



Age Bias:

How government spending is skewed
against the young



By Melissa Bui, Researcher, Intergenerational Foundation
with a foreword by Anne Longfield, Children's Commissioner



The Intergenerational Foundation (www.if.org.uk) is an independent, non-party-political charity that exists to protect the rights of younger and future generations in British policy-making. While increasing longevity is to be welcomed, our changing national demographic and expectations of entitlement are placing increasingly heavy burdens on younger and future generations. From housing, health and education, to employment, taxation, pensions, voting, spending and environmental degradation, younger generations are under increasing pressure to maintain the intergenerational compact while losing out disproportionately to older, wealthier cohorts. IF questions this status quo, calling instead for sustainable long-term policies that are fair to all – the old, the young, and those to come.

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Foreword

As Children's Commissioner, I have always said that I wanted to be ambitious for all children. As we emerge from the COVID-19 pandemic, now more than ever we have to think of our children – be they our own children or other people's. Our children have lost 850 million days of in-person schooling. Their mental health has suffered due to fear and anxiety. Many have suffered the loss of loved ones to a virus they do not understand. Their playgrounds have been closed, friendships put on hold, and the chance of education through socialisation removed, with the most vulnerable falling through the gaps.

And as this research from the Intergenerational Foundation suggests, the gap in per capita spending between children and older generations has doubled over the past 19 years. This is at a time when pensioner poverty has halved from around 30% to 15%. While 1.9 million pensioners live in poverty and need vital welfare support, twice as many children – 4.2 million – are now living in poverty. We are on track to having the highest levels of child poverty since records began in the 1960s.

It can't be right to have to choose between investing in our younger and older generations but we must invest in the next generation's futures. After all, they are the economic engines for the country's future prosperity and that means "levelling up" the next generation equitably as we emerge from the pandemic. "Building back better" must mean rethinking our spending priorities to ensure the basic right of a good childhood. For that reason, I welcome this report and urge policy-makers to read it.

Anne Longfield
Children's Commissioner

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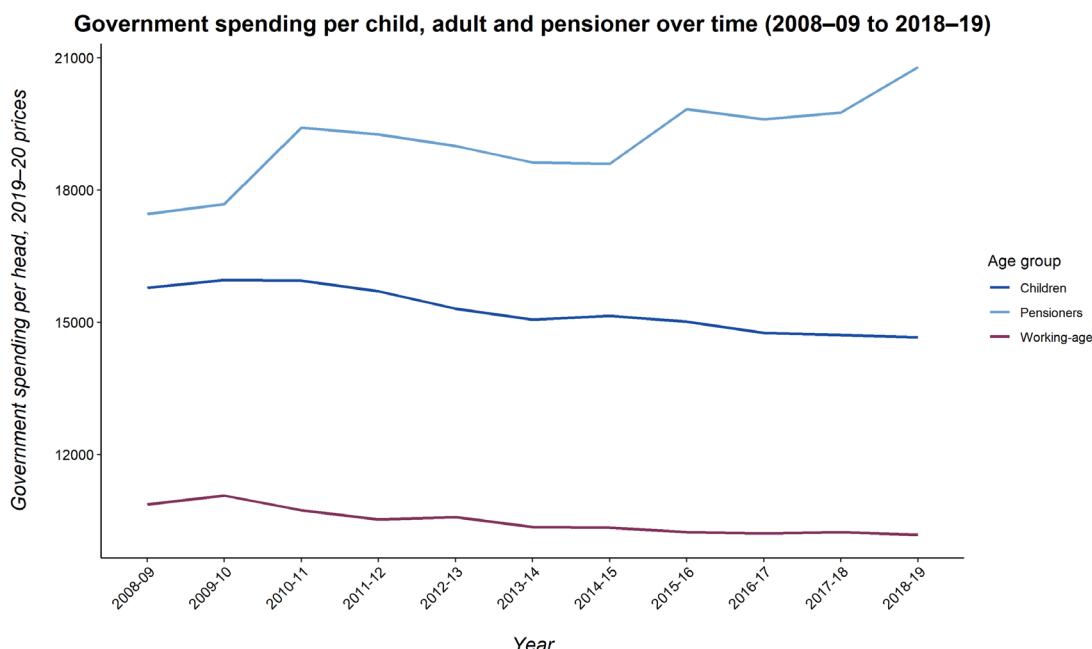
Executive summary

IF has calculated government spending on children (under-18s), working-age adults and pensioners over the course of 19 years between 1999–2000 and 2018–19.

Our findings demonstrate that in 2018–19 the government spent:

- **£14,655 on each child,**
- **£10,178 on each working-age adult, and**
- **£20,789 on each pensioner.**

Over the course of 19 years, the gap in per capita spending between children and pensioners doubled. In 2018–19, the government spent over £6,000 more on each pensioner than it did on each child.



Sources and Notes: IF's calculations using HM Treasury Public Expenditure and Statistical Analyses tables, Department for Work and Pensions Benefit Expenditure and Caseload Tables, the National Travel Survey, NHS Hospital Episode Statistics, National schedule of NHS costs and statistics on concessionary bus, light rail and tram travel from the Department for Transport website. Population figures have been taken from the Office for National Statistics population projections by single year of age. Figures have been deflated using the HM Treasury GDP deflator.
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The introduction of the triple lock in 2010 is likely to be responsible for a large portion of the widening of the gap in spending between children and pensioners from 2010–11 onwards.

The government also spends a remarkable amount of money on paying interest on public sector pension debt. In 2018–19, these interest payments totalled £18.1 billion. Our calculations show that the government spends significantly less on child benefits than on these interest payments (45% more on interest payments every year).



Pensioners have also benefited from the highest rate of growth in outpatient mental health treatment, surpassing spending on each child in 2013–14. Per capita spending on outpatient mental health treatment more than tripled for pensioners since 2011–12 and 2018–19, whereas spending on children increased by only 5.6% in comparison.

Despite the progress in government spending on children between 1999–00 and 2010–11, distribution of government spending has changed drastically for this age group over the past 10 years. While per capita spending on pensioners has continued to rise in key areas such as social protection and concessionary travel – where pensioners benefit from universal or near-universal services – benefits awarded to children on average have stagnated overall and trends in spending on education have reversed.

Moving forward, we cannot make current and future generations of children pay for the COVID-19 crisis through cuts to funding. We recommend that the government reviews public expenditure on the response to COVID–19 so far, as well as all future public expenditure, to ensure that public finances are being distributed in an intergenerationally fair manner. We urge public bodies to develop better measurement of the age distribution of government spending to improve our ability to conduct this analysis.

1. Introduction

Record borrowing during the COVID–19 crisis has intensified public scrutiny on public spending, with public borrowing in 2020–21 estimated to reach £394 billion (Office for Budget Responsibility, 2020). While awarding billions of pounds to schemes designed to protect households and businesses, the government has been criticised for not doing enough to prioritise the policy interests of children and young people. As early evidence is demonstrating, the successive lockdowns have had devastating consequences for younger generations: children are experiencing declines in mental health, and a near year-long disruption to their education, while young adults are facing the same mental health crises as well as high rates of job redundancies and falling wages (Centre for Economic Performance, 2020; NHS digital, 2020). However, recent spending reviews have fallen short on children's needs, with only a relatively small £500 million package announced in November 2020. This support package may go a small way to supporting children and young people's mental health but – as pointed out by the National Bureau for Children – provides no solution for the crisis in children's social care (National Children's Bureau, 2020).

It is also important to note that a decade of cuts to funding for services has made children and young people particularly vulnerable to the economic and mental health consequences of the COVID–19 crisis. Prior to the pandemic, young people were already having to deal with a stagnation in wages, rising housing costs and, for those earning above £26,575 a year having to repay their student loans, a 41% marginal tax rate. Previous IF research has demonstrated that younger generations were having to spend a large proportion (63%) of their weekly expenditure on essentials (Kingman, 2019a), more likely to live in "micro homes" (under 37 square metres) (Wiles, 2020) and buying their first home at a much later age than previous generations. Children's services that were already struggling prior to the pandemic have also been put under further strain over this period.

There is therefore a pressing need to understand how much the government spends on different age groups and how this has changed over the past decades. Looking at long-run trends in spending on children, working-age adults and pensioners allows us to examine how government priorities have shifted over time and whether expenditure has indeed corresponded with key indicators of need. It also provides us with an opportunity to examine public spending in a different light: how much have we historically spent on protecting the financial security of pensioners compared to that of children? Is spending on one age group more prone to cuts than others?

The government has a responsibility to make sure that needs are being met in a cost-effective and sustainable manner. At the time of writing, the government is facing legal action over its decision to award a PPE contract worth \$135 million to a company with only 16 employees without a proper tendering process (Bostock, 2020). Excessive spending of money not only takes excessive resources away from current generations, but also from those yet to be born. The Intergenerational Foundation (IF) has estimated that younger generations were already inheriting much greater levels of public debt than previous generations during pre-COVID times, with public liabilities equivalent to £74,000 per household aged under 30 in 2015 (Hanton, 2015).

This report is a comprehensive study of government spending on children (under-18s), working-age adults and pensioners between 1999–00 and 2018–19, which aims to examine the age distribution of public expenditure under the specific lens of intergenerational fairness. (Because of the inevitable lag in data availability the statistics used in the report could not include current year spending.) Our findings demonstrate that pensioners have benefited from a consistently larger and growing portion of public expenditure; the gap in government spending on each child and each pensioner has increased two-fold over the period examined and this widening imbalance cannot be explained by the ageing of the population alone.



Although our analysis examines government expenditure as a whole, our research pays particular attention to spending on benefits, education, health and transport and finds that, over the past decade in particular, spending on benefits and services for children have faced gradual cuts, while pensioners have enjoyed real increases in spending that is likely to have contributed to the lowering of pensioner poverty rates. Post-pandemic, fixing the nation's finances must not lead to children losing out on government spending in the future. We recommend that the government conducts regular reviews of the age distribution of public spending to better monitor these trends moving forward.

We have structured the paper as follows: Section 2 details why intergenerational equity matters with regards to how public funds are spent and potential reasons for why imbalances in spending arise; Section 3 contains a brief overview of the approach used to estimate the age distribution of spending in this study, which then leads on to the results. Section 4 provides policy recommendations and the conclusion is in Section 5.

