

2019 annual report on education spending in England

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Foreword from the Nuffield Foundation

This is the second annual report on education spending, a series we have initiated with the Institute for Fiscal Studies to provide authoritative and impartial analysis of this vital area of public expenditure. The Nuffield Foundation's work in education spans the full breadth of the system: from early years provision, through schooling, and into further, higher and vocational education. We think it essential that policymakers, those who work in education, and the wider public all have a clear view across the different stages of the system, the interrelationships and trade-offs between them, and the balance in each between public and private spending. All too often such analysis and debate are undertaken in silos.

The first of the annual reports, published in September 2018, has been one of our most widely reported and influential pieces of work in recent years. Its headline findings, relating to the 8% real-terms decrease in school spending between 2009 and 2018, and the 21% fall for students in sixth forms, have fuelled the public debate about education spending throughout this year. There can be little doubt that the report influenced and informed debate ahead of the Prime Minister's recent announcement of a major uplift in funding for schools, amounting to an extra £4.3 billion per year in today's prices. This new report analyses the effects of this funding uplift.

Each annual report features a more detailed analysis of a particular stage of education. This year it is the turn of higher education. This is timely given the publication in May 2019 of the report of the Augar Review of Post-18 Education and Funding, which itself was informed by last year's IFS report. The government has not yet responded formally to this review, and it may be some time before it does so. However, the IFS has been able to analyse its recommendations alongside alternative proposals including those put forward by the Labour party. The in-depth section on higher education, which will be followed shortly by a more detailed supplement, is a major contribution to the body of work supported by the Nuffield Foundation in recent years on the funding of higher education and its implications for participation and access. We remain committed to funding work related to higher education, although a top priority for us is to understand more about the pathways of young people who do not go on to university, and who tend on average to be less advantaged than those who do.

As last year, this report shines a powerful light onto education funding in the UK. It complements the Foundation's wider research programme exploring how policy and practice make best use of this funding. We are very much open for business in continuing this work, both through our usual funding opportunities and through our new Strategic Fund, which calls for larger-scale and more interdisciplinary projects.

We are grateful to the IFS team for this report, in particular to Luke Sibieta, who has led the analysis, and to his co-authors Jack Britton and Christine Farquharson. We hope that its impact will build on that of last year's report.



Tim Gardam, Chief Executive, Nuffield Foundation

Preface

This report is the second in a series of annual reports on education spending in England. The authors gratefully acknowledge the support of the Nuffield Foundation (grant number EDO/43355), an endowed charitable trust that aims to improve social well-being in the widest sense. It funds research and innovation in education and social policy and also works to build capacity in education, science and social science research. The Nuffield Foundation has funded this project, but the views expressed are those of the authors and not necessarily those of the Foundation. More information is available at <http://www.nuffieldfoundation.org>. The authors also appreciate the Economic and Social Research Council, whose support through the Centre for the Microeconomic Analysis of Public Policy (grant number ES/M010147/1) at the Institute for Fiscal Studies underpins much of IFS's research.

The authors would like to thank the members of the advisory group, officials from the Department for Education and HM Treasury, and colleagues at IFS, who have commented on and greatly informed the analysis in this report.

This report uses a range of data releases from the Department for Education, its predecessors, related agencies and non-departmental bodies. These are all listed in the sources below individual figures and/or in the data appendices for individual stages of education. The IFS graduate earnings model draws on National Pupil Database data linked to data from the Higher Education Statistics Agency (HESA). It also uses data from the Office for National Statistics (ONS) Quarterly Labour Force Survey and the University of Essex's British Household Panel Survey. The National Pupil Database is Crown Copyright and made available by the Department for Education. HESA data are Copyright Higher Education Statistics Agency Limited. Neither the Department for Education, Higher Education Statistics Agency Limited nor HESA Services Limited can accept responsibility for any inferences or conclusions derived by third parties from data.

The views and analysis presented in this report are those of the authors alone. Any errors or omissions are also their responsibility.

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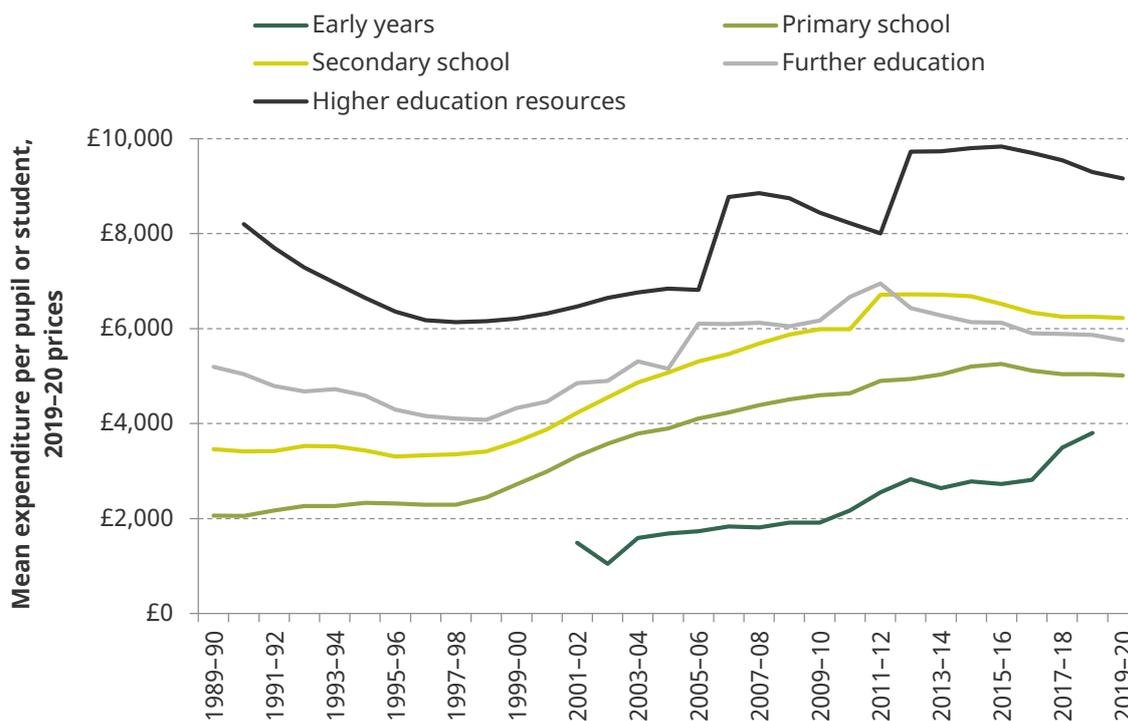
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Executive summary

Education spending is the second-largest element of public service spending in the UK behind health, representing about £91 billion in 2018–19 in today’s prices or about 4.2% of national income. The level of UK education spending has risen significantly in real terms over time, growing particularly fast from the late 1990s through to the late 2000s, before falling in real terms from 2010 onwards. Whilst important, such overall trends in total education spending tell us little about what has happened to the different areas of education spending.

Our second annual report on education spending in England provides measures of spending per student in the early years, schools, further education and higher education back to the early 1990s. These series of day-to-day spending per pupil allow us to understand how policy decisions have affected the resources available to students in different stages of education over the long run. We also analyse the effects of the 2019 Spending Round and the longer-term spending options for policymakers.

Spending per pupil or student per year at different stages of education: actual and plans (2019–20 prices)



Source: Early years figures are spending per child for 3- and 4-year-olds. Further education figures are for ages 16–18. Higher education figures are the cohort-based numbers shown in Figure 5.1, divided by 3 – an approximate course length. See Appendices A–D for a full list of sources and methods.

Key findings

Early years

- **Government spending on funded childcare places for 3- and 4-year-olds stood at £3.3 billion in 2018–19, equivalent to £3,650 per 3- or 4-year-old child (in today's prices).** This is an increase of about £250 million on the previous year, which is entirely explained by the extra money used to deliver the first full year of the extended entitlement to 30 hours a week of childcare for children in working families.
- **After a 7% increase in 2017–18, spending per hour on the 3- and 4-year-old entitlement was effectively frozen in cash terms last year, leading to a 2% cut in real terms.** This leaves spending per hour about 20% higher than it was in 2004–05.
- **The free entitlement is only part of the landscape of government-supported childcare, but it has become increasingly important.** In 2009–10, spending on childcare support through the benefit system was slightly higher than spending on the free entitlement; in 2017–18, free entitlement spending stood at £3.6 billion, compared with £900 million in support through the benefit system. Spending on tax relief for childcare almost doubled, to £860 million, in the same period.
- **There has been a strong shift away from support targeted at low-income families and towards programmes for working families.** In 2007–08, 45% of government spending on the early years and childcare support was targeted explicitly at low-income families. Ten years later – despite the introduction of a new funded childcare offer for disadvantaged children – the share of spending had slipped to 27%.
- **Spending on children's services is increasingly directed at safeguarding and responding to crises, at the expense of universal programmes such as Sure Start and youth services.** Since the peak of children's services spending in 2010–11, spending on Sure Start and services for young people has fallen by over 60%. Meanwhile, spending on children looked after rose by 19% between 2010–11 and 2017–18 and spending on children's social care has risen 9%.

Schools

- **Total school spending per pupil in England has fallen by 8% in real terms between 2009–10 and 2019–20.** The bulk of these funding cuts were driven by a 57% reduction in spending per pupil on services provided by local authorities and a more than 20% cut in sixth-form funding per pupil.
- **This follows on from average growth in primary and secondary school spending per pupil of around 5% per year during the 2000s.** Combining trends since 2000, we calculate that school spending per pupil is likely to be about 40% higher in real terms in 2019–20 than in 2000–01.
- **These funding cuts have been partly delivered through higher class sizes.** Whilst primary school teacher numbers have risen by 11% since 2010, pupil numbers have grown by 17%. This has led to a small rise in average class sizes from 26 to 27 pupils. In secondary schools, teacher numbers have fallen by 20,000 or by just under 10% between 2010 and 2018. With no net change in pupil numbers, average class sizes have risen from 20 to 22 pupils.

- **Teaching assistant (TA) numbers continue to rise in primary schools.** The number of TAs in primary schools has risen by around 50,000 or 40% since 2010, having more than doubled from 50,000 to 125,000 between 2000 and 2010. This may reflect changing head teacher views on the best mix of staff in primary school. It may also reflect the fact that TAs tend to be cheaper to employ than teachers. In contrast, TA numbers in secondary schools have fallen by about 13% since 2011.
- **The government has allocated an extra £4.3 billion to the schools budget in England for 2022–23.** This represents 7.4% expected real-terms growth in spending per pupil between 2019–20 and 2022–23 and is sufficient to almost completely reverse the cuts of 8% seen since 2009–10. If delivered, this will leave school spending per pupil in England about the same level in 2022–23 as it was in 2009–10. No real-terms growth in spending per pupil over 13 years represents a large squeeze by historical standards.
- **School spending per pupil is highest in Scotland, lowest in Northern Ireland.** Total school spending per pupil was about £6,600 in Scotland in 2018–19. This is £600 higher than spending per pupil in England (£6,000), with spending per pupil in Wales £200 lower at £5,800. Spending per pupil was lowest in Northern Ireland, at £5,500 per pupil.
- **Cuts have been largest in England and Northern Ireland,** with spending per pupil falling by 8% in England since 2009–10 and by 11% since 2011–12 in Northern Ireland. Cuts have been smaller in Scotland (2%) and Wales (6%). This differential picture is mostly driven by the fact that England and Northern Ireland have seen large rises in pupil numbers, whilst Scotland and Wales have not.

Further education and skills

- **Further education colleges and sixth forms have faced the largest cuts in recent years.** Between 2010–11 and 2018–19, spending per student fell by 12% in real terms in 16–18 colleges and by 23% in school sixth forms. Following on from larger cuts during the 1990s and lower growth than most other stages of education during the 2000s, further education spending per 16- to 18-year-old is due to be only about 13% greater in 2018–19 than it was about 30 years earlier in 1989–90.
- **Funding is lowest in school sixth forms and sixth-form colleges.** In the 2018–19 academic year, we calculate that spending per student was £4,800 in sixth-form colleges, £4,900 in school sixth forms and £5,900 per young person in further education colleges. These differences mainly result from a funding system that provides more to vocational and complex courses, as well as to pupils from deprived backgrounds.
- **The government has allocated an extra £300 million for further education colleges and sixth forms for 2020–21 (in 2019–20 prices).** This will lead to a real-terms increase in spending per pupil of over 4% in 2020–21, but will still leave spending per student over 7% below its level in 2010–11 in colleges and over 20% below in sixth forms.
- **Fully reversing cuts since 2010–11 would cost a further £1.1 billion over and above existing plans by 2022–23** (£730 million for school sixth forms and £320 million for 16–18 colleges). This increases to about £1.4 billion to ensure that spending on T levels is additional to an unchanged level of spending per student.

- **Total spending on adult education (excluding apprenticeships) has fallen by nearly two-thirds since 2003–04.** This combines cuts of 32% up to 2009–10 and 47% between 2009–10 and 2018–19. These cuts have mainly been driven by falls in learner numbers, which have fallen from 4.4 million in 2004–05 to 1.5 million in 2017–18. The recent Augar review of post-18 education has recommended reversing a range of the cuts to adult education.
- **Spending on adult education and training is increasingly focused on apprenticeships.** Of the £5.3 billion spent on adult education and apprenticeships in 2003–04, about 21% was spent on apprenticeships or work-based learning. By 2018–19, this fraction rose to 54%. Specific spending on apprenticeships rose by 36% in real terms between 2009–10 and 2018–19. Despite this, the government still seems likely to miss its target for 3 million new apprenticeship starts between 2015 and 2020 by a wide margin. However, an increasing share of individuals on apprenticeships are now on A-level-equivalent courses or higher (over 60% to date in 2018–19 as compared with around 40% in 2011–12) which generally offer higher economic returns.

Higher education

- **Universities currently receive £27,500 per full-time undergraduate student to fund the cost of teaching for the full course of their studies (usually three years).** This has fallen by 5% since 2012, but is about 50% higher than at its low point during the mid 1990s.
- **While per-student funding is similar today to its *early 1990s* levels, total resources for teaching undergraduate students have doubled in real terms over that period.** This was driven by a near-doubling in student numbers. The nature of that funding has changed significantly, with it now coming primarily through tuition fees rather than through teaching grants.
- **The overall cost of the current system is about £17 billion per cohort entering higher education.** More than half of the cost is expected to be paid for through graduate contributions (£9.0 billion), particularly from higher-earning graduates. The long-run cost to government is expected to be about £8.0 billion, about £7.4 billion through unrepaid student loans and £700 million in up-front grants.
- **The Augar Review proposed cutting fees to £7,500, reintroducing maintenance grants and changing the terms of repayment.** This would give policymakers greater control of spending on different subjects, which they have little control over at present due to funding being dominated by tuition fees and to a lack of controls on student numbers.
- **The proposals would reduce repayments amongst higher earners and increase repayments amongst mainly middle earners.** But there is no good reason to say the current distribution of repayments and incentives is the ‘correct’ one.
- **Labour’s policies of abolishing fees altogether and bringing back maintenance grants would come at a cost to the public finances of just over £6 billion per cohort of full-time students over the long run.** This policy would give the government even more control over the distribution of spending on certain subjects or institutions, but would benefit the highest-earning graduates substantially. The policy is significantly

cheaper now as a result of the 2017 increase in the repayment threshold on student loans from £21,000 to £25,000.

- **Considering part-time students adds approximately another £1 billion to the cost of Labour’s proposals at current student numbers.** However, the cost of this policy could increase rapidly if the large decline in part-time student numbers since 2010 were reversed.

1. Introduction

Education spending is the second-largest element of public service spending in the UK behind health, representing about £91 billion in 2018–19 in today’s prices or about 4.2% of national income. To make efficient and equitable policy choices, it is crucial to have a clear, consistent picture of how much spending is targeted at each phase of education, how this has changed over time, how it is likely to evolve going forwards and what factors have driven these changes. This provides policymakers and the public with a sense of current resource priorities and future challenges. These issues are also a vital component of the education policy debate, particularly given the work by James Heckman and others emphasising the differential effectiveness of resources at different stages of the life course (Cunha, Heckman and Schennach, 2010).

In our annual series of reports on education spending, funded by the Nuffield Foundation, we bring together data on education spending across the life cycle and provide analysis about the major issues facing the sector.

In last year’s report, we created historical series of spending per pupil at different stages, with a focus on the further education sector. In this report, we build on this work, updating the figures to take into account policy changes in the last year (such as the new teacher pay award and the full introduction of 30 hours’ free childcare). We provide new analysis on wider spending on the early years and differences in school spending between the nations of the United Kingdom. We also analyse the effects of different options for reforms to higher education finance, including the proposals from the Augar Review and Labour’s commitment to abolish tuition fees. Finally, this year’s report discusses the effects of the 2019 Spending Round, as well as longer-term options that could be considered in a full spending review, which is now planned for 2020.

To complement this analysis, in the near future we will also publish a more detailed analysis of options for higher education finance over the longer term, focusing on how the government could respond to the Augar Review of Post-18 Education and Funding.

1.1 Total spending on education

As Figure 1.1 shows, the total level of UK education spending has risen significantly in real terms over time. Growth was particularly fast from the late 1990s through to the late 2000s, with real-terms growth averaging about 5% per year between 1998–99 and 2010–11. Education spending has since fallen in real terms as spending cuts began to take effect from 2010 onwards. Between 2010–11 and 2018–19, recorded education spending fell by about 14% in real terms, taking it back to the same level it was in 2005–06 and a similar share of national income to that last seen through most of the 1990s.

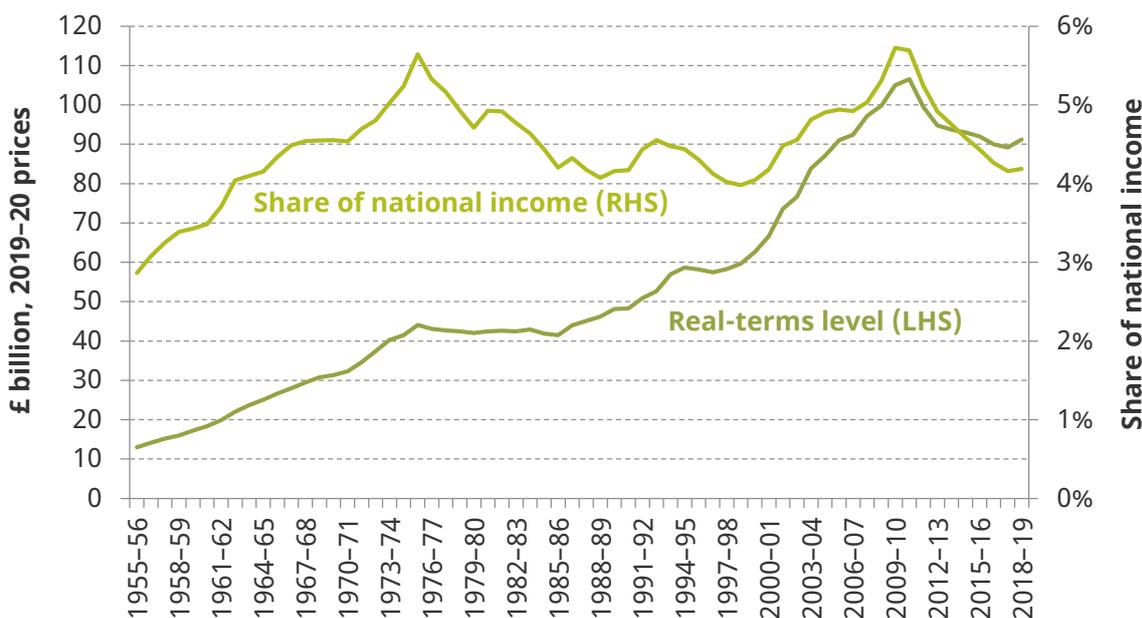
Importantly, however, these figures exclude the cost to the taxpayer of issuing student loans from 2011–12 onwards; this means that the series is inconsistent over time and is likely to overstate cuts to education spending since 2010–11. Recent changes to public accounting rules mean that, from September 2019, the expected cost of issuing student loans will be included in measures of government spending, such as the deficit and reported education spending. The Office for National Statistics (ONS) estimates this would

add about £12 billion or 0.6% of GDP to education spending in the current year.¹ By way of illustration, this change would reduce the scale of cuts since 2010–11 from 14% to around 3% and would increase education spending as a share of national income to about 4.8% in 2018–19, about the same level as in the early 2000s. Of course, these changes to the reporting rules do not actually change anything real in the economy: the only difference is how government spending is being recorded.

Looking over the longer term, it is clear that education spending as a share of national income has not risen since the early 1970s, when it stood at just under 5% of national income. It has instead oscillated between about 4% and 5.5% of national income. This contrasts sharply with health spending, which has nearly doubled as a share of national income since the early 1970s, from about 3.5% to over 7% of national income.²

Whilst smaller than cuts to other areas of public spending, these cuts to public education spending mean that there are resource pressures across all areas of education spending in England. The early years sector has been tasked with delivering a large expansion in entitlement to free early education and childcare; schools have made their first real-terms cuts in over two decades; colleges and sixth forms have had to make deeper cuts than any other area of education; and the higher education finance system has faced continual reform in recent years to manage large increases in participation.

Figure 1.1. UK education spending (2019–20 prices)



Source: HM Treasury, *Public Expenditure Statistical Analyses 2019*; previous PESAs; Office for National Statistics, *Blue Book*; HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

¹ <https://www.ons.gov.uk/news/news/accountingforstudentloanshowweareimprovingtherecordingofstudentloansingovernmentaccounts>.

² https://www.ifs.org.uk/tools_and_resources/public_finances.

1.2 Student numbers

Total spending figures also obscure the impact of changes in the number of pupils, which are one of the most important factors driving changes in the total and per-pupil level of spending over time. Figure 1.2a shows the number of pupils in state-funded primary and secondary schools over time. Numbers in primary schools grew by 17% between 2009–10 and 2019–20, the equivalent of an extra 700,000 pupils – or effectively a full cohort of children. They are now, however, starting to fall again slowly. Pupil numbers in secondary schools fell from the early 2000s through to about 2014–15. They are now forecast to grow by 12% between 2018–19 and 2026–27.

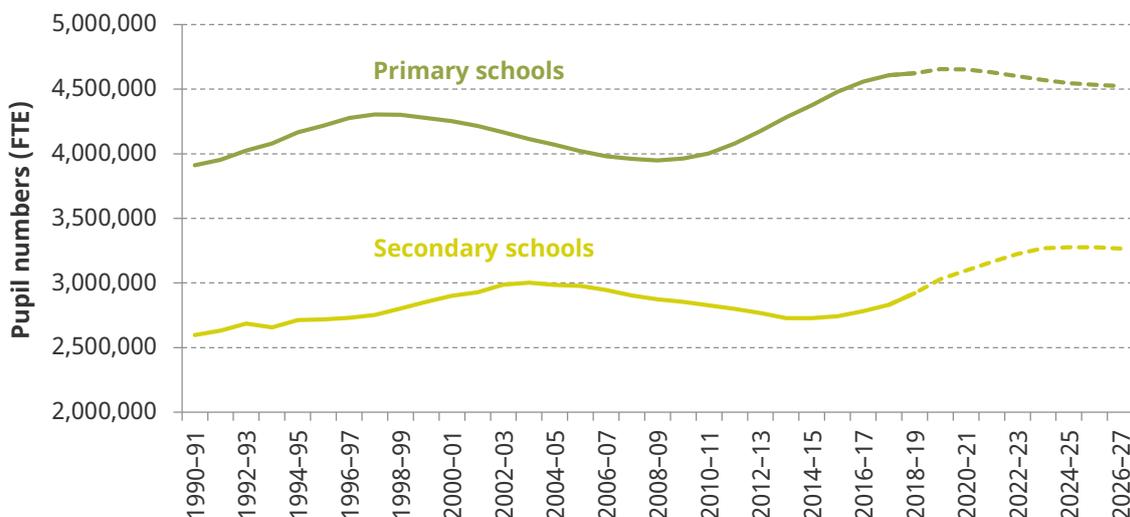
While pupil numbers in primary and secondary schools are driven mainly by population size, pupil numbers in non-compulsory stages of education – early years, further education and higher education – are also affected by changing patterns of participation. Figure 1.2b shows that there have been big increases in pupil numbers at all three stages. While population growth plays a role, extensions to the free childcare entitlement (in the early years) and higher levels of participation (at later stages) are the main factors driving these changes.

The number of children in early years education has risen by 56% since 2001–02, and the number of full-time equivalent (FTE) places has increased by almost 90% over the same period. The number of students in 16–18 education grew by 50% between 1990–91 and 2010–11, from about 800,000 to 1.2 million FTE students. Since 2010–11, numbers have fallen by about 10%, reflecting reduced cohort sizes rather than falls in participation. Numbers in higher education have nearly doubled since 1990, but have been largely constant since 2011–12.³ This large increase in higher education student numbers over time has led many governments in recent years to make substantial changes to the higher education finance system in order to ensure sufficient levels of resources.

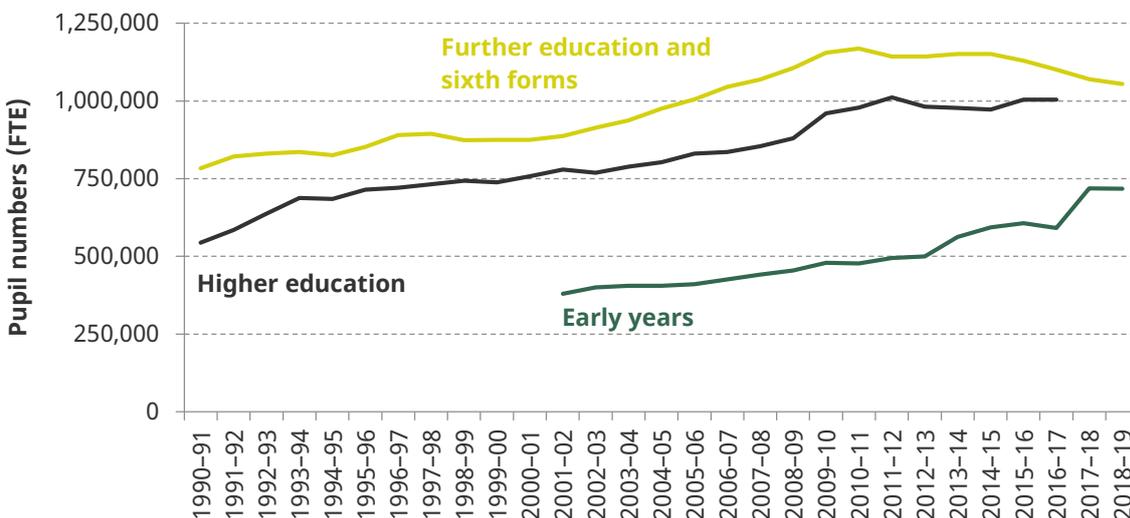
³ The numbers for higher education in Figure 1.2b are larger than those published in our 2018 annual report, because these new figures include both first degree and other undergraduate courses. Numbers on other undergraduate courses, such as foundation degrees and Higher National Diplomas, have fallen sharply over time, from about 100,000 in 2010–11 to about 30,000 by 2017–18.

Figure 1.2. Pupil numbers in education in England

a) Schools



b) Other stages of education



Source: Years refer to academic years. FTE = full-time equivalent. Early years numbers taken from Department for Education, 'Education provision: children under 5 years of age', January 2019 (<https://www.gov.uk/government/statistics/education-provision-children-under-5-years-of-age-january-2019>), January 2010 (<https://www.gov.uk/government/statistics/provision-for-children-under-5-years-of-age-in-england-january-2010>), January 2006 (<http://webarchive.nationalarchives.gov.uk/20130329235614/http://www.education.gov.uk/researchandstatistics/statistics/statistics-by-topic/earlyyearsandchildcare/nurseries/a00195255/provision-for-children-under-five-years-of-age-in->) and January 2002 (<http://webarchive.nationalarchives.gov.uk/20130323070608/http://www.education.gov.uk/researchandstatistics/statistics/statistics-by-topic/earlyyearsandchildcare/a00193904/provision-for-children-under-five-years-of-age-in->). Primary and secondary school numbers taken from Department for Education, 'Schools, pupils and their characteristics', January 2019 and earlier years (<https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2019>) and 'National pupil projections: July 2018 (2019 update)' (<https://www.gov.uk/government/statistics/national-pupil-projections-july-2018>). Further education and sixth forms figures refer to 16- to 18-year-olds in state-funded schools or colleges as measured at the end of each calendar year in Department for Education, 'Participation in education, training and employment: 2018' (<https://www.gov.uk/government/statistics/participation-in-education-training-and-employment-2018>). Higher education figures relate to full-time students on first undergraduate degrees and other undergraduate courses (<https://www.hesa.ac.uk/data-and-analysis/publications>) and 'Historical statistics on the funding and development of the UK university system, 1920-2002' (<https://discover.ukdataservice.ac.uk/catalogue/?sn=4971&type=Data%20catalogue>).

1.3 Key definitions and inclusions

Throughout this report, we focus on current or day-to-day public spending on education in England. Capital spending is a much smaller share of education spending (less than 5%), relatively volatile and focused mostly on the school sector (Sibieta, 2015). Capital spending is due to be about £5 billion in 2019–20. This will leave capital spending about 40% lower in real terms than in 2010–11. However, it was slightly inflated in 2010–11 due to overruns and carrying forward of spending on the (now cancelled) Building Schools for the Future programme. That said, capital spending is still about 25% lower in real terms than it was in 2008–09.⁴

We focus on England primarily for data availability reasons, but include comparisons of school spending per pupil over time across the nations of the UK. Following standard naming conventions at each stage of education, we refer to ‘spending per child’ in early years education, ‘spending per pupil’ for children aged 5–16 and ‘spending per student’ for young people aged over 16.

For the most part, we focus on public spending on education. This is due to a lack of reliable data on total private spending on each stage of education over time. The one exception to this is that we look in detail at how expected graduate contributions to the cost of higher education have increased over time. For schools, we also know that the proportion of pupils in independent schools has remained roughly steady at 6–7% since the early 1980s, despite average fees trebling in real terms between 1980 and 2016 (Green et al., 2017). In the early years, it is difficult to disentangle private spending on early education *per se* from more general spending on childcare, which has been recorded in a range of surveys (e.g. Harding and Cottell, 2018).

Our definition of spending is given in each chapter, with appendices providing further details. In some cases, our measures of spending per child, pupil or student are calculated as total spending divided by the total number of children, pupils or students. In other cases, our calculations represent ‘bottom-up’ estimates of spending per child, pupil or student based on micro-data for schools and students in higher education.

The rest of this report is set out as follows: early years (Chapter 2); schools (Chapter 3); further education and skills (Chapter 4); higher education (Chapter 5); and comparisons and conclusions (Chapter 6).

⁴ Authors’ calculations using HM Treasury, *Public Expenditure Statistical Analyses 2019* and previous PESAs.

2. Early years

England has a wide range of programmes in place to subsidise early childhood education and care (ECEC). In the early years even more so than during school, the boundary between ‘education’ and ‘childcare’ is hard to draw, as is the line between ‘education’ and other social services. In this chapter, we therefore explore how spending on different early years programmes has changed over time.

We first update our estimates for spending on and take-up of the free entitlement to a funded ‘early education’ place. Section 2.2 considers subsidies for ECEC through the tax and benefit systems, including tax-free childcare and employer-provided childcare vouchers. In Section 2.3, we broaden our focus to take in spending on social services, including both universal programmes such as Sure Start and targeted interventions through the social care and safeguarding system. Section 2.4 discusses a range of policy options for early education and childcare, and provides costings for some indicative policies, to inform a potential election campaign this autumn as well as next year’s planned spending review. Section 2.5 provides a summary of this chapter.

2.1 The free entitlement to childcare

The early years are an important period for children’s development. During this period, children start to build the academic, social and behavioural skills that will influence their later schooling and attainment. But because these skills are interrelated, defining which programmes count as ‘education’ spending during the early years always involves some judgement.

In this report, we focus primarily on spending on the free entitlement, a programme in England that offers a funded childcare place to all 3- and 4-year-olds and disadvantaged 2-year-olds.⁵ Providers funded by the free entitlement are intended to support children’s early education (and at the same time provide childcare intended to help parents work).

At the moment, the free entitlement in England offers:

- A **part-time place** (15 hours a week, 38 weeks a year) to all 3- and 4-year-olds, starting from the term after they turn 3.
- An **extended entitlement** (an additional 15 hours a week) to 3- and 4-year-olds in ‘working’ households, where both parents (or the single carer) are earning the equivalent of 16 hours’ work at minimum wage. Households where either parent earns more than £100,000 do not receive the extended entitlement (but still get the 15-hour universal entitlement).

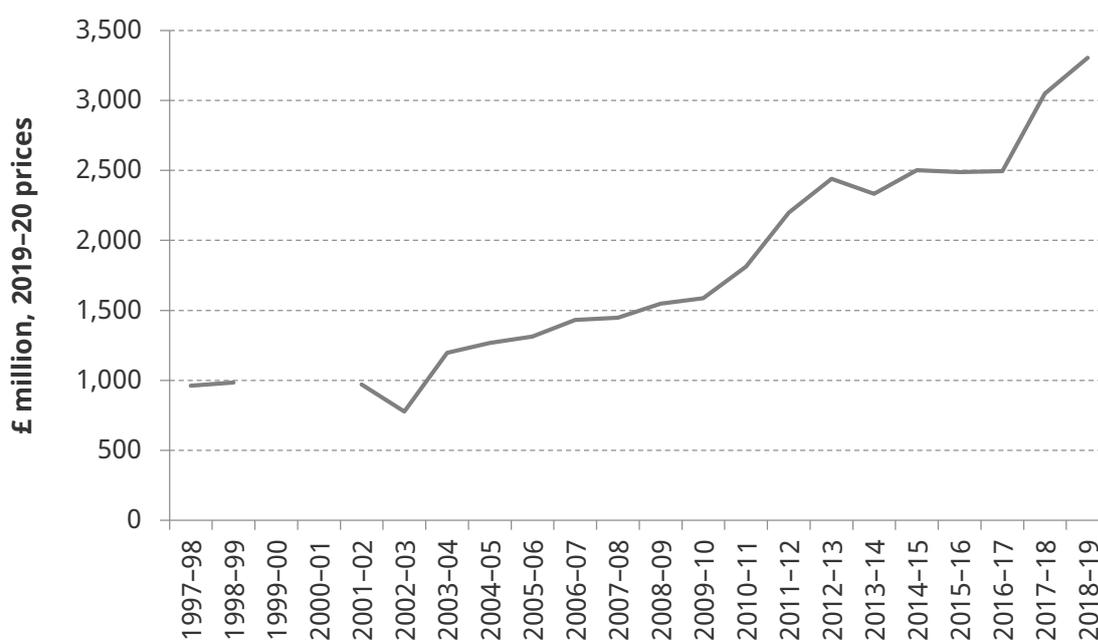
⁵ The other countries of the UK have their own policies in this area. A similar programme in Scotland offers up to 16 hours per week of funded early education to 3- and 4-year-olds and disadvantaged 2-year-olds. Wales offers up to 10 hours a week of early education and another 20 hours of childcare. Parents of 3- and 4-year-olds in Northern Ireland can apply for 12.5 hours a week of funded early education, which can only be taken as 2.5 hours a day during term time.

- A **part-time place** (15 hours a week) for 2-year-olds whose families receive means-tested benefits such as income support or income-based jobseeker's allowance.⁶ In practice, this covers approximately the 40% most disadvantaged 2-year-olds.

While the free entitlement has been in place in some form since September 1997, the programme has been successively extended to cover more hours, more weeks and more children. Three-year-olds received coverage from April 2004, and since 2010 the universal entitlement has covered 15 hours a week for 38 weeks of the year. In September 2017, the programme was again extended, as 3- and 4-year-olds in working households were given an additional 15 hours a week as part of an extended entitlement.

These policy changes have been important drivers of the trends in early years spending (see Belfield, Farquharson and Sibieta (2018) for details). Last year is no exception: 2018–19 was the first full financial year following the introduction of the extended entitlement in September 2017, and spending on the free entitlement for 3- and 4-year-olds has risen for the second year. Spending increased by around £250 million and stood at £3.3 billion in 2018–19 (Figure 2.1).⁷

Figure 2.1. Spending on the 3- and 4-year-old free entitlement (£m, 2019–20 prices)



Note: Spending figures from 2017–18 onwards include spending on the 30-hour extended entitlement.

Source: Spending in 1997–98 and 1998–99 represents reported central government spending on nursery vouchers through the Nursery Education Grant listed in Department for Education and Employment (1999). Data for 2001–02 to 2009–10 come from local authority out-turns. Data for 2010–11 onwards come from local authority budgets. For more detail, see Appendix A. HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

⁶ Some particularly vulnerable children, such as those looked after by the local council or with special educational needs, are also eligible.

⁷ Spending figures for 2018–19 are based on the schools budget allocated to the early years, including the individual schools budget, the high-needs budget, and some elements of central spending on the early years. See Appendix A for more details.

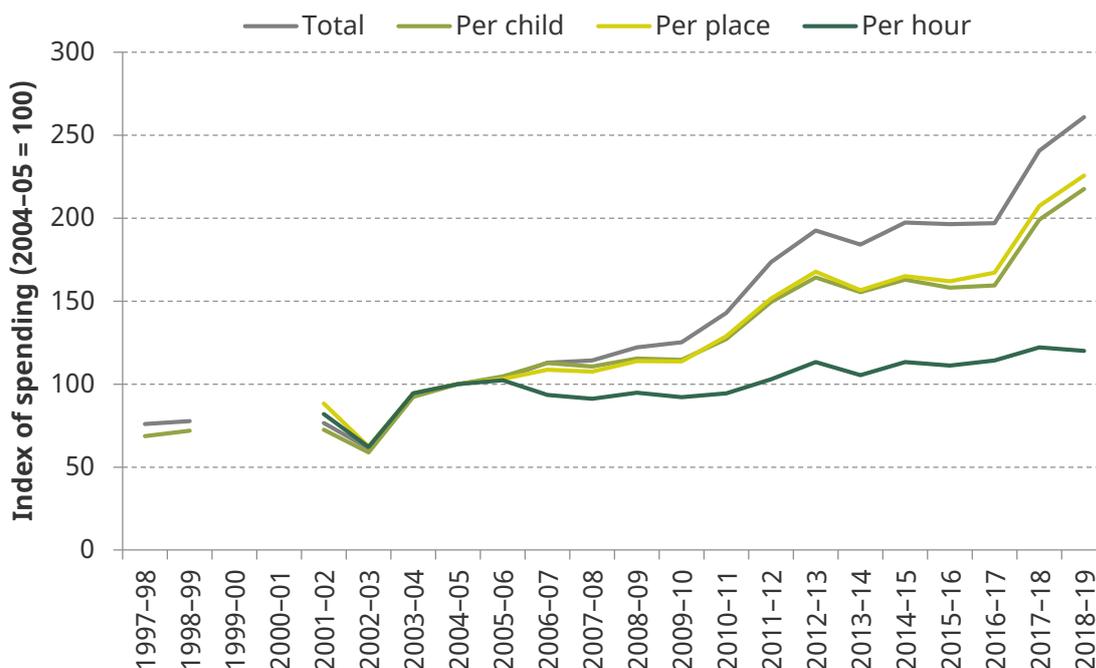
Year-on-year comparisons of total spending provide information about the total resources that the government is spending on the early education of 3- and 4-year-olds. But much of the increase in spending has been the result of increases in the generosity of the free entitlement, most notably with the introduction of the 30-hour extended entitlement for children in working households in September 2017.

