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The cumulative impact on living standards of public spending changes

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1. Introduction

This report shows the projected distributional impact of changes in public spending on protected groups in England, Scotland and Wales up to the 2021/22 tax year. It also shows the combined impact on the final income of these groups of public spending changes and of tax and welfare reforms.

The report is a companion to *The cumulative impact of tax and welfare reforms* (Reed and Portes, 2018), which presented a cumulative impact assessment (CIA) of the changes to the tax and welfare (social security) systems in England, Scotland and Wales since May 2010, including all reforms planned up to the 2021/22 tax year. It also builds on and extends earlier work carried out by, and for, the Commission between 2012 and 2015. This earlier work resulted in several publications, including: *Cumulative impact assessment* (Reed and Portes, 2014); *Making fair financial decisions: fair financial decision-making: 2014 progress report*; and *Future fair financial decision-making* (EHRC, 2012; 2014; 2015).

This report assesses the cumulative distributional impact of changes to other ‘in-kind’ public services – in particular health, social care, education, early years and pre-school services, public transport, housing, and policing. It therefore builds on and extends the Commission’s earlier work which modelled the impact of changes to spending on public services between 2010 and 2015 (Reed and Portes, 2014). This report uses more recent data on public service usage and aggregate spending on public services, as well as published plans for public spending in England, Wales and Scotland, to show the projected distributional impact of changes in spending up to and including the 2021/22 tax year for each country separately.

The report is structured as follows. Chapter 2 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 3 presents some statistics on the overall size of changes to public spending in England, Scotland and Wales. Chapter 4 looks at the detailed distributional impact of the public spending changes on households in the three countries according to their position in the income distribution and a range of other characteristics such as ethnicity, disability, age and demographic type. Chapter 5

combines the results for the distributional impact of tax and welfare reforms since 2010 from Reed and Portes (2018) with the results from Chapter 4 of this report 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). Finally, Chapter 6 offers conclusions and policy recommendations which are supplementary and additional to those in Reed and Portes (2018).

2. Methodology

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.

2.1 Aggregate spending data

Data sources

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

- Data on spending in the financial years 2010/11 to 2015/16 (inclusive) are supplied from HM Treasury's *Public expenditure statistical analyses* (PESA) publication (HMT, 2015; 2016; 2017). The particular tables used are Tables 10.5, 10.6 and 10.7, which show total identifiable expenditure on services by 'sub-function' per head of the population for England, Scotland and Wales respectively. 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 England from 2016/17 to 2019/20 (inclusive) are taken from Table 1.12 of PESA, which shows total departmental expenditure by UK Government department. Departmental spending is mapped on to functional areas of spending. In most cases, this is a relatively straightforward exercise. This is because for the areas of spending covered in this report, funding for Scotland and Wales is devolved. It is covered by a combination of the UK Government's block grants to the Scottish and Welsh Governments, and the Scottish and Welsh Government's own revenue sources (e.g. Council Tax, and a component of the income tax system in Scotland from 2018/19 onwards). Therefore, the departmental allocations in PESA Table 1.12 mainly cover spending in England only for the categories of spending considered in this report.

- Spending plans for Scotland from 2016/17 to 2018/19 (inclusive) are taken from the Scottish Government's 2018/19 draft Budget documentation (Scottish Government, 2017).
- Spending plans for Wales from 2016/17 to 2019/20 (inclusive) are taken from the Welsh Government's 2018/19 draft Budget documentation (Welsh Government, 2017).

In addition to the spending data, population projections for the years 2016 to 2022 are supplied by the Office for National Statistics (ONS, 2017). This enables the adjustment of the spending plans for England, Scotland and Wales for 2016/17 and subsequent years to take account of changes in the relevant population in each country.

Choice of time frame

Although spending plans are not currently available for years beyond 2019/20 (or 2018/19 in the case of the Scottish Government), our estimate of the impact of spending cuts in each country extrapolates the trends as far as 2021/22. This enables us to produce estimates for the distributional impacts of changes in public spending up to 2021/22 which can be combined with the tax and welfare results from the previous report (Reed and Portes, 2018) to produce an overall analysis of the impact of all reforms on 'final income' (measured as net income *plus* the value of public services used by households). The extrapolation methodology is explained in Appendix A.

Some of the analysis in this report examines the impact of cuts across two different sub-periods: (1) 2010/11 to 2015/16 and (2) 2015/16 to 2021/22. The first of these sub-periods corresponds to the actual data on spending per head in Tables 10.5, 10.6 and 10.7 of the PESA data, while the second sub-period includes the period covered by the spending plans.² This classification has the benefit of mapping on to the time period classification used in Reed and Portes (2018). This used a three-period classification which corresponded to the three Parliaments since the 2010 general election: (a) 2010/11 to 2015/16, (b) 2015/16 to 2017/18 and (c) 2017/18 to 2021/22. This report uses a two-period classification rather than a three-period classification; we do not attempt to separate out the spending trends in periods (b) and (c), instead combining them into a single sub-period. This is for two reasons.

² At the time of publishing this report, the 2016/17 and 2017/18 tax years are also historical rather than future spending, but the most recent PESA breakdown of spending for England, Scotland and Wales (HMT, 2017) only gives figures up to 2015/16. For the purposes of this report, it therefore makes more sense to put 2016/17 and 2017/18 in the second sub-period of the analysis.

First, following the June 2017 UK general election, the UK Government announced that the next Spending Review will take place in Autumn 2019. This means that at present, we do not have any detailed information on how spending plans for the post-2017 period differ from those announced in the 2015 Spending Review.

Second, the Parliamentary terms and elections for the Scottish Government and the Welsh Assembly do not correspond with those for the Westminster Parliament. As far as spending in Wales and Scotland is concerned, it therefore makes more sense to divide spending data into historic and planned periods rather than using dividing lines based on UK general elections.

Services included in the model

Not all public services are included in the Landman Economics public spending model – only those which can be reasonably allocated to households based on survey data on service usage ('allocatable services'). The included services are as specified in Table 2.1 below.

Table 2.1. COFOG classifications 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*

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.

* 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 (2018) rather than the Landman Economics public spending model. In Chapter 5 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 5.2 of the PESA data shows that, across Great Britain as a whole, these ‘allocatable services’ accounted for around 75% of total public spending in the 2016/17 tax year when combined with the transfer spending payments included in the IPPR/Resolution/Landman Economics tax-transfer model used for the cumulative impact assessment of tax and welfare reforms in Reed and Portes (2018). 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.

The choice of baseline scenario

We have compared changes in spending per head and per household on each public service with a baseline scenario in which spending on each service 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 GDP (with some short-term variations).³ Most of the time, GDP grows faster than the GDP deflator, which 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, 2018). 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. We have chosen the constant real-term spending benchmark for this analysis as it seems most consistent with our treatment of the baseline scenario for benefit levels and tax thresholds in the previous CIA study of the cumulative impact of tax and welfare reforms by Reed and Portes (2018), which assumed that benefit levels and tax thresholds were held constant in real terms in the baseline scenario.

³ Over the last 70 years, the table on ‘Total government spending and receipts as % of GDP’ produced by the Office for Budget Responsibility (OBR, 2018) shows that spending has always been between 35% and 45% of GDP over this period.

Of course, while the choice of baseline makes a large difference to the overall scale of cuts, it does not affect our key results, which are about the **differential**, or relative impacts of spending changes on different types of household.

2.2 Survey data on service use

The Landman Economics public spending model uses data from household surveys on individuals' use of various public services to establish the pattern of use of those services across the household income distribution and various protected characteristics. Previous analysis in 2014 (Reed and Portes 2014, Chapter 6) used data on service use for England only. In this report we have expanded the number of datasets used so that we have a full set of service use data for Scotland and Wales as well as England. The datasets used in the latest version of the public spending model for this report are as follows:

- The **Family Resources Survey** (which covers England, Scotland and Wales) for data on the use of education, early years, housing and social care services.
- The **National Travel Survey** (which covers England, Scotland and Wales) for data on the use of transport services.
- The **Health Survey for England** for data on the use of health services in England.
- The **Scottish Health Survey** for data on the use of health services in Scotland.
- The **Welsh Health Survey** for data on the use of health services in Wales.⁴
- The **Crime Survey for England and Wales** for data on the use of police services in England and Wales.
- The **Scottish Crime and Justice Survey** for data on the use of police services in Scotland.

Appendix A of this report provides full detail of the service use variables used in each of the seven different survey datasets in the Landman Economics public spending model.

The base dataset for the public spending model is the Family Resources Survey (FRS) (which is also the main dataset used for modelling the distributional impact of tax and welfare reforms in Reed and Portes, 2018). For the services that are covered

⁴ In 2017, the Welsh Health Survey was superseded by the National Survey of Wales (NSW) which collects data on a wider range of topics, including health and social care. However, we used the WHS data for this project as the first wave of NSW data had not been released at the time we were designing the public spending analysis for Wales.

by the FRS, the data on spending per head are apportioned according to the households using the service in the four-year pooled (2012/13 to 2015/16 inclusive) FRS dataset.

For transport, health and police services, which are not covered by the FRS, we estimate regressions of each service use variable against the observable characteristics of household members using the service based on each of the datasets that does cover these services. The regressions contain explanatory variables which are also present in the FRS dataset, and the probability of use of these services for each household in the FRS is estimated by using an out-of-sample prediction for the FRS data based on the regression coefficients from the other datasets. Appendix A gives full details of the regression specifications used.⁵

2.3 Strengths and weaknesses of the modelling methodology

Modelling the distributional impacts of changes in spending on public services that are received as services in kind rather than cash transfers is intrinsically a more difficult task than modelling the impact of changes to benefits, tax credits and Universal Credit. There are several reasons for this:

- It is necessary to decide how to value the service as it is not a cash transfer payment.
- No one micro-dataset in the UK has data on usage of all services. The model therefore needs to combine data from more than one dataset to give a comprehensive picture of the impact of changes to public spending (at least, public spending which can plausibly be allocated to particular households).

In our view, the methodology used in the Landman Economics public spending model has the following strengths (some of which are newly developed since our previous research for the Commission on the distributional impacts of public spending in 2013/14):

- Spending data for the period 2010/11 to 2015/16 are based on actual PESA per head spending information from Tables 10.5, 10.6 and 10.7, while the forecasts for years after 2015/16 are based on departmental spending plans (for England) and government spending plans (for Scotland and Wales)
- Service use is based on actual survey data on usage (from a number of micro-datasets).

⁵ Results from the public services regressions are available from the authors on request.

- The model distinguishes between spending on services in England, Scotland and Wales. Given that most of the areas of public spending featured in the model are devolved competencies of the Scottish Government (in Scotland) and the Welsh Government (in Wales) this is an important innovation.