2. Intergenerational equity and public spending

In the UK, levels of wealth, wellbeing, job security and income can be clearly divided along age lines. While this will be partly driven by the economic environment and differences in occupational and lifestyle preferences between age groups, public policy also has a distinct role in shaping the circumstances of different generations. For instance, eligibility for a number of publicly-funded services in the UK is currently based on age. This is important given that public funds are typically allocated on a programme-by-programme basis and, as resources are limited, some services may receive more funding than others, while some may be more vulnerable to cuts during economic downturns. It is useful to understand how this has impacted the age distribution of government spending over time. Furthermore, equality impact assessments ensure that some spending by age is protected by statute, and in periods of austerity that spending must continue however stretched government finances might be.

Your age also determines what types of rights you are entitled to as well as your obligations, which in turn influence the socioeconomic situation of different generations. The most prominent example is the national minimum wage: the wage rate which employers are required to pay workers by law differs according to the age of the employee. Under law, 16–18 year-olds must be paid a minimum £4.55 per hour, while over-25s must be paid a rate of at least £8.72 (GOV.UK, 2016). In contrast, while most workers are required to pay national insurance contributions to qualify for certain benefits, workers over the State Pension Age (SPA) are exempt from paying these contributions even if they are still working. Such age-based rules will ultimately interact with spending as one of the aims of government spending is to respond to changing needs in society.

It can certainly be argued that it is not fundamentally unfair for resources to be distributed unequally across the life course. Researchers have recognised that the age distribution of spending is not necessarily expected to be flat. Societies tend to spend more during a child's early years, when women give birth and during the education of children, and later in life due to the higher frequency of health complications older people suffer, especially in relation to physical health (Kershaw and Anderson, 2016). Although health complications also arise at younger ages, these disproportionately occur around the first years of life after birth and are much less frequent throughout the rest of one's childhood while the body is developing (Kelly, Stoye and Vera-Hernández, 2016).

As the population ages, it is reasonable to assume that an imbalance in spending will arise to accommodate that ageing process. However, previous studies testing whether demographic changes are responsible for the rise in the gap in spending between children and pensioners seem to find that population ageing only plays a small role. A study investigating the drivers behind pro-elderly biases in spending across 20 OECD countries between 1985 and 2000, conducted by Lynch (2006), found that the share of retirement-aged citizens did not explain a large portion of the variation in bias towards pensioners in public spending.

What else might explain why some governments spend more on pensioners than other age groups? Economic theories of democracies would predict that it is because policies typically reflect the interests of the median voter, who are assumed to be self-interested. With an increasingly ageing electorate, politicians would be incentivised to implement "pro-elderly regimes", such as more spending on state pensions and long-term healthcare. Earlier research by IF also suggests that young people in the UK are becoming more disenfranchised by domestic politics which is leading to a lower turnout over time, thus pushing down the proportion of the electorate that young people account for even further (Kingman, 2019b).

Lynch (2006) proposed an alternative theory referred to as the “historical-institutional” theory, which hypothesises that, rather than the presence of an ageing population itself, what drives pro-elderly bias has got much more to do with the type of welfare regime operating and what model of electoral competition is in place. During the early 20th century, welfare regimes typically fell into either the occupational or citizenship-based regime categories. The former focused on protecting labour market participants, while the latter would include non-labour participants such as children. In countries with a particularistic (where interest groups vouch for themselves and no one else) combined with the occupational welfare regime model (where existing and former labour market participants (i.e. pensioners) are protected), one would expect to find larger pro-elderly biases in public spending.

Another less commonly cited explanation involves the demographic of decision-makers. IF research has revealed that 70% of current Members of Parliament are between the age of 40 and 59 and 86% of House of Lords members are over the age of 60 (Kingman, 2020). With rapidly changing trends in technology, in the nature of work and in family structure, children are facing a much different housing market, education system, and labour market than previous generations. Having decision-makers that are disproportionately older can be argued to reduce the ability of the government to adequately respond to new challenges as it may not be able to fully comprehend the changing realities faced by younger people and may be more inclined to respond to the challenges faced by people in their own age group.

Some critics may still not see that these outcomes are intergenerationally unfair since children will in theory eventually become the beneficiaries of these spending promises once they reach the State Pension Age. However, an intergenerational injustice arises if raising fiscal commitments to older generations is done at the expense of spending on current and future generations of children. One way in which this can happen is if increasing spending on pensioners constrains the government’s ability to effectively respond to new social risks. A paper by Tepe and Vanheusse (2010) found no significant relationship between new social risks and public expenditure across 21 OECD countries. By expanding on Lynch’s (2006) work to include more less-pro-elderly social schemes, they tested statistically how the elderly/non-elderly bias in spending varied across the 21 countries over a 23-year period between 1980 and 2003. In addition to corroborating Lynch’s (2006) conclusion that demographic changes do not significantly impact social spending, their results also demonstrated that levels of new social risks in society did not have a statistically significant effect on spending on the relevant programmes. In other words, social spending was not responsive to new social risks.

Furthermore, different causes often have to compete for funding and this means that the decision of how to allocate funding should be based on cost-effectiveness, or – in current UK policy terms – “value for money”.¹ Not only does this mean that money should be allocated to services that produce the largest return for the level of resources invested, but also that any money borrowed to fulfil fiscal promises should be done under the best available terms so that the nation does not take more resources from future generations than necessary. In some areas of spending, early intervention clearly makes good sense. Research has shown that investments in early education, childcare and income supplements such as child tax credit have positive impacts on health and earnings well into adulthood and long after the child stops becoming an immediate beneficiary of that spending (Milligan and Stabile, 2011). Future public finances are also contingent on the development of a healthy, law-abiding and productive workforce, and the economic theory behind the Heckman equation² has long demonstrated that intervening early is a cost-effective way of doing so, since laying the foundation for desirable skills and habits at a young age has been shown to reduce the amount of spending needed for later interventions.

¹ See H.M. Treasury (2019) for a summary of the Public Value Framework that has been developed for public bodies to be able to maximise the value delivered from public spending.

² Invest (early) + Develop + Sustain = Gain. <https://heckmanequation.org/the-heckman-equation>

Studies comparing public spending on children with spending on working-age adults and pensioners in the UK are in limited supply and some of the most important studies so far have looked only at spending pre-2008 crisis. Through investigating the age distribution of public expenditure in the areas of education, health, social care, housing and social security, Sefton (2004) estimated that per capita spending on children was around twice as great as spending on working-age adults, but two-thirds of that on pensioners in 2001–02. He found that children had benefited most from increases in public expenditure since 1996–97, estimating that per capita spending on children had grown by 20% in real terms over the period, whereas per capita expenditure on working-age adults and pensioners grew much slower at 2% and 13%. Another paper looking at how retired households have fared compared to households with children over time found that, until 2010–11, retired households' final incomes had increased, but not because of changes in taxes, benefits or services, but rather due to a change in the original income distribution in favour of the retired, which was primarily driven by their occupational pensions (Bradshaw and Holmes, 2013).

Nevertheless, a lot has changed since 2010–11. Importantly, the past decade has been characterised by austerity, with children's services among the many programmes to have had their funds cut. An investigation into public spending on children in England between 1999–2000 to 2019–20 by the Institute for Fiscal Studies (IFS) suggested that per capita spending per child actually reached a peak in 2010, and by 2017–18 this figure had dropped by 10% (Kelly et al., 2018). Meanwhile spending on youth justice grants, which fund council youth offending teams, have tumbled from £145m in 2010–11 to £71.5m in 2018–19, according to the Local Government Association (2018) and spending on discretionary youth services and leisure-time activities for young people has fallen by a total of £90m since 2014–15, according to data on councils collected for the government by the Chartered Institute of Public Finance and Accountancy (CIPFA) (Brady, 2019).

The aim of this paper is to study the age distribution of public expenditure in the UK from the perspective of intergenerational fairness. Our approach places emphasis on investigating the imbalance in spending on different age groups over time, in order to answer questions related to whether these spending choices can be considered just from an intergenerational fairness point of view – specifically whether expenditure choices have been cost-effective and responding appropriately to new social risks.



3. Results

Our study aims to estimate annual government spending on children, working-age adults and pensioners and how this has changed between 1999–00 and 2018–19. Where the data has allowed, we have defined government spending on children as public expenditure on services or programmes that rely on the presence of a child. All other types of spending which could not be allocated were assumed to be distributed in proportion to the size of the population in each age group.

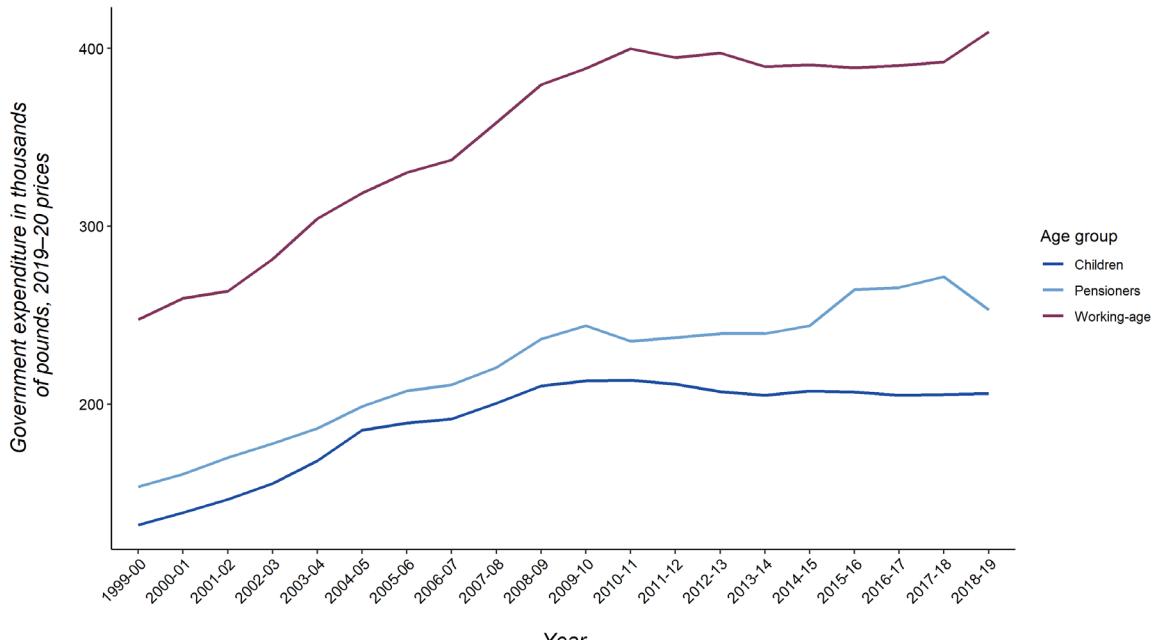
Age distribution of government spending over time

Figure 1 illustrates the overall age distribution of government spending and how this evolved over the 19-year period being examined. Between 1999–2000 and 2018–19, overall public expenditure has grown by 60% in real terms, reaching a total of £852 billion in 2018–19. As expected, spending on working-age adults is highest overall because the size of the working population is the largest. Although spending on pensioners and children increased at relatively similar rates up to 2010–11, trends for these two age groups appeared to diverge in the years following. Spending on children plateaued at around £206 billion, while spending on pensioners mostly continued to grow, reaching £253 billion in 2018–19. This means that pensioners captured 30% of the growth in public expenditure throughout the period, rising by a remarkable £99.4 billion in real terms.

