Department
for Education

Review of childcare costs: the analytical report

An economic assessment of the early education and childcare market and providers' costs

25th November 2015

Reference: DFE-00295-2015

Department for Education

Foreword – Sam Gyimah MP, Minister for Childcare and Education

I welcome this review which delivers on our general election commitment to assess the cost of childcare provision in England. The report gives us a rich, detailed and clear understanding of the early education and childcare market. I am extremely grateful to all of the providers, provider representatives, and other individuals and organisations that have contributed to making this so in depth and comprehensive.

The findings of the review – the first of its kind by government – have formed the evidence base for our decisions at the Autumn 2015 Spending Review. On the basis of this review, I am pleased to be able to confirm that the government is allocating funding for a substantial uplift to the funding rate. We will be investing over £1billion more per year by 2019-20, including £300 million for a significant uplift to the rate paid for the two-, three- and four- year-old entitlements. The new rates will be £4.88 for three- and four-year-olds, including the EYPP,[1] and £5.39 for two-year-olds. This shows the importance government attaches to funding high-quality childcare. We are confident that, on the basis of this review, this new rate will underpin sustainable delivery of the entitlements – including the new 30 hour entitlement for three- and four-year-olds for working families.

Our support for the industry isn't just about providing more money through the uplift. Alongside it we are announcing a package of reforms that will support successful delivery of the entitlements. We know that the current funding system creates unfair and unjustifiable differences between areas, and between types of providers.

We are committed to introducing a fairer and more transparent way of distributing funding for the entitlements, which will see more funding passed on to providers at the front line. We will consult on proposals to do this in the new year.

The review has also shown that some business models do not make full use of the flexibility in the regulatory system – and that high-quality provision can be delivered by providers that do use this flexibility. We are clear that the funding rate will enable providers to deliver high-quality places in line with statutory requirements alongside the introduction of the new National Living wage.

Providers have informed us that there can be unnecessary bureaucracy involved in delivering the entitlements. We will work to simplify and limit the conditions local authorities can place on providers delivering the free entitlement, and will work with the sector to reduce unnecessary bureaucracy that limits the time staff can spend with children. We will begin early implementation of the 30 hours entitlement in a small number of areas from September 2016. The Early Implementers programme will give us an opportunity to test capacity, flexibility and importantly innovation, as well as ensure that all eligible children, including those with special educational needs, can access the 30 hours.

This is an exciting time for the childcare sector with more government investment than ever before going towards helping parents with the cost of living, supporting them to work more hours and for children to benefit from high quality early education.

1 Early years pupil premium

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Contents and acknowledgements

Contents

This review has been written by the Department for Education, with advice and support from across Government.

The review team would like to thank the childcare providers, their representatives and other interested parties that engaged so constructively with the review, and were so generous with their time. This includes the more than 2,000 organisations that responded to the Call for Evidence; those that responded to our follow-up survey; and the more than 100 that attended roundtable discussions across the country. We would particularly like to thank the Pre-school Learning Alliance, the National Day Nurseries Association, PACEY, the Independent Schools Council and other key partners for being so generous with their time.

Deloitte were engaged to support work led by the Department for Education, specifically around understanding the different cost pressures faced in different parts of the market through both a review of the published literature as well as primary research directly with providers; and to engage with providers to help inform the overall review. The Department for Education have interpreted these findings and research to inform this review.

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Purpose of the review

From September 2017, three- and four-year-olds in working families will be eligible for up to 30 hours per week of state-funded childcare. This represents a major expansion in the 'free entitlement', building on the existing, universal three- and four-year-old early education entitlement; and the two-year-old entitlement for disadvantaged children.

It is essential that all of these entitlements are funded properly, at a level that enables providers to deliver the good-quality early education and childcare that benefits children, meets the needs of parents, and which is fair and sustainable for the taxpayer. The government commissioned this review of the cost of providing childcare for pre-school age children in order to provide a sound analytical underpinning to inform what this rate should be.

As a major purchaser in the childcare market, government also wanted a better understanding of the state of the market, its strengths and weaknesses and to learn about the business practices of the most efficient providers in the market.

The review has been analytically-led and evidence-based. It has been worked on by a team of DfE analysts, led by the Department's Chief Analyst, and supported by expertise from across government and outside.

The review examined the costs of childcare provision at provider level and considered all available evidence on the current demand for and supply of childcare places for two-, three- and four-year olds.

It has also considered how government regulation and funding has shaped the market. We have looked at the provision for children with additional needs and how this varies across the market.

Although the review focusses on the current costs of provision, it also examines the implications of future cost pressures facing the sector, in particular the introduction of the Living Wage from 2017.

The review is based on the best evidence available, including additional evidence collected throughout the review. The evidence used to inform the review is outlined in Section 2 and the appendix.

The Department is pleased with the engagement it has had from across the childcare market. Its Call for Evidence received over 2,000 responses between 15 June 2015 and 10 August 2015, with the majority of responses submitted coming from providers.

The Call for Evidence was supplemented by a series of roundtable events with providers, provider representatives, and academics. Events were held at DfE offices in London, Sheffield, Manchester and Coventry. We held particular thematic discussions on childcare for children with additional needs, including those with Special Educational Needs and/or Disability (SEND) and those from disadvantaged backgrounds; and held a roundtable event just with childminders.

Executive summary

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Childcare market segmentation

This review focusses primarily on provision of early education and childcare for two-, three- and four-year-olds. The childcare market is diverse and we have focussed on the following 'segments' of provision:

Group-based provision

Private nurseries: These providers are for-profit entities. Typically, they offer the free entitlement and provide a flexible mix of sessions. They tend to have children across all (pre-school) age groups, and include nurseries based on school sites.

Voluntary nurseries: This segment has a range of voluntary providers, including not-for-profits and social enterprises. These are typically open term-time only, although some also offer out-of-school and holiday care. Voluntary providers do not necessarily own their premises – they may operate out of church halls, community centres, school sites, etc.

Independent school nurseries: These are independent schools with nurseries for children under five.

Primary schools with nursery provision:[1] This segment typically offers morning and afternoon sessions for early education and childcare, with some offering only the free entitlement for children. Typically they have children aged above two years. They generally operate at lower staff to child ratios[2] than private and voluntary providers, with more qualified staff, but still above the statutory requirements. As they are based on school sites, the overhead costs are shared with the rest of the school.

Maintained nursery schools: This segment typically operates in areas of greater disadvantage and are designed to support early education and childcare in these areas. They operate on standalone sites, and are funded by the local authority. Many maintained nursery schools are attached to children's centres as required by their local authorities.

Home-based provision

Childminders: They comprise the largest share of the market in terms of absolute numbers of providers. However, their share of places are limited as most childminders operate alone and are restricted by the 1:3 staff to child ratio requirements for children under five. They operate out of their own domestic premises.

1 These will be referred to as 'primary school nurseries'
2 Lower staff to child means fewer staff per child

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Current market strengths and weaknesses

Market assessment

The childcare market is very complex, with a wide range of different types of providers and contexts. The wide variety in types of provision, and different business models for delivering childcare, is striking.

Our overall assessment is that the market appears to function reasonably effectively. However, there is scope for providers to use all the flexibility available to them in order to improve the sustainability of their business and deliver for parents and children.

The key strengths and weaknesses of the market, as we found them, are summarised here.

Market strengths

Supply in the market is healthy, and has grown in recent years. Evidence suggests there is currently sufficient supply available to the majority of parents.

Government has invested considerably in this market – spending on childcare support had increased to £5billion a year by the end of the last Parliament. This has boosted demand for places and provides a guaranteed income to providers.

Most providers report breaking even or making a profit, and exit rates from the market are low. Parents tend not to switch providers frequently. This indicates parental satisfaction with provision, although we recognise the high costs to switching.

Government regulation appears proportionate and is not the key constraint on behaviour. In particular, the vast majority of providers reported that they are not constrained by government in the staffing models they choose (in respect of both qualification levels and staff to child ratios).

Nevertheless, some providers have reported that complying with regulation is complex and costly. Some have also highlighted the high administrative costs of dealing with their local authority in securing funding for the free entitlements and to cover costs associated with children with additional needs.

Barriers to entry and exit appear moderate to low and many providers report a real commitment to providing education and care to children as a key reason for staying in the market.

Quality in general, as reported by Ofsted is high.[1] In 2015, 85% of two-, three- and four-year-olds receive their funded early education in settings rated good or outstanding by Ofsted.

1 This is where Ofsted judgements are known

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Current market strengths and weaknesses

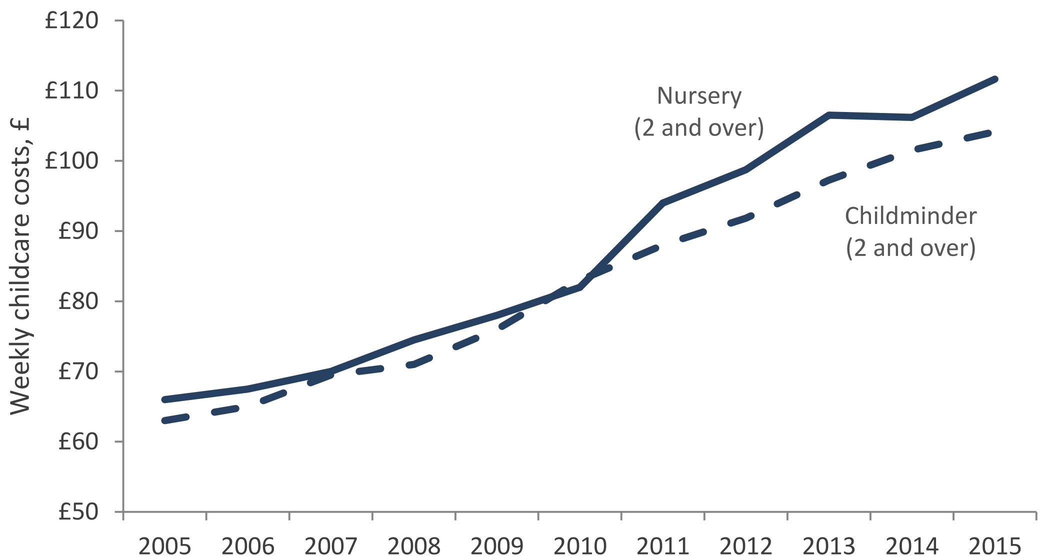
However, the market also has some clear challenges

The childcare market is highly fragmented. Provision is very localised. It is a relatively labour intensive industry, with mostly small, single-site providers with limited scale economies.