The model has the following methodological issues and potential weaknesses:

- The model assumes that the distributional impact on service users of changes to spending on a given public service is equal to the change in spending per head on that public service. 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 (notably social care and early years services in England), decisions about the precise mix and extent of services are made at local authority level. It is not possible to include local authority-level spending decisions in the model for two reasons. First, the FRS datasets do not contain local authority identifiers; and second, we do not have a database of spending categories and amounts at local authority level (which would be very time-consuming to construct).
- Absence of local authority data is also a problem for modelling the effects of population growth on spending per head: for example, we know that projected population growth in England is heavily concentrated in London and the south east, but our model only includes population projections for England as a whole.
- 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.

- With the exception of some analysis of aggregate spending ‘per head’ on services in Chapter 3, the results from the model are all presented at the household level. For the most part, it would be technically possible to use micro-data to model use of public services at the individual rather than the household 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, some of the survey data on receipt of public services for children are not as detailed as for adults (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. Trends in public spending per head and per household

3.1 Trends in overall spending per head

Figure 3.1 shows total public spending on allocatable services (see Table 2.1) per head of the population for England, Scotland and Wales from 2010/11 to 2021/22. The statistics for the period 2010/11 to 2015/16 are marked as 'outturn' data, using unbroken lines, as they are based on actual figures from the public expenditure statistical analyses (PESA). The figures from 2016/17 onwards are marked using dotted lines; they are projections from the spending plans data in PESA and in the Scottish and Welsh Governments' respective draft plans.

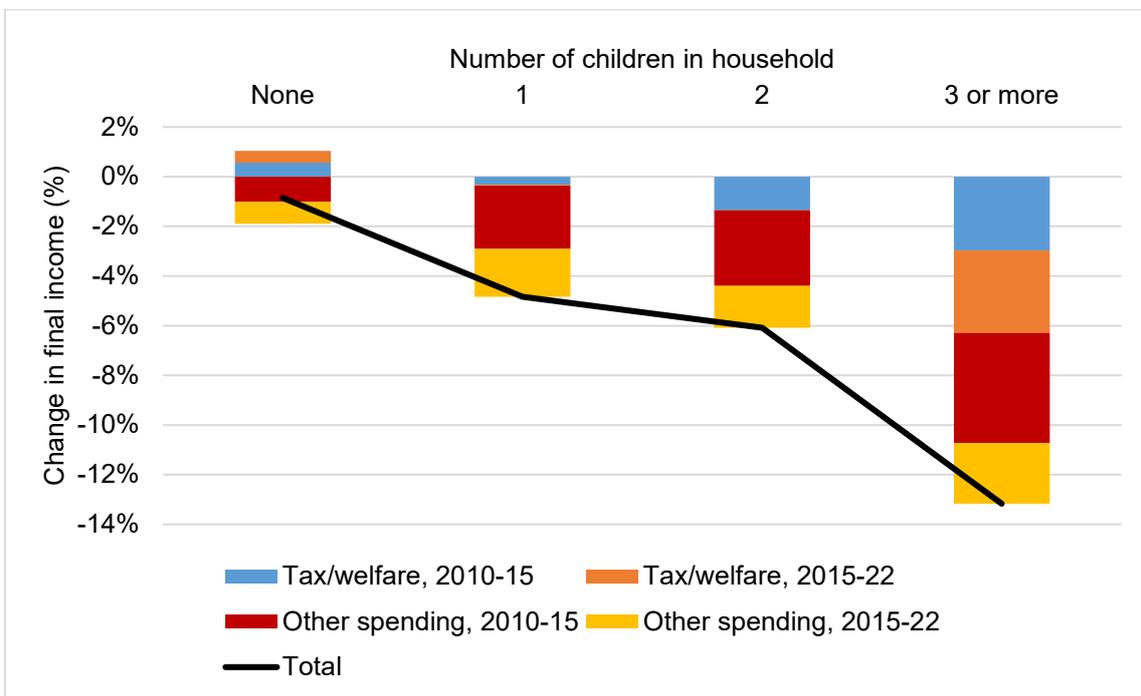
of tax and spending reforms. Average losses for lone parent households in Wales are 10.5% of final income, which is larger than average losses for this group in Scotland but smaller than average losses in England. Most of the losses for lone parent households occur due to tax and welfare reforms, with spending changes between 2015/16 and 2021/22 also having a negative impact, while spending changes between 2010/11 and 2015/16 have a small positive impact.

Couples with children and MBU households with children experience total losses averaging around 4% – tax and welfare reforms make a larger contribution to total impacts for the former group than the latter. Working-age single men with no children and single male pensioners lose between 1% and 2% of final income on average, while working-age single women without children and female single pensioners lose between 2% and 3%. Couple pensioners lose less than 0.5% of final income. Mixed-sex couples and MBU households with no children are modest net gainers overall on average.

5.4 Combined impacts by number of children in household

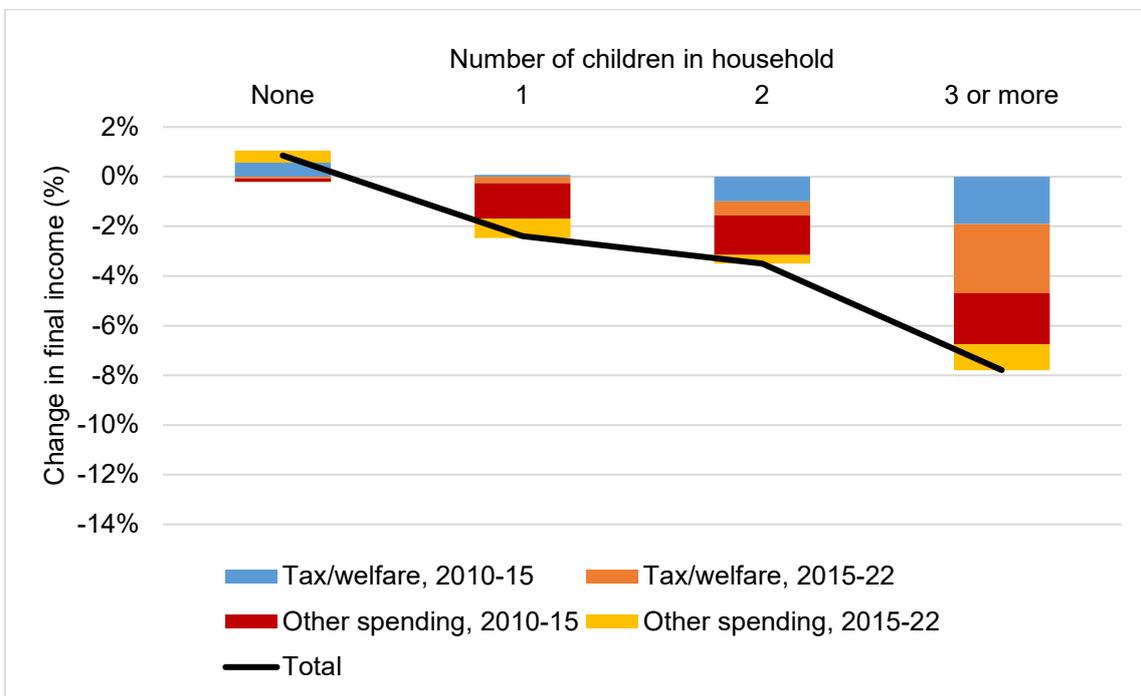
Figures 5.9, 5.10 and 5.11 show the combined impact of the tax and welfare reforms and other spending changes according to the number of children in each household, for England, Scotland and Wales respectively. Comparing the three graphs, there is a clear negative relationship between total losses (as a percentage of living standards) and number of children for all three countries. However, the size of total average losses for households with three or more children is much larger in England (average losses of around 13%) than Scotland (average losses of just under 8%) or Wales (average losses of just under 7%). Losses are also smaller for households with one or two children in Scotland and Wales than in England. This result arises largely because the changes to other public spending have a larger negative impact for households with children in England than in Scotland or Wales. Households with no children are net gainers from the total package of reforms in Scotland, and are approximately no better or worse off in total in Wales, but lose an average of around 1% of final income in England.

Figure 5.9 Combined impact of tax/welfare reforms and public spending changes as a percentage of final income by number of children in household, England



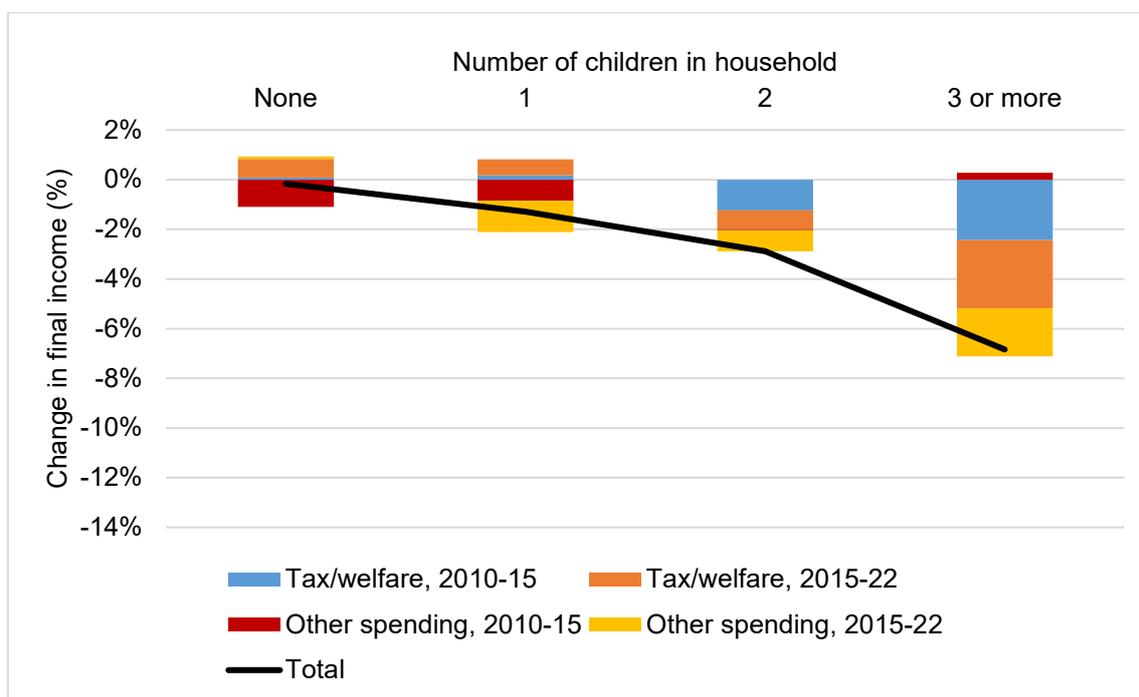
Source: Results from Landman Economics public spending model using pooled FRS data for 2012/13 to 2015/16 inclusive and other data as specified in Appendix A.

Figure 5.10 Combined impact of tax/welfare reforms and public spending changes as a percentage of final income by number of children in household, Scotland



Source: Results from Landman Economics public spending model using pooled FRS data for 2012/13 to 2015/16 inclusive and other data as specified in Appendix A.