Figure 1



Government expenditure on children, working-age adults and pensioners over time (1999–00 to 2018–19)



Sources and Notes: IF's calculations using HM Treasury Public Expenditure and Statistical Analyses tables, Department for Work and Pensions Benefit Expenditure and Caseload Tables, the National Travel Survey, NHS Hospital Episode Statistics, National schedule of NHS costs and statistics on concessionary bus, light rail and tram travel from the Department for Transport website. Population figures have been taken from the Office for National Statistics population projections by single year of age. Figures have been deflated using the HM Treasury GDP deflator.
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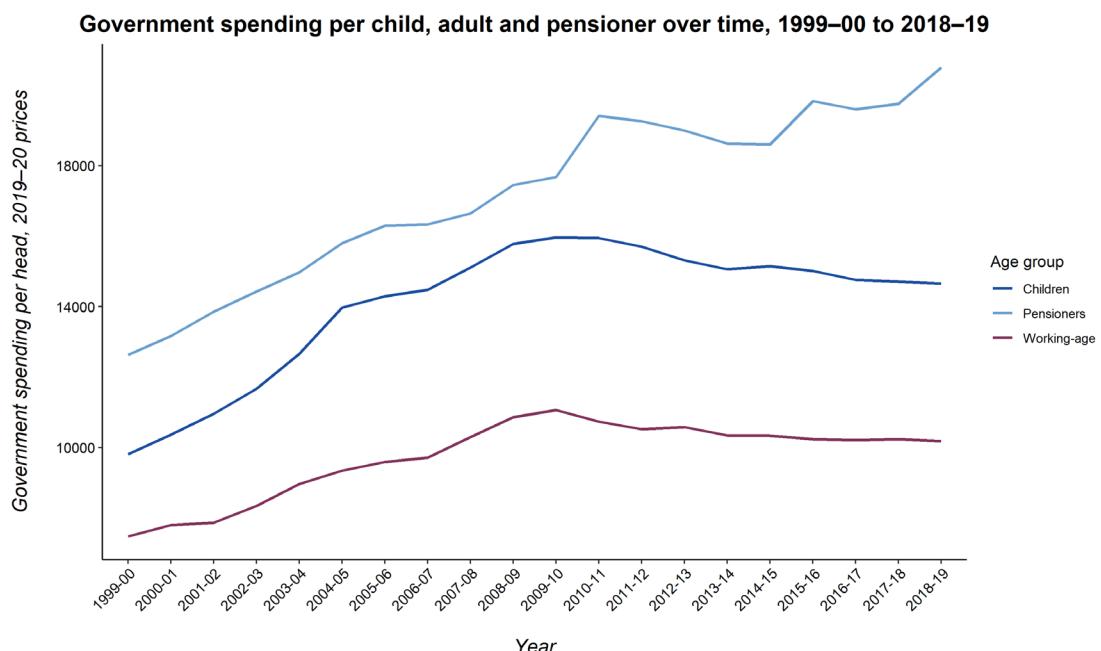
A growth in government spending on pensioners is not necessarily a sign of intergenerational unfairness. It is expected that part of this widening of the imbalance in spending will have been driven by the ageing of the population. Despite increases in the State Pension Age, the number of pensioners in the population has grown considerably relative to the population of working-age adults and children. Average life expectancy has increased from 75.6 to 79.3 for males between 2000–02 and 2016–18 and similarly from 80.4 to 83 for women (Office for National Statistics, 2019). Interacting with this trend is also a decline in the fertility rate in the UK; although an early 21st-century baby boom led to a surge in the fertility rate between 2001 and 2012, this trend reversed entirely in the years following, with the Total Fertility Rate falling down to the lowest level recorded since 2002 in 2019 at 1.65 per woman (Office for National Statistics, 2020).

However, our results demonstrate that public expenditure on pensioners grew at a much faster rate than the population of pensioners. This is clear when examining how much the government spends on each person. According to our model, in 2018–19 the government spent:

- **£14,655 on each child,**
- **£10,178 on each working-age adult, and**
- **£20,789 on each pensioner.**

Total expenditure on each child and each working-age adult in 2018–19 was therefore equivalent to only 57% and 74% of government spending on each pensioner.

Figure 2



Sources and Notes: IF's calculations using HM Treasury Public Expenditure and Statistical Analyses tables, Department for Work and Pensions Benefit Expenditure and Caseload Tables, the National Travel Survey, NHS Hospital Episode Statistics, National schedule of NHS costs and statistics on concessionary bus, light rail and tram travel from the Department for Transport website. Population figures have been taken from the Office for National Statistics population projections by single year of age. Figures have been deflated using the HM Treasury GDP deflator.
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Looking at the change in spending over time (see Figure 2), we can observe that government spending on each pensioner has always exceeded per capita spending on other age groups over the period examined. But over the 19 years, this disparity in per capita spending between children and pensioners has increased by more than two-fold; in 1999–2000, the government spent £2,800 more on each pensioner than it did on each child, compared to over £6,100 in 2018–19. While the gap between the age groups appeared to close slightly between 2004–05 and 2009–10, per capita spending on children and working-age adults stopped increasing and has been relatively unchanged since 2006–07, with spending on each child under 18 stagnating around a level of per capita spending that pensioners had already reached back in 2004–05. As a result, the gap in spending on children and pensioners grew around 43% faster in the years following 2010–11 compared to its rate of growth in the first half of the period examined.

In the following subsections, we have provided more detailed analyses of spending in the categories where we were able to access relevant data: namely, spending on social protection, health, education and transport. We have interpreted the results with the issue of intergenerational fairness in mind.

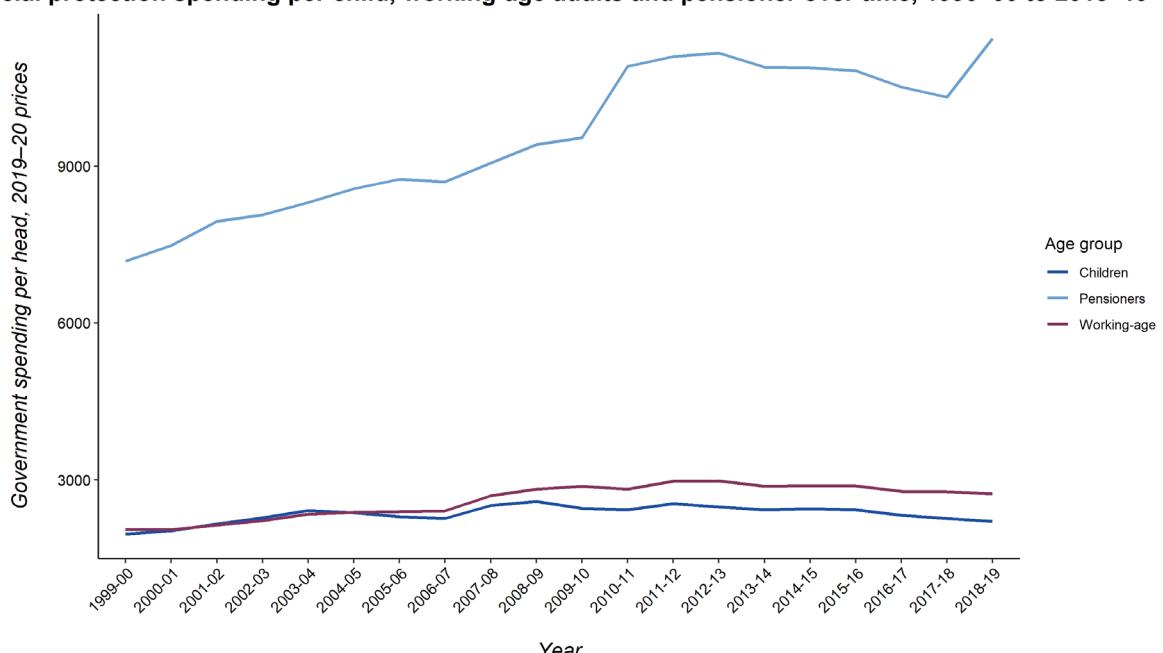
Social protection

Government expenditure on social protection has been consistently higher for pensioners than any other age group over the period examined. We find that over half (£11,440) of our estimate of government spending on each pensioner in 2018–19 can be attributed to spending on social protection alone.

