Costing options for extending the 30 hour free entitlement

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Key Findings

1. **Extending the 30 hour entitlement to cover more three- and four-year-olds, while a substantial change in the generosity of the system, would represent a less radical change in total early years spending than the introduction of the existing extended entitlement.** Our central estimates suggest that extending the entitlement to cover three- and four-year-olds who had been eligible for the two-year-old entitlement for vulnerable children could cost £165 million a year in the longer term, compared to the roughly £735 million that the current 30 hour entitlement will cost. We estimate that universalising the entitlement would raise spending by around £250 million in 2024–25. Taking into account wider implications for the public finances (savings on other childcare programmes and a higher block grant for the devolved nations if the expansion is funded by borrowing), these figures rise to £180m and £280m respectively. (All figures are in current prices.)

2. **However, these estimates of the long-run cost are highly uncertain and depend greatly on assumptions about take-up.** For example, in a low take-up scenario (where families do not increase their usage of childcare in response to the new entitlement), universalising the 30 hour entitlement could cost £115 million. In a high take-up scenario (where the take-up rate is equal to the take-up of the current 30 hour entitlement), the cost could be £560 million. **The relatively low costs of extending the 30 hour entitlement in our central scenario reflect relatively low take-up rates.** Of the 370,000 who would be brought into eligibility if the 30 hour offer were universalised, we estimate that 85,000 part-time (15-hour) equivalent places would be filled (shared between 110,000 children), after accounting for a plausible increase in demand for formal childcare. For an expanded 30 hour offer to form a meaningful part of post-pandemic recovery, government and the early years sector would need to work with families to encourage them to take up their entitlements. Of course, higher take-up rates will also imply higher costs of funding the programme.

3. **A continued cash-terms freeze in per-hour spending would make it very difficult for the sector to deliver any expansion in the 30 hour entitlement.** Compared to its high point in 2017–18, a cash-terms freeze until 2024–25 would leave per-hour spending 15% lower in real terms. When the current 30 hour entitlement was introduced in 2017, the government boosted per-hour spending by 9% year-on-year to support the sector in delivering the entitlement – but this has already been more than reversed in real terms.
4. **Where overall spending is constrained, policymakers face important trade-offs between expanding the free entitlement system to offer more hours to more children and protecting funding for existing entitlements.** Strikingly, the cost in 2024 of offering real-terms protection to per-hour spending instead of a cash-terms freeze at current levels will be around £240 million – a little less than our central estimate of the cost of universalising the 30 hour entitlement. Increasing the funding rate to compensate providers for increases in the National Living Wage would add £685 million to the total cost of existing funded entitlements across all ages, and would raise the cost of universalising the 30 hour entitlement to £305 million under our central scenario (£360 million including wider government costs and savings).
5. **Extending the entitlement to three- and four-year-olds who meet the criteria for 'vulnerable' children (but not universalising it) would predominantly benefit out-of-work families and those with the very lowest household earnings.** Under the current 30 hour policy, 70% of eligible families are in the top half of the earnings distribution. Expanding the entitlement to 'vulnerable' children would bring 57% of those in the bottom third of the earnings distribution into eligibility for the first time. This would be a cheaper option than universalising the entitlement (£165 million of additional spending in the central scenario), but it would leave out a group of families with low but not the lowest household earnings, who earn too much to be eligible under the two-year-old criteria but whose work patterns do not allow them to access the current 30 hour entitlement. It might also increase administration costs and reduce parents' understanding of their entitlements, compared to a universal system.

1
Introduction

The Covid-19 pandemic has had an enormous impact on the educational system. However, while there has been considerable attention paid to the impacts on pupils in schools and universities, there has so far been less awareness of – and support for – younger children in early education and childcare. While childcare funding continued even when centres were forced to close, there has been virtually no funding allocated to support the children who missed out on early education. Of the £3.1 billion so far announced to help children and young people recover from the education disruptions of 2020 and 2021, only £160 million – just 5% of the total – has been explicitly earmarked for the early years (Farquharson et al., 2021).

Even before the pandemic, there was considerable interest in the scope for expanding support to the early years. During the 2019 General Election, both Labour and the Liberal Democrats promised extensive reform to increase the coverage and scope of the free entitlement to funded early education in England; this summer, Scotland is increasing its early learning and childcare to cover 30 hours a week in term-time for all three- and four-year-olds. The Conservative party did not commit to any expansions of the free entitlement, but promised around £250 million a year for wrap-around and holiday childcare for older children.

There are many options for expanding support during the early years. Existing funded early education and childcare entitlements cover a part-time place (15 hours a week) for all three- and four-year-olds, as well as some disadvantaged two-year-olds; three- and four-year-olds in working families are additionally eligible for another 15 hours a week during term time. Recent years have seen proposals to extend funded entitlements to more two-year-olds or to increase the number of hours offered to the children who are currently entitled; to extend the free entitlement to (some or all) one-year-olds, who do not currently have any access to the free entitlement; and to change the targeting of the 30 hour offer.

In this report, as part of a wider project carried out by the Sutton Trust, we focus on the last of these potential reforms. We consider a range of options for extending the 30 hour entitlement to a broader range of children. After a brief overview of the current policy landscape in Section 2, we focus primarily on estimating the costs of these various options (Section 3). We also estimate how many children might take up a full-time place under the different proposals to expand eligibility, and we consider the distributional impacts of these reforms in terms of both families' economic circumstances and where in the country they live (Section 4). Finally, we explore the implications of different rates of per-hour spending on the free entitlement for the overall cost of these proposals (Section 5). Estimating the impact of increasing funding rates is a particularly important aspect of this report, since a cash-terms freeze is unlikely to be sustainable over the next few years. While squeezing funding rates is an effective way to keep costs under control, keeping funding rates too low will jeopardise the early years sector's ability to deliver any increase in funded entitlement. It may also undermine quality, in turn making it less likely that these funded hours benefit children's development or their parents' careers.

Equally, decisions on the free entitlement should consider not only the costs of delivering the entitlement, but also the potential benefits it has. These benefits include savings to families who would otherwise have paid for childcare out of their own pockets, but they could also include benefits to child development or to parents' careers from enabling families to access (more) early education and childcare. Estimating these benefits in advance can be difficult, since the scope for benefits depends critically on the detail of the policy being proposed: the age groups targeted, number of hours offered, and flexibility and quality of places on offer will all affect the potential impacts of these reforms. These issues are discussed briefly in Section 6, but as part of this wider project on expanding the 30 hour offer the Sutton Trust has also considered potential benefits in other sections of this report.

2
The current policy landscape

Over the last 20 years, England has dramatically increased the extent of government support for early childhood education and care (ECEC). Spending on the early years has grown more quickly than any other stage of education (Britton et al., 2020), and the UK is now just above the OECD average for government spending on early childhood education and care as a share of the size of the economy (OECD, 2021).[1]

As Figure 1 shows, much of this growth in spending has been targeted at the 'free entitlement' system, which offers a funded childcare place for all three- and four-year-olds and some two-year-olds. Following successive increases in the generosity of the entitlement, the current free entitlement covers:

- 15 hours a week, 38 weeks of the year for two-year-olds in disadvantaged families, covering roughly 40% of two-year-olds (the 'two-year-old entitlement');
- 15 hours a week, 38 weeks of the year for all three- and four-year-olds (the 'universal entitlement'); and
- An additional 15 hours a week, 38 weeks of the year for three- and four-year-olds in families where both parents (or the single parent) are in work and earning at least the equivalent of 16 hours a week at the relevant minimum wage (the 'extended entitlement').

The eligibility criteria for each of these programmes are summarised in greater detail in Box 1.

1 The UK also has a different balance between public and private spending than many other countries, with high private costs for better-off families but substantial subsidies for those on lower incomes. See OECD (2020) and Farquharson (2019) for more detail.

Box 1: Eligibility for the free entitlement

Eligibility for the different free entitlement programmes is complex, with a number of family and child characteristics determining how much funded childcare children have access to, and when.

The most straightforward programme is the universal entitlement for all three- and four-year-olds. Children are eligible for a part-time funded place from the start of the term after they turn three, until they start Reception year (usually the September after they turn four). They can access these places with Ofsted-registered childcare providers, which can be nurseries and similar settings or childminders (less formal arrangements, like babysitters or nannies, are not eligible).

Since September 2017, three- and four-year-old children in 'working families' have been eligible for an extended entitlement covering a full-time funded place (up to 30 hours a week). This part of the free entitlement programme is currently aimed more at providing support for childcare for working parents. In particular, families are eligible for the extended entitlement if both parents (or the single parent) are working and earning at least the equivalent of 16 hours a week at the appropriate minimum wage (£142.56 a week for most of those aged 23 and up). If either parent earns £100,000 or more, the extended entitlement is withdrawn. Also, unlike the universal entitlement, the extended entitlement is not available to those with no recourse to public funds (though there is an exception where one parent is able to receive benefits, and the family would otherwise be eligible).

While the extended entitlement is targeted at working families, the two-year-old entitlement is intended to cover the approximately 40% most disadvantaged children. Eligibility here is quite complicated, but it broadly picks out two groups: families on low incomes, and children who are vulnerable for other reasons. The main eligibility criteria in the first group are families who receive Universal Credit (with an after-tax household income of £15,400 or less) and families who receive tax credits (with a before-tax household income of £16,190 or less).[2] The second group includes children who are looked after or have left care, and those who receive support for a disability or Special Educational Needs.[3]