Figure 5.11 Combined impact of tax/welfare reforms and public spending changes as a percentage of final income by number of children in household, Wales

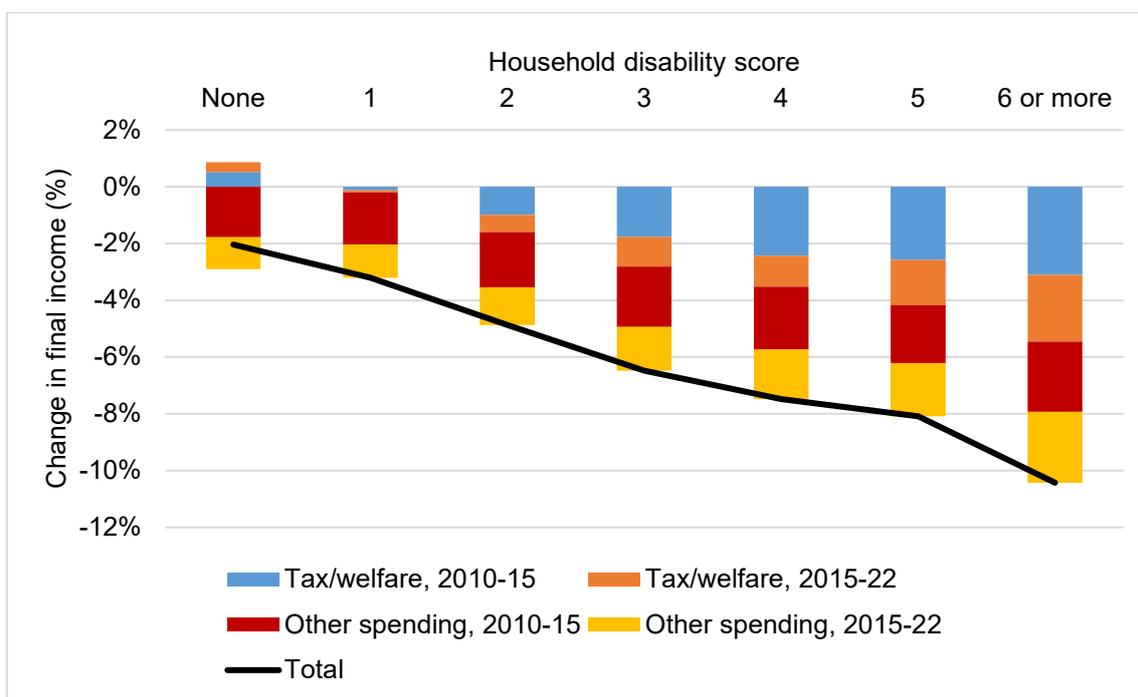


Source: Results from Landman Economics public spending model using pooled FRS data for 2012/13 to 2015/16 inclusive and other data as specified in Appendix A.

5.5 Combined impacts by household disability 'score'

Figures 5.12, 5.13 and 5.14 show the combined impacts of tax and welfare reforms and other public spending changes using the household disability 'score' measure. The results for England in Figure 5.12 show a clear gradient whereby households with a higher disability score lose a larger percentage of final income on average as a result of the combined reforms. Total average losses range from around 2% of final income for households with no functional disabilities, to 6.5% for households with a disability score of 3, up to around 10.5% for households with a disability score of 6 or more. While the distributional impact of the tax and welfare reforms is much more negative for households with a higher disability score than for households with a lower score, the distributional impact of other public spending changes is more even; households with high disability scores do lose larger amounts from the spending changes than less disabled households, but the differences are not as stark.

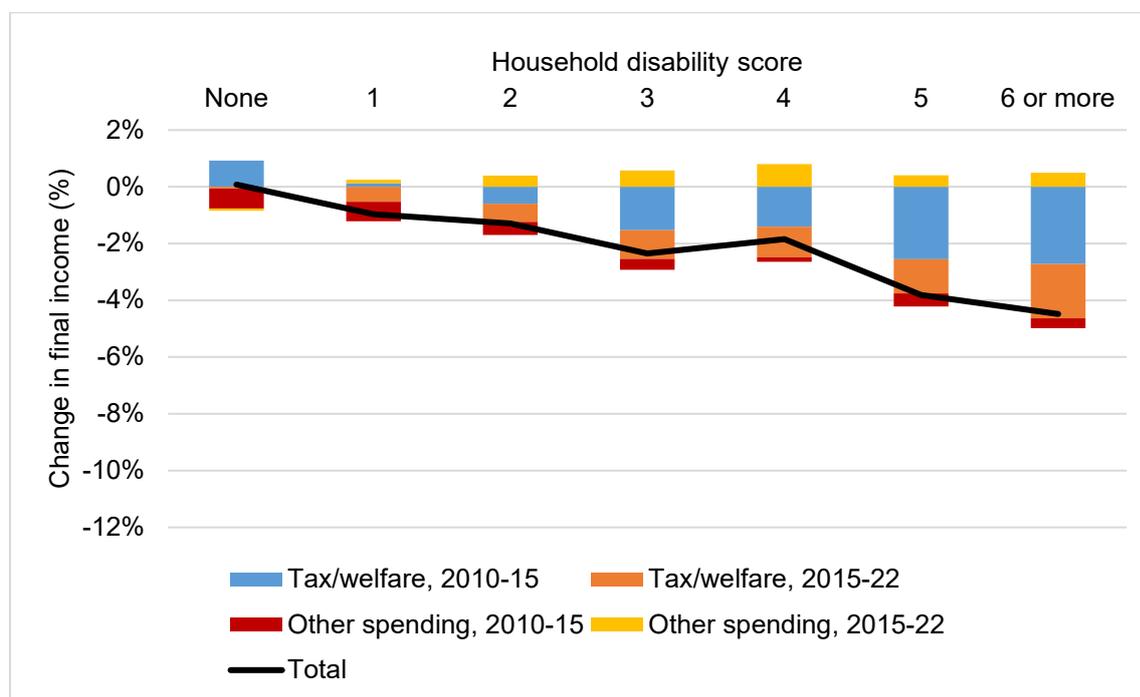
Figure 5.12 Combined impact of tax/welfare reforms and public spending changes as a percentage of final income by household disability 'score', England



Source: Results from Landman Economics public spending model using pooled FRS data for 2012/13 to 2015/16 inclusive and other data as specified in Appendix A.

Figure 5.13 shows that households with a higher disability score in Scotland lose more than less disabled households, but the differences in combined impacts by level of disability are not as pronounced as for England. Households with a disability score of 6 or more lose 4.5% of final income on average, compared with 1% for households with a disability score of 1, and approximately zero impact for non-disabled households. The patterns of distributional impacts of spending changes look very different for Scotland compared with England; spending changes over the 2010/11 to 2015/16 period have a larger negative impact for disabled households than non-disabled households, while changes between 2015/16 and 2021/22 have a small negative impact for non-disabled households, but a positive impact for disabled households (with the largest gains for households with a disability score of 3 or 4).

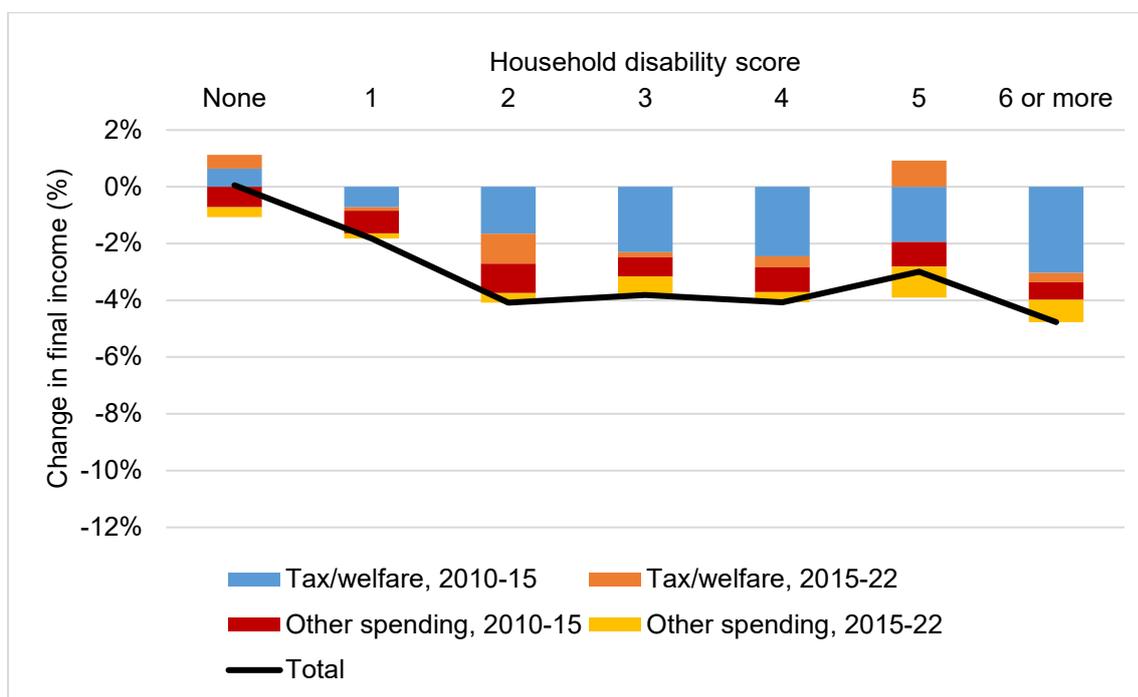
Figure 5.13 Combined impact of tax/welfare reforms and public spending changes as a percentage of final income by household disability 'score', Scotland



Source: Results from Landman Economics public spending model using pooled FRS data for 2012/13 to 2015/16 inclusive and other data as specified in Appendix A.

The results for Wales show that the overall negative impacts of the tax/welfare reforms and public spending changes are larger for households with a disability score of 2 or greater than they are for non-disabled households and households with a disability score of 1. The overall impact of the reforms for non-disabled households is approximately zero on average, with spending cuts almost exactly balancing gains from the tax and welfare reform packages. Households with a disability score of 1 lose just under 2% of final income on average from the changes, with the tax and welfare reforms and the other spending changes contributing roughly equally to the overall result. Households with disability scores of 2, 3, and 4 lose around 4% of final income on average, with the tax and welfare reforms playing a larger role than the other spending cuts. For households with a disability score of 6 or more, total losses are just under 5%, while for households with a disability score of 5, total losses are smaller (3%), due mainly to a positive impact of the tax and welfare reforms after 2015 on this group.

Figure 5.14 Combined impact of tax/welfare reforms and public spending changes as a percentage of final income by household disability 'score', Wales



Source: Results from Landman Economics public spending model using pooled FRS data for 2012/13 to 2015/16 inclusive and other data as specified in Appendix A.