Figure 2.2 therefore reports free entitlement spending overall, per eligible child, per part-time equivalent place and per hour. Spending is reported relative to its level in 2004-05, the year the 3-year-old free entitlement was introduced.

Total spending in 2018-19 was 161% higher than in 2004-05. One of the drivers of this increase is population growth: taking population growth into account in the spending per child series explains around 43 percentage points of the overall increase.

Among eligible children, virtually all – 94% in 2019 – take up the universal free entitlement. Take-up rates have been near-universal since 2002-03; if anything, take-up has actually fallen slightly since its peak in the mid 2000s.

Figure 2.2. Growth in real 3- and 4-year-old free entitlement spending



Note: Spending levels are indexed to 2004-05. Funding per place is based on the number of children taking up a universal free entitlement place. Funding per child is based on the average number of children eligible for the universal entitlement over the year. Funding per hour assumes that all children taking up a place use the maximum number of funded hours available to them.

Source: Spending in 1997-98 and 1998-99 represents reported central government spending on nursery vouchers through the Nursery Education Grant listed in Department for Education and Employment (1999). Data for 2001-02 to 2009-10 come from local authority out-turns. Data for 2010-11 onwards come from local authority budgets. For more detail, see Appendix A. HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

This means that spending per child using a free entitlement place tracks spending per eligible child very closely, but the former has grown slightly more quickly since 2004–05. In 2018–19, spending per child eligible for the universal entitlement stood at about £3,650; spending per child taking up the universal entitlement was around £3,800 (both in 2019–20 prices). These figures include both children using only the universal entitlement and those who also use some or all of their 30 hours.

Of course, the increasing generosity of the free entitlement offer also plays a role in explaining the spending increases. Looking at spending per hour of free entitlement care used accounts for these changes (including not just the extended entitlement but also previous increases in the number of hours per week and weeks per year funded).

Spending per hour stood at £5.45 last year, down from £5.55 the year before. This real-terms cut is due to inflation; in cash terms, spending per hour was unchanged between the two years. More broadly, spending per hour has tended to grow much more slowly in real terms than total free entitlement spending; at its peak in 2017–18, it was just 22% higher than its 2004–05 level, and the real-terms cut the following year brought that down to 20%.

Among children taking up a free entitlement place, the vast majority use all their funded hours.⁸ While there is no official figure on the number of children eligible for the extended entitlement, our estimates using the Labour Force Survey suggest that around 52% of the universal entitlement cohort – or about 470,000 children – are eligible, an increase of 2.7 percentage points from last year.⁹

2-year-old entitlement

In September 2019, the 2-year-old entitlement celebrates its 10th anniversary. Unlike the offer for 3- and 4-year-olds, the 2-year-old offer has always been targeted at disadvantaged children, with the goal of promoting these children’s development. The eligibility criteria have expanded over time, but since September 2014 the 2-year-old offer has covered approximately the 40% most disadvantaged children.

In 2018–19, spending on the 2-year-old offer stood at about £490 million, or about a sixth of free entitlement spending on 3- and 4-year-olds. But spending per child taking up the entitlement was £3,309, virtually unchanged from the previous two years, and equivalent to about £6.60 of spending per hour of care.

Take-up is lower amongst 2-year-olds than among older children. While virtually all 3- and 4-year-olds use at least some of their universal entitlement, only around 68% of eligible 2-year-olds took up their free place in 2019. Of course, lower take-up at these ages does not necessarily reflect a problem in the provision of care. There is evidence that parents are increasingly willing to enrol their child in formal childcare as they get older: almost half of

⁸ In 2019, 86% of 3-year-olds and 89% of 4-year-olds using their free entitlement used between 12.51 and 15 hours of universal funded childcare (after excluding 4-year-olds using between 15 and 25 hours, who are likely to be in a Reception class and so outside the scope of this chapter).

⁹ In 2017, the government estimated that around 390,000 families would be eligible for the extended entitlement, or about 42% of children eligible for the universal entitlement that year. The size of the cohort eligible for the universal entitlement varies by term as new children become eligible while older children have to wait until September to start school. On average, there are about 910,000 children eligible for the universal entitlement.

parents whose 2-year-old does not use formal childcare say that this is because they prefer not to use this type of care (half as many cite cost as the main reason) (Speight et al., 2015). Nevertheless, the Department for Education should ensure that parents of eligible 2-year-olds are not discouraged from taking up their entitlement by a lack of information or a lack of local high-quality places. This is particularly important since the main objective of this policy is to improve the development of otherwise disadvantaged children.

2.2 Wider support for childcare

While the free entitlement accounts for the majority of government spending on childcare, it is far from the only programme operating in this space. Parents can also be eligible for significant subsidies through both the tax and the benefit system.

The idea of offering preferential treatment for childcare in the tax and benefit systems goes back at least to John Major's 1990 Budget, which introduced income tax relief for childcare provided in workplaces. In October 1994, some parents were allowed to disregard up to £40 of weekly childcare spending from the family credit means test. Descendants of both of these policies are still in place today, through preferential tax treatment for childcare and additional childcare subsidies available through the benefit system.

It is important to note that these programmes are not limited to the early years; they also apply to parents with children too young to be eligible for the free entitlement, as well as to those with school-aged children who need childcare before or after school or during holidays. Unfortunately, there are no reliable data on the ages of recipients' children, so we are not able to provide estimates of how much of these programmes' support goes to children in the pre-school period.

Childcare subsidies in the tax system

While childcare subsidies in the benefit system primarily target low-income working families, support through the tax system is somewhat less targeted. There are two main programmes: **employer-supported childcare** (most notably employer-sponsored childcare vouchers, but also workplace nurseries and directly contracted childcare) and the new **tax-free childcare** programme.

Since 2005, employees have been able to sign up for childcare vouchers under a salary sacrifice programme (now closed to new entrants). They can divert some of their salary into buying childcare vouchers from their employer, but they do not pay income tax or National Insurance contributions on the money they use to buy the vouchers. Employers are also exempted from paying their side of the National Insurance contributions on these earnings. Basic-rate taxpayers can buy up to £243 of vouchers each month, with potential savings of £78 (a 32% subsidy). For higher-rate and additional-rate payers, the potential subsidy is lower, but still significant at £52 per month.¹⁰

¹⁰ The subsidy is lower for higher- and additional-rate taxpayers because they pay National Insurance contributions (NICs) at a lower rate (2% rather than 12%). The income tax subsidy is capped at 20%, so basic-rate taxpayers get a subsidy of 32% (20% income tax, 12% NICs) while higher- and additional-rate payers get a

The childcare voucher programme has some limitations: not all employers offer childcare vouchers; self-employed people, who are working but do not have an employer, are not able to access the scheme; and, since the programme is administered on a per-parent basis, families with a lone parent have less potential subsidy than families with two parents in employment.

In response to some of these concerns, the government launched the tax-free childcare programme in April 2017. Parents open an account on behalf of their child. For every £8 they contribute to it, the government tops it up by £2 (a 20% subsidy), up to £167 of government contribution a month. This 20% subsidy is the equivalent of removing income tax for a basic-rate taxpayer. However, unlike childcare vouchers, the subsidy does not take into account National Insurance contributions.

Both childcare vouchers and the tax-free childcare system are complex. This means that determining which system is more generous for a given family depends on that family's characteristics. In general, the total maximum subsidy under tax-free childcare (£2,000 per year) is higher than the maximum subsidy under childcare vouchers (£1,866 if both parents are basic-rate taxpayers with access to vouchers).¹¹ But since the subsidy *rate* under childcare vouchers is higher, families with lower childcare costs will typically be better off under the voucher system, as will those where one parent earns more than £100,000 (and so is not eligible for tax-free childcare). Families with high childcare costs (e.g. because they have several children) or where one or both parents were not eligible for vouchers (e.g. because their employer did not offer them) might be better off under tax-free childcare.¹²

Importantly, there is another subsidy for childcare through the tax system: childcare is exempt from VAT. The precise treatment depends on the status of the childcare provider (registered charities, local authorities, and regulated and unregulated private providers are all treated differently), their turnover, and the activities involved in childcare. But these exemptions are important: for a regulated private provider, for example, the exemption is worth between 15% and 20% of the price of childcare.

Unfortunately, it has not been possible to estimate the cost to government of childcare-specific VAT exemptions; since the specific attributes of the childcare provider matter for how it is treated by the VAT system, any estimate would require very rich data. This means that the figures we present on childcare spending through the tax system will ignore this part of the public subsidy for childcare.

Childcare subsidies in the benefit system

In the benefit system, the childcare element of universal credit (and its predecessors, working tax credit, working families' tax credit and family credit) offsets a share of

22% subsidy (20% income tax, 2% NICs). Additional-rate payers also face a slightly lower monthly cap on vouchers (£110 rather than £124 for higher-rate payers), though annual maximum savings are similar.

¹¹ This figure comes from the unrounded monthly subsidy ceiling of £77.76, multiplied by 12 months and two parents.

¹² Families deciding whether to switch from vouchers to tax-free childcare also need to take into account their expected future earnings and childcare costs, and which system is likely to be more beneficial in future years, since families cannot switch back to childcare vouchers after taking up tax-free childcare.

recipient families' childcare expenses. The size of the payment depends on a family's earnings, their monthly childcare costs, and the number and ages of their children.

The first benefits for childcare expenditure were introduced in April 1997, with the disregard of some childcare spending for families receiving family credit and other benefits such as housing benefit. In October 1999, when family credit was replaced by the working families' tax credit, the childcare disregard was instead replaced by a direct childcare tax credit covering up to 70% of formal childcare costs. In April 2003, this programme became the childcare element of the working tax credit but continued to operate in almost exactly the same way; currently, it covers 70% of childcare expenses with the subsidy capped at £531 or £910 per month.¹³

Most recently, the introduction and continued roll-out of universal credit incorporates a new, more generous, set of subsidy rates. Families with both parents (or the single parent) in work can claim back up to 85% of their childcare costs, to a maximum of £646 per month for one child or £1,108 per month if they have two or more children. Two-year-olds whose families are receiving universal credit are also eligible for the 2-year-old free entitlement,¹⁴ but families receiving universal credit are not eligible for tax-free childcare.

Take-up of different childcare programmes

The government therefore offers three 'categories' of childcare support: the free entitlement, subsidies through the tax system for employees and targeted benefits for low-income families.

Table 2.1 sets out the relative importance of the different schemes, in terms of the number of users of each. By take-up, the biggest programme by far is the universal free entitlement, which covers about 1.3 million children. Around 330,000 of these also use the extended entitlement, while there are about 150,000 2-year-olds receiving their free entitlement. Overall, then, 1.4 million children are accessing the free entitlement.

Comparing these numbers with the take-up rates of other childcare programmes is not straightforward. The statistics are produced by different departments and they cover different periods, different geographies (the whole UK rather than England) and different definitions of users (families rather than children). However, based on some assumptions, it is still possible to estimate the caseload of other programmes.

On the tax side, in 2018–19 there were just shy of 150,000 families using tax-free childcare. Although precise information is not available, this compares with over 500,000 families using childcare vouchers.

¹³ In practice, the subsidy cap for working tax credit is calculated based on weekly (rather than monthly) childcare expenditures. For a one-child family, up to £175 of childcare costs per week are subsidisable, equivalent to £9,100 per year or – at a 70% subsidy rate – a cash subsidy of up to £6,370 a year. Similar calculations apply for families with multiple children, who can have up to £300 per week of childcare costs subsidised.

¹⁴ More generally, childcare subsidies offered through universal credit do not take into account funded hours that a family receives under the free entitlement – families first claim the free hours they are entitled to, and are then subject to the same total subsidy caps on any childcare expenses they pay on top of this.

Table 2.1. Caseload for different programmes for childcare support, England

Programme	Number of families using	Number of children using	Eligibility
Free entitlement (universal)		1,277,000	1,368,000
Free entitlement (extended)		328,000	710,000
Free entitlement (2-year-old)		149,000	220,000
Tax-free childcare	144,400	174,000**	1,275,000 families*
Childcare vouchers	510,000* (gov't) 660,000* (CVPA)		
Working tax credit childcare element	295,000*		
Universal credit childcare element	30,000		

* Figures for England are estimated by rescaling totals for the whole UK by the English share of the under-15 population (85%).

** Rescaled from the number of English families using in 2018–19 based on the ratio between the number of families and children using tax-free childcare in the UK in March 2019.

Source:

Free entitlement: Pupil numbers at January 2019, from Department for Education, 'Education provision: children under 5 years of age, 2019' (<https://www.gov.uk/government/statistics/education-provision-children-under-5-years-of-age-january-2019>). Eligibility for the universal offer is based on Office for National Statistics (ONS) mid-year population estimates for 3- and 4-year-olds. Eligibility for the extended entitlement is estimated based on the Labour Force Survey (data for each quarter of 2018) and ONS mid-year population estimates, adjusted based on school entry dates. Eligibility for the 2-year-old entitlement is backed out from pupil numbers and the share of eligible pupils reported in table 1 of 'Education provision: children under 5 years of age, 2019'.

Tax-free childcare: Take-up for 2018–19 from HM Revenue and Customs, 'Tax-free childcare statistics, March 2019' (<https://www.gov.uk/government/statistics/tax-free-childcare-statistics-march-2019>). Eligibility estimate from House of Commons Written Question 124940, dated 25 January 2018 (<https://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2018-01-25/124940/>).

Childcare vouchers: Government take-up estimate from House of Commons Written Question 124940, dated 25 January 2018 (<https://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2018-01-25/124940/>). Childcare Voucher Providers Association (CVPA) estimate from <http://www.cvpa.org.uk/>, accessed 19 July 2019.

Working tax credit: Annual caseload for 2017–18 from HM Revenue and Customs, 'Child and working tax credit statistics: finalised annual awards, 2017 to 2018' (<https://www.gov.uk/government/statistics/child-and-working-tax-credits-statistics-finalised-annual-awards-2017-to-2018>).

Universal credit: Take-up in February 2019, from the Department for Work and Pensions via Stat-Xplore (<https://stat-xplore.dwp.gov.uk/webapi/jsf/login.xhtml>), table 1.

This is a remarkable departure from the government's projections, as recently as 2015. Tax-free childcare was supposed to be phased in from Autumn 2015, with the government estimating that 90% of the roughly 1.3 million eligible families would be taking part in 2015–16 (Seely, 2018). In the 2016 Budget, the government pushed back the start of the roll-out until early 2017. The programme was opened to all parents in February 2018; since October 2018, the old system of employer-provided childcare vouchers has been closed to new applicants.

But, two years on from the start of the roll-out, take-up of tax-free childcare remains strikingly below original estimates. The government estimates that 1.5 million families UK-wide – or roughly 1.3 million families in England – are eligible for tax-free childcare and have qualifying childcare expenses.¹⁵ Set against that are take-up levels of just 150,000 families in England, or around 11% of the eligible population – a far cry from the rapid take-up that the government originally anticipated. A report by the Treasury Select Committee identified several issues at play in the lower-than-expected take-up, including poor awareness (79% of families surveyed in April 2017 had not heard of tax-free childcare), technical difficulties with the website (which affected around 5% of users) and confusing and sometimes inaccurate guidance to help families choose the most appropriate childcare support scheme for them (House of Commons Treasury Committee, 2018). And, of course, since some families will be better off under the legacy childcare vouchers scheme, it is to be expected that some parents will choose to delay or try to avoid making the switch to tax-free childcare.

Within the group of families that are using tax-free childcare, there are interesting patterns based on children's ages. While children up to age 11 can use tax-free childcare (up to age 16 for those with disabilities), the majority of recipients are under age 5; over half of children using the programme are aged 1 or 2. This reflects the gap in other programmes for childcare support; working parents will typically spend some part of their child's first year on parental leave, and from age 3 children have access to the free entitlement and then school. But childcare costs in the first few years of life are typically higher and there is no systematic programme of public provision of formal childcare or support for parental care in the home.

In terms of caseload, support through the benefit system is smaller than both the free entitlement and the tax system. Around 300,000 families in England claim the childcare element of working tax credit, ten times as many as received the childcare element of universal credit in February 2019.¹⁶

The relatively low importance of universal credit's support for childcare is perhaps not surprising. Although universal credit was first introduced in April 2013, the phased roll-out concentrated first on childless claimants. The full service only became available in all areas of the UK in December 2018, the programme is still less than a third rolled out, and the process of transferring over legacy claimants has only just begun in July of this year.

¹⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/652939/Tax-free_childcare_Impact_Assessment-March_2017.pdf.

¹⁶ Figures for take-up of the childcare element of universal credit are not available on an annualised basis. While many families will claim the benefit throughout the year, there will be some families who claim for only part of the year and so will not be captured in a one-month snapshot.

Spending on support for childcare

Based on the number of users, it is clear that the free entitlement is by far the most important childcare support programme in England. Programmes delivered through the tax system have around half as many users – mostly still on the legacy childcare vouchers programme – and support through the benefit system reaches only around 300,000 families in England, around a fifth as many as the free entitlement. But, of course, the different programmes have different levels of generosity, so when assessing their importance in the English childcare support system it is important to take spending into account.

There have been important changes over the last 20 years in how – and how much – the government subsidises childcare through the tax and benefit systems. Figure 2.3 illustrates how these policy decisions have been reflected in total spending on childcare support, setting it against the free entitlement spending figures discussed in Section 2.1 to provide a fuller picture of government spending on childcare.

Spending on childcare support through the tax system (such as income tax and National Insurance relief on childcare vouchers) has tended to be much lower than spending on childcare benefits for low-income families.¹⁷ However, Figure 2.3 shows that this pattern may not hold for much longer. In 2017–18, spending through the tax system stood at around £860 million (more than two-and-a-half times its level a decade earlier), compared with £905 million in support through the benefit system.

Spending on support for childcare through the benefit system grew steadily between 1997–98 and 2009–10, peaking at £1.6 billion (in current prices). Between 2009–10 and 2012–13, however, there was a sharp 34% drop in spending in the benefit system. The biggest single-year change happened in 2011–12, when spending fell by 23% as the share of childcare expenses that are covered by the subsidy fell from 80% to 70%. More recently, spending fell sharply from £970 million in 2016–17 to £905 million the following year.

Figure 2.4 provides more detail on how these spending cuts have been implemented. It shows how total spending (in real terms), average spending per recipient family, and caseloads have changed since 2008–09. Total spending is now less than 60% of its 2008–09 level. This is a combination of falls in caseload and falls in the average award for recipients.

Caseload has fallen by 22% over this period, mainly because of a 37% drop in the number of couples claiming childcare tax credits. This is happening against a backdrop of a 10% increase in the under-15 population over this period. It seems likely that changes in the wider system of tax credits are important drivers of the fall in caseload; for example, reforms in 2011–12 will have meant fewer families were eligible for working tax credit, while the roll-out of universal credit will also have taken some families out of the working tax credit system (particularly in the last few years).

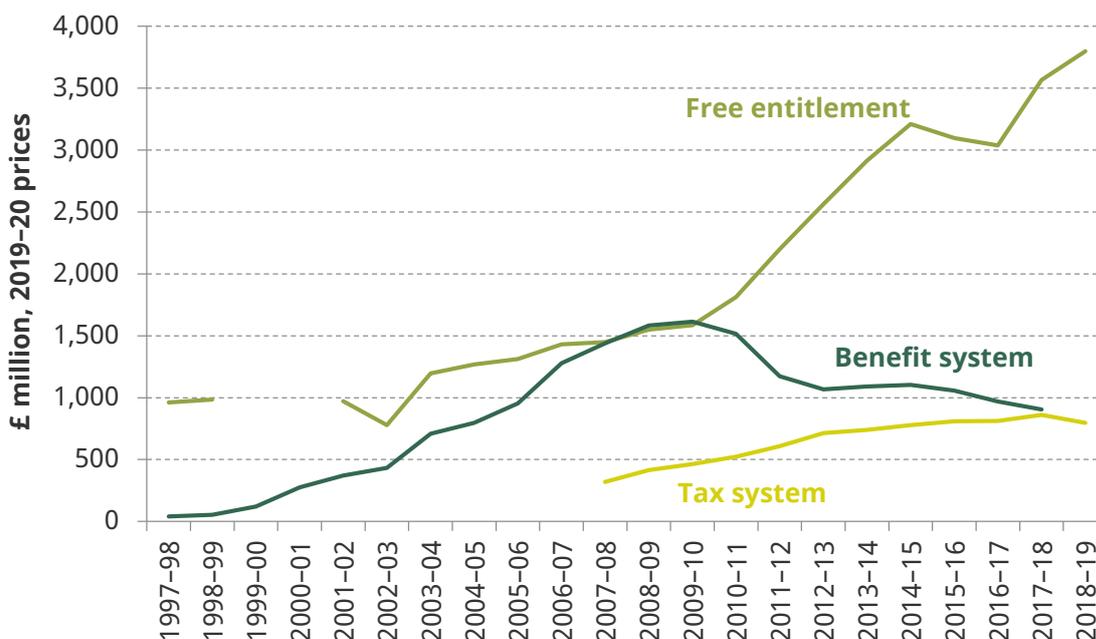
Even for those receiving childcare credits, their average generosity has fallen by more than a quarter. Figure 2.4 makes clear that the biggest falls happened in the early 2010s,

¹⁷ As discussed above, tax and National Insurance relief for some forms of employer-supported or provided childcare has existed since the 1990s, and childcare vouchers likely became an important part of the childcare landscape after a reform in 2005. Unfortunately, data on spending on this programme for 2005–06 and 2006–07 are not readily available, so these years are not reflected in Figure 2.3.

when the system was changed to cover a lower share of childcare expenses. The average weekly payment fell from £80.70 in 2008–09 to £61.21 in 2012–13 and currently stands at £58.92 (in 2019–20 prices).

But the changes in tax and benefit support for childcare, though substantial, are dwarfed by the increase in spending on the free entitlement documented in Section 2.1.

Figure 2.3. Spending on childcare support programmes in England (£m, 2019–20 prices)



Note: Spending on childcare support in the benefit system includes spending on the childcare element of universal credit, working tax credit and their predecessors. It excludes spending on the childcare element of universal credit (which is predicted to be small as take-up is low). Spending on childcare support through the tax system includes tax and, where applicable, National Insurance relief for employer-supported childcare (including both employer provision and employer-sponsored childcare vouchers) as well as for tax-free childcare. Note that data on spending via the tax system are not easily available before 2007–08, and data on the cost of VAT exemptions for childcare are not available at all (and so not incorporated here). Spending both in the tax system and in the benefit system is reported on a UK-wide basis. We approximate spending in England by rescaling by the English share of the UK's under-15 population. Free entitlement spending includes all spending on the universal and extended offer for 3- and 4-year-olds as well as the 2-year-old offer.

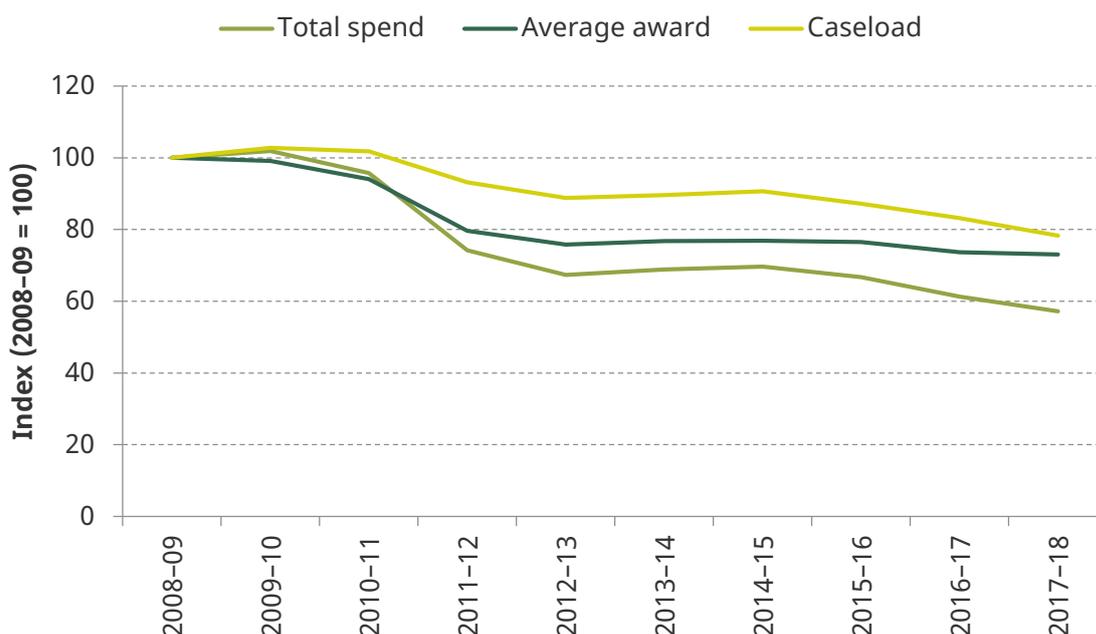
Source:

For the benefit system: Stewart and Obolenskaya (2015) [1997–98 through 2007–08]; table 3.2 and its successors in HM Revenue and Customs, 'Child and working tax credits statistics: finalised annual awards' [2008–09 onwards].

For the tax system: Stewart and Obolenskaya (2015) [2007–08 through 2011–12]; HM Revenue and Customs, 'Tax ready reckoner and tax reliefs' [2012–13 onwards]; Office for Budget Responsibility, *Economic and Fiscal Outlook*, March 2019.

Free entitlement: see note and source to Figure 2.1.

HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

Figure 2.4. Growth in spending, average award and caseload for childcare benefits

Note: Indexed to 2008-09. Spending and caseload are for England (calculated from UK figures based on under-15 population shares each year).

Source: Table 3.2 and its successors in HM Revenue and Customs, 'Child and working tax credit statistics: finalised annual awards'.

Taken together, these programmes offered around £5.3 billion in support for childcare in 2017-18; Table 2.2 shows a breakdown of spending on each programme in 2017-18 and, where data are available, in 2018-19, as well as in 2009-10 for comparison.

The increase in free entitlement spending (driven mainly by the introduction of the 30-hour extended entitlement) has more than offset cuts to subsidies through the benefit system, such that total childcare support was 45% higher in 2017-18 than in 2009-10. Figures for total spending in 2018-19 are not yet available (since statistics on benefit spending will not become available until next year). However, Table 2.2 already highlights three interesting changes in year-on-year spending:

- Spending on the universal free entitlement is predicted to fall between 2017-18 and 2018-19, as flat hourly funding rates in cash terms lead to a real-terms cut in spending per hour.
- By contrast, spending on the extended entitlement will increase by more than two-thirds, as 2018-19 is the first full financial year that the policy is in operation.
- Spending on tax-free childcare will more than triple (from a very low base) as the new programme takes over from childcare vouchers. But cuts to voucher spending of £136 million exceed the £73 million planned increase in tax-free childcare spending.

These are significant year-on-year changes, and reflect the big shifts in policy that are currently underway in the early years sector. In the next subsection, we discuss some of these changes and what they mean for the overall design of the childcare system.

Table 2.2. Spending on different programmes for childcare support in England in 2009–10, 2017–18 and 2018–19 (2019–20 prices)

Programme	2009–10	2017–18	2018–19
Free entitlement (universal)	£1,586m	£2,593m**	£2,538m**
Free entitlement (extended)		£456m**	£768m**
Free entitlement (2-year-old)		£517m	£492m
Tax-free childcare*		£29m	£102m
Childcare vouchers*	£465m	£831m	£695m
Working tax credit childcare element*	£1,613m	£905m	<i>not yet available</i>
Universal credit childcare element		<i>not available</i>	<i>not available</i>
VAT exemptions	<i>not available</i>	<i>not available</i>	<i>not available</i>
Total	£3,664m	£5,330m	<i>not yet available</i>

* Figures for England are estimated by rescaling totals for the whole UK by the English share of the under-15 population (85%).

** Total spending on the 3- and 4-year-old free entitlement is allocated to the universal and extended entitlements based on the notional shares in the Dedicated Schools Grant allocation.

Note: Total spending figure excludes spending on the childcare element of universal credit (which is predicted to be small as take-up is low) and spending on VAT concessions for childcare (spending figures are not available).

Source: See Appendix A.

The design of the childcare system

Childcare is a good example of how hard it is to categorise policy in the early years. Over the past 20 years, policymakers have outlined at least three distinct aims for their early childhood education and care (ECEC) policies: **promoting child development** (especially for disadvantaged children), **supporting working parents** and, more generally, **helping families with the cost of childcare**.

The original free entitlement for 3- and 4-year-olds was referred to as ‘early education’, and researchers found little evidence that a part-time place offered enough hours to induce mothers into work (Brewer et al., 2016). The 2-year-old offer is even more explicitly targeted at supporting the development of potentially disadvantaged children, including those whose parents are receiving out-of-work benefits.

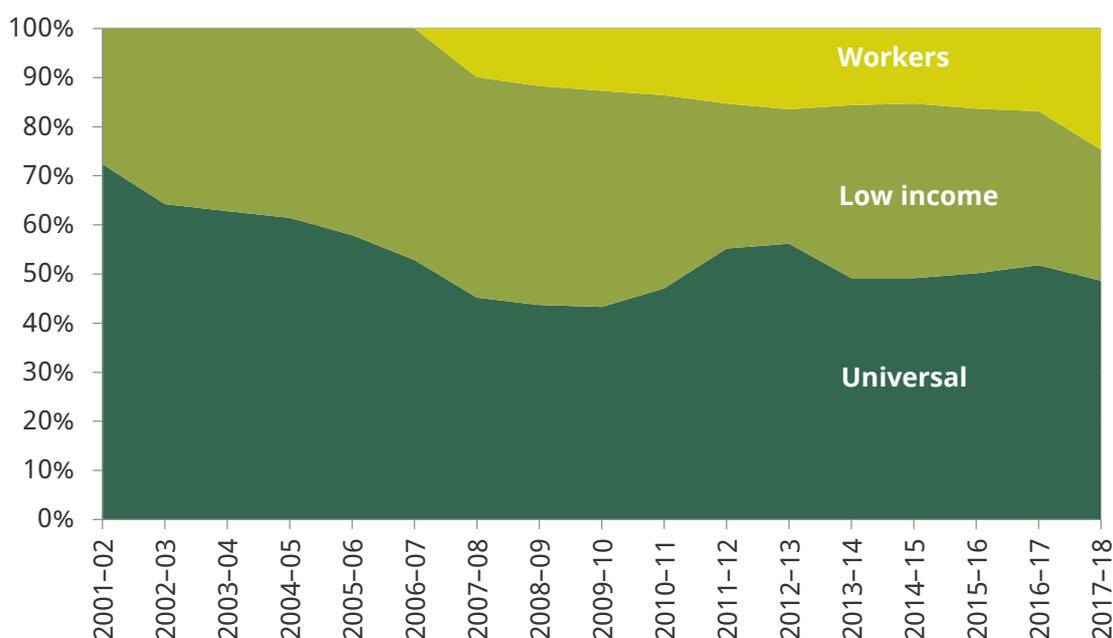
But childcare support through the extended entitlement, the tax credit system, or employer-supported and tax-free childcare is targeted at working families. In the case of

support through the tax and benefit systems, this includes children who are already in school; these subsidies are clearly targeted at supporting work and reducing the cost of childcare rather than fostering children’s development in the early years.

These different policy goals map closely into different targeted groups. Figure 2.5 shows the share of total childcare support spending that goes on universal programmes (the 3- and 4-year-old free entitlement), programmes targeted at low-income families (the 2-year-old entitlement and support through the benefit system) and programmes for working families (support through the tax system and the extended entitlement for 3- and 4-year-olds).

Unfortunately, there are some data limitations: data on spending through the tax system are incomplete, as estimates of the cost to the public finances of childcare vouchers in 2005–06 and 2006–07 (and the costs of tax and National Insurance relief for employer-supported childcare before that) are not available. Spending on the earlier years of the 2-year-old free entitlement – before eligibility criteria were formalised in 2013 – are also not available, but spending is likely to have been relatively low before this point.¹⁸

Figure 2.5. Share of childcare subsidy spending based on policy targeting



Note: ‘Universal’ refers to spending on the universal 3- and 4-year-old free entitlement. Childcare support targeted at low-income families includes the 2-year-old free entitlement and childcare subsidies in the benefit system. Support targeted at working families includes the extended entitlement for 3- and 4-year-olds and the cost of employer-supported childcare and tax-free childcare. Data for spending on workers are only available from 2007–08, though significant public cost through employer-supported childcare vouchers likely began in 2005–06.

Source: See Figure 2.3.

¹⁸ Spending in 2012–13, the first year for which data are available, stood at £120 million (compared with £2,440 million in spending on the free entitlement for 3- and 4-year-olds, £1,070 million through the benefit system and £710 million through the tax system). The following year, spending on the 2-year-old entitlement rose sharply to £580 million as the policy was expanded and formalised.

There have been important changes in the profile of childcare spending over time. In 2007–08 – the first year for which data on spending via the tax system are available – spending on the free entitlement accounted for 45% of total childcare support. Support specifically targeted at low-income families also stood at 45% of total spending, leaving only about 10% of spending explicitly targeted at working families via the tax system.

Big cuts to spending through the benefit system in 2011–12 and 2012–13 eroded the share of spending targeted at low-income families to under 30%, but as spending on the 2-year-old entitlement became more significant this helped to offset some of that effect. The introduction of the extended entitlement in 2017 sharply increased the share of spending targeted at working families, from 17% to 25%.

By 2017–18, the share of spending on universal services had risen slightly from 2007–08 levels, to 49%. However, spending on low-income families had fallen to 27% of the total and was nearly matched by spending on working families, at 25%. With additional spending on the first full year of the extended entitlement in 2018–19, it is likely that spending on childcare programmes targeted at working families will, for the first time, exceed spending on programmes for low-income families.

Of course, it is important to remember that this analysis deals with the share of total spending. Since overall spending on the sector was rising during this period, a cut in the share of spending on a particular service can still be consistent with rising spending in monetary terms. But the analysis in Figure 2.5 does illuminate how policymakers' priorities in the childcare sector have shifted over time.

Having different policies to address different goals might be a necessary feature of a complicated policy area. But it is undeniable that this has led to a complex system – involving eight different programmes, including VAT exemptions, and at least three government departments – that parents sometimes struggle to navigate.

Childcare and early education is a cross-cutting issue that affects not only education and labour supply but also child health and families' living standards. If childcare support is to be effective in achieving its aims, the government needs to clearly set out the goals it hopes to reach and think carefully about the most appropriate policy. But, at the same time, if the system is to be navigable by the families it is trying to support, different departments must work together better.

So far, policymakers have often displayed a tendency to optimistically assume that childcare programmes will deliver a double or even a triple dividend, supporting several policy goals at once. In reality, it is hard to design a programme that has meaningful benefits for both child development and parents' labour supply. Although the evidence base is far from complete, international examples of successful childcare programmes often find either benefits for children's development or increases in mothers' employment, but not both.¹⁹

¹⁹ For example, two evaluations of a 1975 expansion of subsidised childcare in Norway found big benefits for children's development and eventual labour supply, but no effect on the labour supply of their mothers at the time of the policy (Havnes and Mogstad, 2011a and 2011b). By contrast, a subsidised childcare programme in the Canadian province of Quebec significantly increased maternal labour supply, but at the cost of worsening

Spending (as a share of national income) on early childhood education and care in the UK stood close to the EU average in 2015 (OECD, 2019). On this measure, UK spending stood at 0.8% of national income or £16.9 billion – the much higher figure is primarily due to the inclusion of spending on 5-year-olds in school and on some social services, to improve comparability across countries.

On this measure, the vast majority of UK spending goes on children aged 3–5. There is a clear difference in the data between countries that spend most of their early years budget on this age group (e.g. the US, New Zealand, Germany and Italy) and countries where the division is more equal or even skewed towards children aged 0–2 (such as the Scandinavian countries, France, Korea and Australia). In general, countries with a more generous early years budget tend to spend a greater share of it on 0- to 2-year-olds, suggesting that one major international difference is the extent of government support for education and childcare in the earliest years of life.²⁰

2.3 Wider spending on children’s services

Defining ‘education’ spending in the early years is difficult. As a well-defined programme explicitly aimed at promoting children’s development (along with parents’ labour supply), the free entitlement provides the most obvious analogue to ‘school spending’.

Considering other forms of childcare support is a natural extension. But the early years landscape also has a broad range of other services. Given the well-documented synergies between different aspects of health and development in the early years, it makes sense to consider this wider picture too.