Across the board, there are successful providers of varying scale. However, the cost of childcare has continued to increase, which raises questions as to whether providers can operate more efficiently in order to deliver value for money.

Formal childcare prices to parents have outstripped inflation over the past decade. The average market price paid for nursery provision for children aged over two has risen by 69% in the last ten years. During this time period, Consumer Price Inflation (CPI) has been only 28%. One in five parents who have not accessed formal childcare cite cost as the key barrier.

Typical weekly childcare fees for a full-time nursery or childminding place[1]



Percentage change in childcare fees and CPI inflation between 2005 and 2015[2]

Type of provision	Change
Nursery (under 2s)	66%
Nursery (2 and over)	69%
Childminder (under 2s)	59%
Childminder (2 and over)	65%
CPI headline inflation	*28%*

1 Family and Childcare Trust's annual surveys: Over the years there have been some tweaks to the definitions and coverage of the FCT survey, so assumptions have been made to create a consistent time series

2 Family and Childcare Trust's annual surveys; Office for National Statistics http://www.ons.gov.uk/ons/rel/cpi/consumer-price-indices/october-2015/tsd-consumer-price-indices-october-2015.html

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Scope for efficiencies and learning from best practice

Looking across providers, there is scope for efficiencies in the staffing model, and specifically staff to child ratios. Providers typically use more staff than government regulations require. They report, in part, that this is a quality measure, and that ‘slack’ is needed to enable them to cover peaks and troughs in demand. Where providers are operating with ‘slack’ in the system, they incur higher costs.

Parental demand does not appear to be a factor in encouraging this common practice. There is evidence that higher quality can be achieved by providers operating close to or at statutory ratio. Graduate led settings such as school nurseries operate at high ratio and in general have a reputation for high quality.

Our analysis shows that a ‘typical’ provider in a private setting could save around 15% of its unit delivery costs by staffing within the statutory requirements. Similarly, there are potential savings by changing the mix of staff used, within the limits of regulation. Potentially big savings are available using more variable staffing models to recognise peaks and troughs in occupancy. Increasing overall rates of occupancy improves efficiency for the same reasons – spreading costs over a higher number of funded or paid for places.

To a lesser extent, we also consider that some providers would benefit from economies of scale (using any spare capacity within premises, for example) and of scope (using premises to care for other age groups of children or sharing back-office functions with other providers, for example).

Not all of these efficiencies are available to all providers but close examination of ‘typical’ business practices suggest considerable potential for efficiency across the market as a whole.

The next two slides explore the various sources of efficiency we have observed and provides some explanation and quantification of these, where that has been possible.

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Efficiencies from staff deployment

Unit costs vary considerably by staff deployment

Our analysis shows that hourly costs can be reduced where providers deploy staff efficiently within statutory limits.

The table below shows the costs for the commonly reported staff to child ratios used in practice by providers.

For private and voluntary providers these are: 1:6 (the average) or 1:8 (the statutory minimum) for three- and four-year-olds; and 1:3.2 (average) or 1:4 (statutory minimum) for two-year-olds. School providers more typically report using a 1:10 (average) or 1:13 ratio (statutory minimum in a graduate-led setting). The estimates account for all overheads but staffing requirements constitute by far the largest share of total costs across all provider segments.

Those providers that staff at a higher ratio of staff to children (i.e. have fewer children per staff member) are incurring significantly higher costs. They are also foregoing significant revenue. Assuming a price of £5 per hour per child (of any age), the revenue per staff member generated for two-year-old provision in a private setting is £16 with the higher staff to child ratio compared to £20 per hour for the lower one. For three- and four-year-old provision, the revenue per staff member varies from £30 an hour to £40 an hour for the higher and lower assumed staff to child ratios respectively.

There are a number of existing published estimates of unit costs that we consider for comparison in section two of the main report. Estimates vary according to assumptions on providers' business models. We believe the estimates provided here at the statutory ratios provide a good set of unit cost benchmarks.

Representative costs per contact hour, England 2014/15 (staff to child ratio in parentheses)

Core provider segment	Aged two		Aged three and four	
	Hourly cost at average ratios	Hourly cost at statutory ratios	Hourly cost at average ratios	Hourly cost at statutory ratios
Private	£5.87 (1:3.2)	£5.00 (1:4)	£4.25 (1:6)	£3.56 (1:8)
Voluntary	£5.39 (1:3.2)	£4.54 (1:4)	£3.81 (1:6)	£3.14 (1:8)
Primary schools with nursery provision	-	-	£4.37 (1:10)	£3.60 (1:13)

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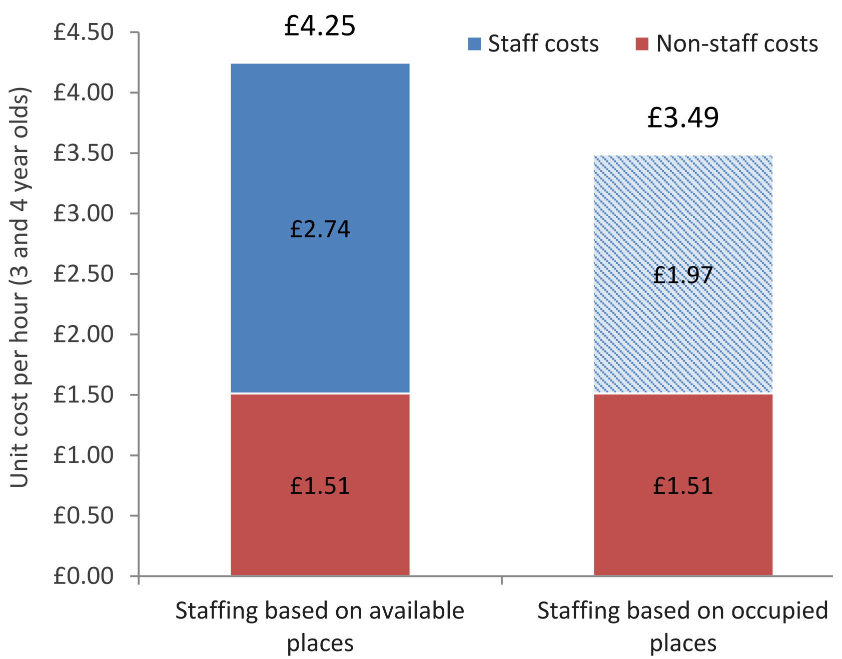
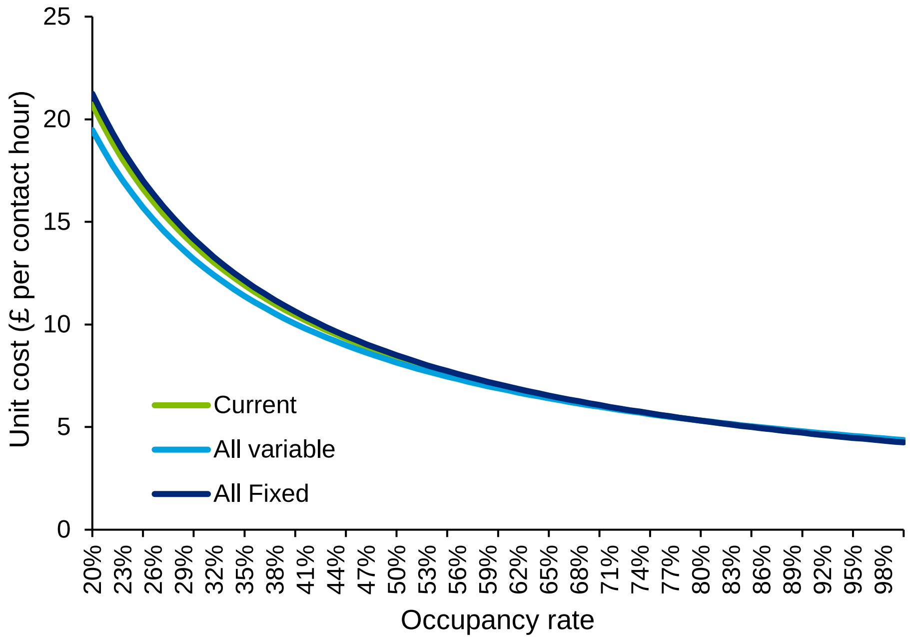
Efficiencies through flexible staffing models, increasing occupancy and diversification

1) **Flexible staffing models** – matching staffing more closely to occupancy levels decreases cost. The chart below shows savings up to 18% from matching staff levels fully to occupancy levels.



2) **Increasing occupancy rates** - attracting children on quieter days of the week lowers unit costs, for example by lowering prices for parents on such days. Unit cost estimates fall by up to 26% if a private provider was able to operate at 100% occupancy compared to 72% occupancy.[1]



3) **Economies of scale** - most providers in the market are small in scale. Although most costs are variable, there can be scope to spread overhead costs where building space can be used to deliver more than one type of childcare provision, for example by providing before and after school clubs.

4) **Economies of scope** - economies of scope can also be realised by nursery chains, sharing managerial and back office functions. School-based settings may also benefit from economies of scope as being co-located with a school enables sharing of staff and administrative functions.

1 We recognise that 100% occupancy is not realistic but this analysis illustrates the range of savings available for providers who can increase their occupancy.

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Conclusions

This review gives government a solid evidence base for the purposes of setting a funding rate for the entitlement.

Ministers are now in a much stronger position to make decisions about a funding rate which is fair to providers, parents and the taxpayer. In making these decisions there are a number of other factors that have also been considered.

The review has found that different types of providers (private, voluntary, school-based nurseries etc.) have different cost bases. However, it found greater variations between providers of the same type than across providers, depending on business practices adopted, geography, size of setting and so on.

The review has provided strong evidence that cost bases vary substantially across different parts of the country. In particular, staff salaries are considerably different between regions. There is, therefore, a strong evidence case for varying funding rates between areas.

This review has concentrated largely on the delivery costs of providing childcare, but we also considered the need for providers to earn a reasonable profit margin, sufficient to make setting up and running a business in the childcare market worthwhile. However, the entitlement cannot cover all of the additional extras some providers and parents might choose. The Department's statutory guidance already spells out that "this document does not provide guidance on how providers operate their private businesses, including charges for provision over and above a child's early education place."[1]

The review has shown that there is considerable scope for providers to become more efficient in their practice, in order to manage their costs within the available revenue. For example they could substantially reduce their unit costs by operating within statutory staffing ratios – for three- and four-year-olds, either 1:8 or 1:13 with a graduate-qualified member of staff present, and 1:4 for two-year-olds.