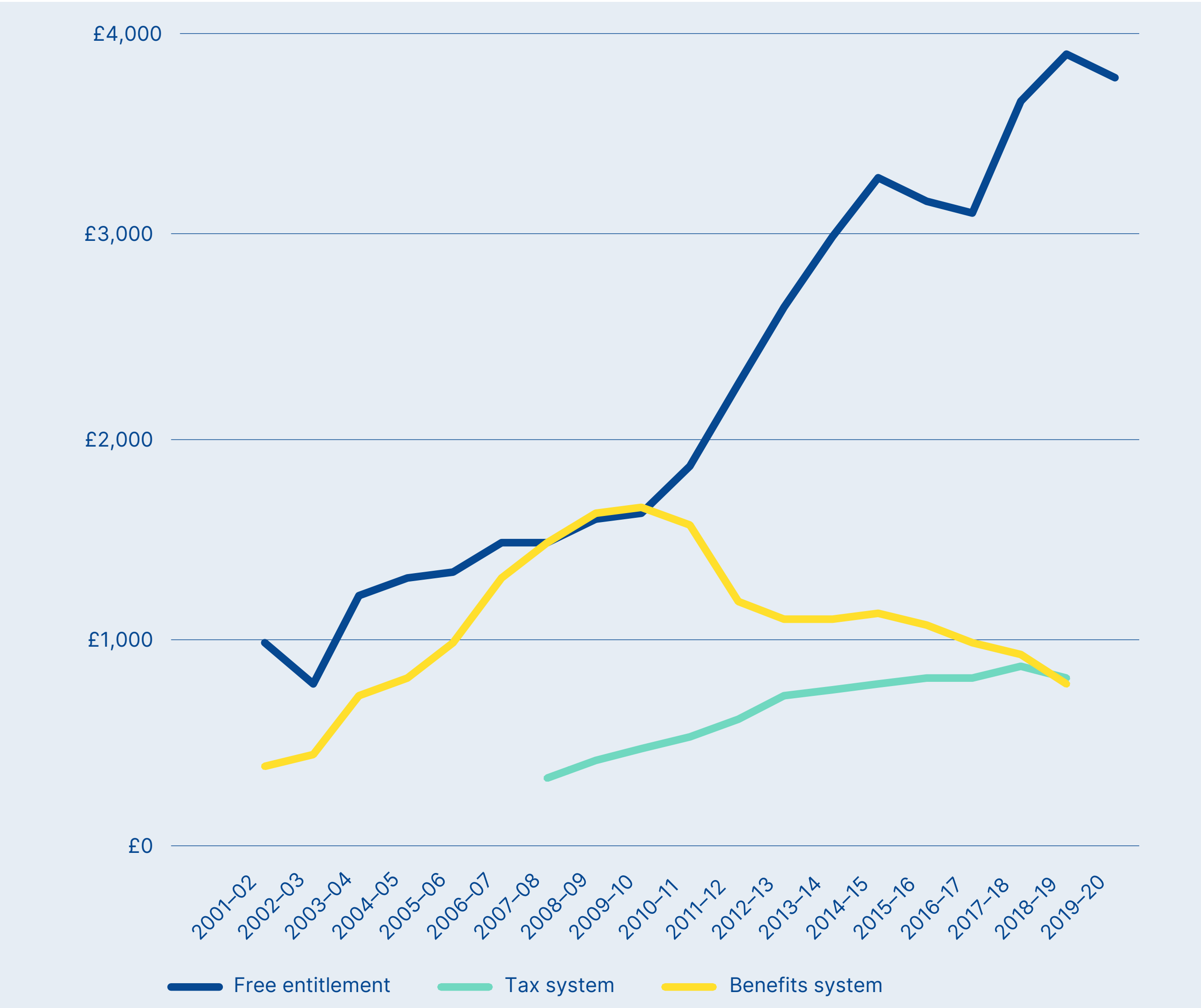
2 Other eligible families include those receiving certain means-tested benefits (Income Support, income-based Jobseeker's Allowance, or the guaranteed element of pension credit); those receiving some disability-related benefits (income-related Employment and Support Allowance); or those receiving the Working Tax Credit four-week run-on payment.

3 To qualify, the child must have a statement of SEN or an education, health and care plan, or must receive Disability Living Allowance.

But while free entitlement spending has risen over time, spending targeted at low-income, in-work families through the benefits system has fallen substantially since its peak in 2005–06. This includes spending on childcare subsidies through Universal Credit (covering 85% of eligible childcare expenses) and through the in-work tax credits that Universal Credit will eventually entirely replace (Working Tax Credit, Working Families' Tax Credit and Family Credit, currently covering 70% of eligible expenses).

Finally, the tax system also offers support for families with childcare expenses, by offering tax relief on employer-sponsored childcare vouchers (now being phased out) and covering 20% of spending on childcare spending (up to a limit) through tax-free childcare accounts. Since 2007–08, while total spending has risen, the profile of spending priorities has changed: universal services still account for just under half of the early education and childcare budget, but subsidies explicitly targeted at low-income families had fallen from 45% of the total to under 30% ten years later (Britton et al., 2019).

Figure 1: Total spending on different types of early education and childcare support in England (£m, 2020–21 prices)



Note: 'Spending' includes foregone tax receipts.

Source: Figure 2.1, Britton et al. (2020).

Arguments for support for the early years

As the name 'early childhood education and care' (ECEC) suggests, there are a number of different goals for spending on the early years. First, early childhood education plays an important role in child development. There is an international evidence base that shows that formal childcare and education in the early years can have benefits for children's academic and social development. Since these benefits are often stronger for children from disadvantaged families, childcare can also help to narrow inequalities between children from different backgrounds, so that they are on a more level playing field when they start school.

Another reason for government to support childcare is for its role in in facilitating paid work for parents (especially mothers) with young children. Appropriately supporting families with paid work during the early years is important for a number of reasons – not least because decisions about whether and how much to work in the pre-school years have a major impact on mothers' wages for the rest of their lives (and hence on the gender wage gap).

Finally, and relatedly, subsidies for childcare and early education are often based on a desire to help young families through a very expensive period of life. Childcare in the UK is expensive; OECD statistics show that the UK comes out near the top of the league table for total childcare costs (parent-paid fees and public subsidies) among 35 developed countries (OECD, 2019).[4] Policymakers often view childcare subsidies as a way to help families with young children with one of the major costs in their household budget.

The existing complex design of the English early years system reflects the prioritisation of different goals at different points in time. While the two-year-old entitlement is explicitly targeted at improving child development, the existing 30 hour extended entitlement has so far been explicitly focused on helping working parents. In the rest of this report, we consider options for extending it to a wider group of children by breaking the link between working and eligibility for the 30 hour entitlement.

4 The precise spot depends on what type of family is being considered – single versus coupled families, families with different numbers of children at different ages, and high- and lower-income families will all affect childcare costs as a share of household income. But Farquharson (2019) shows that, for two example families, the UK ranks third in total childcare costs.

3
Options for extending the 30 hour entitlement

In this report, we consider two main options for extending the 30 hour entitlement to more three- and four-year-olds. The first option would seek to target the expansion to the most disadvantaged children by extending a full-time place to all three- and four-year-olds who qualify under the rules currently used for the two-year-old entitlement. The second option is to universalise fully the 30 hour offer, making it available to all three- and four-year-olds.

In this section, we model the costs of these two different options. We start by documenting the up-front costs to the Department for Education before considering the wider implications on public spending, through savings in the personal tax and benefit system and through implications for devolved governments' finances.

Modelling the direct cost of extending the 30 hour entitlement

There are three main factors that influence the cost of extending the 30 hour entitlement to new groups of children: the *number* of children made eligible; the share of these newly-eligible children who *take up the entitlement* and the number of hours that they use; and the *cost* per hour of delivering an additional funded place. In this section we provide an overview of the choices and assumptions that underpin our modelling; further detail can be found in Appendix 5.

Estimating the number of children eligible

To estimate the number of children who would be eligible for the 30 hour entitlement under each of the reforms considered, we use data from the Labour Force Survey (LFS), which contains information about earnings, hours of paid work, household characteristics and (proxies for) immigration status. Clearly, many of these factors will have been impacted over the past year by the Covid-19 pandemic. However, many of these disruptions will be temporary, so to capture better the long-term costs of the policy reforms under consideration we focus on LFS data from the year predating the pandemic.

With the LFS data, we can estimate both the share of three- and four-year-olds who would already be eligible for the 30 hour entitlement and the share who would be brought into eligibility if the programme were extended to three- and four-year-olds who meet the two-year-old criteria.[5] We then apply these estimated eligibility rates to the number of three- and four-year-olds (in the ONS' population estimates), taking into account differences in the share of three- and four-year-olds who are age-eligible over the course of the school year.[6]

Estimating the (part-time equivalent) take-up rate

Since the free entitlement is a voluntary entitlement, not all eligible families will take up their funded place; those who do take up a place may not use the full number of hours to which they

5 Importantly, the LFS data contains information on benefit take-up rather than benefit eligibility. Take-up rates for some benefits are very low; for example, HMRC estimated that only 67% of families eligible for Working Tax Credit in 2017–18 were actually claiming the benefit (HMRC, 2019). We therefore rescale our overall eligibility estimates to account for this gap between eligibility and take-up.

6 The specific rules on when children become eligible for their free entitlement places mean that the number of children potentially eligible varies over the course of the school year, with more children entitled in the Summer term and fewer in Autumn. We use an average figure that roughly corresponds to the numbers eligible in the Spring term.

are entitled. We therefore calculate a part-time equivalent take-up rate, which gives the number of 15 hour places that would be used as a share of the number of children brought into eligibility.[7]

This take-up rate is impossible to know with certainty in advance: it will depend on a range of factors, including families' preferences and awareness about the programme; the availability and attractiveness of taking up funded places; and any wider shifts, such as a change in employment rates.

We therefore calculate the take-up rate under three scenarios to give an illustration of the range of uncertainty and the extent to which overall costs depend on take-up.

- Our **central scenario** uses data from the Childcare and Early Years Survey of Parents to calculate the amount of formal childcare that families who would be newly eligible currently use. We then rescale this by the percentage growth in the use of formal care seen in families who meet the current eligibility rules for the 30 hour entitlement, before and after the current entitlement was introduced in 2017.
- Our **low take-up scenario** assumes that newly entitled families do not increase their use of formal childcare.
- Our **high take-up scenario** assumes that the take-up rate of newly entitled families is equal to the take-up rate of the current 30 hour entitlement. Because under the current rules these families must be in paid work, they typically use much more formal care than the families who would be newly brought into eligibility.

There may be other factors that influence take-up as well. For example, a universal entitlement may make it easier for parents to understand what they are entitled to, and reduce the complexity and administrative burden of accessing these hours. This could see take-up rise even among those families who are already eligible. This means that our low and high take-up scenarios are not theoretical lower and upper bounds; however, they do reflect what might be considered very low and very high take-up rates.

Spending per hour

The final input into our costing is the per-hour rate of spending on the free entitlement. Here we want to capture the overall amount of spending per hour, not just core central government funding; we therefore use estimates from Britton et al. (2020) on spending per hour on the existing three- and four-year-old entitlements as our starting point. These wider measures of spending per hour take into account the average total spending per hour delivered, including core funding per hour; supplements such as the Early Years Pupil Premium (EYPP); and top-ups from local authorities recorded in their annual statements of spending. (See Britton et al., 2019 for further details.)

For our main estimates, we assume that this per-hour spending measure remains frozen in cash terms going forward. This is analogous to current government policy for the Early Years National Funding Formula. However, in practice a cash terms freeze would likely make it very difficult for providers to deliver an expanded 30 hour entitlement: maintaining a cash-terms freeze until 2024–25 could see real-terms hourly spending at its lowest level since 2011–12. By contrast, when the current extended entitlement was introduced in 2017, the government boosted per-hour spending by 8% in real terms to support providers with the expansion. A cash-terms freeze since then has entirely eroded this boost.