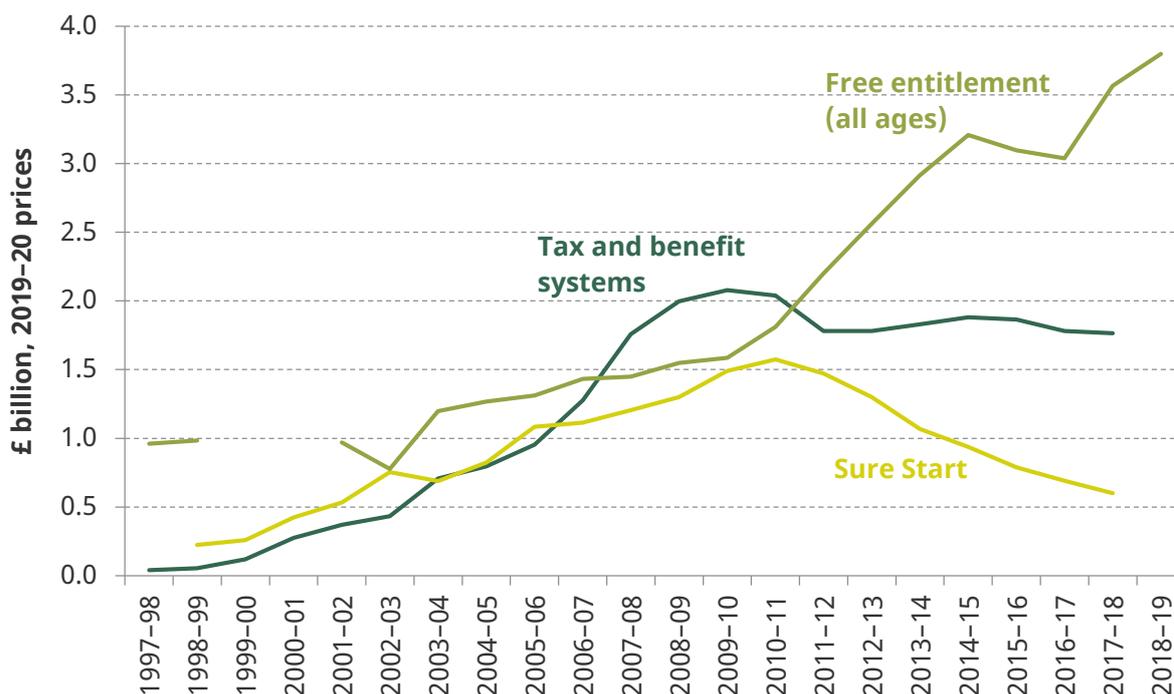
In this section, we consider spending on two other early years programmes: Sure Start Children’s Centres and wider children’s services (such as safeguarding and child protection). The latter group of services affect children and young people of all ages, not just in the early years; in this sense, they are relevant to all of the chapters of this report, but we consider them together here in order to draw out broader patterns in spending across these different services.

Sure Start

Sure Start was first introduced in 1999 and was intended to offer a one-stop shop for families with children under 5, bringing together services such as health, education, childcare and parental employment support. In keeping with these wide-ranging services, the programme was intended to have an impact on outcomes as broad as child development, health and parental employment rates.

parenting and child outcomes (such as an increase in aggression) (Baker, Gruber and Milligan, 2008; Lefebvre and Merrigan, 2008).

²⁰ There is a range of work examining in greater detail how the institutional framework for early education and childcare policy differs between countries. For example, West, Blome and Lewis (forthcoming) find that – for children aged 3 and older – provision in France and Germany offers widespread access and good quality, while staff qualifications are less well regulated in England. They argue that this is likely to undermine quality in England; however, recent work by Blanden, Hansen and McNally (2017) finds only a very weak association between the presence of a graduate in early years settings and children’s early school outcomes.

Figure 2.6. Total early years spending through various programmes (2019–20 prices)

Note: Data on spending through the tax and benefit system will be an underestimate for 2005–06 and 2006–07, when data on the cost to the public purse of employer-supported childcare vouchers are not available.

Source: See Figure 2.1 for details of sources for early years entitlement spending. See Figure 2.3 for sources for tax and benefit data. See Appendix A for sources for Sure Start spending. HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

Figure 2.6 shows how spending on Sure Start compares with spending on the free entitlement and on childcare support through the tax and benefit systems. Over the 2000s, spending on Sure Start increased alongside spending on the free entitlement. Between 2001–02 and 2009–10, Sure Start spending nearly tripled to £1.5 billion as the programme was rolled out to offer ‘a children’s centre in every community’. At the same time, the number of centres rose from 240 (in December 2001) to over 3,000 at the end of 2009 (Cattan et al., 2019). Spending through the tax and benefit systems was also rising quickly over this period, albeit from a very low base. During the 2000s, then, spending on these three early years programmes rose simultaneously, fuelled by a big increase in total spending in this area (from under £2 billion to £5.2 billion).

Since 2009–10, the picture of early years spending has been very different. Spending on the free entitlement continued to rise – fuelled by increases in the generosity of the 3- and 4-year-old offer as well as the introduction of the 2-year-old entitlement. But total spending on childcare subsidies in the tax and benefit systems was largely constant after 2011–12. And spending on Sure Start has fallen by more than two-thirds, to £600 million last year – close to its level in 2001–02.

Overall, spending on the early years did continue to rise over this period, reaching around £5.9 billion in 2017–18, but at a much slower pace than free entitlement spending alone.

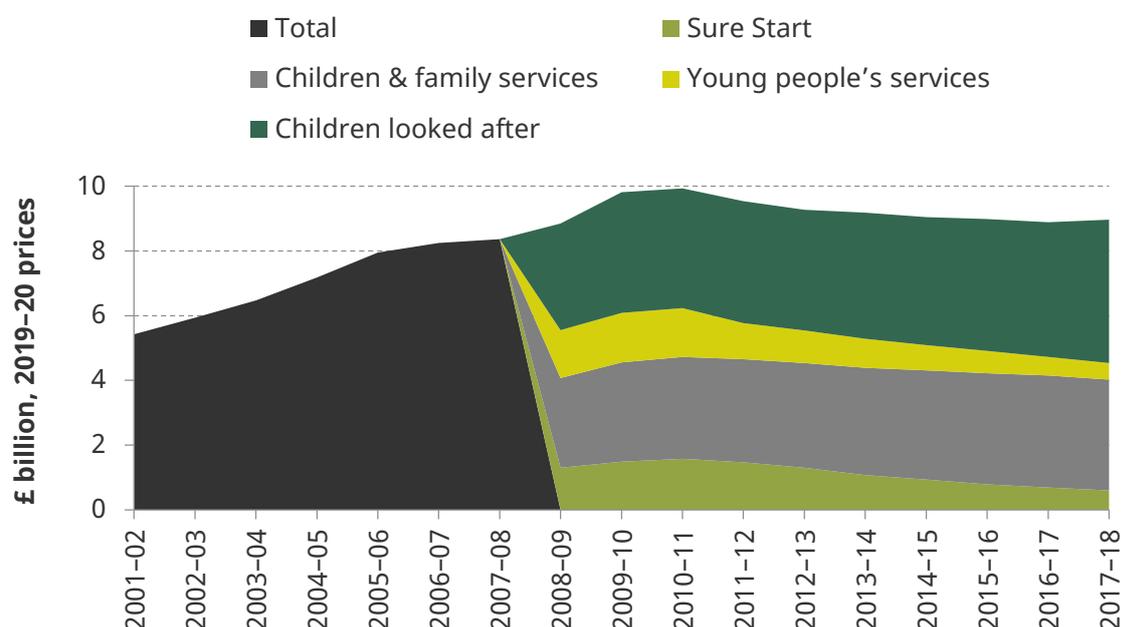
These are big changes in the shape of public spending on the early years, away from ‘holistic’ interventions such as Sure Start (which brought together a wide range of services in the hope of influencing a range of outcomes) and towards subsidised childcare and early education (with which the government hopes to promote parental employment and children’s school readiness).

Spending on children’s services

So far, we have discussed programmes that are primarily targeted at early intervention: the free entitlement, Sure Start and childcare subsidies encourage families to take up programmes that are intended to benefit their child’s development or encourage parents to work. But the Department for Education also has responsibility for children’s services, which range from universal programmes to more specialist interventions such as safeguarding or social work.

In this subsection, we take a closer look at how spending on children’s services has changed over time. In doing so, we look at the whole of spending on children and young people (not just spending during the early years). This is partly because data on spending on children’s services are not always broken down by age. But it also reflects the links between spending on social care at different ages, with interventions earlier in life sometimes affecting the need for specialist services in later childhood and through the teenage years.

Figure 2.7. Spending on social services for children and young people



Note: Total spending covers spending on child and family services and the personal social service strategy and comes from the Finance and General Estimates. From 2008-09, we use data from Section 251 returns and split spending into four categories. The data discontinuity in 2008-09 means that spending figures before and after are unlikely to be perfectly comparable.

Source: Finance and General Estimates (2001-02 to 2007-08); Section 251 returns (2008-09 to 2017-18). HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

Figure 2.7 shows how spending on social services for children and young people has changed over time,²¹ broken down into the following categories:

- **Sure Start** – Spending on Sure Start centres, services delivered by Sure Start, local authority management costs, and other spending on children under 5.
- **Children looked after** – Spending on the system for children taken into care, including fostering, adoption, guardianship, and support for unaccompanied minor asylum seekers.
- **Children and family services** – A broad category including social work, safeguarding, commissioning, the children’s services strategy, and targeted and universal programmes of family support.
- **Young people’s services** – Spending on universal and targeted programmes as well as the youth justice system. Some of the services funded include youth centres and youth work, teen pregnancy services and substance misuse services.

Between 2001–02 and 2010–11, spending was on a fairly constant upward path, rising about £500 million each year to reach £9.9 billion. Between 2010–11 and 2011–12, spending fell by 4%, driven mainly by a £400 million cut to services for young people as the incoming coalition government stopped funding the Connexions career advice programme in advance of a planned all-ages careers service. Since then, spending has fallen gradually, from £9.3 billion in 2012–13 to £9.0 billion in 2017–18. Last year, spending was equivalent to 12% of total local authority spending, and 21% of spending on areas other than education services (Brien, 2018); the latter figure is almost double the corresponding share in 2009–10.²²

However, the relative stability in overall spending on children’s services belies an important change in the composition of spending. Since 2010–11, overall spending has fallen by 10%. But, as discussed before, spending on Sure Start has fallen sharply, by 62%. At 65%, the cut to youth services has been slightly steeper.

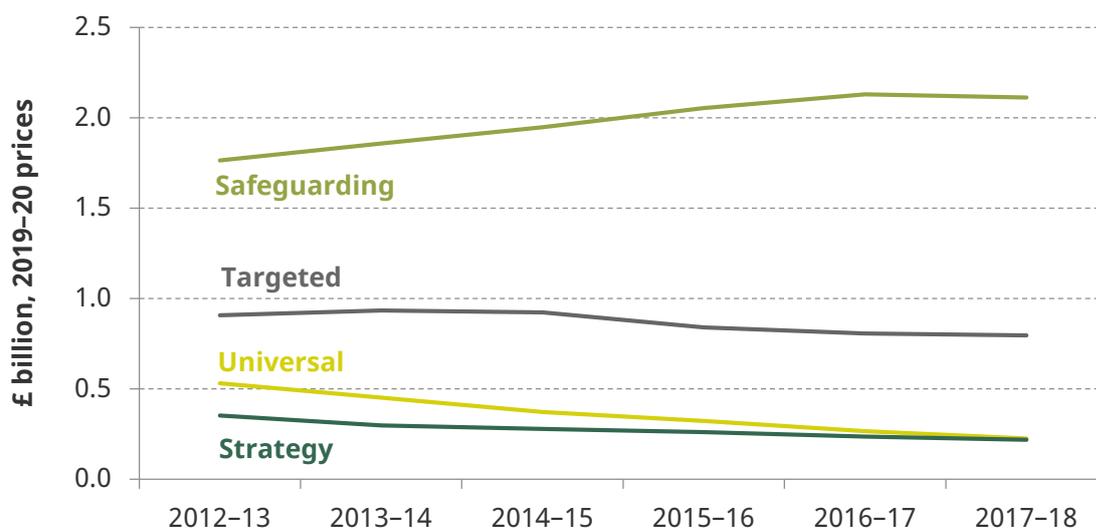
At the same time, spending on children looked after by local authorities is at its highest level since at least 2008–09, when it can first be split out from broader social services; it has grown by almost 20% in this decade. Spending on children and family services has also increased, by around 9% (£300 million) since 2010–11. These trends in spending are partly driven by the increase in numbers of children looked after (children in local authority care), which followed the Baby P case in 2007. Indeed, numbers rose from about 60,000 in 2008 to reach about 75,000 by 2018. The number of children with lower-level safeguarding concerns (children in need) has also risen over time, from about 376,000 in 2010 to about 405,000 in 2018, as has the number of children with protection plans, which has risen from about 40,000 to about 54,000 over the same period.²³

²¹ Prior to 2008–09, we use data from the Finance and General Estimates, which do not allow us to split out spending in each of these categories (see Appendix A for further details).

²² Based on local authority revenue expenditure and financing statistics.

²³ <https://www.gov.uk/government/statistics/characteristics-of-children-in-need-2017-to-2018>. Figures are snapshots of the number of children on child protection plans as of 31 March each year.

Figure 2.8. Spending on different elements of social services for children, families and young people



Note: Safeguarding includes spending on social work and safeguarding children boards. Targeted and universal services incorporate youth and children and family services. Strategy includes spending on commissioning and the children's services strategy.

Source: Section 251 returns. HM Treasury GDP deflators, June 2019

(<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

Taken together, these figures suggest that councils have largely protected spending on children and young people's social services. But within this budget, there has been a big shift towards mandatory services such as children's social care, paid for by less investment in universal and preventative services.

Figure 2.8 looks within the broader categories of youth and children and family services. It pulls out services that we can identify as 'universal'²⁴ and those that are 'targeted'.²⁵ It also shows spending on safeguarding (social work and safeguarding children boards) and on central commissioning and strategy.²⁶ It shows trends in spending only since 2012-13, over which time the categories reported in the spending data are consistent.

Over the past six years, spending on safeguarding has risen by 20%, from £1.8 billion to £2.1 billion. At the same time, spending on targeted services for youth and families has fallen by 12%. Spending on universal services for youth and families has fallen even faster, from around £530 million in 2012-13 to £230 million in 2017-18 – a fall of almost 60%. In 2017-18, spending on universal services was just £7 million higher than spending on commissioning and strategy.

Prioritising short-term emergencies might be understandable, but it is a potentially costly strategy since these 'late intervention' systems are typically much more expensive than effective preventative strategies.

²⁴ This combines spending reported under the 'universal services for young people' and the 'universal family support' headings.

²⁵ This combines spending under the 'targeted services for young people' and the 'targeted family support' headings.

²⁶ This is the 'commissioning and children's services strategy' spending heading.

2.4 Future policy options

This chapter has outlined a number of trends in the early years sector. Spending on the free entitlement has risen, driven by the introduction of the new extended entitlement; but spending per hour of care has grown only slowly, and it fell in real terms last year. Spending on childcare subsidies delivered through the benefit system has fallen sharply back since its peak in 2009–10, driven by cuts in the early 2010s to both welfare caseloads and average generosity. At the same time, spending on tax reliefs for childcare – primarily through employer vouchers – is more than 70% higher than in 2009–10. Meanwhile, wider children’s services have seen spending cuts and a reallocation of money away from early intervention and universal services and towards safeguarding.

In this autumn’s spending round, the government offered a small funding increase for early years of £66 million in 2020–21 (£65 million in today’s prices), which is roughly enough to protect hourly funding in real terms in that year. While this will no doubt be welcome for providers, this was a relatively small announcement in the context of a £13,400 million giveaway spending round, and one that leaves the broader patterns of early years spending largely unchanged. However, there will still be ample opportunity for the government to consider whether and to what extent these sorts of patterns should continue going forward in next year’s spending review – if not in an earlier election campaign.

In this section, therefore, we consider the cost of a range of policy options drawn from across the political spectrum. We provide estimates both for the next financial year (2020–21), which can inform potential promises made on the election campaign trail, and for a multi-year spending review covering 2021–22 and 2022–23; combined, these exercises would make up the three-year horizon discussed by former Chancellor Philip Hammond in the March 2019 Spring Statement.

One of the particular challenges in costing early years programmes (as opposed to schools) is that it can be difficult to predict take-up, which is one of the most important components of programme costs. This is particularly hard when predicting take-up rates for a different age group or a different duration of entitlement. For example, take-up of the 2-year-old offer is much lower than for 3- and 4-year-olds. Analysing an extended offer of free hours – e.g. moving from a 15-hour to a 30-hour entitlement – is also challenging; since families’ decisions might change when offered more free hours (e.g. some mothers might choose to return to work), existing childcare usage is not a good guide to future take-up. For this reason, we limit ourselves to costing changes to the free entitlement programme that happen within the same age group and number of hours of childcare. We also consider options for increasing spending on Sure Start, as promised by the Labour party in the 2017 election campaign.

Box 2.1. Early years promises in the 2017 election

One guide for childcare policies likely to feature in political debate is the manifestos used in the 2017 election. The campaign featured very different proposals for the future of the early education and childcare system.

The Conservative party emphasised its plans to introduce the 30-hour extended entitlement later that year. This policy has since been implemented, and while spending statistics do not differentiate between the universal and extended entitlements, the breakdown used in the early years budget suggests that it cost about £700 million in 2018–19.

The Labour party proposed a radical overhaul of England’s childcare support system: its manifesto promised to extend the 30-hour entitlement to all 3- and 4-year-olds; extend the 2-year-old entitlement to all 2-year-olds in 2020–21 and double it to 30 hours the following year; subsidise additional care over and above these free hours; and offer some free childcare for 1-year-olds in the longer term. The party’s manifesto also promised to increase hourly funding rates to support a graduate-led childcare workforce, and to increase spending on Sure Start.

The Labour party put the cost of this package at £5.3 billion in 2021–22 (which is equivalent to £5.5 billion in today’s prices). However, IFS analysis at the time noted that this figure was highly uncertain, and was unlikely to reflect the true long-run cost of the party’s childcare package (Cattan and Farquharson, 2017). The 2020–21 figure excluded the cost of offering free or subsidised care to 1-year-olds and of extending maternity pay to 12 months. The cost of policy commitments such as ‘phasing in subsidised provision on top of free-hour entitlements’ will depend a lot on the actual programme put in place: how many hours it subsidises, at what rate of subsidy, who is eligible for the subsidies, and how many hours they choose to take up at the new, lower price.

In addition, the Labour party promised higher hourly funding rates to ‘transition to a qualified, graduate-led workforce’. Ensuring that early education places are of high quality is essential if they are to support children’s development (though recent research is divided on whether a graduate-led workforce is necessary to achieve this; see footnote 20 for details). But without knowing the specific changes to the hourly funding rate that the party proposed, it is difficult to incorporate this into an independent costing of the childcare package.

Meanwhile, the Liberal Democrats’ 2017 manifesto offered a 15-hour entitlement for children aged 9 months and above in working families, a universal 15-hour entitlement for 2-year-olds (with a longer-term goal to extend this to 30 hours), and a tripling in the early years Pupil Premium (which offers extra funding for disadvantaged children) to £1,000.

All of the options that we consider are compared against a spending baseline based on current policy. This means that spending per hour is frozen in cash terms except for 2020–21, when early years will receive a £66 million boost from the recent spending round. Absent further details on how these funds will be used, we allocate the money to the free entitlement programmes based on their current share of total free entitlement spending. This broadly results in hourly funding for 3- and 4-year-olds remaining frozen in real terms between 2019–20 and 2020–21, with a real-terms cut for 2-year-olds.²⁷ We then assume that these new, higher, 2020–21 rates are maintained in cash terms going forwards.²⁸

The first policy option that we analyse in Table 2.3 is offering real-terms protection in per-hour funding for the free entitlement (across all ages) at 2018–19 levels (the last year for which we have out-turn data). Factoring in changes in the population size and assuming that take-up stays constant at its 2018–19 level, offering real-terms protection would cost about £80 million in the first year (2020–21) and about £220 million (in today's prices) in 2022–23. The costs in 2020–21 stem from reversing the effects of a cash-terms freeze in hourly funding rates between 2018–19 and 2019–20.

The second policy option we cost is the Labour party's proposal to make the 30-hour entitlement universal, offering it to all 3- and 4-year-olds regardless of whether their parents are in work. We cost this policy based on the baseline funding rates; this means our calculations do not account for Labour's promised higher hourly funding rates. Even so, this is an expensive policy: since at the moment only about half of children are eligible for the extended entitlement, making the scheme universal would almost double spending over the baseline, costing £625 million in 2022–23.

Others have suggested that the extended entitlement as it stands is too generous to high earners. For example, the Education Select Committee found an 'overwhelming message' of concern that the extended entitlement would lead to more inequality in child development and that resources would be better targeted at more disadvantaged children (House of Commons Education Committee, 2019). The third policy that we cost is therefore to limit entitlement to families where parents are both earning under £50,000 (the threshold at which child benefit starts to be withdrawn). There are relatively few people who earn more than £50,000 but less than £100,000, so this change would only reduce the share of children eligible by 8 percentage points, to 45%. Still, this change would be enough to save the government about £100 million a year by 2022–23.

²⁷ In 2018–19 – the last year for which we have out-turn data – total free entitlement spending stood at £3,798 million, of which 87% supported the universal and extended entitlements for 3- and 4-year-olds. Based on the assumptions we have made about the allocation of new spending, this implies an extra £56 million of spending on this age group from the 2019 Spending Round announcement, and another £8 million for 2-year-olds. However, based on population projections, the number of funded hours for 2-year-olds is likely to grow next year, while hours for 3- and 4-year-olds may fall slightly. Taking all this into account, we estimate that baseline hourly spending in 2020–21 will be £5.34 for 3- and 4-year-olds (unchanged from the year before) and £6.40 for 2-year-olds (down from £6.47, all in today's prices). It is essential to stress that this split is based on our assumptions rather than announced government policy; the government could choose to allocate the £66 million differently. However, since the overall amount of money at stake is small relative to the early years budget, these choices do not meaningfully affect the costs of the proposals we outline in this chapter.

²⁸ We take a cash-terms freeze as a baseline case since the Department for Education has not announced any plans to increase hourly funding rates beyond 2020–21. Although central government funding rates do not necessarily translate directly into actual spending, the unchanged per-hour funding in 2017–18 and 2018–19 gives us further confidence that this is a realistic baseline scenario.

Table 2.3. Costings for potential childcare and early years options (2019–20 prices)

Policy option	Net cost in 2020–21	Net cost in 2022–23	Baseline cost in 2019–20
Real-terms protection for per-hour funding	£82m	£219m	£3,709m
Extend the 30-hour entitlement to all 3- and 4-year-olds	£661m	£625m	£721m
Remove the 30-hour entitlement for parents earning over £50,000	–£113m	–£98m	£721m
Offer 15 hours' childcare for all 2-year-olds	£703m	£675m	£468m
Restore Sure Start spending to 2010–11 levels and protect in real terms	£1,007m	£1,028m	£579m
Real-terms protection for Sure Start spending at 2017–18 levels	£33m	£54m	£579m

Note: The baseline case for the childcare scenarios assumes a cash-terms freeze in spending per hour at 2018–19 levels, constant take-up of existing programmes and constant eligibility rates (40% for the 2-year-old entitlement and 52% for the 30-hour extended entitlement) and takes into account population growth. The baseline case for Sure Start spending assumes a cash-terms freeze at £579 million, which is nominal Sure Start spending in 2017–18 (the last year of data available).

Source: Authors' calculations.

The final free entitlement option that we examine is to make the 2-year-old entitlement to 15 hours a week of early education universal, as proposed by both Labour and the Liberal Democrats. This would cost £700 million in 2020–21, falling to £680 million in 2022–23, increasing spending on the 2-year-old entitlement by 150% over the baseline projected cost in that year.

Finally, we cost two very different policies on Sure Start spending: returning spending to its 2010–11 peak of £1.6 billion (and protecting it in real terms); and maintaining spending at current levels in real terms going forward. Both of these options are costed against a baseline scenario that assumes a cash-terms freeze in Sure Start spending at £579 million, the cash-terms level of spending in 2017–18 (the last year of data available; this is £601 million in today's prices). In fact, if recent history is any guide, this counterfactual might be quite generous; cuts since 2010–11 have averaged 13% per year. Any further planned cuts to the Sure Start budget would increase the cost of these options relative to the planned baseline.

Restoring Sure Start spending to its 2010–11 peak is an expensive proposition. We estimate that the cost of doing this in one shot in 2020–21 would be just over £1 billion; continuing to protect this level of spending in real terms means that the cost in 2022–23 would rise by another £21 million. By comparison, offering real-terms protection for Sure Start budgets at 2017–18 levels is the cheapest policy option we consider, costing just £33 million in 2020–21 and £54 million two years later.

The differences between these policy options – for childcare and for Sure Start – highlight some of the big choices facing government, or parties in an election campaign. These are only indicative options; there is a wide range of potential policies costing somewhere in between either endpoint of our costings, and indeed there are policy options that would be even more expensive or save even more money. In practice, decisions about how far – and how quickly – to increase budgets for services such as Sure Start should be informed by evidence about the impact that they have on families and children, balanced against political judgements about which areas of spending to prioritise.

2.5 Summary

Unlike some other areas of education spending, total spending on the early years has risen significantly and fairly consistently over the last 30 years. Since its inception in 1997, spending on the free entitlement has grown to around £3.8 billion in 2018–19; spending on childcare subsidies through the tax and benefit systems stood at £1.8 billion the year before; and, while spending on Sure Start has been cut, the wider budget for children and young people’s social services has broadly held up at around £9 billion, of which about half goes on children looked after.

But while the growth of policy initiatives in the early years has been welcome, it is also important for policymakers to consider the overall design of the system and how well it supports the different – and sometimes conflicting – goals of promoting child development and supporting parents to work. There have been big changes in how spending within the early years is allocated, with a much greater role for the free entitlement and the tax system set against cuts to childcare subsidies for low-income families and dramatic cuts to services such as Sure Start.

England is not short of ideas about ‘where next’ for the early years sector. The Conservative party has tended to prioritise childcare for working families as part of a strategy to encourage parents into work. Meanwhile, the Labour party and the Liberal Democrats have proposed substantial changes to the childcare system, accelerating the trend to put the free entitlement at its core and doing away with many of the demand-side subsidies through the tax and benefit systems in the process.

But any decisions about the future of England’s early childhood education and care strategy need to be informed both by evidence into what works and by clear thinking about what the policy priorities are. In this sense, the upcoming spending review – and any election campaign that might precede it – provide an opportunity for politicians and policymakers to consider their goals for the early years sector, and the different policy options available to meet them. In a sector that has often been pulled different ways by competing targets, and where families often struggle to make sense of an increasingly complex system, clear thinking and clearly articulated goals will be welcome.

3. Schools

School spending covers pupils in state-funded schools aged 5–16, as well as pupils aged 16–18 in school sixth forms. In 2018–19, total spending on schools in England represented about £50 billion (in 2019–20 prices), accounting for 17% of total public service spending in England.²⁹

In what follows, Section 3.1 updates our estimates for school spending per pupil over time in England up to 2019–20 and illustrates how staffing levels have changed over the same period. Section 3.2 analyses how school spending per pupil has changed across the UK over the past decade. In Section 3.3, we set out the implications of the recent spending round and challenges facing policymakers over the next few years. Section 3.4 provides a summary of this chapter.

Further details and assumptions in constructing measures of school spending per pupil can be found in Appendix B.

3.1 Trends in school spending and staffing in England

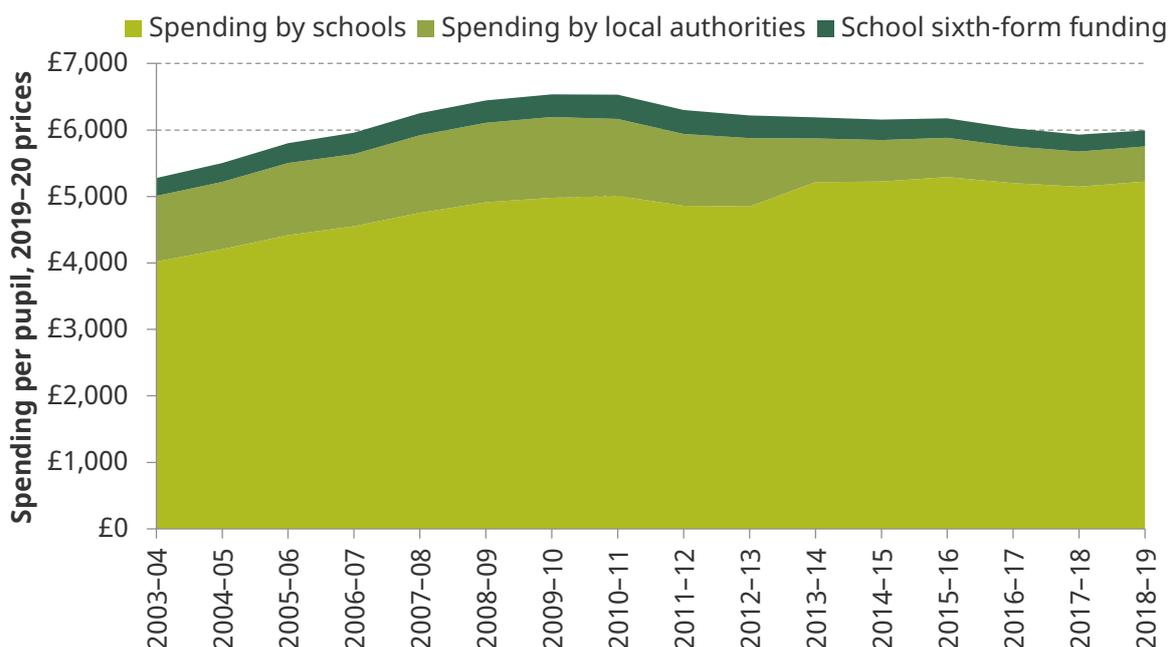
Figure 3.1 shows total school spending per pupil aged 3–19 between 2003–04 and 2018–19 broken down into three different components:

- **Funding allocated to schools** – This includes funding directly allocated to schools and early years providers. Early years providers are included because primary school budgets include funding for nursery pupils in some years.
- **Local authority spending** – This includes central spending on pupils with special educational needs, transport, educational psychology and other services provided to schools and pupils by local authorities.
- **Sixth-form funding** – This includes funding provided to schools for pupils aged 16–19.

In 2003–04 (the earliest year for which we can produce this set of figures in a consistent way), spending directly allocated to schools represented £4,000 per pupil (in 2019–20 prices) or about 76% of total school spending per pupil, which stood at £5,300 per pupil. The rest represented spending by local authorities (about £1,000 per pupil) and sixth-form funding (about £270 across all pupils aged 3–19 or about £5,000 per pupil in school sixth forms).

As summarised in Table 3.1, over the six years up to 2009–10, each component rose by a similar amount – roughly a quarter – in real terms. As such, the share of total spending directly allocated to schools remained at around 76%.

²⁹ Total school spending as calculated in Figure 3.1 and quoted as a proportion of total resource departmental expenditure limits for 2018–19 (excluding Wales, Scotland and Northern Ireland) as recorded in PESA 2019 (<https://www.gov.uk/government/statistics/public-expenditure-statistical-analyses-2019>).

Figure 3.1. Total school spending per pupil by component (2019–20 prices)

Note and source: See Appendix B.

Table 3.1. Summary of levels and changes in different components of total school spending per pupil (2019–20 prices)

	Spending by schools	Spending by local authorities	School sixth-form spending	Total spending
2003–04	£4,019	£991	£268	£5,279
<i>Change</i>	<i>£963</i>	<i>£219</i>	<i>£75</i>	<i>£1,258</i>
<i>Real-terms growth</i>	<i>24%</i>	<i>22%</i>	<i>28%</i>	<i>24%</i>
2009–10	£4,983	£1,211	£343	£6,537
<i>Change</i>	<i>£245</i>	<i>-£685</i>	<i>-£103</i>	<i>-£543</i>
<i>Real-terms growth</i>	<i>5%</i>	<i>-57%</i>	<i>-30%</i>	<i>-8%</i>
2018–19	£5,228	£526	£240	£5,994

Note and source: See Appendix B.

After 2009–10, the different components evolved very differently. Per-pupil spending by schools rose by around 5% in real terms or about £250. This increase is larger than initial plans for a real-terms freeze in school spending per pupil (including spending on the Pupil Premium), which is the result of a combination of factors. First, actual inflation turned out to be lower than expected between 2010–11 and 2015–16, leading to a higher settlement in real terms than initially anticipated. Second, after 2011–12, a range of responsibilities and associated funding moved from local authorities to schools themselves. Analysis by Sibietta (2015) suggests this transfer of funding equated to about 4% of school budgets.

Third, these figures will also include growth in early years spending reported in the previous chapter.

In contrast, local authority spending on services fell by 57% or about £690 per pupil in real terms between 2009–10 and 2018–19, and school sixth-form funding per pupil fell by about 30% or £100.

As a result of these contrasting trends, total school spending per pupil fell by about 8% or about £540 per pupil between 2009–10 and 2018–19. Much of this fall happened prior to 2015–16, with a fall of 5.5% in real terms between 2009–10 and 2015–16 and a further fall of 2.9% between 2015–16 and 2018–19.³⁰

Looking over the long run, these changes leave total school spending per pupil about 14% higher in real terms than at the start of our series in 2003–04.

These figures represent the best measures of the change in total public spending available for school services over this period. They include the effect of cuts to local authority services, many of which schools will have had to fund from their existing budgets, and cuts to school sixth-form funding, which will have put pressure on secondary school budgets. If we exclude school sixth-form funding, school spending per pupil aged under 16 has fallen by 7% in real terms between 2009–10 and 2018–19.

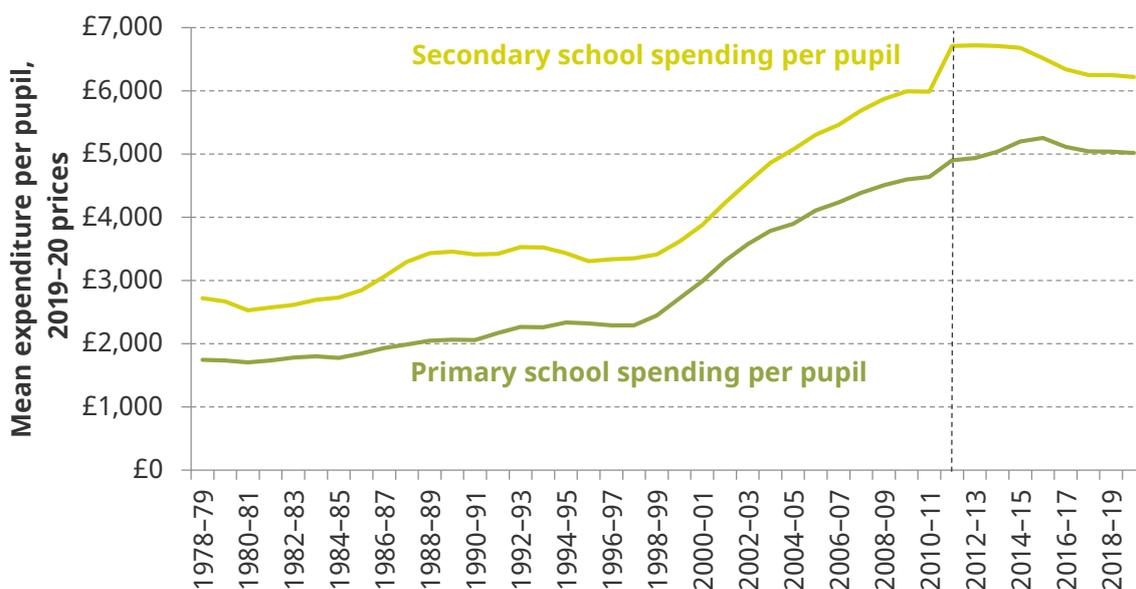
Primary and secondary school spending

Figure 3.2 shows our estimates for the level of primary and secondary school spending per pupil in England over time (in 2019–20 prices), together with projections up to 2019–20 implied by funding allocations and projections (this excludes any effects of the recent spending round, which are detailed in Section 3.3). The data we use to calculate these figures allow us to track spending per pupil further back in time. Here, our definition of school spending is the sum of the amount of spending undertaken by individual schools, which will include expenditure on sixth-form students. It excludes spending undertaken directly by local authorities, spending on special schools and spending in independent fee-charging schools.

As can be seen, spending per pupil has evolved in a number of distinct phases:

- **Modest growth over the 1980s and 1990s** – During the 1980s and 1990s, primary school spending per pupil grew by 2.3% per year, on average, in real terms and secondary school spending per pupil grew by slightly less (around 1.5% per year, on average). There was also a fall of 6% in real terms in secondary school spending per pupil between 1992–93 and 1995–96.
- **Rapid growth over the 2000s** – From 1999–2000 onwards, spending per pupil grew rapidly, with growth of over 5% per year in real terms for primary and secondary schools over the 2000s. This led primary school spending per pupil to rise from £2,700 per pupil in 1999–2000 to reach £4,600 by 2009–10, whilst secondary school spending per pupil grew from £3,600 to £6,000 per pupil.

³⁰ This latter fall is slightly lower than the 5% fall quoted for Figure 3.2, which results from the fact that Figure 3.1 includes rises in funding for early years providers and excludes a small further fall in school spending per student in 2019–20.

Figure 3.2. Spending per pupil in primary and secondary schools (2019–20 prices)

Source: See Appendix B for a full list of sources and methods for school spending. HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

- Real-terms protection between 2010 and 2015** – Under the coalition government, existing school spending per pupil was frozen in cash terms from 2010–11 onwards, but the creation of the Pupil Premium (totalling just under £2.5 billion by 2015–16³¹) and lower-than-expected inflation ensured that total school spending per pupil was largely protected in real terms. Figure 3.2 shows a big apparent increase in 2011–12, which can be largely explained by inconsistencies in the data.³² Between 2011–12 and 2015–16, spending per pupil rose by 7% in real terms in primary schools and fell by about 3% in secondary schools. These differing trends can be accounted for by a range of factors working in different directions. First, the Pupil Premium was gradually introduced at a higher rate in primary schools. Second, funding will have moved to both primary and secondary schools as schools took on responsibility for services previously provided by local authorities (see Figure 3.1 for further details). Third, secondary schools will have further lost out from reductions to school sixth-form funding (see Chapter 4 for further details).
- Real-terms falls since 2015** – Between 2015–16 and 2017–18, school spending per pupil continued to be frozen in cash terms, which translated into a real-terms cut of around 4%. This was the first real-terms cut in per-pupil spending since the mid 1990s. These cuts were due to continue at a similar pace until 2019–20. However, the Department for Education made several new funding announcements in July 2017, 2018 and July 2019 (including both extra core funding and the creation of a teachers’ pay grant). Despite this, school funding per pupil fell by a further 0.5% in real terms between 2017–18 and

³¹ <https://www.gov.uk/government/publications/pupil-premium-2015-to-2016-allocations>.

³² These result from inconsistencies in the availability of data for academies (only available from 2011–12 and on a slightly different basis from maintained schools) and greater levels of funding and responsibilities devolved from local authorities to schools; see Belfield and Sibieta (2016) for more details.

2019–20, after accounting for the latest figures for inflation and pupil numbers. This equates to a total cut of about 5% since 2015–16.