There is potentially scope for improving average levels of occupancy, and for providers to flex their staffing in less busy periods of the year – in particular, we anticipate that providers will do this in order to help meet any increase in costs over time, particularly the National Living Wage.

Early years funding is distributed via local authorities, who retain a proportion of funding to enable them to centrally administer the free entitlement, and other services. The level of central spend retained varies by each local authority. The funding rate also includes the margin needed for local authorities to perform this function.

1 Department for Education – Early education and childcare, statutory guidance for local authorities

Section 1: the childcare market

Description of the market

Factors shaping the market

Providers' operating models

The formal childcare market has particular features which make it different to other markets

We have considered a number of factors that are likely to make the childcare market distinct from many other markets.

1) The relationship between providers and parents is long-term

Choosing a childcare provider to look after their child is a difficult and emotional decision for parents and they take account of a range of competing factors which are not typical when buying most consumer goods. Parents seem to favour providers based on convenience and their reputation; cost plays a much less important role.[1] What also makes this transaction atypical is that once their child starts attending a particular nursery, parents are unlikely to switch provision, for example because of the child's familiarity with surroundings or staff.

Providers rely on cross-subsidisation of funding between age phases, and therefore operate on the basis of having a mix of age groups, preferring for children to remain at their setting until they leave for reception class.

2) Providers are motivated to be in the market to provide good childcare outcomes as well as for commercial gain

Providers have reported having less of a desire to expand given the risk they perceive expansion to delivering personalised level of care.[2]

3) Parents highly value local convenience, safety and trust[1] and a personal service

Although both parents and providers prioritise quality in the market for childcare,[2] they each appear to use different proxies for determining quality.

Parents choose providers on the basis of convenience and provider reputation. These factors are not necessarily corollaries for underlying quality, which research suggests is driven principally by staff quality and pedagogy. Parents rank 'quality of the care' highly, along with the opportunity for the child to mix with other children. However one would need to disentangle precisely how parents gauge quality, further than the survey data allows.

Providers on the other hand seem to define quality as high staff to child ratios[3] and high staff qualifications. Evidence shows that the proportion of staff holding each level of qualification has significantly increased in recent years.[4]

4) There is a strong need for regulation to ensure minimum safeguarding and educational standards

There are a number of measures related to the safety and protection of children, including those covering the qualifications, knowledge and skills of staff; the need to conduct risk assessment and the need for criminal record checks.

The Early Years Foundation Stage framework ensures a consistent level of quality of learning across the country.

1 Childcare and early years survey of parents 2012-13
2 Deloitte primary research (unpublished)
3 i.e. more staff per child
4 Childcare and early years providers survey 2013

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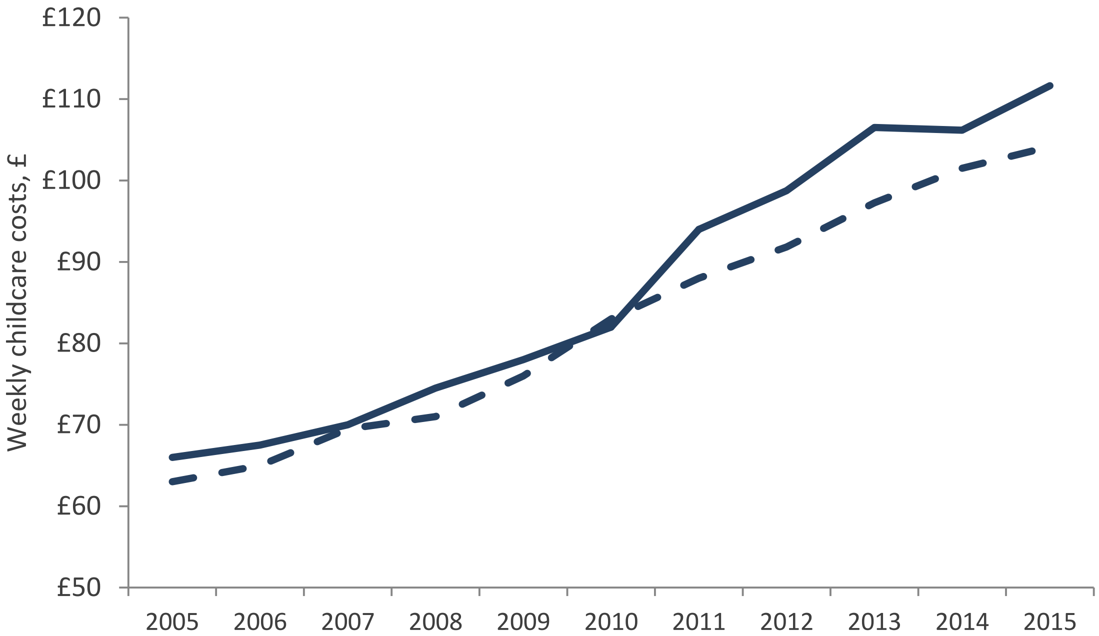
Childcare prices for parents have outstripped inflation over the last decade

Typical weekly childcare fees for a full-time nursery or childminding place[1]



Formal childcare prices for parents have outstripped inflation over the past decade. The average market price paid for 25 hours of nursery provision for children aged over two has risen by 69% in the last ten years.

During this time period, CPI inflation has been only 28%. One in five parents who have not accessed formal childcare cite cost as the key barrier.

Percentage change in childcare costs and inflation between 2005 and 2015[2]

	Nursery (Under 2s)	Nursery (2 and Over)	Childminder (Under 2s)	Childminder (2 and Over)	CPI Inflation
2005-2015	66%	69%	59%	65%	28%

1 Family and Childcare Trust's annual surveys: Over the years there have been some tweaks to the definitions and coverage of the FCT survey, so assumptions have been made to create a consistent time series

2 Family and Childcare Trust's annual surveys; Office for National Statistics http://www.ons.gov.uk/ons/rel/cpi/consumer-price-indices/october-2015/tsd-consumer-price-indices-october-2015.html

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A summary of the supply-side of the market

Overall, there are 81,560 early years registered providers for children under five[1]

Of these 34,000 are group-based. 47,560 are childminders, who comprise 58% of providers.

Focusing on group based provision, 76% (25,740) of providers in the sector are private and voluntary, 21% (6,960) primary school nurseries, 3% (890) in independent school nurseries and 1% (410) in maintained nursery schools.

Overall, there are 1,518,340 early years registered places for children under five[1]

1,258,640 (83%) of these are in group-based provision settings.

68% (1,036,460) of places are in the private and voluntary sector, 17% (259,700) with childminders, 12% (178,850) in primary school nurseries, 2% (24,270) in maintained nursery schools and 1% (19,070) in independent school nurseries.

Each three- or four-year-old place takes up an average of 18 hours of childcare per week[1]

This captures take up only by children receiving the free entitlement. Of the average weekly hours, an average of 14.3 hours are government-funded through the free entitlement.

The longest average weekly hours are taken in independent school nurseries (26 hours) and the private sector (20 hours). The shortest average weekly hours are in primary school nurseries (16 hours) and the voluntary sector (15 hours).

34,530 providers offer the free entitlement (funded)[1]

58% (20,160) of these are in the private and voluntary sector; 20% (6,960) in primary schools with nurseries; 18% (6,110) with childminders; 3% (890) in independent school nurseries and 410 (1%) in maintained nursery schools.

There are 626,610 free entitlement (funded) places, 98% of which are in group-based settings[1]

63% (394,520) of places are in the private and voluntary sector; 29% (178,850) in primary school nurseries, 4% (24,270) in maintained nursery schools; 3% (19,070) in independent school nurseries and 2% (9,900) with childminders.

Composition of providers in the market and hours taken by parents varies by region[1]

The private and voluntary sector has the largest proportion of funded places in most regions, ranging from 80% in West Midlands to 44% in Inner London. The only exception is the North East which has the largest proportion in primary school nurseries (51%). On the demand side, the highest average weekly hours per place are just over 21 hours taken in Inner London, and the lowest are 17 hours in the East Midlands.

The market for funded places varies between age phases[1]

The private and voluntary sector provides 92% of two-year-old places and 39% of three- and four-year-old places.

1 Please note various assumptions and caveats on subsequent slides that underpin this data
Figures are subject to rounding

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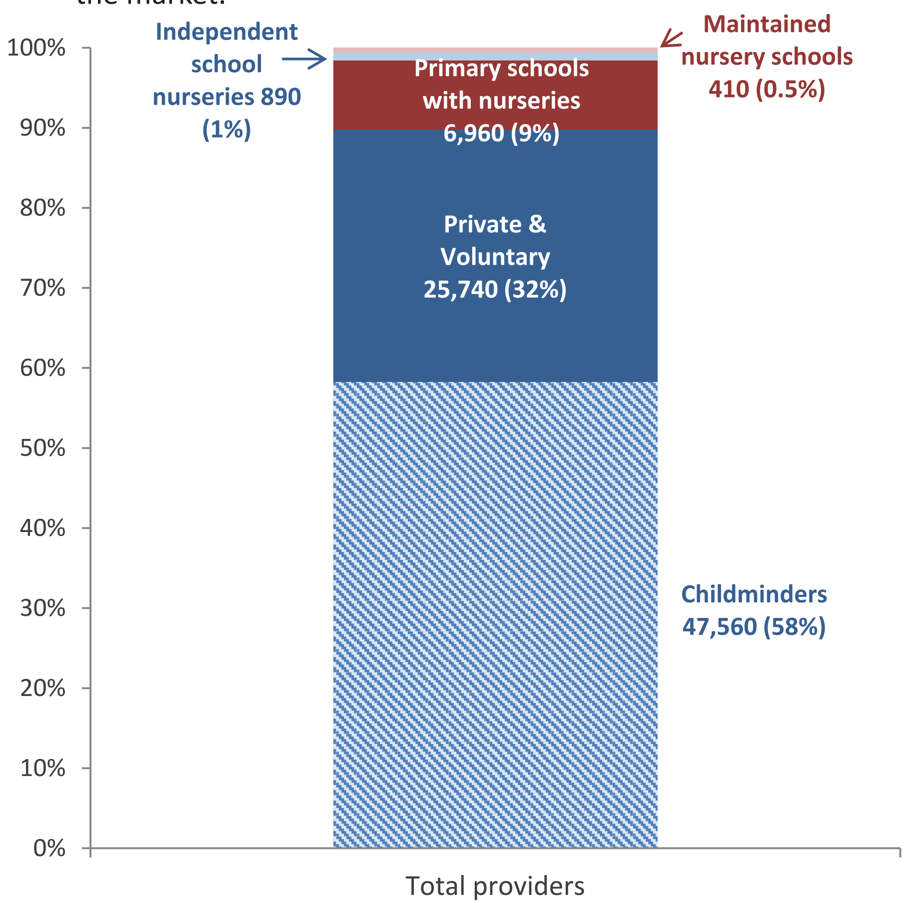
Nationally, formal provision for under fives is dominated by private and voluntary providers