Figure 3



Social protection spending per child, working-age adults and pensioner over time, 1990–00 to 2018–19



Sources and Notes: IF's calculations using HM Treasury Public Expenditure and Statistical Analyses tables, Department for Work and Pensions Benefit Expenditure and Caseload Tables and the Office for National Statistics population projections by single year of age. Figures have been deflated using the HM Treasury GDP deflator.
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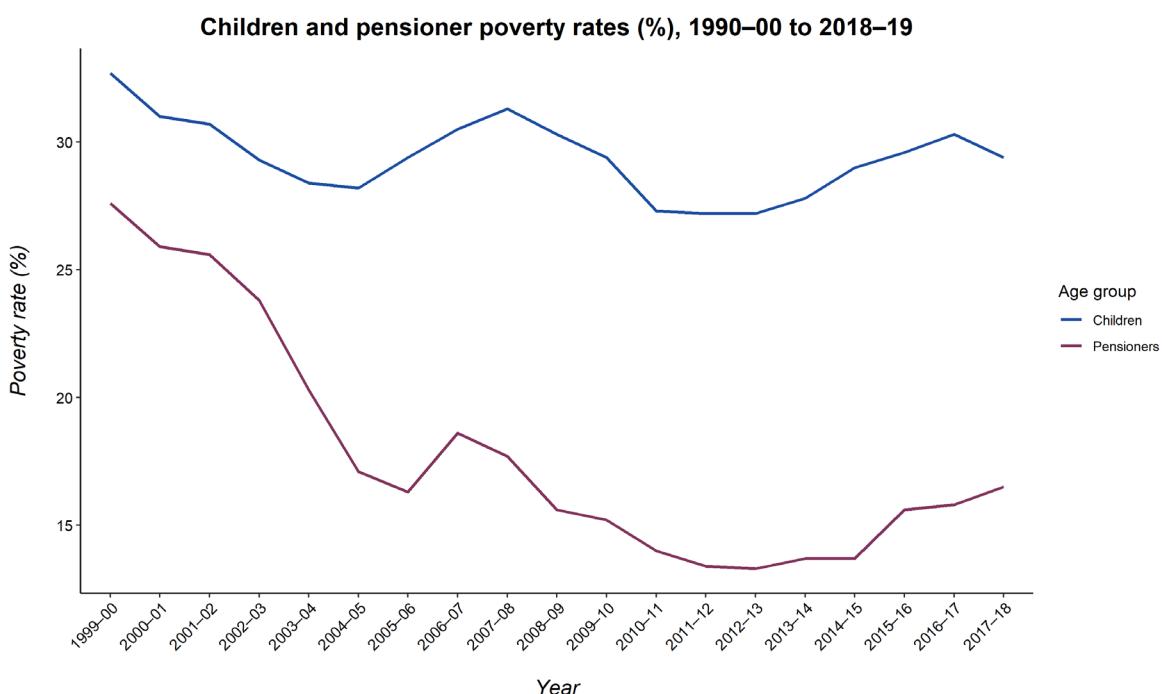


A closer examination tells us that this is primarily driven by government spending on the state pension, which accounts for £8,100 (71%) of social protection spending on each pensioner in that year. Notably, between 2009–10 and 2010–11, public expenditure on pensioners increased steeply by £1,360 per person and we find that 71% of this increase can be explained by the rise in spending on the state pension. The introduction of the triple lock in 2010, which promises rises in pension payments to be increased in line with either earnings, inflation or 2.5%, whichever is the highest, is likely to be a key factor behind this specific growth.

As already pointed out by the DWP (Department for Work and Pensions, 2020), a surprising proportion of benefits that would typically be associated with working-age adults, such as Industrial Injuries Disability Benefit, Personal Independence Payment and Disability Living Allowance, are actually awarded to pensioners. For instance, the Personal Independence Payment (PIP) is a benefit which provides economic compensation for individuals with a long-term disability over the age of 16. The government website states on their website that claimants for the PIP should “usually have not reached State Pension Age”, nevertheless our figures demonstrate that this is quite far from the truth. In 2018–19, the government awarded on average £127 in PIP to each pensioner who qualified, compared to £230 per working-age adult, suggesting that these benefits are clearly just as much of an income supplement for pensioners as they are for an individual of working age.

Contrastingly, spending on social protection for each child has stayed relatively flat over the 19-year period. While per capita spending on disability benefits for children increased by approximately 59%, child benefits and one-parent benefits were on average 10% lower. When we compare policy changes implemented on benefits for children with benefits for pensioners over this period, we can see how this divergence in spending has arisen.

Figure 4



Source: Households Below Average Income (HBAI) reports, Department for Work and Pensions.
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In 2013, the Benefit Uprating Act 2013 lowered increases in Child Tax Credit payments by uprating them below inflation (End Child Poverty Coalition, 2015). Social spending on children suffered further cuts with the introduction of the two-child limit, which restricted receipt of different types of income support for families to a maximum of two children within one household (Work and Pensions Committee, 2019). Benefits for pensioners, on the other hand, have been protected to a higher degree over the period examined, as – even before the introduction of the triple lock – increases in the state pension were attached to the Retail Price Index (RPI), which has been found to run on average 1% higher than national inflation.

As the population ages, concerns over the sustainability of the pension system have emerged, primarily because money coming in to pay for the state pension is shrinking. The state pension is paid by workers' (and their employers') national insurance contributions, which is fed into the National Insurance Fund. In the past, this fund would typically be in surplus; more would be paid in than would be paid out in benefits. Since the financial crisis in 2008–09, however, the National Insurance Fund has been shrinking in size. The Government Actuary Department (GAD) estimates that the fund will run out completely by 2032–2033, meaning that we will not have enough money to sustain pensioner and unemployment benefits from the fund alone (Government Actuary's Department, 2017).

We compare Figure 3 with poverty rates among pensioners and children, illustrated in Figure 4. We have chosen poverty rates as an indicator of need for comparison because the aim of social protection spending is to provide financial assistance to those who have low income, are unemployed, or whose earnings are constrained because of specific circumstances. Although poverty rates for pensioners fell from 18% to 11% between 2000–01 and 2018–19, poverty rates among children are approximately just as high as they were almost two decades ago at 33% (Department for Work and Pensions, 2019). The results show that spending on benefits for pensioners is increasing – despite reductions in revenue – during a time when pensioner poverty rates are reducing. Although it is not normatively wrong to increase spending when pensioner poverty rates are declining, this does seem to suggest that policy-makers have responded to child poverty rates quite differently to how they have responded to pensioner poverty.

The opportunity cost of increasing spending on certain benefits for pensioners can be made more apparent by comparing spending on different age groups at the programme level. For instance, is it justifiable that the government seems to spend more on season-specific benefits for pensioners, specifically Winter Fuel Payments, compared to Sure Start Centres, which provide year-round services for children? The flexibility of the criteria for Winter Fuel Payments means that it has been possible to receive this payment even if a pensioner lives overseas. In 2019–20, it was estimated that 38,000 individuals who received Winter Fuel Payments were actually living elsewhere in Europe (Department for Work and Pensions, 2020). These payments also seem to fill a purpose already provided by Cold Weather Payments, which cost the government £27 million in 2018–19.

Public sector pensions

Furthermore, the cost of pensions for public sector workers is increasing, leading to unnecessarily high levels of accumulated debt. Public sector pensions are funded mostly through unfunded liabilities and considered one of the most generous pension schemes in the UK. In 2019, IF discovered – by submitting FOI requests – that the number of retired public sector workers receiving high annual government pensions has more than doubled over the period of seven years between 2010–11 and 2017–18. In 2017–18, over 20,000 NHS retirees were receiving pensions of over £50,000 a year (Intergenerational Foundation, 2019). Our findings further put this issue into perspective: figures show that the government spends more per year solely on interest payments attached to



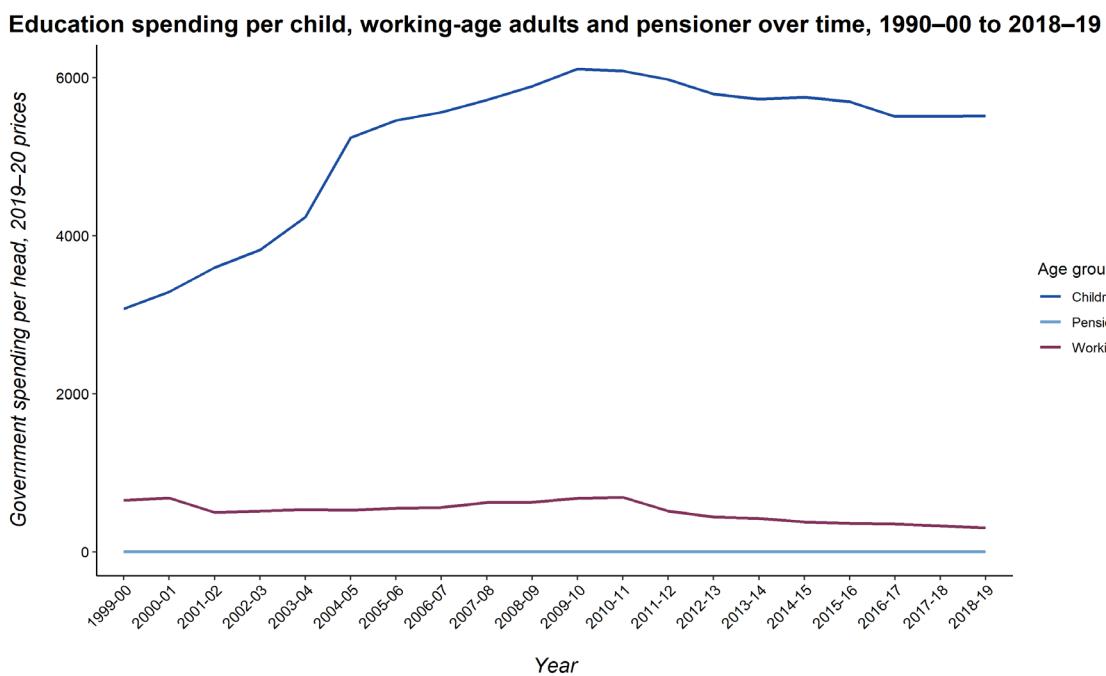
public sector pension debt (£18.1 billion) than it does on child benefits every year (£11.5 billion in 2018–19). Over the past four years, these interest payments have been on average 45% higher than overall spending on child benefits. Why is it that we are spending more on interest payments attached to public sector pension debt than we are on providing financial supplements for families with children?

Education

On the other side of the spectrum, education is disproportionately allocated to children under the age of 18. In 2018–19, the government spent on average £5,500 on education for each child. This is to be expected: investment in education has long been considered to be a more cost-effective intervention in order to raise the human capital of the population than improving skills and training for individuals once they have already entered the labour market. This understanding has been driven forward by the Heckman equation, which explains that early intervention in children's development sets up good foundations at a young age, making interventions later on more cost effective.

Trends in government spending on education per child has been characterised by a period of rapid growth from 1999–00 to 2010–11 followed by a gradual decline in spending (see Figure 5). Per capita education spending on children increased by 98% between 1999–00 and 2010–11 from roughly £3,000 to £6,000 per child, before falling by 9% over the rest of the period.