Based on current policy and trends, primary school spending per pupil in 2019–20 will be about 2% above its level in 2011–12 and secondary school spending per pupil will be about 7%, or £500, lower than in 2011–12.

Both primary and secondary school spending per pupil will still be over 60% higher than in 2000–01. However, this is likely to be an overestimate of growth over time as these figures partly reflect transfers of responsibilities and funding from local authorities to schools. Since 2003–04, our comprehensive measure of school spending per pupil takes these changes into account. This rose by 14% in real terms between 2003–04 and 2018–19, which is about half of the equivalent growth in spending per pupil by individual schools (30%).

We cannot track this comprehensive spending figure before 2003–04. If we assume that the comprehensive figure grew in line with school-based spending between 2000–01 and 2003–04 and combine this with the growth that we observe from 2003–04 onwards, we estimate that the comprehensive measure of school spending per pupil grew by a total of 44% for primary schools and 42% for secondary schools between 2000–01 and 2019–20. This equates to an annual average real-terms growth rate of about 1.9% per year.

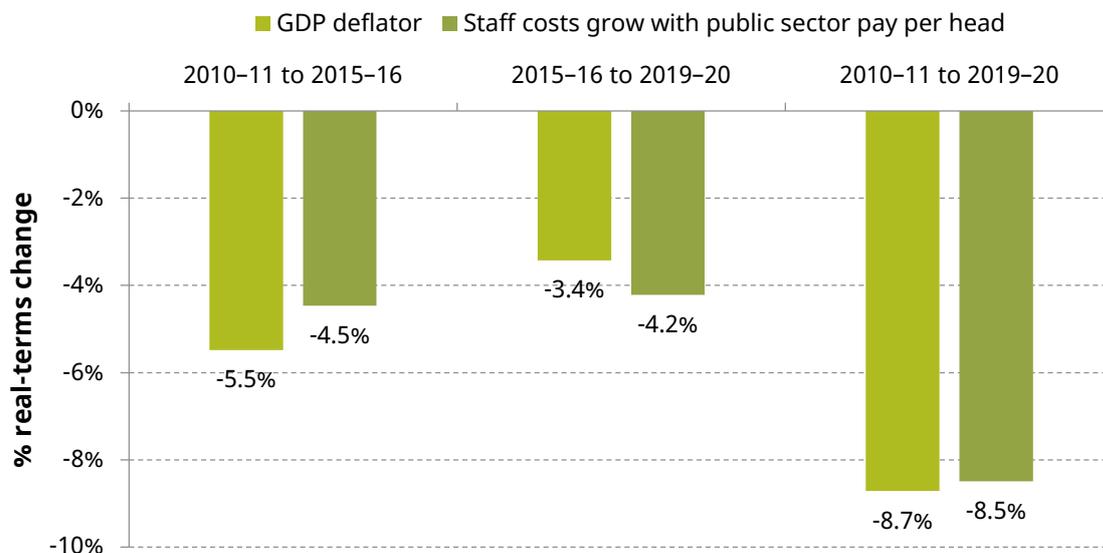
Even this figure is likely to be a slight overestimate, since the transfer of funding and responsibilities from local authorities to schools predates 2003–04. This means that the assumption that the comprehensive funding measure tracked the school-based spending measure before 2003–04 is likely to overstate actual growth in the comprehensive measure. Therefore, total school spending per pupil is unlikely to be more than about 40% higher in 2019–20 than it was in 2000–01.

Staffing costs

The spending trends quoted above are based on an economy-wide measure of inflation: the GDP deflator. But the actual costs faced by schools are likely to evolve differently in individual years. In particular, staffing costs make up about three-quarters of school budgets, so changes in public sector pay can have important consequences for resource pressures within schools.

In Figure 3.3, we therefore show real-terms changes in total school spending per pupil in two scenarios. The first assumes that schools' costs follow economy-wide inflation (as measured by the GDP deflator); this is equivalent to the spending figures presented so far in this chapter. The second scenario instead assumes that 75% of schools' costs change in line with average public sector pay per head (as faced by employers); the remaining 25% of costs still change with the GDP deflator. We do this separately for the period from 2010–11 to 2015–16 (corresponding to the coalition government) and from 2015–16 onwards.

Under the coalition government, school spending per pupil fell by about 5.5% in real terms between 2010–11 and 2015–16 judged against the GDP deflator, but by the lesser figure of 4.5% if we assume that staff costs grew in line with public sector pay per head. This results from the fact that growth in public sector pay per head (6% in cash terms between 2010–11 and 2015–16) was below that in economy-wide inflation (7.5%) over this period. The slower growth in public sector pay per head is linked to a two-year freeze in public sector

Figure 3.3. Real-terms changes in total school spending per pupil under different assumptions for inflation faced by schools

Note and source: Growth in total spending per pupil as reported in Figure 3.1, plus expected cash-terms growth in 2019-20 as implied by Figure 3.2. When calculating the real-terms growth in costs faced by schools, we also add the value of the Teachers' Pension Employer Contribution Grant in 2019-20. Growth in the GDP deflator is taken from HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>). We assume that 75% of school costs are staff costs. Growth in staff costs is assumed to follow growth in public sector pay per head as shown in Office for Budget Responsibility, *Economic and Fiscal Outlook*, various years: 2017-18 to 2019-20 taken from March 2019 forecast (<https://obr.uk/efo/economic-fiscal-outlook-march-2019/>), 2016-17 taken from March 2018 forecast (<http://obr.uk/efo/economic-fiscal-outlook-march-2018/>), 2015-16 taken from November 2016 forecast (<http://obr.uk/efo/economic-and-fiscal-outlook-november-2016/>), 2014-15 taken from March 2015 forecast (<http://obr.uk/efo/economic-fiscal-outlook-march-2015/>), 2013-14 taken from March 2014 forecast (<http://obr.uk/efo/economic-fiscal-outlook-march-2014/>), 2012-13 taken from December 2013 forecast (<http://obr.uk/efo/economic-fiscal-outlook-december-2013/>), 2011-12 taken from March 2013 forecast (<http://obr.uk/efo/economic-and-fiscal-outlook-march-2013/>) and 2010-11 taken from March 2012 forecast (<http://obr.uk/efo/economic-and-fiscal-outlook-march-2012/>).

pay in 2011-12 and 2012-13 (excluding low-paid workers), and then the subsequent 1% cap on pay increases.³³

Increases in employer pension contributions and National Insurance contributions in April 2015 and 2016, respectively, added to schools' payroll costs, but these were partly balanced out by the fact that teacher salary increases were held at 1% per year up to 2018. From September 2018, the 1% public sector pay cap was lifted for teachers. Classroom teachers on the main pay scale (about 40% of teachers³⁴) saw increases of 3.5% and other teachers received a 2% increase, while school leaders received a 1.5% rise. From September 2019, teachers received a 2.75% increase in salary scales. This must be afforded within 1.5% cash-terms growth in funding per pupil between 2018-19 and 2019-

³³ Public sector pay per head still managed to grow by 6% because low-paid workers were excluded from the initial freezes in 2011-12 and 2012-13, and because of compositional shifts in the public sector workforce.

³⁴ Authors' calculations using School Workforce Census Statistics, November 2014 (<https://www.gov.uk/government/statistics/school-workforce-in-england-november-2014>).

20. The government declared an ambition to increase teacher starting salaries to £30,000 by 2022–23, but no details are available yet on how this would be delivered.

From September 2019, schools face additional costs in the form of increased employer contributions to the Teachers' Pension Scheme, which rise from 16.4% to 23.6% of gross salary each year.³⁵ In contrast to the rises in 2015, the government has announced that it will compensate schools for these increases in the form of a grant (the Teachers' Pension Employer Contribution Grant), to be worth £848 million from September 2019 to March 2020.³⁶

Combining all these factors, between 2015–16 and 2019–20 the OBR expects that public sector pay per head will grow by 12.2% in cash terms, outpacing growth in the GDP deflator (8.4%) by about 4 percentage points. This places additional pressure on school budgets. Using the GDP deflator, we expect that total school spending per pupil will have fallen by about 3.4% in real terms between 2015–16 and 2019–20 (*excluding* the Teachers' Pension Employer Contribution Grant³⁷), but by the higher figure of about 4.2% if we assume staff costs grew in line with public sector pay per head (and *including* the Teachers' Pension Employer Contribution Grant in school spending).

Looking over the full period (2010–11 to 2019–20), we find that total school spending per pupil would have fallen by about 8.7% in real terms judged against the GDP deflator and by about 8.5% in real terms if we assume that schools' staff costs grew in line with public sector pay per head. The lower and higher relative growth rates in public sector pay per head before and after 2015–16, respectively, are largely offsetting when we consider the period as a whole.

Staffing levels

With school spending per pupil falling in real terms over recent years, a key question is how these cuts have translated into the resources employed by schools. Ideally, we would track what has happened to spending through different budget lines, such as staffing or programme spending. While data limitations preclude a full analysis, we can show how numbers of different types of staff have changed over the last 20 years. This covers around three-quarters of school budgets and will reflect both schools' own choices and policy changes requiring schools to employ particular types of staff.

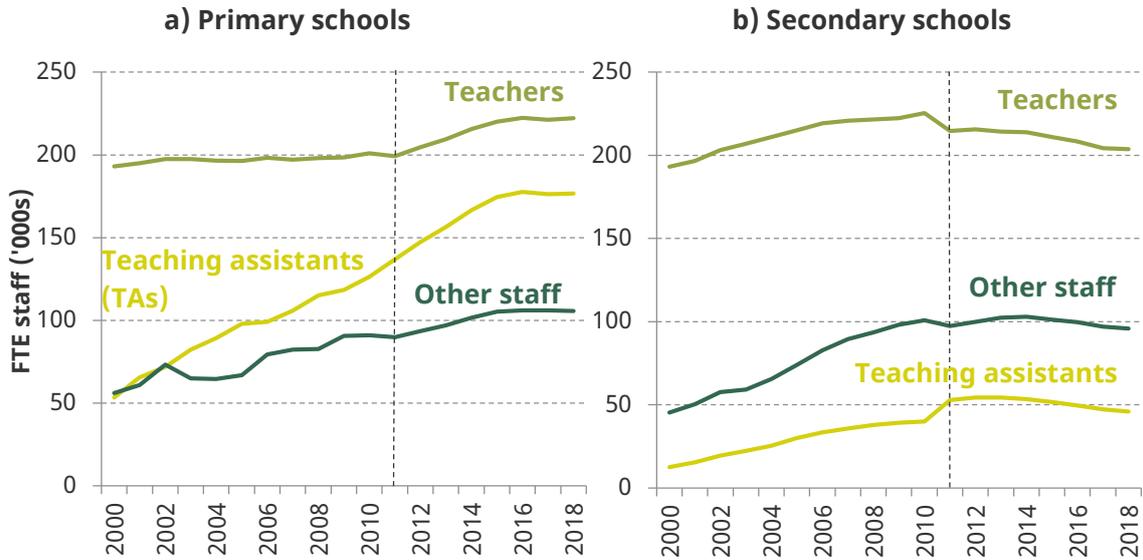
For this analysis, we split school staff into three groups: teachers, teaching assistants, and other staff (including administrative, caretaking and pastoral staff). Figures 3.4 and 3.5 illustrate what has happened to staff numbers within these categories since 2000. Figure 3.4 shows the actual (full-time equivalent) levels for primary and secondary schools, whilst Figure 3.5 shows the pupil:teacher ratios (panel a) and the ratio between pupil numbers and other types of staff (panel b). Figures relate to January of each year up to 2010 and November thereafter. As a result, there is a nearly two-year gap between the figures for 2010 and 2011.

³⁵ Excludes the administrative levy of 0.08% charged by the Teachers' Pension Scheme.

³⁶ <https://www.gov.uk/government/publications/teachers-pension-employer-contribution-grant-tpcgc>.

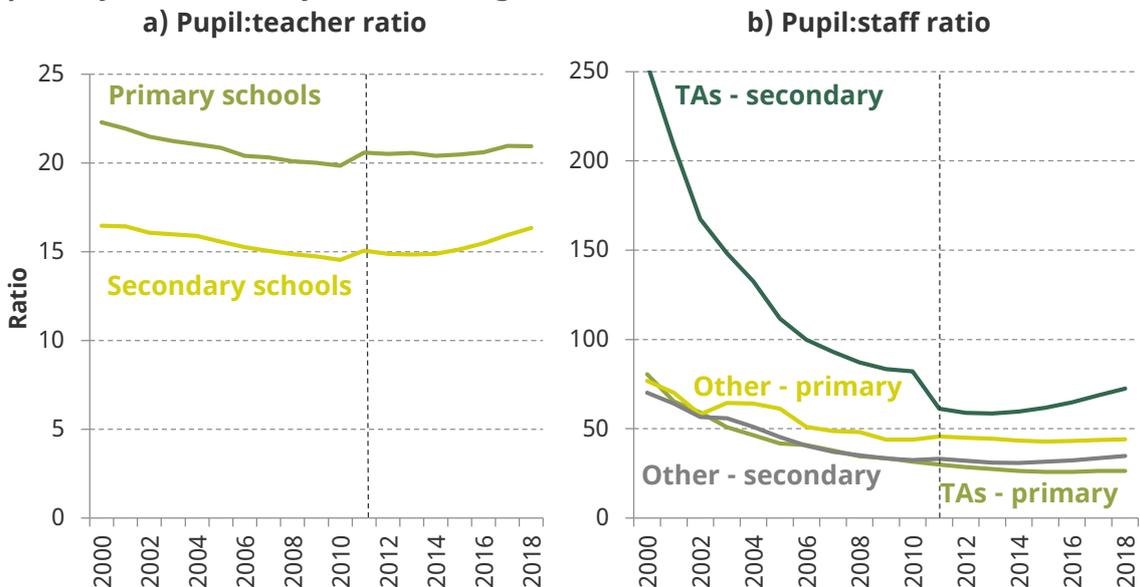
³⁷ We have not included this grant in our calculations for school spending judged against the GDP deflator as it is explicitly dedicated to meet the additional costs for schools as a result of the increase in employer contributions. There is also no guarantee that this funding will continue into the next spending review period.

Figure 3.4. Full-time-equivalent staff in state-funded primary and secondary schools in England over time



Source: Department for Education, 'School workforce in England: November 2017' (<https://www.gov.uk/government/statistics/school-workforce-in-england-november-2017>); Department for Children, Schools and Families, 'School workforce in England: January 2008' (<https://webarchive.nationalarchives.gov.uk/20120905141217/http://www.education.gov.uk/researchandstatistics/statistics/statistics-by-topic/teachersandschoolworkforce/a00195870/school-workforce>). Years relate to January up to 2010 and November thereafter. 'Other staff' is imputed before 2011 based on the level of other and auxiliary staff recorded in 2011 and the growth rate in other staff up to 2011 (data on auxiliary staff were not recorded until 2011).

Figure 3.5. Ratios between pupils and full-time-equivalent staff in state-funded primary and secondary schools in England over time



Source: See Figure 3.4 for sources of staffing numbers. Teaching assistant numbers are re-indexed to 2011 from 2011 onwards due to a methodological change in their calculation in that year. Department for Education, 'Schools, pupils and their characteristics', January 2019 (<https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2019>) and January 2010 (<https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2010>).

There are markedly different trends across different types of staff and across primary and secondary schools.

- **Teachers** – Between 2000 and 2010, teacher numbers were largely constant at around 200,000 in primary schools, whilst they grew by around 30,000 or about 17% in secondary schools. With falling primary school pupil numbers and largely constant secondary school pupil numbers, the number of teachers grew relative to the number of pupils. The pupil:teacher ratio fell from 22.3 to 19.8 in primary schools and from 16.5 to 14.5 in secondary schools.³⁸

Between 2010 and 2018, the number of primary school teachers has risen by 20,000 or 11% to reach around 220,000. However, since pupil numbers rose even faster at 17% (see Figure 1.2), the number of teachers has fallen relative to the number of pupils in primary schools. This has led to a rise in the pupil:teacher ratio from 19.8 to 20.9, about the same level as in 2005. In secondary schools, teacher numbers have fallen back by 20,000, reversing much of the growth up to 2010. As a result, there are currently around 200,000 teachers in secondary schools. Furthermore, with no net change in the number of pupils between 2010 and 2018, the pupil:teacher ratio has risen back up to 16.3, about the same level as in 2000.

As a result of these trends, class sizes have risen in both primary and secondary schools since 2010: from average class sizes in primary schools of 26 pupils in January 2010 to 27 pupils in January 2019, and from 20 to 22 pupils in secondary schools over the same period.³⁹

- **Teaching assistants** – The number of teaching assistants in primary schools has grown substantially over the last 20 years. Between 2000 and 2010, numbers more than doubled from 50,000 to over 125,000. Despite the squeeze on funding after 2010, numbers continued to increase to nearly 180,000 by 2018. This represents a 50,000 or 40% rise since 2010. Whilst significant, this is still smaller than the 75,000 rise that occurred between 2000 and 2010.

Much of the increase in teaching assistant numbers over time has been part of a deliberate policy to provide more one-to-one support for pupils with additional or special educational needs, and to provide support to teachers. This has led the number of pupils per teaching assistant to fall from 81 for every teaching assistant in 2000 to 32 in 2010 and to 26 pupils for every teaching assistant in 2018. There is now effectively one teaching assistant for every primary school class.

In secondary schools, there are far fewer teaching assistants, though their number did still grow rapidly up to 2010. In stark contrast to the growth in primary schools, numbers of teaching assistants fell in secondary schools by about 13% between 2011 and 2018 (though still remained close to 50,000). This means that both teacher and teaching assistant numbers fell relative to secondary pupil numbers between 2010 and 2018.

³⁸ Note that this represents the ratio of pupils to teachers rather than actual class sizes. Average class sizes are around 27 in primary schools and about 22 in secondary schools.

³⁹ Table 7a of <https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2019>.

The different trends in teaching assistant numbers for primary and secondary schools are likely to partly result from differences in the funding trends at each stage. Between 2011–12 and 2019–20, there was a 2% real-terms rise in spending per pupil in primary schools as compared with a 7% fall in secondary schools. However, the scale of the increase in numbers in primary schools (a 40% rise between 2010 and 2018) is still surprising given the squeeze on funding and may suggest that primary school head teachers' views on the best mix of staffing have been changing over time. It is also possible that head teachers have responded to the funding squeeze by increasing teaching assistant numbers by much more than the number of teachers, maybe because teaching assistants are generally employed on much lower salaries and on more flexible terms. Indeed, the number of teachers and teaching assistants combined grew by 22% between 2010 and 2018, more than the 17% growth in pupil numbers (see Figure 1.2).

- **Other staff** – This group covers a much wider range of staff, including administrative staff, caretakers and pastoral support staff. Such staff are used more in secondary schools than primary schools, with about one member of staff for every 45 pupils in primary schools and about one for every 35 pupils in secondary schools. Numbers grew rapidly in both sectors over the 2000s, from about 60,000 in 2000 to around 90,000 in 2010 across primary schools and from 45,000 to around 100,000 in secondary schools.⁴⁰ Since 2010, the number of other staff has continued to grow in primary schools, by about 16% between 2010 and 2018, matching the growth in pupil numbers. In secondary schools, the number of other staff has fallen by about 5% and has thus fallen slightly relative to the number of pupils.

In summary, the large increases in spending per pupil up to 2010 translated into substantial increases in the number of teaching assistants and other staff in both primary and secondary schools, as well as modest increases in the number of teachers relative to pupil numbers. The squeeze on school spending since 2010 has been partly delivered through a fall in the number of teachers relative to pupil numbers in both primary and secondary schools, which has led to larger class sizes. However, growth in the number of teaching assistants in primary schools has continued largely unabated, with numbers growing by 50,000 or 40% between 2010 and 2017. This is likely to have been driven by other policy pressures, over and above funding concerns. In secondary schools, by way of contrast, the number of teaching assistants has fallen by 13% since 2011.

3.2 Comparisons across the UK

Up to this point, all our analysis has focused on England. In Figure 3.6, we expand our analysis by showing changes over time in total school spending, total pupil numbers and spending per pupil across the four nations of the UK. The definition of spending per pupil across the four nations largely matches that in Figure 3.1, i.e. total school spending on children aged 3–19 by schools and local authorities.

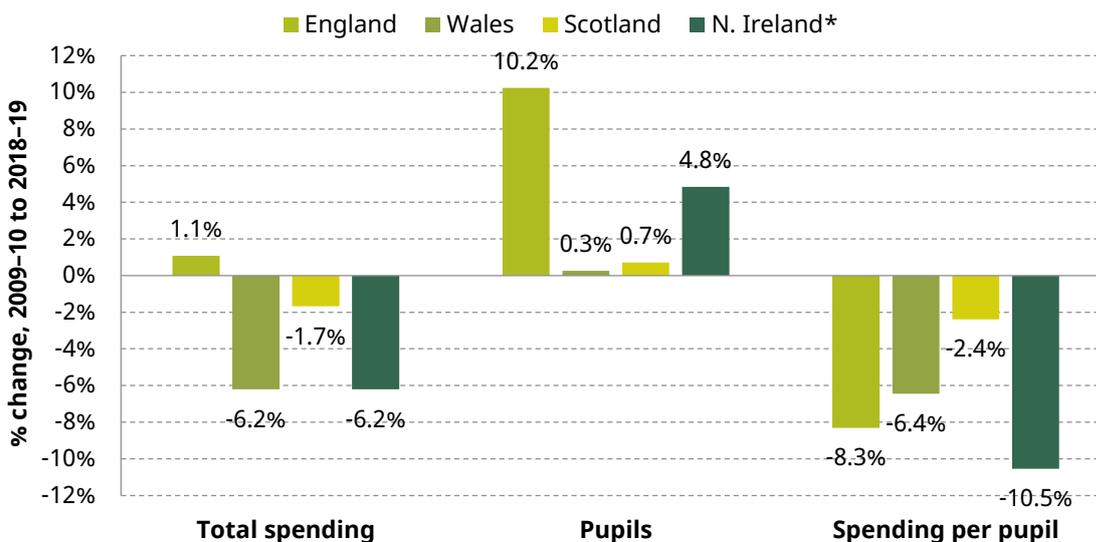
This shows that real-terms cuts in school spending per pupil have been largest in Northern Ireland (11%) and England (8%). Both countries have seen fast growth in pupil numbers. In England, a largely constant budget in real terms translated into cuts in spending per pupil as a result of population growth. In Northern Ireland, the total budget

⁴⁰ Auxiliary staff numbers are imputed between 2000 and 2010.

fell in real terms, meaning that population growth led to even larger cuts in spending per pupil.

Cuts have been smaller in Wales (6%) and Scotland (2%), where pupil numbers have been steady. Both countries saw cuts to total school spending (around 6% in Wales and 2% in Scotland). However, because of the lack of growth in pupil numbers, these translated into smaller falls in spending per pupil.

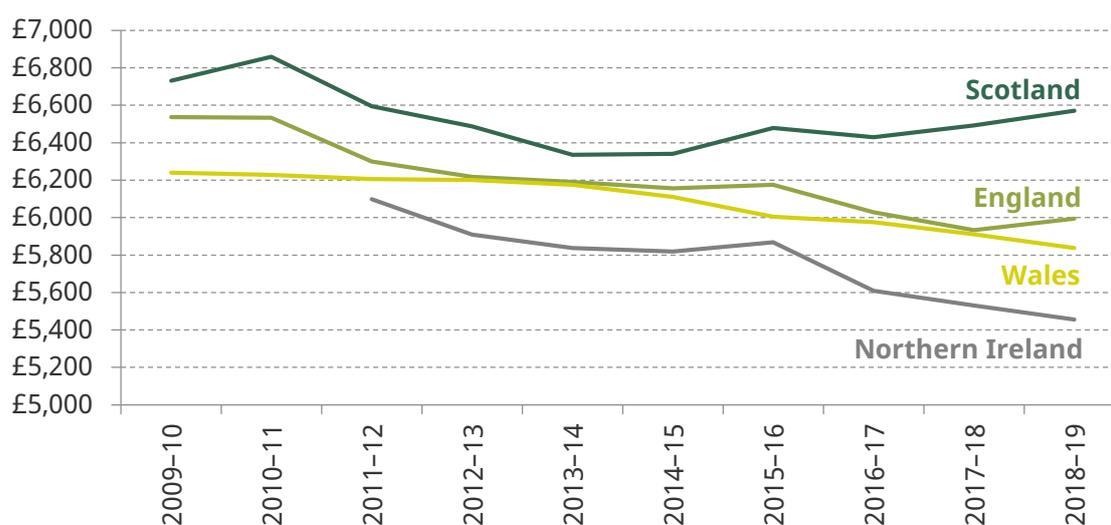
Figure 3.6. Real-terms change in total school spending, spending per pupil and pupil numbers in England, Wales, Scotland and Northern Ireland, 2009-10 to 2018-19



* Northern Ireland only covers changes from 2011-12 to 2018-19.

Source: See Figure 3.7.

Figure 3.7. School spending per pupil across England, Wales, Scotland and Northern Ireland (2019-20 prices)



Source: See next page.

Source to Figure 3.7

Figures for England are taken from Figure 3.1. Total school spending for Wales taken from Stats Wales, 'Education revenue expenditure' (<https://statswales.gov.wales/Catalogue/Local-Government/Finance/Revenue/Education>), with 2018–19 nowcasted based on Welsh Government, 'Local authority budgeted expenditure on schools' (<https://gov.wales/local-authority-budgeted-expenditure-schools>). Number of full-time-equivalent pupils in state-funded schools taken from Welsh Government, 'Schools' census results', 2010, 2012, 2017 (<https://gov.wales/schools-census-results-january-2017>) and 2018 (<https://gov.wales/schools-census-results-january-2018>) and Stats Wales, 'Pupil projections' (<https://statswales.gov.wales/Catalogue/Education-and-Skills/Schools-and-Teachers/Schools-Census/Pupil-Projections>). Total school spending for Scotland based on education spending minus non-school spending as reported in Scottish Government, 'local government provisional outturn and budget estimates' (<https://www2.gov.scot/Topics/Statistics/Browse/Local-Government-Finance/POBEStats>), with full-time-equivalent pupil numbers calculated as the sum of pupils in state-funded schools and early education centres (<https://www2.gov.scot/Topics/Statistics/Browse/School-Education/dspupcensus>). Total spending for Northern Ireland defined as the General Schools Budget with data taken from Northern Ireland Audit Office, *The Financial Health of Schools* (<https://www.niauditoffice.gov.uk/publications/financial-health-schools-0>), Northern Ireland Department of Education, 'DE budget 2018–19' (<https://www.education-ni.gov.uk/publications/de-budget-2018-19>) and the Salisbury Review (<https://www.education-ni.gov.uk/articles/common-funding#toc-3>). Northern Ireland pupil numbers relate to full-time-equivalent pupils at all schools and pre-school education centres, excluding independent schools (<https://www.education-ni.gov.uk/publications/school-enrolments-northern-ireland-summary-data>). HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

Figure 3.7 compares the level of spending per pupil over time across the four nations of the UK. Across the whole period, school spending per pupil is consistently highest in Scotland and lowest in Northern Ireland. In 2018–19, school spending was close to £6,000 per pupil in both England and Wales, but about £600 higher in Scotland and £500 lower in Northern Ireland.

In terms of trends over time, we see steady declines across England, Wales and Northern Ireland. In Scotland, there was a decline of 6% between 2009–10 and 2013–14, followed by a rise of about 4% since 2013–14. As a result, the net decline is notably less in Scotland, which is the only country in the UK to have seen a rise in school spending since 2013–14.

3.3 Forecasts and challenges for the future

In September 2019, the government announced the results of the 2019 Spending Round. This includes details of the schools settlement through to 2022–23. In what follows, we set out the implications and other challenges facing policymakers.

Spending Round 2019

In Table 3.2, we set out the schools settlement in the 2019 Spending Round. This included a cash-terms rise in the schools budget (covering pupils aged 5–16) of £7.1 billion between 2019–20 and 2022–23. This equates to a real-terms rise of £4.3 billion in today's prices (2019–20 prices) or £4.6 billion in 2022–23 prices. This was in line with Prime Minister Boris Johnson's commitment to increase school funding by £4.6 billion above inflation, at least as measured in 2022–23. This is a real-terms increase of about 10% on the 2019–20 schools budget.

As shown in Figure 1.2, the number of pupils in primary schools is expected to fall by 1% between 2019–20 and 2022–23, whilst the number of secondary school pupils is expected

to grow by nearly 7% over the same period. Combining these figures gives a figure of 1.9% growth in pupil numbers between 2019–20 and 2022–23.

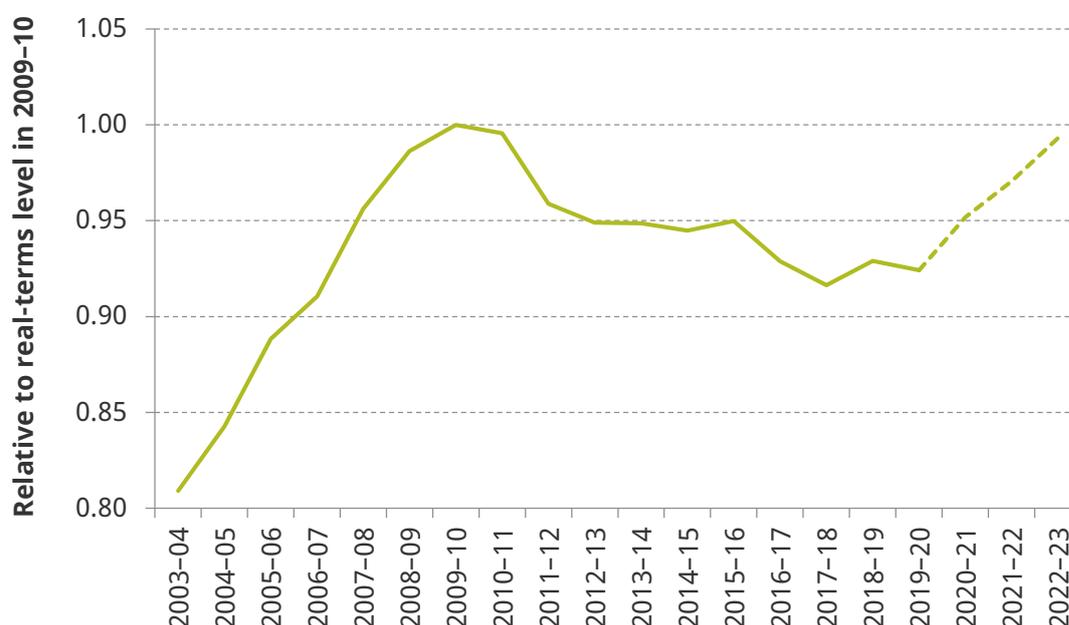
After accounting for expected growth in pupil numbers, we project that spending per pupil will grow by 7.4% in real terms between 2019–20 and 2022–23. This would be the first sustained growth in school spending per pupil for over a decade and is more than sufficient to reverse the real-terms cut of 5% seen since 2015–16.⁴¹ As shown in Figure 3.8,

Table 3.2. School spending plans for 2020–21 to 2022–23

	2019–20	2020–21	2021–22	2022–23
School spending (£bn)	43.5	46.1	48.3	50.6
Cash-terms rise (£bn), relative to 2019–20		+2.6	+4.8	+7.1
Real-terms rise (£bn, 2019–20 prices), relative to 2019–20		+1.8	+3.0	+4.3
% real-terms rise in spending per pupil, relative to 2019–20		+3.0%	+5.0%	+7.4%

Note and source: HM Treasury, Spending Round 2019 (<https://www.gov.uk/government/publications/spending-round-2019-document>). See Appendix B.

Figure 3.8. Total school spending per pupil (actual up to 2019–20, projected to 2022–23), 2009–10 = 1



Note and source: HM Treasury, Spending Round 2019 (<https://www.gov.uk/government/publications/spending-round-2019-document>). See Appendix B.

⁴¹ This figure is based on changes in school-based spending per pupil in Figure 3.2. The implied cut in per-pupil spending since 2015–16 in Figure 3.8 is lower at 3%, which results from the inclusion of wider changes in spending, such as the growth in spending on early years entitlement detailed in Chapter 2.

it also comes very close to reversing the 8% cut in total school spending per pupil seen since 2009–10.⁴² By 2022–23, spending per pupil would remain about 0.7% below its peak in 2009–10. Fully closing this gap would cost an additional £300 million (2019–20 prices) over and above existing plans.

Whilst the planned increases in school spending per pupil represent a clear turnaround as compared with recent trends, these plans would still leave school spending per pupil at about the same level in 2022–23 as it was 13 years earlier. This represents a significant squeeze on school resources as compared with recent history. The previous lowest growth over a 13-year period was 18% for secondary schools between 1987–88 and 2000–01 (see Figure 3.2). This highlights a long-run historical pattern whereby spending per pupil alternates between large rises (late 1980s, 2000s, early 2020s) and periods of retrenchment (late 1970s, early 1980s, 1990s).

Teachers' pensions grant

All these figures exclude the new grant to schools to cover the additional costs of higher employer contributions to teacher pensions from September 2019, which rise from 16.4% to 23.6% of gross salary.⁴³ State-funded schools will be compensated for these additional costs through the Teachers' Pension Employer Contribution Grant, which will be worth £848 million from September 2019 to March 2020.⁴⁴ The expected levels of teachers' pensions are unaffected by this change. The government has committed to continuing this compensation through to 2022–23 over and above the settlement described above, at a cost of £1.5 billion over a full year.⁴⁵

High-needs budget

One of the biggest pressures facing schools and local authorities is spending on high needs or pupils with special educational needs and disabilities (SEND). The number of pupils with statements of special educational needs (SEN) or education, health and care (EHC) plans in state-funded schools rose from 220,000 in January 2016 to about 250,000 in January 2019, or by about 14%.⁴⁶ This growth is a relatively recent phenomenon; the share of pupils with a statement of special education needs or an EHC plan rose from 2.8% to 3.0% over the same period, following a long time when it stayed at 2.8%. Following the Children and Families Act (2014), the high-needs budget is also expected to cover children aged 16–25 with statements of SEN or EHC plans. Previously, many such young people would have been covered by Learning Disability Assessments. The new system aims to increase early identification, ensure a better link between education and health services, and provide greater levels of support. The number of pupils aged 16–25 with statements of SEN or EHC plans has grown from a little over 40,000 in January 2016 to nearly 100,000

⁴² We calculate that total school spending per pupil fell by 7.1% in real terms between 2009–10 and 2018–19 (from Figure 3.1 after excluding school sixth-form funding) and that spending per pupil fell by 0.5% in real terms in 2019–20 (from Figure 3.2). Combining these figures equates to a total baseline cut of 7.6% in real terms between 2009–10 and 2019–20. Reversing this cut would require an increase of 8.2%, given the lower baseline in 2019–20.

⁴³ Excludes the administrative levy of 0.08% charged by the Teachers' Pension Scheme.

⁴⁴ <https://www.gov.uk/government/publications/teachers-pension-employer-contribution-grant-tpecg>.

⁴⁵ <https://www.gov.uk/government/publications/spending-round-2019-document>.

⁴⁶ <https://www.gov.uk/government/statistics/special-educational-needs-in-england-january-2019>.

by January 2019.⁴⁷ Combining figures for schools and ages 16–25 gives an overall rise from 260,000 in January 2016 to 350,000 in January 2019, or a rise of 33%.

The high-needs funding block rose from £5.2 billion in 2015–16⁴⁸ to about £6.3 billion in 2019–20,⁴⁹ or by about 20% in cash terms or about 10% in real terms. Calculating a trend in spending per pupil is not simple, however, as local authorities also receive some explicit funding through the schools block and have been topping up high-needs spending from the core schools block too. A large part of the rise in numbers has also been driven by post-16 provision, which tends to be cheaper.

The National Audit Office (2019) calculates that high-needs funding per pupil fell by 2.5% in real terms between 2013–14 and 2017–18. The continued rapid expansion in the number of pupils with SEN statements or EHC plans means that such real-terms cuts in funding per pupil have almost certainly continued through to the present day, at least at the same pace.

In the 2019 Spending Round, the government committed an extra £700 million to the high-needs budget for 2020–21 from within the overall schools settlement. This equates to real-terms growth of just over 10%. However, the annual average growth in pupils aged under 16 with statements of SEN or EHC plans was about 5% per year between 2015–16 and 2018–19, or about 10% per year once over-16s are included. The extra funding might thus only be enough to keep spending per pupil largely constant in real terms.

National funding formula

In April 2018, the government implemented a new national funding formula for schools in England. This sought to maintain existing funding priorities, such as extra funding for more deprived schools and funding uplifts for areas that have to pay London weighting for teacher salaries. Whilst the formula is at school level, it is only used to determine the amount of money that is allocated to local authorities. It is still the case that local authorities are free to set their own funding formula for all state-funded schools in their area (including academies and free schools). They can set a formula totally aligned with the new national funding formula, or they can choose to set their own priorities, subject to their overall allocation. The government has set out an aspiration to move towards a full school-level formula in the future, but with no specific timetable.

This new funding formula represents a significant achievement. It ensures that school funding allocations to all local authorities in England are now based on measures of need and costs, the first time this has been the case for nearly 15 years. This effectively ended a postcode lottery in school funding in England. There are still differences in per-pupil funding across local authorities in England. Local authorities receive higher levels of per-pupil funding if they have higher levels of deprivation and/or because they have to pay London weighting. These are deliberate differences.

In the 2019 Spending Round, the government restated a commitment to introduce new minimum funding levels of £4,000 for primary schools (with an intermediate floor of £3,750 in 2020–21) and £5,000 for secondary schools. The current national funding formula

⁴⁷ <https://www.gov.uk/government/statistics/statements-of-sen-and-ehc-plans-england-2019>.

⁴⁸ <https://www.gov.uk/government/publications/dedicated-schools-grant-dsg-2016-to-2017>.

⁴⁹ <https://www.gov.uk/government/publications/dedicated-schools-grant-dsg-2019-to-2020>.

already has minimum funding levels of £3,500 for primary schools and £4,800 for secondary schools. However, these are only currently used to determine funding allocated to local authorities, which can choose to ignore them in their own funding formulae. The government has proposed to make its new minimum funding levels compulsory for local authorities and is consulting on how to achieve this.⁵⁰

3.4 Summary

School spending per pupil has fallen by about 8% in real terms between 2009–10 and 2019–20. This is the largest fall in school spending per pupil since at least the 1970s. Spending directly allocated to schools has grown substantially over time, but this partly reflects transfers of responsibilities and funding from local authorities to schools. There are also good reasons to believe that schools' costs have risen faster than overall inflation, given rises in employer National Insurance and pension contributions in 2015 and 2016.