7 We focus on part-time equivalent places, and 15 hour places, since we are interested in the cost of making an additional 15 hours a week available to families who are already eligible for the universal 15 hour offer.

We therefore also estimate the cost of these expansions in the free entitlement under a variety of alternatives for per-hour spending. These are summarised in Section 5.

Direct costs to the Department for Education

We combine these inputs, along with population projections from the ONS, to estimate the direct cost to the Department for Education of extending the 30 hour entitlement in England either to three- and four-year-old children who meet the two-year-old 'vulnerability' criteria[8] (Panel A) or to all three- and four-year-olds (Panel B). We focus on the long-run cost of implementing these programmes, in 2024–25 (the final year of the current parliament, and potentially the final year covered by this autumn's Spending Review). However, we also provide an indication of the short-term cost next year (2022–23), based on the same set of assumptions around eligibility and take-up as the longer-term projections.

In Table 1, we also present the costs of universalising the extended entitlement alongside an increased funding supplement for disadvantaged children. We model the impact of raising spending rates for disadvantaged children by £1 per hour in current prices (with the supplement subsequently frozen in cash terms). This is roughly twice the value of the existing Early Years Pupil Premium, and is broadly enough to raise per-hour spending to the same level as for the two-year-old entitlement (which receives higher per-hour funding than the three- and four-year-old entitlements, to recognise higher costs for these younger children). We define 'disadvantaged' children in two ways: based on the existing Early Years Pupil Premium criteria (Panel C) and based on the current two-year-old childcare criteria (Panel D).

We find that, under our central scenario for take-up, extending the 30 hour entitlement based on the two-year-old criteria would cost an additional £165 million per year in the longer term. This is just over a fifth of the projected budget for the extended entitlement in 2024–25 (£735 million), and around 6% of the total budget of £2.9 billion for the three- and four-year-old free entitlements in that year. Universalising the entitlement would cost around £250 million, half as much again as the cost of extending the entitlement based on the two-year-old criteria. By contrast, removing the 30 hour entitlement from families where at least one parent earns more than £50,000 a year (rather than the current cap of £100,000 a year) would save around £100 million a year by removing eligibility from around 75,000 relatively high-income families (Britton et al., 2019).

At the moment, around 57% of three- and four-year-olds are eligible for the current 30 hour entitlement. Given the substantial share of children who would be brought into eligibility by universalising the offer, it is striking that the additional cost is so much less than the current 30 hour entitlement. There are two main reasons for this. First, we estimate that the number of children who would be brought into the programme by universalising it is around 100,000 lower than the number of children who are eligible for the entitlement as it stands.

But the bigger reason for the substantially lower cost of extending the programme is shown in the second column of Table 1. We estimate that the part-time equivalent take-up rate of the children newly brought into the programme would be substantially lower than the take-up rate of the current programme (which is itself much lower than the PTE take-up rate of the universal entitlement). We estimate around 67% of currently-eligible children take up any of their extended entitlement, and the PTE take-up rate is around 53%.

8 Specifically, this is the group of three- and four-year-olds who meet the means-testing criteria for the current two-year-old offer.

Table 1: Direct costs of extending the 30 hour entitlement in England

	Number of children eligible (2022–23)*	Number of PTE places (2022–23)*	Direct cost, 2022–23 (£m, 2021 prices)	Direct cost, 2024–25 (£m, 2021 prices)
Memo: Current three- and four-year-old entitlements				
Universal	*850,000*	*750,000*	*£2,245m*	*£2,135m*
Extended	*485,000*	*260,000*	*£770m*	*£735m*
Total	*850,000*	*1,100,000*	*£3,015m*	*£2,871m*
Panel A: Extending the 30 hour entitlement based on 2yo criteria				
Central scenario	240,000	58,000	£175m	£165m
Low take-up scenario	240,000	25,000	£80m	£80m
High take-up scenario	240,000	130,000	£385m	£365m
Panel B: Universalising the 30 hour entitlement				
Central scenario	370,000	85,000	£260m	£250m
Low take-up scenario	370,000	40,000	£120m	£115m
High take-up scenario	370,000	200,000	£590m	£560m
Panel C: Universalising the 30 hour entitlement, with a £1/hr supplement for EYPP children				
Central scenario	370,000	85,000	£275m	£260m
Low take-up scenario	370,000	40,000	£125m	£120m
High take-up scenario	370,000	200,000	£615m	£590m
Panel D: Universalising the 30 hour entitlement, with a £1/hr supplement for 2yo criteria				
Central scenario	370,000	85,000	£295m	£280m
Low take-up scenario	370,000	40,000	£135m	£130m
High take-up scenario	370,000	200,000	£665m	£630m

* Numbers of children and PTE (part-time equivalent) places are reported based on averages over the school year. They roughly correspond to the Spring term. Numbers benefitting will be higher than this in Summer term, and lower in Autumn term. Panels C and D only take into account the impact of the supplement on newly-entitled children.

Note: Costs are rounded to the nearest £5 million.

By contrast, in our central scenario we assume that the PTE take-up rate of children who would be brought in under the expanded programme is around 24%, less than half the rate of the current entitlement. Appendix 5 presents some additional evidence on formal childcare usage among this group as well as the changes in childcare usage among currently-eligible when the 30 hour entitlement was first introduced. But the overall conclusion from that data is that there would need to be an enormous increase in demand for early education and formal childcare for these newly entitled groups to reach take-up rates anywhere close to the take-up rates seen in the current 30 hour entitlement.

These lower take-up rates help to keep the costs of expanding the 30 hour entitlement down, but they also suggest that relatively few children might actually benefit from the expanded 30 hour offer. For example, in our central scenario we estimate that universalising the 30 hour entitlement would lead to an extra 85,000 part-time equivalent places, shared between 110,000 children. That is around a third as many as the existing 30 hour entitlement.

Of course, these estimates are based on one scenario for take-up, which assumes that demand for formal childcare and early education grows at the same rate as it did for currently-eligible families after the current 30 hour entitlement was introduced. Take-up could in practice turn out to be lower than this (if, for example, newly entitled families are less likely to replace informal care from friends and family with early education). Or it could be higher (for example, if the ease of messaging makes it easier to communicate the offer to parents, or if parents are more willing to take up the offer when they don't need to pass eligibility checks). Table 1 therefore summarises the costs of the policy options under alternative low- and high-take-up assumptions.

The key point from these alternative scenarios is the extent of the uncertainty in the costs of extending the 30 hour entitlement. For example, the cost of universalising the 30 hour entitlement is nearly 5 times as high under the high take-up scenario as it is in the low take-up scenario. Policymakers designing and implementing these reforms would be well advised to budget for contingency funding, at least in the first few years, to account for the risk that take-up turns out higher than expected.

In our high take-up scenario, for example, universalising the 30 hour entitlement would cost around £560 million in 2024–25. This is a substantial amount of money, worth a fifth of the entire current budget for the three- and four-year-old free entitlement (£2.9 billion). However, the additional cost from universalising the 30 hour entitlement in a high take-up scenario is still less than the current cost of the 30 hour entitlement (£735m). These figures suggest that universalising the extended entitlement, while a substantial change in the generosity of the system, would represent a less radical change in total early years spending than the introduction of the existing 30 hour entitlement, which raised spending by a third over two years (Britton et al., 2020).

Wider implications for government spending

The costs in Table 1 represent the up-front spending commitment needed from the Department for Education to introduce an expanded 30 hour entitlement. However, a major reform of free entitlement policy would also have implications for two other areas of government spending: childcare subsidies in the personal tax and (especially) benefits system, and the block grants for devolved nations calculated under the Barnett formula.

Savings on other childcare subsidies

Expanding the free entitlement can reduce government spending on some of the other childcare subsidy programmes outlined in Section 2. There are relatively few savings to be realised through the tax-free childcare programme, since its eligibility criteria overlap with the existing 30 hour entitlement (which means that the families who would be brought into 30 hour eligibility by these reforms would not currently be entitled to use tax-free childcare).

There is slightly more scope for savings through the working-age benefits system. Here, families receiving Universal Credit can have up to 85% of eligible childcare expenses reimbursed. But the childcare reimbursement again comes with a requirement that both parents (or the single parent) are in paid work. We estimate that around one in ten families who are not currently eligible for the 30 hour entitlement might be eligible for childcare subsidies through the benefits system.

Based on data on childcare spending from the Childcare and Early Years Survey of Parents, we estimate that the savings through the benefits system could offset a portion of the cost of extending the 30 hour entitlement to additional groups. While the precise savings in 2024 will depend on the future rates of benefit take-up, we estimate that the government would save perhaps £10 million, or around 7% of the cost of extending the entitlement just to the two-year-old criteria group under the central take-up scenario.

Barnett consequentials

Since education is fully devolved, any increase in spending by DfE will trigger an increase in the block grant for all three devolved administrations unless it is paid for out of an increase in taxation or cuts to other areas of devolved spending. Based on the 2020 Barnett formula factors, this raises the total cost of policies by around 19% (10% for Scotland, 6% for Wales and 3% for Northern Ireland).

Since the tax and benefits systems are (mostly) run at the UK level, savings through these systems are not automatically included in the Barnett formula. However, savings in the tax and benefits system triggered by a change in spending in a Barnett-able area usually do result in adjustments to the block grant, based on negotiations between the UK government and devolved administrations.

All in, the savings from the benefits system on the one hand and the costs of Barnett consequentials on the other mean that extending the 30 hour entitlement to disadvantaged children under the central take-up scenario would cost the UK government around £180 million in 2024 (compared to a £165 million direct cost to DfE). If policymakers instead chose to universalise the entitlement, again under the central take-up scenario, the whole-of-government cost would be around £280 million (versus a direct cost to DfE of £250 million).