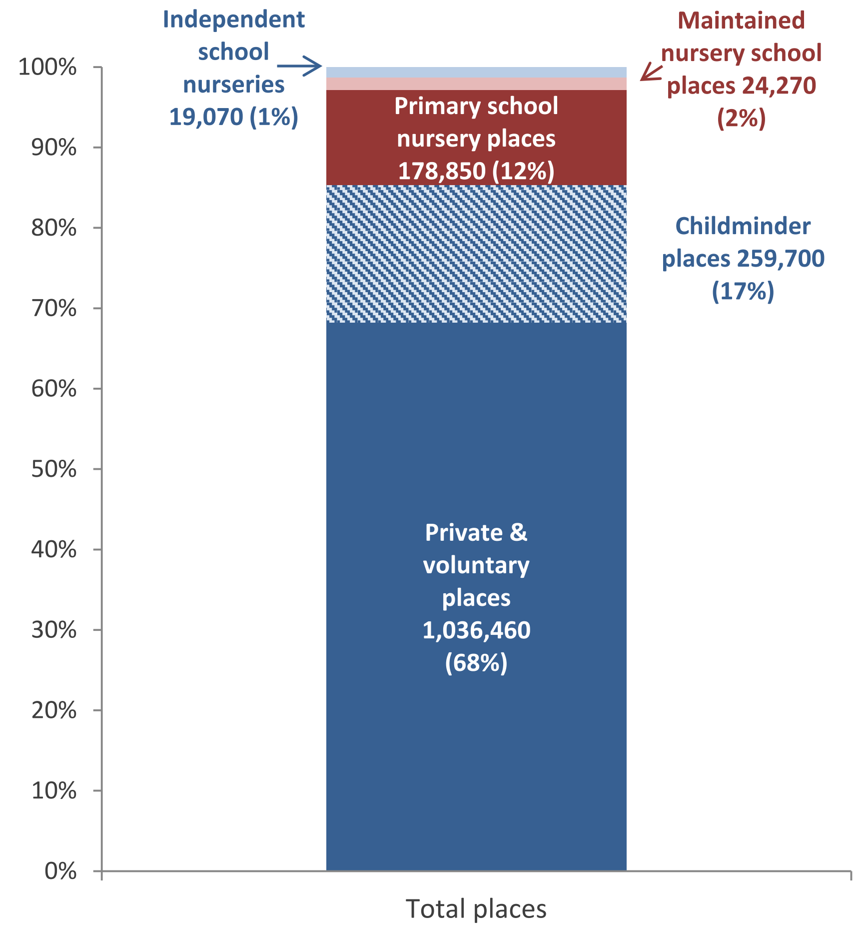
Number of providers, by market segment[1,3]

There are a total of 34,000 group-based providers. Excluding childminders, private and voluntary providers comprise 76% of the market.



Number of overall places, by market segment[1,2,3]

There are a total of 1,518,340 places for children under five years old, including group-based provision and childminders.



1. Sources: Childcare inspections and outcomes, Ofsted March 2015, Provision for children under 5 years of age, 2015. Figures exclude secondary schools and special schools. Figures are rounded to the nearest ten. 2. Analysis assumes 15 weekly hours of childcare per place for primary school nurseries, maintained nursery schools, and 25 weekly hours for private, voluntary, childminders and independent school nurseries. 3 There may be some double-counting between independent nursery provision and private and voluntary provision data

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Across England, three- and four-year-olds take an overall average of 18 hours per week

Average weekly hours of childcare per three- and four-year-old place[1]

Total free entitlement places	Number of places with additional hours paid for by parents/LAs	Percentage of places with additional hours paid for by parents/LAs	Average government-funded hours per place	Average overall hours per place	Average additional (parent or LA-funded) hours per place
891,330	261,050	29%	14.3	18	12

Hours which are currently taken up in early years settings are either paid for by the government through the free entitlement, by parents or local authorities (LAs).[2]

Across England, the average weekly hours taken by children at each place are 18 hours. Within this, children take an average of 14.3 government funded hours.

Limitations of the data

This data captures only hours taken by children that are receiving the free entitlement. Some of these children purchase additional hours at the same setting.

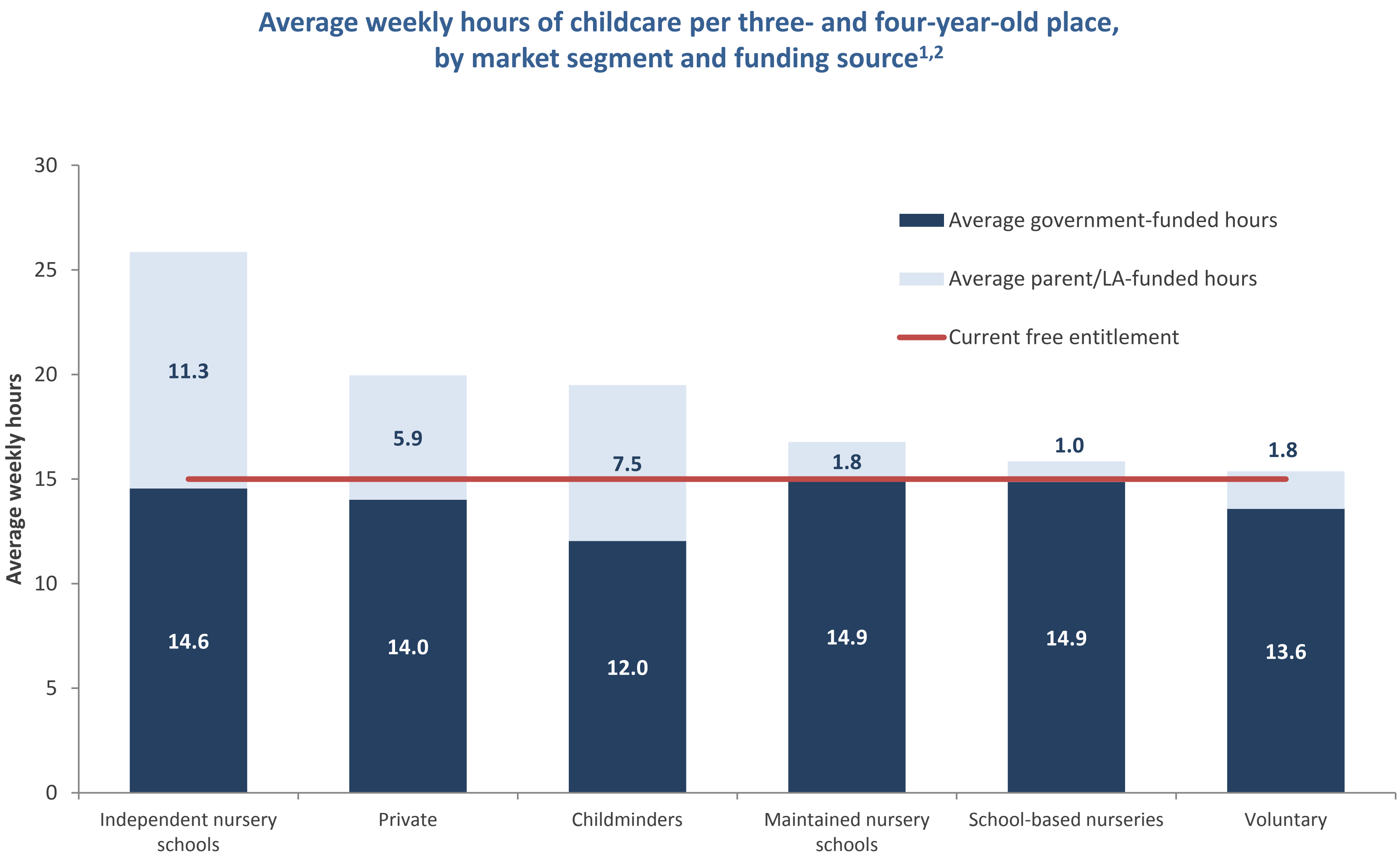
Children taking additional hours at more than one provider are treated as two different children therefore underestimating average hours. This affects only a small number of children.

This data excludes children's centre and reception data, and treats 'LA day nursery' and 'other' categories as 'voluntary' providers

Parent and LA funded hours are only captured in settings in which the child is receiving free entitlement hours. Children not taking up free entitlement places are not included. However in some LAs, parent/LA funded hours are not routinely recorded which will underestimate the overall average hour figures.

1 Source of data: Early Years Census and Schools Census, January 2015

The longest weekly hours are taken at independent school nurseries, private settings and childminders



1 For the full list of caveats, please see previous slide
2 Private, voluntary, independent school nurseries and childminders - Early Years Census 2015.
Primary school nurseries and maintained nursery schools - School Census 2015

Section 1: the childcare market

Description of the market

Factors shaping the market

Providers’ operating models

The formal childcare market has been shaped by various factors, which we have considered in the review

Factors shaping the market

1. Parental demand

2. Government funding

3. Market structure

4. Early years workforce

5. Regulation

1. Parental demand

Informal care is a vital element of childcare as a whole. Parents of younger pre-school children are less likely than parents of older pre-school children to take up formal types of childcare.[1] This may be in part due to the universal free entitlement for three- and four-year-olds.

The nature of parental demand contributes to shaping the formal market for childcare. Parents seem to select childcare provision on the basis of convenience and provider reputation.[1]

Parents who access information about children favour word of mouth.[1] At a local level, a significant majority of parents of pre-school children feel there is too little information about childcare provision.[1] This might partly explain why parents rely on informal information sources.

In a well-functioning market, parents should be aware of the choices available to them, and have the ability to assess information about services.

Alongside this, providers have reported generally a degree of customer loyalty and lack of desire to switch providers based on small differences in prices.[2]

The majority of parents of children with an illness or disability either believe there is insufficient local provision to meet their needs or they simply don't have enough information to know either way.[1] It is unclear from the information we have whether this is genuinely due to lack of provision or if it is again, an asymmetric information problem.

