northern Ireland.

Compared to the other three UK countries, the pattern of spending in Northern Ireland was more volatile between 2014-15 and 2019-20, with a much bigger decline between 2014-15 and 2017-18, followed by a faster rise in 2018-19 and 2019-20.

**Figure 4.2. Average annual spending per head for the countries of the UK, 2010-11 to 2019-20 (indexed: 2010-11 = 100)**

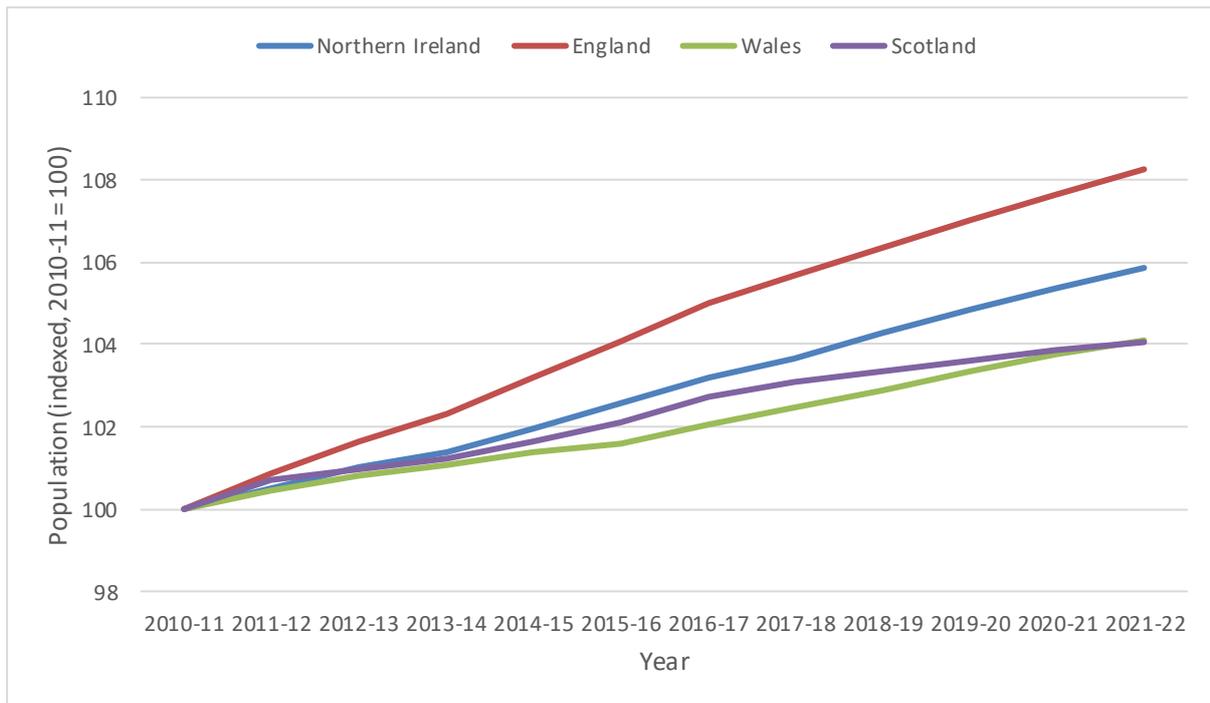


Source: Landman Economics analysis of HMT PESA data (2010-11 to 2019-20)

## 4.2 Population growth

Figure 4.3 shows that total population grew in all four countries of the UK between 2010-11 and 2021-22, but the growth was fastest in England (at around 8 per cent over the whole time period), around twice the rate of growth of Scotland and Wales). Northern Ireland's population growth rate was just under 6 per cent, faster than Scotland and Wales but slower than England. The per-head and per-benefit unit spending figures in this report adjust for growth of the relevant population age group in receipt of each service. For some services (such as health and public transport) this is the whole population (i.e. all age groups); for others (e.g. pre-school and school education, social care for the elderly) the population total in the relevant age group is used. Appendix B of the report explains in detail which age subgroup is used for each spending category, and contains comparative graphs for each age subgroup across the four UK countries.

**Figure 4.3. Population for each country of the UK, 2010-11 to 2021-22 (indexed: 2010-11 = 100)**



Source: ONS (2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2020a, 2020b, 2020c); NISRA (2020).

### 4.3 Spending on each public service

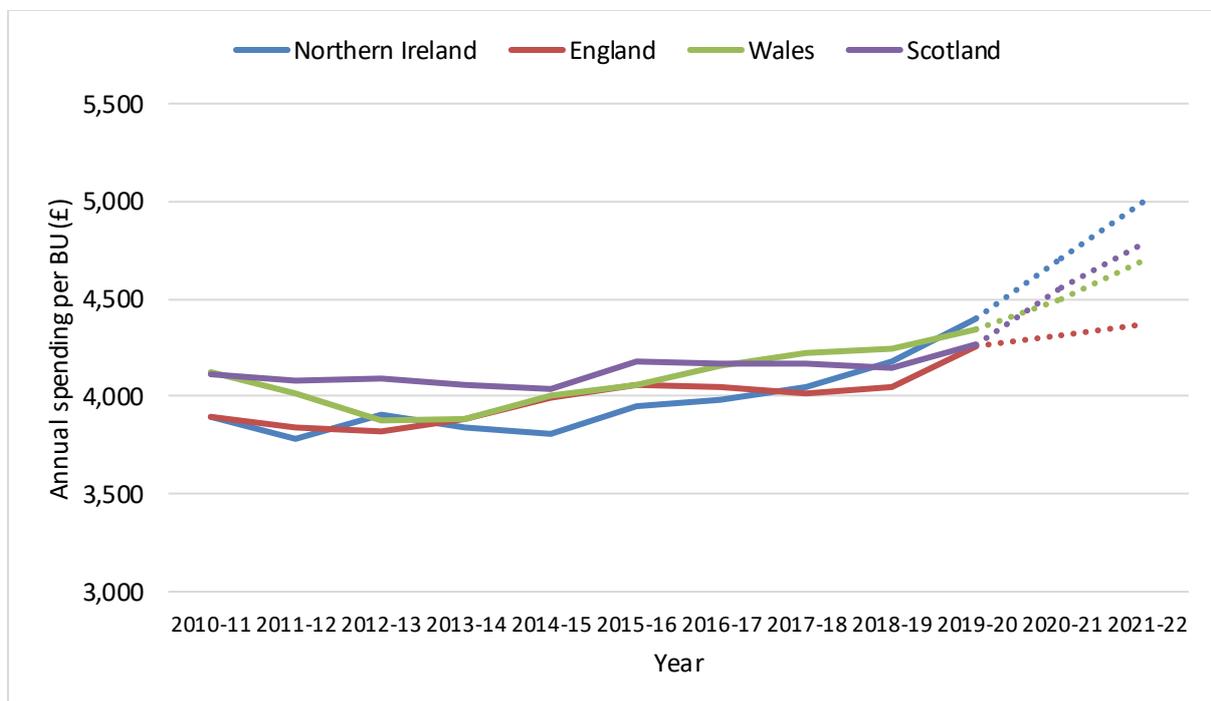
This subsection shows trends in spending for each category of public service included in the Landman Economics public spending model. These were constructed using the following methodology:

- Results for 2010-11 to 2019-20 are taken from the PESA dataset. For 2020-21 and 2021-22 the results are taken from spending plans announced by the UK Government (for England) or the relevant devolved government or administration (for Northern Ireland, Scotland and Wales). Spending plans are shown as dotted lines in Figure 4.5 (and the other graphs of spending by public service category in this Chapter), while historical spending outturns are shown as unbroken lines.

- Figures are presented on a per-benefit unit basis rather than per head. This is because the Landman Economics model uses the benefit unit (defined in Section 3.3 above) as the basic unit of analysis, because some public services (e.g. education and childcare) can't be easily allocated to individuals in a family. In practice the pattern of spending changes over time is very similar whether benefit units, households or individuals are used as the unit of analysis.

## Health

**Figure 4.5 Health spending per benefit unit in the four countries of the UK, 2010-11 to 2021-22**



Source: Landman Economics analysis of HMT PESA data (2010-11 to 2019-20), Department of Finance (2020, 2021), Scottish Government (2021), Welsh Parliament Senedd Research (2020, 2021), HM Treasury (2020).

Health spending per benefit unit has increased in all four countries of the UK between 2010-11 and 2019-20. The increase was faster in Northern Ireland than in the other three countries of the UK. In 2010-11, spending per benefit unit (BU) in

Northern Ireland was roughly the same as in England. By 2019-20, spending per BU in Northern Ireland was higher than for any other UK country. The overall increase in spending per BU over this period in NI was just under 13 per cent.

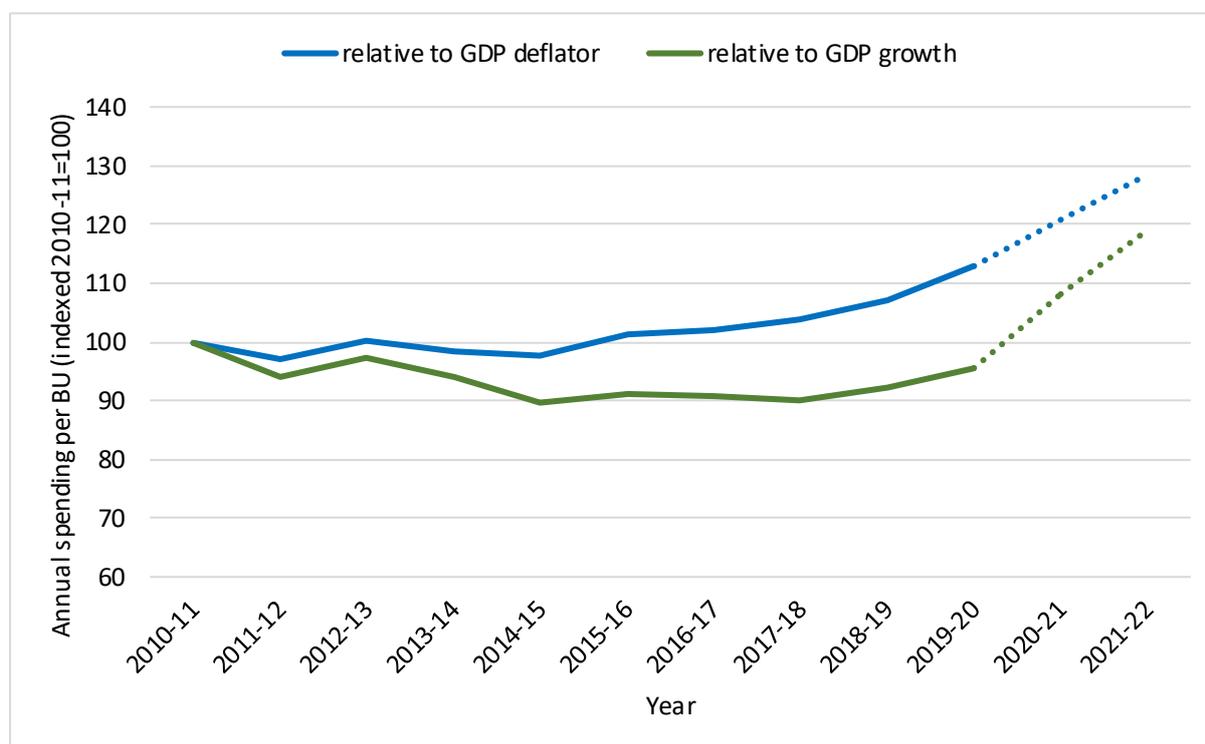
Spending plans for 2020-21 and 2021-22 in Northern Ireland show substantial further increases in health spending. A further 12 per cent increase in health spending is planned over these two years. This is a faster rate of increase than in any other UK country (although Scotland and Wales also plan substantial real terms increases).

It is important to note that the spending totals here exclude money specifically allocated to Covid-19 (for vaccines, testing etc) but do *not* take account of the effects of reallocation of the NHS budget to address the short or long-term consequences of Covid-19 (e.g. increased hospitalisations, increased prevalence of chronic health conditions due to “long Covid”, etc.) Once additional NHS needs arising from Covid-19 are taken into account, it is not clear whether spending on *pre-existing* health conditions will rise or fall over 2020-21 and 2021-22. We address this issue in our forthcoming report for NIHRC on the consequences of the Covid-19 pandemic for public spending in Northern Ireland.

Additionally, it is important to note that assessing health spending relative to GDP, i.e. taking the baseline as spending fixed as a proportion of GDP rather than a fixed amount in real terms, would show a different pattern for health spending. This is illustrated in Figure 4.6 below which graphs health spending in real terms (indexed to the GDP deflator, in blue) and also relative to GDP (in green). Between 2010-11 and 2019-20, real GDP was growing, and growing faster than the growth in health spending in Northern Ireland. This contrasts with the historical experience; since the establishment of the NHS, health spending has generally increased relative to GDP. By 2017-18, health spending is about 10 per cent lower relative to GDP than in 2010-11. Health spending grew faster than GDP between 2017-18 and 2019-20, but was still around 5 per cent lower in 2019-20 (relative to GDP) than in 2010-11. After 2019-20 very unusual circumstances apply, in that GDP fell due to the impact of the Covid-19 pandemic, and this means that health spending is projected to grow faster relative to GDP than in real terms over these two years. Appendix C contains an analysis of spending per benefit unit across each of the service categories featured

in this chapter showing the difference that indexing against GDP rather than the GDP deflator makes to the measured trends in spending on each service.

**Figure 4.6 Health spending per benefit unit in Northern Ireland in real terms (GDP deflator) and relative to GDP, indexed 2010-11=100, 2010-11 to 2021-22**

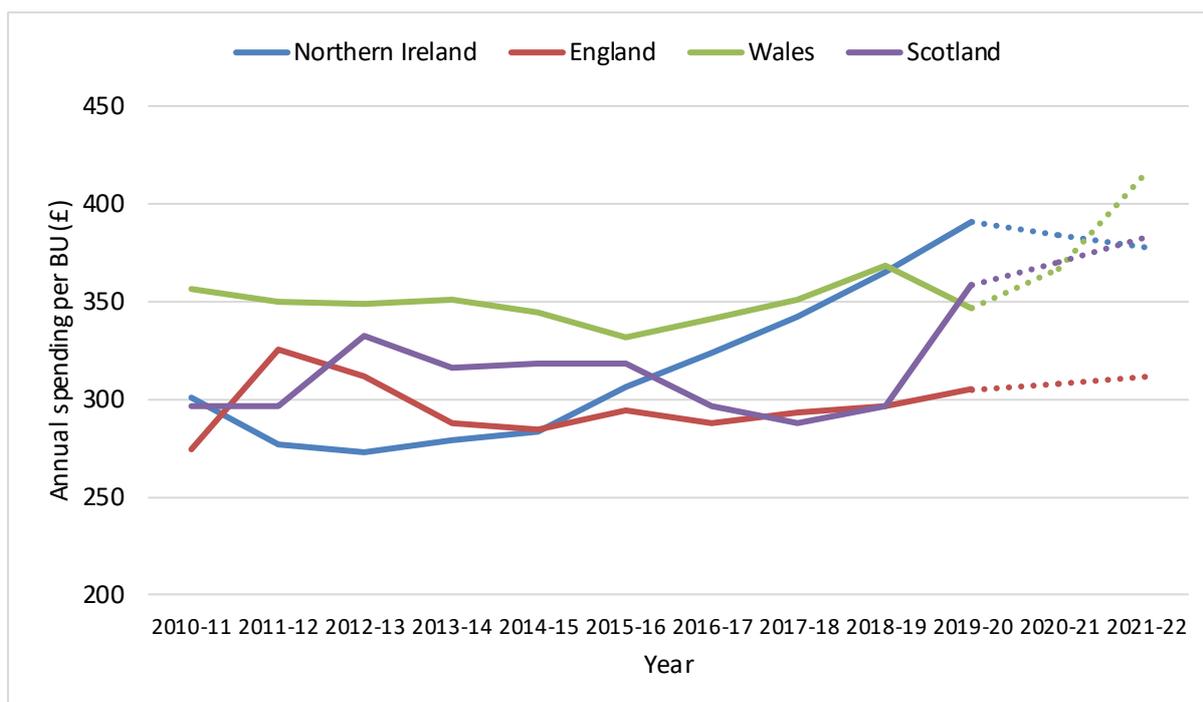


Source: health spending data as for Figure 4.5. Nominal GDP and GDP deflator data taken from OBR (2021).

### Social care

Social care consists of three different spending streams: (a) social care spending for disabled people (working age adults and children), (b) social care spending for the elderly (classified as adults aged 65 and older in the data), (c) social care spending for families (comprising spending on children in care homes, foster care homes and social workers plus children’s services such as Sure Start, but *not* childcare or pre-school education spending (which is in the ‘early years’ category below). Figures 4.7, 4.8 and 4.9 show trends in spending per benefit unit for each of these three spending streams respectively.

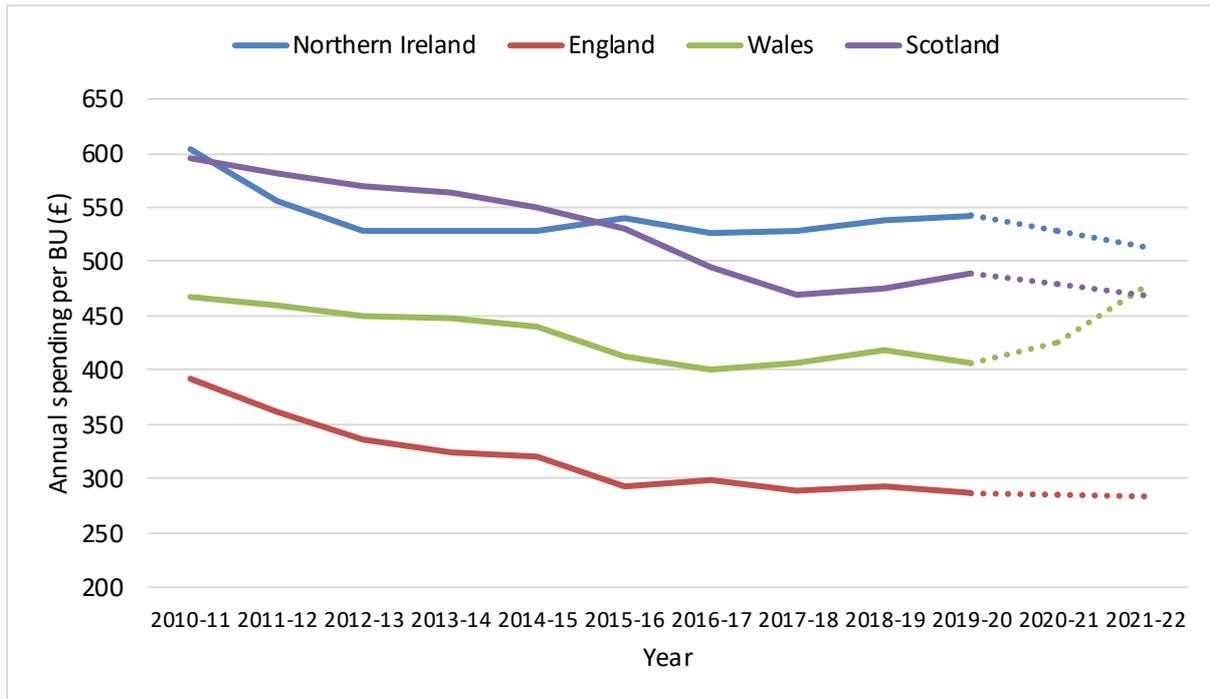
**Figure 4.7 Social care spending for disabled under-65s per benefit unit in the four countries of the UK, 2010-11 to 2021-22**



Source: as Figure 4.5

Figure 4.7 shows that social care spending for disabled people in Northern Ireland increased overall by around 25 per cent between 2010-11 and 2021-22. The increase was fastest between 2014-15; spending plans for Northern Ireland after 2019-20 show a slight decrease. Spending also increased substantially in Scotland and Wales over the period covered by the graph, but this was not the case in England, where spending fell sharply between 2011-12 and 2014-15 followed by a slight recovery in subsequent years.

**Figure 4.8 Social care spending for the elderly per benefit unit in the four countries of the UK, 2010-11 to 2021-22**



Source: as Figure 4.5

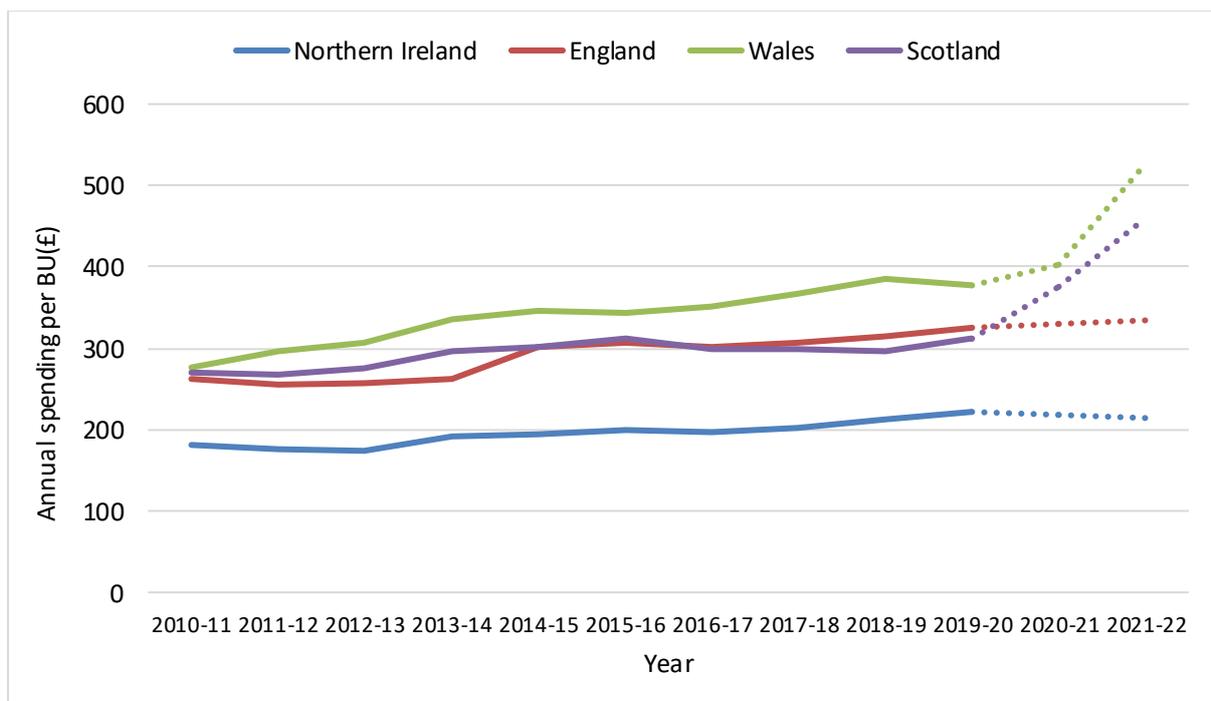
Figure 4.8 shows that based on PESA data between 2010-11 and 2019-20, the overall trend in social care expenditure for the elderly per benefit unit is significantly downwards. Spending plans for Northern Ireland (as for Scotland and England) show a decrease over the spending plans period after 2019-20. For Wales a substantial increase in funding is planned (which would leave spending per benefit unit in Wales slightly higher in real terms in 2021-22 compared to 2010-11). The reduction in elderly social care spending per BU in Northern Ireland is around 15 per cent which is a smaller decrease than England (28 per cent) or Scotland (21 per cent) but still substantial.