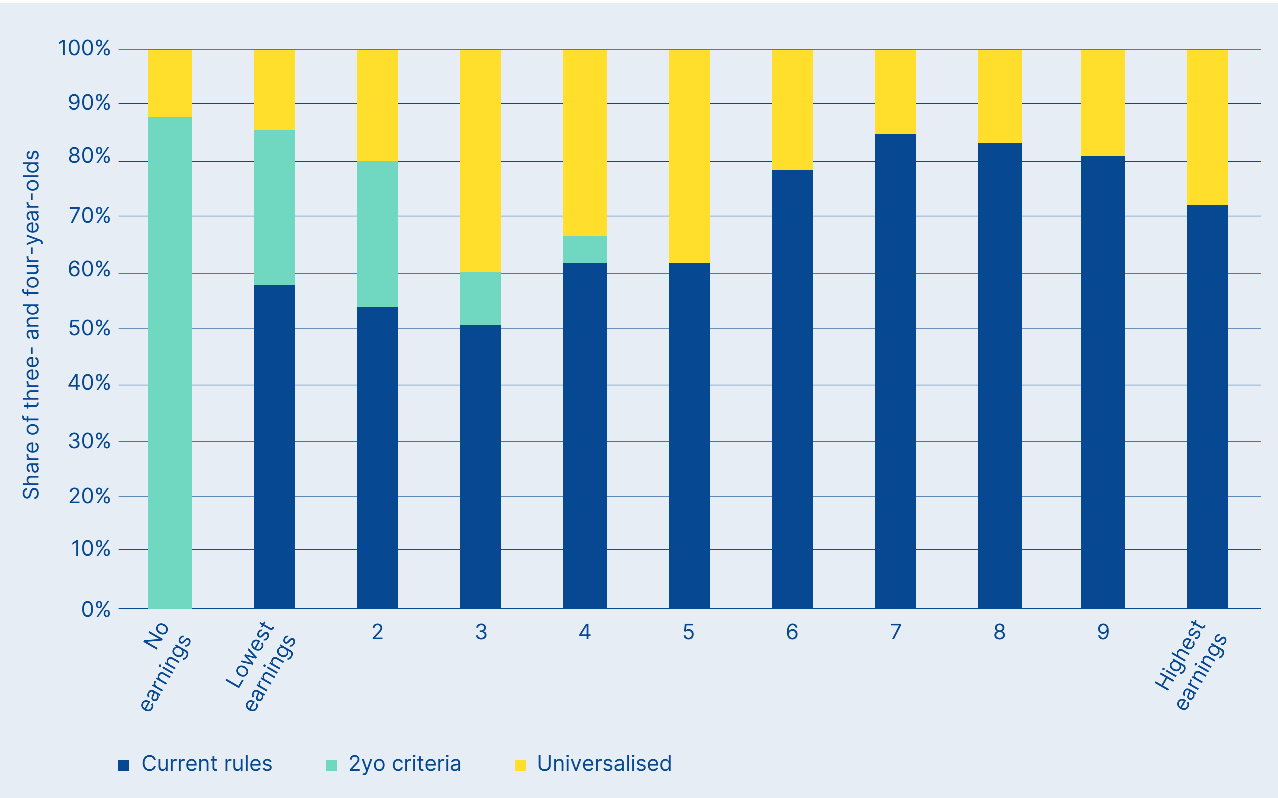
4
Distributional impacts of extending the entitlement

One key criterion for evaluating the different proposals is their distributional impacts. If the motivation for expanding the 30 hour entitlement is to help children to recover from the effects of the Covid-19 pandemic and to support disadvantaged children in accessing full-time early education and childcare, understanding the policies' impacts across the earnings distribution is vital. Equally, given the government's focus on 'levelling up' in disadvantaged areas of the country, the geographic distribution of the benefits will also be important.

In this section, we provide an initial assessment of the distributional impacts of the existing 30 hour entitlement and of the two main options for reform by exploring how the share of three- and four-year-olds brought into eligibility differs by households' earnings and their location.

Figure 2 shows the share of three- and four-year-olds estimated to be eligible under the current rules (blue), and those who would become eligible if the full-time entitlement were extended based on the two-year-old criteria (pink) or were universalised (green).

Figure 2: Share of three- and four-year-olds brought into eligibility under different criteria, by household earnings



Note: Households are first divided based on whether they report zero earnings (around 16% of children are in this group, shown on the far left). The remainder of households are then divided into ten equally-sized groups based on equivalised gross earnings. Earnings data is only recorded for employees (not the self-employed), so the sample of households is restricted to those with neither parent in self-employment. The lowest-earning decile corresponds to average equivalised weekly earnings of around £75; the middle decile, average equivalised weekly earnings of about £365. These are based on gross earnings from work, so are measured before tax is paid and before any benefit income is received.

Source: Authors' calculations using Q2–2019 to Q1–2020 of the Labour Force Survey.

Figure 2 shows that, under the current eligibility criteria for the extended entitlement, it is predominantly children whose families are in the top half of the earnings distribution who are eligible for a full-time place. By contrast, by far the largest group that would benefit from extending the entitlement based on the existing two-year-old criteria would be children in the 16% of families with no earnings – nearly nine in ten of these children would be brought into eligibility by this policy.[9]

Even so, extending the entitlement based on the two-year-old criteria will still exclude some children in low-earning families, for example those whose parents have no recourse to public funds or those who are not eligible for, or unable to claim, the relevant means-tested benefits for other reasons.

At the other end of the earnings distribution, the majority of children are already eligible for the extended entitlement (though this tails off slightly for the families with the highest earnings as some individual earnings exceed the £100,000 cap). Children in these families would not become eligible if the two-year-old criteria were applied.

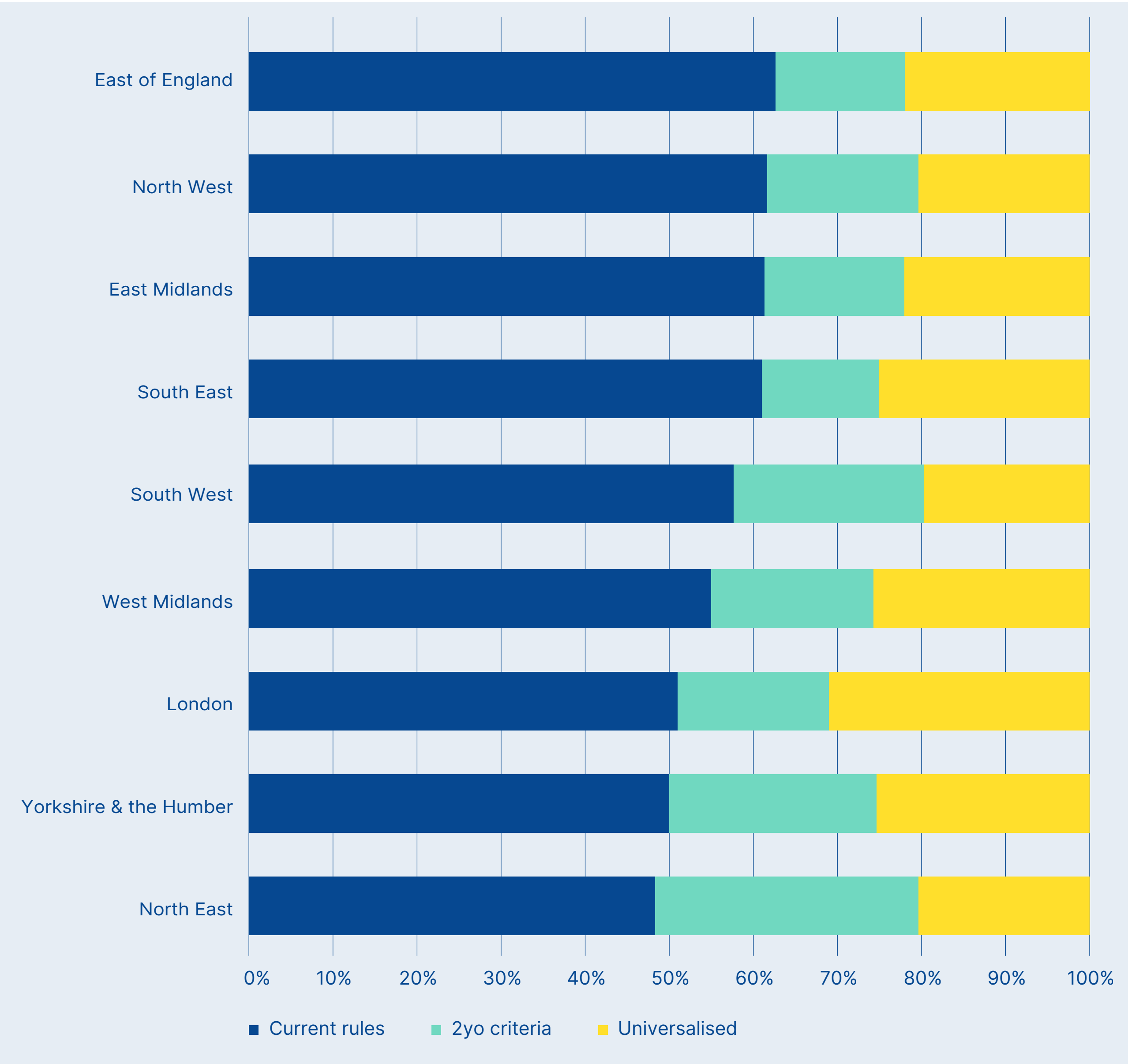
However, Figure 2 also shows that the group that would benefit most from universalising the extended entitlement (rather than extending it only to those who meet the two-year-old criteria) would be in-work families whose earnings are low, but not at the very bottom of the distribution (the second to fifth deciles).[10] While some of these 'just about managing' families would be eligible for the extended entitlement under the two-year-old criteria, in many cases these families' earnings are too high to be eligible for the two-year-old offer but their working patterns do not meet the existing 30 hour criteria either.

9 Figure 3 is based on data from the LFS, which means that it uses *receipt* of various benefits to assess whether families meet the current two-year-old criteria. Since the take-up rate of some of these benefits is relatively low, it is very likely that more low-earning families would be potentially eligible than Figure 3 shows – though this will not be all families because of specific restrictions on benefit eligibility that are not related to earnings.

10 On average, the gross equivalised household earnings of families in the second decile are around £145 per week; for those in the fifth decile, this is around £365 per week. By comparison, those in the eighth decile – where the largest share of children are already eligible for the 30 hour entitlement – have gross equivalised earnings of around £625 per week.

Figure 3 repeats this analysis, but considering where families live rather than what they earn. In contrast to the strong patterns by family earnings, it shows relatively little in the way of clear patterns in eligibility by geography. There are differences in the geographic distribution of children who we estimate to be eligible for the current entitlement (ranging from just under half of children in the North East and Yorkshire to just over 60% in the East Midlands, North West and East of England); however, these differences are not statistically significant, which means we cannot be confident that they reflect actual differences. The two-year-old criteria do seem to apply to (statistically significantly) fewer children in the South East than in the North East and Yorkshire, suggesting that families in the South East are less likely to be receiving means-tested benefits.