5.6 Combined impacts by average age of adults in household

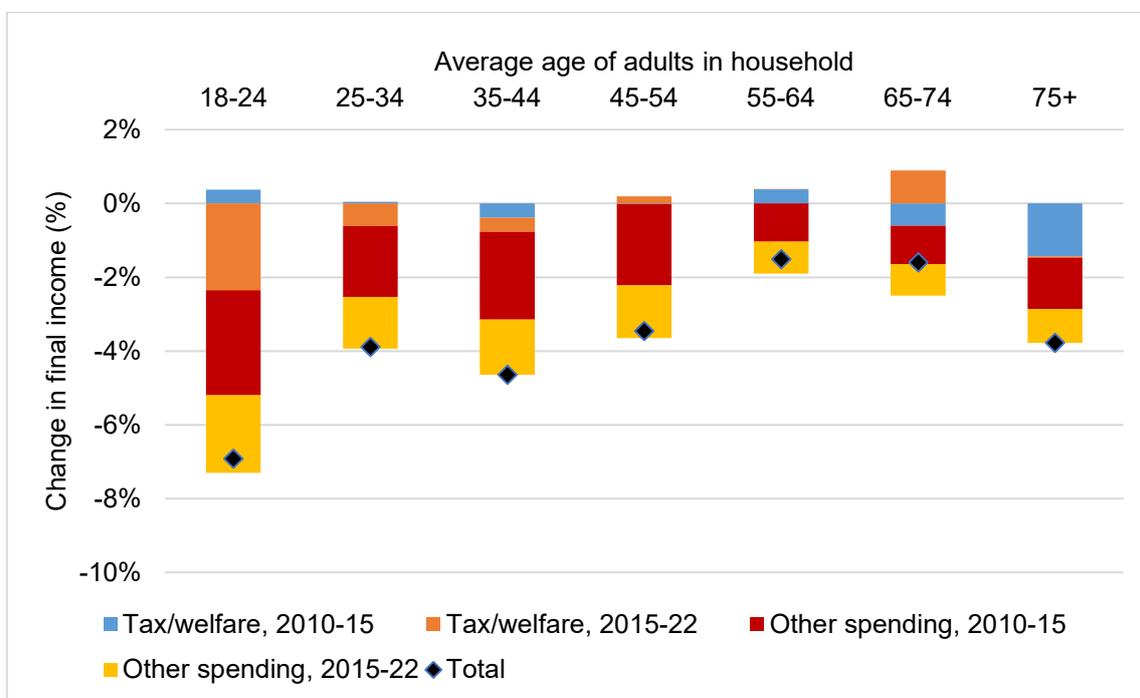
Finally in this chapter, Figures 5.15, 5.16 and 5.17 show the combined impacts of tax and welfare reforms and other public spending changes by the average age of adults in the household. The results show that households where the average age of adults is 18-24 experience the largest combined losses in England, Wales and Scotland. Their losses are largest in Wales (averaging just over 8.5% of final income), and smallest in Scotland (averaging less than 3% of final income); in England, their losses average just under 7%.

The age groups with the smallest combined losses in England are households with average age 55-64 (average losses of 1.5%) and 65-74 (average losses of 1.6%). In Scotland, both of these age groups experience slight net gains from the combined reforms, as do households with average age 25-34. In Wales, households aged 25-24, 35-44, 55-64 and 65-74 do best on average from the reforms, with average losses of between 0.8 and 1.5 per cent. Households with average age 35-44 are the

second most negatively affected group in England and Scotland, whereas in Wales, the oldest age group (75 and over) are the second most negatively affected group.

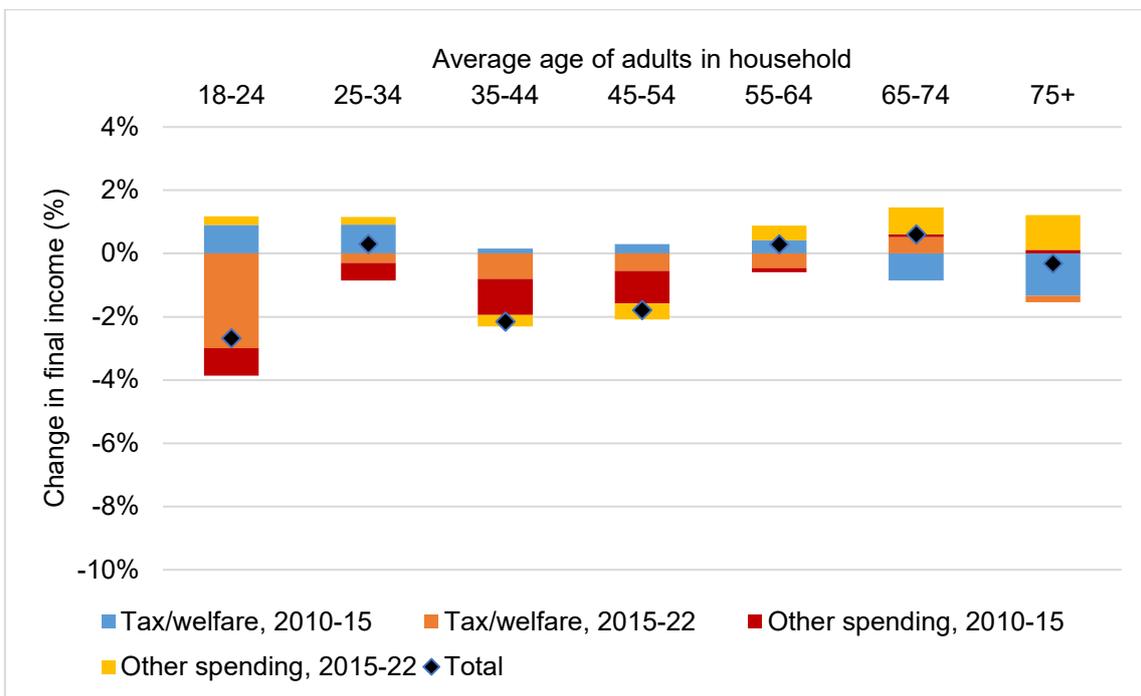
In Wales, the changes to other spending have a much more negative impact for the 18-24 age group than the other age groups, whereas in England, households with average ages up to 54 experience larger negative impacts from the spending changes than households with average ages 55 and over. In Scotland, the largest negative impact from the spending changes taken in isolation is for the 35-44 and 45-54 age groups, while households with average age 55 and over see a positive impact on final income from the spending changes.

Figure 5.15 Combined impact of tax/welfare reforms and public spending changes as a percentage of final income by average age of adults in household, England



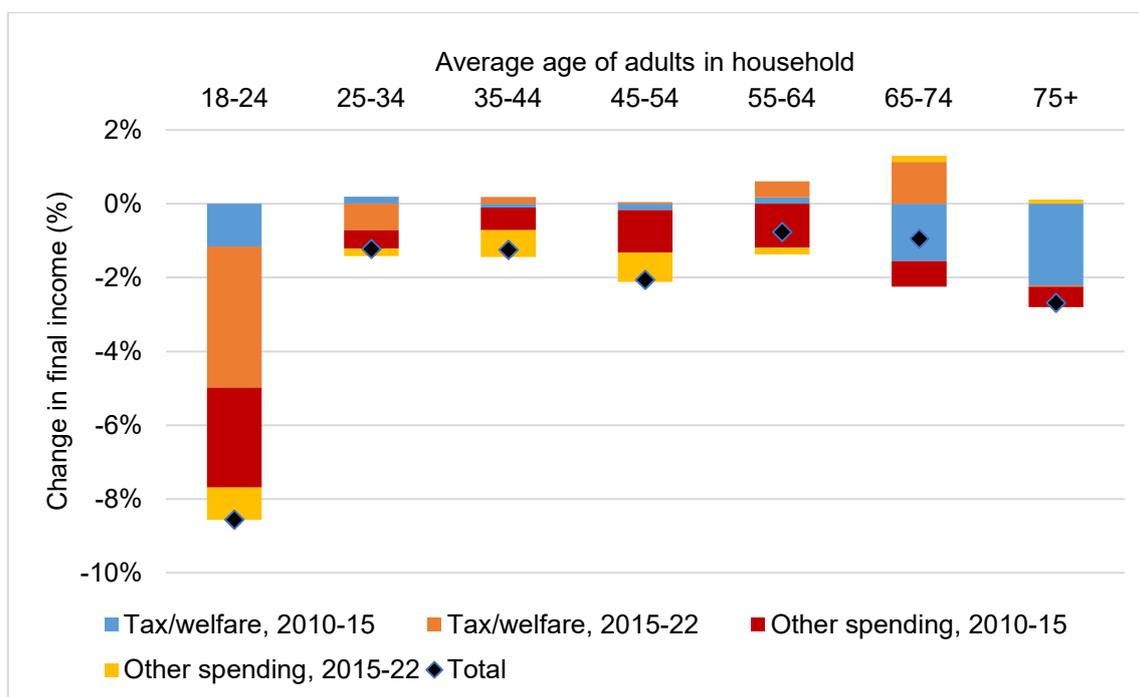
Source: Results from Landman Economics public spending model using pooled FRS data for 2012/13 to 2015/16 inclusive and other data as specified in Appendix A.

Figure 5.16 Combined impact of tax/welfare reforms and public spending changes as a percentage of final income by average age of adults in household, Scotland



Source: Results from Landman Economics public spending model using pooled FRS data for 2012/13 to 2015/16 inclusive and other data as specified in Appendix A.

Figure 5.17 Combined impact of tax/welfare reforms and public spending changes as a percentage of final income by average age of adults in household, Wales



Source: Results from Landman Economics public spending model using pooled FRS data for 2012/13 to 2015/16 inclusive and other data as specified in Appendix A.

5.7 Summary of findings

The results from our analysis of the combined impact of tax and welfare reforms and public spending changes on final income can be summarised as follows:

- Analysis by household income decile shows regressive impacts for each country, where poorer households lose more from the total package of changes (as a percentage of final income) than richer households. This regressive pattern is particularly pronounced for England, where the poorest two deciles suffer average losses of over 11% of final income compared with an impact of approximately zero in the top two deciles. In Scotland, the decile pattern is still regressive, but much shallower; the bottom two deciles lose between 4 and 5% of final income on average, compared with slight gains for the top four deciles. For Wales, the degree of regressivity is somewhere in between England and Scotland; the largest average losses are for decile 2 (around 7%), while the top four deciles experience slight gains on average.