Overall spending per BU on elderly social care in 2021-22 will be higher in N Ireland than the other UK countries. Recent research by the Institute for Government (Atkins *et al*, 2021) comparing the social care systems across the four countries of the UK suggests that the higher level of social care spending in Northern Ireland is partly because there are a larger number of care recipients relative to the size of the total elderly population. In 2020, 0.7 per cent of the overall adult population in Northern Ireland was in a residential care or nursing home compared to around 0.4 per cent in

England, Scotland and Wales (Atkins *et al* 2021, Figure 4.6 p48). Northern Ireland also provided a higher number of average care hours per person per week than the other three countries (Atkins *et al* 2021, Figure 4.7 p49).

Overall, the reduction in real terms spending on social care on the elderly across all four countries of the UK is concerning given the increase in social care needs identified in surveys of the social care sector. For example, the National Audit Office (2021) projects a 57 per cent increase in the number of adults aged 65 and over requiring care by 2038 in England compared with 2018. This compares to a projected increase of 29% in the number of adults aged 18 to 64 requiring care over the same period. We were unable to find comparable projections of social care needs for Northern Ireland, but it seems likely that future increases in care needs in Northern Ireland will follow a similar upward trajectory to England.

**Figure 4.9 Social care spending on family services in the four countries of the UK, 2010-11 to 2021-22**



Source: as Figure 4.5

As shown in Figure 4.9, spending per benefit unit on family services shows some increase between 2010-11 and 2019-20 in all four countries of the UK. In Northern Ireland, spending increased by about 22 per cent over this period. The spending plans for 2020-21 and 2021-22 show a slight fall in Northern Ireland, slight increases in England and substantial increases for Wales and Scotland.

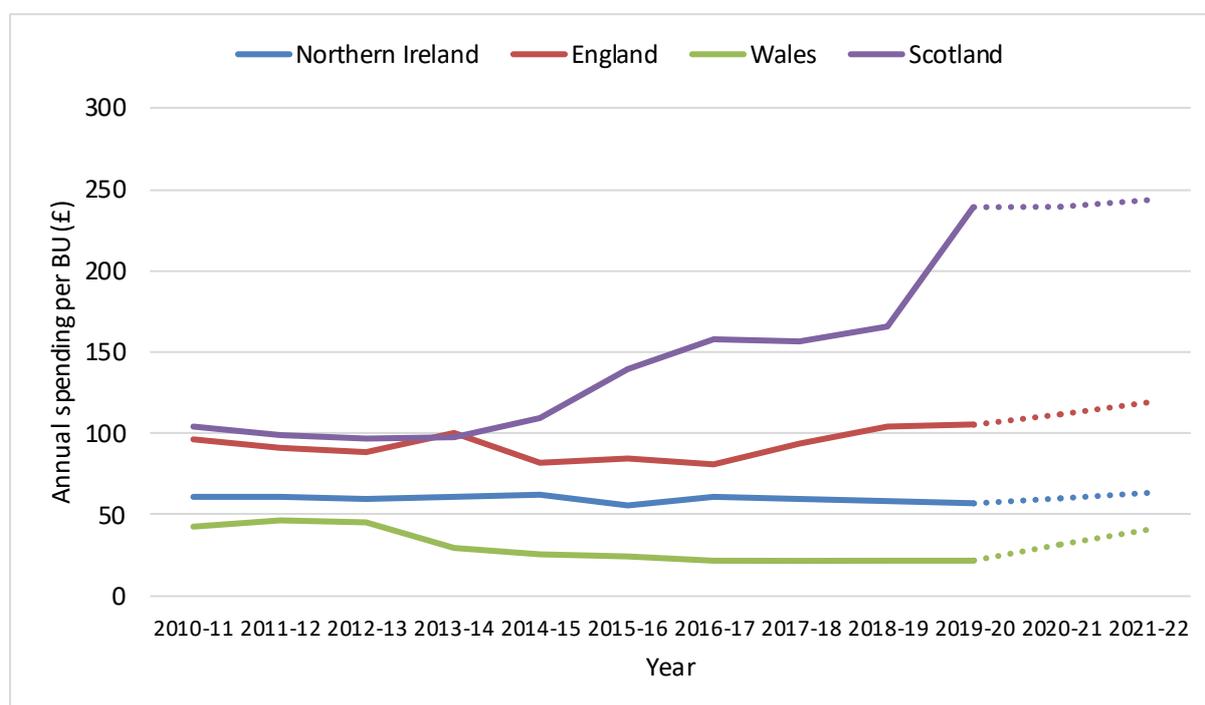
Figure 4.9 shows that the level of funding for family care services in Northern Ireland (when measured per BU across the whole population) is lower than in the other three countries. Once again it is not clear whether this reflects differences in spending per family receiving care, or is just due to differences in the relevant population of care recipients in each country.

Data from the Northern Ireland Department of Education shows that Sure Start funding increased between 2013-14 and 2018-19, which contrasts with substantial funding cuts to Sure Start programmes in England (Department of Education 2020; Cattan *et al*, 2019). However, Sure Start is only a relatively small proportion of the total “family services” budget as measured in the PESA data.

The current version of Landman Economics public spending model does not model the distributional impacts of changes in family care services, for two reasons. First, the USoc micro-data does not include interviews with children in institutional care settings, and second, for services such as Sure Start, the USoc data does not contain any data on who receives them.

## Early years

**Figure 4.10 Public spending on pre-schools, nurseries and other childcare for children aged under 5 in the four countries of the UK, 2010-11 to 2021-22**



Source: as Figure 4.5

As shown in Box 4.1 below, entitlements to free childcare for 3 and 4-year-olds (and 2-year-olds in disadvantaged families) are significantly more generous in England, Scotland and Wales than in Northern Ireland. Accordingly, the PESA data graphed in Figure 4.10 show that spending per BU on early years is lower in Northern Ireland than England, and much lower than Scotland. However, the data also suggest that early years spending is higher in Northern Ireland than in Wales. Given the relative generosity of the free childcare entitlement in Wales compared to Northern Ireland, it is likely that the differences between Wales and Northern Ireland in Figure 4.10 reflect issues with the reporting framework that the Welsh Government uses to supply data to PESA.

The overall pattern of early years spending per benefit unit in Northern Ireland is fairly flat, with spending between £55 and £65 per benefit unit in all of the years featured in Figure 4.10.

#### **Box 4.1. Free childcare entitlements in Northern Ireland compared to England, Scotland and Wales**

##### ***England***

Families in England with 3 and 4-year-old children are entitled to 15 hours per week of free childcare per child for 38 weeks of the year (corresponding to the school terms). An *extended offer* of up to 15 additional hours per week of free childcare per child is available to families of 3 and 4-year-old children whose parents work and who earn less than £100,000 per year. In addition, roughly the 40% of most *disadvantaged* families (e.g. those in receipt of Universal Credit with incomes of £15,400 per year or less after tax, not including benefit payments) with 2-year olds can claim up to 15 hours per week of free childcare.

##### ***Northern Ireland***

In Northern Ireland, parents of 3- and 4-year-olds can apply to receive 12.5 hours of free early education per week. This scheme is much more rigid than England's offer; the entitlement must be taken over 2.5 hours per day, 5 days a week during term time.

##### ***Scotland***

Scotland offers 600 hours per year of free 'early learning and childcare' to all 3- and 4-year-olds. This works out to about 16 hours per week, 38 weeks of the year. From August 2021, entitlement has increased to 1,140 hours per year (30 hours per week if taken in term time). Scotland also offers free early learning and childcare to disadvantaged 2-year-olds. Eligibility depends on whether the family receives certain benefits, and is generally more targeted than in England, covering roughly the 25% most disadvantaged children.

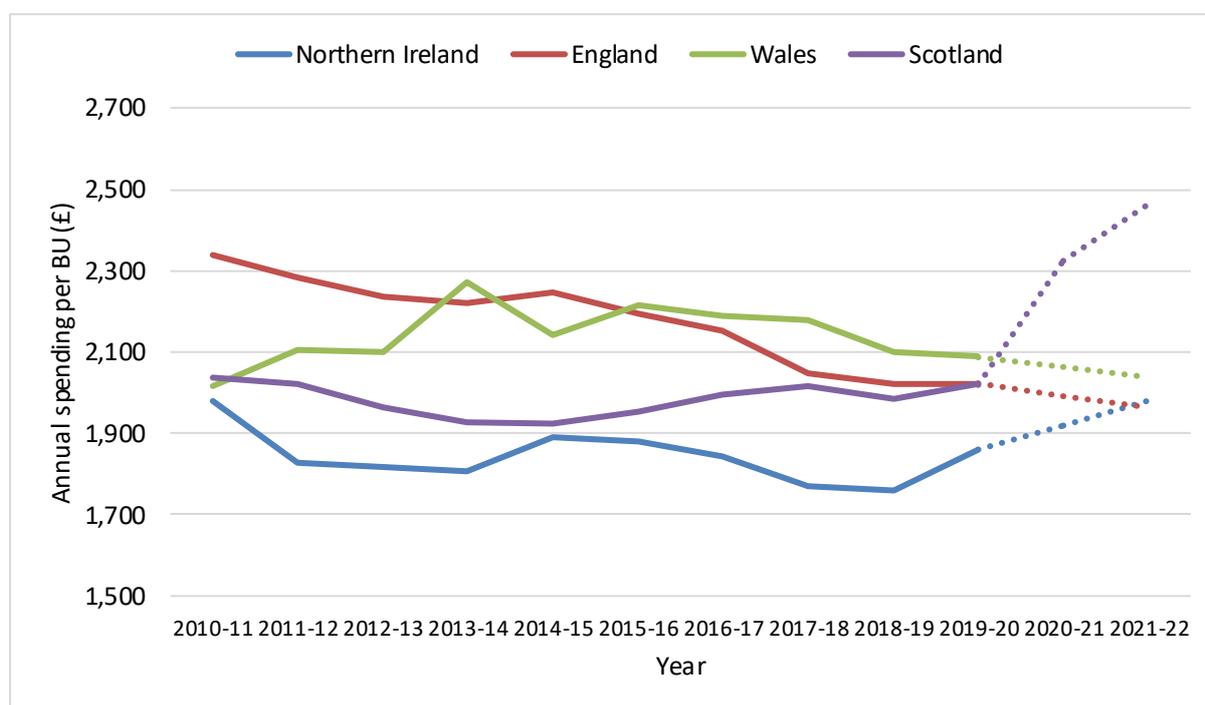
##### ***Wales***

The 'childcare offer' in Wales provides working parents with a mix of funded childcare and early education for 3- and 4-year-old children. Children can receive up to 30 hours per week under this scheme for up to 48 weeks a year, with at least 10 of these hours provided through schools as 'early education'. Different local authorities offer different amounts of early education. Some 2-year-olds in disadvantaged 'Flying Start' areas can get free part-time childcare, which covers 2.5 hours a day for 39 weeks.

Source: Farquharson (2019)

## Schools

**Figure 4.11 Public spending on schools in the four countries of the UK, 2010-11 to 2021-22**



Source: as Figure 4.5

Figure 4.11 shows that spending per benefit unit on schools in Northern Ireland was significantly below the other three UK countries in most years between 2010-11 and 2019-20. Between 2010-11 and 2019-20, spending per BU declined by 6 per cent although the pattern was fairly volatile, with spending rising in some years and falling in others.

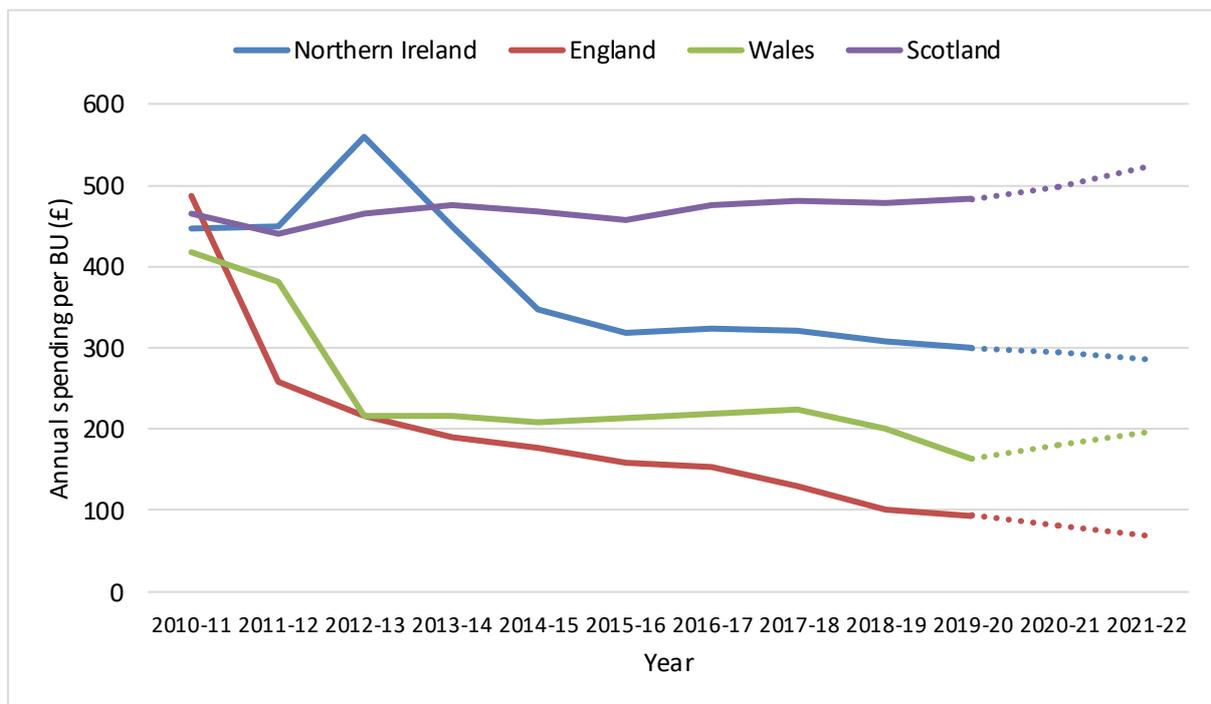
The spending plans for Northern Ireland for 2020-21 and 2021-22 show a substantial increase in funding per benefit unit of over 20 per cent. This would return real-terms spending (allowing for changes in the number of schoolchildren) to approximately where it was in 2010-11.

Spending plans for the other countries show a very large increase for Scotland but small declines for England and Wales. It is worth noting that the Scottish Budget's education funding plans include a commitment to "invest over £30 million to support

our schools to mitigate the impacts of Covid on the learning experiences of our children and young people” (Scottish Government 2021, p92).

### Further and Higher Education

**Figure 4.12 Public spending on further and higher education in the four countries of the UK, 2010-11 to 2021-22**

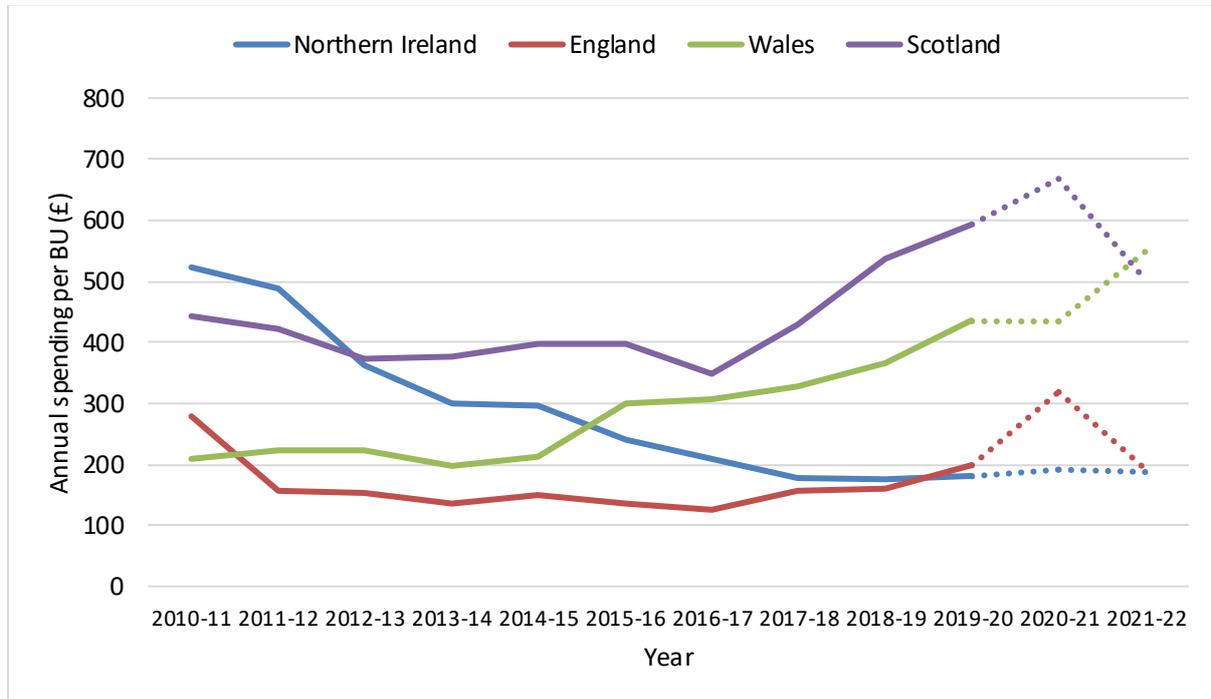


Source: as Figure 4.5

The PESA data from 2010-11 to 2019-20 graphed in Figure 4.12 show substantial declines in further education (FE) and higher education (HE) funding per BU in Northern Ireland, Wales and England, with the largest decline in England. This is consistent with the reduction in student support and increases in HE tuition fees in all three countries. By contrast, in Scotland funding has increased slightly, reflecting Scotland’s decision not to introduce tuition fees for domestic students. In Northern Ireland, combined HE and FE funding per benefit unit is planned to be 36 per cent lower in 2021-22 compared to 2010-11.

## Social housing

**Figure 4.13 Public spending on social housing in the four countries of the UK, 2010-11 to 2021-22**



Source: as Figure 4.5

Note: social housing expenditure excludes support for tenants through Universal Credit and Housing Benefit, but the impact changes to these benefits is included in the results shown in Chapter 6 of this report.

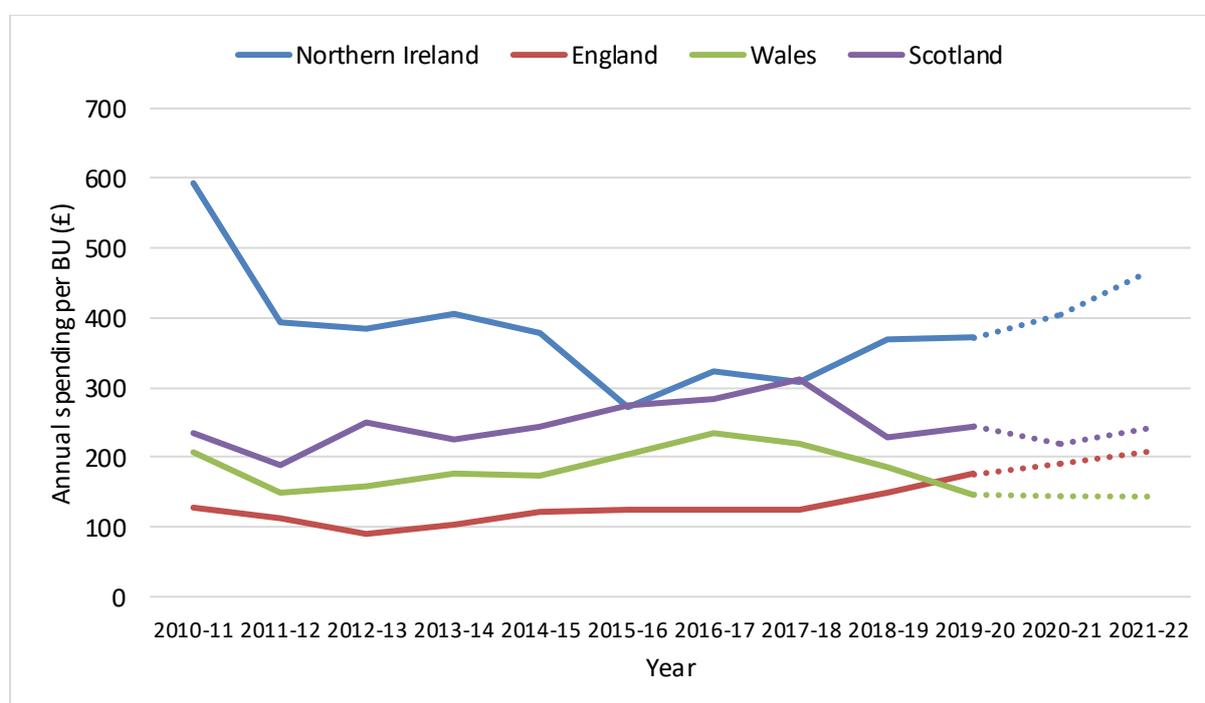
Figure 4.13 shows a substantial decline in social housing expenditure per benefit unit in Northern Ireland, of around 65 per cent between 2010-11 and 2019-20. By contrast, in Scotland and Wales there were substantial *increases* in expenditure over the same period. In England there was a sharp decline between 2010-11 and 2011-12 followed by relatively flat spending between 2011-12 and 2019-20.

The spending plans for Northern Ireland show a flat trend in planned expenditure on social housing for 2020-21 and 2021-22 compared to 2019-20.

## Transport

This section shows trends for each component of transport spending: roads (in Figure 4.14), buses (Figure 4.15) and rail (in Figure 4.16). The three components of transport spending have very different distributional profiles. Spending on buses is distributionally progressive, as poorer households are more likely to use buses than richer households. By contrast, richer households are more likely to use the train than poorer households – mainly because a significant proportion of rail users are work commuters. The distributional profile of journeys by car (which we use as a proxy for the distributional impact of road transport in this report) is slightly skewed towards richer households but not by as much as for train journeys.

**Figure 4.14 Public spending on roads per benefit unit in the four countries of the UK, 2010-11 to 2021-22**

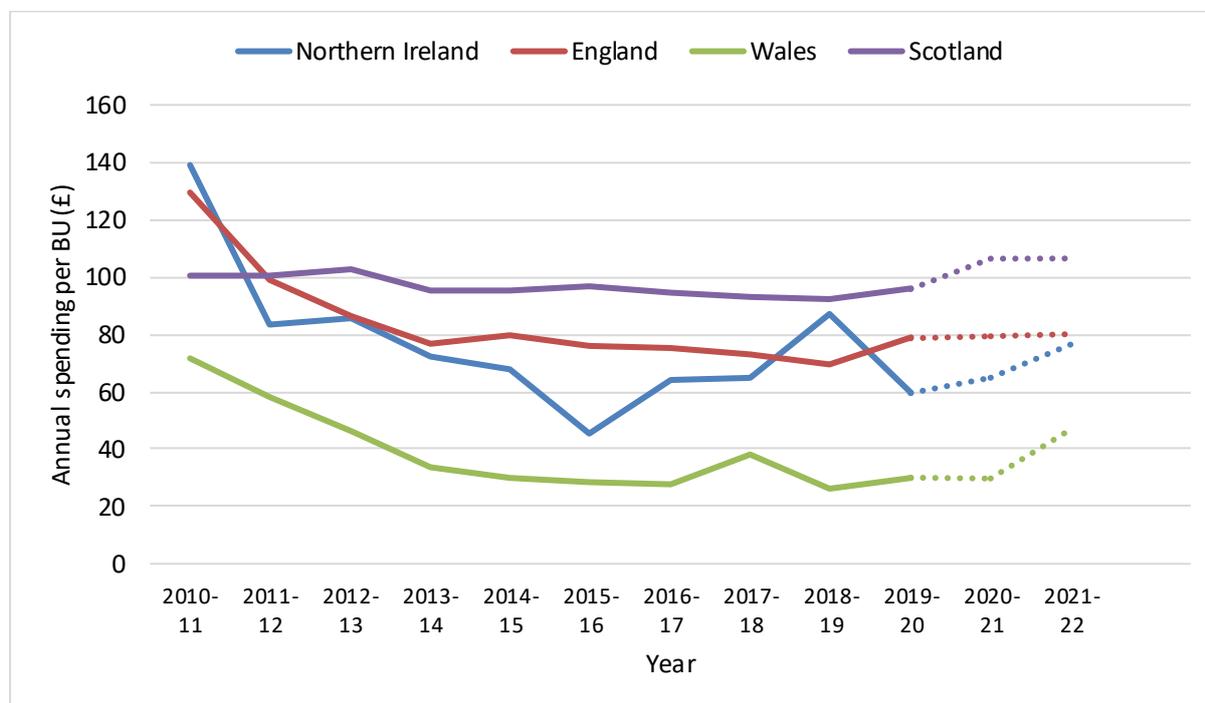


Source: as Figure 4.5

Figure 4.14 shows that between 2010-11 and 2014-15, road spending per BU was much higher in N Ireland than the other three UK countries, but fell by around 50 per cent over this period. Between 2015-16 and 2017-18 spending was roughly comparable with Scotland, and higher than Wales and England. Spending on roads

in Northern Ireland increased in 2018-19 and is projected to increase further in 2020-21 and 2021-22. This contrasts with flat or falling planned expenditure on roads per BU in Scotland and Wales (but rising planned expenditure in England).