A large part of these cuts was delivered through cuts to spending on local authority services and sixth-form funding, which have fallen by 57% and 30% since 2009–10 in real terms, respectively. Schools in England have also partly delivered cuts by allowing class sizes to rise. At the same time, primary schools have prioritised continued rapid growth in the number of teaching assistants, while secondary schools have also seen falls in the number of teaching assistants and other staff.

Cuts to school spending have been seen right across the UK. However, cuts to school spending between 2009–10 and 2018–19 have been lower in Scotland (2%) and Wales (6%), largely due to steady pupil numbers. It is no coincidence that cuts have been larger in England (8%) and Northern Ireland (11%), where pupil numbers have risen faster.

In the 2019 Spending Round, the government chose to increase the schools budget by £4.3 billion between 2019–20 and 2022–23 (2019–20 prices), which equates to a 7% real-terms rise in spending per pupil. If delivered, this would more than offset cuts of 5% seen since 2015–16 and comes very close to offsetting the 8% cuts in total school spending per pupil seen since 2009–10. This would leave spending per pupil in 2022–23 at about the same level in real terms as it was in 2009–10. No growth over 13 years still represents a significant squeeze on school resources as compared with recent history. It also continues a historical pattern whereby spending per pupil alternates between periods of rapid rises and periods of retrenchment.

⁵⁰ <https://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2019-09-09/HCWS1828/>.

4. Further education and skills

At age 16, young people face a range of education and employment options. They can continue in full-time education at a school sixth form, sixth-form college or further education (FE) college. They can combine part-time work and education or training, including in an apprenticeship. Historically, many young people have also opted to move straight into paid employment, though this has become less common over time, particularly since the participation age was increased to 18 from 2013 onwards.

Participation in full-time education amongst 16- to 18-year-olds has more than doubled since the 1980s. The proportion of 16- and 17-year-olds in full-time education rose from 40% in the mid 1980s to over 80%. As a result, the proportion in paid employment without training went down from 21% to 2% and the proportion in other forms of education or training fell from 29% to 12%. Despite the rise in the statutory participation age, there remain about 3–4% of 16- and 17-year-olds not in any form of education, employment or training.

Even within these categories, there are many different routes to choose between; for example, while most of those continuing in full-time education take A levels, there is a vast range of other vocational qualifications on offer, particularly at further education colleges. See Hupkau et al. (2017) for a more detailed overview of the choices available to young people.

The further education sector also provides education and training for adults, which has historically been the main focus of the sector. Here again, there is a vast range of education and training options to choose between, including formal education qualifications in classroom-based settings (usually taken part-time), apprenticeships and shorter training courses, as well as basic courses in English and maths.

In last year's report (Belfield, Farquharson and Sibieta, 2018), we included a special focus on further education and skills. This showed that the sector has been in an almost permanent state of revolution, with frequent major reforms to qualifications and institutional and funding structures. We also showed that this has been the area of education spending to have seen the largest cuts since 2010. This continues a long historical trend, with further education seeing the smallest rises at times of overall spending increases and the largest falls during times of spending cuts.

In this chapter, we update and build on the analysis from last year's report. In Section 4.1, we provide an overview of spending levels on further education and skills, including both young people aged 16–18 and adult skills. In Section 4.2, we analyse trends in spending per student in the 16–18 education sector. We then discuss (in Section 4.3) the overall challenges facing the sector over the near future and the implications of the Augar review into post-18 education. In this section, we also discuss the implications of the recent spending round for 2020–21 and the longer-run options, which are likely to be covered by a larger spending review to be conducted in 2020. Section 4.4 provides a summary of this chapter.

4.1 Spending levels

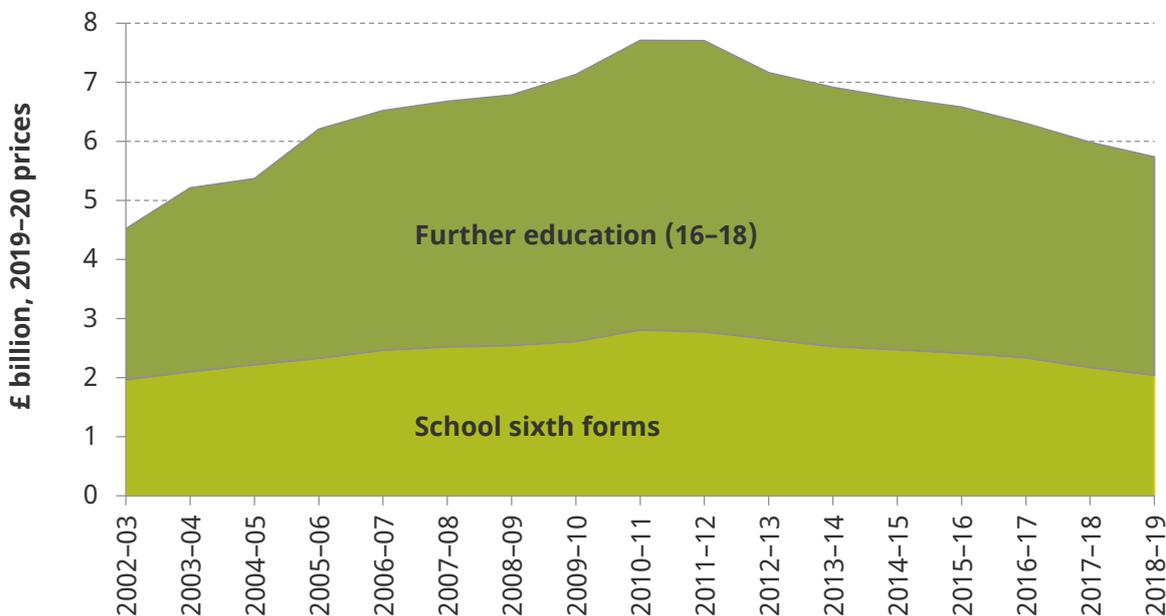
Figure 4.1 shows the total level of day-to-day spending on 16–18 education. In all cases, this represents allocations from central government, rather than actual spending. For example, we show allocations to school sixth forms, FE and sixth-form colleges, rather than spending by schools or colleges on 16–18 education.

Total spending on 16–18 education (including FE and sixth-form colleges and school sixth forms) stood at £5.7 billion in 2018–19 (in 2019–20 prices). Reflecting the increases in post-16 participation amongst young people in England, total spending has generally grown rapidly over time:

- Between 2002–03 and 2009–10, spending on FE and sixth-form colleges grew by 76% in real terms, whilst spending on school sixth forms rose by 33%. This reflects the fact that a larger part of the increase in post-16 participation was absorbed by FE and sixth-form colleges than by school sixth forms.
- Since 2009–10, total spending has fallen back in real terms, with spending on school sixth forms falling by 22% and spending on 16–18 further education and sixth-form colleges falling by 18%.

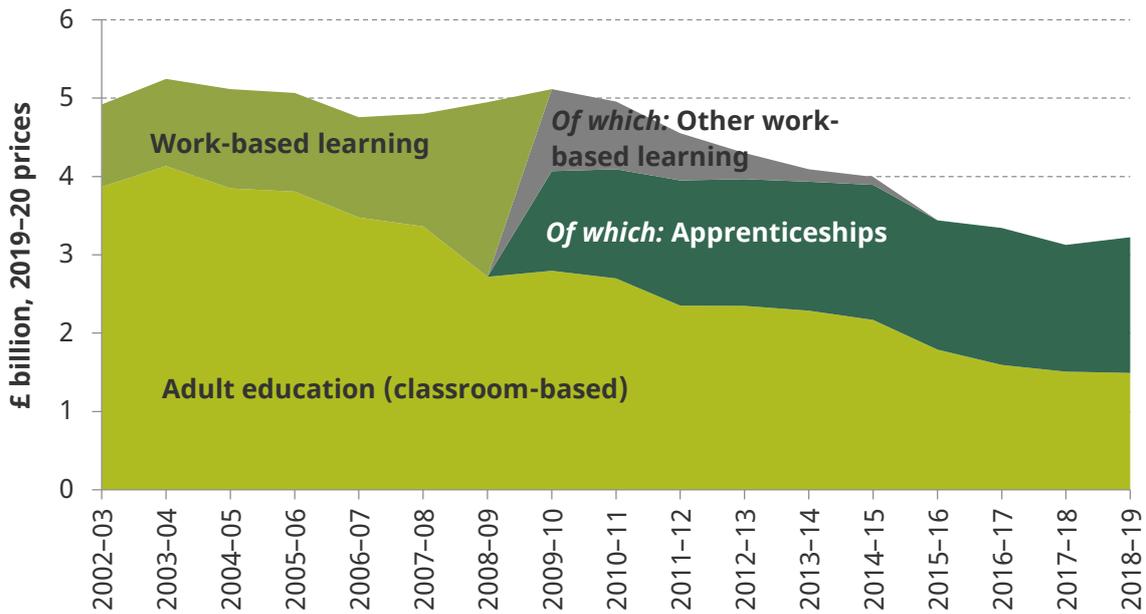
Figure 4.2 shows the total level of day-to-day spending on adult education and skills, including classroom-based education and apprenticeships (across all ages).

Figure 4.1. Total spending on further education and skills for 16- to 18-year-olds



Note: 'Further education' includes expenditure on FE and sixth-form colleges. 'School sixth forms' includes expenditure on sixth forms in academies and maintained schools.

Source: See Appendix C for sources and methods for further education and school sixth forms.

Figure 4.2. Total spending on adult education and skills

Note: 'Adult education (classroom-based)' includes all 19+ skills expenditure (excluding work-based learning, apprenticeships, higher education and offender learning). 'Work-based learning' includes Train to Gain and apprenticeships. Apprenticeships include 16-18 and 19+ apprenticeships.

Source: Authors' calculations using Department for Education annual report and accounts 2018-19 (<https://www.gov.uk/government/publications/dfes-consolidated-annual-report-and-accounts-2018-to-2019>), Education and Skills Funding Agency annual report and accounts 2017-18 (<https://www.gov.uk/government/publications/education-and-skills-funding-agency-annual-report-and-accounts-2017-to-2018>), Skills Funding Agency annual reports and accounts 2010-11 to 2016-17 (<https://www.gov.uk/government/collections/sfa-annual-reports-and-accounts>) and Department for Innovation, Universities and Skills departmental report 2009 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/238617/7596.pdf).

Spending on apprenticeships across all ages stood at about £1.7 billion in 2018-19 (in 2019-20 prices). This spending includes public subsidies and apprenticeship levy spending by employers. In 2017-18, this covered about 180,000 16- to 18-year-olds and about 640,000 individuals aged 19 or over on apprenticeships.⁵¹

- Spending on apprenticeships and other work-based learning for adults has fallen since 2009-10 by about 25% in real terms. Most of this fall can be explained by the rapid increase in expenditure on 'Train to Gain' between 2007-08 and 2009-10 and the subsequent winding down of spending on it up to 2014-15. Specific spending on apprenticeships rose by about 36% in real terms, from around £1.3 billion in 2009-10 to £1.7 billion in 2018-19.
- In the latest year of data (2018-19), spending on apprenticeships rose by about 7% in real terms. However, this follows on from a fall of 7% in 2017-18, leaving it about the same level in real terms as it was in 2016-17.

⁵¹ <https://www.gov.uk/government/statistics/further-education-and-skills-march-2019>.

- Spending on apprenticeships for 16- to 18-year-olds stood at about £800 million in 2017–18 (2019–20 prices) and has been at this level since the early 2000s.⁵² Spending earlier in the 2000s included a number of other youth training schemes, which have since been abolished. It is therefore likely that spending specifically on apprenticeships for young people has grown slightly over time. However, the number of young people on apprenticeships fell by about 13% between 2010–11 and 2017–18, from just over 200,000 down to just under 180,000.
- Spending on apprenticeships for individuals aged 19 or over also stood at about £800 million in 2017–18 (2019–20 prices). The number of adults participating in apprenticeships has risen significantly over time and this rise accounts for almost all of the growth in apprenticeship numbers. In 2017–18, there were 640,000 individuals aged 19 or over on an apprenticeship, which compares with just over 460,000 in 2010–11. However, much of this growth in numbers occurred in 2011–12, when the number of apprenticeships reached 620,000, and is likely related to individuals being moved from Train to Gain onto apprenticeships instead. The number of adults on apprenticeships is also down from its high point of 710,000 in 2016–17.
- Despite the net growth in apprenticeship spending and numbers, the government looks set to miss its commitment for 3 million new apprenticeship starts between 2015 and 2020. To date, there have been 1.7 million new apprenticeship starts between 2015–16 and the middle of 2018–19. Meeting the target would therefore require about 1.3 million new starts over a period of 18 months.

Funding for other adult education and skills, which will mostly be classroom- or community-based, stood at about £1.5 billion in 2018–19 (in 2019–20 prices).

- Total spending on adult education (excluding apprenticeships) was at a high point of about £4.1 billion in 2003–04. It then fell by about 32% between 2003–04 and 2009–10 and by a further 47% between 2009–10 and 2018–19. Taken together, this represents an overall fall of nearly two-thirds since 2003–04.
- Most of this fall can be accounted for by falling learner numbers, particularly on lower-level courses (McNally, 2018). Total learner numbers (excluding apprenticeships) fell from 4.4 million in 2004–05 to about 2.7 million in 2010–11 and to about 1.5 million by 2016–17 (Belfield, Farquharson and Sibieta, 2018). In the latest full year of data (2017–18), numbers remained at this level.⁵³
- There has also been a large and deliberate shift from classroom-based to apprenticeship training. In 2003–04, total spending on apprenticeships and adult education was about £5.3 billion (2019–20 prices), with about 21% of this on apprenticeships or work-based learning. This combined total fell by 39% in real terms to about £3.2 billion in 2018–19, but now about 54% is spent on apprenticeships.

⁵² Unfortunately, this spending split by age is not available for 2018–19.

⁵³ <https://www.gov.uk/government/statistics/further-education-and-skills-march-2019>.

4.2 Spending per student in 16–18 education

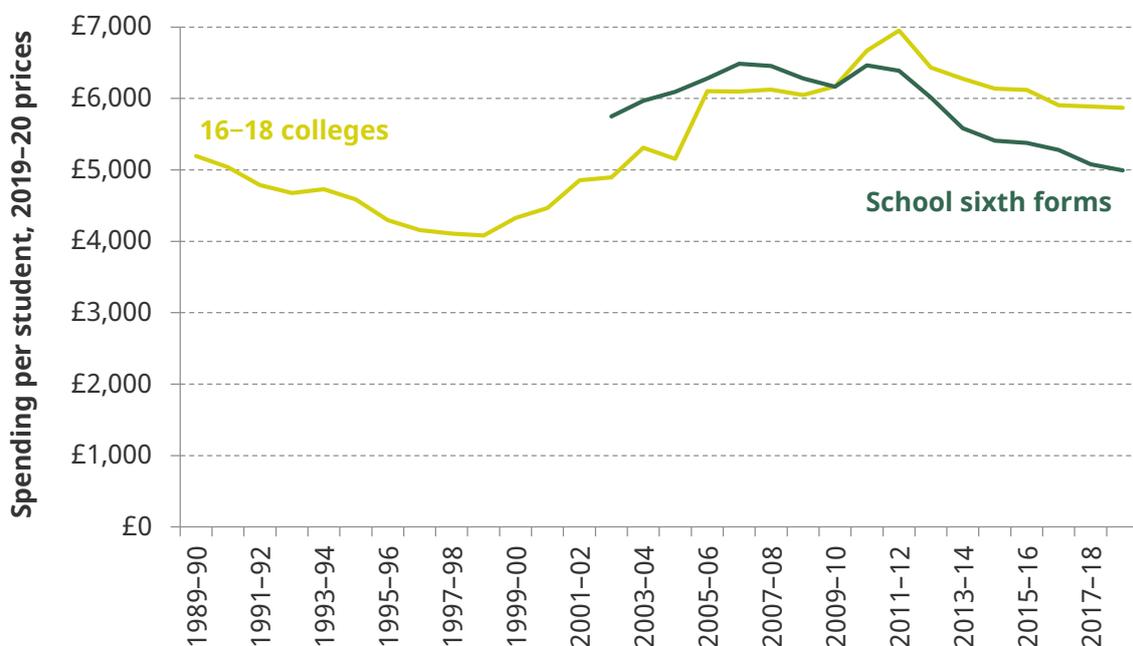
Figure 4.3 shows the level of spending per student in FE and sixth-form colleges (16–18 colleges) and school sixth forms over time. It is based on an updated and refined methodology that seeks to take better account of the complex changes to high-needs funding and conversions to academy status. These changes are described in more detail in Appendix C, together with a comparison between our old and new methodologies.

These institutions differ in terms of the qualifications they offer, with young people in school sixth forms and sixth-form colleges more likely to take academic qualifications. Around 87% of pupils in school sixth forms were taking A/AS levels in 2017, as were about three-quarters of pupils in sixth-form colleges (Belfield, Farquharson and Sibieta, 2018). In contrast, only about 10% of pupils in FE colleges were taking A/AS levels in 2017, and a much larger share were taking other, vocational, Level 3 qualifications (42%) or lower-level qualifications.

Given the way the funding system works, these differences in the qualifications being taken will lead to differences in funding across all three institution types. For example, the funding system provides more for more complicated vocational qualifications, which will tend to boost funding for FE colleges by more. More funding is also provided for more deprived pupils, who are more likely to attend FE colleges (Hupkau et al., 2017; Belfield, Goll and Sibieta, 2018).

Unfortunately, however, we can only present a split by all three institutional types from 2013–14. Before then, data on FE and sixth-form colleges are combined.

Figure 4.3. Spend per FTE student in 16–18 colleges and school sixth forms



Note: Number of full-time-equivalent (FTE) students is calculated as number of full-time students plus 0.5 times number of part-time students. '16–18 colleges' includes both FE and sixth-form colleges.

Source: See Appendix C.

FE and sixth-form colleges

Starting with FE and sixth-form colleges, spending per student has evolved in three distinct phases.

- In 1989–90, spending per student stood at around £5,200 (in 2019–20 prices). It then fell by 21% in real terms over the course of the 1990s to reach a low of £4,100 per student in 1998–99.
- After that, spending per student rose significantly, by 63% in real terms to reach a level of £6,670 in 2010–11.
- Spending per student has since fallen in real terms as cuts to public spending have gradually taken hold. Between 2010–11 and 2018–19, we estimate that spending per student fell by around 12% in real terms.

Looking over the long run, spending per student in 2018–19 was only 13% higher in real terms than it was in 1989–90, which represents average annual growth of just 0.4% per year over the last 30 years. Spending in other areas of education has risen much faster over time. This means that spending per student in an FE or sixth-form college is now about 6% *lower* than spending per pupil in secondary school, having been about 50% *greater* at the start of the 1990s. It may well be that spending on further education was relatively generous in the early 1990s. However, the change compared with secondary schools is dramatic.

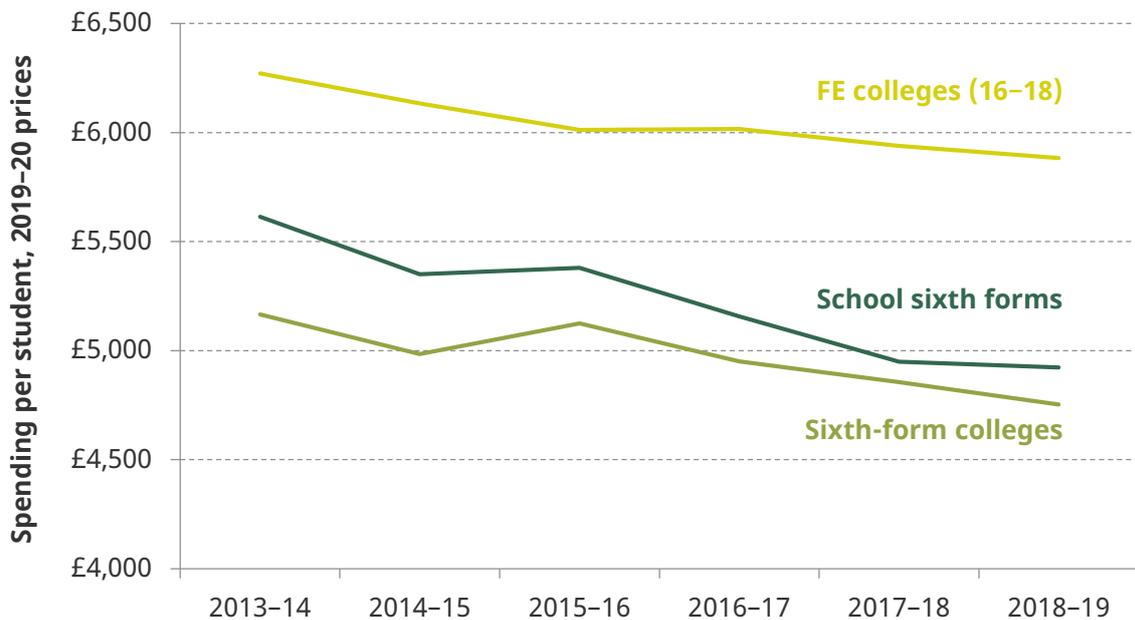
School sixth forms

Trends in school sixth-form spending per student are only available back to 2002–03. We see from Figure 4.3 that annual spending per student was £500 higher in school sixth forms than in FE and sixth-form colleges on average during the mid 2000s. Both grew during the period, but faster growth in college spending meant that the picture had reversed by 2009–10 and spending per student is now around £900 higher in FE and sixth-form colleges than in school sixth forms. This largely results from a faster pace of cuts to school sixth-form spending per student, which has fallen by 23% in real terms between 2010–11 and 2018–19 (compared with 12% cuts for colleges).

Up to 2010, there was significant concern regarding the more generous funding of school sixth forms compared with FE colleges. The contrasting trends since then are a direct result of policymakers' efforts to ensure greater parity in funding between school sixth forms and FE colleges. The higher level of funding per student in FE colleges is also directly related to the new national 16–19 funding formula, implemented from 2013–14 onwards. This provides extra funding for pupils from more deprived backgrounds and for pupils taking more complicated vocational qualifications. Given that FE colleges contain more pupils from deprived backgrounds and pupils are more likely to be taking vocational qualifications (Belfield, Goll and Sibieta, 2018), these changes will have benefited FE colleges more than they have school sixth forms.

It is also important to acknowledge that schools with sixth forms could have benefited from the real-terms protection to secondary school spending per pupil under the coalition government (discussed in Chapter 3). These schools may have been able to partly offset cuts to sixth-form spending over that period. This is likely to have been less feasible since 2015–16, when school spending per pupil has also been cut in real terms. Furthermore, a

Figure 4.4. Spend per FTE student in further education colleges (16–18), sixth-form colleges and school sixth forms



Note: Number of full-time-equivalent (FTE) students is calculated as number of full-time students plus 0.5 times number of part-time students.

Source: See Appendix C.

23% cut to a major source of funding for schools with sixth forms will clearly have placed a significant squeeze on budgets for these schools.

Figure 4.3 takes FE and sixth-form colleges together. This is necessary because reported spending totals combine these two different types of institutions across most years. Ideally, the figures would be presented separately.

In more recent years, it has become possible to disentangle spending in school sixth forms, sixth-form colleges, and FE colleges (for pupils aged 16–18). Figure 4.4 presents this analysis; note that the structure of the data means that these figures relate to academic years rather than financial years. As can be seen, spending per student is noticeably higher in 16–18 FE colleges (£5,900) than in school sixth forms (£4,900) and lowest in sixth-form colleges (£4,800) in academic year 2018–19. The pace of real-terms cuts has been similar across 16–18 FE colleges and sixth-form colleges, with real-terms cuts of 6% and 8%, respectively, since 2013–14. The cuts to school sixth forms have been higher at 12% between 2013–14 and 2018–19.

4.3 Future reforms and challenges

In this section, we set out the major challenges facing further education and sixth forms over the medium term, proposals for reform from the Augar Review, the implications of the recent spending round and the longer-run spending options for policymakers.

Overall challenges

The main challenge facing sixth forms and further education colleges, both for adults and young people, is delivering a high-quality education following nearly a decade of real-terms budget cuts. Amongst young people, spending per student in further education and sixth-form colleges fell by 12% in real terms between 2010–11 and 2018–19, whilst spending per student in school sixth forms fell by 23% in real terms. This follows on from a historical pattern where further education and sixth forms receive relatively low spending increases when overall spending goes up, and some of the largest cuts when spending goes down.

Classroom-based adult education spending has fallen by nearly two-thirds in real terms since the early 2000s and is down nearly 50% since 2009–10 alone. This has mainly been driven by reduced learner numbers, particularly on low-level courses. It has also been partly supplanted by higher spending on apprenticeships. However, total spending on adult education or apprenticeships is still about 37% down on 2009–10 in real terms.

Between 2010–11 and 2018–19, the number of young people in further education and sixth forms has declined by around 10%, which has been driven almost entirely by the size of the population in that age group rather than by reduced participation. Based on Office for National Statistics (ONS) projections for the number of individuals aged 15–19 in England, the number of young people in further education or school sixth forms is likely to grow by around 6% between 2019 and 2022.

This presents opportunities and challenges for the sector. In a financial sense, it should allow budgets to grow again as the student bodies of institutions increase again. On the other hand, these extra students clearly require extra teachers and resources to provide their education. The overall sector as a whole will thus become more costly for the government for a given level of spending per student. Having gone through significant reorganisations and mergers over the last 10 years, it is not clear whether colleges and sixth forms are well placed to reorganise again and grow to meet rising student numbers.

The introduction of T levels also represents a significant challenge for the further education sector in particular. These new qualifications seek to simplify the choices available to young people into 15 different lines of learning, raise the prestige of vocational qualifications and increase classroom learning time. These are laudable aims. However, they are coming on a very tight timetable: T levels are due to be rolled out by 2020. This will be particularly challenging since the government intends to use a single awarding organisation for each T level, which has been a source of significant controversy.⁵⁴ It is too early to judge whether these new qualifications will deliver the high-quality technical education they are intended to provide.

The government has committed to extra funds for the introduction of T levels. This amounts to about £115 million in 2019–20, growing to about £445 million by 2021–22 (all figures at UK level and in cash terms).⁵⁵ This amounts to a further £520 per student a year by 2021–22 (in 2019–20 prices), assuming all or most of the funding goes to FE or sixth-form colleges. However, most of this extra money for T levels is focused on preparations and delivering extra teaching hours, so is unlikely to ease the resource challenges on the

⁵⁴ <https://feweek.co.uk/2018/05/29/dfe-begins-t-level-tender-process-for-single-awarding-organisations/>.

⁵⁵ Announced in Spring Budget 2017 (<https://www.gov.uk/government/publications/spring-budget-2017-documents>).

sector. Furthermore, it may take a few more years to reach the figure of £520 per student given the slower roll-out of T levels.⁵⁶

The government also faces significant challenges around apprenticeships. As stated earlier, the target for 3 million new apprenticeships between 2015 and 2020 looks likely to be missed by a significant margin. However, the more important challenge surrounds getting more young people and adults into higher-level apprenticeships. Cuts to adult education funding were partly predicated on the idea that many adults were taking low-level (and potentially low-value) courses. Until recently, most apprenticeships were also relatively low-level too. In 2017–18, about 46% of individuals on apprenticeships were on courses of levels equivalent to GCSEs. Encouragingly, this is down from around 57% in 2015–16 and 63% in 2011–12.⁵⁷ In the first half of 2018–19, it is down further to around 38%, with almost half now taking advanced apprenticeships (intended to be around the same level as A levels). There are therefore encouraging signs that apprenticeships are starting to shift towards providing higher levels of education and training, even if the total numbers are unlikely to meet the 3 million target.

Finally, FE and sixth-form colleges face similar challenges to schools from the increases in employer contributions to the Teachers' Pension Scheme. The government has committed to compensating state-funded schools and colleges for the additional costs in 2019–20⁵⁸ and for 2020–21 as part of the 2019 Spending Round.

Augar Review proposals

In June 2019, the government published the Augar review of post-18 education and funding.⁵⁹ This covered both further and higher education funding for individuals aged over 18. We discuss the proposals and issues raised with respect to higher education in the next chapter, but a large part of this review was dedicated to the spending pressures affecting further education.

The review proposed a range of changes to the organisation of further education, as well as a range of proposals for higher levels of funding. The main proposals on funding were as follows:

- **Extend tuition fee and maintenance loans for Level 4 and 5 courses (cost: £0.3–£0.6 billion)** – Currently, individuals taking their first Level 4, 5 or 6 course in higher education are eligible for both tuition fee and maintenance loans in England. This includes foundation and degree-level courses. However, individuals taking Level 4 or 5 courses in further education are only eligible for Advanced Learner Loans, which cover tuition fees, but not maintenance loans. The proposal would extend coverage of the student loan system to Level 4 and 5 courses in further education. There is also a proposal for lower fees of £7,500 a year to be aligned across the higher and further education systems, with teaching grants making up the difference to current funding. This package is estimated to cost about £0.6–£1.2 billion in extra loans and spending,

⁵⁶ <https://www.tes.com/news/t-levels-rollout-some-courses-will-be-delayed>.

⁵⁷ <https://www.gov.uk/government/statistics/further-education-and-skills-march-2019>.

⁵⁸ <https://www.gov.uk/government/publications/teachers-pension-scheme-employer-contribution-grant-further-education-providers/teachers-pension-scheme-employer-contribution-grant-further-education-providers#grant-funding-calculations>.

⁵⁹ <https://www.gov.uk/government/publications/post-18-review-of-education-and-funding-independent-panel-report>.

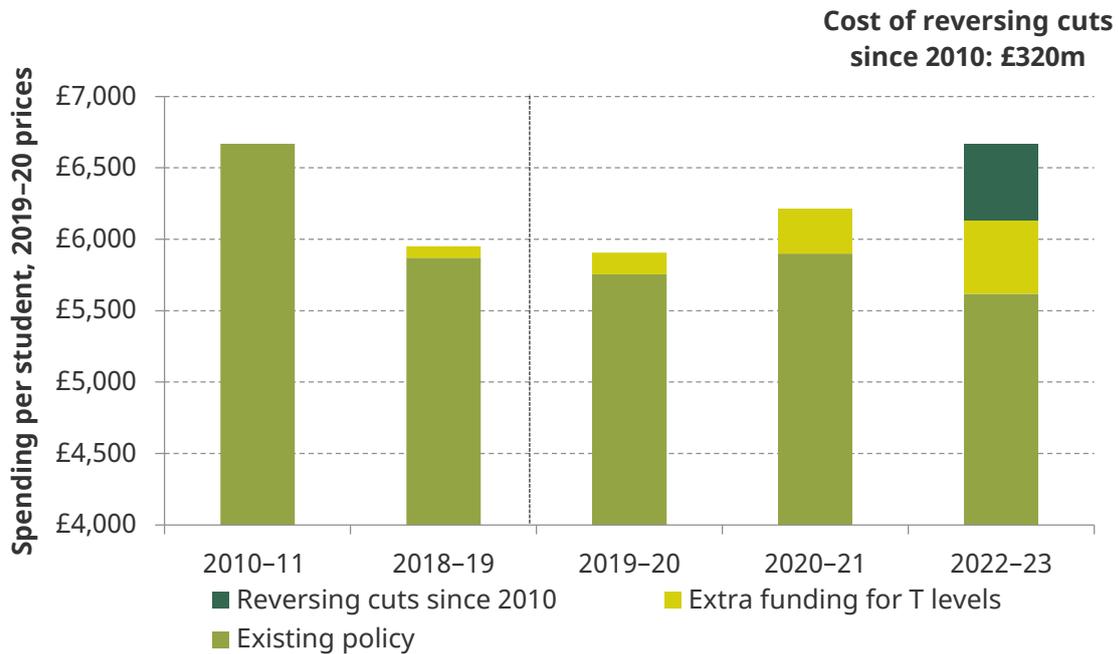
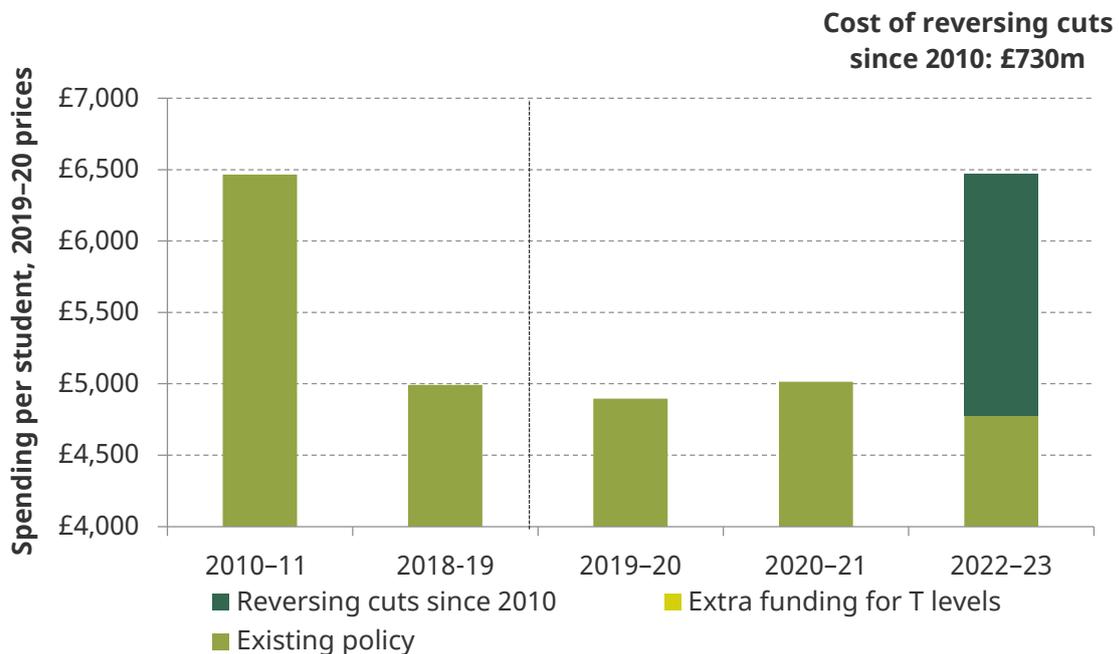
with an estimated annual cost to government of about £0.3–£0.6 billion. This implies about half of the loans being repaid. Estimating how much of the loans is likely to be repaid is difficult. However, it is likely that a smaller share will be repaid than is the case for undergraduate degrees, given that those taking further education tend to receive lower earnings, on average, over the course of their career.

- **Full funding for first Level 2 or 3 courses and increased funding rate for ‘economically valuable’ adult education courses (cost: £0.5 billion)** – Currently, full funding is available for first Level 2 courses if individuals are under 24 or unemployed. Full funding for first Level 3 courses is only available to under-24s. This proposal would extend full funding for all first Level 2 or 3 courses, regardless of age. There is also a proposal to increase the funding rate for ‘economically valuable’ courses. Which courses are the most economically valuable, however, is difficult to judge a priori, particularly given that current economic returns relate to courses with the current level of funding. Both proposals would reverse some of the large cuts to the adult education budget that have taken place in recent years.
- **Reverse cuts to 18-year-old rate and other changes to FE (cost: £0.2 billion)** – Currently, there is a lower funding rate for 18-year-olds continuing in further education or sixth forms than there is for 16- and 17-year-olds. The review argues there is no justification for this and that the rate for 18-year-olds should be increased. Combined with the cost of additional teaching grants for FE, a careers strategy and additional bursaries for Level 2 and 3 courses, this is estimated to cost about £0.2 billion.
- **Prioritise workforce from extra funding** – Over the past decade, there have been significant cuts to teacher pay in 16–18 colleges, particularly in further education colleges. Teacher salaries are now about 17% lower in further education colleges than in secondary schools (Dominguez-Reig and Robinson, 2019). This is likely to make it extremely challenging for further education colleges to attract high-quality teachers. The Augar Review highlights such difficulties facing the workforce in colleges. There is no specific proposal for extra funding for the workforce, but the review highlights the importance of using the extra funding for adult education courses to support and enhance the workforce, e.g. by increasing salaries and providing more training.
- **£1 billion of capital investment** – Given low and declining levels of capital investment, increased investment in infrastructure would be welcome, particularly given the introduction of T levels and the growing student population.

Implications of the 2019 Spending Round and future options

The government has recently announced a £400 million increase in spending on 16–18 education in 2020–21. In what follows, we set out the implications of these plans and the potential cost of reversing past cuts in 16–18 education spending in colleges and school sixth forms by 2022–23 (the end of the current fiscal forecast period and original planned end date of the spending review).

The rise of £400 million is in cash terms and relative to spending in 2019–20, which equates to an extra £300 million in 2019–20 prices. It includes planned rises in T-level spending, which is likely to be lower than previous spending plans given the slower-than-expected roll-out of T levels.

Figure 4.5. Projections for spending per student and cost of reversing past cuts**a) Further education and sixth-form colleges****b) School sixth forms**

Source: See Appendix C for spending per student in 2010-11 and 2018-19. Projections based on authors' calculations using data underlying Figure 3.3 and Table C.1, Office for National Statistics 2016-based mid-year population projections for individuals aged 15-19 (<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections>), Spring Budget 2017 (<https://www.gov.uk/government/publications/spring-budget-2017-documents>) and HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

Figure 4.5 shows the level of spending per student in 16–18 colleges (panel a) and school sixth forms (panel b) in 2010–11 and 2018–19, as well as projections for 2019–20, 2020–21 and 2022–23. Projections for 2020–21 are based on the assumption that the planned spending rise for 2020–21 is shared equally across sectors. Planned spending on T levels is shown separately as this is distinctly focused on preparations and delivering extra teaching hours. We assume this is exclusively focused on further education and sixth-form colleges, and present spending figures with and without this increase given that it is not clear such funding eases existing resource pressures.

The extra £300 million is equivalent to a rise in spending per student across colleges and sixth forms of over 4% in real terms.⁶⁰ Excluding planned T-level spending, the extra funding for 2020–21 means that we now expect 16–18 college and school sixth form funding per student to rise by 2.5% in real terms in 2020–21. Once planned T-level spending is included, this becomes a 5.2% real-terms rise for 16–18 colleges. These changes represent the first real-terms rises in funding per student for about 10 years. These figures are likely to change once actual patterns of spending on T levels are factored in.

Looking further in the future, if the government maintained the new higher level of 16–18 spending in real terms up to 2022–23, this would equate to a real-terms fall in spending per student of 4.8% between 2020–21 and 2022–23 as a result of growing student numbers. Even if one then also adds the effect of planned growth in spending on T levels for colleges, this would still mean a cut of just over 1% in real terms.