Figure 3: Share of three- and four-year-olds brought into eligibility under different criteria, by region



Note: Households are first divided based on whether they report zero earnings (shown on the far left). The remainder of households are then divided into ten equally-sized groups based on equivalised gross earnings. Earnings data is only recorded for employees (not the self-employed), so the sample of households is restricted to those with neither parent in self-employment.
Source: Authors' calculations using Q2–2019 to Q1–2020 of the Labour Force Survey.

5
Costs under alternative funding rates

So far, all of our analysis has assumed a cash-terms freeze in per-hour spending. However, as Figure 4 shows in the pink series, a long cash-terms freeze in per-hour spending translates into ever-less-generous budgets as the cost of staff, rent, and other inputs rises in cash terms. Maintaining a cash-terms freeze in per-hour spending through to 2024–25 could see spending per hour brought to its lowest level since 2011–12.[11] This represents a real-terms fall of 8% compared to 2019–20; compared to the high point of spending per hour in 2017–18, this would be a real-terms fall of 15%. This scale of real-terms cuts would pose substantial difficulties for a sector that has already seen pre-existing financial challenges exacerbated by the Covid-19 crisis.

In this section, therefore, we consider the cost of extending the 30 hour entitlement under a range of alternative funding rates. We consider four main options:

1. Real-terms protection at 2019–20 levels (yellow series)[12]
2. Real-terms protection at 2017–18 levels (purple series)
3. An uplift on 2017–18 levels to account for minimum wage increases,[13] followed by real-terms protection (light blue series)
4. An uplift to £7.49 per hour (in line with the highest rate discussed in a recent Freedom of Information request)[14], followed by real-terms protection (white series)

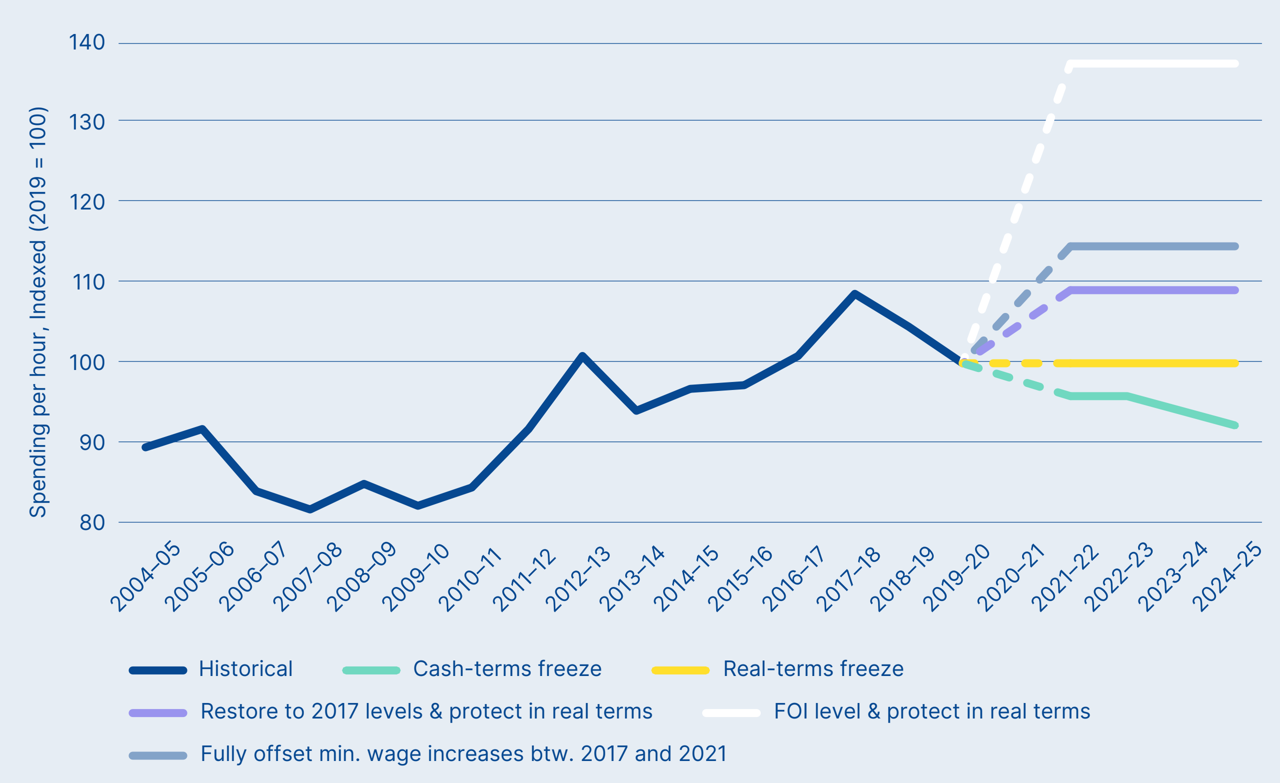
11 The measure of inflation that underpins these figures is the GDP deflator from the June 2021 Quarterly National Accounts (HM Treasury, 2021). The GDP deflator is particularly difficult to measure and forecast at the moment, as the UK economy recovers from successive lockdowns. Inflation figures for 2020–21 and 2021–22 are particularly affected; we therefore focus primarily on figures in 2024–25, when estimates of the deflator are not as volatile.

12 The series of spending per hour is based on Britton et al. (2020). Analogous data for 2020–21 are not yet available.

13 Between 2017–18 and 2020–21, the National Living Wage for most adults rose by 16% in cash terms, a faster rate of increase than the 10% cumulative inflation over this period. This funding option therefore builds in an uplift that fully compensates providers for the minimum wage increases between 2017–18 and 2021–22, then protects this in real terms going forward (not accounting for any future minimum wage increases). The Social Mobility Commission recently found that the average wage for childcare workers was below minimum wage, suggesting that this is an important factor in providers' costs. They therefore recommended that free entitlement funding rates be linked to increases in inflation and the minimum wage (Social Mobility Commission, 2020).

14 The Early Years Alliance requested information from the Department for Education on how it had set its per-hour funding levels for the free entitlement. The FOI documents show that the Department estimated that, absent a planned push for provider efficiencies, cost pressures on the three- and four-year-old free entitlement places would mean a funding rate of £7.49 per hour in 2020–21.

Figure 4: Free entitlement real-terms spending per hour (Indexed: 2019–20 = 100)



Note: Data for 2020–21 not shown since this year's data are not yet available on a consistent historical series.

Source: Historical series based on Figure 2.2, Britton et al. (2020). GDP deflator from HM Treasury (2021).

Table 2 summarises the cost of the two main policy options under each of these rates of per-hour spending. Compared with a cash-terms freeze, offering real-terms protection to per-hour spending would increase costs by around 8%. Put another way, the early years sector will lose about 8% of its spending power over this period if the government pursues a cash-terms freeze in per-hour spending.

Restoring per-hour spending to the real-terms equivalent of its 2017 level (the level of funding in place to support providers with delivering the original 30 hour entitlement) would raise costs by around 18% by 2024–25, compared to a cash-terms freeze. Building in compensation for increases in the minimum wage between 2017 and 2020 over and above this would increase the cost difference to almost 25%. And increasing spending per hour to meet the £7.49 that DfE estimated would be necessary absent reform would be around 50% more expensive than the baseline cash-terms freeze by 2024–25.

These figures point to the challenges facing the existing free entitlement funding system in coping with funding rates that do not increase to reflect general inflation, let alone substantial minimum wage increases, from year to year. As Figure 4 shows, providers instead have to contend with the erosion of their spending power in some years, coupled with relatively large ad-hoc increases in funding rates in other years. This does not give providers a solid foundation to plan their finances over the medium term.

However, the flip side of this is that offering real-terms protection for funding rates can be costly. Strikingly, the cost in 2024 of offering real-terms protection to per-hour spending instead of a cash-terms freeze at current levels will be £240 million – close to the cost of universalising the 30 hour entitlement in our central scenario. There are many such comparisons to be made in Table 2. But the central point is that, when spending is constrained, policymakers face real trade-offs between broadening the early years system by announcing new childcare entitlements, and maintaining the existing system of entitlements by ensuring that providers' funding is not being continuously eroded.

Table 2: Estimated direct cost in 2024–25 of extensions to the 30 hour entitlement, under different policies on per-hour spending (£m, 2021 prices)

	Cash-terms freeze	Real-terms protection	Restore to 2017 levels & protect	Offset minimum wage increases	Real-terms protection at FOI level
Memo: Current three- and four-year-old entitlements					
Universal	*£2,135m*	£2,315m	*£2,515m*	£2,645m	£3,180m
Extended	*£735m*	£795m	*£865m*	£910m	£1,095m
Total	*£2,870m*	£3,110m	*£3,385m*	£3,555m	£4,270m
Panel A: Extending the 30 hour entitlement based on 2yo criteria					
Central scenario	£165m	£180m	£195m	£205m	£245m
Low take-up scenario	£75m	£80m	£90m	£95m	£115m
High take-up scenario	£365m	£395m	£430m	£455m	£545m
Panel B: Universalising the 30 hour entitlement					
Central scenario	£250m	£270m	£295m	£305m	£370m
Low take-up scenario	£115m	£125m	£135m	£140m	£170m
High take-up scenario	£560m	£605m	£660m	£695m	£835m

Note: The table gives estimated direct costs to DfE in 2024–25 (in current prices). It does not take into account wider savings through the tax and benefit system or spending on Barnett consequentials.

6
Scope for wider benefits

Extending the 30 hour entitlement to a wider group of three- and four-year-olds could have wider benefits for children's development and for their parents' labour supply. Even more than the cost of the policy, these benefits are enormously uncertain: research and evaluations from around the world have confirmed that subsidising childcare *can* bring more parents into the labour force or improve children's development, but these benefits are by no means assured. There are many studies that find substantial benefits of childcare subsidies for children or their parents; other studies find little to no effect, or even negative impacts on some measures, for example socio-economic development.

The effects of childcare subsidies depend on the specific design of the policy – the ages that they target, the number and pattern of hours subsidised, and the quality of the childcare on offer. The relative impact of a new childcare policy also depends on the status quo before the policy is brought in – the share of parents in work, the types of childcare available and how costly they are, and the other barriers (such as cultural norms) preventing parents from working (Cattan, 2016).

In this section, we summarise some of the existing research evaluating childcare subsidies and their impacts on parental employment and child development. We focus primarily on studies evaluating the impact of providing full-time rather than part-time care, since that is the closest analogue to moving from 15 to 30 free hours. We also focus on studies that identify the *causal* effects of these childcare programmes, rather than simply exploring the statistical relationships between childcare and outcomes.