**Figure 4.15 Public spending on buses and local public transport per benefit unit in the four countries of the UK, 2010-11 to 2021-22**

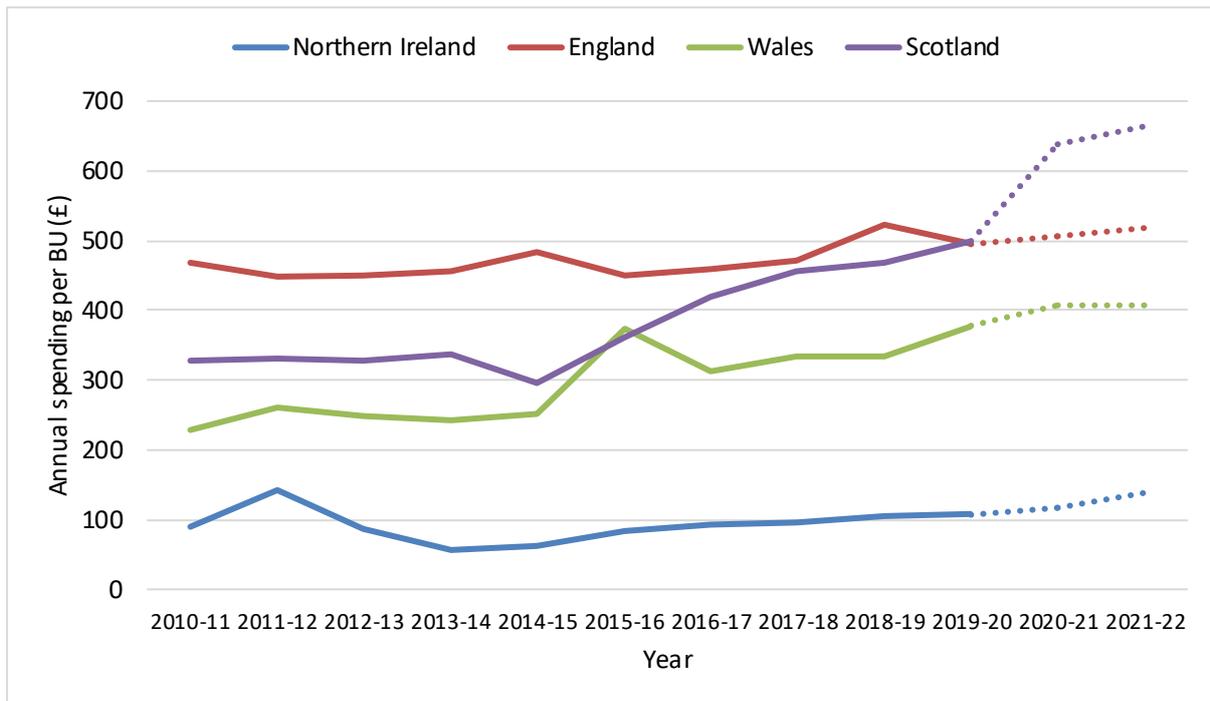


Source: as Figure 4.5

Notes: 'local public transport' includes underground and light rail systems.

Figure 4.15 shows that public spending per benefit unit on buses fell by almost two-thirds in Northern Ireland between 2010-11 and 2015-16, from about £140 per BU to less than £50 per benefit unit. Since then there has been some recovery in spending, and modest increases are planned for 2020-21 and 2021-22 (although this would still leave real-terms spending per benefit unit below its 2012-13 level). Spending also declined in England and Wales over this time period. In Scotland, spending per benefit unit had a much flatter profile than for the other three countries over the period covered by Figure 4.15, with a slight increase in spending planned for 2020-21.

**Figure 4.16 Public spending on rail per benefit unit in the four countries of the UK, 2010-11 to 2021-22**



Source: as Figure 4.5

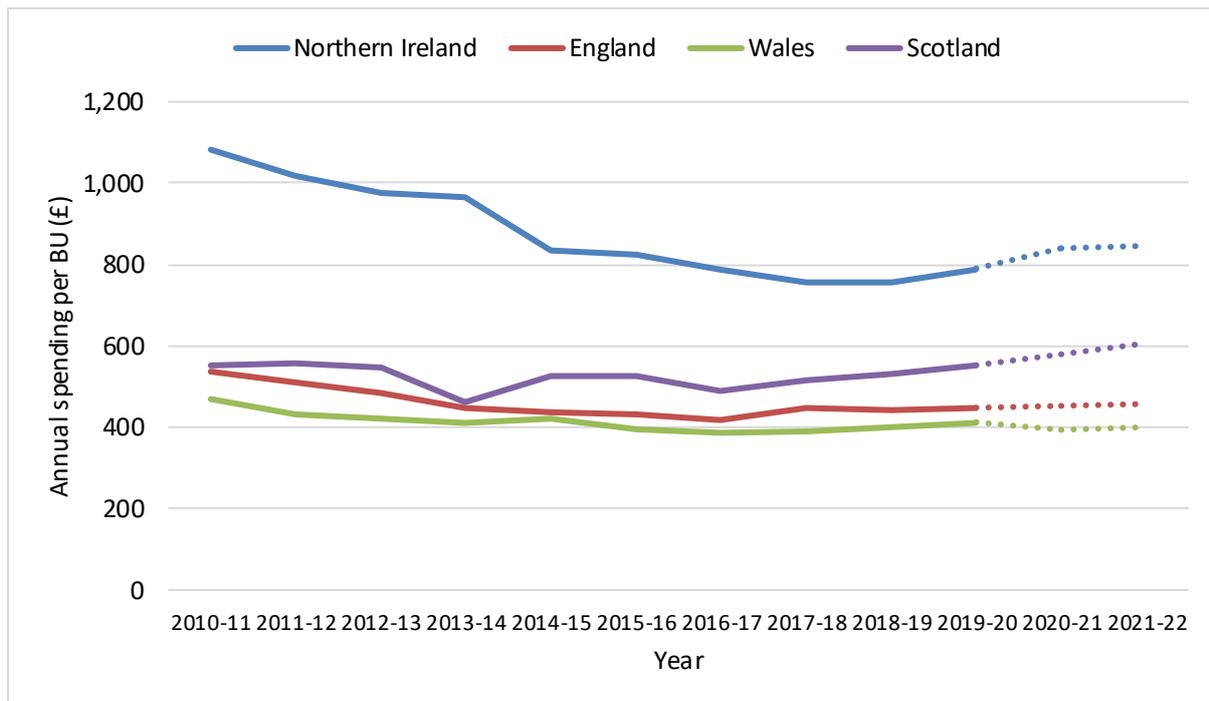
As shown in Figure 4.16 above, spending on rail per benefit unit is significantly lower in N Ireland than in the other three UK countries. To a large extent this reflects the fact that fewer rail journeys are made in Northern Ireland per head of the population than in Great Britain<sup>7</sup>. Rail spending in Northern Ireland fell from £90 per benefit unit to £56 per benefit unit between 2010-11 and 2013-14 before increasing gradually to £107 per benefit unit by 2019-20. Further increases are planned for 2020-21 and 2021-22.

Rail spending per benefit unit also increased substantially since the mid-2010s in Scotland and Wales and has also increased between 2010-11 and 2019-20 (but at a slower rate) in England. Scotland is the only country for which large-scale increases in rail spending are planned for 2020-21 and 2021-22.

## Police

<sup>7</sup> Statistics from the Northern Ireland Department for Infrastructure (2020) show that an average of 8 rail journeys per person were made in Northern Ireland in 2019-20. This compares with 26 rail journeys per person across England, Scotland and Wales (Department for Transport, 2020).

**Figure 4.17 Public spending on police services per benefit unit in the four countries of the UK, 2010-11 to 2021-22**



Source: as Figure 4.5

Figure 4.17 shows that spending on the police per benefit unit in Northern Ireland is substantially higher than in other UK countries (although the gap in spending between N Ireland and the other countries was much smaller in 2019-20 than it was in 2010-11). Spending per benefit unit in Northern Ireland fell by almost a third between 2010-11 and 2018-19 compared to relatively flat spending patterns in the other three countries. Modest spending increases for police services in Northern Ireland are planned in 2020-21 and 2021-22.

We do not present distributional results for the impact of changes in police spending in this report. This is for two reasons. First, there are too few individuals in the Northern Ireland USoc sample who report use of police services. The police services use variable was only introduced in Wave 10 and there are only seven individuals in Northern Ireland who report use of police services. This is too small a sample size to produce statistically valid distributional results. Second, the relationship between ‘use of police services’ and the overall benefits of the police force to individuals and households is complex, and is unlikely to be captured adequately by the USoc

survey variable asking each adult whether he or she has “made use of the police service” in the previous year.

### 4.3 Summary of findings

The main findings from Chapter 4 are as follows:

- Overall public spending per head is higher in Northern Ireland than in England, Scotland and Wales. Since 2010 spending per head in NI has fallen relative to Scotland and Wales, but not relative to England.
- Spending per head has also been more volatile in N Ireland over the period 2010-11 to 2019-20 than in the other three countries of the UK.
- Since 2010, health spending per benefit unit in Northern Ireland has increased by around 25%. Most of this increase occurs after 2017-18, and planned increases for 2020-21 and 2021-22 are especially large. Note that the effects of Covid are not fully considered here, however.
- Overall patterns of social care spending in NI show a shift from elderly people to disabled (working age) people and families and children (especially looked-after children).
- Schools funding per benefit unit in NI was significantly below the levels for the other three UK countries for most of the 2010-20 period, but is planned to rise by around 20% between 2019-20 and 2021-22, which would return real-terms spending (allowing for changes in the number of schoolchildren) to approximately where it was in 2010-11.
- Substantial declines in further and higher education funding per BU in Northern Ireland (as in England and Wales) consistent with a reduction in student support and increases in HE tuition fees in all three countries.
- There was a pronounced decline in social housing expenditure per BU in N Ireland between 2010-11 and 2019-20 (around 65%) - a worse outcome than for any other country in the UK.
- Analysis of transport spending in N Ireland shows higher road spending per head and lower rail spending than elsewhere in the UK.

## **5 Distributional impacts of changes to public spending in Northern Ireland between 2010-11 and 2021-22**

The results in this chapter show the distributional impact of changes to public spending in Northern Ireland using two different breakdowns: (a) according to the category of spending (health, social care, early years, schools, HE/FE, housing, transport), and (b) across time periods within the overall 11-year period under consideration. We identify three separate time periods:

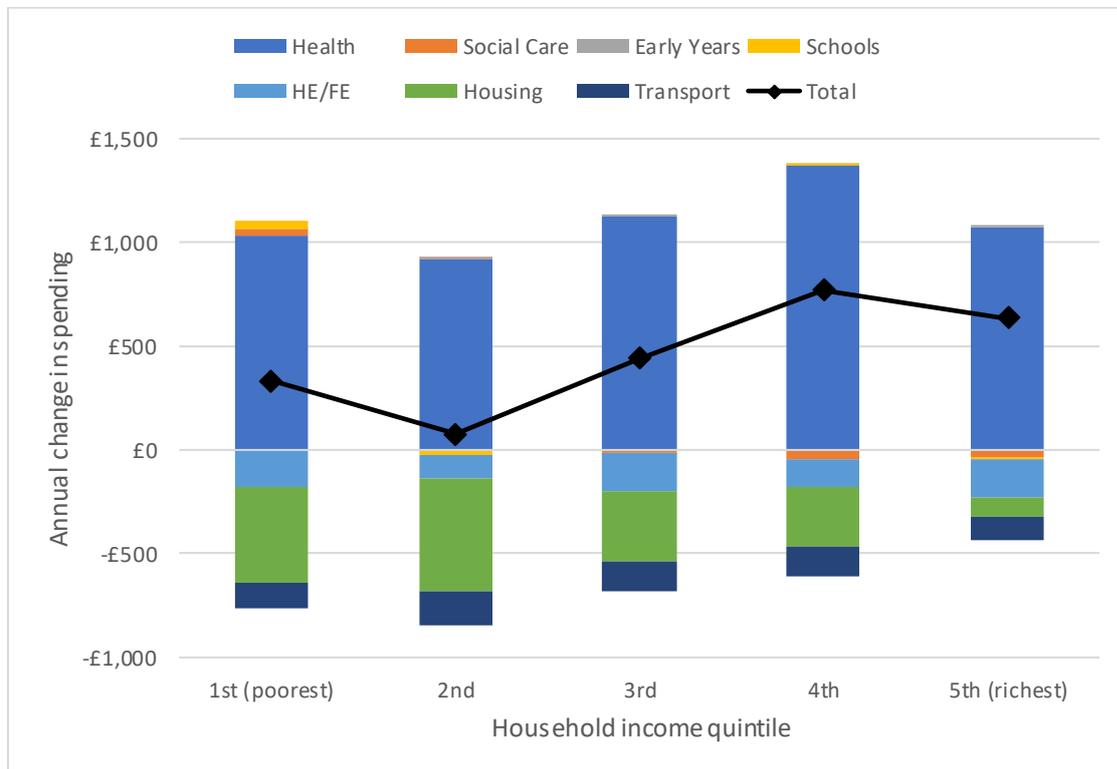
- i. 2010-11 to 2017-18 – a period where spending on most services was falling;
- ii. 2017-18 to 2019-20 – a period of increasing spending;
- iii. 2019-20 to 2021-22 – the current period, where the NI Executive's spending plans show further overall spending increases.

These distributional effects are shown using the seven different breakdown variables set out in Section 3.3 above:

- Quintile of net household income (Section 5.1);
- Benefit unit type (Section 5.2);
- Number of children (Section 5.3);
- Age of adults (Section 5.4);
- Ethnicity/nationality of adults (Section 5.5);
- Number of functional disabilities (Section 5.6);
- Religious affiliation (Section 5.7).

## 5.1 Impacts by household income

**Figure 5.1 Distributional impact of public spending changes in Northern Ireland by household income quintile, 2010-11 to 2021-22: by service category**



Source: Landman Economics analysis of HMT PESA data (2010-11 to 2019-20), Department of Finance (2020, 2021), Scottish Government (2021), Welsh Parliament Senedd Research (2020, 2021), HM Treasury (2020).

Figure 5.1 shows the total distributional impact of the changes to spending per benefit unit in Northern Ireland between 2010-11 and 2021-22 (including planned changes in spending in 2020-21 and 2021-22). The black line shows the total impacts. The coloured bars decompose the total impact into different categories of spending. The first quintile is the poorest quintile of net incomes, and the fifth quintile is the richest.

Overall, average spending per benefit unit increased for all five net income quintiles, with the largest increase in the fourth (second to top) quintile (around £750 per year) and the smallest increase in the second quintile (around £80 per year).

Looking at public service categories, the distributional impact across income quintiles in Figure 5.1 is dominated by health spending (which increases substantially in real terms across the income distribution, with the biggest cash increase of around £1,400 per year in the fourth quintile). The second-most important distributional impact in the graph is the reduction in spending on social housing, which is regressive (having the largest impact on the lowest two quintiles, with smaller impacts higher up the income distribution). Spending on further and higher education also has a negative impact – this is uneven, being particularly large in the top quintile as well as the first and third quintiles. Transport spending has a negative impact which is also uneven across the income distribution, with the largest impacts in the second and fourth quintiles. Social care and schools spending have a (relatively small) positive impact in the lowest quintile, and (very small) positive impacts further up the income distribution. The impact of early years spending changes is negligible (this is the case for all the distributional breakdowns shown in this chapter due to the relatively low spending on early years services in Northern Ireland, and the relatively minor changes to early years spending over the period).

Figure 5.2 shows the same result for the distributional impact of total spending (the black line) as Figure 5.1, but decomposes the change in spending by time period rather than by spending category.

**Figure 5.2 Distributional impact of public spending changes in Northern Ireland by household income quintile, 2010-11 to 2021-22: by time period**



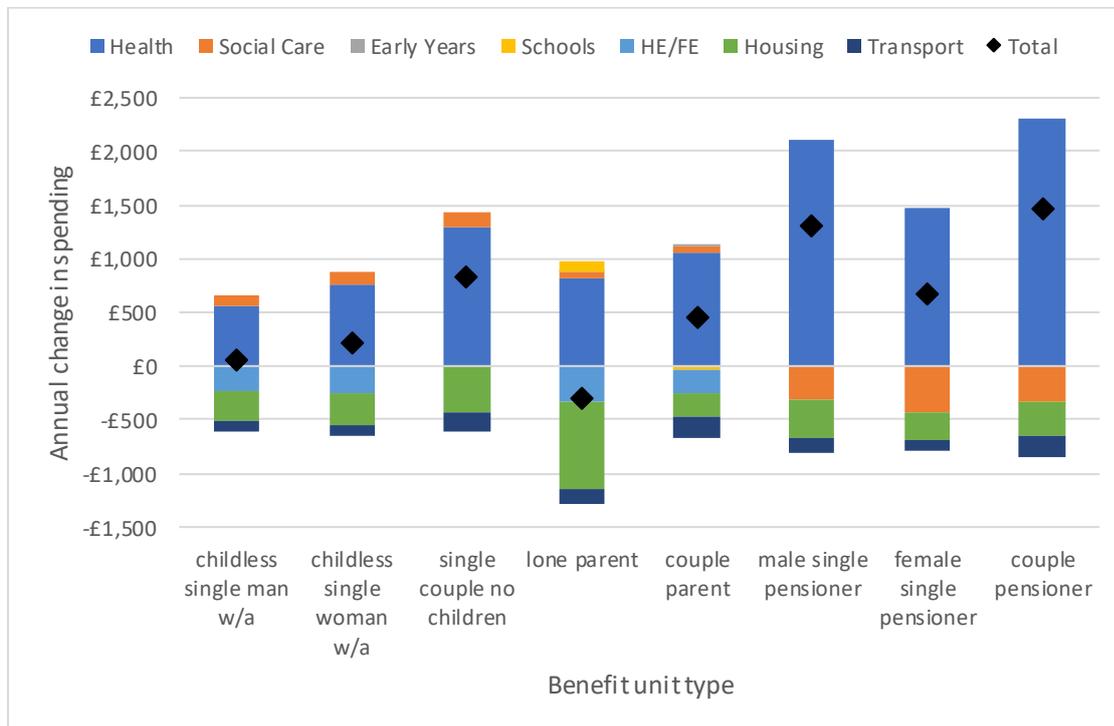
Source: as Figure 5.1

Figure 5.2 shows that spending changes between 2010-11 and 2017-18 had a negative impact, which was biggest in the lowest two quintiles of the income distribution, and smallest in the top quintile. In contrast, spending changes between 2017-18 and 2019-20 had a positive impact, which was fairly even across the income distribution. However, the positive impacts between 2017-18 and 2019-20 were not by themselves large enough to offset the spending cuts between 2010-11 and 2017-18.

Planned spending changes between 2019-20 and 2021-22 will have a positive impact which is larger than the spending increases between 2017-18 and 2019-20. Taken together, the increases in spending between 2017-18 and 2021-22 outweigh the spending cuts before 2017-18 and lead to positive overall impacts of spending changes in real terms for each quintile (although the impacts for the second quintile are close to zero).

## 5.2 Impacts by benefit unit type

**Figure 5.3 Distributional impact of public spending changes in Northern Ireland by benefit unit type, 2010-11 to 2021-22: by service category**



Source: as Figure 5.1

Figure 5.3 shows the total impacts of spending for each benefit unit type using black diamonds. These are decomposed into the impact for each category of spending using the coloured bars. The positive impacts of health spending are larger for pensioners than for working age benefit units (this reflects the fact that pensioners are more likely to use health services in the USoc data than working age adults). Single couples with no children gain more from the health spending increases than lone parents or couple parents, who in turn gain more than childless single women or men<sup>8</sup>.

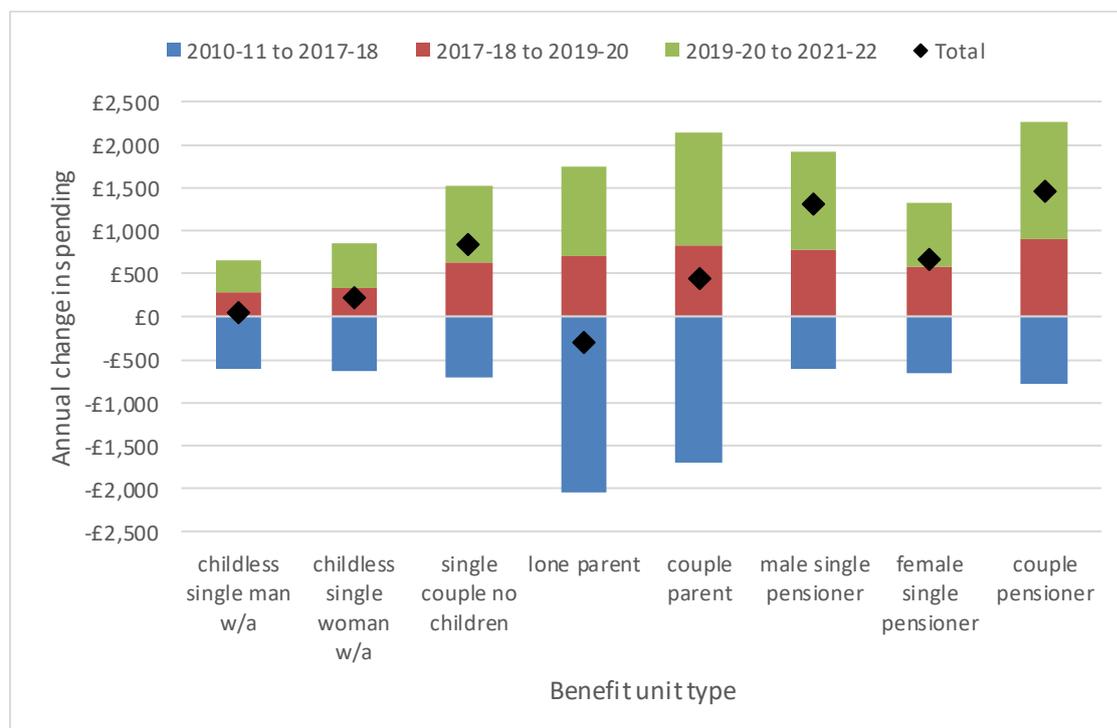
Cuts to social housing spending have a much larger negative impact for lone parents than for other groups, while changes to social care spending have a negative impact for pensioners but a (smaller) positive impact for working age benefit units. Transport

<sup>8</sup> Note that use of children's health services is not directly recorded in the USoc data but is indirectly recorded when parents attend GP or hospital appointments with children. Nonetheless there is likely to be under-representation of children's use of health services in the USoc data.

spending cuts have a larger negative impact for couple benefit units and lone parents than single benefit units, while schools spending has a positive impact for lone parents but negligible impacts for couple parents. Cuts to spending on further and higher education have a negative impact for single childless working age people, lone parents and couples with children. This reflects the fact that some adult students are benefit units in their own right, whereas other students are dependent children in family benefit units.