If one adds the effect of cuts that have already taken place, these projections would imply a real-terms cut of 8% for colleges between 2010–11 and 2022–23 (including the effect of extra T-level spending) and a cut of 26% for school sixth forms.

The cost of reversing these cuts by 2022–23 would be £320 million for colleges and £730 million for school sixth forms, or a total of just over £1 billion (all in 2019–20 prices). This cost rises to £670 million for colleges if one instead wanted to ensure that planned T-level spending represented extra spending on top of a real-terms freeze in core funding between 2010–11 and 2022–23. If delivered, such additions would leave spending per student at about £6,700 in 16–18 colleges, about 28% above its level in 1989–90 and about 12% higher than current spending in colleges (including T-level spending). In school sixth forms, spending would be back at about £6,500 per student, about 12% higher than in 2002–03.

We assume that any such funding settlements include the effects of any boosts to 16–18 education spending as a result of implementation of the Augar Review proposals, such as raising the 18-year-old funding rate.

⁶⁰ This is based on an assumption of an unchanged level of spending between 2018–19 and 2019–20 and existing plans for T-level spending. Assuming this baseline for 2019–20, an extra £300 million in 2019–20 prices equates to a 4.3% real-terms increase in spending per student. Given that we expect spending on T levels was lower in 2019–20 than previous plans, the true rise is likely to be higher.

We have not included compensation for additional costs associated with higher employer contributions to the Teachers' Pension Scheme. This amounts to £80 million for colleges in 2019–20⁶¹ and the government has committed to repeating this for 2020–21.⁶²

4.4 Summary

Further education and skills spending for young people and adults has received the largest cuts across all areas of education spending over the last decade. Amongst young people, spending per student in further education and sixth-form colleges fell by 12% in real terms between 2010–11 and 2018–19, whilst spending per student in school sixth forms fell by 23% in real terms.

Classroom-based adult education spending has fallen by nearly two-thirds in real terms since the early 2000s and is down nearly 50% since 2009–10 alone. This has mainly been driven by reduced learner numbers, particularly on low-level courses. It has also been partly supplanted by higher spending on apprenticeships. However, total spending on adult education or apprenticeships is still about 37% down on 2009–10 in real terms.

In addition, as Chapter 2 showed, there have been real-terms cuts of 66% to local-authority-provided youth services between 2009–10 and 2017–18. This includes spending on both universal and targeted services for young people as well as the youth justice system. Some of the services funded include youth centres and youth work, teen pregnancy services and substance misuse services. Cuts to such services are likely to affect a similar age group to the one affected by cuts to 16–18 education.

The recent Augar review of post-18 education has proposed to reverse some of the cuts to further education spending through additional funding for adult education courses, extending fee and maintenance loans to Level 4 and 5 courses in further education, increasing the 18-year-old funding rate, £1 billion of capital investment and a host of other smaller changes.

Spending on 16–18 education has recently been boosted for 2020–21 as part of the spending round. This is likely to result in real-terms increases in funding per student of 2.5% for school sixth forms in 2020–21 and over 5% for 16–18 colleges once one includes the effect of rising spending on T levels. These are the first real-terms increases in 16–18 funding per student for about 10 years. However, with student numbers expected to grow by about 5% between 2020–21 and 2022–23, we project a real-terms fall in funding per student even if the new higher level of spending is protected in real terms. We calculate that reversing cuts to 16–18 education spending and protecting spending per student in real terms would cost an additional £1 billion by 2022–23.

The overall challenge facing the further education and skills sector remains the same as it has for a long period: delivering high-quality education with lower resources than other sectors. Some of the cuts to adult education funding were predicated on the fact that many learners were taking low-level and low-value courses. Many adult apprenticeships

⁶¹ <https://www.gov.uk/government/consultations/funding-increases-to-teachers-pensions-employer-contributions>.

⁶² <https://feweek.co.uk/2019/08/31/association-of-colleges-gives-cautious-welcome-to-chancellors-fe-funding-boost/>.

that replaced this provision were also low-level, most being at GCSE level. However, even though the target for 3 million new apprenticeship starts is likely to be missed by a wide margin, there are some encouraging signs in the form of more people taking higher-level apprenticeships. In the first half of 2018–19, over half of apprenticeships were at advanced level or higher (equivalent to A level and higher).

5. Higher education

Under the current higher education (HE) funding system in England, it costs around £17 billion to fund the education of each cohort of undergraduate students. This includes the cost of teaching for three or more years and funding towards the cost of living while at university for more than 350,000 students. Initially, this cost is funded entirely from government finances.⁶³ In the long run, however, graduates make repayments on their student loans and the cost is split between taxpayers and students.

The HE system is funded primarily through tuition fees, with some government grants for 'high-cost' subjects. However, few students have to pay these fees up front. Most students can take out government-backed loans to cover the full cost of tuition fees and contribute towards the cost of living (to qualify for the latter, students must be UK domiciled and taking their first undergraduate degree; EU students qualify for the former only). These loans are repaid on an income-contingent basis: graduates repay a proportion of their income over a certain threshold and any outstanding loan is written off at the end of the repayment period. This system ensures that students do not face an up-front cost of attending HE, high-earning graduates contribute towards the cost of their degrees and there is insurance for graduates who have periods of low earnings.

This way of funding HE means that estimating government and graduate contributions to the overall cost of the system involves the projection of the earnings of graduates well into the future. This involves complicated modelling of earnings dynamics as well as sometimes fairly heroic assumptions about what is going to happen to the distribution of graduate earnings over the next 30 years. Consequently, while all of our up-front spending figures should be reasonably accurate, there is a large degree of uncertainty associated with the long-run estimates: a large negative shock to graduate earnings, for example, would dramatically reduce their lifetime repayments and hence the long-run cost of the system to government.⁶⁴

HE has not always been funded this way. In the 1990s, the provision of HE was entirely funded through direct teaching grants paid to universities by government; graduates did not contribute toward the cost of their degrees. Sequential reforms in 1998, 2006 and 2012 introduced and increased tuition fees, with the maximum fee level now standing at £9,250. These reforms, alongside the relaxation of controls on the number of students that universities could accept, have served to create a quasi-market structure in the HE system where universities are incentivised to compete to attract new students.

The past two years have seen the debate around higher education policy re-emerge as a key domestic issue. There have been official reports from both the Treasury and the House of Lords, after which an Office for National Statistics (ONS) review of the accounting treatment of student loans followed in December. There has been an independent review of the system in the form of the Augar review of post-18 education. The ONS review has significant implications for HE policy, while the Augar recommendations would result in yet another radical change in the way HE is funded. Even more radically, the Labour party

⁶³ This figure excludes the cost of tuition fees paid directly by students not taking out loans.

⁶⁴ Furthermore, it is difficult to quantify this uncertainty in a meaningful way. We therefore do not provide formal estimates of confidence intervals for our estimates throughout this report.

proposed the abolition of tuition fees in the 2017 general election, which remains its official policy.

In this chapter, we start in Section 5.1 by documenting how the overall level of funding universities receive for teaching has changed over the past 30 years, up to 2019–20. Section 5.2 shows the impact on the government finances and Section 5.3 sets out the changes in graduate contributions over time. We then look in Section 5.4 at future policy options by comparing the current system with those proposed in the Augar Review and by Labour in 2017. We show the implications for universities, government finances and graduate repayments and speak more generally about the wider implications of the different systems.

5.1 University resources

For each student who started HE in September 2019, universities receive an average of £27,500 (2019 prices) to fund the teaching of their degrees, as shown in Figure 5.1. This is 50% higher than its low point of just over £18,000 per student in the late 1990s, but only about 12% more in real terms per student than the funding level for the cohort who started in 1990–91.

Growth over time has been far from smooth. Between 1990–91 and 1997–98, growth in student numbers significantly outpaced increases in teaching grants, resulting in a 25% real-terms decline in university funding per student. Since 1997–98, teaching resources per student have grown by nearly 50% in total. This has largely been the result of sequential tuition fee reforms.

In 1998, tuition fees were introduced at £1,000 for new students. However, other funding (teaching grants and fees paid by local authorities) was cut in equal measure, leaving total resources per student largely unchanged in real terms. Between 1998 and 2005, real-terms increases in teaching grants provided led to an 11% increase in the level of resources available per student.

In 2006, tuition fees were increased from £1,200 to £3,000. This was a deliberate attempt to increase university resources, and the level of teaching grants was kept roughly constant while the maximum tuition fee increased. This led to a 29% increase in the overall level of resources per student universities received, although some of this increase was lost as resources per student fell over the following five years due to real-terms falls in teaching grants per student.

University resources then increased by 22% following the 2012 reforms: the large increase in tuition fee income more than outweighed the significant cut to teaching grants. However, not all courses received the same increases in funding. Science and laboratory-based subjects that are more reliant on funding from teaching grants have experienced smaller increases in funding (between 6% and 19%), while cheaper-to-teach subjects have experienced increases of more than 45% (Belfield et al., 2017). This has led to significant debate about the extent to which universities cross-subsidise the provision of different courses.

Figure 5.1. Total teaching resources provided per student in HE for cohorts starting between 1990–91 and 2019–20 (2019 prices)



Note: The total level of teaching resources per degree is the sum of teaching grants, fees paid by local authorities (prior to their removal from 1998–99) and the up-front fees paid by students (with or without student loans). The up-front fees included in total resources prior to 2012–13 assume all courses are three years, so they represent a slight underestimate. The fee loan subsidy and teaching grants from 2012–13 onwards account for the actual course length. Fee waivers are included in the deficit impact for 1998–99 to 2005–06; total resources then include the additional income from fees. For 2006–07 to 2019–20, institution-specific bursaries and fee waivers (when appropriate) are deducted from total resources. For 2012–13 to 2014–15, National Scholarship Programme funding is included in total resources. Figures exclude targeted allocations, which are worth around £1,000 per student in recent years.

Source: HEFCE Teaching Grant Letters, various years (<http://www.hefce.ac.uk/funding/annallocs/>). Figures from Department for Children, Schools and Families (2008). Data on student numbers are from HESA statistics (<https://www.hesa.ac.uk/>) and the 'Historical statistics on the funding and development of the UK university system' data available through the UK Data Archive (<http://www.data-archive.ac.uk/>). HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/collections/gdp-deflators-at-market-prices-and-money-gdp>).

Between 2012–13 and 2016–17, the level of university resources remained largely unchanged. This is despite the fact that the maximum cap on tuition fees was frozen in cash terms. This stability of funding levels was achieved by universities increasing tuition fee levels up to the maximum cap and cutting the level of fee waivers and bursaries provided to incoming students. Since 2016–17, the fee cap was increased by £250 in 2017, but has otherwise been frozen in cash terms. This has resulted in a near 6% real-terms fall in funding per student between 2016–17 and 2019–20. With the fee cap fixed and with the vast majority of providers now charging the maximum fee, there is little scope for increasing fees to offset real-terms reductions.

Although there have been several major changes to HE funding over the past two decades, Figure 5.1 shows that per-student resources are actually quite similar now to what they were in the early 1990s in real terms. However, this masks the large increase in

overall resources received by universities due to student number growth. Because student numbers have roughly doubled since the early 1990s,⁶⁵ total teaching resources received by universities have also roughly doubled in real terms.

5.2 Government finances

The cost of financing this teaching and the cost of maintenance funding provided to students is split between taxpayers and graduates. In this and the following section, we show how recent reforms have affected how these costs are split. To do this, we must forecast the lifetime repayments of graduates. As highlighted in the introduction, this is a speculative exercise, and any of the 'long-run' figures in this and the following sections should therefore be treated with caution.

A brief summary of reforms since 2012 is provided in Table 5.1. The largest reform to the HE system in recent years occurred in 2012, when the maximum cap on tuition fees was almost tripled from £3,375 to £9,000. There were several other reforms alongside this: teaching grants were cut; the threshold above which graduates make repayments on their student loans was increased from £15,000 to £21,000; and the interest rate charged on student loans was increased.

Table 5.1. Details of various HE systems in England

	2011 system	2012 system	Current system
Maximum fees	£3,375 in 2011, increasing with RPI thereafter ^a	£9,000 in 2012, increasing with RPI thereafter	£9,250 frozen in nominal terms
Graduate repayments threshold	£15,000 in 2011 increasing roughly with nominal earnings growth ^b	£21,000 in 2016 increasing with nominal earnings growth from 2016	£25,000 in 2018 increasing with nominal earnings growth from 2018
Interest rate on loans	RPI ^c	RPI + 0–3%	RPI + 0–3%
Maintenance grants	Yes	Yes	No
Write-off	25 years	30 years	30 years

^aIn reality, the pre-2012 fees were frozen in cash terms at £3,465 after 2012 (rather than increasing with the RPI) but this was not the policy proposal at the time.

^bIn practice, this threshold was not increased exactly in line with nominal earnings growth between 2011 and 2019.

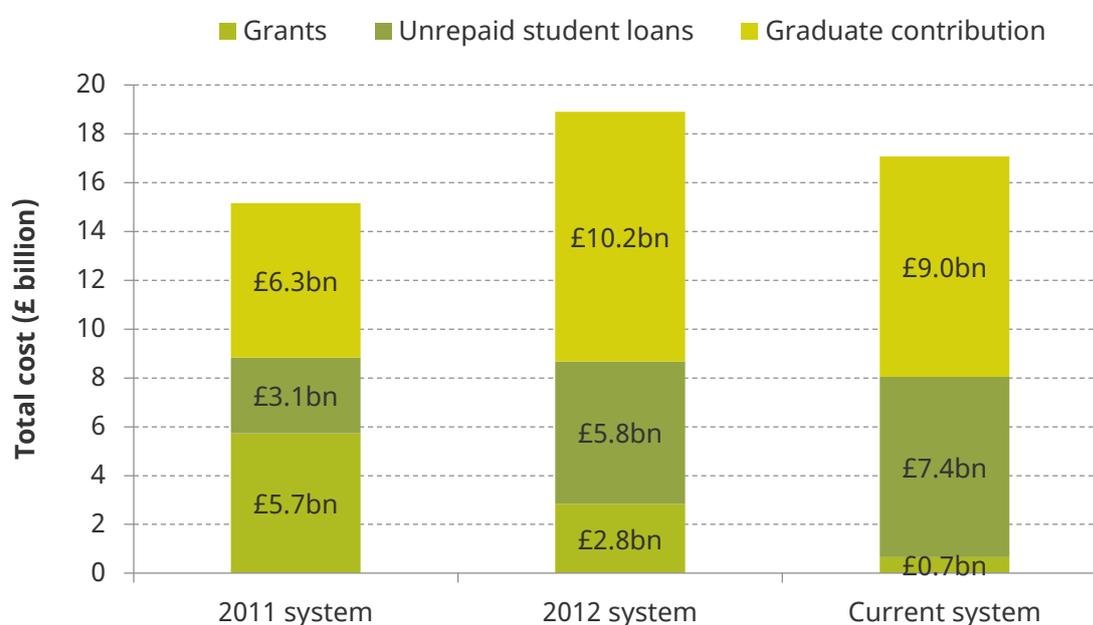
^cActual policy is the minimum of base rate + 1% or Retail Prices Index (RPI) inflation. We assume it is RPI inflation in the long run.

⁶⁵ Recent student numbers are available on the HESA website. For student numbers in the 1990s, see https://dera.ioe.ac.uk/13586/1/Education_and_training_expenditure_since_1989-90_%28Statistics_Bulletin_10_99%29.pdf.

Since then, there have been a number of important changes to the system. In 2016, the repayment threshold was frozen at £21,000 (instead of increasing in line with average earnings) and maintenance grants for students from low-income backgrounds were abolished. In 2017, the cap on fees was increased to £9,250 and frozen again in nominal terms up to the present date. The repayment threshold was increased to £25,000 in 2018 and once again linked to earnings growth (more than reversing the freeze announced the year before).

To illustrate the impacts of these recent reforms on government finances and graduate contributions, we compare the impact three distinct systems would have had on the cohort of graduates who started HE in 2019.⁶⁶ The current system is compared with what the '2011 system' and the '2012 system' would have looked like had there been no major reforms to the system since they were in place. Details of each of these systems are summarised in Table 5.1.

Figure 5.2. Cost of financing HE (2019 prices)



Note: All figures are given in 2019 prices, in net-present-value terms using the government discount rate of RPI + 0.7%. These figures apply to full-time England-domiciled students starting at a UK university in 2019–20. Cohort of students is held constant across systems. We assume that all students taking out loans do so for the full amount to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income. This assumes a cohort size of 353,095 based on 2017–18 Higher Education Statistics Agency (HESA) estimates of England-domiciled first-year full-time undergraduates doing first degrees. We assume 10% non-take-up of loans, approximately in line with Student Loans Company (SLC) data on loan uptake. The graduate contribution does not include fees or other maintenance costs that are paid privately. Grant figures exclude targeted allocations, which are worth up to £500 million under the current system.

Source: Authors' calculations using IFS's graduate repayments model.

⁶⁶ This also holds the government discount rate constant at 0.7% for all systems. The rate used to evaluate the long-run cost of student finance was reduced from 2.2% to 0.7% in 2016.

Figure 5.2 estimates the total cost of providing HE (including the cost of maintenance loans and grants) for the cohort of England-domiciled students starting full-time degrees at a UK university in 2019, showing how it varies across the three different funding systems. This total cost is broken down into the sum expected to be paid by graduates as repayments on their student loans in the long run (including any repayments made on accrued interest) and the cost paid by the government/taxpayer. This taxpayer cost is broken down into the money paid out in direct grants (teaching grants and maintenance grants) and the long-run student loan write-offs. As the figure shows, changes to the system since 2011 have acted to increase the overall cost of the HE finance system from £15.2 billion to £17.1 billion. This has happened despite the long-run government contribution going down, meaning the increase in overall funding has been entirely funded by an increase in graduate contributions. The overall long-run cost to the taxpayer for the cohort of students who entered HE in 2019 is expected to be around £8.0 billion, with graduates paying the remaining £9.0 billion.⁶⁷ The cost of the current system is actually almost £2 billion lower than it would have been had there been no reforms to the system since 2012: that is driven primarily by repeated freezes in tuition fees rather than them being uprated in real terms.

The ONS reclassification

Following criticism over the way student loans are recorded in the public finances,⁶⁸ the ONS undertook a review in 2018 and changed the way student loans are treated in the government accounts.⁶⁹ Under the previous treatment, spending on grants did count toward the deficit, while spending on student loans did not. The losses on student loans did not appear on the deficit until they were realised, at the end of the term of the loan. Under the new treatment, the *expected* losses on student loans count towards the deficit today.

The House of Lords Economic Affairs Committee (2018) argued that the previous treatment ‘hides the true cost of public spending on higher education’, suggesting that this might motivate suboptimal policy decisions. Figure 5.2 helps to emphasise this point. Under the old accounting rules, the short-run deficit impact of HE was equal to the grant spending, meaning the 2011 system would add around £5.7 billion, while the current system would add only around £0.7 billion. This is despite the fact that the long-run costs of the two systems are actually much more similar, at £8.8 billion and £8.0 billion respectively. For a government concerned about the deficit and under the old treatment, the current system looks much more attractive, despite the long-run cost of it being similar. Under the new treatment, the deficit impact takes into account the expected losses on student loans as well, and so the deficit impacts of the two systems are much more similar (and equal to the long-run cost).

A potentially important caveat to this is that the student loan losses are rather oddly treated (primarily) as *capital spending*, while grant spending counts as *current spending*. This means that while student loan losses now count towards the overall budget deficit, they still do not count towards the current budget deficit, while grant spending does – this

⁶⁷ This, and all other long-run figures in this section, are the net present value of the expected cost using the real government discount rate of 0.7%.

⁶⁸ See, for example, Johnson (2018) for a summary of this. The accounting treatment was also heavily criticised in chapter 10 of House of Lords Economic Affairs Committee (2018).

⁶⁹ <https://www.ons.gov.uk/news/news/accountingforstudentloanshowweareimprovingtherecordingofstudentloansingovernmentaccounts>.

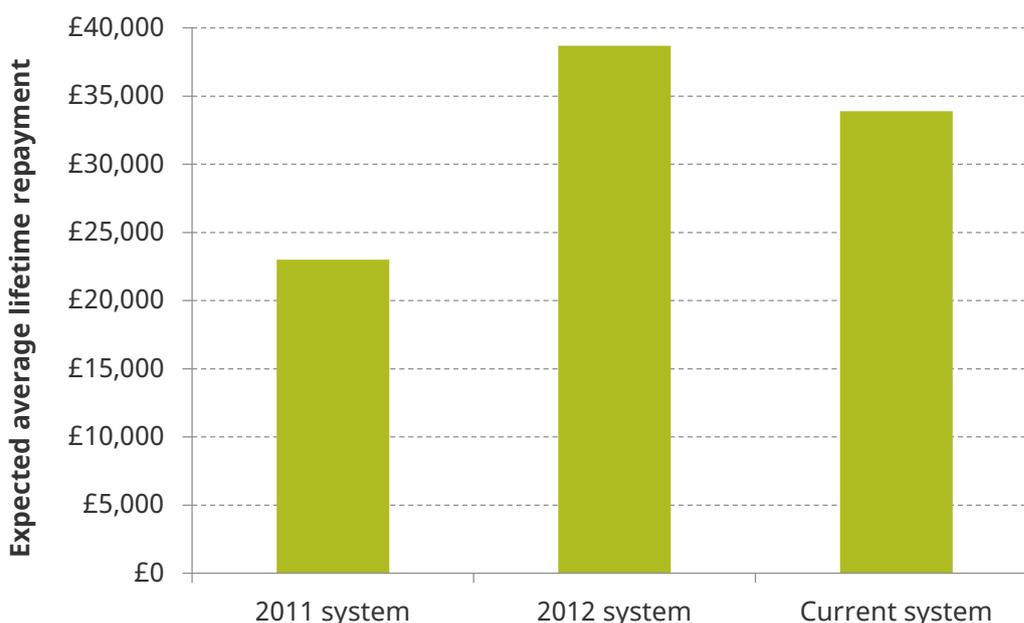
is important if parties set fiscal targets based on the *current budget deficit*, as the Labour party did in its manifesto for the last general election.

5.3 Graduate repayments

As highlighted in the previous section, university funding increased significantly as a result of the 2012 reforms, while the government contribution – as measured by up-front spending on grants plus expected losses on student loans – did not change by very much. This was possible because the new system increased reliance on contributions from graduates.

As shown in Figure 5.3, under the system in 2011, the average graduate would have been expected to make around £23,000 in repayments over the lifetime of their loans.⁷⁰ The reforms in 2012 increased this average expected contribution to £39,000. The major driver of this increase in graduate contributions was, predictably, the significant increase in the debt levels with which graduates leave university. Under the 2011 system, the average student on a three-year degree would have graduated with around £25,000 of debt. This rose to around £50,000 under the 2012 system (Belfield et al., 2017). The simultaneous increase in the interest rate and the extension of the repayment period to 30 years also

Figure 5.3. Expected average lifetime repayments for 2019–20 cohort of borrowers (2019 prices, not discounted)



Note: Figures in 2019 prices, deflated using Consumer Prices Index (CPI) inflation, not discounted. These figures apply to (projected) England-domiciled students starting at a UK university in 2019–20. We assume that all borrowers take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

Source: Authors' calculations using IFS's graduate repayments model.

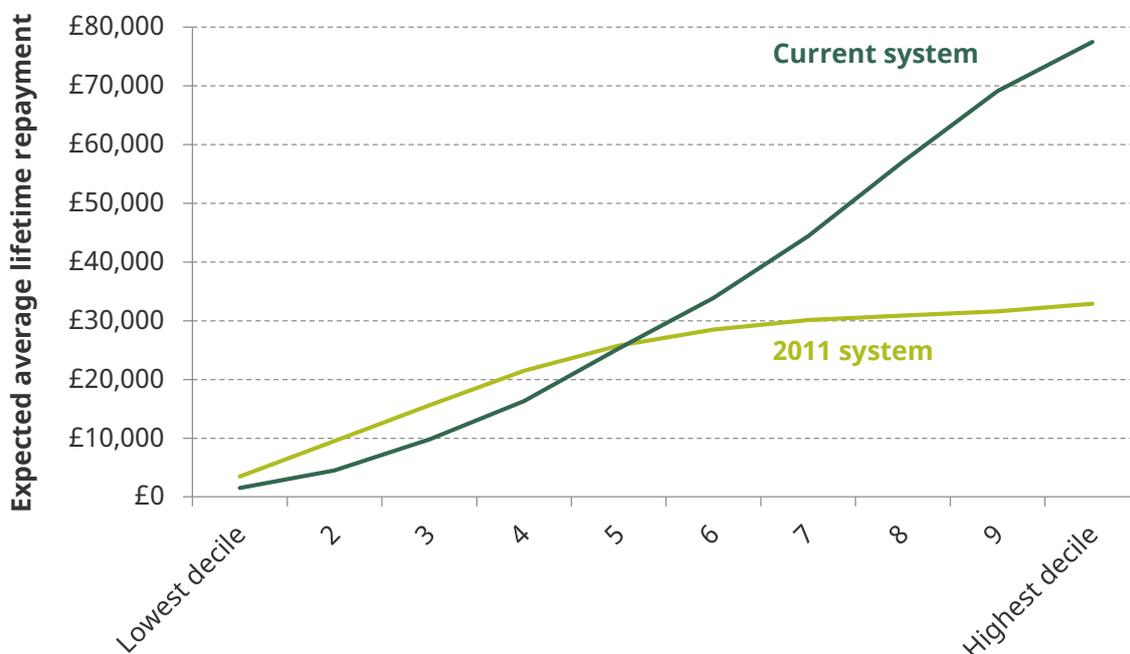
⁷⁰ The figures here are in real terms and not discounted. If graduates discount future payments at a positive discount rate, the net present value of these payments will be lower.

increased graduate contributions, while increasing the repayment threshold from £15,000 to £21,000 acted to reduce average repayments.

Under the current system, average graduate repayments are expected to be around £34,000. This has been mostly driven by the 2018 increase in the repayment threshold from £21,000 to £25,000, which significantly reduced graduate contributions by up to around £12,500 over the course of their lifetimes (or around £6,000 on average). Other reforms, such as replacing maintenance grants with loans, have increased expected graduate contributions, whilst freezing fee levels in nominal terms has reduced expected repayments. However, these effects have been small in magnitude, largely because small changes in debt levels do not affect the repayments made for the vast majority of graduates.

While on average those who entered HE in 2019 will end up paying considerably more than if they had faced the system that was in place in 2011, this is not true of all graduates. In fact, as shown in Figure 5.4, the lowest-earning 40% of students that started in 2019 are expected to pay considerably less towards their university education than they would have done under the 2011 system: indeed, those in the fourth decile of the lifetime earnings distribution make repayments that are on average 25% (£5,000) lower over their lifetimes as a result of the reform. This is entirely the result of the higher repayment threshold, which means that graduates pay less in each year for the duration of their loans. The other reforms have simply increased the length of time for which graduates have loans outstanding. Low-earning graduates would have taken almost the full 25 years to repay

Figure 5.4. Expected average lifetime repayments by decile of graduate lifetime earnings for 2019–20 cohort of borrowers (2019 prices, not discounted)



Note: Figures in 2019 prices, deflated using CPI inflation, not discounted. These figures apply to (projected) England-domiciled students starting at a UK university in 2019–20. We assume that all borrowers take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

Source: Authors’ calculations using IFS’s graduate repayments model.

the smaller pre-2011 loans (or not fully repaid them) and so increasing their debt levels simply increases the amount written off at the end of the repayment period.

By contrast, the 20% of graduates with the highest lifetime earnings pay significantly more under the current system: they are expected to repay over £70,000 on average under the current system, compared with just over £30,000 had they faced the 2011 system. This is because they repay most, or all, of the now significantly higher debt levels, and the higher interest rates act to increase these debt levels further. The higher interest rates alone add around £20,000 to the lifetime repayments of the highest-earning 20% of graduates.⁷¹

5.4 Future reforms

We now turn attention to likely reforms to the HE system moving forwards. Following Labour's proposal to abolish tuition fees in its 2017 general election manifesto, the HE system has come under extreme scrutiny. This scrutiny ultimately resulted in Prime Minister Theresa May announcing the Augar review of post-18 education, which had several significant recommendations for the funding of HE. Here we consider what the impact of Labour's policy from 2017 would be if it were brought in today, before considering the impact of the recommendations for HE from the Augar Review. We then proceed into a more general discussion about the design of the system. Our focus is initially on full-time undergraduate students only, though we discuss implications for part-time students in more detail in the discussion section.

Labour party proposals

In its 2017 general election manifesto, the Labour party proposed to abolish tuition fees altogether, replacing the lost fee income for universities by increasing teaching grants. It also proposed the reintroduction of maintenance grants for the poorest students. Combined, this would return the system to something very similar to the pre-1998 system.

In Table 5.2, we estimate per-borrower and total spending on HE under the current system and compare it with the components of the Labour proposals. The top half of the table estimates the combined up-front spending on grants plus student loans *per borrower*. It then divides that up-front spend into the graduate and taxpayer contributions (again, per borrower). The graduate contribution comes through their *estimated* lifetime student loan repayments; as discussed above, because this number involves forecasting the earnings profiles of graduates over the remainder of their working lives, it is uncertain and should therefore be treated with caution. In the bottom half of the table, total up-front and long-run spending are calculated, including the roughly 10% of students who do not borrow. For the current system, these students account for very little of the total long-run government cost as grant spending is low; indeed, the vast majority of this long-run government contribution comes from write-offs on student loans.

The table shows the estimated per-borrower and overall per-cohort costs of the system with fees abolished, with maintenance grants reinstated and with both done together, which is what we are calling the Labour proposals.

⁷¹ For a more detailed discussion of the impact of interest rates, see Belfield, Britton and Hodge (2017).

Table 5.2. Summary of impact of Labour party proposals for the 2019–20 cohort

	Current system	Abolishing tuition fees only	Bringing back maintenance grants only	Abolishing tuition fees and bringing back maintenance grants
Cost per borrower (across degree)				
Total up-front government spend	£53,500	£53,500	£53,500	£53,500
<i>Of which: loans</i>	96%	41%	85%	30%
Long-run graduate contribution	£28,400	£15,900	£27,100	£12,600
Long-run taxpayer subsidy	£25,100	£37,500	£26,500	£41,000
Total costs (including non-borrowers)				
Total up-front government spend	£17.1bn	£18.1bn	£17.3bn	£18.3bn
<i>Of which: direct grants</i>	£0.7bn	£11.1bn	£2.8bn	£13.2bn
Total long-run government contribution (deficit impact)	£8.0bn	£13.0bn	£8.7bn	£14.3bn

Note: 2019 prices, future graduate repayments discounted at 0.7% plus RPI. These figures apply to full-time England-domiciled students starting a first undergraduate degree at a UK university in 2019–20. Assumes 353,095 students based on 2017–18 HESA data. We assume 10% non-take-up of student loans, although total costs include grant spending on those students. Figures exclude targeted allocations, which are worth up to £500 million.

Source: Authors' calculations using IFS's graduate repayments model.

We see that abolishing tuition fees would cost around £5 billion (£13.0 billion minus £8.0 billion) per cohort of HE students, assuming that student numbers are unchanged and that per-student university funding is held fixed, i.e. that fees are replaced one-for-one with teaching grants. The majority of this cost comes from reduced student loan repayments of borrowers (which are around £12,500 lower⁷²), although around £1 billion of it comes from the students who were previously paying their own tuition fees directly (this also explains the increased up-front government spend from £17.1 billion to £18.1 billion).

Bringing back maintenance grants for the poorest students would reverse a more recent policy change that was enacted in 2016. Prior to that, students from the poorest households received around £3,000 per year in grants (meaning they did not have to be repaid) from the government to contribute towards their living costs. The 2016 policy abolished those grants, replacing them with slightly larger loans. The third column of Table 5.2 shows that we estimate the total cost of bringing back similar maintenance

⁷² Note that the government discount rate is applied to this figure.

grants to those that were previously in place would be around £700 million (£8.7 billion minus £8.0 billion), driven by a reduction in student loan repayments in the long term.

The final column of Table 5.2 shows that our central estimate of the overall long-run cost of abolishing fees and reintroducing grants together is around £6.3 billion (£14.3 billion minus £8.0 billion). Note that the cost of the two policies combined is greater than the sum of the costs of the individual components because when you put one policy on top of the other you are cutting the loans from a lower base, which is more expensive. For example, it is cheaper to cut loans by £9,000 from £50,000 than to cut loans by £9,000 from £20,000 because more people would actually repay that chunk of their debts. It is also worth noting that Labour's package of policies is made around £1.3 billion cheaper by the fact that the repayment threshold was increased to £25,000 in 2017, as that reduced the expected repayments on tuition fee debt.

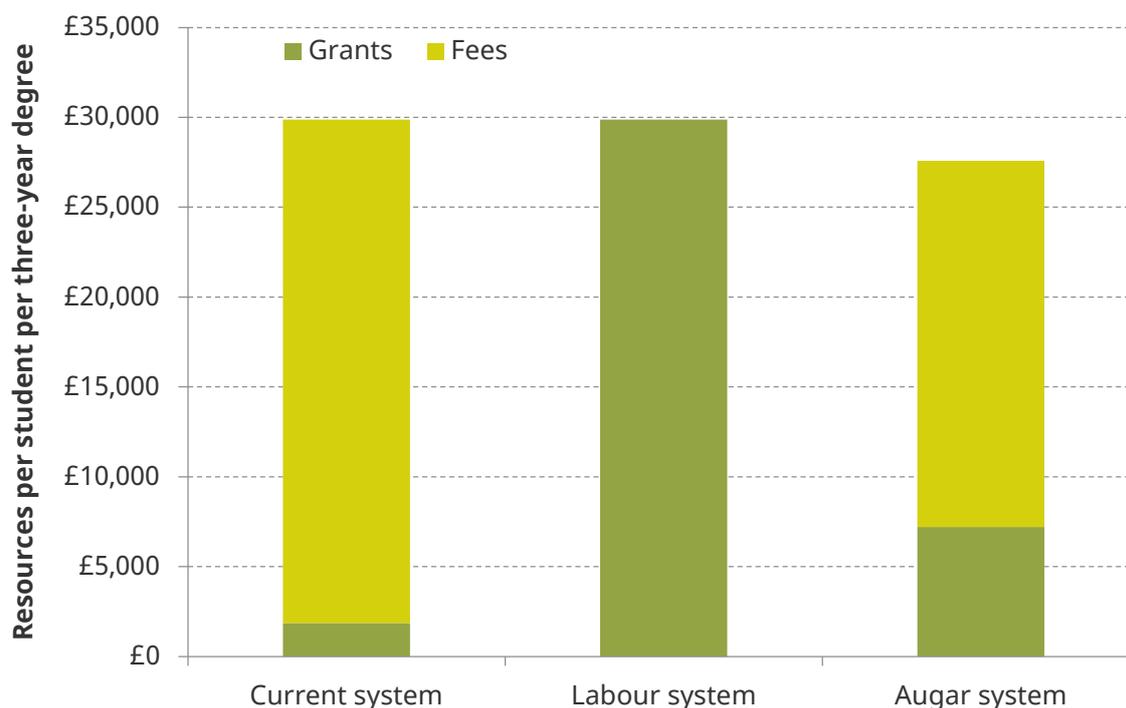
Under the new ONS accounting treatment, this long-run cost of Labour's policy of around £6.3 billion is also the short-run deficit impact of the reform.⁷³ This highlights the importance of the ONS recommendation: under the old rules, the short-run impact on the deficit was much greater because all of the grants counted towards the deficit while the loan write-offs did not. As stated in Britton, Emmerson and Pope (2018), this is a much more sensible way of accounting for student loans in the public finances and gives a more transparent estimate of the long-run impact of different policies. However, as mentioned in Section 5.2, there is an important caveat to this: while loan write-offs do count towards the deficit under the new accounting treatment, they (mostly) do not count towards the *current budget deficit*. Consequently, abolishing loans and replacing them with grants still acts to increase the current budget deficit in the short run. This matters for Labour's policy because in the 2017 election the Labour party set its fiscal targets based on the current budget deficit (so that it could exclude investment spending).

The Augar HE proposals

The Augar Review proposed several changes to the HE system. The most notable was the recommendation to reduce the headline tuition fee cap to £7,500 (to be implemented in 2021–22). This lost fee income is mostly made up with increased grant spending (with the exception of a nominal freeze in teaching grants plus tuition fees until 2021). We discuss the rationale for this policy in more detail below. In addition, Augar proposed to reintroduce maintenance grants (as with the Labour party policy) and also cut the interest rate on student loans during study to RPI+0% rather than its current level of RPI+3%. The first of these policies – as with Labour – is intended to address concerns about access to university for those coming from poorer households, while the second is addressing a policy that has been widely criticised, largely because the interest rates charged by government are now so much higher than the Bank of England base rate. As an alternative (but less expensive) way to constrain the impact of positive interest rates after graduation, Augar instead proposed a cap so that the total value of repayments could not exceed 1.2 times the value of the initial amount borrowed.

However, Augar's basic remit was to be roughly revenue neutral, and so the review had to recoup some of the money from these giveaways. The review therefore proposed to reduce the repayment threshold from £25,000 to around £23,000 and increase the repayment term from 30 to 40 years.

⁷³ Again, note that this excludes part-time students, which we talk about further in the discussion section.

Figure 5.5. University resources per student per degree, 2022–23 cohort (2019 prices)

Note: 2019 prices. Includes full-time-equivalent three-year degrees only. University resources exclude any maintenance support and funding from targeted allocations.

Source: Authors' calculations based on projected teaching grants and tuition fees for 2022–23.

To see the impact of the individual components of the Augar proposals, we refer the reader to our previous analysis funded by the Nuffield Foundation (Britton and van der Erve, 2019). We note in particular that the 1.2 cap is itself quite expensive, costing around £500 million per cohort, benefiting only graduates in the top half of the lifetime earnings distribution (it is still considerably cheaper than scrapping interest altogether, however). Here we consider the impact of the full package of Augar recommendations, comparing it with the current system and also the proposed Labour system.

Figure 5.5 shows our projection for per-student, per-degree university resources under the three systems. The Augar system would result in lower per-student resources by the 2022–23 cohort due to the proposal to freeze resources at their current levels until 2021, while we assume that under the current system resources would increase with inflation. We assume that Labour's policy would continue to match the current system, meaning that Augar would result in per-student university funding that is around 8% lower than the other two systems.