Childcare and parental employment

As the Covid-19 pandemic has highlighted, reliable and accessible childcare is essential for parents of young children to carry out paid work. This is particularly important for mothers: Costa Dias et al. (2020) find that the employment rate of graduate women drops 9 percentage points during the year after the birth of a first child, but graduate men's employment rate does not fall at all. Among women educated to GCSE level or below, the drop is 30 percentage points. Even among those women who do remain in paid work, there is a substantial shift to part-time working that is not seen among men. These labour market changes around the birth of a child explain two-thirds of the gender wage gap among degree-educated women in the UK.

Policymakers have long recognised the role that childcare can play in helping mothers (back) into paid work when their children are young. In some contexts, these programmes can be important drivers of maternal employment. For example, a universal subsidised childcare programme that capped costs in Quebec (Canada) at $5 per day increased female labour force participation by almost 8 percentage points (Baker et al., 2008; Lefebvre and Merrigan, 2008). In Germany, the introduction of an entitlement to a part-time Kindergarten place from age three boosted the maternal employment rate by around 6 percentage points (Bauernschuster and Schlotter, 2015). A review of the evidence base suggests that a 10% childcare subsidy might boost maternal employment by 0.5–2.5% in the U.S., with smaller effects in European countries (Morrissey, 2017).

On the other hand, a number of studies find very little evidence of impact. Havnes and Mogstad (2011a) find that the expansion of subsidised childcare in Norway had little impact on mothers' working patterns; instead, the subsidised childcare largely replaced existing informal care arrangements. Lundin et al. (2008) find no effect on working patterns from a similar reform in Sweden, ruling out even small benefits for maternal labour supply.

Evidence on full-time versus part-time care

One possible reason for these mixed effects is that the childcare offer is not sufficiently generous. For example, if jobs require an employee to work at least 20 hours a week, capping a mother's childcare entitlement at 15 hours may not be compatible with moving into paid work. While families can choose to pay privately for additional hours of childcare (and there are other subsidies available in England to help with these costs), additional free hours would essentially raise the effective wage rate of the parent who would otherwise be looking after the child by reducing the costs associated with working another hour.[15]

A handful of studies have been able to explore this hypothesis by examining the impacts of extending childcare subsidies from covering part-time to full-time care. These studies tend to find no overall effect on maternal employment from offering full-time rather than part-time care. However, there can be reasonably large benefits from full-time pre-school for single mothers without any younger children. Dhuey et al. (2019a) show that the introduction of full-day Kindergarten in Ontario (Canada) increased the employment rate of single mothers by nearly 12 percentage points, while Cascio (2009) finds a seven-percentage point increase in employment for single mothers whose youngest child was affected by reforms in the U.S.

Evidence from England

Most relevant to the discussion on the 30 hour entitlement is analysis by Brewer et al. (2020), who studied the impact of the 15 hour free entitlement compared to full-time care in Reception in England. Cut-offs for when children start childcare and school are based on a child's date of birth, which means that some children can be in full-time schooling while others who are almost exactly the same age remain in part-time childcare. This research finds that the 15 hour entitlement had no impact on maternal or paternal employment, but eligibility for full-time schooling increased the maternal employment rate for mothers whose youngest child was eligible by around 2 percentage points.

The Department for Education has also carried out an initial evaluation of the existing 30 hour entitlement. This found that just 2% of mothers reported entering paid work once the 30 hour entitlement became available, but 26% reported that they had increased their working hours (Paull and La Valle, 2018).

However, these estimates provide only a limited guide to the impact that a universal 30 hour entitlement could have: they come from mothers who are eligible for the entitlement, who – by definition – are almost entirely already in work. Further, the mothers were asked to compare the period after their child's 30 hour entitlement started with the period before their child became entitled. This means that the differences are picking up not only the effect of the policy, but also changes over time that would have happened anyway (for example, mothers are increasingly likely to be in paid work, and to work more hours, as their youngest child gets older – regardless of any changes in childcare policy). Finally, a universalised policy may make it easier

15 In economics, this is known as the 'substitution effect', and it means that additional free hours would encourage parents to work more. Offsetting this is the 'income effect': since the additional funded childcare hours free up money that would have spent on childcare, parents might not need to work as many hours to earn their desired level of income. This means that the impact of additional funded childcare hours is theoretically ambiguous. In practice, very few studies find that increasing childcare subsidies reduces working hours: this suggests that the substitution effect tends to dominate.

for parents to seek and find work, by supporting them with a predictable full-time childcare offer while they are searching for work and removing the need for parents who have moved into paid work to wait until the start of the next term to access childcare.

Limitations of the evidence base

For the most part, the existing studies that explore the impact of full-time vs. part-time care use entry into school as their measure of full-time care. While these results are a valuable indication of how big the impact on mothers' working patterns could be, these effects are likely to overstate the impact of extending the 30 hour entitlement to all three- and four-year-olds.

Most of the existing evidence focuses on five-year-olds or older four-year-olds; we might expect the impact to be smaller when eligibility is expanded for younger children, since parents of younger children are more likely to cite preferences rather than cost when asked why their children are not in childcare (Department for Education, 2017).

As well, full-time care provided through the school system might have a bigger effect on maternal labour supply than full-time childcare. For example, parents might consider a child starting school a natural point to go back to work. And, since school is mandatory while the free entitlement is not, the start of full-time school has more scope to affect the decisions of families who might not have responded to an optional offer of full-time childcare.

These factors suggest that the estimates from existing literature are likely to be an 'upper bound' on the impact of universalising the 30 hour entitlement.

Benefits to the public finances

In addition to the benefits for family earnings, an increase in the share of mothers in work – or in the number of hours they choose to work – could also benefit the public finances through higher tax revenues.

Andresen et al. (2019), for example, study an expansion of childcare subsidies for one- and two-year-olds in Norway. They find that increased tax revenues from cohabiting mothers who started using childcare were offset by increased benefit spending on single mothers (who became eligible for in-work benefits). Overall, additional tax revenues from cohabiting mothers offset around 6% of the cost of the subsidy; for single mothers, the increase in benefit income meant that the total cost to the public purse was higher than the direct cost of the subsidies.

To give an indication of the potential scale of the impact of universalising the 30 hour entitlement for tax receipts, we model what mothers' wages might be if they moved into work and how much tax they would pay on those earnings. Clearly, for mothers who are not currently in work, the actual wage they would earn in work is unknown. We therefore use data from working mothers of three- and four-year-olds to predict what their wage might be, taking into account their age, education, region, whether they have a partner, and whether they have a child younger than three.[16]

16 Of course, these predicted wages will differ from the wages that out-of-work mothers might actually earn if they moved into paid work. In particular, mothers who choose to remain in paid work might have systematically higher wages than the wages that out-of-work mothers could earn (even after accounting for characteristics like education). These predicted wages are a useful guide to the potential scale of the public finance effects of increasing maternal labour supply, but they are only an indication, not a prediction.

We find that, on average, a non-working mother whose three- or four-year-old child is not currently eligible for the 30 hour entitlement might earn £335 a week (around £17,450 a year) if she moved into work. This mother would pay just shy of £2,000 a year in income tax and National Insurance contributions. In addition, their employer would owe around £1,200 in employer National Insurance contributions. This means that, for each mother brought into work by this policy, we might expect just over £3,100 in direct tax revenues.[17]

To give a plausible estimate of the total increase in tax receipts, consider the estimate of Brewer et al. (2021), who find that full-time care in Reception in England boosts the share of women whose youngest child is eligible by 2 percentage points compared to part-time childcare. Table 1 shows that around 370,000 children would be brought into eligibility by universalising the 30 hour policy; 70% of these children are the youngest in their family. This means that Brewer et al.'s estimate of the impact on labour supply would see direct tax receipts rise by around £16 million.

Early education and child development

Early childhood education and care (ECEC) can also have wider benefits for children's development. These benefits are most firmly established for small-scale, very intensive and expensive programmes that are highly targeted at very disadvantaged families. A number of these programmes, like the Perry Preschool Project and the Abecedarian Initiative, were robustly evaluated in the U.S. and showed substantial long-term benefits for children's educational attainment, social development, health, and criminality (Heckman et al., 2010; Conti et al., 2014).

While the results from these 'classic' programmes are striking, the programmes themselves are quite different from the ECEC policy options that are on the table in England today. Most European countries favour programmes that aim to reach a broader group of children with a less intensive offer than these earlier interventions. Even so, there is a growing evidence base confirming that these universal childcare programmes can still benefit children's development even in countries with a much stronger social safety net (Havnes and Mogstad, 2011b; Felfe et al., 2015; Cornelissen et al., 2018).

Most researchers find that ECEC is particularly beneficial for disadvantaged children's development (van Huizen and Plantenga, 2018; Waldfogel, 2015). This means that – done well – an effective early years programme can help to reduce inequalities between children from disadvantaged families and their better-off peers.

However, while there is a strong evidence base showing that public support for ECEC *can* benefit children, it is equally clear that benefits are far from guaranteed. In many contexts, childcare programmes have had only small effects on children's developmental outcomes, or even no detectable effect at all (Datta Gupta and Simonsen, 2010). In other cases, childcare subsidies have had a strong *negative* impact on children. For example, Quebec's $5-a-day daycare programme helped mothers into paid work – but it also worsened children's social and emotional development, worsening aggression and preventing children from developing motor and social skills as quickly as they would have otherwise done. These early negative impacts persisted in the longer term, with affected children having worse health and more risk of crime later in life (Baker et al., 2019).

17 Moving into work would also have implications for benefit spending and for indirect tax revenues (e.g. VAT), but these are not considered in these figures.

Evidence from England

The evidence for the impact of early years policies in England is quite mixed, but generally supports some benefits for children's early academic outcomes (though studies differ on whether these benefits persist beyond the first years of primary school). This relationship has been detected by several different studies that use different methodological approaches.

Two longitudinal studies tracked cohorts of children over time to examine associations between childcare use and academic development. The Effective Provision of Pre-School Education (EPPE) project, from the early 2000s, found that children who used ECEC tended to have better academic skills up to age 11 (Sylva et al., 2008). More recent data from the 2010s, collected by the Study of Early Education and Development (SEED) paints a more mixed picture: this research found that *informal* childcare between age two and the start of school boosted children's language development at age five-six, but the relationship between early language and *formal* childcare (of the sort offered under the free entitlement) was only present for children in the least enriching home environments (Melhuish and Gardiner, 2020).