The total gain from changes in spending is largest for male single pensioners (approximately £1,500 per year) and pensioner couples (around £1,300 per year). Lone parents are the only benefit unit type who lose out on average from spending changes between 2010-11 and 2021-22 (by around £300 per year).

**Figure 5.4 Distributional impact of public spending changes in Northern Ireland by benefit unit type, 2010-11 to 2021-22: by time period**

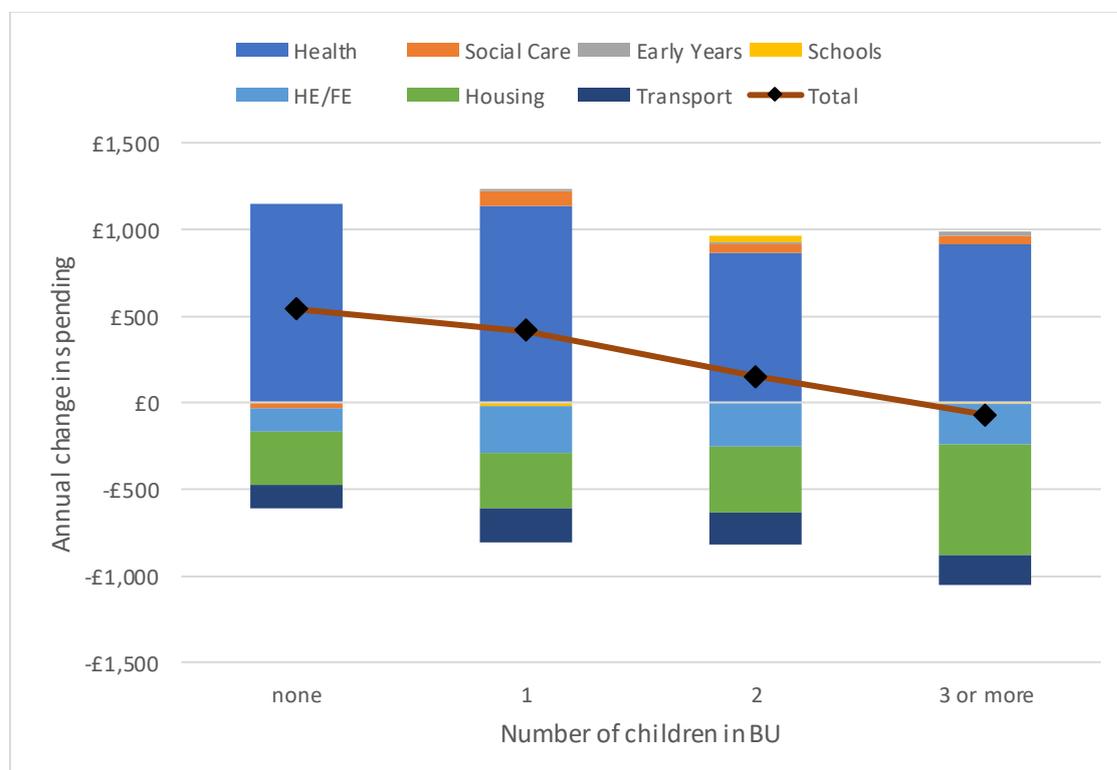


Source: as Figure 5.1

Analysis of the distributional impact of spending changes by time period in Figure 5.4 shows that the spending cuts between 2010-11 and 2017-18 had the largest negative impact for lone parents and couple parents. The increases in spending between 2017-18 and 2019-20 benefited pensioner benefit units, working age couples (with and without children) and lone parents more than they did childless single working age adults. Finally, the planned spending increases between 2019-20 and 2021-22 will benefit lone and couple parents, male single pensioners and couple pensioners more than other groups.

### 5.3 Impacts by number of children in benefit unit

**Figure 5.5 Distributional impact of public spending changes in Northern Ireland by number of children, 2010-11 to 2021-22: by service category**



Source: as Figure 5.1

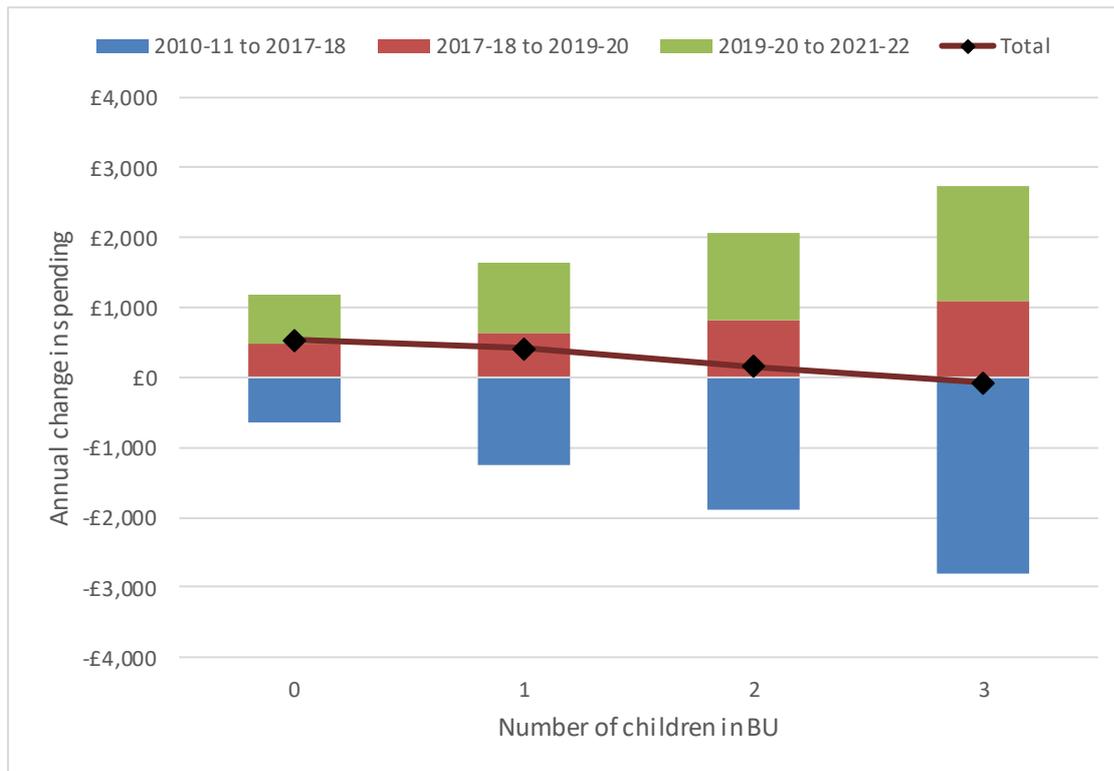
Figure 5.5 shows that the impacts of health spending are slightly larger for benefit units with no children or just one child than for benefit units with two or three children. As explained above this may reflect under-reporting of use of health

services by families with children in the USoc data given the structure of the questionnaire.

Social housing has a bigger negative impact for benefit units with three or more children than for those with fewer children. This reflects the fact that benefit units with three or more children are more likely to be in social housing than those with two or fewer children (this is the case in Northern Ireland, and also in the rest of the UK). Schools spending has a small positive impact for benefit units with two children but only a very small impact for the other groups. Higher and further education spending has the biggest negative impact for BUs with one or two children, followed by BUs with three or more children, with childless adults having the smallest negative impact of any group. Meanwhile, transport spending has a larger negative impact for BUs with children than childless BUs.

The overall profile of distributional impacts by number of children shows that the total average impact of spending is more positive the fewer number of children the benefit unit has. Childless benefit units gain an average of over £500 per year compared to around £400 for families with one child and £150 for two-child families. Families with three or more children lose around £70 per year from the spending changes on average.

**Figure 5.6 Distributional impact of public spending changes in Northern Ireland by number of children, 2010-11 to 2021-22: by time period**



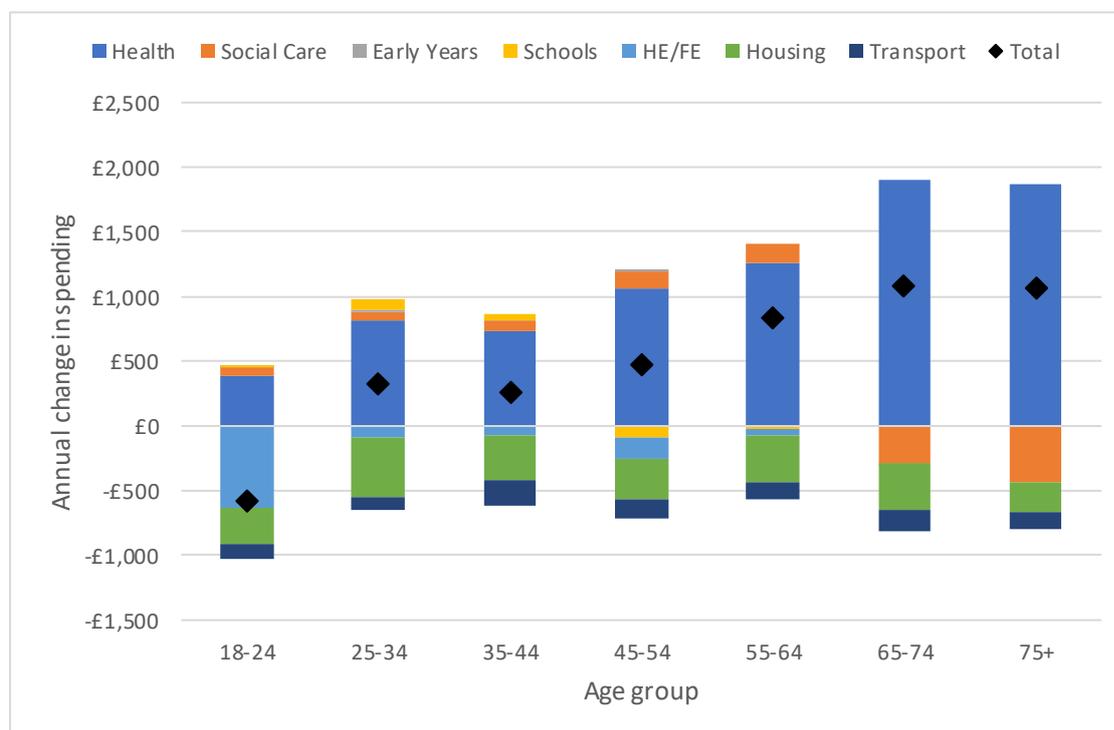
Source: as Figure 5.1

Figure 5.6 shows that the impact of spending changes between 2010-11 and 2017-18 was negative for all groups, but the average loss was larger the more children in the benefit unit. Families with three or more children lost services worth over £2,800 per year on average over this period. By contrast, the impacts from 2017-18 to 2019-20 were positive and slightly larger for families with more children but the disparities by number of children were not as large as in the earlier time period.

Planned spending increases from 2019-20 to 2021-22 also result in larger increases for families with more children but this is not enough to offset the spending cuts before 2017-18 for families with three or more children.

## 5.4 Impacts by age group

**Figure 5.7 Distributional impact of public spending changes in Northern Ireland by average age of adults in benefit unit, 2010-11 to 2021-22: by service category**



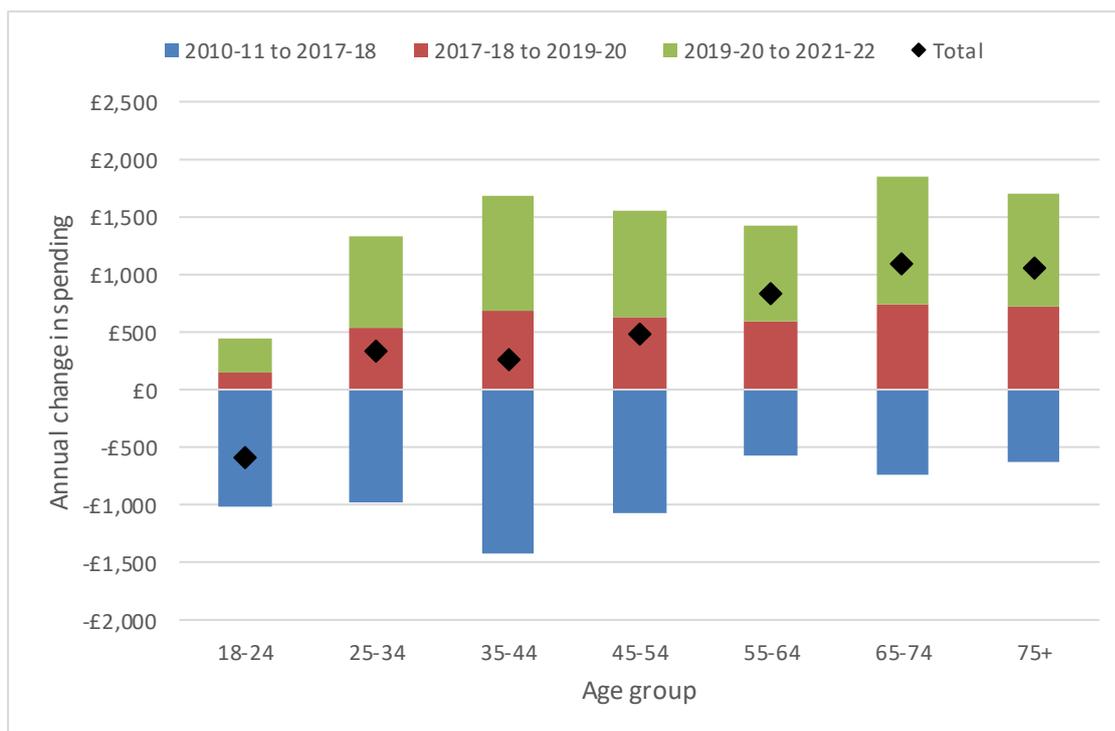
Source: as Figure 5.1

Figure 5.7 shows that health spending has a clear age gradient with adults aged under 25 much less likely to use health services than other groups, and over-65s much more likely to use health services. Given the increases in overall health spending, this means that the gains from health spending are larger for benefit units with older adults in them (with the exception that 35-44 year olds have a slightly lower increase than 25-34 year olds).

Spending on FE and HE has a particularly large negative impact for the under-25 age group (reflecting the fact that there are a lot of young adult students in this age group). The impact of cuts to social housing is negative for each age group, with the biggest impacts in the 25-34 and 55-64 groups. Changes to social care spending have a negative impact on over-65s but a positive impact for other age groups. This reflects the overall shift in the balance social care spending in Northern Ireland, with spending increasing for disabled working age adults but falling for pensioners.

Changes to spending on schools have a small positive impact for 25-34 and 35-44 year olds but a small negative impact for 45-54 year olds. Overall, benefit units where the average age of the adults is under 25 lose out from the combined spending changes by around £600 per year on average) whereas benefit units where the average age of the adults is 65 or older gain (by around £1,100 per year on average).

**Figure 5.8 Distributional impact of public spending changes in Northern Ireland by age group, 2010-11 to 2021-22: by time period**



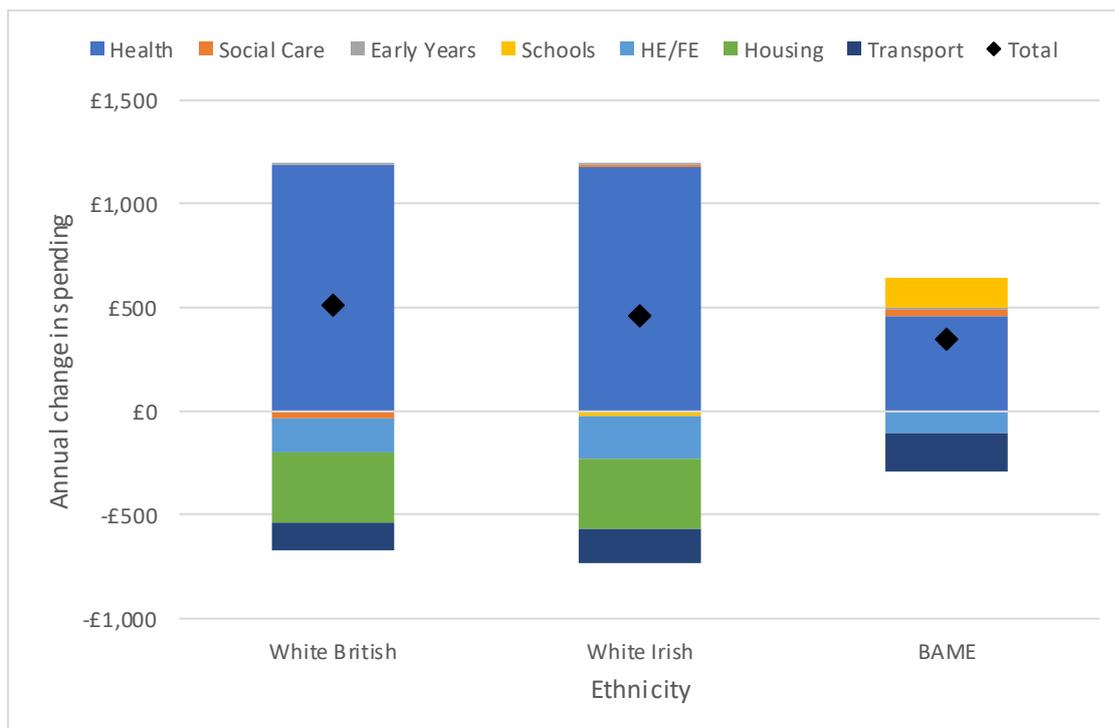
Source: as Figure 5.1

Figure 5.8 shows that cuts to spending between 2010-11 and 2017-18 had a bigger negative impact for age groups under 55 than for those aged over 55. The biggest negative impact was for the 35-44 age group. Subsequent spending increases between 2017-18 and 2019-20 had a fairly even positive impact for most age groups but the average gains were much smaller for the under-25s. The planned spending increases after 2019-20 also have a smaller positive impact for the 18-24 age group

than other age groups. The biggest positive impacts are for 35-44 year olds and 65-74 year olds.

## 5.5 Impacts by ethnicity/nationality

**Figure 5.9 Distributional impact of public spending changes in Northern Ireland by ethnicity and nationality, 2010-11 to 2021-22: by service category**

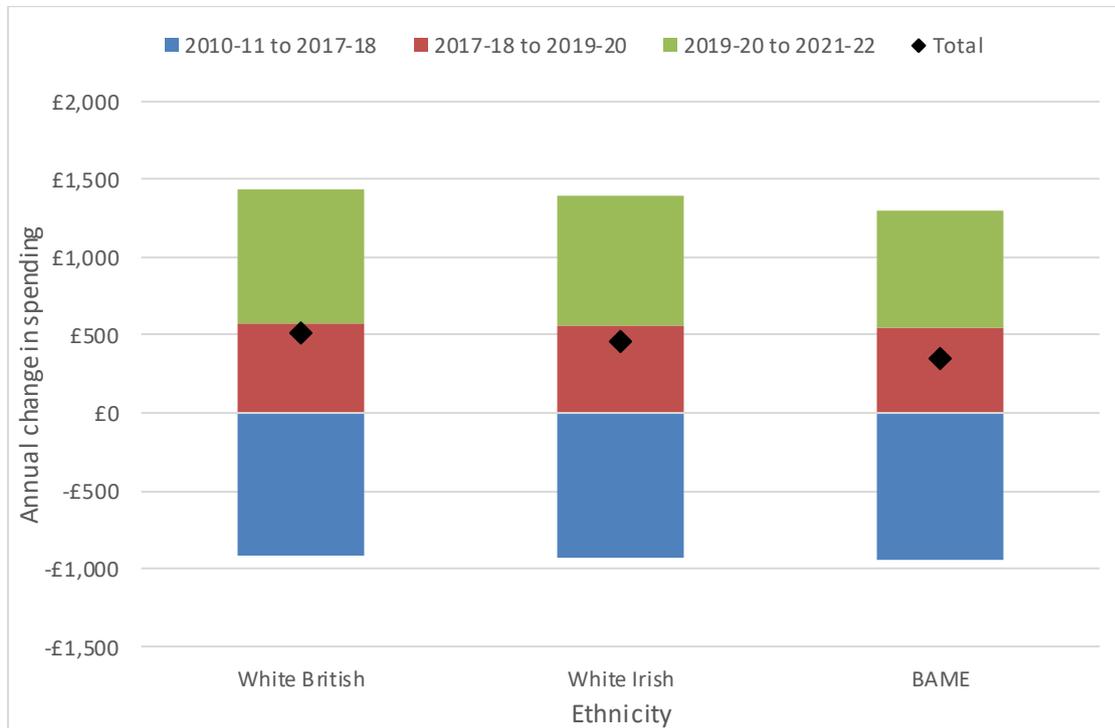


Source: as Figure 5.1

Figure 5.9 shows that the distributional impacts by service category (and in total) for benefit units who identify as White British and White Irish are very similar. For BAME benefit units, the overall gains are slightly smaller than for the other two groups, but the composition of gains by service categories is very different. This group gains from changes to education spending whereas the impact for the other two groups is close to zero. There is also no measurable impact of housing spending changes for the BAME group, who are less likely to live in social housing, but substantial negative impacts for the White British and Irish groups. Gains from health spending

are larger for the two White groups than the BAME group, likely reflecting the latter's younger age profile.

**Figure 5.10 Distributional impact of public spending changes in Northern Ireland by ethnicity, 2010-11 to 2021-22: by time period**

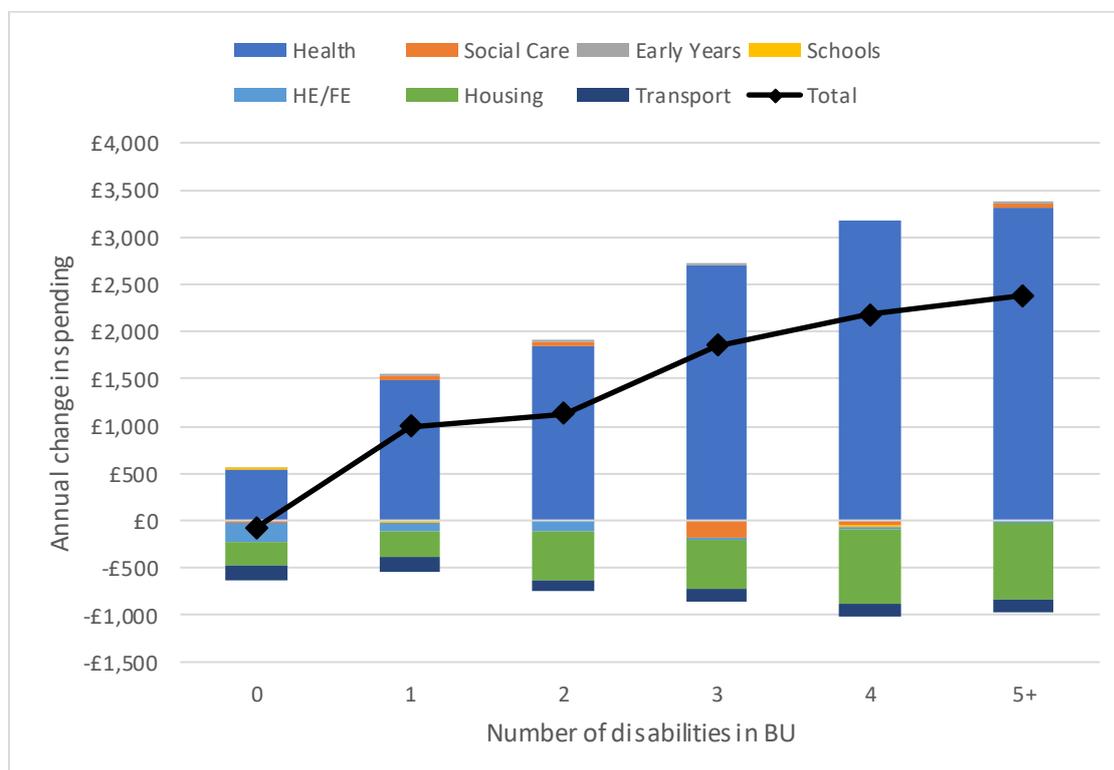


Source: as Figure 5.1

Shown by time period in Figure 5.10, the average distributional impacts of changes to public spending in Northern Ireland patterns are fairly even across each ethnic group. All three groups experienced cuts to spending of similar magnitude between 2010-11 and 2017-18, followed by increases of similar magnitude after 2017-18.