Figure 5



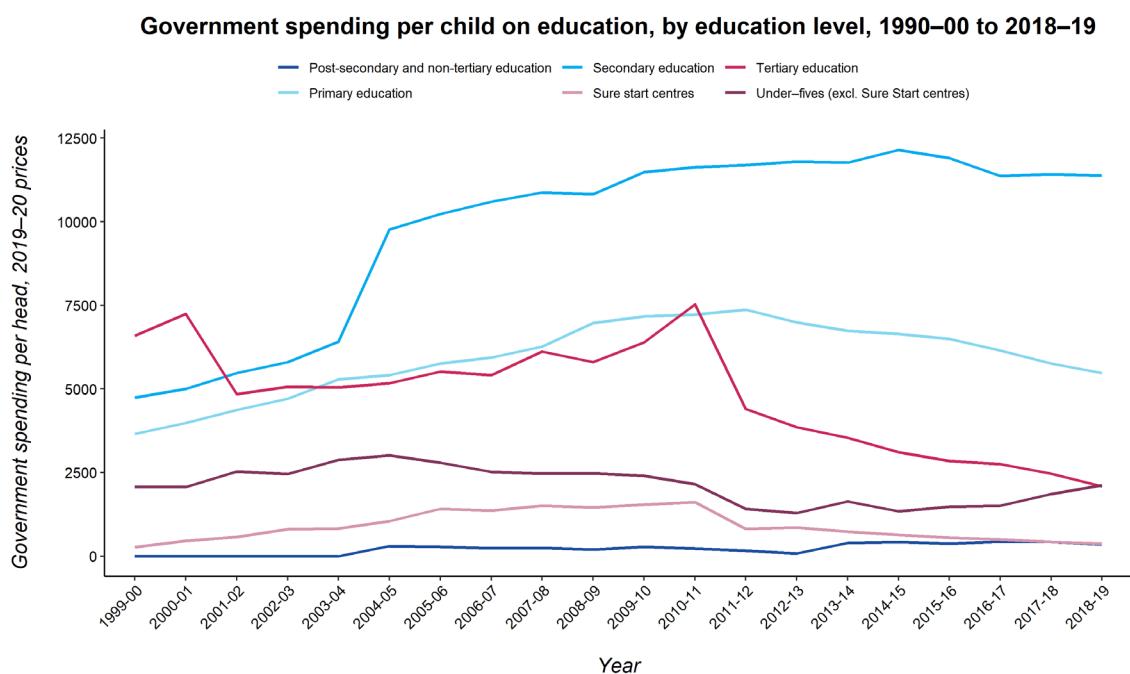
Sources and Notes: IF's calculations using HM Treasury Public Expenditure and Statistical Analyses tables and the Office for National Statistics population projections by single year of age. Figures have been deflated using the HM Treasury GDP deflator.
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The rapid growth in the first half of the period examined is likely to be the result of the steep increases in spending on education at the primary and secondary level. Figure 6 provides a breakdown of per capita expenditure on children by education level. We can see that spending on primary education per child increased by 97.5% between 1999–2000 and 2018–19, while spending on secondary schools increased by 145%.

Our results generally follow the same pattern of findings outlined in previous studies. A study by the IFS examining government spending per pupil in England found that the rapid rates of growth up until 2010 had been occurring since slightly before the first year examined in our study, in 1997–98, and this too had been driven mostly by primary and secondary education spending.

Figure 6



Sources and Notes: IF's calculations using HM Treasury Public Expenditure and Statistical Analyses tables and the Office for National Statistics population projections by single year of age. Figures have been deflated using the HM Treasury GDP deflator. We assumed that the beneficiaries of each level of education fell into the following age groups: under 5s (3-4 year-olds), primary (5-10 year-olds), secondary (11-15 year-olds) and post-secondary and non-tertiary (16-17 year-olds).

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Trends in the second half of the period examined, after 2010, however, paint a very different story. In the years following 2010–11, government expenditure on primary school and secondary school education largely stagnated, before falling more quickly from 2015–16 onwards. Funds for Sure Start Centres were also hit dramatically over this period, with per capita spending falling from £1,600 per child to £377 between 2010–11 and 2018–19.

Under-5's education was the only level of education to benefit from higher levels of expenditure in the second half of the period examined. Previous literature points to the extension of entitlement for early



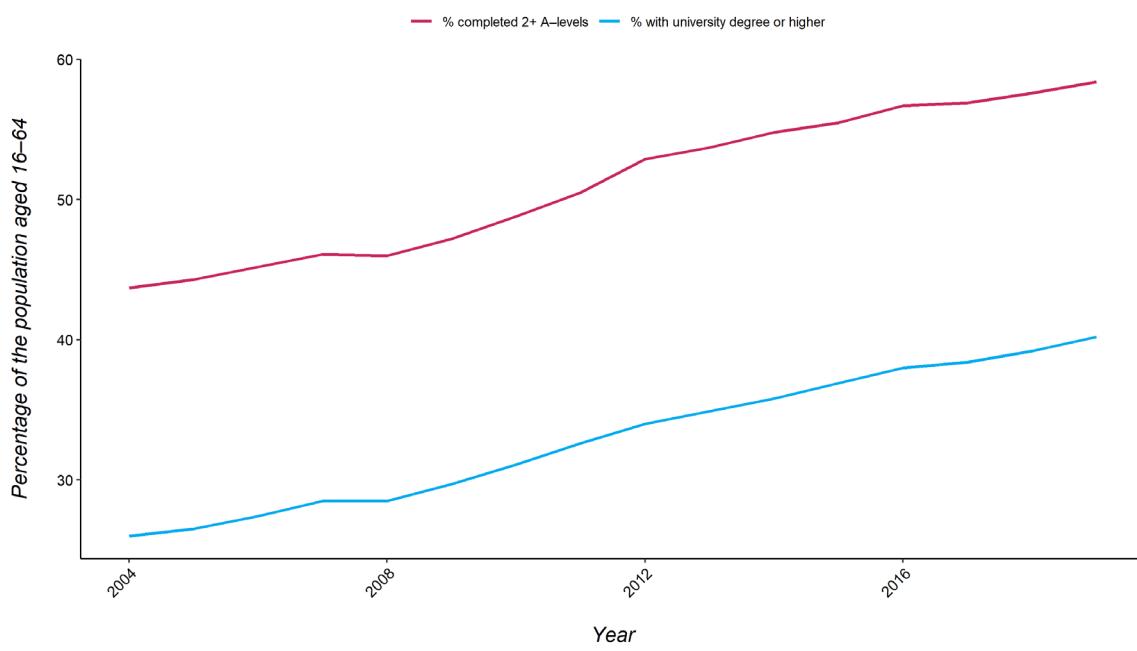
years education, first to 15 hours in 2010 and then to 30 hours for working parents in 2017, as an explanation for this divergence.

Spending on education for working-age adults, which primarily consists of tertiary education, has remained relatively unchanged according to our results. This does not seem to have impacted educational attainment, as the proportion of the population with a university degree and to have completed two or more A levels continued to rise throughout the period, as illustrated in Figure 7. Nevertheless, what these figures do not show is how an increasing proportion of the debt burden associated with spending on higher education has been gradually shifted to the responsibility of individual students because of the introduction and subsequent increases in tuition fees over time, first to £3,000 in 2006, to £6,000 in 2009, to £9,000 in 2012 and then to £9,250 in 2017.

Figure 7



Educational attainment over time, 2004–2019



Source: Annual Population Survey
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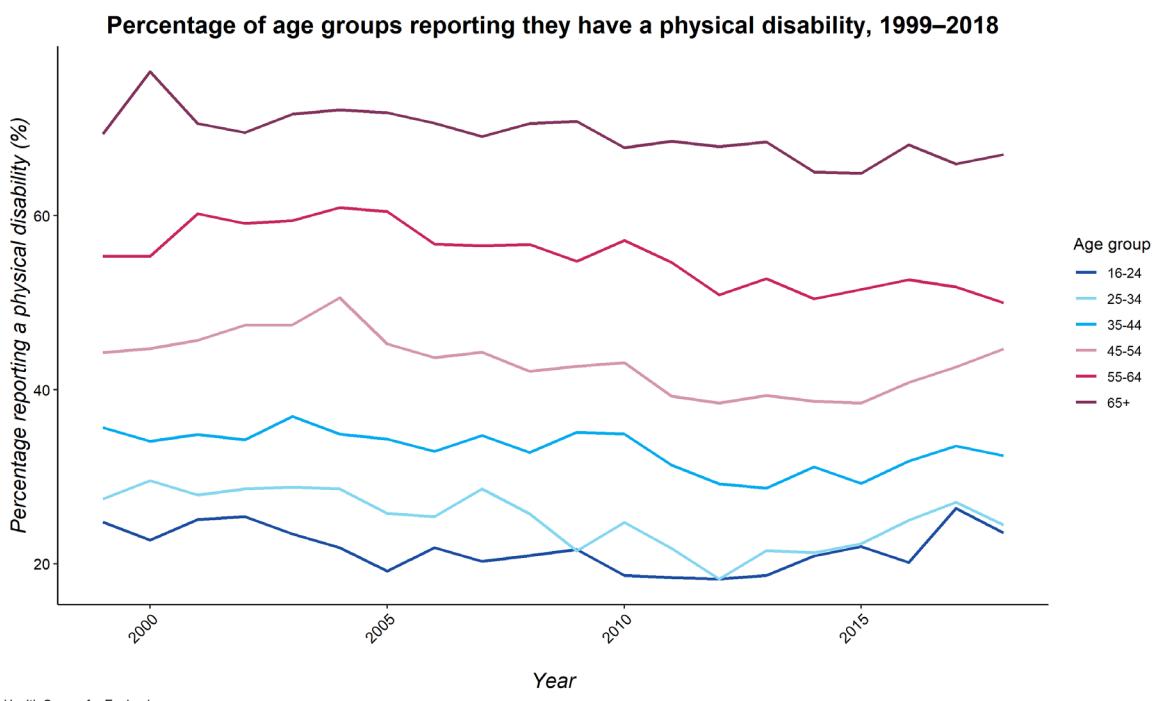
Health

Our results demonstrate that government spending on health per person increases with age, reaching just over £20,000 for each child compared to £29,000 for each pensioner. This is primarily because pensioners attend more inpatient consultations than any other age group, which account for a much larger chunk of overall health costs since it is typically more expensive to admit a patient to hospital than it is to provide outpatient care. Pensioners accounted on average for 47% of all inpatient attendances over the period compared to 12% for children and 40% for working-age adults. This very



much falls in line with observed trends in disability prevalence across different age groups. As can be seen from Figure 8, likelihood of physical disability (and thus by implication need) increases with age, rising from 22% for 16–24 year-olds to 68% for over-65s.