- In England, the spending cuts modelled in Chapter 4 have a bigger negative impact on final income than the tax and welfare reforms for households in the bottom half of the income distribution.
- In England, the results by ethnicity show that Black and Other ethnicity households experience average losses of around 9% to 9.5% of final income – around three times higher than average losses for White households and households with adults of differing ethnicities. In Scotland, the largest losses are for Black households (around 6.5% on average); while White households lose just under 1%.
- Lone parent households (and especially female lone parent households) are the largest average losers from combined tax, welfare and public spending reforms by demographic type in England and Scotland. In England, average losses for female lone parents are over 19%, compared with 7.8% in Scotland (average losses for male lone parents are 14% in England and 4.8% in Scotland). Lone parent households overall lose 18.7% in England and 7.6% in Scotland. In Wales, average losses for the combined lone parents' category are 10.5%. Couples with children lose around 9% of final income on average in England, with losses of between 4% and 5% in Scotland and Wales. MBU households without children and couple households without children gain slightly from the combined reforms in all three countries.
- In all three countries, there is a negative relationship between number of children and overall average losses in percentage terms. However, average losses for households with three or more children are much larger in England (13%) than for Scotland or Wales (between 7% and 8%).
- In all three countries, there is a negative gradient by household disability score, where more disabled households have larger losses as a percentage of final income. However, the negative gradient is much steeper in England than in Wales or Scotland. Households with a disability score of 6 or more suffer average losses of 10.5% of final income in England compared with between 4.5% and 5% in Scotland and Wales.
- Analysis by average age of adults in each household shows that the group with average ages 18-24 experience the worst average outcomes in all three countries, with losses of 8.5% of total income in Wales, around 7% in England and around 3% in Scotland. Households with average adult ages of 55-64 and 65-74 experience the smallest average losses by age group in Wales and England, and slight gains in Scotland.

6. Conclusions and policy recommendations

6.1 Introduction

The final chapter of this report reviews the main findings from our analysis of the cumulative impact of changes to public spending in England, Scotland and Wales, and the implications of these changes for protected groups in England, Scotland and Wales. We then present a set of policy recommendations. These are divided into two main areas:

- Mitigating the negative impact of cuts to spending on particular services
- Improving the data used for cumulative impact assessment (CIA) of spending changes.

These recommendations should be read alongside the recommendations previously made in Chapter 10 of Reed and Portes (2018).

6.2 Conclusions

Substantial real-term cuts to public spending – whether measured per head, or per household – have already taken place in England and, to a lesser extent, Wales, with smaller cuts in Scotland. Based on data from HM Treasury's *Public expenditure statistical analyses* (PESA) and the Scottish and Welsh Government's spending plans, we forecast that spending per head on services covered by the Landman Economics public spending model will fall by around 18% in England between 2010/11 and 2021/22, compared with a fall of 5.5% in Wales and just over 1% in Scotland. By 2021/22, overall spending per head on modelled services will be 36% higher in Scotland than in England and 17% higher in Wales than in England. The discrepancy between England and Scotland, in particular, has increased significantly since 2010/11.

Measured in cash terms on a per household basis, total spending on modelled public services per household is forecast to fall by almost £1,500 per household in England by 2021/22 compared with just under £500 per household in Wales and around £200 per household in Scotland. The differences between spending trends in England, Scotland and Wales are due to a number of factors including: faster population growth in England compared with Scotland and Wales; different spending priorities for the Scottish and Welsh Governments compared with the UK Government; and more generous funding in Scotland due to Scotland-specific income tax rises.

Overall, the impact of changes to public spending is regressive by household income decile, with households in decile 2 (the second poorest decile) losing more than any other decile in cash terms in England, Scotland and Wales. Cash losses for lower deciles are larger in England than Wales or Scotland due to the overall scale of cuts in spending being far greater in England.

When cuts to public spending are combined with the changes to the tax and welfare system presented in Reed and Portes (2018) and the combined impacts are shown as a percentage of 'final income' (net income plus the value of public services used), the overall impacts of combined reforms are regressive, with poorer households losing more than richer households. This is especially the case in England, where the poorest two deciles suffer average losses of over 11% of final income compared with an impact of approximately zero in the top two deciles.

The changes in spending have a disproportionately negative impact on households when analysed according to several protected groups, in particular lone parent households, young adults, households containing disabled people and certain ethnic groups. But there is considerable variation between England, Wales and Scotland in the impacts by protected group. Our main findings are that:

- Black households experience the biggest overall spending cuts in cash terms in England and Scotland. A lack of data on ethnicity means that it is not possible to compare Wales with England or Scotland.
- In England and Scotland, households with children suffer larger losses from the spending cuts than households without children; this finding is mainly driven by cuts to schools spending. In Wales, losses for couples with children and lone parent households are smaller due to boosts to school spending per household.
- Lone parent households are the largest average losers of any demographic type from combined tax, welfare and public spending reforms in all three countries. In England, their average losses are 18.7%, compared with 10.5% in Wales and 7.6% in Scotland. Female lone parents experience greater losses than male lone parents in England and Scotland, largely because they are more negatively

affected by the tax and welfare reforms. In Wales, the sample of male lone parents is too small to analyse separately.

- In all three countries, there is a negative relationship between number of children and combined losses from tax, welfare and public spending changes. Average losses for households with three or more children are much larger in England (13% of final income) than in Scotland or Wales (between 7 and 8%).
- In England, households with a high disability score suffer much larger losses as a result of the spending cuts than households with fewer disabilities, largely because of social care cuts. In Wales, the 'disability gradient' is much shallower, while in Scotland households with more disabilities fare slightly better than non-disabled households.
- Younger households (with average age of adults in the household under 55) experience larger losses from the changes in spending than do older households (with average age of adults 55 or over). Households with average adult age 18-24 experience the largest losses from tax, welfare and public spending changes as a percentage of final income out of any age group.

As with the tax and welfare reforms analysed in Reed and Portes (2018), these reforms took place against a background of a clear and overarching UK Government commitment to deficit reduction. Cuts in spending on the services included in the modelling in this report – alongside reductions in benefits and tax credit spending – were a key component of the deficit reduction strategy, and would have been necessary to achieve deficit reduction in the absence of tax increases and/or greatly improved economic growth. However, it does not follow that the spending cuts implemented in England or Wales (and to a lesser degree in Scotland) were inevitable, nor was the impact on disadvantaged groups that has emerged.

This adverse impact on the living standards, access to social care and health care and other rights of certain groups is in contravention of the non-discrimination principle the UK committed to respect under international human rights law. Moreover, the UK is a State Party to the International Covenant on Economic, Social and Cultural Rights (ICESCR), which includes the state obligation to allocate the maximum resources available to the protection and implementation of human rights (ICESCR Art. 2(1)), including the right to public services such as health care and education. This Government duty has very important implications for decisions on budgets and public spending. It requires the Government to demonstrate that it has made every effort to mobilise, allocate and spend budget resources to fulfil people's rights (UN Committee on the Rights of the Child, 2016). The UN Committee on Economic, Social and Cultural Rights has observed that public services must be of

sufficient quality and coverage to ensure an adequate standard of living; moreover, any reductions (driven, for example, by wider economic policy considerations) should be temporary, necessary and proportionate and uphold a minimum essential level of all human rights (Office of the High Commissioner for Human Rights, 2016). As with our analysis of social security reforms in Reed and Portes (2018), the UK Government's published impact assessments do not, in themselves, indicate that these obligations have been taken into account; nor do they indicate that the Government has paid sufficient regard to the Public Sector Equality Duty (PSED) and the impact of reforms on disadvantaged groups.

The different pattern of distributional impacts of spending cuts seen in Wales and Scotland, compared with England, shows that neither the overall scale of spending cuts in England, nor their precise impact on protected groups, was inevitable. The results for Scotland, in particular, show that it has been possible to make spending choices which result in better outcomes for disadvantaged groups (defined in terms of low income, or across some, though not all, of the Equality Act 2010 protected characteristics) in Scotland than has been the case in England. This does not seem to be because Scotland is more likely to use equality impact assessments of spending changes than England or Wales. Rather, Scotland has had different spending priorities from England since 2010 and the Scottish Government's approach has had a positive impact on outcomes for households in disadvantaged groups across several protected characteristics.

As explained in Reed and Portes (2018), the UK Government's response to the recommendations made in the Commission's previous report *Future fair financial decision making* (EHRC, 2015) has been disappointing. Despite high-level commitments to ensuring that equality considerations are properly taken into account in financial decisions, and some indication that progress has been made internally on data quality and availability issues, there is little concrete evidence that the specific recommendations have been properly considered or acted upon. The published Impact on Equalities Analysis and the distributional analysis to accompany the 2015 Spending Review (HM Treasury, 2015) (at the time of writing, still the most recent set of overall public spending plans that the UK Government has produced) do not appear to represent any significant progress from comparable documents produced in 2010.

6.3 Policy recommendations

Mitigating the negative impacts of public spending changes

We recommend that the UK, Scottish and Welsh Governments:

- 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 public services. This could be done (for example) by increasing the rates of means-tested benefits, tax credits and Universal Credit, and by increasing spending on in-kind public services such as health, social care, education and public housing.
- Take into account in the next UK Government's Spending Review and the spending plans of the Scottish and Welsh Governments, the likely impact on protected groups and the impacts for poorer households of further changes in spending.
- Require that the next UK Government's Spending Review, and the spending plans of the Scottish and Welsh Governments, 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 the Public Sector Equality Duty; demonstrate that 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 Parliament, 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 UK, Scottish and Welsh Governments:

- Make available more national, regional and local information on the usage of various public services, including on social care services; legal aid services; publicly funded recreational facilities (for example, museums and galleries, parks etc.); and fire services.
- Improve the quality of data on children's usage of health services in the Health Survey for England, Scottish Health Survey and Welsh Health Survey.

- 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 Wales, increase, boost or pool samples as necessary.

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Appendix A: Detailed methodology for the Landman Economics public spending model

Survey variables used

Table A.1 below uses the subset of COFOG classifications for which services are included in the public spending model (see Table 2.1 in the main report for the full set of COFOG classifications). For each classification, the table lists the variable used as a measure of service use in the public spending model, and which of the survey datasets it is contained in.