## 5.6 Impacts by number of functional disabilities in benefit unit

**Figure 5.11 Distributional impact of public spending changes in Northern Ireland by disability “score”, 2010-11 to 2021-22: by service category**



Source: as Figure 5.1

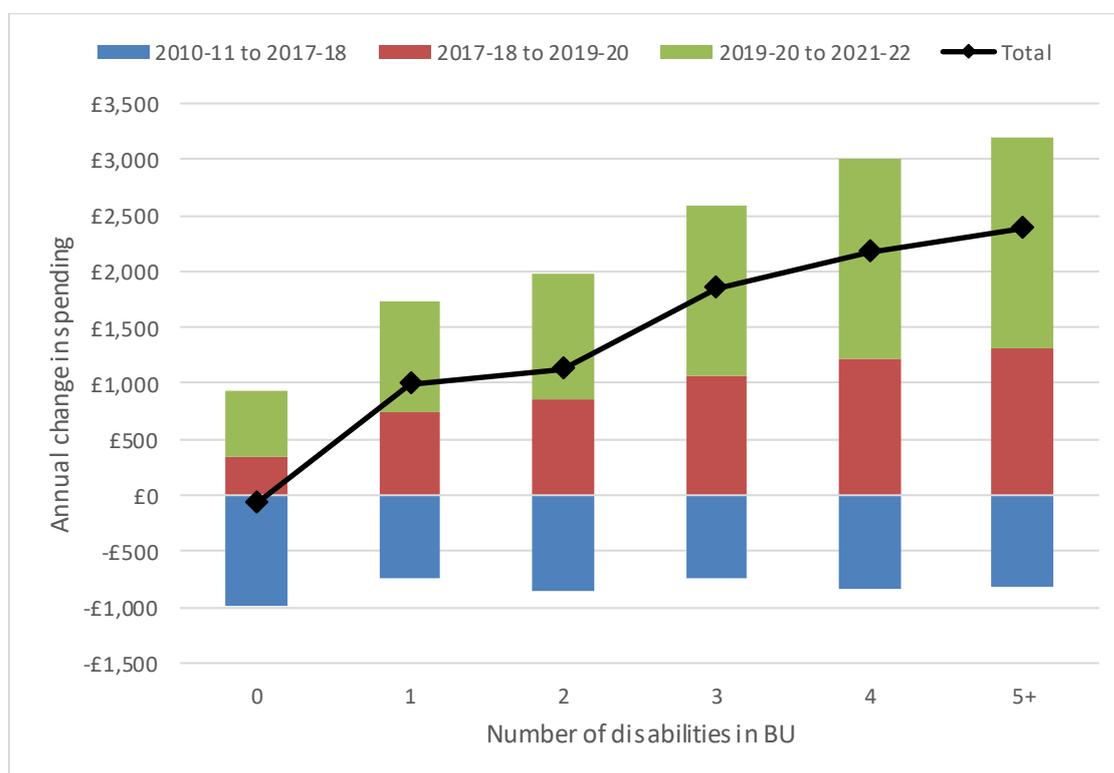
Figure 5.11 shows the impact of changes to spending broken down according to the number of functional disabilities for adults in each benefit units<sup>9</sup>. The pattern of distributional impacts is dominated by the increases in health spending. Benefit units with at least one disability, experience much larger average gains from the increases in health spending than benefit units with no disabilities. For benefit units with three or more disabilities the gains from health spending are even larger. Benefit units with four or more functional disabilities have average gains of over £3,000 per year from the health spending increases compared to just over £500 per year for non-disabled benefit units. These differences arise because benefit units with a larger number of disabilities are more likely to use health services and in particular more likely to experience prolonged stays as hospital inpatients (which are a major component of

<sup>9</sup> Note that the USoc data does not include detailed information on disabilities for children, so the disability classification used in this report is based on adults only.

health spending based on analysis of data on the unit costs of inpatient hospital admissions compared to GP visits and outpatient visits).

Benefit units with two or more disabilities also experience bigger reductions in housing spending than those with one disability or none, but these changes in spending are smaller than the increases in health spending and so don't alter the overall distributional pattern very much. The impacts of other spending categories are relatively small. The biggest of these is the cuts to higher and further education spending which have the biggest impact on benefit units with no disability.

**Figure 5.12 Distributional impact of public spending changes in Northern Ireland by disability “score”, 2010-11 to 2021-22: by time period**



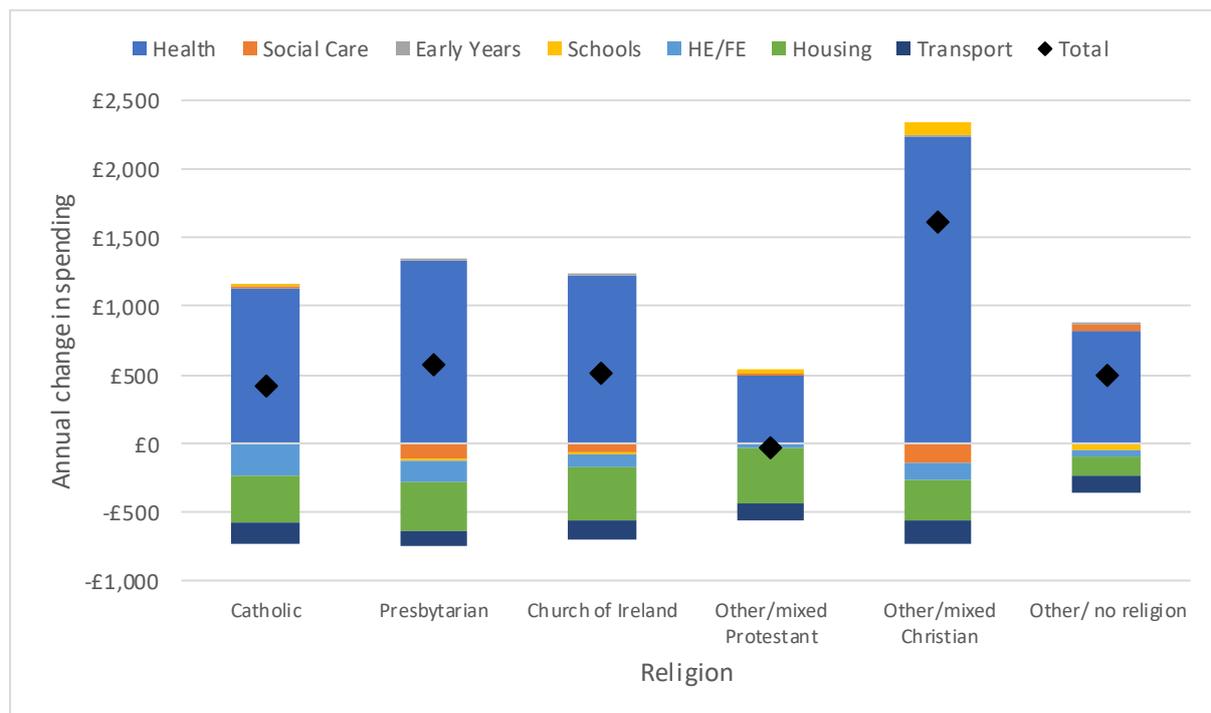
Source: as Figure 5.1

Figure 5.12 shows that the spending cuts between 2010-11 and 2017-18 had a larger negative impact for benefit units who had no disabled members (average annual losses of around £1,000) than for those with one or more disability (average annual losses ranging from £740 to £860 per year). The spending increases from 2017-18 onwards have a bigger positive impact for disabled benefit units, and

especially benefit units with three or more functional disabilities, than for those with no disabilities – this is mainly driven by increases in health spending.

## 5.7 Impacts by religious affiliation

**Figure 5.13 Distributional impact of public spending changes in Northern Ireland by religious affiliation, 2010-11 to 2021-22: by service category**



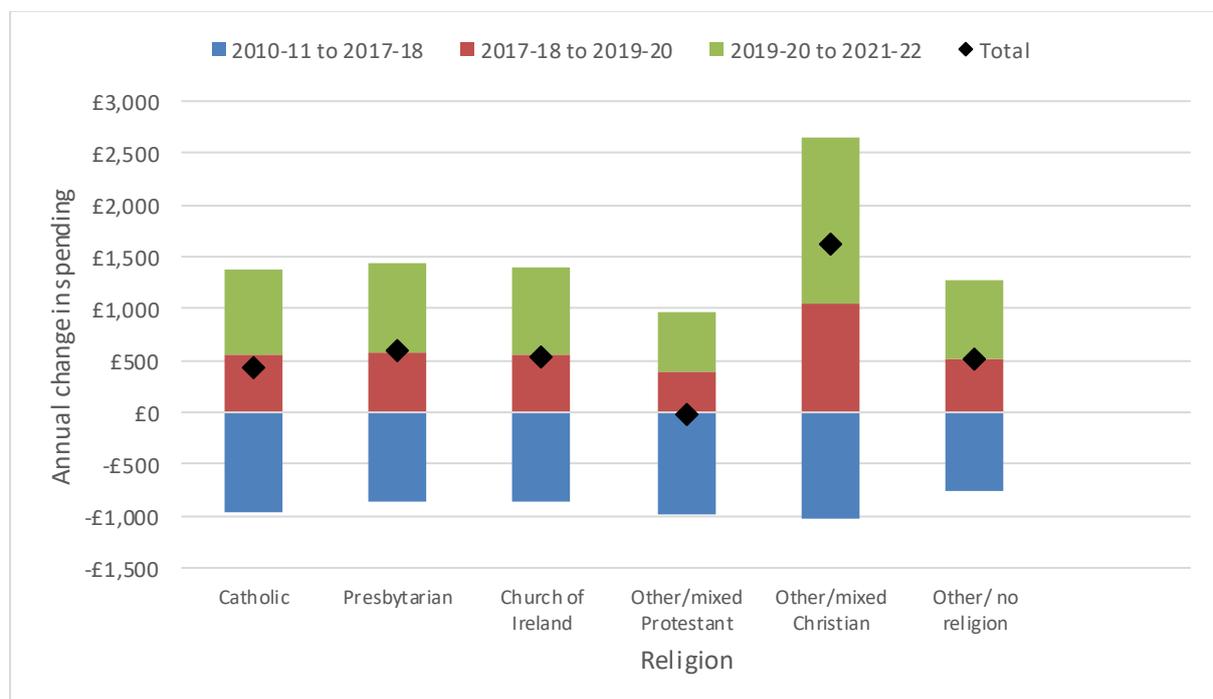
Source: as Figure 5.1

Figure 5.13 shows that overall distributional impacts of the changes in public spending for Catholic benefit units and the largest two Protestant denominations by sample size (Presbyterian and Church of Ireland) are very similar. The main difference is that Catholic benefit units have larger negative impacts from cuts to further and higher education spending whereas Presbyterian and Church of Ireland BUs have a larger impact of cuts to social care. This reflects the different age profiles of the two groups, with Catholic BUs having a higher proportion of 18-24 year olds than Presbyterian and Church of Ireland BUs, whereas Presbyterian and Church of

Ireland BUs have a higher proportion of adults aged 75 and over than Catholic BUs)<sup>10</sup>.

Looking at the other groups, there are particularly large positive impacts of health spending for benefit units in the “other/mixed Christian” category. Schools spending has a positive impact for the “other/mixed Christian” category but a negative impact for the “other/no religion” category. Social care spending has a negative impact for the “other/mixed Christian” group.

**Figure 5.14 Distributional impact of public spending changes in Northern Ireland by religious affiliation, 2010-11 to 2021-22: by time period**



Source: as Figure 5.1

Figure 5.14 shows that the distributional effects of spending by time period look very similar for Catholic benefit units, Presbyterians and Church of Ireland BUs, as well as the “other/no religion” group. There is a smaller positive impact of the spending

<sup>10</sup> Specifically, 11% of Catholic BUs are in the 18-24 age group, and 10% are in the 75+ age group. For Presbyterian and Church of Ireland BUs, 8% are in the 18-24 age group, and 20% are in the 75+ age group.

changes since 2017/18 for the “other/mixed Protestant” group, and larger impacts for the “mixed Catholic/Protestant” and “other/mixed Christian” groups.

## 5.8 Summary of findings

The main findings from Chapter 5 are as follows:

- Overall average spending per benefit unit increased for all five net income quintiles, with the largest increase in the fourth (second to top) quintile (around £750 per year) and the smallest increase in the second quintile (around £80 per year). The main spending areas driving this overall impact are health spending (which increased substantially across the income distribution) and spending on social housing (which decreased substantially, but this affected the bottom two quintiles more than the other quintiles, and had hardly any impact on the top quintile).
- Spending changes between 2010-11 and 2017-18 had a negative impact, which was biggest in the lowest two quintiles of the income distribution and smallest in the top quintile. However, taken together the increases in spending between 2017-18 and 2019-20 and the planned spending increases for 2020-21 and 2021-22 outweigh the earlier spending cuts and lead to positive overall impacts of spending changes in real terms for each quintile.
- By benefit unit, the total gain from changes in spending is largest for male single pensioners (approximately £1,500 per year) and pensioner couples (around £1,300 per year). Lone parents are the only benefit unit type who lose out on average from spending changes between 2010-11 and 2021-22 (by around £300 per year).
- Overall, the total average impact of changes in spending is more positive the fewer children the benefit unit has. Childless benefit units gain an average of over £50 per year compared to around £400 for families with one child and £150 for two-child families. Families with three or more children lose around £70 per year from the spending changes on average. This pattern is mainly driven by substantial losses for families with three or more children between 2010-11 and 2017-18.

- The pattern of gains from spending changes by age group is mainly driven by health spending, which has a much bigger positive impact for pensioners than for young adults. Overall, benefit units where the average age of the adults is under 25 lose out from the combined spending changes (by around £600 per year on average) whereas benefit units where the average age of the adults is 65 or older gain (by around £1,100 per year on average).
- 18-24 year olds gain much less on average from spending increases after 2017-18 than other age groups do.
- The overall distributional impact of public spending changes by service category and by time period is very similar for benefit units who identify as White British and for those who identify as White Irish. The pattern of impacts by service category for BAME benefit units is different (although the overall impact is similar across all three groups).
- The pattern of distributional impacts by number of functional disabilities in the benefit unit is dominated by the increases in health spending. Benefit units with four or more functional disabilities have average gains of over £3,000 per year from the health spending increases compared to just over £500 per year for non-disabled benefit units. These differences arise because benefit units with a larger number of disabilities are more likely to use health services.
- The overall distributional impacts of changes in public spending for Catholic benefit units and the largest two Protestant denominations by sample size (Presbyterian and Church of Ireland) are very similar.

## 6 Combined distributional impacts of public spending and tax and social security measures, 2010-11 to 2021-22

This chapter combines the analysis of the distributional effects of public spending set out in Chapter 5 with analysis of the effects of changes to direct and indirect taxes and the social security system in Northern Ireland between 2010-11 and 2021-22. The modelled direct taxes include income tax, National Insurance Contributions, and the local tax system (domestic rates in Northern Ireland). Indirect taxes comprise Value Added Tax (VAT) plus changes to excise duties. The modelled social security reforms include changes to benefits and tax credits, plus the rollout of Universal Credit.

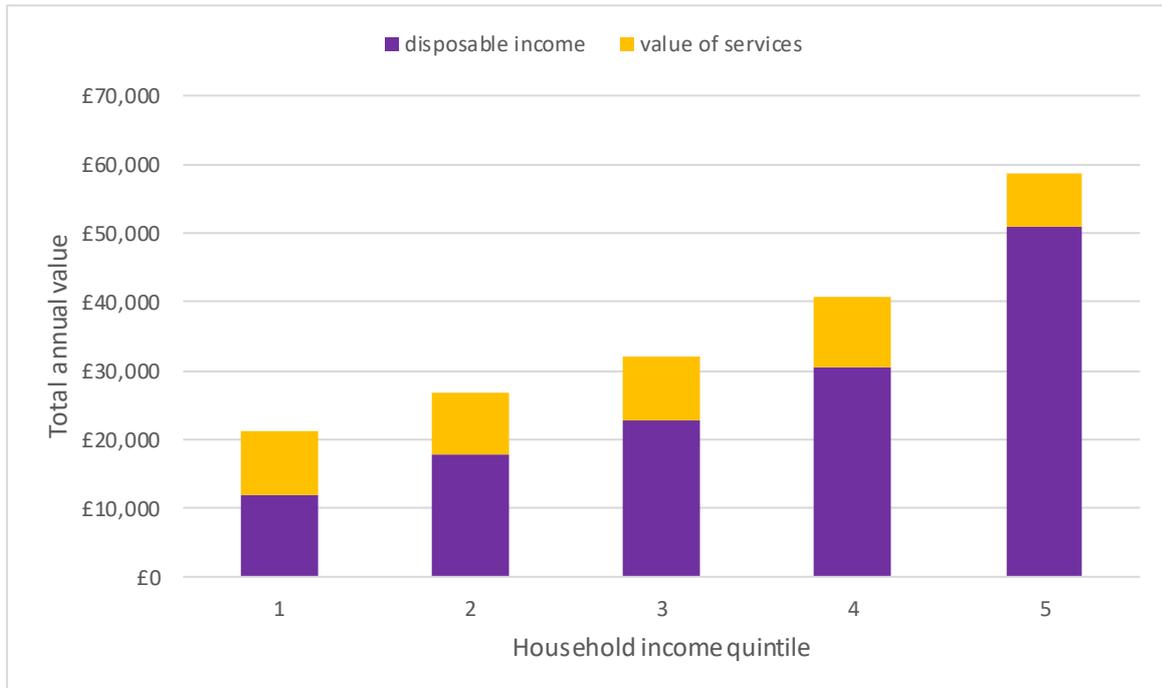
It is important to note that the direct tax effects do not include the impact of the 1.25 percentage point increases in employee, self-employed and employer National Insurance Contributions announced in September 2021 because these will only take effect from April 2022. Our forthcoming report on the distributional impact of the Covid-19 pandemic and its consequences for public spending will include an analysis of the impact of these NICs increases.

### 6.1 The composition of final income across the household income distribution

The distributional effects in this chapter are shown as a percentage of *final income*, which is defined as disposable income plus the value of public services that can be allocated to benefit units.

Figure 6.1 is included in the report to give readers an indication of the distribution of the value of services across household income quintiles compared to disposable income (and hence the composition of final income).

**Figure 6.1 Value and composition of final income by household income quintile, Northern Ireland 2021-22**



Source: analysis of results from Landman Economics tax-transfer model (for disposable income) and Landman economics public spending model (for value of services)

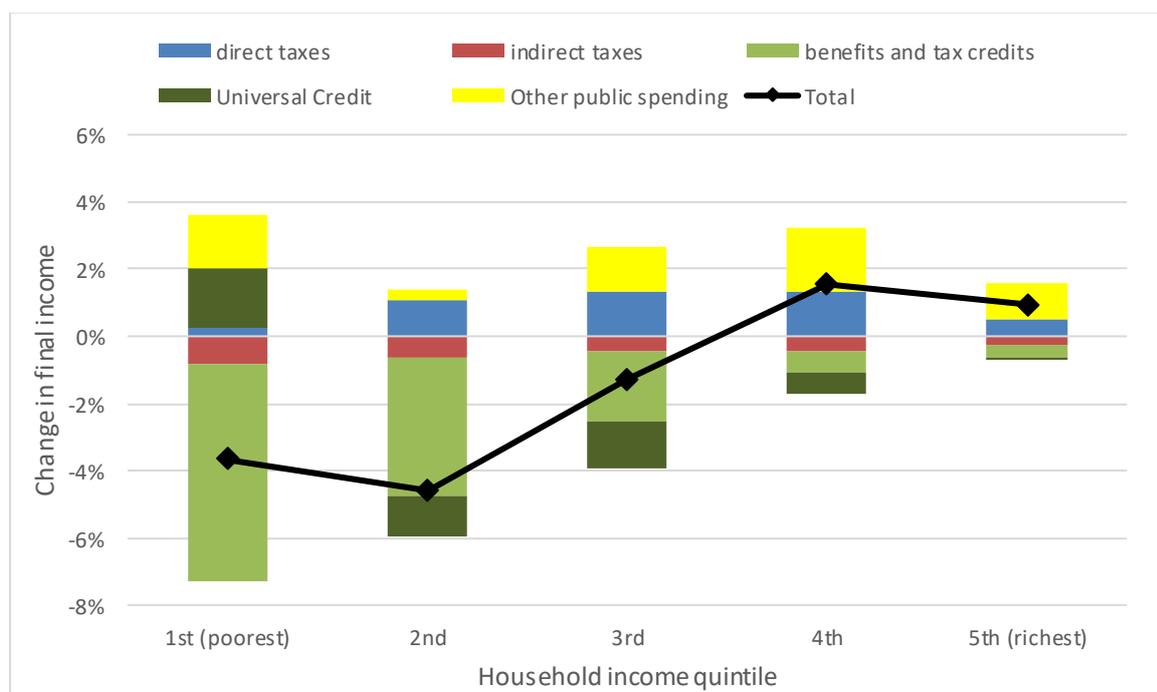
Figure 6.1 shows that average disposable income is around four times higher for benefit units in the top household income quintile than the bottom quintile. Meanwhile, the value of (allocatable) in-kind services received by benefit units is between £8,900 and £10,000 per year in the lowest four quintiles of the household income distribution. In the top quintile the annual value is lower, at around £7,900. Hence, public services have a redistributive effect, narrowing the distribution of final income compared to the distribution of disposable income. The ONS publication *The Effects of Taxes and Benefits on Household Income*, which uses data from the Living Costs and Food Survey to assess the impact of taxes and benefits and in-kind public services such as health and education, includes estimates of the Gini coefficient (a commonly used measure of inequality) for individual level disposable income and final income (defined as disposable income plus the value of allocatable public services). The ONS's estimated Gini coefficient (across the whole UK) for disposable income in 2019-20 was 0.363, whereas the Gini coefficient for final income was 0.317. Given that a higher Gini coefficient corresponds to higher inequality, the

redistributive impact of public services can clearly be seen from the ONS estimates (ONS 2021)<sup>11</sup>.

## 6.2 Combined distributional impacts by household income

Figure 6.2 shows the distributional impact of changes to taxes and social security spending plus other public spending by household income quintile. The effects of taxes are shown separately for direct taxes and indirect taxes. The effects of social security are shown separately for changes to benefits and tax credits (in light green) and the additional impact of the rollout of Universal Credit (in dark green). The effects of other public spending changes (i.e. the results from Chapter 5) are shown in yellow. Note that the results in this chapter are shown as a percentage of final income for each breakdown group, rather than in cash terms.