Figure 8

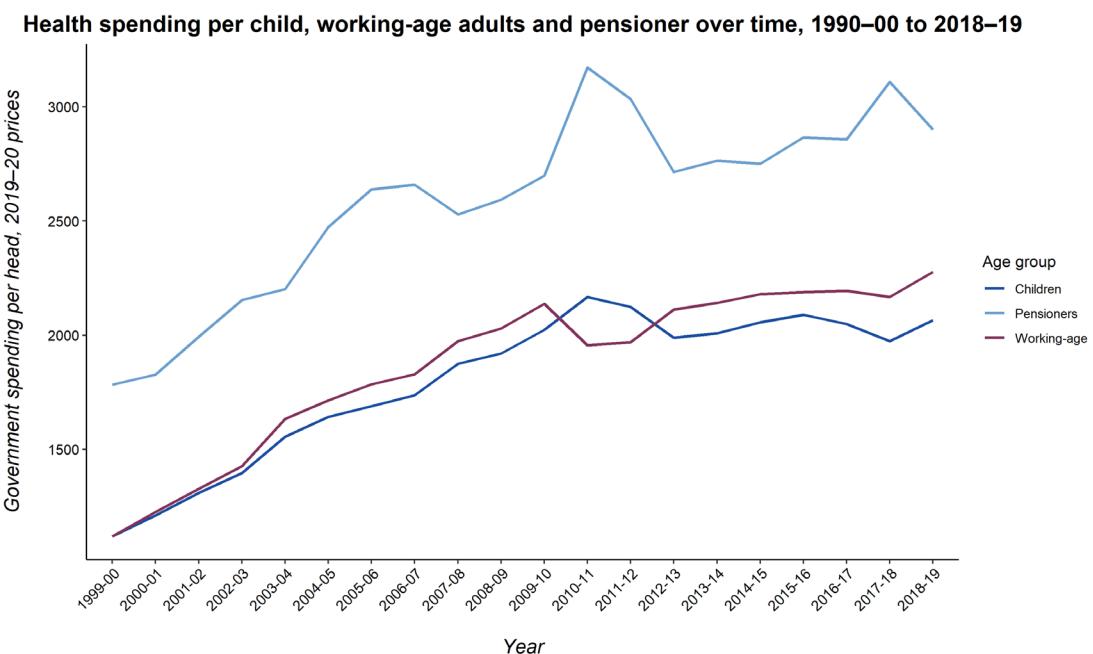


When examining how health spending has varied over time (Figure 9), we find that per capita spending on health has increased at similar levels for all age groups. These increases in health spending have coincided with marginal improvements in physical disability rates across older generations. The proportion of the population reporting a physical disability has fallen for 55–64 year-olds and over-65s since 2005–06, by 8% and 4% respectively. While physical disability rates among children have also fallen overall, we find that these rates have upticked since 2015, suggesting that children are benefiting less from these increases in spending in recent years.

An analysis of health spending from an intergenerational perspective must include spending on mental health. Because of inconsistent data, the only figures on mental health spending we were able to derive relate to outpatient mental health treatments from 2011–12 onwards (see Figure 10). Our results suggest that pensioners enjoyed the highest rate of growth in mental health spending over the 8-year period between 2011–12 and 2018–19. Per capita spending on outpatient mental health consultations more than tripled for pensioners, surpassing mental health spending on each child in 2013–14. Spending on children in contrast only increased by 5.6%. Another limitation is the lack of consideration of prescription data. We did not have access to this data. Entitlement to free prescriptions, provided on a universal basis, is only limited to individuals over the age of 60 and costs the government millions of pounds per year. During 2018–19, over £1 billion of prescription items were dispensed, of which 89% of prescriptions are provided free of charge (UK Parliament, 2019).

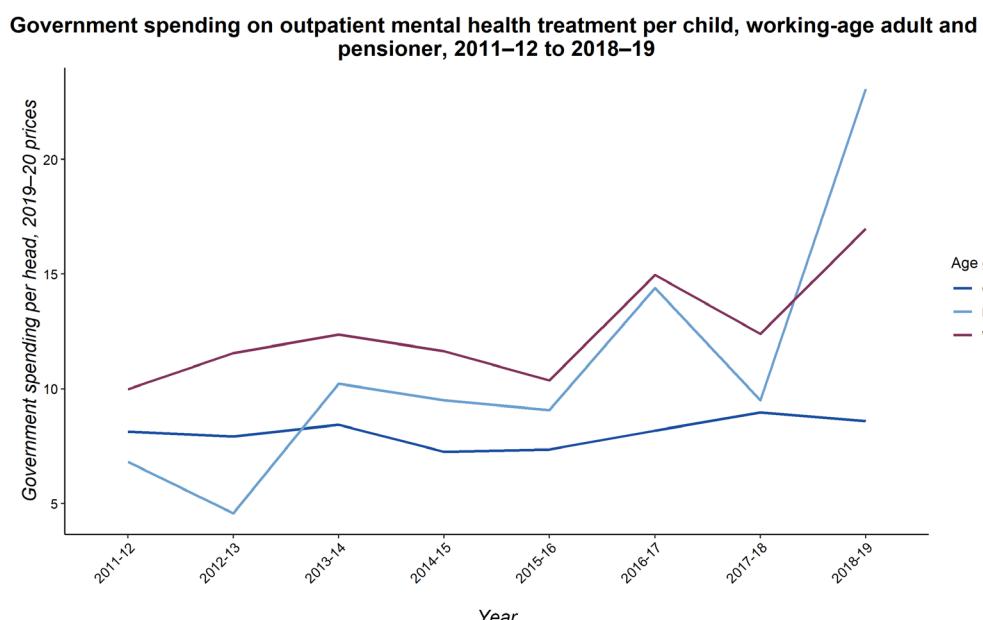


Figure 9



Sources and Notes: IF's calculations using HM Treasury Public Expenditure and Statistical Analyses tables, NHS Hospital Episode Statistics, National schedule of NHS costs and Office for National Statistics population projections by single year of age. Figures have been deflated using the HM Treasury GDP deflator.
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Figure 10



Sources and Notes: IF's calculations using NHS Hospital Episode Statistics, National schedule of NHS costs and Office for National Statistics population projections by single year of age. Figures have been deflated using the HM Treasury GDP deflator.
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Transport

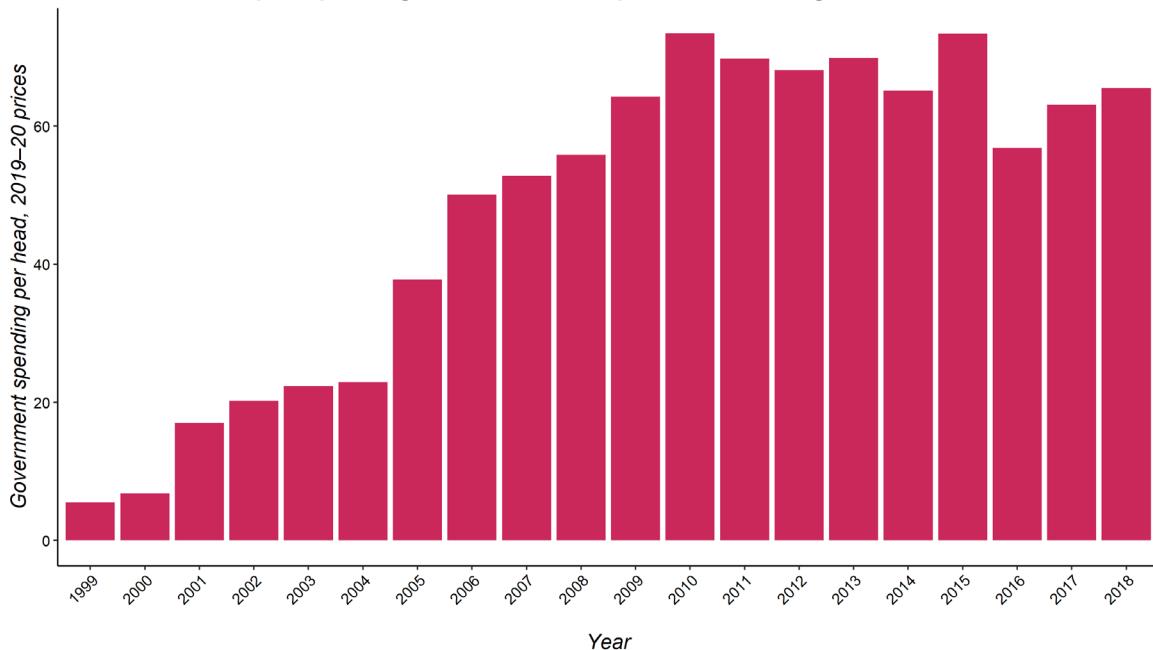
The government spent £903 million on concessionary travel for older and disabled passengers in 2018–19. Our derivations suggest that concessionary travel for pensioners in England accounted for 88% of that total.

As can be demonstrated by Figure 11, per capita spending on free travel for pensioners in England increased by almost 12 times between 1999–00 and 2018–19 in real terms. The rise will have been driven by the numerous extensions to entitlement for free travel for the elderly population over the years. For instance, although pensioners have been granted free travel since 1999 in London, the English National Concessionary Travel Scheme – which offers free travel on buses across all areas of England and not just London – was introduced in 2001. It is then likely that changes to eligibility rules for the ENCTS – notably the change of the concession from half fare to full fare in 2005 and the alignment of the eligibility age for both men and women with the women's (lower) State Pension Age in 2010 – have played a key part in driving up expenditure further in later years.