Table A.1 Service use variables in the public spending model

COFOG classification	Service category	England	Wales	Scotland
3.1 Police services		CSEW: VICTIM (whether victim of crime or not)	CSEW: VICTIM (whether victim of crime or not)	SCJS: VICFLAG (whether victim of crime or not)
4.5 Transport	Bus use	NTS: ORDBUSFREQ (frequency of bus use)	NTS: ORDBUSFREQ (frequency of bus use)	NTS: ORDBUSFREQ (frequency of bus use)
	Train use	NTS: TRAINFREQ (frequency of train use)	NTS: TRAINFREQ (frequency of train use)	NTS: TRAINFREQ (frequency of train use)
	Road use	NTS: PRIVCAR (frequency of trips by car)	NTS: PRIVCAR (frequency of trips by car)	NTS: PRIVCAR (frequency of trips by car)
6.1 Housing development	Social housing	FRS: TENTYP2 (tenure type)	FRS: TENTYP2 (tenure type)	FRS: TENTYP2 (tenure type)
7 Health	GP visits	HSE: NDCTK12 (number of times talked to GP – last 12 months)	WHS:GPFREQ (number of times talked to GP – last 2 weeks)	SHS: NUMYEAR (number of times talked to GP)
	Hospital outpatient	HSE: OUTNPA, OUTNPA (number of outpatient visits last 12 months)	WHS: OUTPAT (outpatient in last 12 months yes/no)	SHS: OUTPAT (outpatient in last 12 months yes/no)
	Hospital inpatient	HSE: INPATNO (number of inpatient visits last 12 months)	WHS: INPAT (inpatient in last 12 months yes/no)	SHS: INPAT (inpatient in last 12 months yes/no)
9.1 Pre-primary and primary education	Free childcare	FRS: see 'modelling free childcare offer' subsection below	FRS: see 'modelling free childcare offer' subsection below	FRS: see 'modelling free childcare offer' subsection below
	State primary school	FRS child record: TYPEED=2, or (TYPEED2=3 and AGE<11)	FRS child record: TYPEED=2, or (TYPEED2=3 and AGE<11)	FRS child record: TYPEED=2, or (TYPEED2=3 and AGE<11)
9.2 Secondary education	State secondary school	FRS child record: TYPEED2=5, or (TYPEED2=3 and AGE>=11)	FRS child record: TYPEED2=5, or (TYPEED2=3 and AGE>=11)	FRS child record: TYPEED2=5, or (TYPEED2=3 and AGE>=11)
School-level education	Free school meals	FRS: SMLIT For extension of free school meals to all pupils in school years 1 and 2 see 'modelling universal free school meals' subsection below	FRS: SMLIT For extension of free school meals to all pupils in school years 1 and 2 see 'modelling universal free school meals' subsection below	FRS: SMLIT For extension of free school meals to all pupils in school years 1 and 2 see 'modelling universal free school meals' subsection below

COFOG classification	Service category	England	Wales	Scotland
9.3 Post-secondary non-tertiary education	Further education	FRS child and adult records: TYPEED2=7	FRS child and adult records: TYPEED2=7	FRS child and adult records: TYPEED2=7
9.4 Tertiary education	Higher education	FRS: (1) students in extchild record (2) students in adult record: TYPEED2=9, EDTYP=2, 4, 6 or 8	FRS: (1) students in extchild record (2) students in adult record: TYPEED2=9, EDTYP=2, 4, 6 or 8	FRS: (1) students in extchild record (2) students in adult record: TYPEED2=9, EDTYP=2, 4, 6 or 8
10 Social protection	Social care services	FRS: see 'modelling social care receipt and funding' subsection below	FRS: see 'modelling social care receipt and funding' subsection below	FRS: see 'modelling social care receipt and funding' subsection below

Key to datasets:

FRS – Family Resources Survey

CSEW – Crime Survey of England and Wales

SCJS – Scottish Crime and Justice Survey

NTS – National Travel Survey

HSE – Health Survey for England

SHS – Scottish Health Survey

WHS – Welsh Health Survey

Additional notes on modelling services using the FRS

Free childcare for 3- and 4-year-olds, and disadvantaged 2-year-olds

The baseline scenarios include 15 hours' free childcare per week per child for families with children aged 3 and 4. Two additional items of childcare expenditure are modelled in England, Scotland and Wales:

1. The introduction of an additional 15 hours of entitlement per week per child (making 30 hours in total) for families with children aged 3 and 4. This has been available from September 2016 in England, and will be available in Wales by 2019 and in Scotland by 2020. In England, all families where both parents (or the parent in the case of a lone parent family) are in work and earning at least £120 per week (but less than £100,000 per year) are eligible. Similar eligibility conditions apply in Scotland and Wales.
2. 15 hours' free childcare per week per child for disadvantaged families with children aged 2 (the qualifying criteria are given at <https://www.nao.org.uk/wp-content/uploads/2016/03/Entitlement-to-free-early-education-and-childcare-Summary.pdf> for families in England, <https://www.mygov.scot/childcare-costs-help/funded-early-learning-and-childcare/> for families in Scotland and <https://gov.wales/topics/people-and-communities/people/children-and-young->

[people/parenting-support-guidance/help/flyingstart/?skip=1&lang=en](https://www.gov.uk/guidance/people/parenting-support-guidance/help/flyingstart/?skip=1&lang=en) for families in Wales.

The allocation of free childcare to families with 3- and 4-year-old children, and disadvantaged families with 2-year-old children, is modelled using the information on family gross incomes and eligibility for the relevant benefits and tax credits in the FRS. For means-tested benefits and tax credits (and Universal Credits), eligibility is calculated using the Landman Economics tax-transfer model (TTM).

Modelling universal free school meals in Years 1 and 2

Free school meals for all children in Years 1 and 2 of state primary schools were introduced in England from September 2014 and in Scotland from January 2015. The impact of this reform is modelled by extending it to all children in state primary schools aged 7 or under in the FRS. The FRS already includes a variable (SMLIT) for take-up of free school meals for older children and this is used to assign free school meals to pupils in Years 1 and 2 in England and Scotland in the baseline scenario (and to older children in the baseline and reform scenarios). In Wales, universal free school meals have not been introduced for children in Year 1 and 2; instead, all state school children remain on the means-tested entitlements.

Pupil Premium, Pupil Deprivation Grant and Pupil Equity Fund

The Pupil Premium (introduced in England in 2011), the Pupil Deprivation Grant (introduced in Wales in 2012) and the Pupil Equity Fund (introduced in Scotland in 2017) distribute part of the education spending budget to schools using a formula based on the number of pupils receiving Free School Meals in each school. In our model, the SMLIT variable in the FRS is used to assign pupil premium spending to qualifying children in England, Scotland and Wales.

Modelling social care receipt and funding

Public funding of social care is subject to needs-testing (whereby social care recipients have to meet certain conditions of need before being awarded public funding) and means-testing (whereby the incomes and assets of social care claimants are taken into account when deciding whether the state will fund a package of care). The exact rules differ between England, Wales and Scotland and between domiciliary care (care received in the recipients' own home) and residential care (care received in a care home). Briefly, the current means-testing rules for each country for *domiciliary* care are as follows:

- In England, state-funded domiciliary care is only available to recipients with assets below £23,350. Between £14,250 and £23,350 there is a sliding scale of eligibility with recipients with assets below £14,250 receiving full support with care costs (conditional on meeting the other criteria). For homeowners, the value of a recipient's house is not taken into consideration in the asset needs-test. Care recipients' income is also taken into account when determining eligibility for public funding and the need for any co-payments towards the costs of care.
- In Wales, the general structure of the assets and income means-tests is similar to England but slightly more generous (for example, full support for care costs is available to recipients with assets below £24,000, not including house value).
- In Scotland, domiciliary care is not means-tested on income or assets.

The means-testing rules for *residential* care are as follows:

- In England, Wales and Scotland the value of assets (*including* the value of the home, for homeowners) is taken into account in the asset means-test. The maximum permissible value of assets to be able to receive full state funding for residential care is £14,250 in England, £16,250 in Scotland and £30,000 for Wales. A sliding scale for eligibility operates in England and Scotland up to a maximum of £23,250 in England and £26,250 in Scotland.
- An income means-test also operates in England and Wales (but not in Scotland).

The means-tests for domiciliary and residential care are modelled in the FRS using information on personal income and assets (including value of home where appropriate) for each survey member. For residential care there is the additional complication that we do not observe any FRS sample members in care homes because the FRS sampling frame does not include residential care homes.

Therefore, an alternative strategy for allocating public spending on residential care is used, which uses a regression for 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 FRS 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 FRS sample (combined with the results of the residential care means-tests in each country).

For domiciliary care, the needs-test is simulated by using information on the number of hours of care received by each adult individual in the FRS sample and allocating a greater proportion of care to sample members with greater care requirements.

Regression specifications

Table A.2 below shows the regression specifications for the variables used in datasets other than the FRS. The set coefficients from each of these regressions is used to calculate a predicted probability of receiving each type of service based on the characteristics of FRS sample members, via a process known as ‘out of sample prediction’. Full regression results are available from the authors on request.

It should be noted that, in order to provide maximum flexibility in the specification of service use between countries, where a dataset covers more than one country, the regressions are estimated separately for each country. So for example, the regression for police services is estimated separately for England and Wales.

Different types of regression specification are used according to the specification of the dependent variable:

- logit (binary)
- negative binomial (number of uses of service in a fixed time period, e.g. 12 months)
- interval regression (banded data).

Table A.2 Regression specifications for non-FRS service use variables in the public spending model

Service	Dataset	Dependent variable	Control variables	Regression type
Police services: England and Wales	CSEW 2015-16	Whether victim of crime in last 12 months	Gender Family type Age (x gender) Ethnicity Labour market status Health-limiting condition Housing tenure Region (in England regression)	Logit
Police services: Scotland	SCJS	Whether victim of crime in last 12 months	Gender Family type Age (x gender) Labour market status Housing tenure Region (in England regression)	Logit

Service	Dataset	Dependent variable	Control variables	Regression type
Transport: England, Scotland, Wales	NTS 2010- 16*	(1) Frequency of bus use (2) Frequency of train use (3) Number of car journeys	Gender Family type Number of children in household Age (x gender) Labour market status Household net income quintile Region (in England regression)	(1), (2), (3): Interval regression
Health: England	HSE 2013- 14**	(1) Number of GP visits in last 12 months (2) Number of hospital outpatient visits in last 12 months (3) Number of hospital inpatient visits in last 12 months	Gender Family type Age (x gender) Age of youngest child Ethnicity Labour market status Health-limiting condition DLA/PIP/Attendance Allowance receipt Household net income quintile Housing tenure	(1): Interval regression (2), (3): negative binomial
Health: Scotland	SHS 2015	(1) Number of GP visits in last 12 months (2) Whether hospital outpatient in last 12 months (3) Whether hospital inpatient in last 12 months	Gender Family type Age (x gender) Age of youngest child Ethnicity Labour market status Health-limiting condition Household net income quintile Housing tenure	(1): Negative binomial (2), (3): logit
Health: Wales	WHS 2015	(1) Number of GP visits in last 2 weeks (2) Whether hospital outpatient in last 12 months (3) Whether hospital inpatient in last 12 months	Gender Age (x gender) Number of children in household Age of youngest child Socio-economic classification Highest qualification Labour market status Health-limiting condition Housing tenure	(1): Negative binomial (2), (3): logit

Notes:

* Prior to and including the 2012 wave, the NTS survey collected data for England, Wales and Scotland, but from 2013 onwards it became an England-only survey. Therefore, the transport regressions for Scotland use data for 2010-12 only whereas the transport regression for England uses 2010-16 data.

** The HSE sample for 2013-14 was used because the HSE for 2015 does not include a household identifier variable to enable the adult interview dataset to be combined with the child interview dataset. This makes it impossible to construct variables for family type or age of youngest child using the HSE 2015 dataset.