**Figure 6.2 Distributional impact of changes to taxes and social security spending plus other public spending, by household income quintile, Northern Ireland, 2010-11 to 2021-22**



<sup>11</sup> Ideally we would have calculated the Gini coefficient for disposable and final incomes based on our own results in this paper. However, this is not technically possible because the Landman Economics public spending model uses USoc data while the tax-transfer model uses FRS data. The two models would need to use the same base dataset in order to calculate the Gini.

Source: analysis of results from Landman Economics tax-transfer model (for disposable income) and Landman economics public spending model (for value of services)

Overall, the impact of tax/social security changes and public spending changes is regressive across most of the income distribution. The biggest average losses as a percentage of final income are in the second household income quintile (just under 5% of final income), while the fourth quintile sees average gains of around 1.5 per cent of final income. Losses are somewhat smaller in the lowest quintile than the second (just under 4 per cent) while gains are somewhat smaller in the top quintile compared to the fourth.

Changes to direct taxes result in a boost to final income across all quintiles but the percentage gains are much larger in the middle three fifths of the income distribution than at the bottom or top. This is mainly because the increase in the personal allowance for income tax had the biggest impact for individuals in the middle of the household income distribution.

The changes to indirect taxes result in losses across the whole income distribution, with larger percentage losses at the bottom compared to the top. This distributional pattern occurs mainly because expenditure subject to VAT is a larger percentage of income for low-income households than for high-income households. Since 2010 there has been an increase in the amount of revenue raised from VAT, mainly due to the increase in the standard rate of VAT from 17.5 per cent to 20 per cent in 2011. HMRC statistics show that VAT increased from 18 per cent to 21 per cent of total receipts between 2010-11 and 2011-12, and stayed at around 21 per cent or 22 per cent of total receipts until 2019-20<sup>12</sup> (HMRC 2021). Fuel duty receipts fell over the same period from 6 per cent to 4 per cent of total receipts due to repeated fuel duty rate freezes in Budgets since 2010, but this does not fully offset the rise in VAT, particularly for low-income households (who are less likely to own a car than high-income households).

Changes to benefits and tax credits are strongly regressive, with benefit units in the lowest quintile of the household income distribution losing around 6 per cent of final income on average. The roll-out of Universal Credit, when completed in Northern

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<sup>12</sup> In 2020-21 receipts from VAT fell to 17% of total HMRC receipts (HMRC 2021), but this was a temporary effect due to the reduction in economic activity during the Covid-19 pandemic.

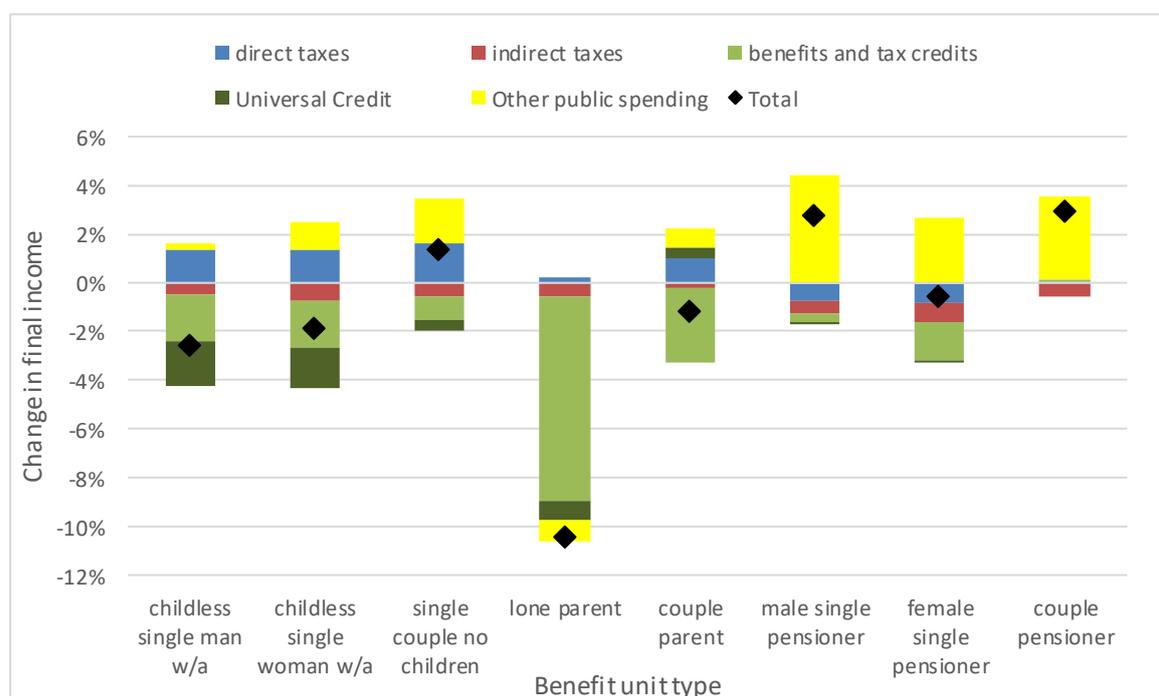
Ireland, will increase average incomes in the lowest quintile (mainly due to better take-up compared to the legacy benefits and tax credits it replaces) but will result in additional losses in the other quintiles.

Adding in the gains from changes to other public spending helps reduce percentage losses in the bottom quintile so that they are smaller than the second quintile.

Overall, the top two quintiles gain on average when increases in other spending are taken into consideration, but the bottom three-fifths still lose out overall.

### 6.3 Combined distributional impacts by benefit unit type

**Figure 6.3 Distributional impact of changes to taxes and social security spending plus other public spending, by benefit unit type, Northern Ireland, 2010-11 to 2021-22**



Source: as Figure 6.2

Overall, lone parents fare much worse from the combined tax, social security and public spending changes than any other group. Once Universal Credit is fully rolled out, they are forecast to lose just under 11 per cent of final income on average. Childless single men are the next most badly affected group (losing around 3.5 per

cent of final income on average), with childless single women, couple parents and female single pensioners also losing out. The biggest gainers are couple pensioners and male single pensioners (around 3 per cent of final income in each case); single working age childless couples also gain.

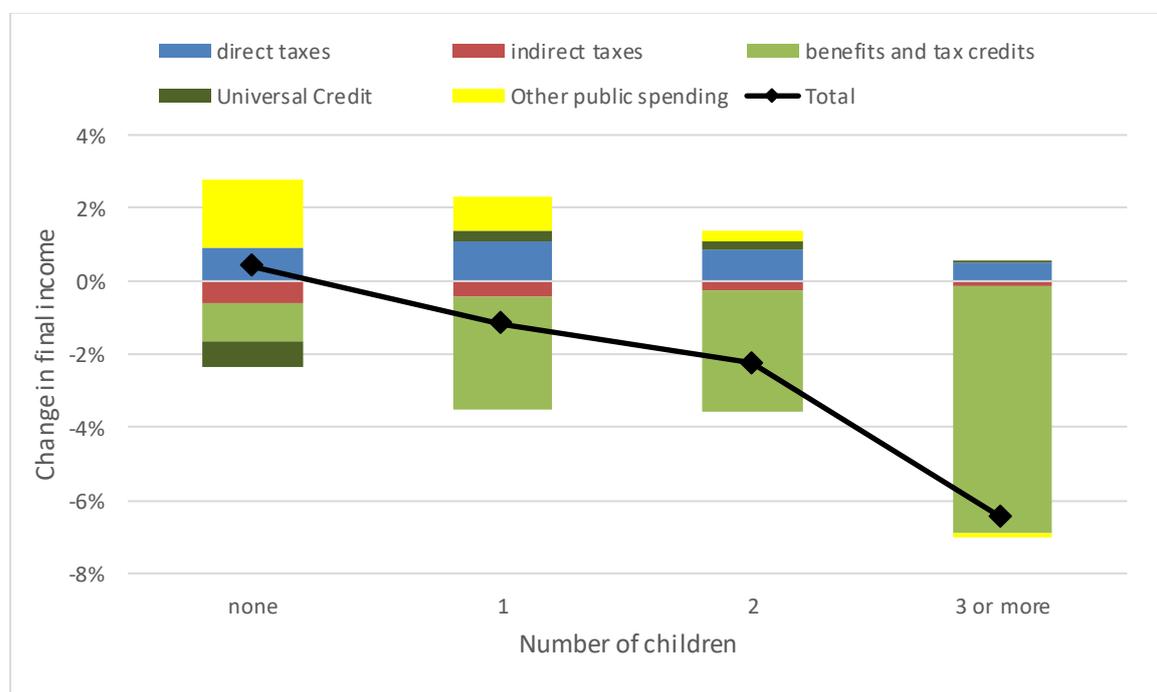
Childless working age benefit units and couple parents gain from the direct tax changes; lone parents also gain (very slightly). Single pensioners lose out (mainly because they do not gain much from the real-terms increase in the value of the income tax personal allowance since 2010 as they already had higher personal allowances than working age people in 2010).

The changes to indirect taxes have a negative impact on final incomes which is largest for female single pensioners and childless single women and smallest for couple parents. The benefit and tax credit changes have the biggest negative impact for lone parents, followed by couple parents. They also have a fairly large negative impact for childless working age single adults and for female single pensioners (the latter effect is mainly due to the uprating rules for Attendance Allowance and Housing Benefit, not due to the State Pension, which has been relatively unaffected by austerity due to the 'triple lock'). The rollout of Universal Credit has the biggest negative impact on childless single working age adults.

The effects of the changes to other public spending are positive for all three pensioner benefit unit types and also for single couples without children. There are smaller positive impacts for all the other groups except lone parents (for whom the impact of other public spending changes is negative, as shown in Section 5.2).

## 6.4 Combined distributional impacts by number of children

**Figure 6.4. Distributional impact of changes to taxes and social security spending plus other public spending, by number of children, Northern Ireland, 2010-11 to 2021-22**



Source: as Figure 6.2

Overall, the impact of changes to taxes and social security combined with other public spending is approximately zero for childless benefit units, with average losses increasing as the number of children in the family increases. Families with 3 or more children experience average losses of just over 6 per cent of final income. Changes to direct taxes have a positive impact for all groups but the percentage impact is slightly lower for families with three or more children. Meanwhile, changes to indirect taxes have a larger negative impact for BUs with no children or one child than for larger families.

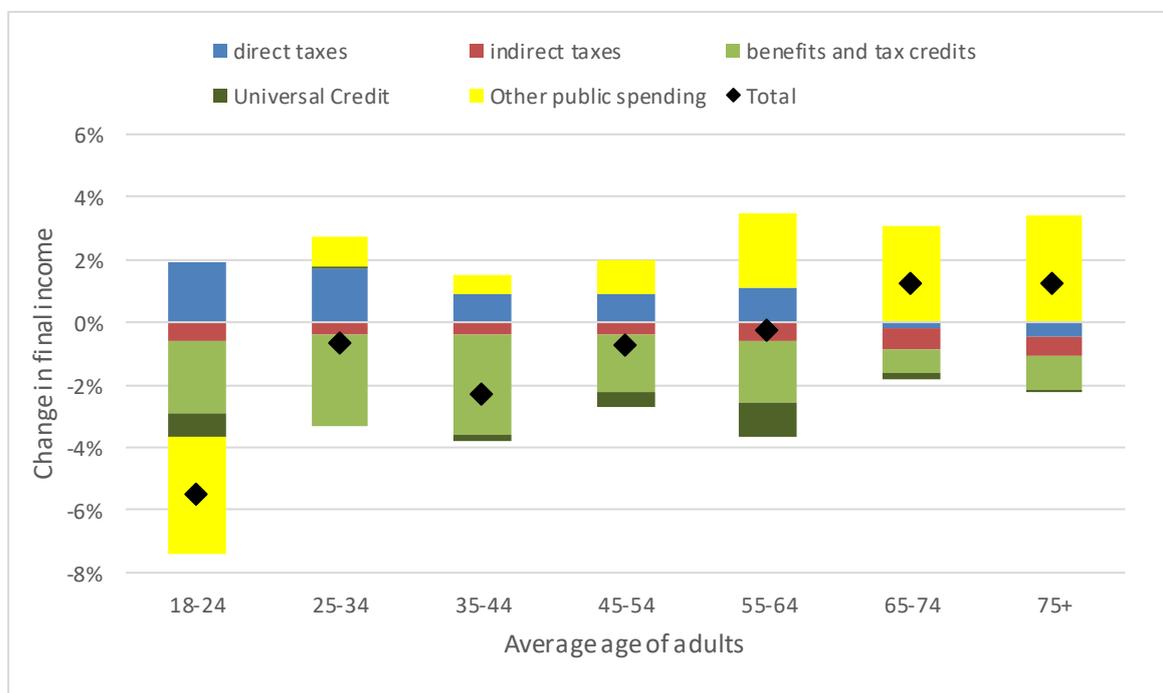
Benefit and tax credit changes have a much larger percentage impact for families with 3 or more children – even after taking Northern Ireland-specific mitigation measures into account – than for other groups. The average losses from benefit/tax credit changes for families with 3 or more children are just under 7 per cent of net

income. The losses for families with 1 or 2 children are around 3.5 per cent; for childless benefit units the average impact is less than 2 per cent. However, including the impact of the Universal Credit roll-out increases average losses to more than 2 per cent for childless benefit units but has little impact for families with children.

The impact of the changes to other public spending is strongly positive for childless BUs and BUs with one child but much smaller as a percentage of final income for families with 2 or more children.

## 6.5 Combined distributional impacts by age group

**Figure 6.5. Distributional impact of changes to taxes and social security spending plus other public spending, by average age of adults in benefit unit, Northern Ireland, 2010-11 to 2021-22**



Source: as Figure 6.2

Figure 6.5 shows that the largest losses from combined tax, social security and other public spending changes by age group are for the youngest group (average age of adults under 25), whose average losses are over 5 per cent of final income. The

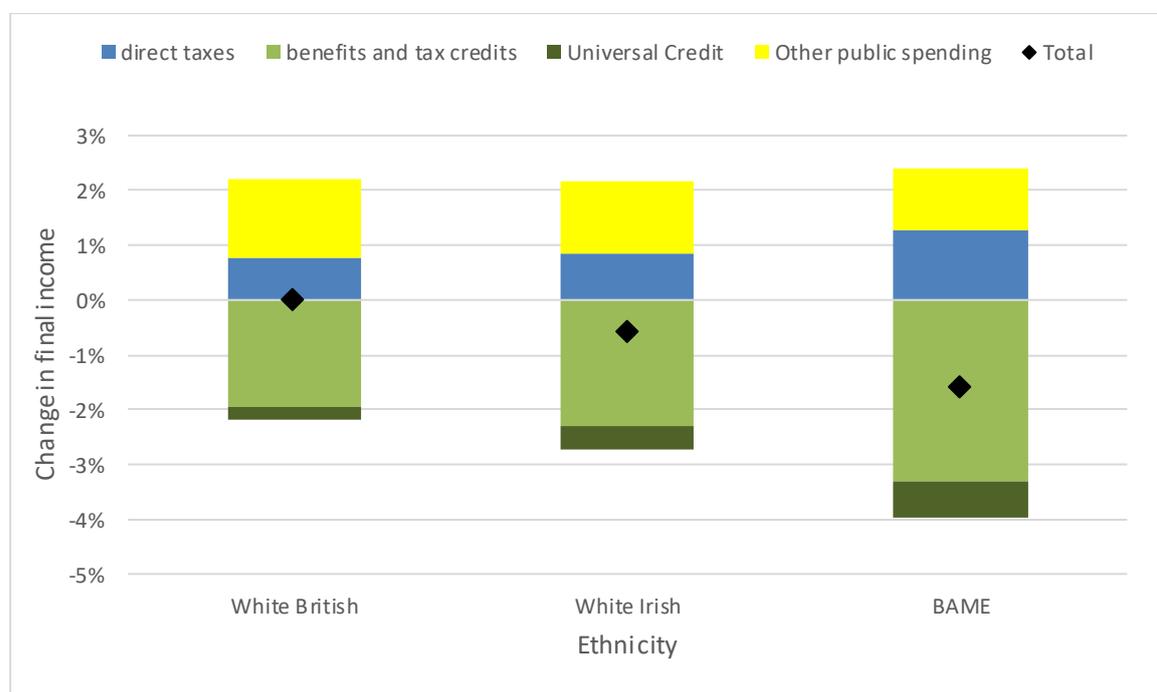
second largest losses are for adults aged 35-44 (just over 2 per cent of final income). There are also small losses for the other working age groups. By contrast, the two pensioner age groups experience average gains in final income of around 1.5 per cent.

Changes to direct taxes have the biggest positive impact for the two youngest age groups, smaller positive impacts for age groups between 35 and 64, and small negative impacts for pensioner age groups. Changes to indirect taxes have a slightly larger negative impact for pensioners compared to other groups. Benefit and tax credit changes have a larger negative impact for working age groups (particularly the age groups between 18 and 44) than pensioner age groups. The Universal Credit roll-out has particularly large negative impacts for adults aged between 18 and 24 and 55 to 64.

As shown in Chapter 5, the changes to other public spending have substantial negative average impacts for the under-25 age groups but positive impacts for other age groups. The size of the positive impacts of other public spending increases for the older age groups and is particularly large for pensioners.

## 6.6 Combined distributional impacts by ethnicity/nationality

**Figure 6.6. Distributional impact of changes to taxes and social security spending plus other public spending, by ethnicity and nationality, Northern Ireland 2010-11 to 2021-22**



Source: as Figure 6.2

Note: Figure 6.6 does not include indirect tax impacts as the LCF does not have a variable for British/Irish national identity.

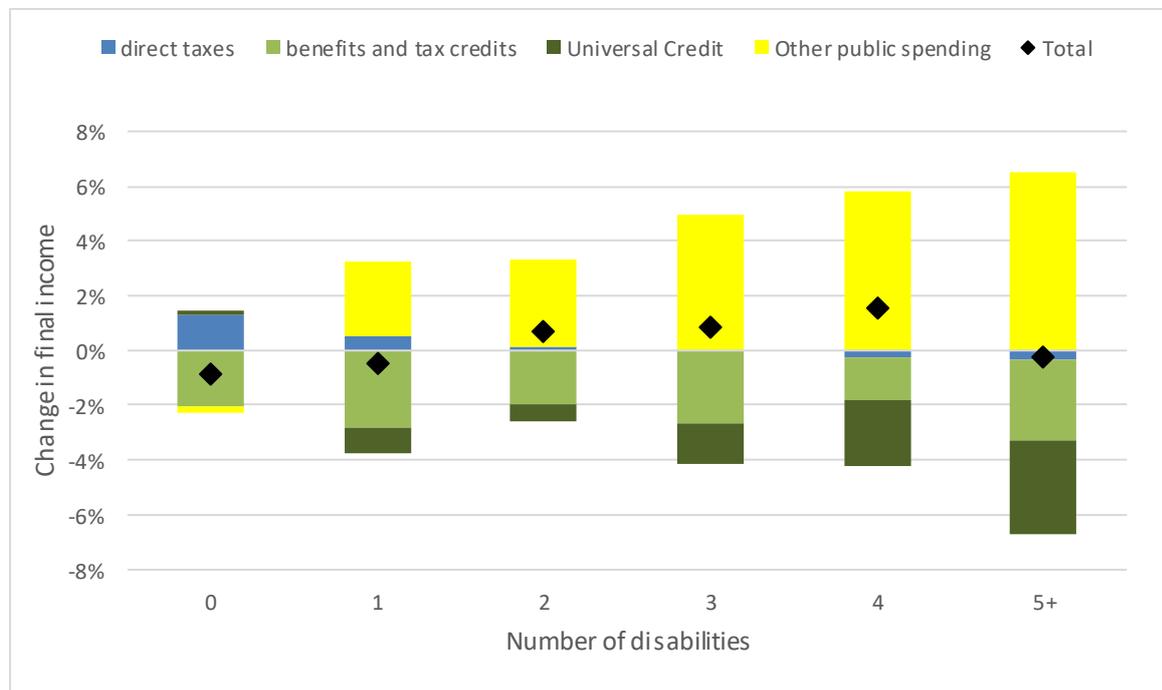
The overall impacts of the changes to tax, social security and other public spending are zero for White British benefit units, slightly negative for White Irish benefit units (average losses of around 0.5 per cent), and more negative for BAME BUs (average losses of around 1.5%). Direct taxes have a positive impact for all groups, with the impact being largest for the BAME group.

The changes to benefits and tax credits have a bigger negative impact for the BAME group than the other two groups. This distributional pattern is reinforced if the Universal Credit roll-out is included in the analysis. Changes to other public spending changes have a slightly larger positive impact for White British benefit units than the other two groups.

Because of the data limitations noted above, we do not present results for combined distributional impacts by religious affiliation. However, these results, combined with the results by age, suggest that the impact will be somewhat more negative for Catholic benefit units than for those of the main Protestant denominations, driven primarily by the younger age profile of the Catholic population.

## 6.7 Combined distributional impacts by number of disabilities

**Figure 6.7. Distributional impact of changes to taxes and social security spending plus other public spending, by number of disabilities in BU, Northern Ireland 2010-11 to 2021-22**



Source: as Figure 6.2

Note: Figure 6.7 does not include indirect tax impacts as the LCF does not have a disability variable.

Looking at the overall impact of changes to taxes, social security measures and other public spending combined, Figure 6.7 shows that there is no strong relationship between change in final income and benefit unit disability “score”.

Benefit units with no disabilities have a slightly worse average outcome (with losses

of just under 1 per cent of final income) than BUs with at least one disability. Benefit units with 3 disabilities have the largest average positive outcome, with gains of just under 2 per cent of final income). Average outcomes for other groups are between minus 0.5 per cent and plus 0.5 per cent of final income.

For disabled groups, the average increases in other public spending are approximately balanced out by average losses from changes to benefits and tax credits and Universal Credit. Changes to direct taxes have positive average impacts of around 1 per cent of final income for non-disabled BUs, much smaller impacts for BUs with one disability and very small impacts for BUs with more disabilities.

## 6.8 Summary

The main findings from Chapter 6 are as follows:

- Spending on public services has a redistributive effect, narrowing the distribution of final income (which includes disposable income plus the value of public services received by households) compared to the distribution of disposable income on its own.
- Overall, the impact of tax and social security changes combined with other public spending changes is regressive across most of the income distribution. The second household income quintile loses just under 5 per cent of final income from the changes overall, while the fourth quintile sees average gains of around 1.5 per cent of final income. These effects are due to a combination of regressive changes to benefits and tax credits and an increase in regressive indirect taxation since 2010. Reductions in direct taxes have the biggest positive impact in the middle of the income distribution.
- Lone parents fare much worse from the combined changes to tax, social security and public spending than any other benefit unit type. Once Universal Credit is fully rolled out, they are forecast to lose just under 11 per cent of final income on average. By contrast, couple pensioners and male single pensioner gain around 3 per cent of final income on average from the combined changes.

- The impact of changes to taxes and social security combined with other public spending is approximately zero for childless benefit units, with average losses increasing as the number of children in the family increases. Families with 3 or more children experience average losses of just over 6 per cent of final income.
- The largest losses from the combined changes by age group are for the youngest group (average age of adults under 25), who lose over 5 per cent of final income on average. By contrast, benefit units where the average age of adults is 65 or over gain around 1.5 per cent of final income on average.
- The overall impacts of the changes to tax, social security and other public spending are zero for White British benefit units, slightly negative for White Irish Benefit units (average losses of around 0.5 per cent) and more negative for BAME BUs (average losses of around 1.5 per cent).
- There is no strong relationship between the number of functional disabilities in the BU and the overall impact of the combined changes on final income. For disabled groups, the average increases in other public spending are approximately balanced out by average losses from changes to benefits and tax credits and the Universal Credit rollout.

## 7 Human rights implications of public spending changes in Northern Ireland

This section discusses the implications of the cumulative impact assessment of changes to public spending since 2010 in Northern Ireland for human rights in Northern Ireland.