For families not using childcare, most say it is a choice as they would rather look after their children themselves.[1] Parents of younger pre-school children in particular believe their children are too young to be in childcare.[1]

The lack of affordability of childcare could potentially be a barrier to employment for parents. Families who haven't recently used childcare mention the cost of childcare as the greatest barrier for not doing so.[1] When asked which changes would enable childcare to better suit their needs, parents cite more affordable childcare as the most commonly needed change.[2] For mothers who are currently in work, the greatest enabler of them being able to work has been the reliability of childcare.[1]

Looking ahead to the introduction of the 30 hour free entitlement for working parents from 2017, we estimate that the national proportion of parents meeting the eligibility criteria of weekly earnings at 16 times the National Minimum Wage rate is 42%.[3] This assumes no behavioural change from parents and there is also likely to be significant variation geographically.

1 Childcare & Early Years Survey of Parents 2012
2 Deloitte primary research (unpublished)
3 Family Resources Survey 2014

Much childcare provision is informal

Proportion of parents using childcare, split by type[1]

	Age of children	
	0-2	3-4
Formal providers	37%	88%
Informal providers	35%	31%
Any childcare	**58%**	**91%**

The childcare market is a mix of formal and informal provision. An example of the latter is children looked after by grandparents.

Parents of children in both age groups use both types of childcare.

The free entitlement for three- and four-year-olds is a contributory factor to the high use of formal childcare by parents of three- and four-year-olds.

It is worth noting that this survey was undertaken prior to the roll-out of the two-year-old free entitlement.

1 Childcare & Early Years Survey of Parents 2012, table 2.3

Parental demand shapes the market, where parents value convenience and quality

Reasons for choosing main formal provider for pre-school children, by age of child[1]

	Age of child		
Reasons for choosing provider	0-2	3-4	Under 4
	%	%	%
Provider's reputation	67	64	65
Convenience	62	55	58
Concern with care given	61	45	51
Child could mix	56	46	49
Child could be educated	37	45	42
Trust	42	31	35
Older sibling went there	23	25	25
Economic factors	24	18	20
No other option	2	3	3
Child's choice	0	*	*
Other (e.g. family ties)	10	6	7

'Provider's reputation' and convenience are the most important factors for parents in choosing a childcare provider.

Reasons other than reputation and convenience vary significantly according to the age of the selected child.

Decisions based on economic factors such as price or affordability have a relatively low ranking for all ages, mentioned by just 20% of respondents.

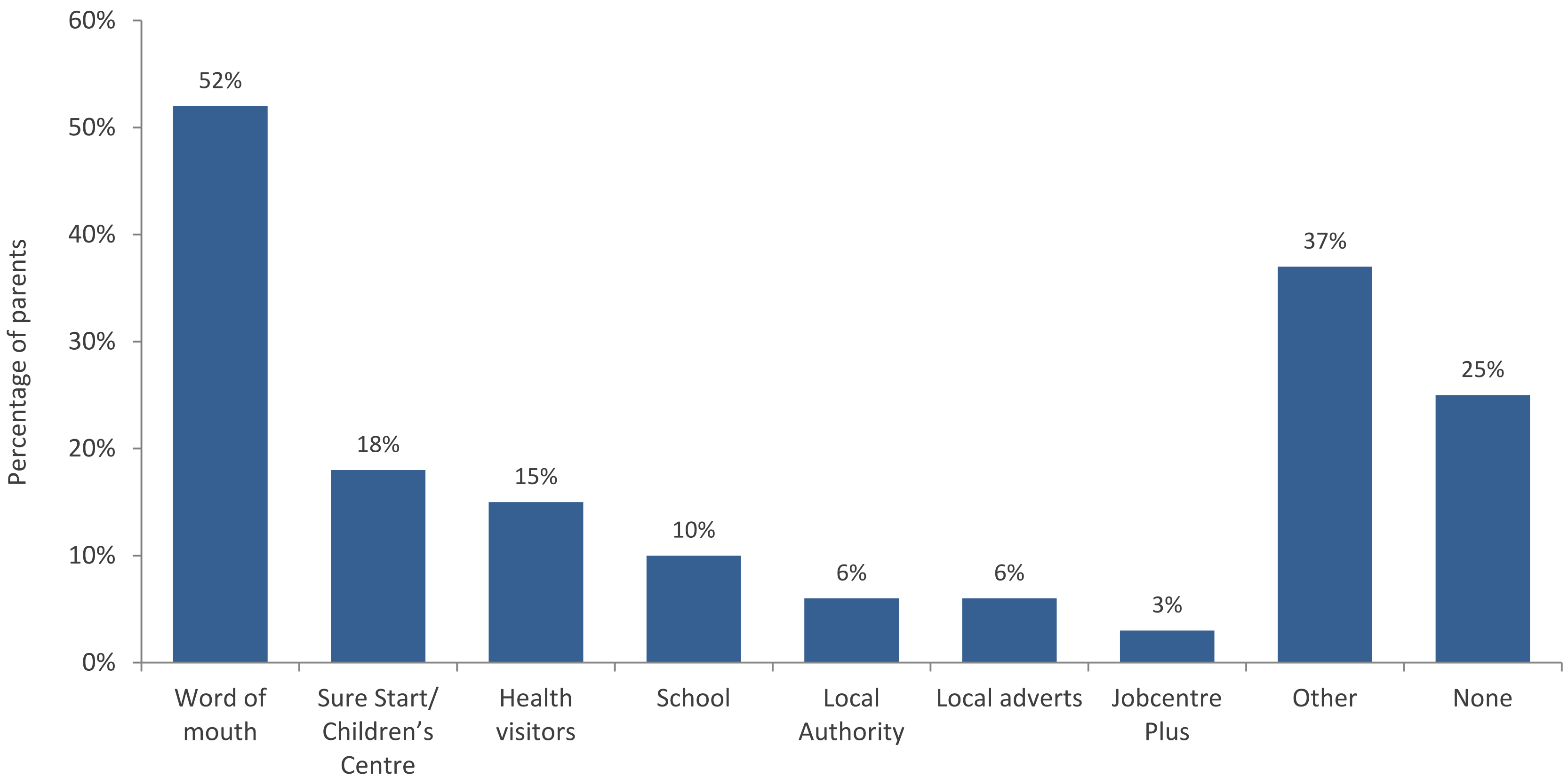
Economic factors may be less important to some parents given the availability of government-funded childcare.

Only a small proportion say there are no other options available to them.

1 Table 7.1, Childcare and early years survey of parents 2012-13

Parents who access information on childcare favour word of mouth

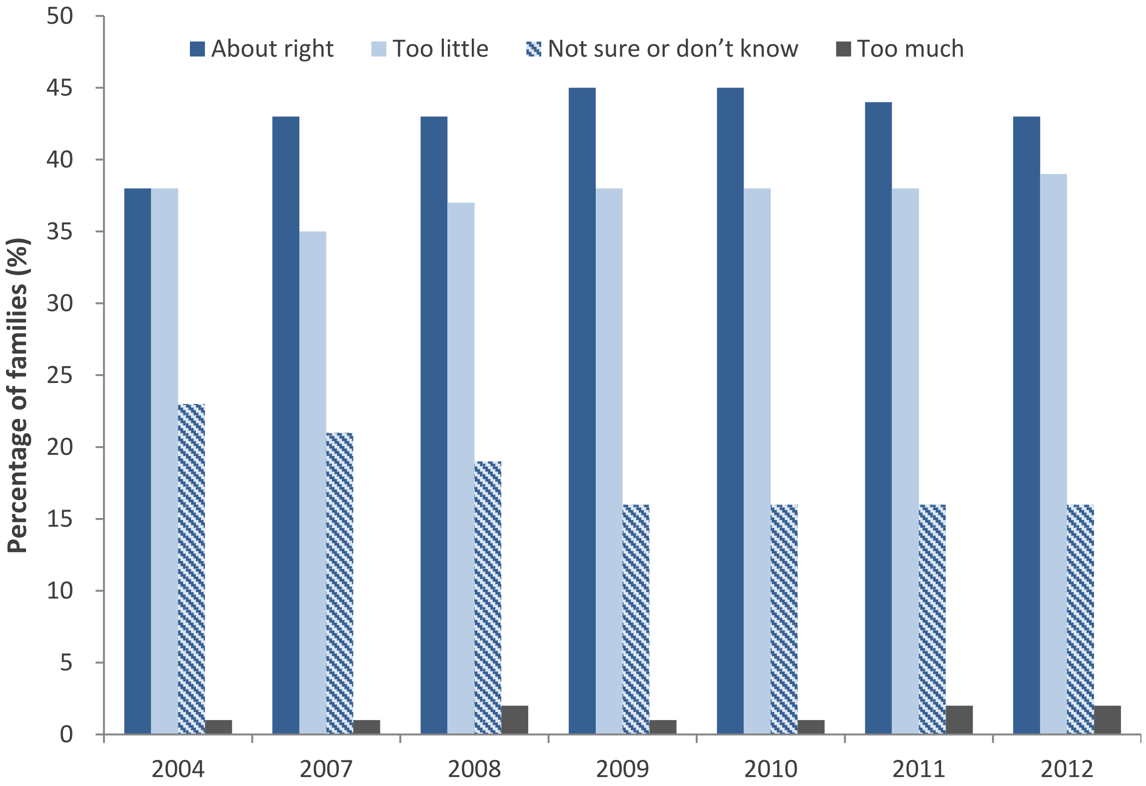
Sources of information about childcare used in last year by parents of pre-school children, regardless of whether parents used formal, informal or no childcare[1]



1 Table C6.2, Childcare and early years survey of parents 2012-13

Over one-third of parents feel there is too little information about childcare in the local area

Level of information about childcare in local area, 2004-2012[1]



A significant proportion of parents say there is too little information about childcare in their local area.

It should be noted that this includes parents of children of all ages, and not just parents of children of early years age.

We might expect parents of children of early years age to be more likely to feel there is sufficient information about childcare in the local area given they are more likely to take up formal childcare than parents of older children.