Another key feature is the major difference in the type of funding received by universities. Under the current system, around 95% of university funding comes from fees, with the remainder coming from grants. Under the Labour system it would be entirely from grants, while under the Augar system around 75% would come from fees and 25% from grants. This is important from the viewpoint of universities, which have historically been concerned that funding from grants is less likely to be protected than funding from tuition fees. This is not without justification: we saw from Figure 5.1 that grants per student

reduced significantly in real terms during the early 1990s as their real-terms value failed to keep pace with rising student numbers.

Table 5.3 highlights the impact of the three systems on government finances for the 2022–23 cohort of students, when Augar proposes his system would be fully in place. We estimate that Augar broadly achieved the goal of being roughly cost neutral compared with the current system. This is because the cut in university resources is offset by a similar-sized cut in expected graduate contributions.

The table projects that the deficit impact of the 2022–23 cohort (under the new accounting treatment) will be just over £8 billion under the current and Augar systems, while it will be £14.7 billion under the Labour system. Figure 5.6 shows our estimated projections of how the deficit will be impacted over time by HE under the three different systems. We see that in the long run, the Augar proposals remain close to the current system, becoming slightly more expensive over time as the repayment cap (of 1.2 times the initial value of the loan) starts to bite more. The Labour system, meanwhile, adds around £8.5 billion a year (increasing from an initial £6 billion a year as student numbers grow) more than the current system to the deficit every year.⁷⁴

Table 5.3. Summary of impact of Labour party and Augar proposals for the 2022–23 cohort

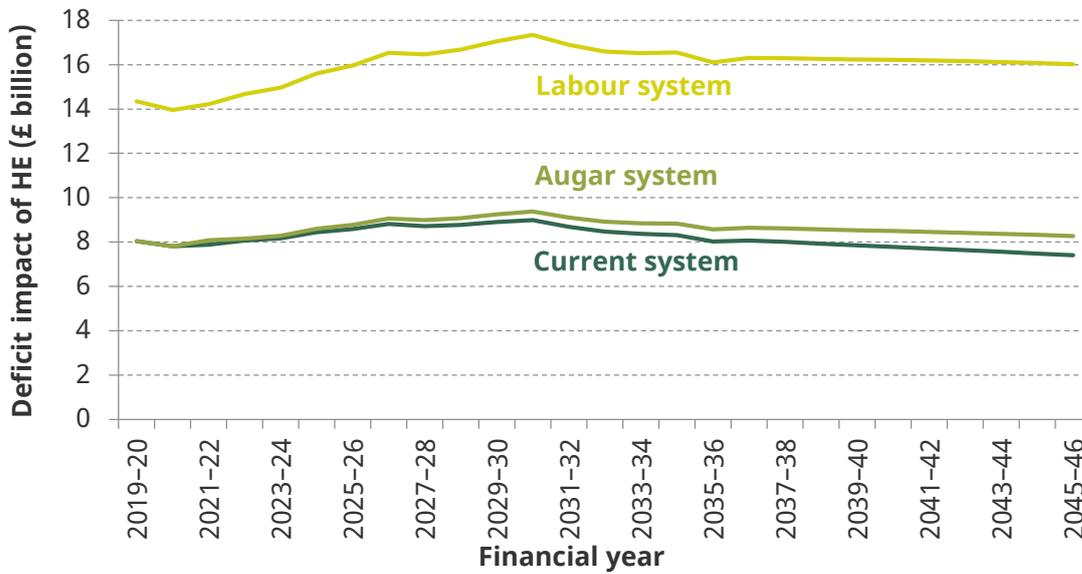
	Current system	Labour system	Augar system
Cost per borrower (across degree)			
Total up-front government spend	£53,400	£53,400	£50,900
<i>Of which: loans</i>	97%	30%	75%
Long-run graduate contribution	£28,900	£12,600	£27,400
Long-run taxpayer subsidy	£24,500	£40,800	£23,500
Total costs (including non-borrowers)			
Total up-front government spend	£17.5bn	£18.8bn	£17.1bn
<i>Of which: direct grants</i>	£0.7bn	£13.6bn	£4.7bn
Total long-run government contribution (deficit impact)	£8.1bn	£14.7bn	£8.2bn

Note: 2019 prices. Future student repayments discounted at 0.7% plus RPI. These figures apply to full-time England-domiciled students starting a first undergraduate degree at a UK university in 2022–23. Assumes 363,000 students based on 2017–18 HESA data and ONS forecasts of population growth (fixing ratio of number of students to number of 18-year-olds). We assume 10% non-take-up of student loans, although total costs include grant spending on those students. Figures exclude targeted allocations, which are worth up to £500 million.

Source: Authors' calculations using IFS's graduate repayments model.

⁷⁴ Again, it is important to note that these figures all *exclude* part-time students, which we further discuss below.

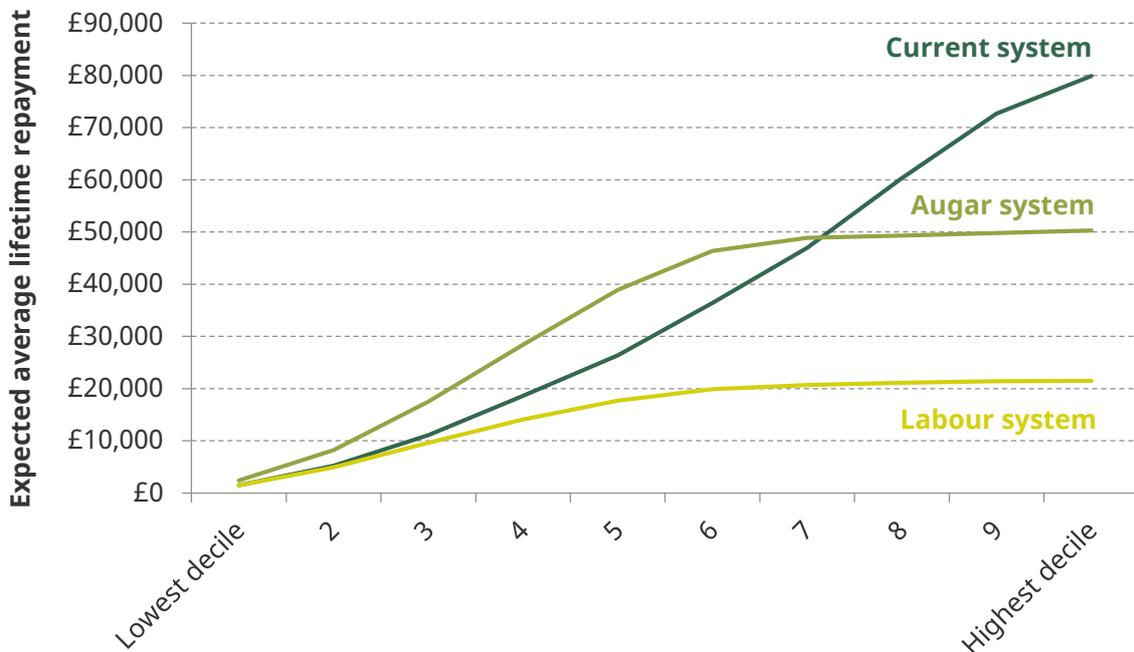
Figure 5.6. Projected deficit impact of HE under new ONS accounting treatment (2019 prices)



Note: Relies on population estimates from ONS and student numbers from HESA in 2017-18. We assume that the ratio of students to English 18-year-olds is fixed over time. University resources and student maintenance are held constant in real terms. Figures exclude targeted allocations, which are worth up to £500 million per year.

Source: Authors' calculations using IFS's graduate repayments model.

Figure 5.7. Expected average lifetime repayments by decile of graduate lifetime income for 2022-23 cohort (2019 prices, not discounted)



Note: Figures in 2019 prices, deflated using CPI inflation, not discounted. These figures apply to (projected) England-domiciled students starting at a UK university in 2022-23. We assume that all borrowers take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

Source: Authors' calculations using IFS's graduate repayments model.

Finally, Figure 5.7 considers the distribution of graduate repayments under the three systems. Both the Augar and Labour systems result in large benefits for the highest-earning graduates. For those projected to be in the top decile of the lifetime earnings distribution, their (non-discounted) lifetime repayments drop from around £80,000 under the projected current system to around £50,000 under the Augar system and just £20,000 under the Labour system (under which they are just repaying their maintenance loans). Low-earning graduates are largely unaffected by the Labour proposals as they do not repay enough to clear their maintenance loans anyway, while all graduates above that level see reduced lifetime repayments. Under the Augar proposals, however, lower- and middle-earning graduates pay more than under the current system. For example, the repayments of those in the fifth decile increase from around £25,000 to around £40,000 over their life cycle. This is primarily driven by the extension of the repayment period from 30 to 40 years meaning they will still be making repayments into their early 60s, but also by the reduction in the repayment threshold that increases their repayments in the short term by up to around £180 per year.

Discussion

Much of the attention of Augar has been on the distributional impact of the changes to the system, and in particular its impacts on low and middle earners, who will pay more than under the current system. As Figure 5.7 makes clear, all three systems – the current loans system, Augar’s proposed reforms and Labour’s grant-led model – will be broadly progressive, with students who go on to have high earnings paying more, but there are big differences in the *degree* of progressivity between the three systems. It is up to policymakers to set out their preferred degree of progressivity; for example, it would be perfectly reasonable to conclude that the current system excessively penalises the highest earners as a result of high interest rates, or indeed undercharges low earners because of the high earnings threshold.

Distributional concerns are not the only metric by which to judge a system of HE finance. Decisions about what is the right or appropriate system will depend on a whole range of judgements about the appropriate degree of risk sharing between taxpayers and graduates, the appropriate incentivisation of universities and the appropriate degree of redistribution between graduates.

In practice, the Augar proposals were motivated by the need to deal with some of the key issues with the system, while working within a strict remit of being broadly revenue neutral. In reality, these recommendations could be brought in without any changes to the terms of the loans, or with an alternative design that is less ‘regressive’.⁷⁵

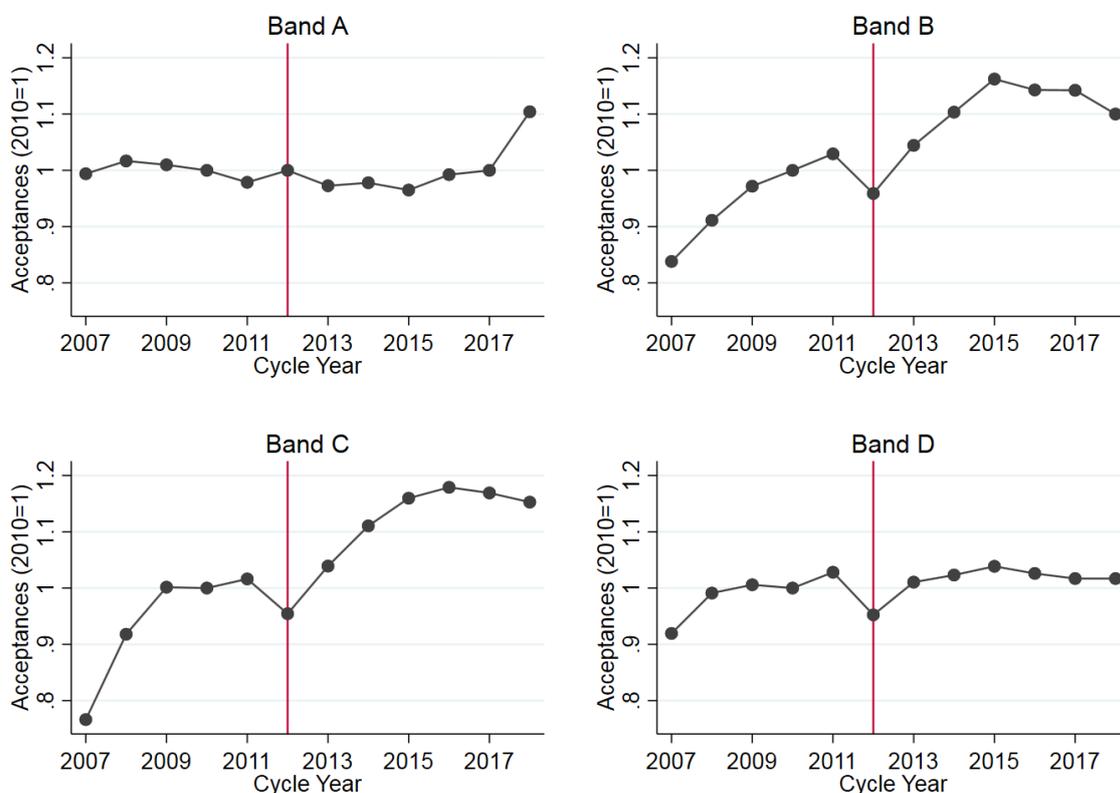
One of the biggest issues that Augar addressed in his review is the mix of market- and government-led incentives in the higher education system. At the moment, the government has limited control over both the total level and the distribution of spending on HE. The government provides a significant contribution through the student loans system, but students are free to use their loans to study their subject of choice at their institution of choice. This has been even more the case since 2015, when caps on the number of students for particular courses were fully lifted.

⁷⁵ Examples of this would be the introduction of a loan surcharge, or a tapering of the repayment threshold for higher earners.

These problems are largely the result of a miscalculation in 2012: the government anticipated that universities would start to compete to offer lower fees to attract more students, while in practice almost all universities simply increased their fees to the maximum level.⁷⁶

Previous IFS research has highlighted the large increases in funding for cheaper-to-teach 'Band C and D' subjects relative to the more-expensive-to-teach 'Band A and B' subjects as the effective payment per student evened out between these groups. Since the graduates of many of these Band C and D courses (such as creative arts) earn less on average than the graduates of some Band A and B courses (such as engineering), long-run government *spending* on these courses has increased even more quickly. For example, Belfield et al. (2019) showed that the government spends around 30% more per creative arts degree than per engineering degree today, compared with 20% less under the pre-2012 system.

Figure 5.8. University acceptances by teaching cost band



Note: Shows acceptances of England-domiciled students at UK universities onto full-time and part-time undergraduate courses, all standardised to 2010. Subject bands approximated based on the majority of students, as several broad subject areas cover more than one band. Red line indicates timing of the 2012 tuition fee reform.

Source: UCAS.

⁷⁶ This was probably driven by the price elasticity of students being lower than expected, which *ex post* is not surprising given the huge write-offs on student loans.

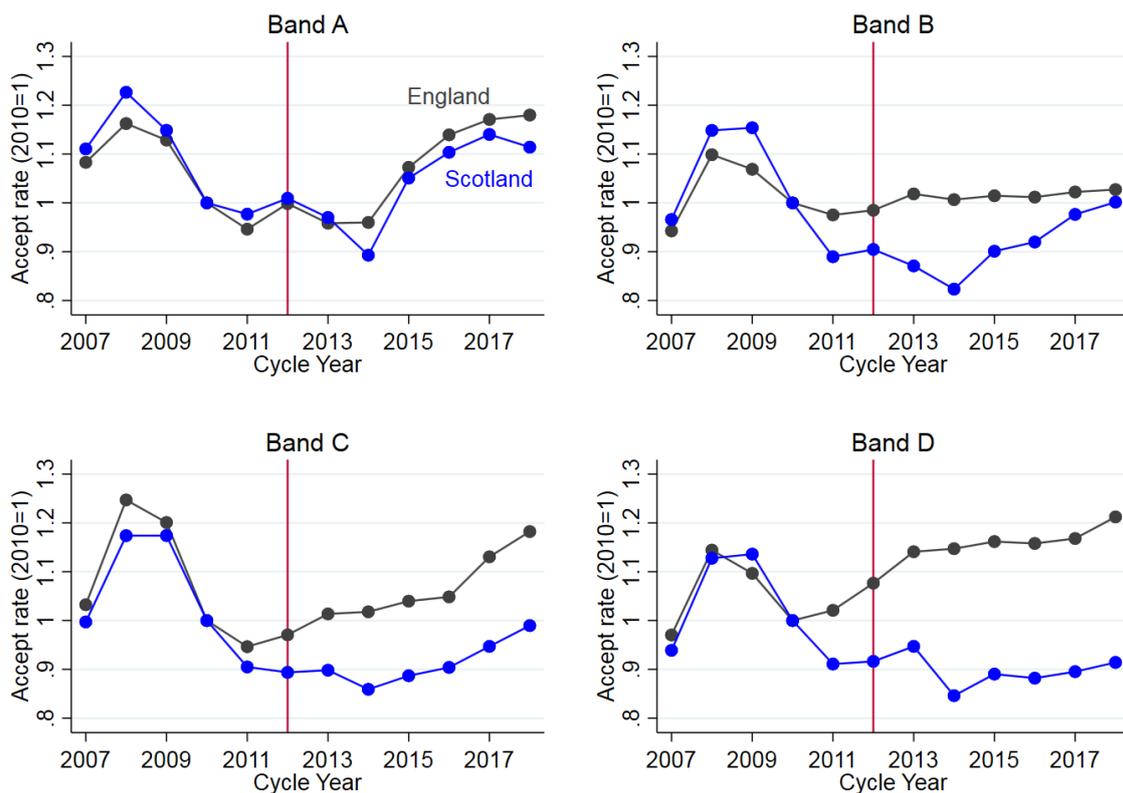
These factors are a concern in terms of the design of the system, first because this might not be a very efficient distribution of existing government spending and second because it might generate incentives for universities to expand in these areas, further exacerbating the first issue.

Evidence that universities are responding to changing incentives has so far been limited. Figure 5.8 shows that, aside from a dip in 2012, the number of offers given for Band D courses – the cheapest to teach – has remained very similar to its 2010 level since the 2012 reforms.

However, this figure masks an important change behind the scenes: since 2010, while the overall *number* of students on Band D courses has remained broadly flat, the acceptance *rate* – i.e. the share of applications that received offers – has increased by 20%. This could reflect a broader change over time; the same is also true for courses in Bands C and A, which are more expensive to teach.

To try to understand how much of this effect is due to broader changes over time, Figure 5.9 compares acceptance rates in England with those in Scotland (where universities have

Figure 5.9. University acceptance rates by teaching cost band



Note: Shows acceptance rates for England- and Scotland-domiciled students at UK universities onto full-time and part-time undergraduate courses, all standardised to 2010. Subject bands approximated based on the majority of students, as several broad subject areas cover more than one band. Red line indicates timing of the 2012 tuition fee reform.

Source: UCAS.

not faced the same increase in incentives to expand cheap-to-teach courses). It shows that acceptance rates have behaved in a broadly similar way in England and Scotland for Band A courses, suggesting that the increase in acceptance rates for these courses is part of a broader pattern. But the same cannot be said of courses in the other bands. Most strikingly, in Bands C and D, acceptance rates have gone from being nearly identical in the two countries to being around 20–30% higher in England. This is consistent with English universities responding to new incentives by doing more to keep Band C and D courses full, although on their own these data cannot prove that this is what is happening.

The Augar proposals are intended to give the government the ability to redistribute HE spending towards higher-priority students (such as those from lower-income households) or subject areas (such as STEM subjects⁷⁷). This, it is hoped, would reduce incentives for universities to expand in ways that the government might not see as desirable.

Labour's policy, meanwhile, would of course go much further by giving the government complete control over the distribution of spending by removing tuition fees altogether and going back to a grant-based system. There are two key issues that arise here though. First, it is unclear how those who had incurred large debts under the existing system would be treated. Britton, Emmerson and van der Erve (2017) showed that there was around £34 billion in outstanding tuition fee debt for those who started university in or after 2012, and we estimate this figure is now closer to £50 billion.⁷⁸ Of course, not all of that money would have been repaid, but writing the debt off completely would still represent a significant hit to the public finances.

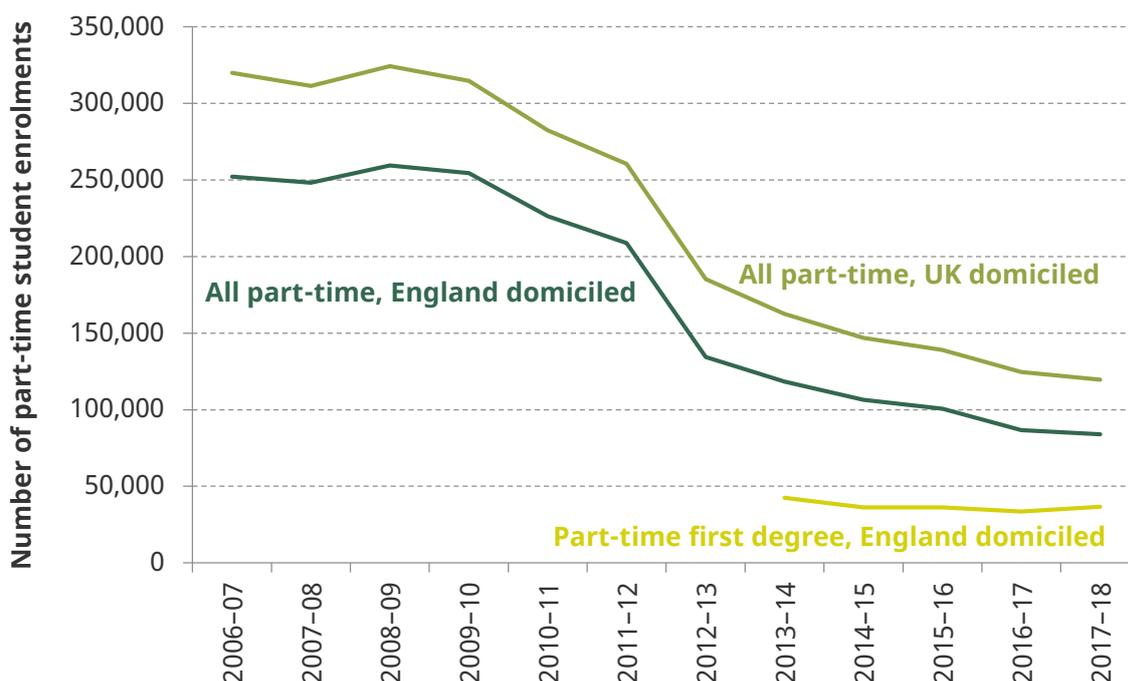
Second, and more important, it is unclear what the Labour party plans to do with student number caps. Until 2012, the government imposed tight restrictions on the number of domestic undergraduate students that universities could admit. This was an important part of controlling total government spending on HE. Under the new tuition fee regime, the government decided to gradually remove those restrictions, until in 2015 universities could let in as many students as they wished. The rationale for doing this was that it would be a move towards a market that would increase competition between universities. However, it is likely that demand has been kept in check, at least to an extent, by the £9,250 tuition fees. With no fees, student demand could increase significantly.

This could potentially be very significant. As discussed above, we estimate that Labour's policy of removing tuition fees would cost a little over £6 billion per year in the short run. Importantly, this number excludes part-time students, who would add approximately another £1 billion to the costs of Labour's proposals at current student numbers.⁷⁹ However, Figure 5.10 highlights the uncertainty inherent in this figure. When student loans were restricted for part-time students in 2010, the number of first-year part-time students fell dramatically. This was compounded by the subsequent increase in tuition fees in 2012. This suggests that part-time numbers are highly sensitive to the availability of credit, and the removal of tuition fees could result in very large increases in the number of these students, which would increase the costs of Labour's policy dramatically.

⁷⁷ STEM stands for science, technology, engineering and maths.

⁷⁸ <https://www.gov.uk/government/statistics/student-loans-in-england-2018-to-2019>.

⁷⁹ This includes the 40,000 part-time students (per cohort) doing first undergraduate degrees. Including the currently 50,000 part-time students (per cohort) doing 'other' undergraduate qualifications would add to this cost.

Figure 5.10. Part-time student numbers at UK institutions

Source: HESA. Includes first-year enrolments only.

Labour may choose to mitigate this risk by bringing back student number caps. This would take us back towards the old system that was heavily criticised in the 2010 Browne Report – a key influence behind the 2012 reforms⁸⁰ – primarily because it constrained competitive incentives between universities.⁸¹ However, few would argue the ‘2012 system’ has been an unmitigated success. While Browne hoped that we would see competition on both price and teaching quality, the higher-than-expected fees, rapid recent growth in the number of good degrees (firsts and 2:1s) being awarded by English universities, and the large increase in unconditional offers all appear to be evidence of universities competing in ways that were not intended and are not desirable. Both the Augar and the Labour proposals would represent moves towards a more closely regulated market, which is probably a move in the right direction; however, the degree of movement is very much a judgement call, and deserves careful consideration about the trade-offs between redistribution, offering insurance to graduates and giving the government a say in the shape of the UK’s graduate market.

⁸⁰ It is important to note that the 2012 system differed from the one proposed by Browne in several important ways.

⁸¹ In particular, Lord Browne argued that, under his proposals, ‘increasing competition for students will mean that institutions will have stronger incentives to focus on improving teaching quality’.

6. Comparisons and conclusions

In this final chapter, we compare the level of spending per student across the different stages of education. This only covers this year to date and not the likely patterns to emerge as a result of recent decisions in the 2019 Spending Round.

The shape of public spending on education has changed significantly since the early 1990s. In 1990–91, there was a very clear gradient across education stages: the older the pupils being taught, the higher the level of public spending (or resources) per pupil per year. Although this broadly remains true in 2018–19, the relative differences are smaller. Figure 6.1a compares these trends in public spending per student on various stages of education over time in England, whilst Figure 6.1b shows the levels relative to primary school spending per pupil.

For higher education, we focus on total resources per student, rather than the long-run government subsidy – e.g. for the present day, it is total fees plus teaching grant and so includes the amount paid for by graduate contributions. We use this figure as we feel it best reflects the up-front resources going into higher education from government. For other stages of education, we focus on just the level of public subsidy as all other private spending comes directly from households and there is no evidence to suggest this has changed differentially over time.

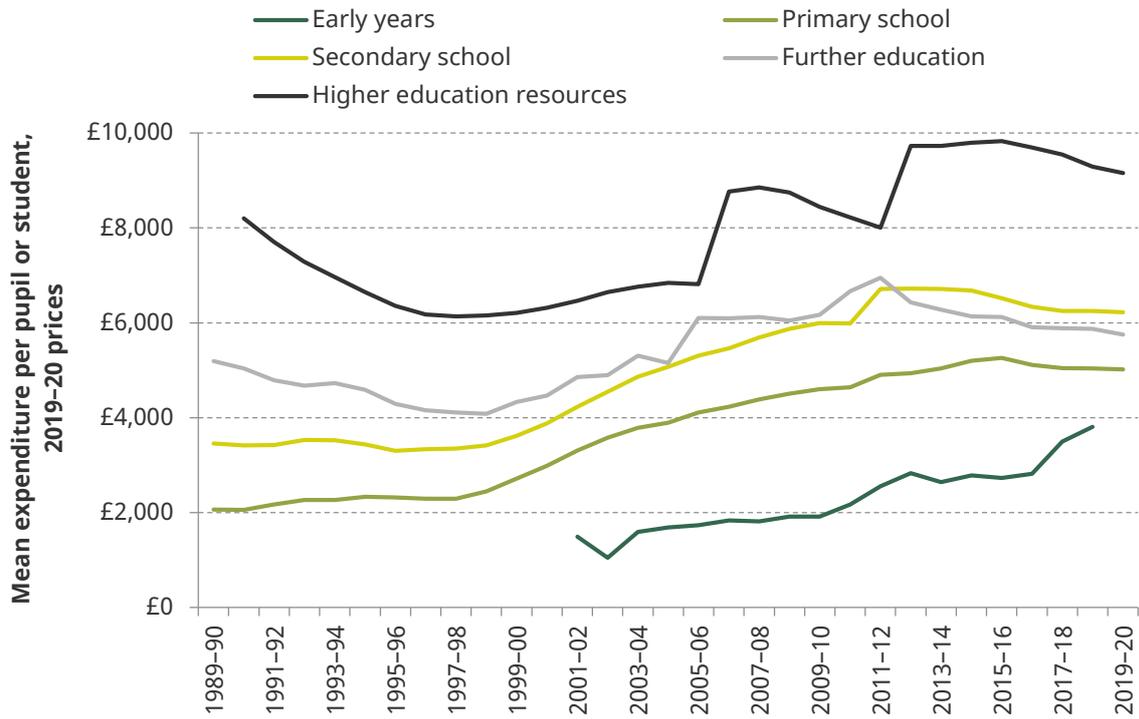
At the start of the period, in 1990–91, higher education spending was £8,200 per student per year (this and all figures here are in 2019–20 prices), about four times the level of primary school spending per pupil, and it all came directly from government spending. Further education spending was just over £5,000 per student and about 2.5 times the level of primary school spending (and nearly 1.5 times the level of secondary school spending per pupil). Secondary school spending was £3,400 per pupil, about 1.7 times the level of primary school spending per pupil (£2,100). Early years spending was very low (less than £100 million in total) and is not shown on this graph as a result.

Over the next 25 years, there were then significant changes in this balance of spending, with three distinct phases of change: falls in spending (1990–91 to 1997–98); rapid growth (1997–98 to 2010–11); and differential protections from spending cuts (2010–11 onwards).

During the period of falls in spending in the 1990s, 16–18 education and higher education spending per student both fell significantly in real terms, by around 19% and 25% respectively between 1990–91 and 1997–98. In contrast, primary and secondary school spending per pupil were largely frozen in real terms, shrinking the gap between school spending per pupil and post-compulsory education spending per student.

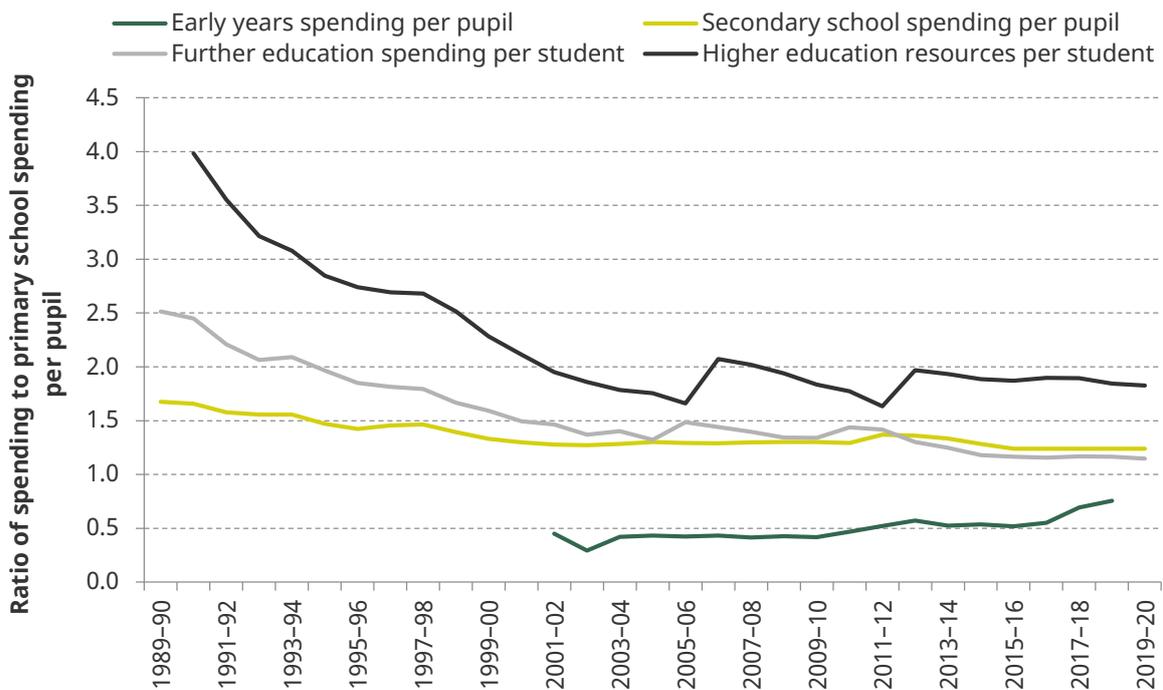
From 1997–98 to 2010–11, spending and resources increased across all stages of education. The early years entitlement was introduced and then extended over time. There were some very significant increases in school spending per pupil, with primary school spending per pupil growing by 6% per year and secondary school spending per pupil by 5% per year, on average, in real terms between 1997–98 and 2010–11. Further education spending per student also grew significantly over the period, but by a slightly slower rate, at around 4% per year on average in real terms. As a result, by the late 2000s,

Figure 6.1a. Spending per pupil or student per year at different stages of education: actual and plans (2019-20 prices)



Source: Early years figures are spending per child for 3- and 4-year-olds. Further education figures are for ages 16-18. Higher education figures are the cohort-based numbers shown in Figure 5.1, divided by 3 - an approximate course length. See Appendices A-D for a full list of sources and methods.

Figure 6.1b. Relative spending per pupil or student per year at different stages of education: actual and plans (primary school spending per pupil = 1)



Source: See Figure 6.1a.

the level of spending per pupil in secondary school was similar to that in 16–18 education, a dramatic turnaround compared with the picture in the early 1990s.

Resources for higher education increased slightly in real terms, by around 11% between 1997–98 and 2005–06, as the real value of teaching grants per student increased. The increase in the tuition fee cap to £3,000 then led to a large uptick in resources. However, these increases were not enough to keep pace with the growth in primary school spending over this period. In 1997–98, higher education received more than 2.5 times as much funding per pupil as primary schools, but by 2011–12 this had fallen to a little over 1.6 times as much. This is a dramatic shift in the relative priorities of these spending areas.

From 2010–11 onwards, early years spending per head continued to rise as the scope of the free entitlement was expanded, first to 15 hours in 2010 and then to 30 hours for working parents in 2017. School spending per pupil was largely protected in real terms up to 2015, before then falling by about 5% in real terms between 2015–16 and 2019–20. There were larger falls in further education spending per student, which fell by 14% in real terms between 2010–11 and 2019–20, leading spending on 16–18 education to fall significantly behind spending on secondary schools for the first time in at least 25 years and probably a lot longer.

Higher education saw a large increase in resources per student as a result of the increase in tuition fees in 2012. As we showed in Chapter 5, this increase in resources was driven by increased expected graduate contributions. These resources were relatively steady up until 2015–16, but have since fallen in real terms. As a result, resources per student in 2019–20 are about 6% lower in real terms than they were in 2012–13. This leaves spending per student in higher education only about 12% higher in real terms than it was in 1990–91, though with a much larger student population and much larger total funding as a result. Because of cuts to school spending, spending per student in higher education also remains at about 1.8 times the level of spending in primary schools. However, these trends continue a clear historical pattern of large increases in higher education resources in years when fees are increased, which are then followed by periods of gradual real-terms falls in resources per student.

By 2018–19, we see a much more complex picture than we saw in 1990. Higher education resources per student continue to be higher than resources at all other stages, but only due to graduate contributions, and the changes over time have been far from smooth. School spending has been prioritised by successive governments, whilst 16–18 education has been the big loser from changes over the last 25 years, with spending per student in further education now 6% below that in secondary schools. Early years spending has been a focus of successive governments too, though spending per pupil is still only around 75% of that in primary schools, and we know there have been cuts to other early years services such as Sure Start. This provides an important context for the challenges each stage of education faces in the years to come.

Overall, the picture of government spending on education has changed significantly over the last 25 years, with the focus of spending shifting towards earlier in youngsters' lives. Most stages of education have seen significant real-terms increases in spending per pupil over this period, with 16–18 education a notable exception. To inform the public debate, we plan to continue to use our annual reports to update our estimates of spending per pupil at each education stage.

Appendix A. Early years spending methodology

In this appendix, we outline the data sources we have used to prepare spending figures in Chapter 2. As with any exercise to construct a historical series of spending, there will inevitably be limitations in the data quality and consistency from year to year. We have prioritised building a consistent series as far as possible, including using imputation where warranted.

Spending on the free entitlement

In constructing a series of spending on early education, we combined information from several data sources, each of them imperfect. We used budget data from the Section 251 summary budget tables and data on spending (out-turns) from the Department for Education's Statistical First Release SFR52 series. We also had available data from the Section 251 out-turns and for the Dedicated Schools Grant (DSG).

Table A.1 summarises the availability of these different sources of data and the total spending figures implied by each (all in 2019–20 prices). Sources for each type of data are available via embedded hyperlinks for the spending figures, except for the Nursery Education Grant figures.⁸²

The budget data are based on the Individual Schools Budget for nursery schools (2001–02 to 2009–10) and for early years (2010–11 to 2018–19). From 2012–13 onwards, they net out spending on the 2-year-old free entitlement.⁸³ In an effort to focus as clearly as possible on spending related to education, these figures net out spending on health-related services as well as some elements of central spend, on school admissions, servicing schools forums, termination costs, the Falling Rolls Fund, capital expenditure from revenue, prudential borrowing costs, and equal pay back pay. Taken together, these excluded items were budgeted in cash terms at £4 million on a total budget of £3,798 million (inclusive of spending on the 2-year-old entitlement), so these classification decisions do not meaningfully affect our final spending estimates in any case.

Section 251 out-turn data are calculated as net current spend from nursery schools and private, voluntary and independent (PVI) providers plus net current central spend on nursery schools.

We believe that the data series have the following limitations:

- Budget data between 2001–02 and 2009–10 likely exclude spending on nursery classes.
- Spending figures from the Section 251 returns do not explicitly include spending on the free entitlement as delivered by PVI providers.

⁸² Spending in 1997–98 and 1998–99 represents reported central government spending on nursery vouchers through the Nursery Education Grant listed in Department for Education and Employment (1999).

⁸³ Spending on the 2-year-old offer is directly reported in the 2012–13 budget table. In 2013–14, it comes from the National Audit Office's report on the free entitlement (National Audit Office, 2016, figure 7). From 2014–15 onwards, it comes from the early years table of the budget data.

Table A.1. Total spending on the 3- and 4-year-old free entitlement, by data source (£000s, 2019–20 prices)

	Nursery Education Grant	Budget, Section 251	Budget, DSG	Spend, Section 251	Spend, SFR52
1997–98	961,587				
1998–99	985,104				
1999–00					
2000–01					
2001–02		545,159		971,120	
2002–03		590,784		777,446	
2003–04		1,090,189		1,196,646	
2004–05		1,153,974		1,267,110	
2005–06		1,162,216		1,312,154	
2006–07		1,251,265		1,431,758	
2007–08		1,300,122		1,448,391	
2008–09		1,324,838		1,548,520	
2009–10		1,413,788		1,586,134	
2010–11		1,811,794		1,471,042	
2011–12		2,198,557		1,509,283	
2012–13		2,440,925		1,421,657	
2013–14		2,333,402			2,147,602
2014–15		2,500,608			2,220,536
2015–16		2,488,195	2,427,464		2,387,838
2016–17		2,495,880	2,348,716		2,449,350
2017–18		3,048,918	2,811,942		2,892,638
2018–19		3,305,701	3,043,722		

Source: Links embedded in the table.