### 7.1 The right to public services

The right to many of the specific public services featured in this report is protected by the ECHR and the international human rights system. The United Kingdom is a State Party to the International Covenant on Economic, Social and Cultural Rights (ICESCR), which includes references to public services (Office of the High Commissioner for Human Rights, 1976). In particular:

- ISESCR Article 11 recognises “the right of everyone to an adequate standard of living for himself and his family, including adequate, food, clothing and housing”. While housing is the only public service explicitly mentioned in this article, public services are an important component of living standards in the UK and other countries (as acknowledged by the ONS in its use of “final income” as a measure of living standards (ONS, 2021). Hence other public services such as health, social care, education and public transport should also be considered part of the definition of an “adequate standard of living”.
- ISESCR Article 12 recognises “the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.” The steps to be taken by the States Parties to achieve the full realisation of this right include “the creation of conditions which would assure to all medical service and medical attention in the event of sickness.” This is an explicit reference to public service health provision.
- ISESCR Article 13 recognises the right of everyone to education, “directed to the full development of the human personality and the sense of its dignity.” This includes, for example, “higher education shall be made equally

accessible to all, on the basis of capacity, by every appropriate means, and in particular by the progressive introduction of free education.”

## **7.1 The human rights impact of changes to public spending in Northern Ireland since 2010**

Looking by service category, the biggest increases in spending per benefit unit in Northern Ireland between 2010-11 and 2021-22 (including planned changes up to the 2021-22 tax year) are health (a total planned increase per BU of around 25 per cent over the time period) and social care for disabled people aged under 65. By contrast, spending on social housing and on further and higher education has fallen significantly.

The results from Chapter 4 show that overall spending per head on public services that can be allocated to households using the available data on service use fell by around 7 per cent between 2010-11 and 2017-18 in Northern Ireland, before recovering by around 3 per cent between 2017-18 and 2019-20 (with further increases planned after 2019-20). This overall trajectory of spending conceals very different patterns for specific services (for example spending on health has increased in real terms whereas spending on housing and social care for the elderly has fallen).

Overall, the two most disadvantaged groups from changes in spending since 2010 are lone parents, and younger adults (particularly those aged 18-24). While the changes in spending have been skewed towards pensioners and away from young people, but there are specific categories of spending where pensioners have lost out (particularly social care spending on the elderly, which has reduced per BU and per care recipient).

## **7.2 The human rights impact of reforms to tax and social security since 2010 alongside public spending changes**

Our previous report on cumulative impact assessment of the impact of tax and social security reforms in Northern Ireland between 2010 and 2019 (Reed and Portes, 2019) found that social security reforms since 2010 do infringe the right to social

security as specified in the ICESCR and other international treaties to which the UK is a signatory. This was for several reasons:

- It did not look as if **alternatives to the measures** were comprehensively examined, nor was it the case that there was **genuine participation of affected groups** in examining the proposed measures and alternatives.
- The social security measures were **discriminatory**: they had a disproportionately negative impact on some of the most vulnerable groups in Northern Ireland (as elsewhere in the UK); for example, low income households, lone parent households, households with a large number of functional disabilities among household members and households with three or more children.
- The reforms had a **sustained impact on the realisation of the right to social security** and deprived particular groups of access to the **minimum essential level of social security**. The package of tax and social reforms undertaken in Northern Ireland since 2010, has failed to take human rights considerations into account in two key dimensions. First, it is clear that benefits are not 'adequate in amount and duration to ensure an adequate standard of living'. Second, It also does not appear to be the case that the reforms since 2010 are 'temporary, necessary and proportionate.' They are not temporary because the UK Government has no plans to reverse the reforms, even after the austerity which has characterised UK economic policymaking since 2010 comes to an end.
- Finally, there has been no official **independent review** of the measures at a national level (although there have been independent reviews of the measures by third parties such as Portes and Reed (2019)).

The analysis of changes in public spending in this report suggests that in some areas of public spending – particularly housing, social care for the elderly, and further and higher education – reductions in spending have reinforced the impact of the social security reductions, because the impact is disproportionately felt by groups who have already lost out from the effects of the tax and social security package, in particular lone parents and families with children. For other groups, for example people with disabilities, spending increases, particularly on health, may partially offset the impact of the cuts

Again, this raises significant human rights concerns, in that there does not seem to have been any assessment of the interaction between reductions in public services and reductions in social security payments, and the likelihood that some groups will be disadvantaged disproportionately by both. In particular, changes in both public spending and social security payments seem to have a pronounced age gradient; that is, they disadvantage younger households, particularly young adults and families with children, while protecting (in relative terms) those above pension age.

It is important to note that even when the *average* impacts of spending increases appear to offset the impact of social security cuts (this seems to be the case when looking at the effects by number of disabilities, as in Figure 6.7 for example) there are likely to be many adults and benefit units for whom the impacts do not balance out – the results shown in this report are average effects which conceal a complex pattern of winners and losers. It is not possible to produce a more detailed assessment of individual winners and losers from the tax and spending changes for two reasons. First, the sample sizes of the Northern Ireland datasets used for this analysis are relatively small. Second, the datasets used for the modelling of public spending effects, direct tax and social security effects and the indirect tax effects are different and contain different households – therefore no combined “winners/losers” analysis can be produced with the data as it currently stands.

## 8 Conclusions and Recommendations

### 8.1 Conclusions

In the first half of the period under investigation – up until about 2017, UK-wide austerity measures meant significant falls in overall spending on public services in Northern Ireland. As elsewhere, health spending was broadly protected, but there were reductions in per-pupil spend in education and substantial falls in spending on higher education with the introduction of tuition fees. Social housing was particularly hard hit in Northern Ireland. Since 2017, however, overall spending has increased, and – as a consequence of the extra funding allocated to NI as part of the agreement between the Conservatives and the DUP – has done so faster than elsewhere in the UK.

Much of this extra spending has gone (even before the impact of the pandemic) to the NHS, which by 2021-22 will have gone from a position of parity with England in 2010 to a level almost 15 per cent higher than England.

In distributional terms, the benefits of spending on public services are relatively evenly distributed on some key dimensions: for example, by religion/faith and by ethnicity, where different groups have seen roughly similar impacts. However, the concentration of recent spending increases on health more than other key public services does give rise to a very clear gradient by age and disability. Pensioners benefit much more than younger groups, especially the youngest (who lose from spending reductions on HE/FE) and lone parents. Disabled people, who are much more likely to make use of the health service, also benefit more, with more benefits going to more severely disabled people.”

Combining the analysis of changes in public spending with an updated analysis of the distributional impact of changes to tax and social security since 2010-11 shows that the regressive impact of the cuts to benefits and tax credits is only partially offset by the increases in public spending across the income distribution. The poorest two-fifths of households still lose out by an average of 4 per cent of final income from the combined changes. Lone parents suffer a dual hit, losing out from the social security reforms *and* the other spending changes – by a total of over 10 per cent of final

income on average. The overall distributional impacts by number of children show a similar effect at work, with families with three or more children losing out both from the social security reforms and other public spending (with total losses of over 6 per cent of final income). Likewise, the youngest age category of benefit units (adults aged 18 to 24) lose out from the social security reforms and the changes to other spending, whereas other age groups gain from the other spending changes (while still losing out from the social security reforms). There is a clear 'age gradient' overall with adults aged 18-24 losing around 5 per cent of final income on average, while pensioners gain just over 1 per cent of final income on average. Hence, the poorest two-fifths of households, lone parents, families with three or more children and benefit units where adults are aged 18 to 24 are the clearest losers from the overall programme of tax and spending changes in Northern Ireland since 2010.

Northern Ireland has little direct control over the quantum of public spending, because of the operation of the Barnett formula and little/no devolved revenue raising capacity. However, it has substantial control over how that spending is allocated. That is particularly important when, as now, overall spending levels are increasing significantly, so there are choices to be made. So far it appears that the NI executive has chosen to allocate the bulk of spending increases to health. That has significant distributional consequences. It benefits disabled people, partly offsetting, in our analytical framework, the impact of the large cuts to benefits that have reduced disabled people's cash incomes. However, it also disproportionately benefits pensioners, while the lasting impact of cuts to other services, especially education, hits younger people and families, who have also seen large benefit cuts (while pension benefits have largely been protected). This raises a number of questions about both fairness and policy coordination, particularly with respect to families with children, who seem to be suffering a "double whammy" of both cuts to cash benefits and a lower share of overall spending on public services.

## **8.2 Policy Recommendations**

## Mitigating the negative impacts of public spending changes

We recommend that the Northern Ireland Executive:

- Significantly mitigate the disproportionate negative impacts on poorer households and protected groups of changes to the tax and welfare system and cuts to spending on specific public services such as housing, transport and social care for the elderly. Chapter 8 of our 2019 report on the distributional impact of tax and benefit reforms in Northern Ireland (Reed and Portes, 2019) gives details of possible mitigation measures including offsetting of the 2-child limit for Universal Credit and tax credits, an additional payment for children in low-income families and a Cost of Work Allowance for low-income working households.
- Focus mitigation measures particularly on groups that have been badly affected by the combined impact of tax, social security and other public spending changes since 2010 – for example, lone parent families and adults aged under 25.
- Take into account in the future spending plans the likely impact on protected groups and the impacts for poorer households and protected groups who have lost out from changes since 2010.
- Require that future Budget plans from the Department of Finance are accompanied by an equality impact assessment (EIA). The EIAs should incorporate a CIA of the impact on protected groups, showing how distributional impacts vary across groups; analyse and explain any major disparities in outcomes that adversely impact protected groups; and take into account the impacts for poorer households of further changes in spending.
- Publish a detailed explanation of the process by which they will ensure that the Spending Review and spending plans are fully compliant section 75 of the Northern Ireland Act 1998; demonstrating that any regressive measures are temporary, necessary, proportionate and non-discriminatory and do not undercut a core minimum level of protection and put in place any mitigating measures required to safeguard people's rights.
- Ensure that these analyses by each government are publicly accessible and subject to meaningful scrutiny by the Northern Ireland Assembly, the public and protected groups that may be adversely affected by the decisions.

## Improving data for impact assessments of public spending changes

In order to improve the quality of data for CIAs on public spending, we recommend that the Northern Ireland Executive (working with the UK Government where necessary):

- Makes available more information on the usage of various public services in Northern Ireland, including on social care services; Sure Start; legal aid services; publicly funded recreational facilities (for example, museums and galleries, parks etc.); and fire services.
- Improve the quality and availability of data on children's usage of health services.
- Publish more detailed analysis where data are collected on protected characteristics and take steps to redress this omission where they are not.
- Where data are lacking for particular groups, e.g. people from ethnic minorities in Northern Ireland, increase, boost or pool samples as necessary.

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## Appendices

### Appendix A: Technical details of the Landman Economics public spending model

#### A.1 Service use variables in Understanding Society

Table A.1 shows the variables which are used to proxy use of services by individuals for each of the public service categories included in the model.

**Table A.1. Service use variables in Understanding Society Waves 9 and 10**

Service	Variables used (Wave 10)	
<b>Health</b>	J_h12gp: number of times talked to GP in last 12 months J_h12hop: number of hospital outpatient visits in last 12 months J_hospd: number of days in hospital as an inpatient in last 12 months	Calculation of costs of GP visits, hospital outpatient visits and hospital inpatient stays use data on average costs from Manchester Unit Costs database (GMCA, 2019).
<b>Social care (domiciliary)</b>	J_disdif1, J_disdif2, ...J_disdif12: functional disability variables J_servuse3: receipt of social care services	See Section A.2 below for more details
<b>Social care (residential)</b>	Prediction from ELSA regression on probability of entering residential social care (in England)	See Section A.2 below for more details
<b>Early years</b>	Childcare type: J_wrkch2a1: nursery school or class J_wrkch2a2: special educational needs nursery J_wrkch2a3: day nursery or creche J_wrkch2a4: playgroup or pre-school J_wrkch2a5: childminder J_wrkch2a6: nanny/carer in home J_wrkch31-J_wrkch36: hours spent per week in each of these settings	

<b>Education (school level)</b>	Number of children aged 5-10 (for primary) Number of children aged 11-16 plus those aged 17-18 not in further/higher education (for secondary)	
<b>Education (further/higher)</b>	J_jbstat=7 (full time student) <i>and</i> either: J_dvage>18 (age more than 18): or J_edtype = 3, 4 or 5 (at FE college, HE college or university)	
<b>Transport</b>	J_trbus: frequency of bus journeys J_trtm: frequency of train journeys J_trcar: frequency of car journeys (for allocation of road spending)	Available in Wave 10 only
<b>Social housing</b>	J_tenure_dv = 3 or 4 (social tenant households)	
<b>Police</b>	J_servuse5 (use of police services)	Not used in final model as not enough people used police services to model distributional effects accurately

## A.2 Further detail on modelling receipt of services

### Domiciliary social care services

Our original plan for modelling domiciliary social care services (i.e. services received in a person's own home rather than in a residential care home) was to use the J\_servuse3 variable in USoc Wave 10. However, this variable only has 6 positive responses for adults in Northern Ireland, which is too few to produce a reliable distributional analysis. Furthermore, the variable was only introduced in USoc Wave 10 and is not available in Wave 9.

As a work-around we use the relationship between the J\_servuse3 variable and the disability variables in the USoc data to model the probability of receiving social care based on disability across the whole United Kingdom (i.e. all 4 countries of the UK) because the sample size of adults with a positive response for J\_servuse3 is large enough for coherent distributional modelling to be produced (248 positive responses across the whole Wave 10 USoc sample). A probit regression is used including the disability variables listed in Table A.2 below, plus sex and age variables. The

predicted probability of domiciliary social care receipt based on the regression prediction is used as the service use variable for domiciliary social care in the model.

**Table A.2. Disability variables in Understanding Society used in modelling predicted social care receipt**

<b>Disability type</b>	<b>Variable name: has disability</b>
Mobility (moving around at home and waiting)	j_disdif1
Lifting, carrying or moving objects	j_disdif2
Manual dexterity (using your hands to carry out everyday tasks)	j_disdif3
Continence (bladder and bowel control)	j_disdif4
Hearing (apart from using a standard hearing aid)	j_disdif5
Sight (apart from wearing standard glasses)	j_disdif6
Communication or speech problems	j_disdif7
Memory or ability to concentrate, learn or understand	j_disdif8
Recognising when you are in physical danger	j_disdif9
Your physical co-ordination (e.g. balance)	j_disdif10
Difficulties with own personal care	j_disdif11
Other health problem or disability	j_disdif12

### **Residential social care services**

Modelling receipt of residential care is harder than domiciliary care because we do not observe any USoc sample members in care homes because USoc panel members who enter residential care are dropped from the sample<sup>13</sup>. Therefore, an alternative strategy for allocating public spending on residential care is used, which uses a regression for

<sup>13</sup> The USoc data does include a variable for why individuals who were interviewed for USoc in previous waves left the USoc sample, but this does not include an option for “moved into residential care”.

sample members in the English Longitudinal Survey of Ageing (ELSA) which predicts the probability of ELSA members moving into residential care in future waves conditional on age and other characteristics in Wave 1. The predicted probabilities of moving into residential care from the ELSA regression are used to make an out-of-sample prediction for USoc sample members of their probability of moving into residential care, and these probabilities are used to allocate public funding for residential social care across the USoc sample (combined with the results of the residential care means-test as explained below). This methodology is not ideal because the ELSA data covers England rather than Northern Ireland, but given that no comparable Northern Ireland data sampling individuals in residential care settings is available, using ELSA is the only realistic option available.

### **Means-testing for social care**

As well as modelling the receipt of social care, for the purposes of modelling the distributional impact of public spending on social care in each country in the UK it is essential to model the means-tests for domiciliary and residential care, which differ from country to country. The means tests determine whether care recipients receive free social care or whether they have to self-fund. For Northern Ireland, the following rules apply<sup>14</sup>:

- Residential care is subject to an asset test which includes the value of the care recipient's house (for homeowners who live on their own). Anybody with total assets in excess of £23,250 is not eligible for state-funded residential care.
- For domiciliary care, there is no means-test and care is provided free of charge. This is a similar arrangement to Scotland and is different from England and Wales, where domiciliary care is subject to means testing.

For residential care, information in the USoc data on household structure and the value of housing (for homeowners) and other assets is used to determine eligibility for publicly funded social care.

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<sup>14</sup> For details see Atkins *et al* (2021).

### **A.3 Mapping of Northern Ireland Budget data to public service categories**

As explained in Section 3.1, the analysis of public spending in Northern Ireland (and the other UK countries) between 2010-11 and 2019-20 (inclusive) uses HM Treasury's *Public Expenditure Statistical Analyses* data (specifically Chapter 10, which shows public spending in aggregate and per head of the population for each of the four countries of the UK). This data is organised by COFOG (Classification of Functions of Government) heading (as shown in Table 3.1) which makes it easy to map onto the service use variables in the Landman Economics public spending model.

The current PESA data only covers years up to 2019-20. For 2020-21 and 2021-22 this report uses spending plans from the Northern Ireland Department of Finance (DoF)'s 2020-21 and 2021-22 Budgets [ref]. Table A.3 below illustrates how the spending categories in the Landman Economics public spending model map on to the Departmental and sub-departmental breakdown in the 2021-22 DoF Budget documentation.

**Table A.3. Mapping between Northern Ireland Budget documentation and service categories in the Landman Economics public spending model**

<b>Service</b>	<b>Reference in Northern Ireland Department of Finance 2021-22 Budget document: Department and page numbers</b>
<b>Health</b>	Department of Health (pp65-66) – all expenditure in “Objective A” list except Food Safety Promotion Board, Fire and Rescue Services and Social Care services.
<b>Social care</b>	Department of Health (pp65-66) – Social Care Services
<b>Early years</b>	Department of Education (pp55-56) – Pre-school, Primary and Post-primary Education*
<b>Education (school level)</b>	Department of Education (pp55-56) – Pre-school, Primary and Post-primary Education*
<b>Education (further/higher)</b>	Department for Economy (p53) – Student Support & Higher Education
<b>Transport</b>	Department for Infrastructure (pp71-72): Roads, Rivers and Waterways (roads spending) Bus, Rail and Ports (bus and rail spending)**
<b>Social housing</b>	Department for Communities (pp46-47) – Housing and Regeneration

Notes: \* because separate expenditure lines are not shown for pre-school education and school education, funding for each category is assumed to increase or decrease in line with the overall increase in funding for the “Pre-school, Primary and Post-primary Education” expenditure line.

\*\* because separate expenditure lines are not shown for bus and rail spending, funding for each of these categories is assumed to increase or decrease in proportion to the overall increase in funding for the “Bus, Rail and Ports” expenditure line.

## Appendix B: Population trends in countries of the UK by age group

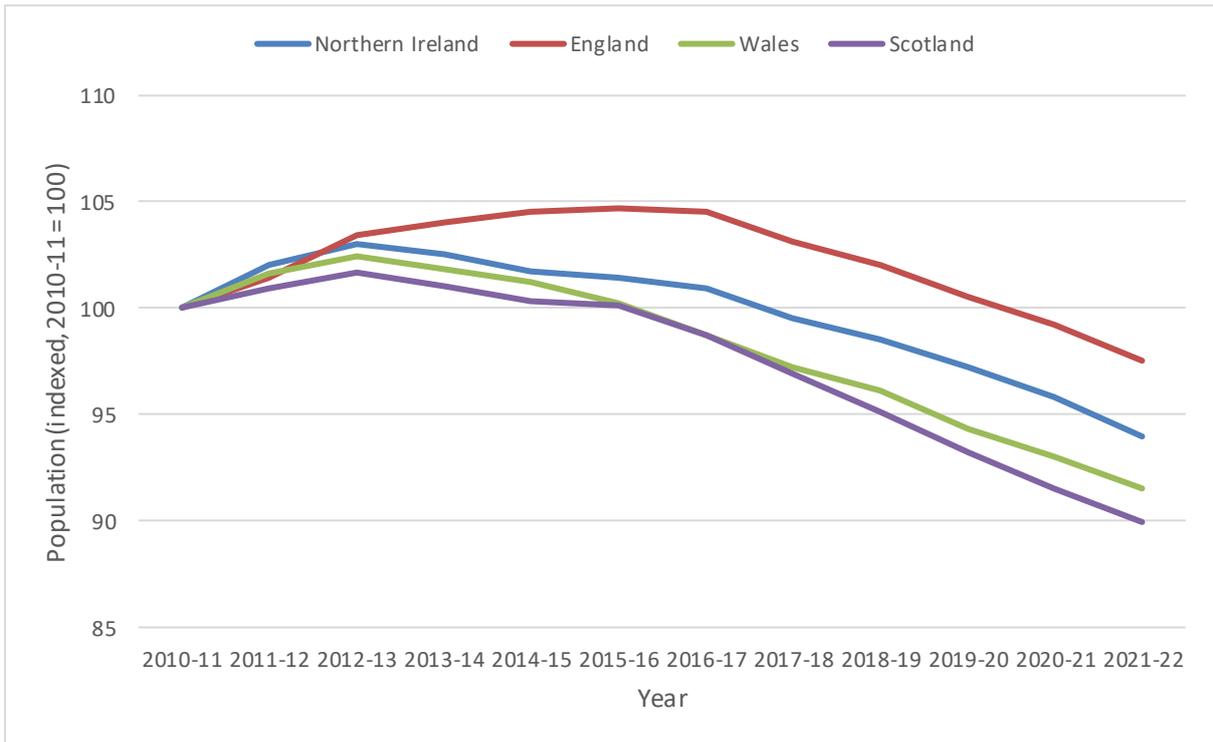
The Landman Economics public spending model adjusts spending per benefit unit on each public service to take account of changes in the size of the relevant population for the service. Table B.1 shows the relevant age groups used for the assessment of population growth in service users for each service. Because the population projections from the Office for National Statistics are in 5-year age bands, we use the nearest approximation to the relevant age group of service users in each case. So for example, the actual age group for primary school children is 5 to 11 years old but we use the 5-9 age band because this is the age band that most closely approximates the ages of the users.