1 Table 6.3, Childcare and early years survey of parents 2012-13

Department for Education

Families who had not used any formal childcare would rather look after their children themselves

Reasons for not using any childcare in the last year[1]

	%
Choices	
I would rather look after my child(ren) myself	77
My child(ren) are old enough to look after themselves	7
I rarely need to be away from my child(ren)	15
No need to use childcare	1
My/my partner's work hours or conditions fit around child(ren)	0
My child(ren) are too young	4
Constraints	
I cannot afford childcare	18
My child(ren) need special care	0
There are no childcare providers that I could trust	4
The quality of childcare is not good enough	2
I cannot find a childcare place as local providers are full	1
I would have transport difficulties getting to a provider	1
I have had a bad experience of using childcare in the past	0

The majority of parents who have not used childcare prefer to look after their children themselves.

The most common constraint to using childcare is affordability, while provider supply, trust or quality appear to be less of an issue.

Nearly seven in ten (69%) children aged up to two years had not received nursery education.[2]

The most common reason for deciding against the use of nursery education is that parents feel their child is too young (55%). Nearly three in ten (29%) have other personal preferences for not using nursery education, while costs are a barrier for a fifth (20%) of parents. Problems with availability are mentioned by one in ten (10%) parents.[3]

1 Table 6.5, Childcare and early years survey of parents 2012-13. To note this is for families with children of all ages, and not just pre-school children
2 Childcare and early years survey of parents 2012-13

3 Table 6.8, Childcare and early years survey of parents 2012-13, To note answer are based on responses from parents in relation to during reference week

Department for Education

More affordable childcare is most commonly mentioned to better suit parental need

Changes to childcare provision that would make it better suited to parents' needs[1]

	%
Nothing	37
More affordable childcare	38
More childcare available during school holidays	20
More information about what is available	19
Longer opening hours	16
More childcare places - general	12
More flexibility about when childcare is available	12
Childcare more suited to my child's individual interests	10
More convenient/accessible locations	8
Higher quality childcare	8
Making childcare available closer to where I live	8
More childcare available during term-time	7
Childcare more suited to child's SENs	3
Other	3
Making childcare available closer to where I work	2

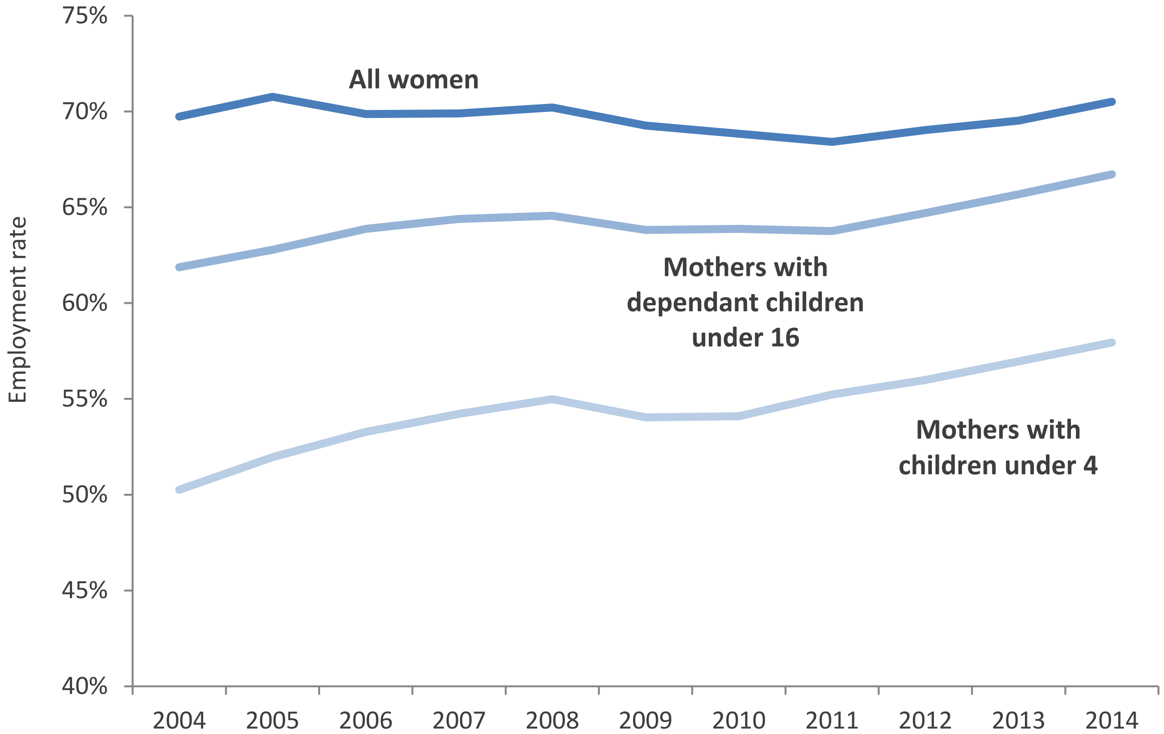
More affordable childcare is the most commonly mentioned change that would make childcare provision suit their needs better (38%).

37% of parents stated that nothing would make childcare better suited to their needs. The evidence does not allow an analysis of whether this response is from parents who are satisfied with their current provision, or changes would not persuade them to take up formal childcare.

1 Childcare and early years survey of parents 2012-13. To note this is for families with children of all ages, and not just pre-school children

UK maternal employment has been increasing in recent years but lags behind OECD average

Employment rates by maternal status[1]



The employment rate of mothers has been increasing, closing the gap on the overall employment rate within the UK.

The employment rate for mothers with children aged up to four years was 58% in 2014,[1] increasing from just over 50% in 2004.

The average age of first-time mothers has risen to 28.3 in 2013, up from 27.0 a decade earlier.[2] Mothers are therefore typically more established in the labour market than they were previously.

Internationally, the UK maternal employment rate lags behind the OECD average among mothers of those aged three to five.[3] This is despite the UK having a relatively high female employment rate.

1 DfE analysis of the Annual Population Survey data for England 2004 - 2014
2 Office for National Statistics, Birth Characteristics in England and Wales, 2014
3 OECD Family Database

Focusing on mothers only, reliable childcare is most frequently mentioned to enable mothers to work

Arrangements that helped mother to go out to work[1]

	%
Have reliable childcare	50
Relatives help with childcare	44
Children at school	38
Childcare fits with working hours	38
Have good quality childcare	34
Have free/cheap childcare	27
Friends help with childcare	11
Children old enough to look after themselves	10
Help with childcare costs through tax credits	5
Employer provides/pays for childcare	2
Other	1
None of these	8

Having reliable childcare and relatives who help with childcare helps around half of mothers to work. Having children at school and having childcare which is flexible enough to fit with working hours are also important factors.

Affordability of childcare is still an important contributor but of less importance than other factors.

Help with costs through government policy have been cited by only a very small proportion of mothers.

It should be noted that this survey covers mothers of childcare of all ages, and not just pre-school age children.

1 Table 9.8, Childcare and early years survey of parents 2012-13

The formal childcare market has been shaped by various factors, which we have considered in the review

Factors shaping the market

1. Parental demand
2. Market structure
3. Government funding
4. Early years workforce
5. Regulation

2. Market structure - strengths

Overall market assessment

The childcare market is very complex and is made up of a broad range of different provider types and contexts. The wide variety in types of provision, and different business models for delivering childcare, is striking.

Our overall assessment is that the market appears to function reasonably effectively.

The key strengths and weaknesses of the market, as we found them, are summarised here.

Supply has grown in recent years

The recession saw the childcare market contract for the first time.[1]

Since 2013 however, there has been improved economic performance, record high employment rates[2], and an introduction of a free entitlement policy for two-year-olds, which subsequently expanded in 2014.

These factors are likely to have contributed to the increased demand from parents; to which the sector has responded. The supply of day care places in the market has increased overall, with the growth in places driven by the number of nurseries opening outstripping the number closing.[1]

Barriers to entry, expansion and exit are moderate to low

Barriers to entry are low[3], and there is not much exit from the market except from childminders.[4] Feedback from providers suggests that commitment to providing early education and care to children as a key reason for staying in the market.[3]

Access to capital funding is reported to be limited and has been cited by providers as a major barrier to growth.[3] Many have stated that they do not want to expand their businesses.[3]

Provider shift towards full day care

There has been a sustained move away from sessional provision to full day provision in recent years.[5] Since 2001, the number of sessional providers has almost halved. However more than offsetting this decline is the increase in the number of full day care providers.

The trend in provision away from sessional care suggests an ongoing change in the nature of care that is needed by parents. Changes in female employment patterns are likely to have influenced this shift.

Quality is high

Quality in the market is high as defined by Ofsted. In January 2015, 85% of two-, three-, and four-year-olds receive their funded early education in settings rated good or outstanding by Ofsted.[6] This is up one percentage point on last year. However, the proportion of children in good or outstanding settings vary by local authority.

1 Childrens nurseries UK market report, LaingBuisson 2014
2 ONS Labour Market Statistics 2015
3 Deloitte primary research (unpublished)
4 Childcare inspections and outcomes 2015
5 Childcare and early years provider survey 2014
6 Provision for children under 5 years of age 2015

Market structure – challenges

Large numbers of small firms

The childcare market is highly fragmented and is characterised by an enormous number of individual nurseries, with nursery groups forming only a minority of the market. Currently the largest 20 nursery chains in the country have a market share of just over 10% between them.[1]

Ten years ago, the market was even more fragmented. Numerous smaller-scale businesses have sought to expand locally, and many regional-based nursery groups have increased coverage in their area. Since 2002 the number of nurseries operated by nursery groups has almost trebled from 945 to 2,790, and their share of nursery places increased from 14.6% to be 24.6% over the time period.[1]

Highly localised provision, with little consolidation

Parents choose a childcare provider based on convenience.[2] The highly fragmented nature of supply is therefore partly reflective of the highly localised nature of demand.

Although we have an increase in the number of nursery groups, the scale of consolidation has been modest as the average size of groups has not changed much.

A lack of consolidation is not inherently a weakness in a labour-intensive industry. However there is a great deal of variability in prices paid by parents, and high rates of price inflation overall.

1 Childrens nurseries UK market report, LaingBuisson 2014
2 Childcare and early years survey of parents 2012-13

The formal childcare market has been shaped by various factors, which we have considered in the review

Factors shaping the market

1. Parental demand
2. Market structure
3. Government funding
4. Early years workforce
5. Regulation

3. Government funding consists of free entitlements and subsidies

Government provides free childcare entitlements which are funded directly to providers, through local authorities, and is free to parents.