Since we do not believe that spending was overstated in any of these years, our decision has been to use the most complete measure of spending available in each period up to 2012–13 to provide the most accurate figures possible. Since 2012–13, the trends in the budget and SFR52 spending data have tracked each other closely (and, since 2015–16, the free entitlement block in the Dedicated Schools Grant has tracked both of these series as well). We have preferred the budget measures for these years to avoid another break in the data series and in order to get first estimates for the changes in spending in 2018–19 from a consistent data source. This means that our figures do the following:

- **1997–98 to 1998–99** – Use spending on the Nursery Education Grant.
- **1999–2000 to 2000–01** – There are no spending data in 1999–2000, and spending data in 2000–01 are incomplete. We do not report spending figures for these years.
- **2001–02 to 2009–10** – Use the Section 251 spending data as they explicitly include spending on PVI provision of the free entitlement (while the budget data are likely to exclude spending on nursery classes).
- **2010–11 to 2012–13** – Use the budget data (which now relate to all early years spending) as they are likely to be more comprehensive.
- **2013–14 to 2018–19** – Budget and SFR52 spending data track each other closely. Continue to use the budget data to provide a more consistent series and to report on planned spending levels in 2018–19.

Tax and benefit spending

In Section 2.2, we consider historical patterns in spending on childcare subsidies delivered through the tax and benefit systems, including employer-supported childcare vouchers, tax-free childcare, and the childcare element of working tax credit and universal credit.

Table A.2. Total spending on employer-supported childcare vouchers, by data source, and on tax-free childcare (£000s, 2019–20 prices)

	Stewart and Obolenskaya (2015)	HMRC Ready Reckoner	Tax-free childcare
2007–08	319,700		
2008–09	415,000		
2009–10	464,800		
2010–11	523,300		
2011–12	608,200		
2012–13	608,100	714,800	
2013–14		740,500	
2014–15		778,400	
2015–16		809,900	
2016–17		810,800	
2017–18		830,900	28,700
2018–19		694,900	102,200

Source: Stewart and Obolenskaya (2015); HM Revenue and Customs, Ready Reckoner, 2016 and 2019 (links embedded in the table); Office for Budget Responsibility, *Economic and Fiscal Outlook*, March 2019 (links embedded in the table).

As for the free entitlement, we have pieced together a historical record of spending based on data from a number of sources. In the tax system, data on forgone tax and National Insurance revenues are first available from 2007–08 (although employer-supported childcare vouchers were first introduced in 2005). As shown in Table A.2, we combine data from table 2 of Stewart and Obolenskaya (2015) and from HMRC’s Ready Reckoner, which shows the costs of various tax reliefs.

One complication is that, since these are national policies, spending figures are reported for the whole of the UK. In order to be consistent with the rest of Chapter 2, which discusses spending on policies in England, we attribute a portion of these UK-wide costs to spending in England based on the English share of the under-15 population in the UK.

In the one year where the two data sources overlap, there is a considerable difference between them; however, the figures from HMRC for 2012–13 are more consistent with the rapid growth in spending from previous years, so we prefer the official government source in that year (Stewart and Obolenskaya rely on Hansard records from responses to ministerial questions). We also avoid analysing spending around the point where the data source changes.

Table A.2 also reports our data for spending on tax-free childcare. To the best of our knowledge, there is only one data source for these figures: the Office for Budget Responsibility’s *Economic and Fiscal Outlook*. We use the EFO for March 2019 (table 4.17).

On the benefits side, we again rely on Stewart and Obolenskaya (2015) for historical data. For more recent years, we use HMRC’s statistics on finalised awards through working tax credit. As with the tax system, we use population shares to attribute a portion of UK-wide spending to England. Table A.3 outlines the data availability and spending figures from these sources.

In the period where Stewart and Obolenskaya’s figures overlap with data from HMRC’s working tax credit statistics, there is a very close correspondence between the two series; discrepancies are likely the result of rounding during the calculations to compute English shares of the UK spending totals. We therefore prefer to use data from the Department for Work and Pensions (DWP) to be as consistent as possible with later figures, so we follow Stewart and Obolenskaya from 1997–98 through 2007–08 and the HMRC statistics thereafter.

As discussed in Section 2.2, there is very little take-up of the childcare element of universal credit so far. Since figures on spending on this element are not available and the upper bound from data that are available is small in comparison with spending via working tax credit,⁸⁴ we have chosen to ignore the childcare element of universal credit for the moment.

⁸⁴ We use data from DWP’s Stat-Xplore on the banded amount of monthly universal credit given to recipients of the childcare element. This includes the entire benefit award, not just the childcare element. Based on these figures, total monthly spending through universal credit on families that receive the childcare element was just £27 million in February 2019, or about £325 million on an annualised basis. Even though this includes a significant amount of spending on benefits other than the childcare element, it is still much smaller than annual spending on the childcare element of working tax credit.

Table A.3. Total spending on the childcare element of tax credits, by data source (£000s, 2019–20 prices)

	Stewart and Obolenskaya (2015)	HMRC working tax credit awards
1997–98	40,300	
1998–99	53,400	
1999–00	119,900	
2000–01	275,200	
2001–02	370,300	
2002–03	432,900	
2003–04	707,800	
2004–05	796,000	
2005–06	953,800	
2006–07	1,277,700	
2007–08	1,437,600	
2008–09	1,609,400	1,582,400
2009–10	1,613,600	1,612,700
2010–11	1,499,900	1,515,500
2011–12	1,148,900	1,173,800
2012–13	1,066,200	1,066,100
2013–14		1,089,400
2014–15		1,102,600
2015–16		1,055,800
2016–17		970,100
2017–18		904,700
2018–19		<i>not yet available</i>

Source: Links embedded in the table.

Spending on social services

Section 2.3 discusses spending on wider social services. We use data from the Section 251 out-turns for school spending on education, children and young people’s services. We also make use of the Finance and General Estimates for 2000–01 through 2007–08.

One of the biggest data challenges in this section of the report is to create consistent classifications for the different categories of services over time. We start by creating four categories based on 2018–19 data:

- **Sure Start** – Spending by individual children’s centres; spending on local-authority-provided or commissioned services delivered through Sure Start; spending on local authority management cost related to Sure Start; and other spending on children under 5.
- **Children and family services** – Social work; commissioning and children’s services strategy; safeguarding children boards; family support (targeted, universal, direct payments, respite care); and other child and family services.
- **Children looked after (CLA)** – Residential care; fostering, adoption, guardianship; children placed with family and friends; other CLA services; short-term respite for CLA families; services for the education of children in care; leaving care support; and support for asylum seekers who are children.
- **Youth services** – Targeted and universal services for young people; and youth justice.

The individual budget lines that make up these categories can generally be traced in the Section 251 data back through to 2008–09. There are some small changes in the data from 2012–13 and earlier, but these are for budget lines that are small relative to overall spending on a category. The exception to this is spending on Sure Start, where there are potentially significant changes in individual budget lines. We return to this below.

Prior to the start of the Section 251 data in 2008–09, we cannot distinguish between different categories of spending on social services. Instead, we use the Finance and General Estimates, augmented with historical data on Sure Start and youth services, to provide an indication of total spending on social services related to children and families.

Sure Start spending

Unlike the other three categories of social service spending, there are important differences from year to year in the budget lines related to Sure Start in the Section 251 returns. Management costs are not reported in 2011–12 and 2012–13, and the figures given in the year before and after this hole are very different (£202 million and £47 million respectively, in 2019–20 prices). Other spending on children under 5 is not reported before 2012–13, when it accounts for £227 million.

At the same time, we also have data on Sure Start spending between 1997–98 and 2010–11 from Stewart and Obolenskaya (2015). These figures overlap with the Section 251 data only in one year (2010–11), when there is a gap between the data sources (spending is reported at £1.9 billion in Stewart and Obolenskaya, compared with £1.6 billion in the Section 251 returns; both expressed in 2019–20 prices).

We therefore develop an imputation procedure to piece together as consistent a series as possible, improving on the spending figures reported in Cattan et al. (2019).

- **2013–14 to 2018–19** – Follow Section 251 data.
- **2012–13** – Impute management costs as a function of the number of Sure Start centres and add this to the other three components of Sure Start spending reported in the Section 251 data (spending by centres, LA-commissioned services, and other early years spending).

- **2011–12** – Impute management costs as above. Linearly extrapolate spending on other early years services from later years. Add to the other two components of spending reported in the Section 251 data.
- **2010–11** – Disregard the reported management costs, which are implausibly high to be consistent with later years, in favour of the imputed management costs described above. Add to the other three components in the Section 251 return.
- **1998–99 to 2009–10** – Follow Stewart and Obolenskaya (2015), but rescale so that their 2010–11 figure matches the adjusted 2010–11 figure we obtain from the Section 251 returns. In practice, this means rescaling to capture 83% of Stewart and Obolenskaya’s reported Sure Start spending.

Table A.4 gives an overview of this imputation process.

Table A.4. Imputation of Sure Start spending (£000s, 2019–20 prices)

	Stewart and Obolenskaya (2015)	S251: LA services	S251: Spend by centres	S251: Management	S251: Other services	S251: Total	Stewart and Obolenskaya, rescaled
1998–99	269,280						222,750
1999–00	314,358						260,038
2000–01	512,463						423,911
2001–02	644,137						532,833
2002–03	912,231						754,601
2003–04	833,938						689,837
2004–05	995,269						823,290
2005–06	1,311,999						1,085,291
2006–07	1,347,587						1,114,729
2007–08	1,455,536						1,204,025
2008–09	1,572,976						1,301,172
2009–10	1,800,737						1,489,577
2010–11	1,903,941	310,768	938,163	<i>55,462</i>	<i>270,554</i>	1,574,948	1,574,948
2011–12		303,829	867,293	<i>52,817</i>	<i>247,143</i>	1,471,082	
2012–13		221,663	802,288	<i>50,012</i>	227,074	1,301,037	
2013–14		116,815	699,737	46,857	204,331	1,067,740	
2014–15		99,426	621,293	44,498	172,765	937,981	
2015–16		99,028	506,810	41,525	141,235	788,599	
2016–17		41,451	474,736	41,451	134,317	691,956	
2017–18		73,700	380,697	35,266	111,513	601,176	

Note: Figures in green italics have been imputed based on a time trend alone (other services) or based on number of Sure Start centres and a time trend (management).

Appendix B. School spending methodology

We have two main methods for calculating school spending per pupil. The first relates to school-based spending per pupil, whilst the second additionally includes spending undertaken by local authorities. Here, we detail the underlying assumptions, methods and data sources for each measure.

School-based spending

Our measures of school-based spending per pupil are shown for both primary and secondary state-funded schools in Figure 3.2. The methods and data used for calculating these figures are updated from Belfield and Sibieta (2016). Spending includes all spending undertaken by state-funded schools, including academies and free schools where possible. Given that the data do not break expenditure down by pre-16 or post-16 categories, this will include spending on school sixth forms. We exclude special schools because funding arrangements for these schools are more complex and driven more by the needs of individual pupils.

We make use of four main data sources for expenditure: CIPFA Education Statistics Actuals between 1978–79 and 1999–2000; schools’ Section 52/251 returns between 1999–2000 and 2015–16; academies’ financial returns from 2011–12 to 2015–16; and national school funding allocations from 2016–17 to 2019–20.

The CIPFA Education Statistics Actuals compiles data returned by each local authority (LA) in England and Wales. This includes information about the number of pupils and teachers and a breakdown of expenditure on primary⁸⁵ and secondary schooling.⁸⁶ The CIPFA data include all expenditure by LAs on schooling.⁸⁷ Prior to Local Management of Schools in 1990, this expenditure was primarily spent directly by the LA. After 1990, this expenditure is the amount allocated to schools directly through the LA formula plus the amount spent centrally by the LA. The CIPFA data thus combine school-based and LA-based expenditures. We are unfortunately not able to separate these two components.

From 1999–2000 to 2015–16, we use the Section 52/251 data. These data are compiled from the returns of individual schools about their levels of funding and expenditure each year. Differences between funding and expenditure may emerge when schools do not spend their entire budget. As we are interested in the amount of money spent on pupils’ education, we use the expenditure data wherever possible. Importantly, this excludes

⁸⁵ The expenditure data for nursery and primary are combined for the years 1978–79, 1979–80 and between 1987–88 and 1995–96; therefore we estimate combined nursery–primary per-pupil funding. We then combine this with the primary per-pupil Section 52/251 data using the method outlined below. This is a reasonable assumption, as total nursery funding only constituted 1.2% of total nursery and primary funding in 1986–87.

⁸⁶ We use the Net Expenditure variable (available from 1978–79) for consistency across years. This includes spending on teaching staff, other staff, contributions to/from other local education authorities and other net expenditure.

⁸⁷ In the years between 1993–94 and 1997–98, we add data on funding and pupils in grant-maintained schools (data kindly provided by Damon Clark). The CIPFA data are coded from scanned PDF documents available from the CIPFA website. Headings and definitions often change over time and there are a number of clear errors in the original data (e.g. missing zeros, incorrect ordering and incorrect labelling of local authorities). We have made every effort to check and correct the data but a small number of errors may remain.

central spending by LAs. As such, the data from Section 52/251 returns represent school-based expenditure. In all cases, we divide total expenditure in each financial year by the number of full-time-equivalent pupils in the January within the financial year to create per-pupil measures of school expenditure (e.g. January 2013 for financial year 2012–13).

Figures for academies are not included in the Section 52/251 returns, and financial returns for academies⁸⁸ are only available from 2011–12 to 2015–16. This means all academies are missing from the data for any period between their foundation or conversion and 2011–12. We do not include schools where information is only available for part of the financial year.⁸⁹ With the exception of 2011–12, we only use spending recorded for individual academies, which will exclude any money retained centrally by multi-academy trusts. A number of inconsistencies mean the spending per pupil will be higher for academies than for similar maintained schools. First, academies' financial data relate to the academic year, rather than the financial year. Second, academies' expenditure will include funding for services provided by LAs for maintained schools (particularly in the years 2011–12 and 2012–13). Third, sponsor academies tend to be located in more deprived, urban areas, which typically receive higher levels of funding. This means the exclusion of academies before 2011–12 will likely depress the recorded measure of overall spending below its true level and their inclusion afterwards will create an artificial jump in spending per pupil (particularly for secondary schools).

To create a consistent school spending figure, we need to use a consistent definition of LAs over time. Given that there were significant changes to LAs in the mid 1990s, we use the LAs as they were defined before 1996. We define 1996 LAs using the *Gazetteer of the Old and New Geographies of the United Kingdom* produced by the Office for National Statistics (ONS).⁹⁰ The Inner London Education Authority was also abolished in 1990 and replaced by 13 smaller LAs (including the City of London). To create a consistent series, we combine these smaller areas to form a single LA in our analysis. This leaves us with 96 LAs in England (we exclude the Isles of Scilly and the Isle of Wight). We calculate LA-level expenditure-per-pupil data from the individual schools data in the Section 52/251 returns. All figures are weighted by pupil numbers to ensure that LAs with larger numbers of pupils are weighted more heavily in our analysis.

To combine our data sets, we apply the LA-level expenditure-per-pupil growth rates implied by the CIPFA data to extrapolate the Section 52/251 data backwards from 1999–2000. This creates an LA-level data series for school-based spending from 1978–79 through to 2015–16. However, there are three inconsistencies that remain between our data sets. In creating this series, we therefore make the following assumptions:

- The inclusion of nursery data does not significantly affect the *growth* rate of nursery and primary funding per pupil in the CIPFA data. Given that nursery spending was relatively small over the period covered by the CIPFA data (up to 1999–2000), this assumption appears relatively minor.

⁸⁸ Including both sponsor and converter academies. We only count ongoing funding for day-to-day spending, thus excluding additional start-up grants.

⁸⁹ In 2011–12, data for schools that are part of multiple-academy trusts are only available for the trust as a whole. We can therefore only calculate spending per pupil for the trust as a whole in 2011–12. For other years, data are available for all academies at an individual school level.

⁹⁰ <http://www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/glossary/geography-gazetteer.pdf>.

- The growth rate of LA expenditure (equivalent to school funding plus central LA expenditure) provides a good approximation to the growth rate of school-based expenditure within the LA between 1990–91 and 1999–2000. This appears to be a relatively innocuous assumption. Between 1994–95 and 1998–99, national statistics on school-based spending and total school spending by LA show that both sets of figures for spending per pupil were largely frozen in real terms (Department for Education and Skills, 2004).
- The exclusion of central LA spending from the Section 52/251 data does not significantly affect the trends and levels. This is not a benign assumption. Belfield and Sibieta (2016) show that LA-based spending represented a shrinking share of total school spending over the 2000s and that most of this reduction occurred over the early 2000s, falling from 16% in 2000–01 to 11% by 2006–07. These results suggest that trends in school-based expenditure probably represent an overestimate of the growth rate in total school spending over time. We therefore calculate an additional measure of total school spending stretching back to 2003–04, which does include LA-based spending (see below).

This provides a broadly consistent measure of school-based spending per pupil between 1978–79 and 2015–16. We then project the series up to 2019–20 by making use of the growth rate in total school funding per pupil between 2015–16 and 2019–20. This includes the Dedicated Schools Grant,⁹¹ Pupil Premium allocations,⁹² Teachers’ Pay Grant⁹³ and pupil number projections.⁹⁴

Total school spending

Total school spending (as presented in Figure 3.1) is intended to represent all spending by either schools or local authorities on children aged 3–19 in state-funded schools in England.

‘**Spending by schools**’ is calculated as the sum of (net) individual school budgets, any money delegated to schools for high needs, the Pupil Premium and the Teachers’ Pay Grant. Individual school budgets and high-needs delegated funding is calculated from Section 52/251 out-turn data up to 2012–13 and Section 52/251 budget data from 2013–14 to 2018–19. For years 2010–11 to 2012–13, we additionally include academies’ recoupment funding from Dedicated Schools Grant allocations. Pupil Premium allocations 2011–12 to 2018–19 and the Teachers’ Pay Grant are taken from the same sources as school-based spending above. For years 2013–14 to 2016–17, we also add imputed values of the Education Services Grant based on the published rate and pupil numbers.

⁹¹ 2016–17 (<https://www.gov.uk/government/publications/dedicated-schools-grant-dsg-2016-to-2017>), 2017–18 (<https://www.gov.uk/government/publications/dedicated-schools-grant-dsg-2017-to-2018>), 2018–19 (<https://www.gov.uk/government/publications/dedicated-schools-grant-dsg-2018-to-2019>) and 2019–20 (<https://www.gov.uk/government/publications/dedicated-schools-grant-dsg-2019-to-2020>).

⁹² 2016–17 (<https://www.gov.uk/government/publications/pupil-premium-conditions-of-grant-2016-to-2017>), 2017–18 (<https://www.gov.uk/government/publications/pupil-premium-conditions-of-grant-2017-to-2018>) and 2018–19 (<https://www.gov.uk/government/publications/pupil-premium-conditions-of-grant-2018-to-2019>).

⁹³ <https://www.gov.uk/government/publications/teachers-pay-grant-methodology/teachers-pay-grant-methodology>.

⁹⁴ <https://www.gov.uk/government/statistics/national-pupil-projections-july-2018>.

This spending will include funding for delivery of the free entitlement for 3- and 4-year-olds, which cannot be excluded from individual school budgets in most years of data. We are, however, able to exclude funding for 2-year-olds as detailed in table 8 of Section 52/251 budget statements.

'Spending by local authorities' is calculated as the (net) schools budget minus any funding provided direct to schools via individual schools budgets or top-ups to providers for high-needs funding. We additionally include the wider education and community budget detailed in Section 52/251 out-turn and budget returns (excluding items 2.3.1 to 2.4 for consistency with school funding figures for Wales).

'School sixth-form funding' is based on allocations to school sixth forms as presented in Figure 4.1 and detailed further in Appendix C.

Pupil numbers in state-funded schools are calculated from Department for Education, 'Schools, pupils and their characteristics', January 2010 to 2019 and Department for Education, 'National pupil projections', July 2018. We then additionally include pupils aged 3-4 in private, voluntary and independent settings from Department for Education, 'Education provision: children under 5', January 2010 to January 2019.

Appendix C. 16–18 education spending methodology

In this appendix, we detail how we constructed our series for spending per student in further education colleges (including sixth-form colleges) and school sixth forms (academies and maintained schools). Table C.1 gives details of the numbers and sources.

2003–04 to 2018–19

From 2003–04 to 2018–19, we are able to calculate both sets of figures by first calculating total reported allocations to further education and sixth-form colleges and to school sixth forms. We have also improved our figures from last year’s report to take better account of changes to high-needs spending for young people aged 16 and over. In particular, we now include spending on learners with learning difficulties or disabilities between 2005–06 and 2014–15 (no spending is reported outside of these years), matching our inclusion of spending on special educational needs for children under 16. We also include high-needs top-up payments from local authorities to 16–18 providers between 2013–14 and 2018–19. For colleges, we are able to calculate these directly as top-up payments to post-school providers. For school sixth forms, we impute these as 0.125 of the total top-up payments to state-funded secondary schools (0.125 being the approximate share of pupils at state-funded secondary schools who are aged 16–19⁹⁵).

For years between 2003–04 and 2015–16, we can then simply divide these allocations by the reported numbers of students by institution type. As a minor change to our methodology, we add pupils aged 16–18 who are studying further education in higher education institutions, around 3,000 students in 2014–15.

From 2017, sixth-form colleges had the opportunity to convert to academy status. This creates a problem for our analysis as the funding shifts from being classified at 16–18 colleges towards academies with school sixth forms. The students also move from being classified as in sixth-form colleges towards academies. Unfortunately, the student and funding data are reported at different times of the years and are highly likely to be inconsistent with one another. Using the raw data would lead to a misleading conclusion. In last year’s report, we imputed spending per student by assuming a cash-terms freeze across both sectors and uprating both by the total growth in spending.

As this is not sustainable, we have implemented a new methodology for financial years 2016–17 onwards, which makes use of institution-level 16–19 funding allocation data (which is on the basis of college academic years) and existing student numbers data. In particular, from 2016–17, we take the following steps:

- We manually recode academy sixth-form colleges back to sixth-form colleges again. There are fewer than 20 of these in academic year 2017–18, though closer to 30 in 2018–19.
- We calculate total funding (excluding student support and 19+ funding) allocated to school sixth forms and colleges.

⁹⁵ <https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2018>.

Table C.1. Spending on and numbers of students in further education and sixth forms

	Further education				School sixth forms		
	Total allocation, £bn (2019–20 prices)	Calculated spending per student (2019–20 prices)	Imputed spending per student (2019–20 prices)	16- to 18-year-olds (FTE)	Total allocation, £bn (2019–20 prices)	Calculated spending per student (2019–20 prices)	16- to 18-year-olds (FTE)
1989–90		£5,634	£5,195	537,100			248,400
1990–91		£5,466	£5,040	529,150			254,700
1991–92		£5,193	£4,789	550,450			270,600
1992–93		£5,071	£4,676	554,250			276,300
1993–94		£5,127	£4,728	561,450			274,300
1994–95		£4,975	£4,587	548,700			277,100
1995–96		£4,657	£4,294	561,650			290,100
1996–97		£4,510	£4,159	582,450			308,100
1997–98		£4,751	£4,106	576,700			317,200
1998–99		£4,721	£4,080	555,700			318,100
1999–00		£5,008	£4,328	550,200			324,200
2000–01		£5,165	£4,464	544,700			329,700
2001–02		£5,615	£4,853	554,000			332,700
2002–03		£5,666	£4,897	572,050	1.96	£5,749	341,350
2003–04	3.11	£5,309		586,400	2.10	£5,966	351,350
2004–05	3.15	£5,153		611,700	2.21	£6,095	363,300
2005–06	3.88	£6,102		635,350	2.33	£6,283	370,050
2006–07	4.06	£6,096		665,550	2.46	£6,489	379,350
2007–08	4.16	£6,124		678,750	2.52	£6,456	390,250
2008–09	4.24	£6,049		700,700	2.54	£6,279	404,900
2009–10	4.52	£6,167		732,200	2.61	£6,164	423,550
2010–11	4.90	£6,668		734,600	2.81	£6,465	434,150
2011–12	4.93	£6,950		708,850	2.78	£6,389	434,450
2012–13	4.51	£6,431		701,850	2.65	£6,011	440,750
2013–14	4.39	£6,277		698,950	2.52	£5,585	451,950
2014–15	4.26	£6,138		694,050	2.47	£5,408	456,750
2015–16	4.17	£6,120		680,950	2.41	£5,376	448,700
2016–17	3.97	£5,904		667,517	2.34	£5,279	442,867
2017–18	3.81	£5,888		644,101	2.17	£5,078	426,309
2018–19	3.70	£5,870		631,608	2.04	£4,993	407,119

Note: Number of full-time-equivalent (FTE) students is calculated as number of full-time students plus 0.5 times number of part-time students.

Source: See next page.

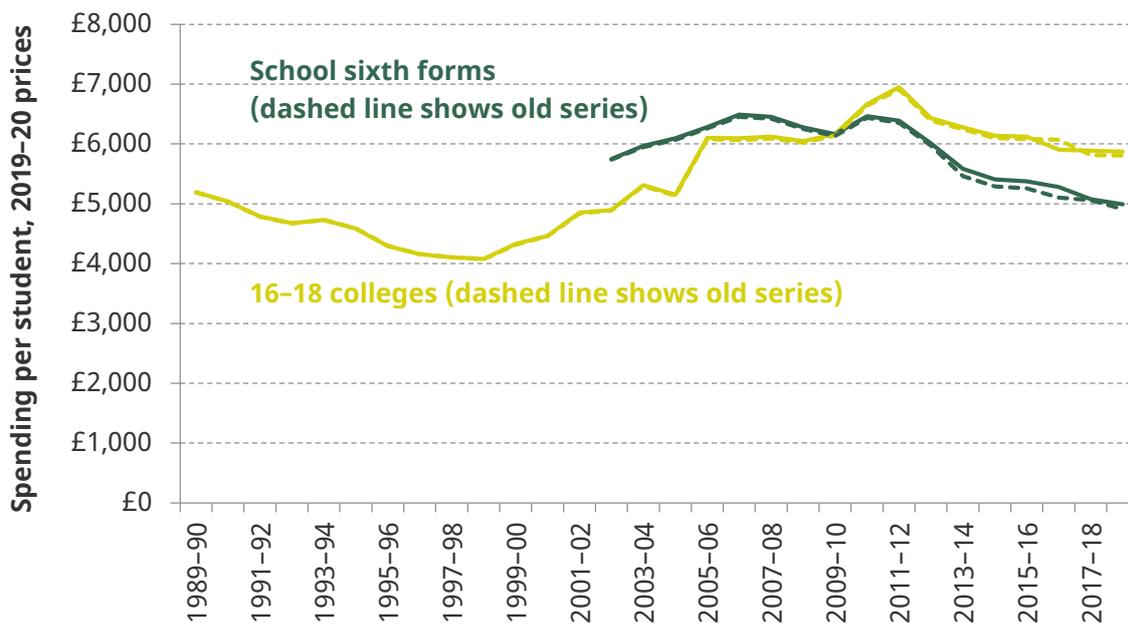
Source to Table C.1

Spending per student from 2016–17 to 2018–19 calculated based on total funding allocations in annual 16–19 funding allocations (<https://www.gov.uk/guidance/16-to-19-education-funding-allocations>) divided by the number of full-time-equivalent students aged 16–18 in further education colleges and school sixth forms. Number of students taken from Department for Education, ‘Participation in education, training and employment: 2018’ (<https://www.gov.uk/government/statistics/participation-in-education-training-and-employment-2018>). For 2017–18 and 2018–19, these figures are adjusted based on the number of students reported in the aforementioned 16–19 institutional funding allocations. Spending per student for 2003–04 to 2015–16 calculated as spending on further education for 16- to 19-year-olds, sixth-form spending (maintained schools and academies) and spending on learners with learning difficulties or disabilities as reported in Education Funding Agency annual report and accounts for 2012–13 to 2015–16 (<https://www.gov.uk/government/publications/efa-annual-report-and-accounts-for-the-year-ended-31-march-2016>, <https://www.gov.uk/government/publications/efa-annual-report-and-accounts-for-the-year-ended-31-march-2015>, <https://www.gov.uk/government/publications/efa-annual-report-and-accounts-1-april-2013-to-31-march-2014>, <https://www.gov.uk/government/publications/efa-annual-report-and-financial-statements-for-april-2012-to-march-2013>), Young People’s Learning Agency annual report and accounts for 2011–12 (<https://www.gov.uk/government/publications/the-young-peoples-learning-agencys-annual-report-and-accounts-for-2011-to-2012>) and Learning and Skills Council annual report and accounts for 2004–05 to 2009–10 (<https://www.gov.uk/government/publications?departments%5B%5D=learning-and-skills-council>) and divided by number of full-time-equivalent students aged 16–18 in further education colleges and school sixth forms. Number of students taken from Department for Education, ‘Participation in education, training and employment: 2018’ (<https://www.gov.uk/government/statistics/participation-in-education-training-and-employment-2018>). For years between 2013–14 and 2018–19, we also include local authority top-ups for high-needs pupils calculated from local authority spending plans (<https://www.gov.uk/government/collections/statistics-local-authority-school-finance-data>). Figures for spending per student in further education from 1989–90 to 2003–04 taken from Department for Children, Schools and Families departmental report for 2009 (<http://webarchive.nationalarchives.gov.uk/20130401151715/http://www.education.gov.uk/publications/eOrderingDownload/DCSF-Annual%20Report%202009-BKMK.PDF>) and Department for Education and Employment, ‘Education and training expenditure since 1989–90’, Statistical Bulletin 10/99 (http://dera.ioe.ac.uk/13586/1/Education_and_training_expenditure_since_1989-90_%28Statistics_Bulletin_10_99%29.pdf). Imputed figures are calculated by back-rating the calculated figure in 2003–04 by the real-terms growth in the calculated series (figures for overlapping years are not shown here). HM Treasury GDP deflators, June 2019 (<https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2019-quarterly-national-accounts>).

- We divide by student numbers at school sixth forms and colleges as reported in national statistics for academic years 2015–16 and 2016–17 (i.e. using end of calendar year 2016 for 2016–17).
- For academic years 2017–18 and 2018–19, we use student numbers as reported in the institutional allocations. However, these are high relative to national statistics (partly because these are lagged numbers used for allocations and partly because they are headcounts). We therefore adjust these by the known difference between them in 2016–17 (downrating school sixth form numbers by 5.8% and college numbers by 7.5%, the adjustment being higher for colleges as it implicitly also includes an FTE adjustment for part-time students).
- This gives a series by academic years. We then take averages between years to give a series in financial years (e.g. $FY\ 2017-18 = \frac{4}{12} \times AY\ 2016-17 + \frac{8}{12} \times AY\ 2017-18$).

As can be seen in Figure C.1, the various changes to our methodology have made little net effect to the level of spending per student by sector over time.

Figure C.1. Spend per FTE student in 16–18 further education and school sixth forms, comparing old and new series



Note: Number of full-time-equivalent (FTE) students is calculated as number of full-time students plus 0.5 times number of part-time students.

Source: See Table C.1.

Before 2004–05

Before 2004–05, figures for spending per student in further education are available from various departmental and Office for National Statistics publications. These give slightly different levels for spending per student in 2003–04 from the more recent source. We therefore take the more reliable 2003–04 figure and back-cast imputed figures based on past changes in spending per student in further education. Figures for spending per student in school sixth forms are not readily available before 2002–03.

Split by three institutional types from 2013–14 onwards

From 2013–14 onwards, we are able to split spending per student by all three main institutional types: school sixth forms; sixth-form colleges; and further education colleges. These figures are based on reported allocations to providers,⁹⁶ with total spending measured as total programme funding for individuals aged 16–18, plus high-needs funding and any funding adjustments for young people who have not achieved C grades in English and maths GCSEs. We adjust student and institution numbers in the same way as above to account for conversions of sixth-form colleges to academy status. However, in contrast to our main figures, we leave these figures in academic rather than financial years, given this is how the data are presented.

⁹⁶ <https://www.gov.uk/guidance/16-to-19-education-funding-allocations#to-19-funding-allocations>.

Appendix D. Higher education methodology

There are two main components to our calculations for public spending on higher education and resources per student: teaching grants (including fees paid by local authorities in the 1990s) and income from tuition fees. Here, we detail our methods for calculating each of these components. Our goal throughout is to measure the total level of public funding and resources per full-time undergraduate student. Due to the incomplete and changing nature of the data over time, various assumptions are made to ensure the most consistent time series.

Teaching grants

Between 2001–02 and 2011–12, we record teaching grant allocations from allocations reported in HEFCE recurrent grant allocations 2001–02 to 2011–12.⁹⁷ These include allocations for rewarding and developing staff in higher education (which were folded into the main teaching grant allocation in 2004–05) but exclude special funding and research funding. To get funding per full-time student, we divide by the total number of full-time-equivalent students covered by teaching grants over time (as reported in the recurrent grants document), which includes postgraduate students.

Before 2001–02, we back-cast teaching grants per student based on two different sources. Between 1998–99 and 2001–02, we back-cast fees plus teaching grant based on figures for resources per student reported in Department for Children, Schools and Families (2008). We then net off known fee levels to get teaching grant per student. Between 1990–91 and 1997–98, we back-cast teaching grants based on changes in resources per student reported in Department for Education and Employment (1999). This includes the level of and changes in fees paid by local education authorities on behalf of students.

For the years 2012–13 onwards, we calculate teaching grants using a bottom-up approach. This is partly to identify the teaching grants that accrue to the specific cohorts of students (rather than incorporating the much higher pre-2012 teaching grants). We retrieve the teaching grant levels by subject cost band adjusted for Inner and Outer London weightings scaling factors from HEFCE publications⁹⁸ and gross up to the overall average

⁹⁷ HEFCE, 'Recurrent grants for 2001–02: final allocations', http://webarchive.nationalarchives.gov.uk/20081203021504/http://www.hefce.ac.uk/pubs/hefce/2001/01_57.htm; HEFCE, 'Recurrent grants for 2002–03', http://webarchive.nationalarchives.gov.uk/20081203021411/http://www.hefce.ac.uk/pubs/hefce/2002/02_11.htm; HEFCE, 'Recurrent grants for 2003–04', http://webarchive.nationalarchives.gov.uk/20081203021233/http://www.hefce.ac.uk/pubs/hefce/2003/03_10.htm; HEFCE, 'Recurrent grants for 2004–05', http://dera.ioe.ac.uk/14382/1/04_12.pdf; HEFCE, 'Recurrent grants for 2005–06', http://dera.ioe.ac.uk/14381/1/05_13.pdf; HEFCE, 'Recurrent grants for 2006–07', http://webarchive.nationalarchives.gov.uk/20081203020906/http://www.hefce.ac.uk/pubs/hefce/2006/06_08/; HEFCE, 'Recurrent grants for 2007–08', http://webarchive.nationalarchives.gov.uk/20081203020038/http://www.hefce.ac.uk/pubs/hefce/2007/07_06/; HEFCE, 'Recurrent grants for 2008–09', http://webarchive.nationalarchives.gov.uk/20081203000848/http://www.hefce.ac.uk/pubs/hefce/2008/08_12/; HEFCE, 'Recurrent grants for 2009–10', <http://www.hefce.ac.uk/data/year/2009/Recurrent,grants,for,2009-10/>; HEFCE, 'Recurrent grants for 2010–11', <http://www.hefce.ac.uk/pubs/year/2010/201008/>; HEFCE, 'Recurrent grants for 2011–12', <http://www.hefce.ac.uk/pubs/year/2011/201107/>.

⁹⁸ HEFCE, 'Guide to funding and student number control 2013-14', <http://www.bbk.ac.uk/committees/governors/HEFCEguide.pdf>;

teaching grant using the distribution of students across cost bands in the 2011 cohort of entrants (from HESA student numbers data). We assume these are frozen in nominal terms for years not yet announced.

Tuition fees

Prior to 2006–07, no loans were available to cover tuition fees, which were capped at £1,000. Means-tested subsidies were available between 1998–99 and 2005–06, spending on which we include as part of teaching grant. The rest of the expenditure on fees in those years we count as private rather than public spending on education. As such, we include them in total resources but not in the government subsidy in Figure 5.2.

For graduates who began, but had not graduated from, university before 2006–07, loans became available from 2006–07 to cover these £1,000 tuition fees up front. In our analysis, we assume that these loans either were not taken up or were fully repaid. To the extent that there is non-repayment of fees, this will result in an underestimate of the government subsidy.

In 2006–07, fees increased to £3,000 per year, rising gradually to £3,375 in 2011–12. As tuition fees, and the loans to cover them, now constituted a significant part of the higher education finance system, we explicitly model the cost to government of providing these loans.

To do this, we simulate the lifetime earnings of graduates using the British Household Panel Survey (BHPS) to estimate the dynamics of individuals' earnings over time, which are matched to the cross-sectional distribution of earnings in the Labour Force Survey (LFS). Earnings are uprated over time using actual or forecast average earnings growth as published in the Office for Budget Responsibility (OBR)'s *Economic and Fiscal Outlook November 2018*. These graduate earnings profiles are matched to the population of students that entered higher education in 2013–14⁹⁹ and are then uprated or downrated with average earnings growth according to the cohort that is being simulated. Using these profiles and information on the level of tuition and maintenance loans provided, we can calculate the value of future repayments according to the loan system in place and, therefore, the level of the government subsidy.¹⁰⁰

From the 2012–13 increase in the tuition fee cap to £9,000 per year, we use the same methodology discussed above to calculate the government fee subsidy. From 2014–15, we reweight the population of students based on actual student numbers from publicly available HESA data tables.

<http://www.hefce.ac.uk/media/hefce/content/pubs/2014/201406/Guide%20to%20funding%20and%20SNCS%202013-14%20and%202014-15.pdf>;

http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/2015/201504/2015_04.pdf;

http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/2016/201607/HEFCE2016_07.pdf.

⁹⁹ The 2013–14 cohort of students is used for all years due to data constraints. We require the Higher Education Statistics Agency (HESA) data on higher education students to be linked to the National Pupil Database (NPD) for background characteristics; we only have these data sources available up until the 2013–14 cohort. Prior to 2011–12, we also impose the 2011–12 distribution of institution-specific fee waivers, as this information is not readily available for previous years.

¹⁰⁰ Full details of this model are explained in Britton, van der Erve and Higgins (2019).

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