Blanden et al. (2016) use a different approach to study the impacts of the 15 hour free entitlement. They compare children living in the same neighbourhoods but born at different times during the rollout of the 15 hour free entitlement. Based on when and where they are born, different cohorts of children therefore have different amounts of access to funded free entitlement places. Using statistical techniques, the researchers are able to account for both permanent differences between different areas and nationwide changes over time. While the estimates from this study differ from those in EPPE and SEED, the researchers again find that access to ECEC via the free entitlement improves children's academic outcomes at age 5. However, they also conclude that these benefits fade out over the primary school years. The authors argue that the relatively modest benefits are the result of high take-up of childcare even before the free entitlement was introduced, coupled with the emphasis on delivering free entitlement hours through the private and voluntary sectors.

While there is some consensus on the academic benefits associated with childcare in England, the evidence on social and behavioural development is much less certain. Evidence from EPPE suggested that children's social and emotional development at ages 5 and 6 benefitted from attending childcare, but most of these benefits had faded out by the end of primary school (Sylva et al., 2008). The more recent data from SEED concludes that formal childcare use is associated with worse behaviour and less emotional control during the early schooling years (Melhuish and Gardiner, 2020). This is particularly true of formal group settings (such as nurseries), and the relationships between childcare use and socio-emotional development were similar across children with different levels of disadvantage.

Impact of number of hours in childcare[18]

Most studies of how childcare affects child development focuses on whether families use childcare at all, or the overall impacts of a childcare subsidy programme. Less is known about how these impacts vary with the number of hours of childcare that children use. However, there is some indication from existing studies that increasing the amount of time spent in childcare can benefit children's academic development, but often harms their social and emotional development.

18 For a fuller discussion of the developmental impacts of longer hours in childcare, please see section 1 of this report – *What do we know about the 30 hour entitlement? – literature review and qualitative stakeholder work.*

For example, Gibbs (2017) focuses on the outcomes of children in the U.S. randomly assigned to either full-day or half-day Kindergarten. She finds that full-day Kindergarten substantially boosts children's literacy at the end of the Kindergarten year, with the largest effects for Hispanic students and those who enter Kindergarten with low literacy levels. The relative benefits for Hispanic students mean that offering full-day rather than half-day Kindergarten would close around 70% of the ethnicity gap in literacy at the end of Kindergarten. These are very meaningful benefits. However, they will not be directly comparable to the 30 hour entitlement: Gibbs studies a slightly older age group (age 5) in a school rather than an early education setting.

On the other hand, Datta Gupta and Simonsen (2010) use a reform in Denmark to estimate the impact of increasing formal childcare hours on children's social and emotional development at age 7. They find that enrolment in pre-school at age 3 does not significantly affect children's development at age 7, but longer hours in formal childcare lead to more behavioural and emotional problems.

In England, the SEED study considered whether using more hours of childcare was associated with children's outcomes during primary school. It found that using more hours of formal childcare was associated with worse social and emotional outcomes during Year 1 (age 6). Among other outcomes, it found that children who used more than 15 hours of formal group care per week had statistically significantly more behavioural problems and less emotional regulation than their peers using 5 or fewer hours of formal care. On the other hand, for the 40% most disadvantaged children – which is largely the group that would be affected by extending or universalising the 30 hour entitlement – using at least 10 hours of childcare from age two, combined with using at least 20 hours a week on average between age two and the start of school, was associated with better verbal ability in Year 1.

7 Summary

Overall, the evidence on the impacts of increasing the number of hours of childcare is relatively mixed. Universalising the 30 hour entitlement in England would probably help some mothers to move into paid work, but the best evidence we have comes from slightly older children entering school and so is likely to be an 'upper bound' for the plausible impact. If results from a study comparing the 15 hour free entitlement to full-day schooling in Reception extend to a 30 hour childcare offer, the government might expect to receive around £16 million in additional direct tax revenues as a result. Of course, given the huge amount of uncertainty, this figure is less a forecast than an indication of the small scale of additional tax revenues that might be generated.

The evidence for early education and child development is somewhat more mixed. While there are clear benefits to very intensive, small-scale, highly targeted early years programmes, the international evidence base suggests that effects of large-scale or universal programmes depend crucially on what kinds of care children would have used in absence of a childcare subsidy. In general, the evidence points to positive benefits for children's intellectual development in a range of international contexts. However, in some contexts spending more hours in early education or childcare has been linked with worse social and emotional development and more behavioural problems, particularly for younger children in more formal settings.

As this overview has highlighted, the potential benefits of childcare for parents and their children depend on a range of factors, including – crucially – the counterfactual: what would have happened without the policy. To the extent that children would have been in formal childcare anyway, expanding the free entitlement is likely to change how much families have to pay but would have less dramatic impacts on the kinds of environments children are actually exposed to. By contrast, expanding the 30 hour entitlement will likely have much less of this 'deadweight': as discussed in Section 3, most children who would be brought into eligibility if the 30 hour entitlement were expanded are currently using at most 15 hours of ECEC per week. While our modelling suggests that take-up of a 30 hour offer in this group would be low, the children who do take up the offer would mostly be increasing the actual time they spend in childcare, rather than simply changing how it is paid for.

8 Conclusion

The Covid-19 pandemic has caused enormous disruption to the lives of young children and their families. In contrast to the remote learning that took place in schools, children who were asked to stay away from their early years settings in spring-summer 2020 had relatively little in the way of formal replacement activities to help support their development. While the impact on the development of this age group is not yet fully known, early indicators suggest that the early years will not have escaped the wider pattern of lost learning and widening inequalities caused by the lockdowns.

Even before the pandemic, there has been debate about whether England's current childcare entitlements for three- and four-year-olds go far enough. Both the Labour and Liberal Democrat parties promised substantial increases in these free entitlements in their 2019 General Election manifestos, while the Conservative party pledged £250 million a year for wraparound and holiday care (including for older age groups). In Scotland, the Scottish Government is completing the rollout of a universal 30 hour offer for three- and four-year-olds in summer 2021, and the SNP's manifesto earlier this year promised to expand free early education to disadvantaged one- and two-year-olds as well.

In this report, we focus primarily on providing a range of estimates for the potential cost of widening eligibility for the 30 hour offer. The current 30 hour entitlement applies to just over half of three- and four-year-olds. Despite this, even universalising the entitlement in this age group would likely cost much less than the current programme. These relatively low costs are related to relatively low predicted take-up rates: even taking into account how childcare use might rise if families are given an additional 15 free hours, the groups that are currently excluded from the free entitlement are likely to use much less childcare than the children who are currently eligible.

The low take-up rates that we predict have two important implications. The first is that the costs of expanding the 30 hour entitlement are very uncertain: considering different scenarios for take-up, we find that universalising the entitlement might cost a sixth as much as the current programme, or it might cost 75% of the current budget.

The second implication is that relatively few children are likely to benefit from extending the entitlement. If the government wishes to pursue this as a policy to support children's development, it needs to consider how it will ensure that the offer is attractive enough to benefit a meaningful share of the cohort. Of course, in doing so, it will also face higher costs as take-up rises.

One of the most important findings in this report, though, is the difficulty that the government will have in continuing to fund providers at the current level. Spending per hour on three- and four-year-olds has already fallen by 8% from its 2017–18 high point; continuing with a cash-terms freeze until 2024–25 will leave hourly spending 16% below its 2017 level. For providers who are facing rising costs on the back of minimum wage increases and – more recently – COVID-related disruption, a continued funding squeeze will be difficult to sustain.

Going into this autumn's Spending Review, the government faces difficult choices for the early years. While the costs of expanding the 30 hour entitlement are not especially large, the government must also consider the need to put the existing free entitlements on firmer financial footing. After two mini-Spending Reviews that did little to change the early years budget, it is clear that these choices – while perhaps difficult – must not be ignored this coming autumn.

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Appendices

Appendix 5
Technical details of modelling

In this appendix we provide more detail about the modelling choices and assumptions that underpin the costing figures presented in this report.

There are three main factors that influence the cost of extending the 30 hour entitlement to new groups of children: the number of children made eligible; the share of these newly-eligible children who take up the entitlement; and the cost per hour of delivering a funded place.

Estimating the number of children newly eligible

To estimate the number of children brought into eligibility, we first need to know the share of children who are already eligible for the extended entitlement. As the eligibility criteria in Box 1 suggest, modelling this requires a fair bit of information about families' earnings, working patterns, and parents' ages and immigration status. We use data from the Labour Force Survey (LFS) to estimate eligibility, since it combines information for all adults in the household on all of these characteristics. Importantly, we focus on the LFS data collected in the year prior to the Covid-19 pandemic (Q2 2019-Q1 2020); since this report aims to produce estimates of the long-run cost of these extensions, these pre-pandemic data will (hopefully) be more representative of the state of the economy in the longer term than this year's data.

Based on this data, we estimate that around 57% of three- and four-year-olds live in families that are currently eligible for the extended entitlement. The number of children who are age-eligible varies throughout the year (more children are eligible in the summer term, fewer in the autumn after most four-year-olds start school), but on average 2021–22 will see around 875,000 children eligible for the universal entitlement (falling to 840,000 by 2024). This means that we estimate there are around 500,000 children already eligible for the extended entitlement this year.

We then use the same dataset to estimate the share of three- and four-year-olds living in families that meet the two-year-old eligibility criteria, but would not currently be eligible for the extended entitlement. There are two main limitations to our estimate of eligibility under the two-year-old rules:

- The LFS does not contain data on children's Special Educational Needs status or social care history, so we cannot incorporate these measures into our estimate of eligibility. We therefore focus only on eligibility under the financial criteria for the two-year-old entitlement.[1] This means we will underestimate the share of children who would be eligible under these criteria.[2]
- The LFS collects data on benefit take-up, not benefit eligibility. The difference between the two can be substantial: for example, the Department for Work and Pensions estimated that only 67% of households that were eligible for Working Tax Credit were actually receiving the benefit in 2017–18. Since tax credits is by far the largest reason in our data that a family would be eligible under the two-year-old rules, we rescale our estimated eligibility rate by a factor of 1.5 (=1/0.67).

1 Because the LFS does not ask about all possible benefits, we are also not able to take into account eligibility for the guaranteed element of Pension Credit or the Working Tax Credit 4-week run-on payment.

2 Eligibility under these non-financial criteria is much rarer: in 2020 around 16,000 children under 5 had an EHC plan or SEN Statement, and there were around 11,000 children aged 1–4 who were looked after by a local authority.

At the end of this process, we estimate that 39% of three- and four-year-olds meet the two-year-old criteria (again, focusing only on the financial criteria). However, around a quarter of these children are already entitled to the 30 hour entitlement under current rules, so the share of children who would be newly brought into eligibility under these rules is 28% (with a 95% confidence interval of 25%–31%).