The entitlements are:

- A universal entitlement for all three- and four-year-olds to 15 hours per week for 38 weeks of the year. The entitlement has been in place for a number of years – the most recent change was to extend it to 15 hours (from 12.5) per week in September 2010.
- A targeted entitlement of 15 hours per week for 38 weeks of the year for the 40% most disadvantaged two-year-olds. This was introduced for the most disadvantaged 20% of two-year-olds in September 2013, and extended to 40% in September 2014.
- From September 2017 (September 2016 in some early implementer areas) three- and four-year-olds in families where all parents are working will be entitled up to an additional 15 hours per week for 38 weeks of the year.

Take up of funded free early education for three- and four-year-olds is very high, at 94% and 99% respectively.[1] 58% of eligible two-year-olds took up funded early education.[1]

Alongside the free entitlements, the government funds substantial childcare subsidies direct to parents. These cover school-age children, as well as children in the early years. The most significant of these are:

- The childcare element of working tax credit: eligible families can get help with up to 70% of their childcare costs. As working tax credits are replaced by Universal Credit, the childcare element will transition across, and will be increased to 85% of childcare costs.
- Tax-Free Childcare: Through this scheme, the government will provide 20% support on childcare costs up to £10,000 per year for each child. It is due to be introduced in 2017. (See below).
- Childcare Vouchers: this scheme is being phased out, following the introduction of Tax-Free Childcare, and is closed to new entrants. Employers opted into a government scheme to provide parents with childcare vouchers which could be used towards the cost of qualifying childcare. These were worth £124 per month for higher rate taxpayers; £110 per month for additional rate earners; and £243 per month for everyone else.

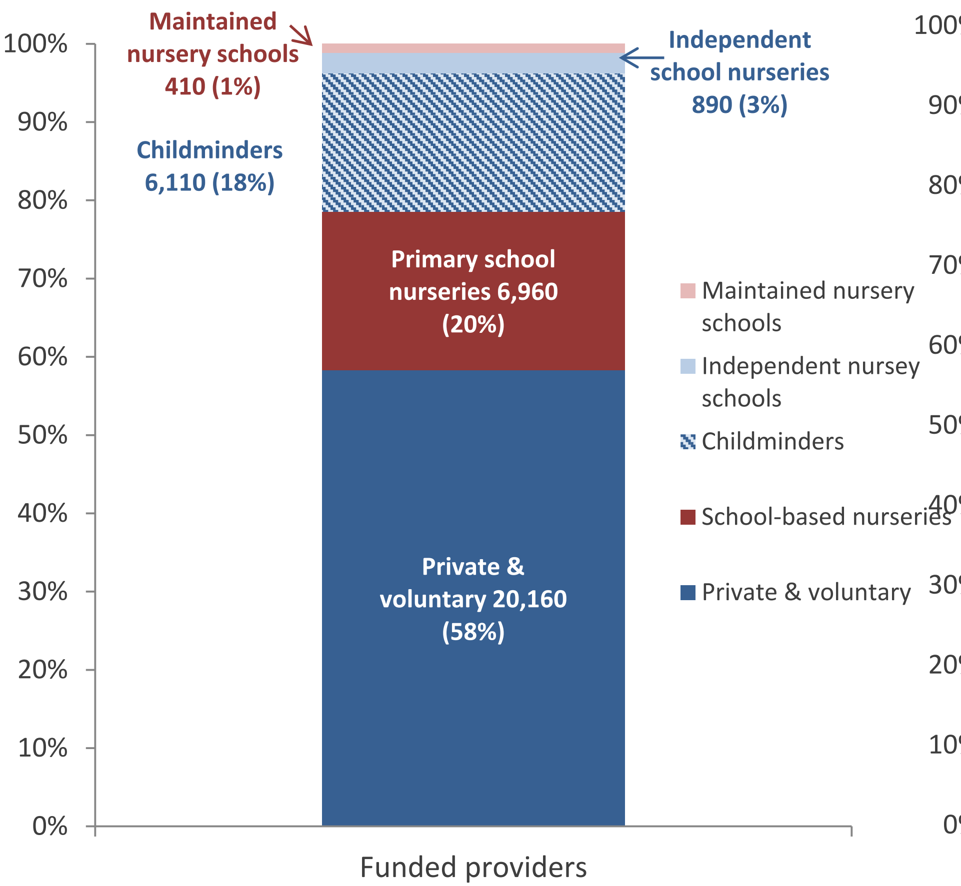
1 Provision for children under 5 years of age: January 2015 SFR

Department for Education

The majority of free entitlement (funded) places are delivered by private and voluntary providers

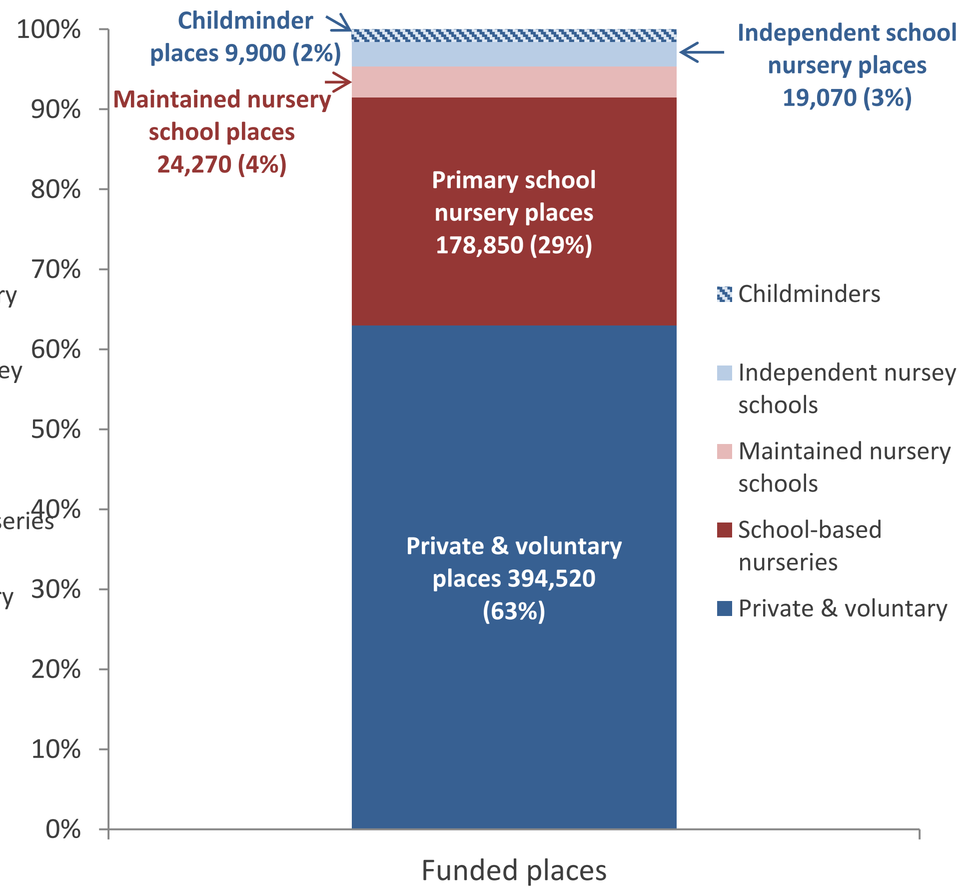
Proportion of providers by type[1,3]

There are 34,580 providers offering the free entitlement for two-, three- and four-year-olds; a large majority of these providers are private and voluntary.



Proportion of places by type[1,2]

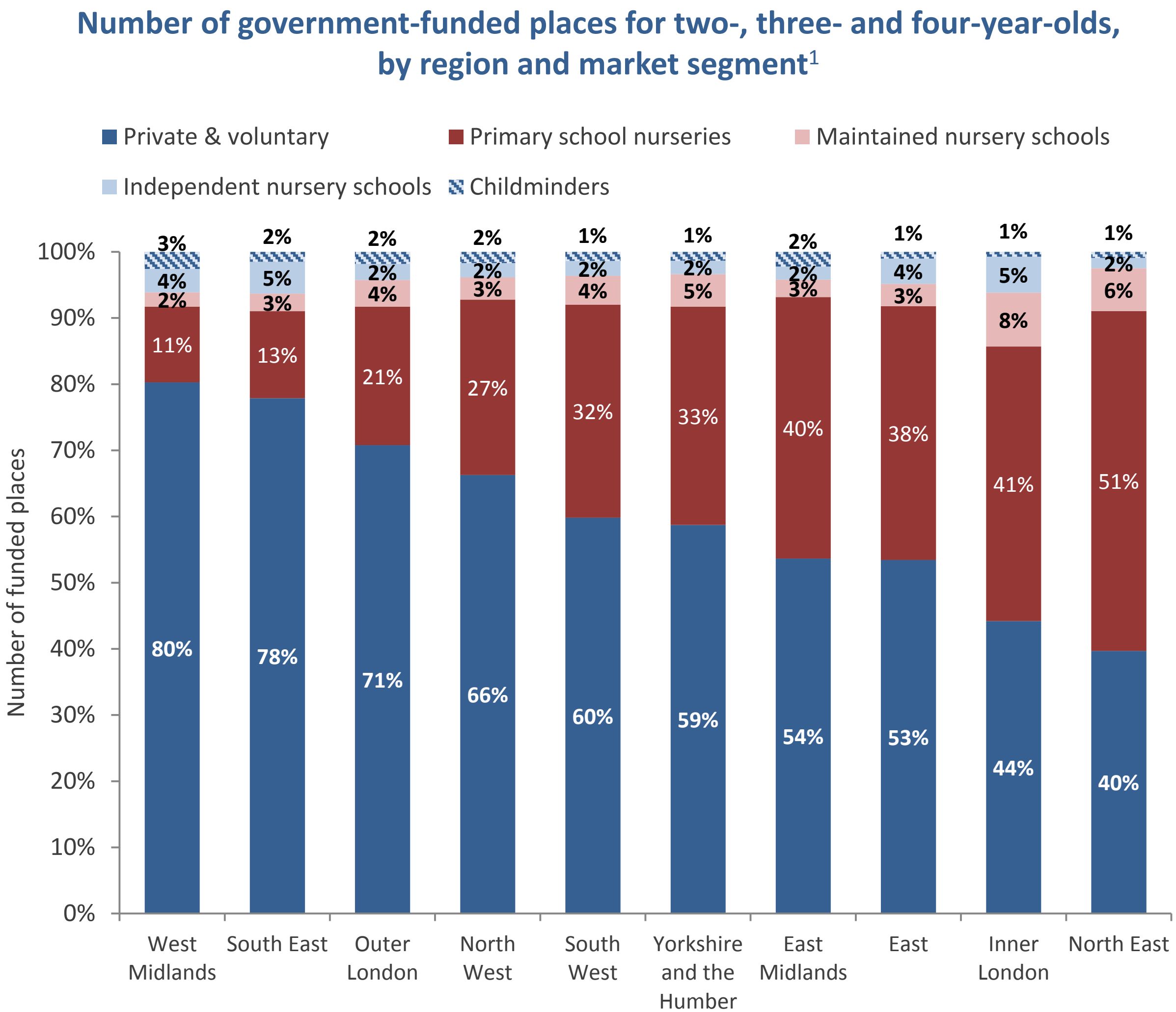
There are 626,610 free entitlement places for two-, three- and four-year-olds. Although childminders make up 18% of the funded providers, they contribute to only 2% of funded places.