Usage and extrapolation of public spending plans in England, Scotland and Wales

The public spending model uses data from spending plans for England, Scotland and Wales as follows:

- In England, Table 1.12 of HM Treasury (2017) shows UK Government departmental spending plans up to and including 2019-20. For the spending categories used in the Landman Economics public spending model, the relevant UK Government departments are responsible for spending in England only (for example the Department of Health and Social Care spending plans are for the NHS in England, because health spending in Scotland and Wales is a devolved competency).
- In Scotland, the 2018-19 draft budget (Scottish Government 2018) shows Scottish Government spending plans up to and including 2018-19.
- In Wales, the 2018-19 budget (Welsh Government 2017) shows Welsh Government spending plans up to and including 2019-20.

Note that the modelling in this report only includes spending plans published up to and including the end of January 2018 because that was when the current version of the Landman Economics public spending model was finalised. This means that subsequent publications such as PESA 2018 (published in July 2018) or the Welsh Government's supplementary 2018-19 Budget (published in June 2018) are not included. The model also does not include the announcement of additional NHS spending by the UK Prime Minister in June 2018 – partly because the announcement was made too late to be included in the modelling, but also because details of the precise timing of the increase, and how it is to be funded (either by tax rises, cuts to spending or additional borrowing) have not yet been announced.

Because the spending plans used in the report are only available up to 2019/20 (in the case of England and Wales) and 2018/19 (in the case of Scotland), it is necessary to extrapolate trends in public spending out to 2021/22 (which is the tax year used for the results shown in this report). The extrapolation assumes that the trend in spending in each functional category between 2015/16 and the final year of the public spending plans for each country is maintained. So for example, for schools in England, PESA 2017 suggests a real-term cut in spending per household (allowing for growth in the school-age population) of £86 between 2015/16 and 2019-20. We extrapolate this spending cut for a further two years to produce an overall

real-term cut in schools spending per household of £128 between 2015/16 and 2021/22 (this is the figure used in Figure 3.3).

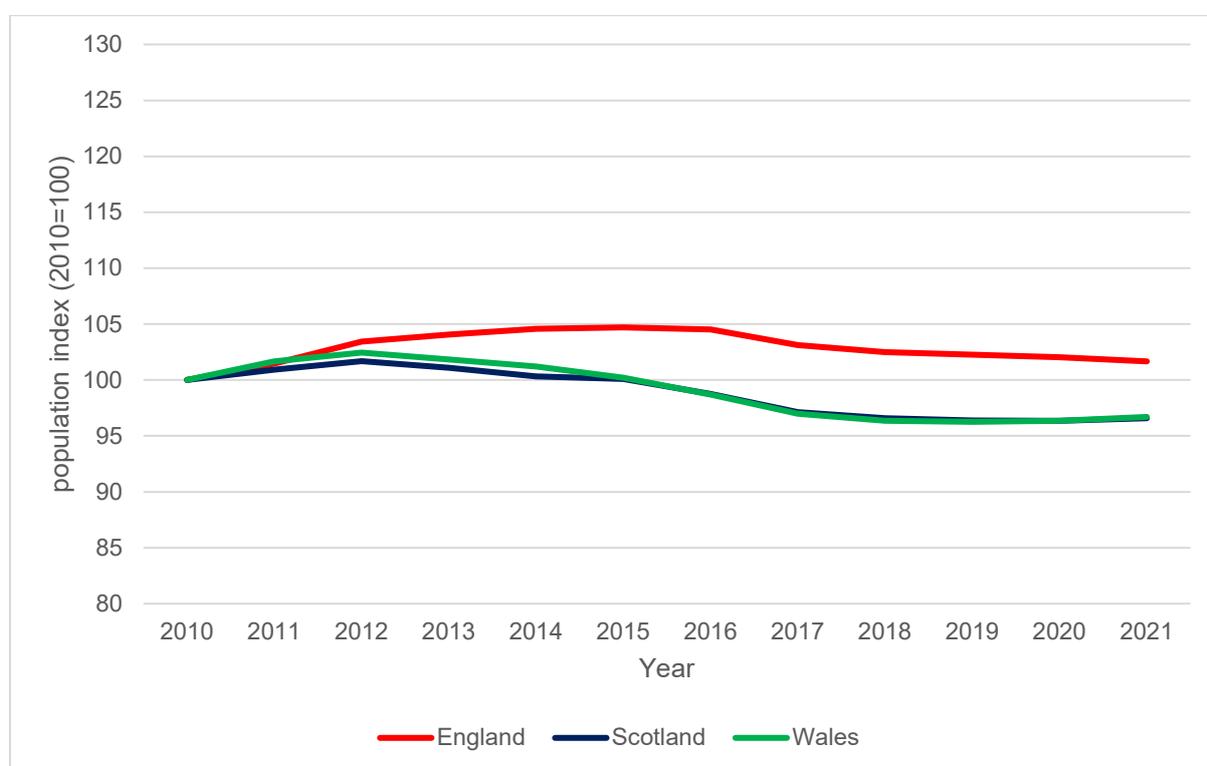
Sample size and model robustness

The results from the Landman Economics public spending model are more robust for England than for Scotland or Wales because a much larger number of households in England are surveyed in the FRS than households in Scotland and Wales. This means that the results for Wales and Scotland based on FRS data are subject to a larger degree of uncertainty than for the England results.

This discrepancy in sample sizes also applies to the NTS data used for the transport spending results, and the Welsh part of the CSEW data used for the police spending results. For other spending categories where the results for Scotland and/or Wales are based on a dedicated country-specific survey – the SHS for the Scottish health spending results, the WHS for the Welsh health spending results, and the SCJS for the Scottish police spending results – the sample sizes are broadly comparable with the equivalent English survey and the results for Scotland and Wales are no less robust than for England.

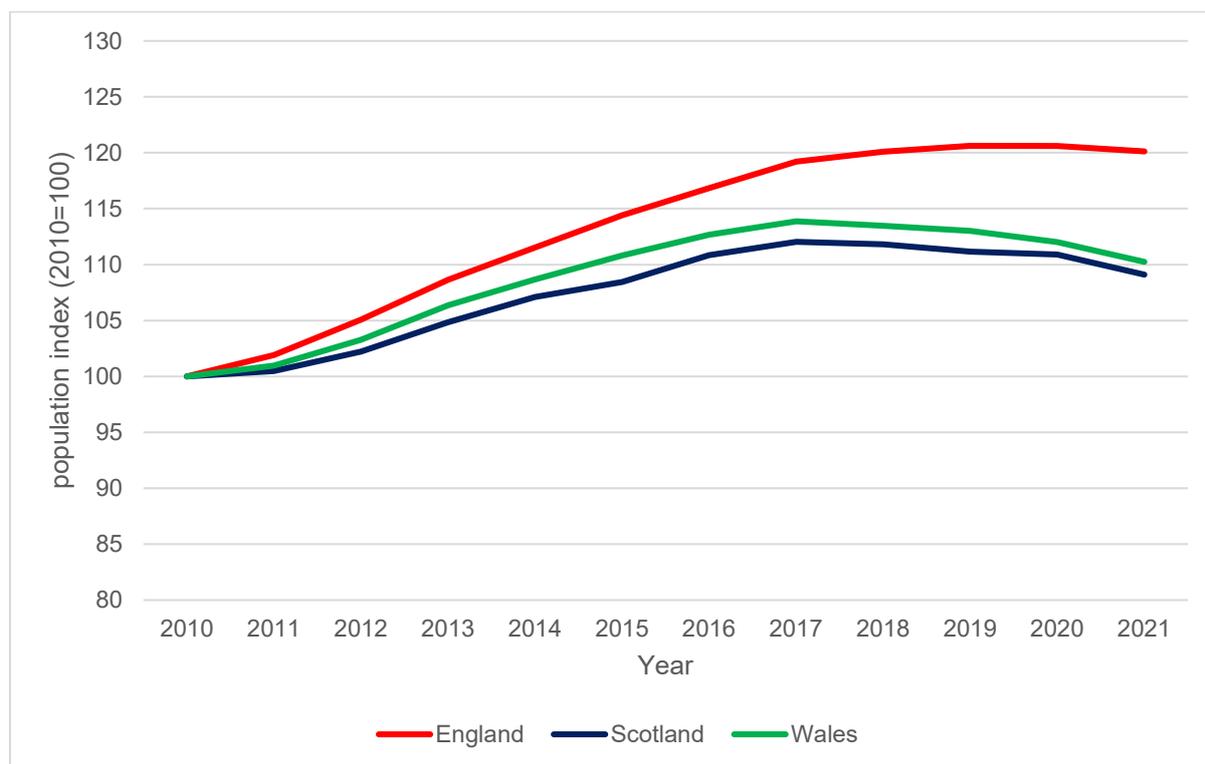
Appendix B. Population trends broken down into 5-year age bands

Figure B.1 0-4 year olds: Projected population growth in England, Scotland and Wales, 2010-2021



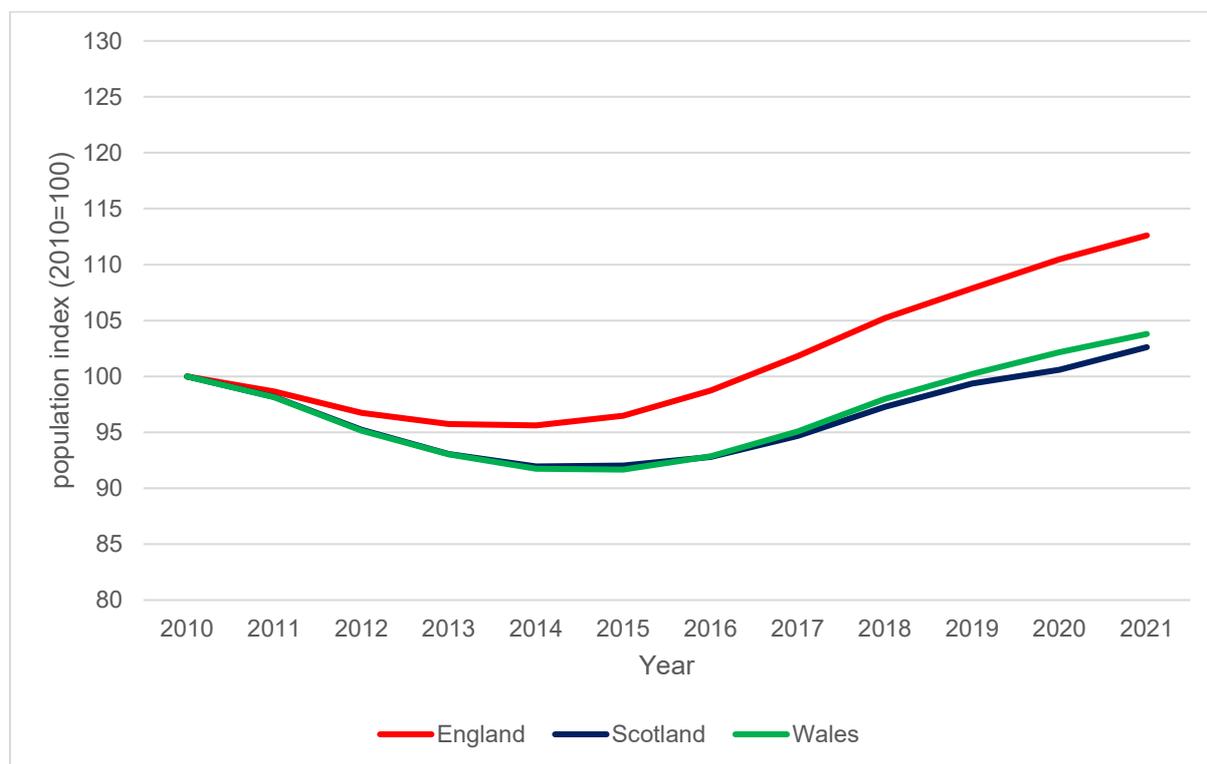
Source: ONS, 2017.