Figure 11



Per capita spending on free travel for pensioners in England, 1999 to 2018



Sources and Notes: National Travel Survey and concessionary bus, light rail and tram travel from the Department for Transport website. Population figures have been taken from the Office for National Statistics population projections by single year of age. Figures have been deflated using the HM Treasury GDP deflator.
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Current rules in the UK grant free travel on buses for anyone over the women's State Pension Age in England, which has only recently aligned with the State Pension Age for men. However, in London entitlement is extended to anyone over the age of 60, meaning that working-age adults aged 60–64 can also benefit. In a previous government consultation response, IF estimated that the government spent

between £33.1 and £40.2 million on 60–64 year-olds' free travel in London in 2018–19, which is approximately equal to paying for 104,000 children to go to and from school every day of the year for free (Intergenerational Foundation, 2020). However, given that this estimate has been derived from a small sample size, we have not included these figures in the model. IF also estimates that 24% of eligible older people across the nation are being subsidised to travel to work for free, costing taxpayers, who are mostly of a younger working age, millions of pounds every year. This figure rises to 55% in London. Unlike concessionary travel for pensioners, concessionary travel for children and young people is not protected under statutory law. Free travel for young people is awarded on a discretionary basis at the local authority level, which meant that we were not able to compare spending on concessionary travel for pensioners with spending on free travel for children. However, given that concessionary travel for young people is not provided in every travel concession authority (around only 76 out of 89 according to the Department for Transport) and that, where it is available, it is likely to be means-tested, it is fair to assume that spending on free travel for children will be well below spending on free travel for pensioners.

The lack of protection of free travel for children in itself can be argued to be intergenerationally unfair. Many children often use public transport to travel to school, whether for practical reasons or issues more closely related to safety. The imbalance between the protection of concessionary travel for young people and pensioners is characteristic of a larger pattern at hand where benefits and services for pensioners are often more likely to be universal in provision and entitlement. Better measurement of public spending on free travel for children would also allow us to investigate the degree to which lack of statutory protection impacts spending on children in this category.

What has been driving the gap in spending?

It is useful to consider how each of these imbalances contributes to the overall distribution of government spending between the different age groups. The bars in Figure 12 show in what categories of spending the government spent more or less on pensioners relative to children. Categories to the right of zero spending ($x>0$) – such as health, education, transport, social protection and interest payments on public debt – represent where the government has spent more on pensioners than they have on children. Education has fallen on the left side of the graph ($x<0$) since in this category the government spends more on each child than it does on each pensioner.

The orange line and black dots in Figure 12 represent the net gap in expenditure between spending on each pensioner and each child, taking into account the net effect of all spending differences combined. The more this line moves to the right, the wider the imbalance in spending in favour of the pensioner population in that year.

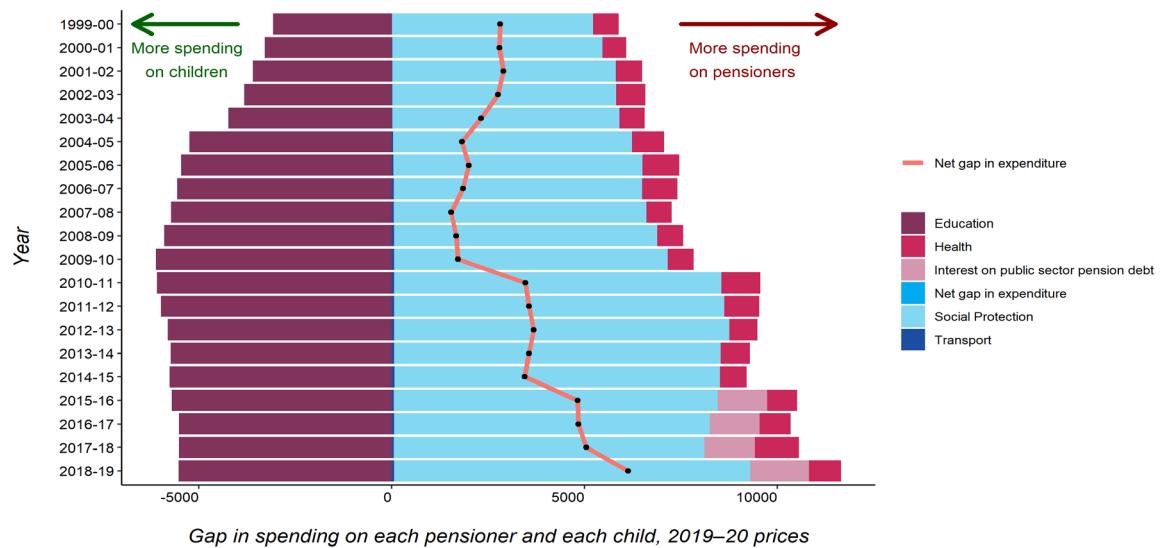
Our results demonstrate that between 2001–02 and 2007–08, the gap in spending, although still skewed in favour of pensioners, actually reduced due to increases in spending on education on average for each child. However this trend reversed from 2010–11 onwards following the reduction in education spending on children and increase in benefit payments for pensioners, widening the imbalance in favour of pensioners once more. There are two specific changes that stand out in this period. The first occurs between 2009–10 and 2010–11 and is mostly driven by average spending on each pensioner rising by £1,740 which, as mentioned in our earlier analysis, coincided with the introduction of the triple lock.



Figure 12



Key drivers behind gaps in spending on each pensioner and each child, 2019–20 prices



Sources and Notes: IF's calculations using HM Treasury Public Expenditure and Statistical Analyses tables, Department for Work and Pensions Benefit Expenditure and Caseload Tables, the National Travel Survey, NHS Hospital Episode Statistics, National schedule of NHS costs and statistics on concessionary bus, light rail and tram travel from the Department for Transport website. Population figures have been taken from the Office for National Statistics population projections by single year of age. Figures have been deflated using the HM Treasury GDP deflator.
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The second noticeable jump in spending on pensioners occurred in 2015–16. This was the result of an update in Public Expenditure Statistical Analyses (PESA) methodology; the most recent publication of the PESA tables have for the first time made figures on public spending on public sector pension debt interest available. However, only the last four financial years are covered, meaning that in 2015–16 when this expenditure first appears, we observe a sudden widening of the disparity in spending between children and pensioners, adding an additional £1,520 in spending on each pensioner to the figures – in other words, 26% of the gap in spending between pensioners and children in 2018–19. This tells us that our estimates of spending on pensioners in years prior to 2015–16 are likely to underestimate true spending on this age group.

4. Policy recommendations

Our results have revealed a large and growing gap in government spending on children and pensioners. Given the diverging circumstances of children and pensioners both before and during the COVID-19 crisis, we cannot have a “business as usual” approach to government spending. To rebalance the treatment of services and benefits for children and pensioners moving forward, IF recommends a number of policy changes:

Reform the triple lock and public sector pensions

Our results suggest that the introduction of the triple lock played a key role in widening the gap in spending on each child and each pensioner in 2010–11, with the increase in the cost of the state pension responsible for 71% of the increase in government spending on pensioners that year. New figures on the cost of public sector pensions have also revealed that they have become unjustifiably large. In the case of state pensions, these policies certainly appear to have served their purpose: poverty rates among pensioners have fallen by seven percentage points over the past two decades. Nevertheless, is it justifiable for pensions to increase in line with inflation (at the very least), while child benefit payments are uprated at a level below national inflation? Is it fair that so much spending is committed to funding the retirement of public sector workers that the interest payments paid on this debt alone exceeds total spending on child benefits by 45%? Almost no progress has been made with poverty rates among children over the past two decades and reforming the triple lock and public sector pensions could release funds that might be used to fulfil the urgent need to improve the livelihoods of children.

Treat the needs of children equally to the needs of pensioners

A common pattern that can be observed in our findings is the tendency for services and benefits for pensioners to be offered on a universal basis, in comparison to similar services for children which are typically reserved for those most in need. The provision of free travel for pensioners, protected under statutory law, is a key example of this imbalance, and similarly the case of Winter Fuel Payments. Services and benefits should be awarded based on need rather than purely on age; the universality of these benefits for pensioners has meant that a considerable number of individuals over the State Pension Age who are still working benefit from free travel and tens of thousands of Winter Fuel Payment recipients are actually living overseas.

Commit to intergenerational fairness in all tax and spending decisions

Despite the diverging circumstances of children and pensioners, it is not currently a requirement that intergenerational fairness is incorporated into tax and spending decisions. Failing to prioritise long-termism into policy decisions risks compromising the ability of current younger and future generations to meet their own needs. For it to be possible to commit to intergenerational fairness when making these decisions, regular reviews into the age distribution of government spending need to be conducted to enable transparency. We also encourage scrutiny of the approximately £241 billion that has already been spent in the government response to COVID-19 so far. It is important to identify whether expenditure over this period has indeed produced “value for money”, or whether unnecessary payments have placed a larger burden on current and future generations than needed.

This does, however, require better measurement of the age distribution of public spending. A key point that our analysis has revealed is that the current types of data available to enable disaggregation of government spending by age in detail are limited. The categories of spending that we managed to cover in this study – social protection, education, health and transport – only account for two-thirds of total government spending. Key areas of spending which we were not able to examine in full included spending on inpatient mental health treatments as well as spending on free travel for children across England. Examining how expenditure is distributed by age in categories such as housing and community amenities, spending on the environment, industry agriculture and recreation, culture and religion is also likely to be fruitful. We urge public bodies to commit to developing these tools.

Raise taxes on unearned income and wealth

As well as government spending, attention needs to be given to who is made to pay for increases in spending. Our study has identified numerous areas of spending on services and benefits for children that are in need of more funding, for instance child benefits, mental health services, primary and secondary education and free travel on public transport. However, young workers have borne the brunt of the economic cost of the COVID-19 crisis, being the most likely to experience a reduction in pay as a result of the pandemic. It is therefore important that they are not made to pay for the pandemic and for any attempts to undo the years of cuts in funding for children's services.

Over the previous decades a key subgroup of the population – namely homeowners – have benefited from unearned growth in income and wealth as a result of rising house prices. The majority of those on the receiving end of this growth are aged over 50; in 2018 it was estimated that approximately 75% of housing equity is owned by over-50s (Savills, 2018) and certain policies – such as not having to pay national insurance contributions on rental income, and Capital Gains Tax (CGT) exemptions and allowances – have enhanced this growth. IF has previously estimated that the government could raise up to £50 billion a year by raising taxes on unearned income and wealth, a figure that is large enough to award free university education to all on an annual basis and is equivalent to 33% of spending on the NHS (Intergenerational Foundation, 2020). Approximately £24 billion in extra tax revenue can be generated by charging national insurance contributions on rental income for landlords and shareholder dividends, while up to £28 billion could be raised from the removal of removing CGT exemptions and allowances. This would serve as an effective way forward to redress the imbalances in government spending and wealth between the generations.