Estimating the (part-time equivalent) take-up rate

The next important input in estimating the cost of extending the entitlement is the take-up rate among children who are newly eligible. We are interested both in understanding the overall take-up rate (the number of newly eligible children who use any of the extended entitlement, as a share of all newly eligible children) and the part-time equivalent take-up rate (the number of new part-time equivalent places taken up, as a share of all newly eligible children).

Estimating the take-up rate is highly uncertain, since it requires understanding both how much formal childcare newly eligible families currently use, and how their demand might change if they suddenly have access to 15 additional hours of formal childcare at no cost. This in turn is influenced by bigger-picture impacts; for example, if the availability of full-time free childcare encourages more parents to return to work, take-up might rise over time.

To give an initial indication of what the take-up rate of a newly extended 30 hour entitlement might be, we use data from the Childcare and Early Years Survey of Parents to track formal childcare usage among families who would likely be eligible for the extended entitlement under current rules, and those who would not.[3]

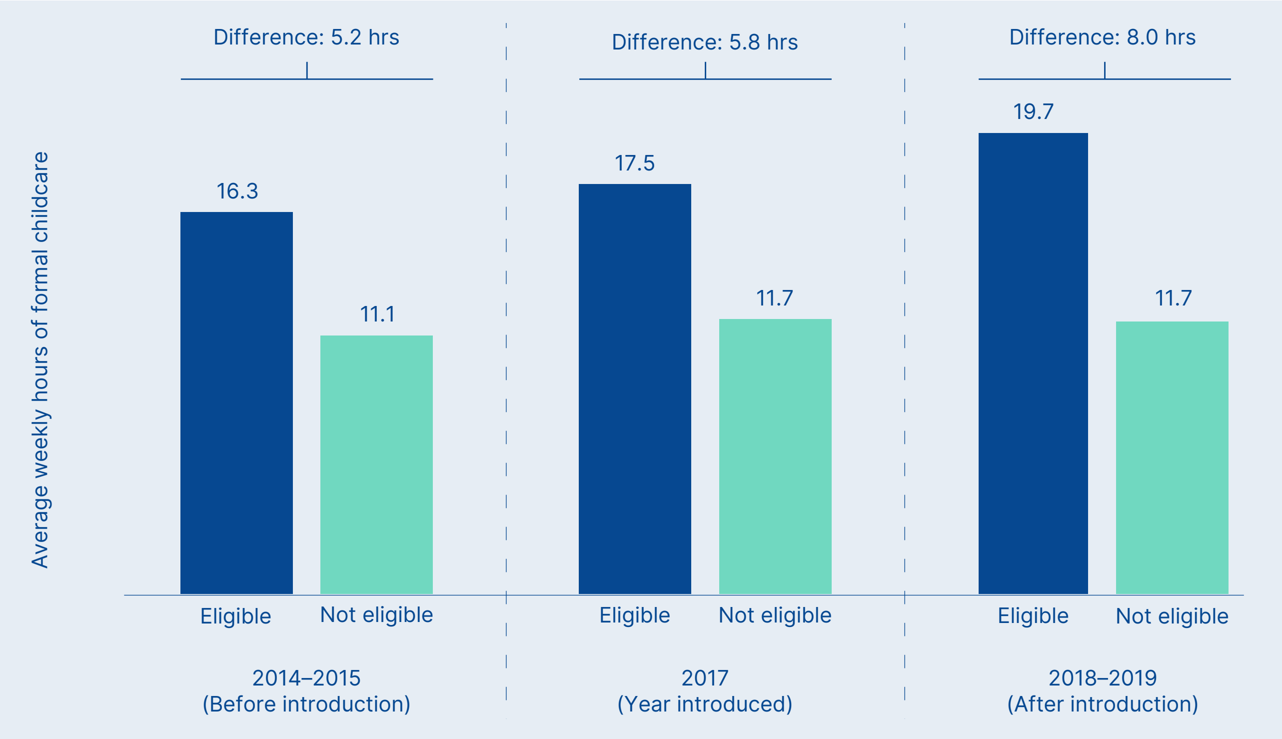
Figures 1 and 2 show how much formal childcare three- and four-year-olds were using in 2014–2015, before the extended entitlement was introduced;[4] in 2017, when the entitlement was first brought in; and in 2018–2019, when the extended entitlement was fully in place. For each year, Figure 1 shows the average weekly hours used by among families who would likely be eligible for the extended entitlement under current rules, and those who would not be. Figure 2 focuses on the share of each of these groups using more than 15 hours a week of formal childcare.

These two figures highlight two important points to consider when estimating the potential take-up rate of an expanded 30 hour entitlement. First, overall usage of formal childcare increases when it is made free: among families meet the current eligibility criteria, average formal care usage rose from 16 to just under 20 hours a week between 2014–2015 and 2018–2019. Second, there are differences in formal childcare use between families who are and are not eligible under current rules: even in 2014–2015, before the extended entitlement was introduced, families who fulfil the current rules used more than 5 hours a week more formal care than those who do not fulfil the current criteria.

3 In this dataset, income is only available in bands, so we primarily rely on parents' work hours to estimate eligibility. We assume that families where both parents (or the lone parent) are in work and working 16 or more hours a week are eligible unless either (a) there is a single carer with household income above £100,000 a year or (b) there are two parents with total household income under £10,000 (two people aged 20 or up working 16 hours each at the National Living Wage would together earn around £13,000 a year).

4 Survey data for 2016 are not available.

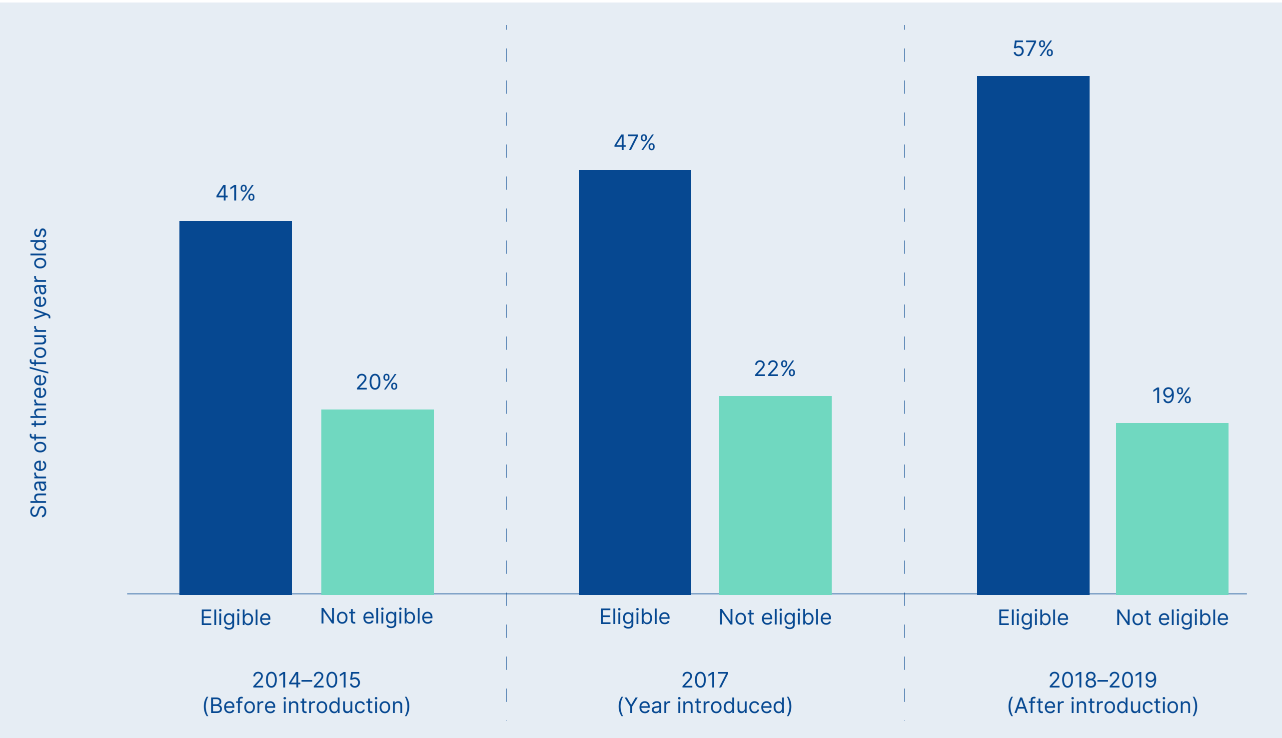
Figure 1: Average weekly hours of formal childcare for three- and four-year-olds, by year and likely extended entitlement eligibility



Note: 'Eligible' and 'not eligible' are based on predicted eligibility for the extended entitlement under current rules.

Source: Authors' calculations using data from Childcare and Early Years Survey of Parents (2014–15, 2017, 2018, 2019).

Figure 2: Share of three- and four-year-olds using more than 15 hours a week of formal childcare



Notes and sources: As for Figure 1.

In order to incorporate both of these facts in our estimate of the take-up rate of an expanded 30 hour entitlement, we calculate the *change* in take-up before and after the extended entitlement was introduced for likely-eligible families, and apply that to the current *level* of formal childcare usage among the groups who would be newly eligible for full-time childcare. We do this separately for children who would become eligible under the two-year-old criteria, and all other children who are not currently eligible for the extended entitlement.

Because the take-up rate is so uncertain, and so important to the overall cost of the programme, we also present costs under two alternative scenarios. The first, a **low take-up scenario**, assumes that there is no change in the use of formal childcare as a result of the new entitlements: that is, that newly eligible families do not respond to the new entitlement by increasing their childcare usage at all. The second, a **high take-up scenario**, assumes that the take-up rate for newly eligible families is the same as the take-up rate of families who are currently entitled to a 30 hour place. Neither of these scenarios is likely to be 'right', but they help to illustrate the range of uncertainty around take-up and the importance that it plays in driving the total cost of the programme.

Spending per hour

For our measure of spending per hour, we use the estimates in Britton et al. (2020) as a starting point. These go beyond the headline funding rate, which averaged £4.86 across local authorities in 2019–20. Our measure of spending per hour also incorporates a variety of uplifts, including the Early Years Pupil Premium; other supplements like the Maintained Nursery Supplement; and any top-up spending done by local authorities.

These measures of spending per hour are constructed based on the Individual Schools Budget for early years in 2019–20. The figures net out spending on health-related services as well as some elements of central spending on school admissions; servicing schools forums; termination costs; the Falling Rolls Fund; capital expenditure from revenue; prudential borrowing costs; and equal pay back pay.

We also cross-check these budget data against out-turn data reported in the Statistical First Release SFR52 data. For a full description of the checks carried out on these data and the inputs into the longer-term series of spending per hour used in Figure 4 of the main report, please see Appendix A of Britton et al. (2020).