Figure B.2 5-9 year olds: Projected population growth in England, Scotland and Wales, 2010-2021



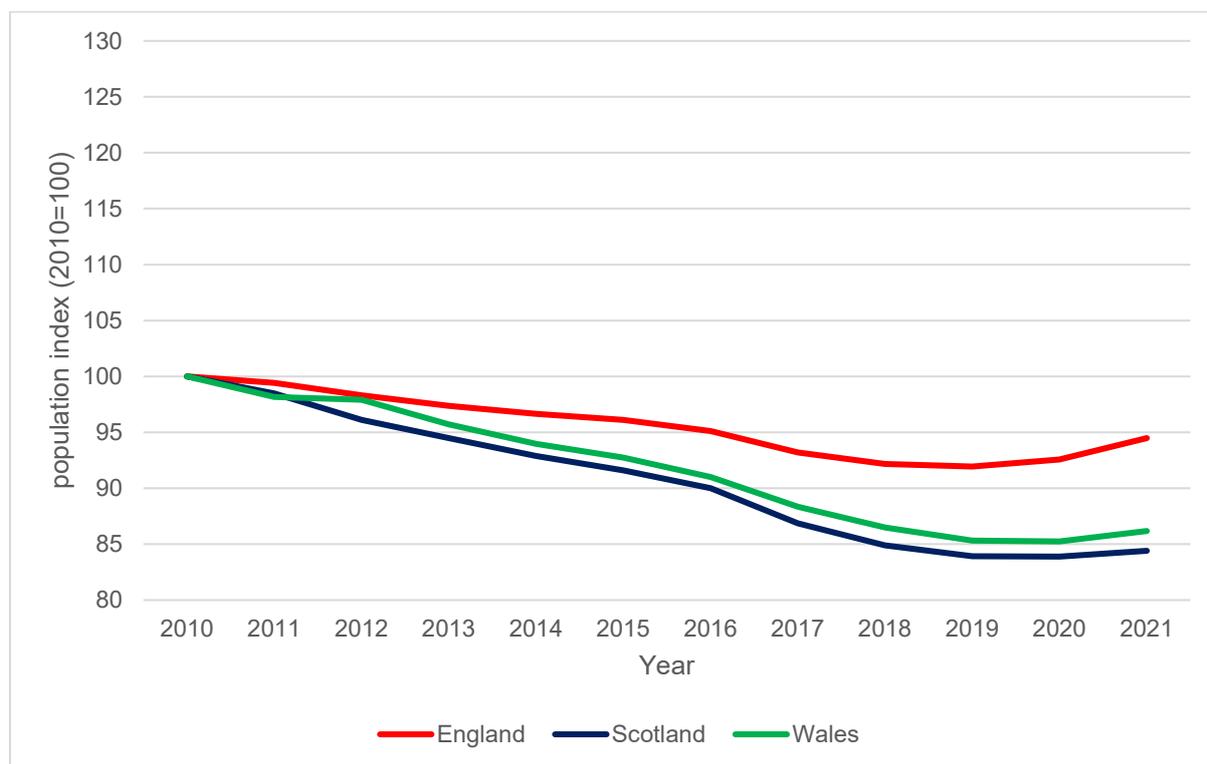
Source: ONS, 2017.

Figure B.3 10-14 year olds: Projected population growth in England, Scotland and Wales, 2010-2021



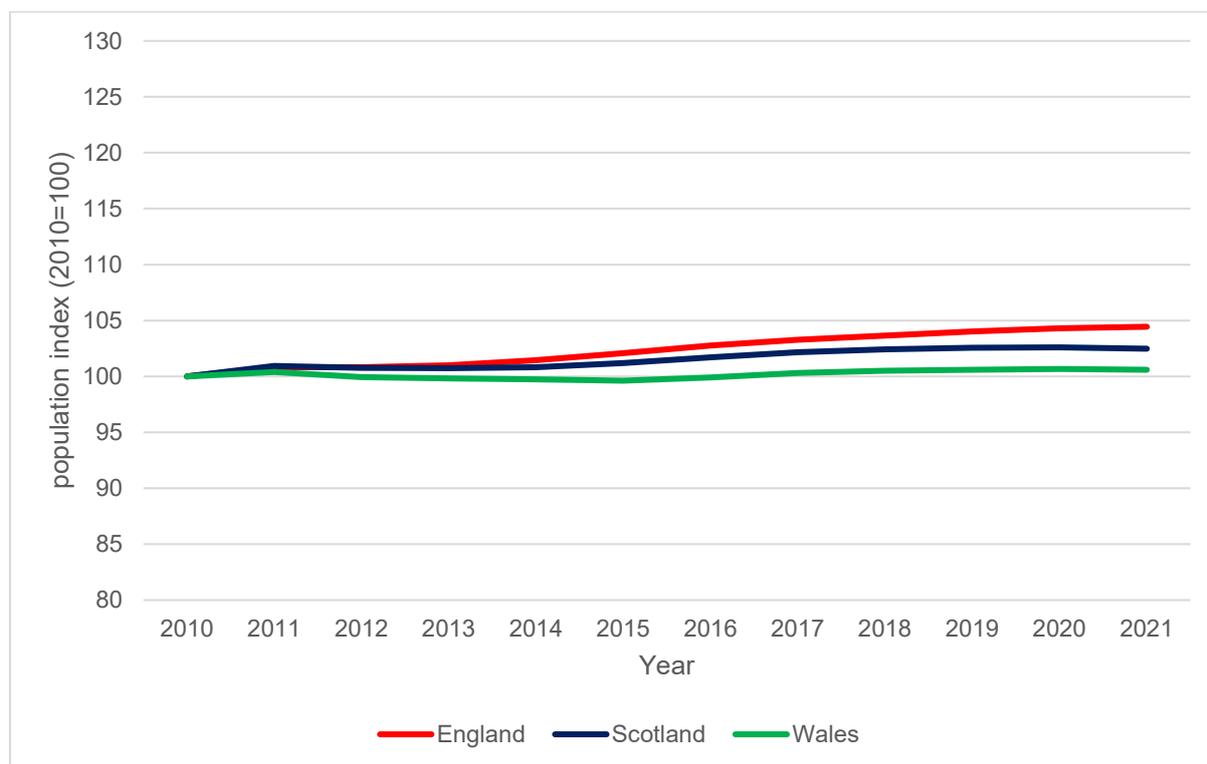
Source: ONS 2017.

Figure B.4 15-19 year olds: Projected population growth in England, Scotland and Wales, 2010-2021



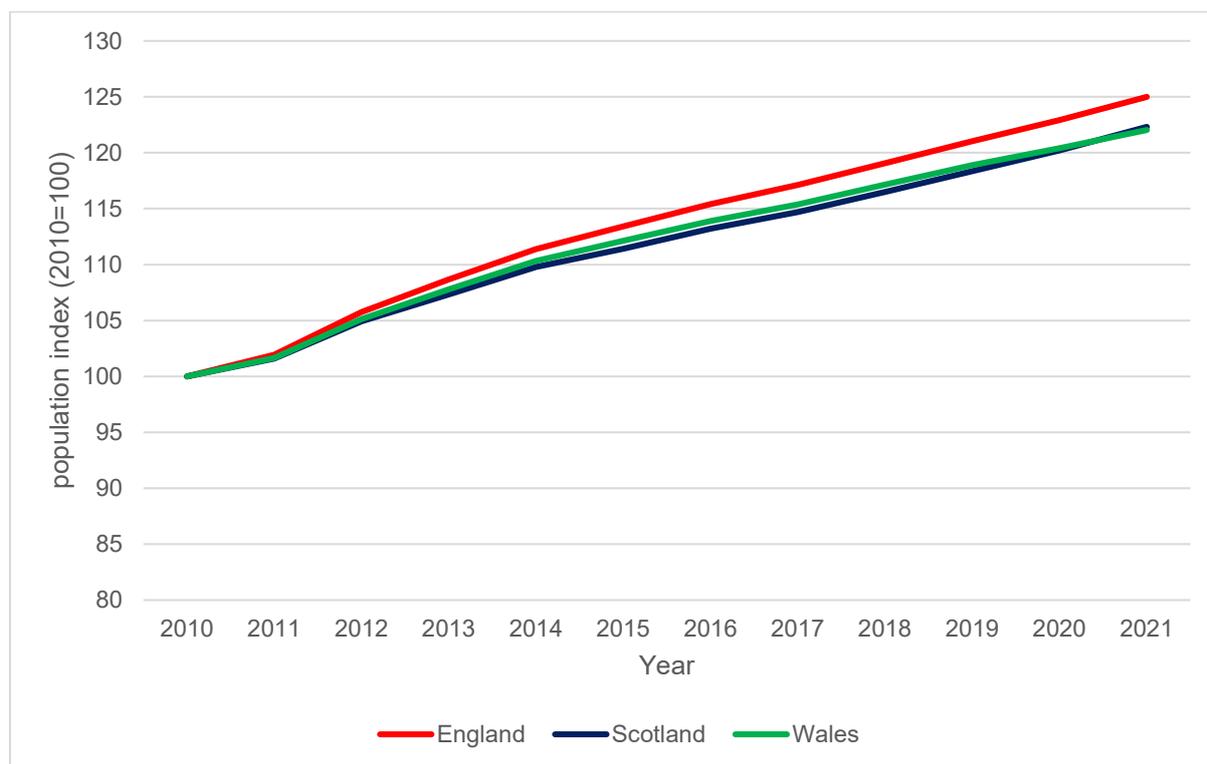
Source: ONS, 2017.

Figure B.5 20-64 year olds: Projected population growth in England, Scotland and Wales, 2010-2021



Source: ONS, 2017.

Figure B.6 65+ year olds: Projected population growth in England, Scotland and Wales, 2010-2021



Source: ONS, 2017.

Contacts

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