5. Conclusion

To some extent, the COVID–19 crisis has marked a period of innovation for fiscal policy: the introduction of the furlough scheme, the Kickstart Scheme, Eat Out to Help Out, and the extension of free school meals for children over selected holiday periods collectively have signalled a degree of willingness for change when it comes to how public finances are distributed across age groups. However, despite recent spending announcements and record borrowing, government commitment to children’s needs is arguably still falling short, and there needs to be full recognition of the role that the past decade of underspending has played in making children and young people particularly vulnerable to the economic and mental health consequences of the pandemic.

In this paper, IF has estimated the age distribution of government spending between the period of 1999–2000 to 2018–19 and examined the trends from the perspective of intergenerational fairness. Our findings demonstrate that in 2018–19, the government spent on average £14,660 on each child, £10,180 on each working-age adult, and £20,790 on each pensioner and that the gap in per capita spending on each child and each pensioner has more than doubled over the period examined. As our results reflect spending on each person, this disparity in spending cannot be explained by the ageing of the population. We have also found that changes to government expenditure over this period have not always been cost-effective. For instance, one of the most striking examples of intergenerational unfairness in spending that we identified is that we spend approximately 45% more on the interest payments attached to public sector pension debt alone than on child benefits altogether.

Despite the progress in government spending on children between 1999–2000 and 2010–11, the picture has changed drastically for this age group over the past 10 years. While per capita spending on pensioners has continued to rise in key areas such as social protection and concessionary travel, where pensioners benefit from universal or near universal services, benefits awarded to children on average have stagnated overall, while trends in spending on education have reversed. Spending increases for pensioners have largely been driven by rises in state pension payments which, since 2010, have been guaranteed to increase in line the highest rate out of three options – earnings, inflation or 2.5% – following the introduction of the triple lock in 2010. Meanwhile, benefits for children in recent years have been uprated at or below national inflation, and primary and secondary education and Sure Start Centres have faced spending cuts, with per capita spending on Sure Start Centres dropping dramatically between 2010–11 and 2018–19 from £1,600 per child to £377. This is in spite of making little to no progress with child poverty rates since 1999–2000.

Surprisingly, pensioners have also benefited from the highest rate of growth in outpatient mental health treatment, surpassing spending on each child in 2013–14. Per capita spending on outpatient mental health treatment more than tripled for pensioners between 2011–12 and 2018–19, whereas spending on children increased by only 5.6% in comparison.

This is symptomatic of the more general asymmetry in the treatment of services for children and pensioners, which has continued during the COVID–19 crisis. Cuts to children’s services have already been proposed: for instance, one of the many conditions attached to the bailout for Transport for London was to temporarily remove free travel on buses for under–18s in London, which, at the time of writing, has been delayed. Under the bailout conditions, free travel for pensioners in London during peak weekday morning hours has also been removed, but travel outside these peak morning hours will be protected for this age group.

Looking ahead, we need to make sure that children are not made to pay for this crisis through cuts to funding, as has happened over the past decade. Steps needed to protect funding for children’s services include conducting regular reviews into the age distribution of public spending from the perspective of intergenerational fairness.



To be able to achieve this, government bodies need to improve the availability of data that enables the breakdown of public spending by age.

Further recommended changes include reforming the triple lock, reducing spending on public sector pensions, introducing means-testing for pensioners' benefits and raising taxes on unearned income and wealth. This would generate the urgently needed funds to redress the imbalances in government spending between children and pensioners.

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Appendix

Methodology and data

Previous studies have approached the task of estimating the age distribution of government expenditure in different ways. While the most straightforward way is to allocate spending by the age group that the money was intended for, some studies have allocated spending according to who is in direct receipt of the service or benefit based on the argument that we cannot be confident that age-targeted benefit payments such as child benefits are actually spent on the intended recipient. The issue with using this approach, however, is that spending on children will inevitably be underestimated; after all, benefit payments are not paid directly to the child but to the parent or guardian. Other studies have allocated public spending according to who theoretically is set to benefit from spending. For instance, in Kershaw and Lynderson's (2015) analysis of public spending in Canada, they allocated selected portions of education spending to working-age adults under the assumption that spending on education also acts as a childcare service for parents and guardians.

For the purpose of this study, we have aimed to capture the age distribution of spending according to whom it was intended for. We have defined public expenditure on children as spending on programmes or services that rely on the presence of a child (excluding spending on children yet to be born, for instance in the case of maternity benefits).

We have used data from the 2020 publication of the Public Expenditure Statistical Analyses (PESA) tables, a comprehensive series of statistics that breaks down public spending by function and subfunction over time up to the financial year 2018–19, to formulate the framework for our model.

The tables provide a breakdown of public spending into the following categories:

- Social protection
- Education
- Health
- Transport
- General public services
- Defence
- Public order and safety
- Economic affairs
- Environment protection
- Housing and community amenities
- Recreation, culture and religion
- EU transactions

While we have used figures from all of these categories to formulate our estimates of overall spending, we have taken specific steps to distinguish how much expenditure has been allocated to children (under-18), working-age adults and pensioners within the categories of social protection, education, health and transport. With the exception of interest payments on public sector pension debt, all other types of spending has been allocated in proportion to the size of the age group in any specific year, which was determined using population projections published by the Office for National Statistics. The methodology that we undertook for the four specific categories is outlined as follows:



Benefits

We used data from the Benefit Expenditure and Caseload Tables (BECT), which have been compiled and published by the Department for Work and Pensions. These tables provide a detailed analysis of spending on benefits for children, working-age adults and pensioners over time and we input these figures straight under the social protection category of the PESA data. Although we have tried to keep our definition of children as consistent as possible, the definition of children used in these tables differs depending on the eligibility criteria attached to the type of benefit. As such, some analysis of spending on children under the category of social protection may exclude a small fraction of spending on children under the age of 18, while some analyses on working-age adults may include a small fraction of spending on under-18s.

Total spending on social protection as summarised by the BECT tables is considerably lower than the total spending recorded in the PESA tables. As such, to ensure that the total amount of spending is taken into account, we included all other spending on social protection not accounted for in the BECT tables as "spending not defined", which we allocate in proportion to the size of the age groups.

Education

The PESA tables breakdown government spending on education by level of education. As such, spending on pre-primary and primary, secondary, post-secondary education was allocated to children, while spending on tertiary education was allocated to working-age adults.

Health

Our results on health spending were based on data on outpatient and inpatient treatment, which have been costed using the national cost schedule. Inpatient treatments refer to the consultations typically attended by patients following referral from their GP that involve being admitted into hospital. Outpatient treatments refer to all other treatments that are not part of emergency care.

We derived estimates on spending on inpatient and outpatient activity by first matching data on finished consultant episodes taken from the Hospital Episodes Statistics series with reference cost data taken from the National cost schedule. In most cases, we would match activity with costs using HRG codes; however, for some years we used Service codes instead. If neither of these options was available, for instance if different versions of the HRG codes were used, then we would match finished consultant episodes with the average cost of all treatments sharing the same HRG root instead.

Unfortunately, we could only derive estimates on treatments where reference costs were available and where matches could be found. This meant that some types of treatment could not be included in the analysis, such as inpatient mental health treatments.

To estimate the age distribution of the government spend on outpatient mental health treatments, we aggregated all costs under the following categories: Adult Mental Illness, Child and Adolescent Psychiatry, Forensic Psychiatry, Psychotherapy, and Old Age Psychiatry. Due to inconsistent data, we were only able to derive figures for outpatient mental health spending from 2011–12 onwards.

All other forms of health spending included in the PESA tables but not accounted for in our derivations were allocated in proportion to the size of the age groups.

Transport

As concessionary travel for young people is provided on a discretionary basis, we were not able to derive estimates for spending on free travel for children and young people. However, concessionary bus travel for pensioners is protected under statutory law, meaning that the eligibility rules are more clear-cut and nationally enforced. We estimated annual spending on concessionary travel for pensioners between 1999–2000 and 2018–19 using data from the National Travel Survey in R.

The equation below represents more generally how we derived our estimates of total expenditure on concessionary travel for pensioners.

Total expenditure on concessionary travel for pensioners in any given year =

$$\text{Annual concessionary trip rates} \times \text{average reimbursement per journey} \times \text{number of pensioners with passes} \quad (1)$$

$$\frac{\text{Number of pensioners with passes}}{\text{per eligible population}} = \frac{\text{population of pensioners} \times \text{number of passes}}{(2)}$$

Although travel on buses is free for pensioners across England, pensioners in London are entitled to free travel on all forms of public transport. As such, we estimated total expenditure on concessionary travel in London separately to allow us to include different forms of rail journeys in our estimates. Figures on annual trip rates and number of passes per eligible population were derived using the National Travel Survey, while data on average reimbursement for bus and light rail and tram operators were taken from the GOV.UK website. In the years where average reimbursement figures were not available, we used the bus fares rail index and the rail fare index to derive estimates for the missing years, thus assuming that total reimbursement for these concessionary journeys rose in line with average fares.

Again, all other forms of transport spending included in the PESA tables but not accounted for in our derivations was allocated in proportion to the size of the age groups.

Interest payments on public sector pension debt

Spending on this type of interest payment was found under the category "General Public Services" in the PESA tables. We allocated all of this spending to pensioners.

The list below contains links which provide more information on the data sources mentioned in our methodology.

Office for National Statistic's population projections by single year of age:

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforkenglandandwalesscotlandandnorthernireland>

Public Expenditure and Statistical Analyses tables:

<https://www.gov.uk/government/statistics/public-expenditure-statistical-analyses-2020>



Benefit Expenditure and Caseload Tables:

<https://www.gov.uk/government/collections/benefit-expenditure-tables>

National Travel Survey data:

<https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=5340>

Hospital Episode Statistics:

<https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/hospital-episode-statistics>

National schedule of NHS costs:

<https://www.england.nhs.uk/national-cost-collection>

Concessionary bus travel statistics:

<https://www.gov.uk/government/statistical-data-sets/bus08-concessionary-travel>

Light rail and tram concessionary travel statistics:

<https://www.gov.uk/government/statistical-data-sets/light-rail-and-tram-statistics-lrt>





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