**Table B.1. Age groups used for relevant population for each service**

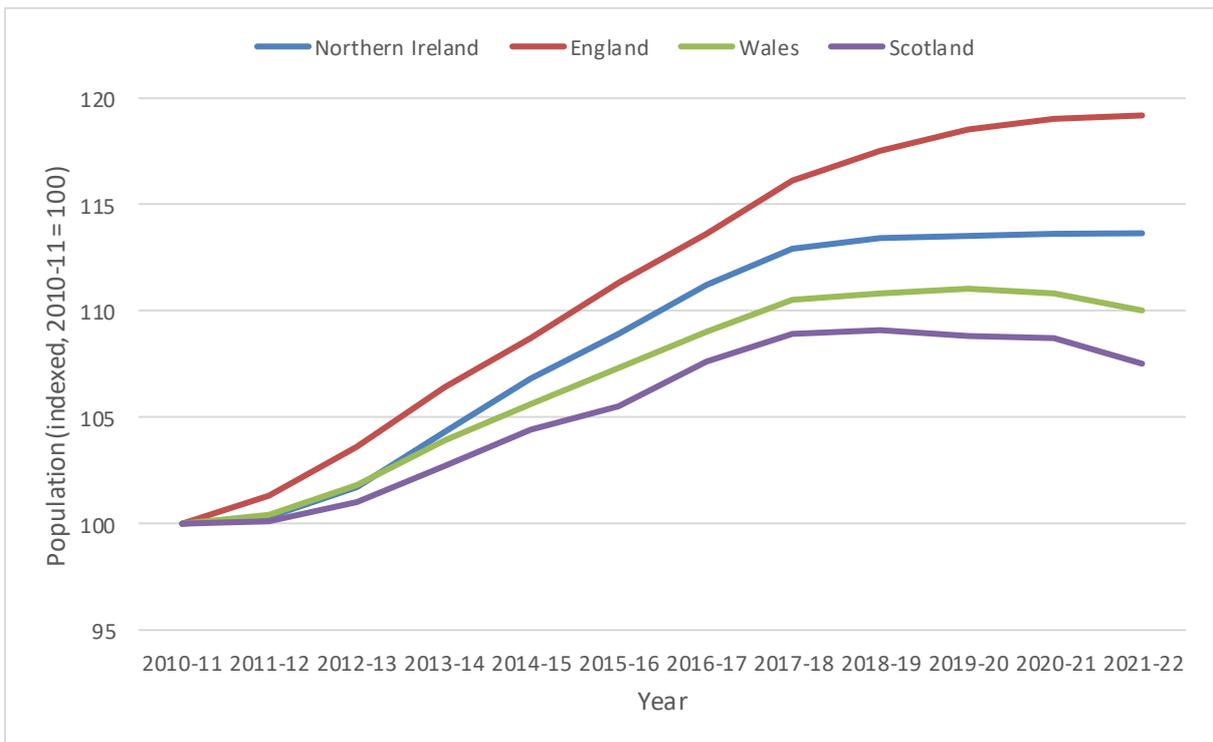
<b>Service</b>	<b>Relevant age group (to nearest 5-year age bands)</b>
Health	All ages
Social care: disabled	20-64
Social care: elderly	65 and over
Early years	0-4
Education: primary	5-9
Education: secondary	10-19
Education: FE/HE	15-19
Transport	All ages
Social housing	All ages

The graphs in the rest of this section show population growth in each country of the UK broken down into the following age bands: 0 to 4, 5 to 9, 10 to 14, 15 to 19, 20 to 64 and 65 and over. The source for all figures is as for Figure 4.2 in the main text.

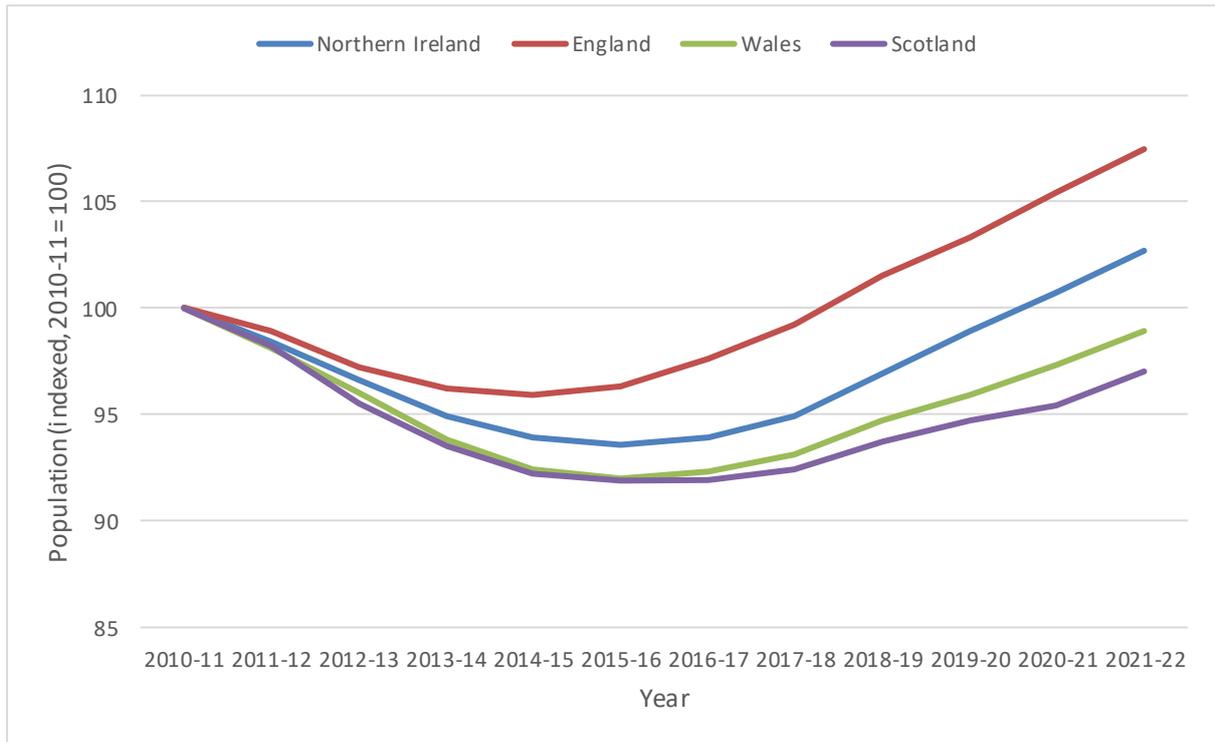
**Figure B.1. Aged 0-4: Projected population growth in the four countries of the UK, 2010-22**



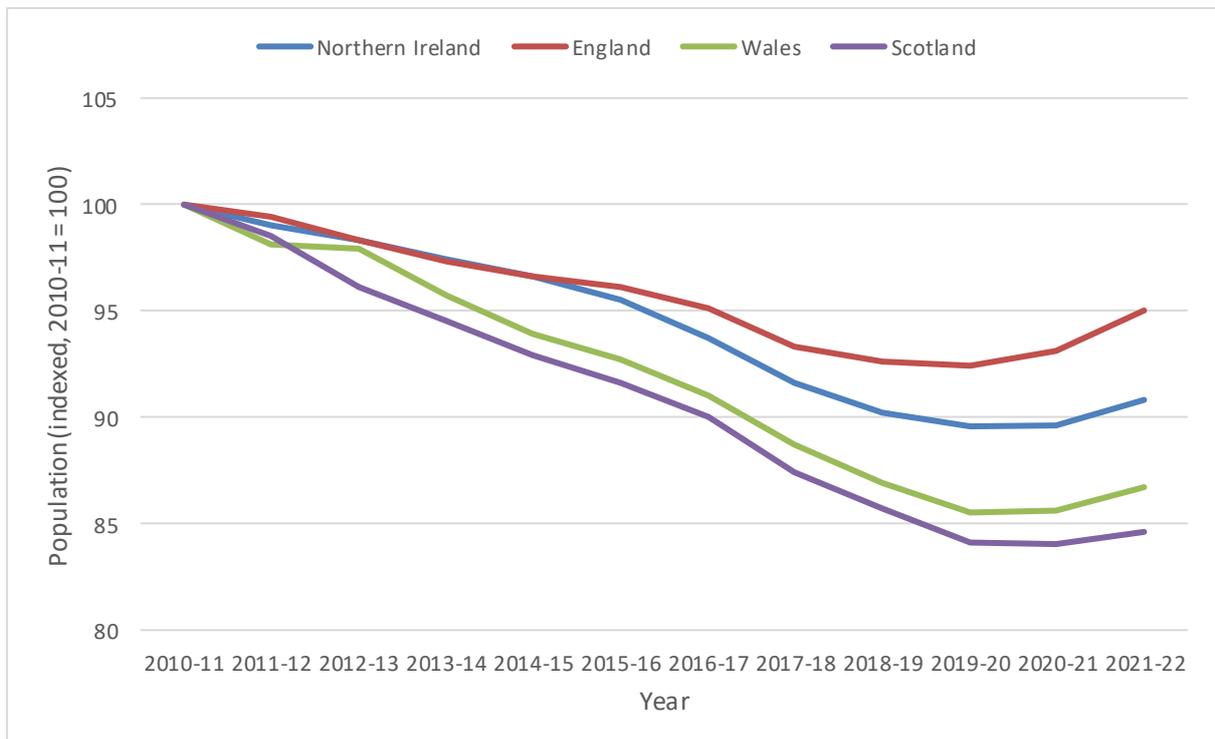
**Figure B.2. Aged 5-9: Projected population growth in the four countries of the UK, 2010-22**



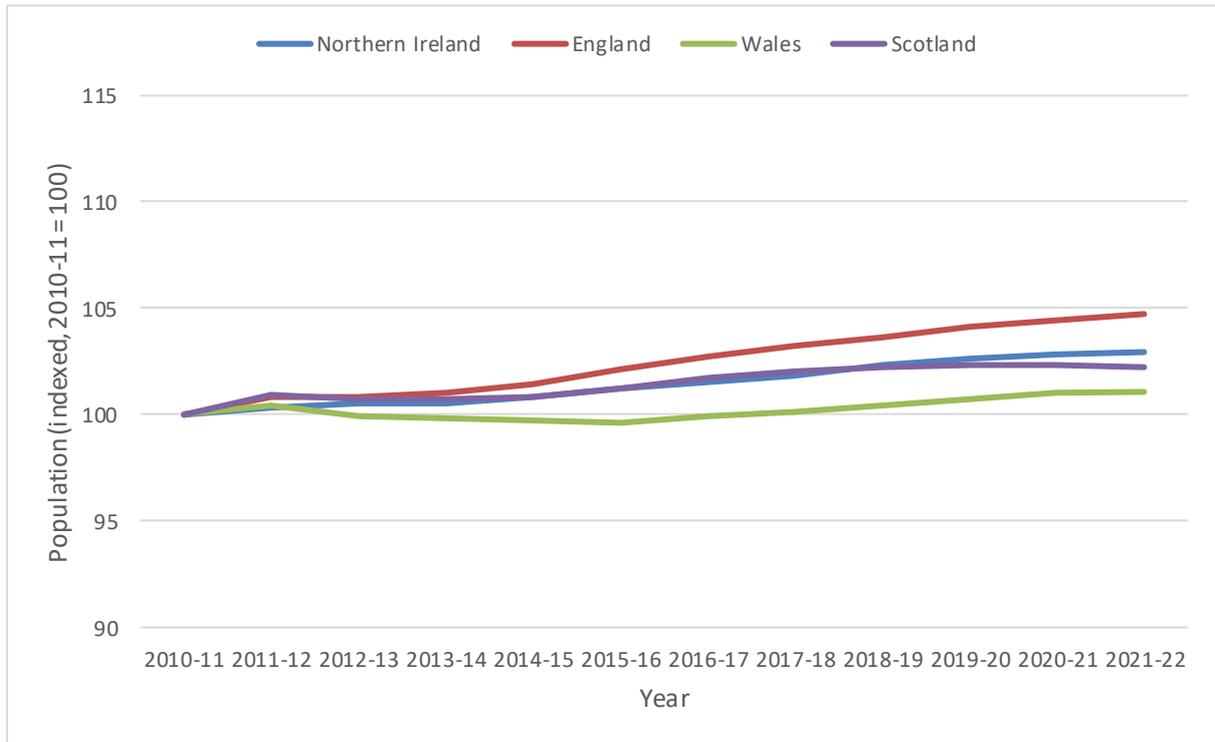
**Figure B.3. Aged 10-14: Projected population growth in the four countries of the UK, 2010-22**



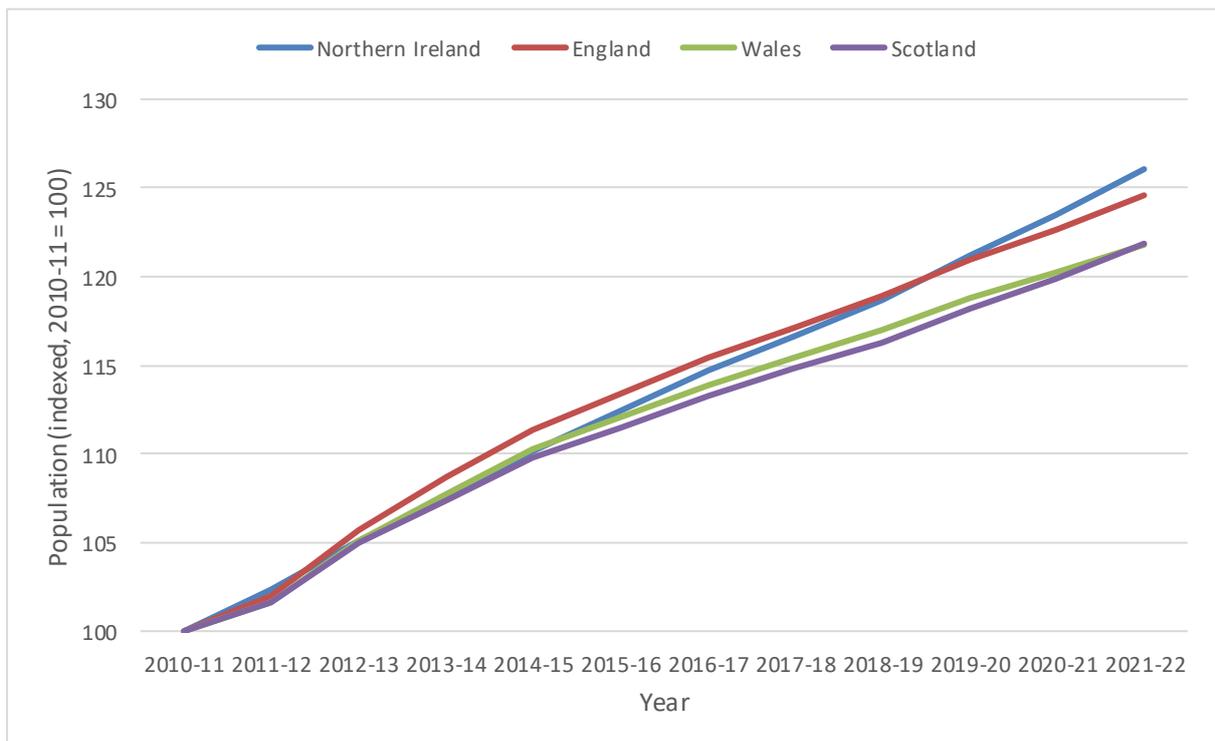
**Figure B.4. Aged 15-19: Projected population growth in the four countries of the UK, 2010-22**



**Figure B.5. Aged 20-64: Projected population growth in the four countries of the UK, 2010-22**



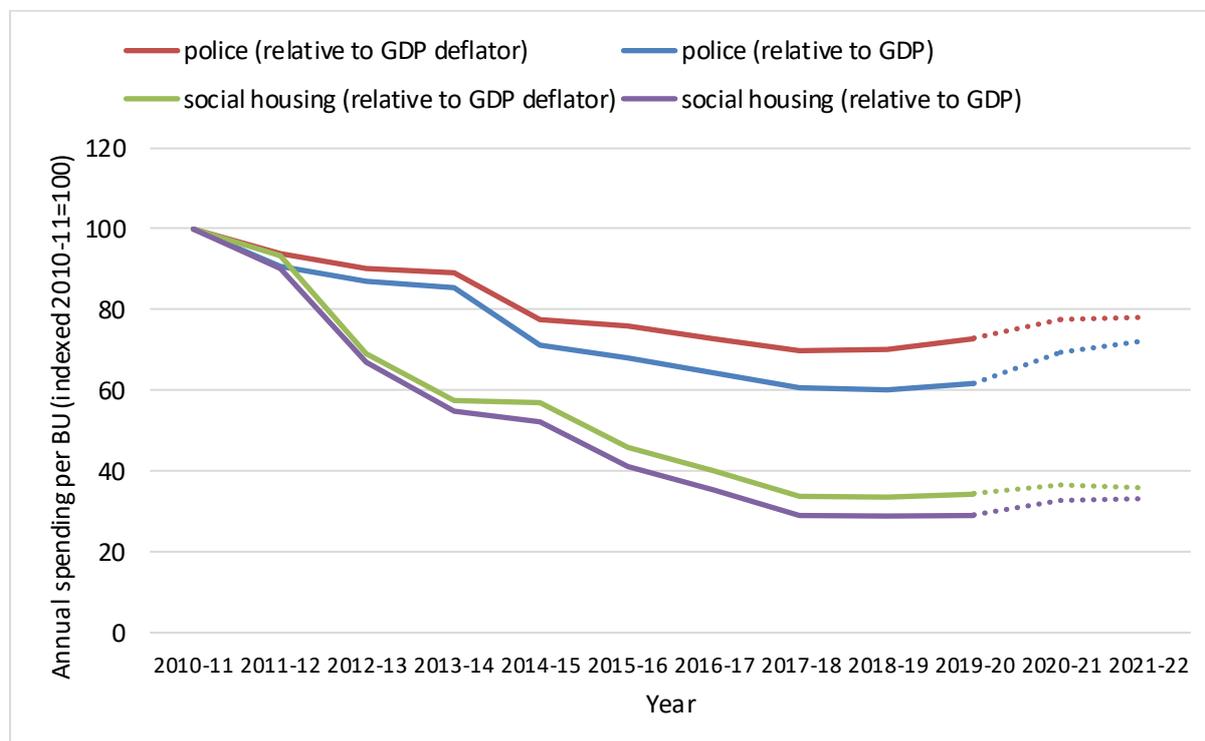
**Figure B.6. Aged 65 and over: Projected population growth in the four countries of the UK, 2010-22**



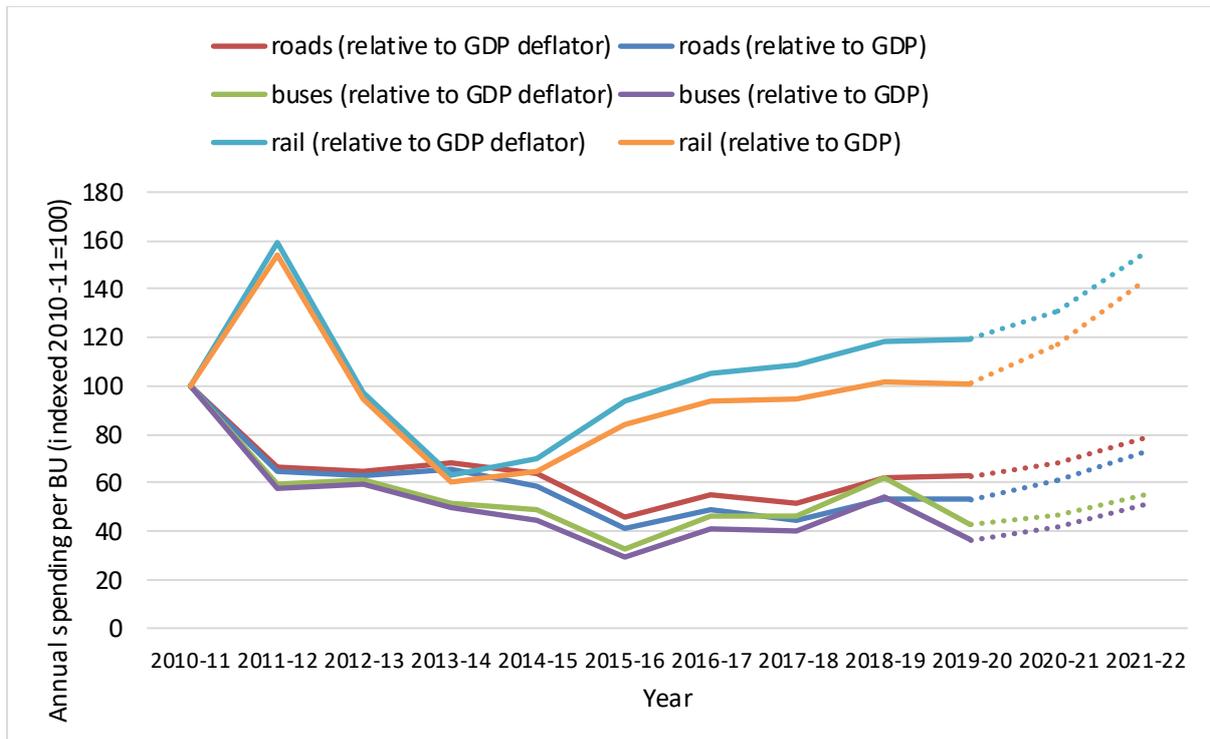
## Appendix C: Comparisons of changes in spending on each public service in Northern Ireland using GDP deflator and nominal GDP indices

This Appendix presents graphs for the other public services included in Chapter 4 which are equivalent to Figure 4.6 in the main text, which showed the growth in health spending against a baseline where health spending grew in line with the GDP deflator (i.e. constant real-terms spending) compared to a baseline where health spending grew in line with GDP (i.e. constant spending as a share of GDP).

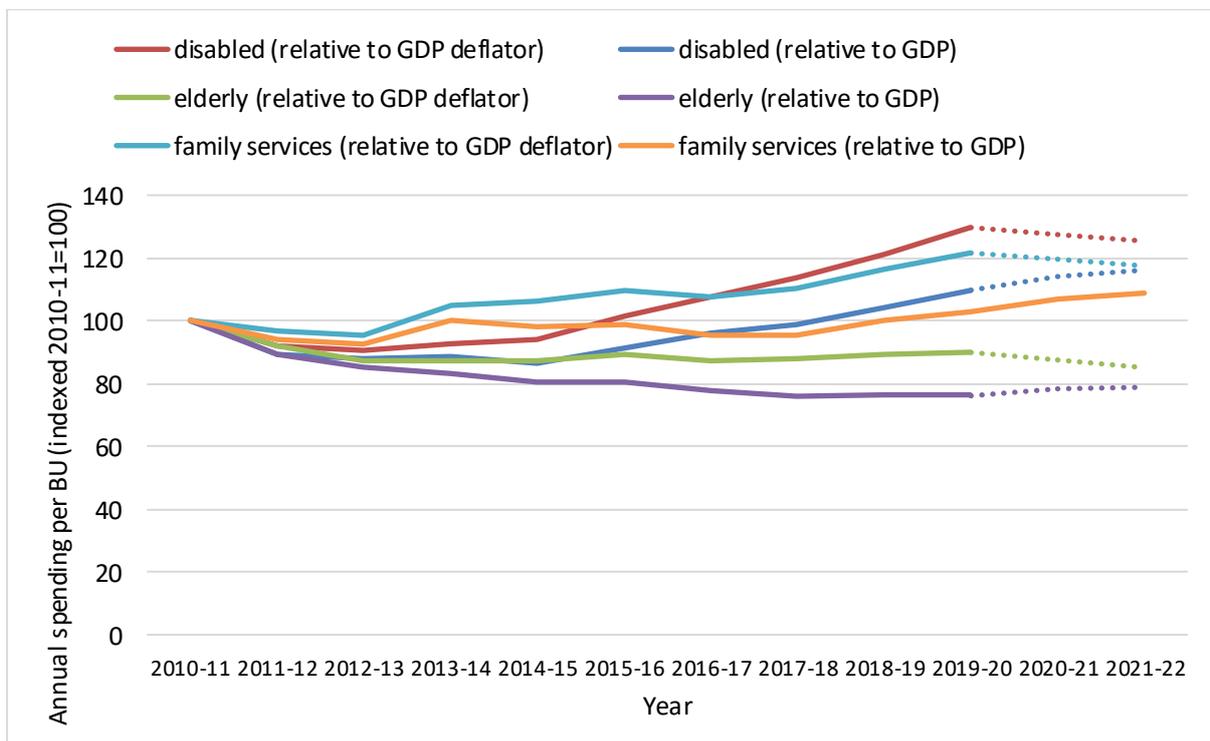
**Figure C.1 Police and social housing spending per benefit unit in Northern Ireland in real terms (GDP deflator) and relative to GDP, indexed 2010-11=100, 2010-11 to 2021-22**



**Figure C.2 Components of transport spending per benefit unit in Northern Ireland in real terms (GDP deflator) and relative to GDP, indexed 2010-11=100, 2010-11 to 2021-22**



**Figure C.3 Components of social care spending per benefit unit in Northern Ireland in real terms (GDP deflator) and relative to GDP, indexed 2010-11=100, 2010-11 to 2021-22**



**Figure C.4 Components of early years and education spending per benefit unit in Northern Ireland in real terms (GDP deflator) and relative to GDP, indexed 2010-11=100, 2010-11 to 2021-22**