1 Provision for children under 5 years of age: January 2015 SFR. Figures have been rounded to the nearest ten. 2 Analysis assumes a full-time place is 25 hours of childcare per week, with 15 hours per week for funded places.

3 Figures are for providers taking three- and four-year-olds. Analysis assumes no providers are taking two-year-olds only.

Types of funded places differ by region



The proportion of funded places offered by each provider type varies by region.

Private and voluntary provision has the majority of funded places in most regions, with a few exceptions.

The market in the North East has a greater proportion of places in primary school nurseries.

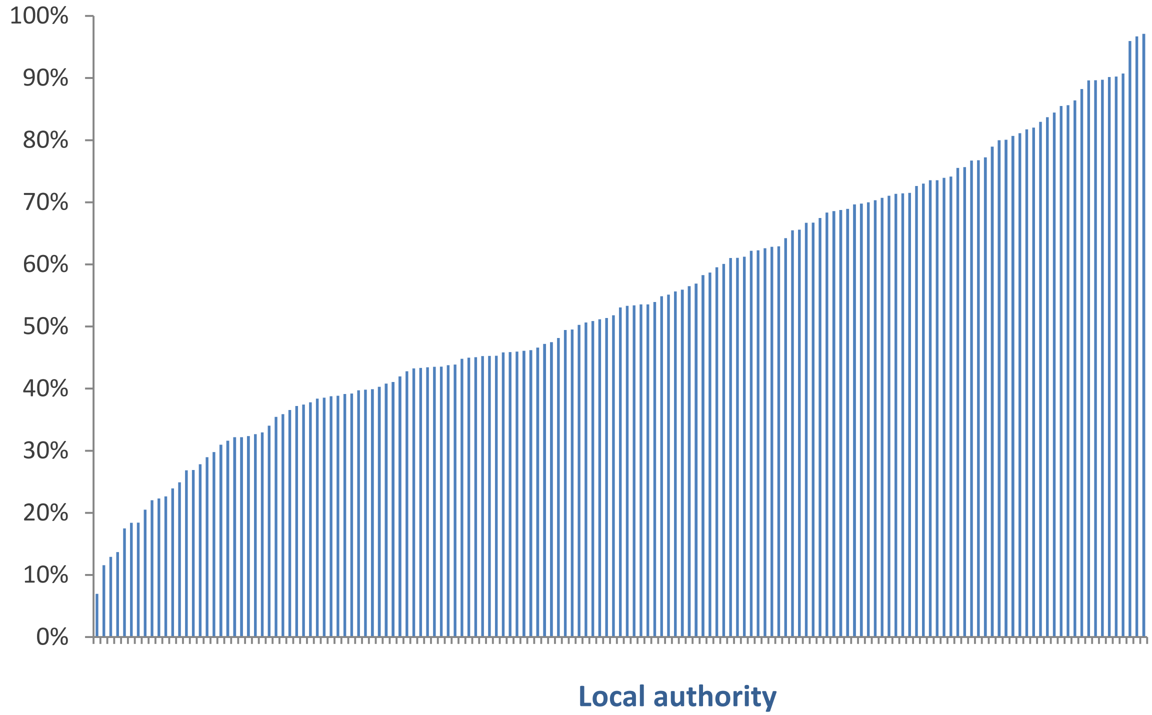
The funded market in Inner London is more balanced between private, voluntary provision and primary school nursery provision.

1 Provision for children under 5 years of age: January 2015 SFR

2 Analysis assumes a full-time place is 25 hours of childcare per week, with 15 hours per week for funded places.

The composition of the market varies by local authority

Proportion of three- or four-year-olds with private and voluntary providers in each local authority[1]



The composition of provider types varies widely across local authorities. Each bar represents the proportion of three- and four-year-olds in each local authority.

For example, the Isle of Wight has 97% of its funded three- and four-year-old places with private and voluntary providers.

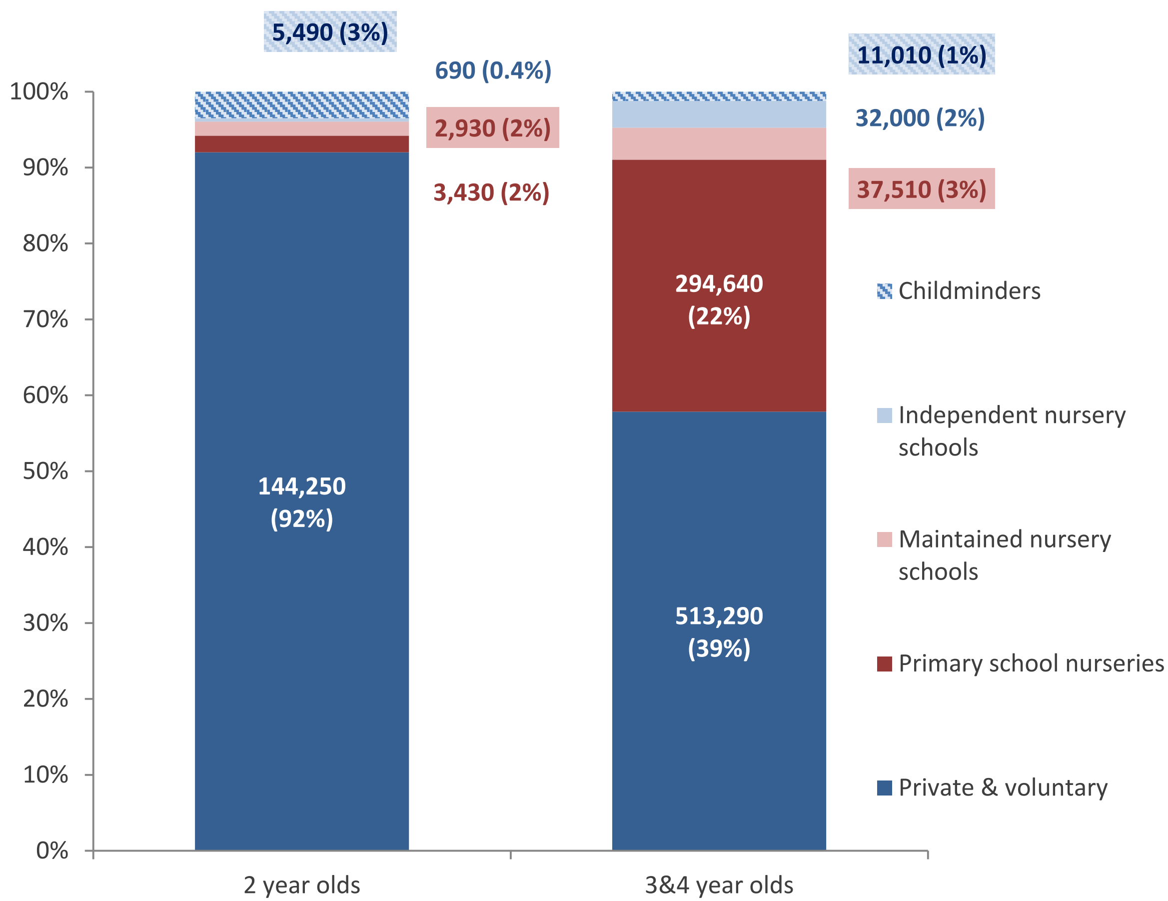
In comparison, Redcar and Cleveland has 7% of its funded three- and four-years with private and voluntary providers (its places are mainly in nursery classes attached to primary schools).

1 Table 2a, Provision for children under 5 years of age 2015

Department for Education

The market for funded places is rather different between two-year-olds and three- and four-year-olds

Proportion of children in government-funded early years places, by age[1]



While the two-year-old funded market is mostly served by private and voluntary providers, the three- and four-year-old market is much more mixed.

There are just under 160,000 two-year-olds and 1.3m three- and four-year-olds in funded early years places.[2]

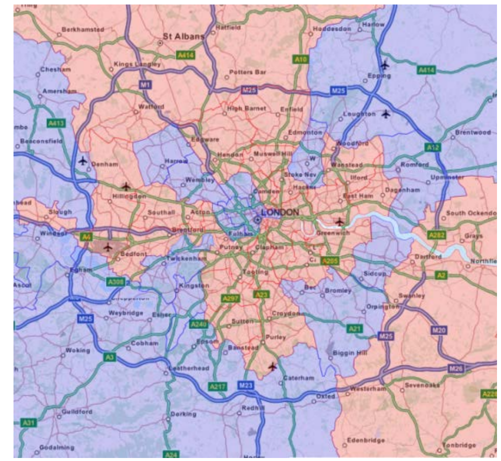
1 Table 1 and Table 1, Provision for children under 5 years of age 2015
Note that children in reception provision are not included here
2 This figures includes four-year-olds in reception provision

Department for Education

Private and voluntary provision is the largest type of provision in most places across the country

Provider type that provides the greatest number of funded places in each LA[1]

Focus on London[1]



Key:

Private and Voluntary

Primary school nurseries

Private and voluntary provision is the largest type of provision across most regions (86 LAs), with primary school nurseries the largest in mainly the North East and East Midlands (66 LAs). London has a mix of both private and voluntary and primary school provision.

1 Table 2a Provision for children under 5 years of age 2015 and Early Years Census 2015

Department for Education

The formal childcare market has been shaped by various factors, which we have considered in the review

Factors shaping the market

1. Parental demand
2. Market structure
3. Government funding
4. Early years workforce
5. Regulation

4. Early years workforce

Highest level of relevant qualification for all paid staff in full day care settings[1]

	2008	2009	2010	2011	2013
No qualification	8%	6%	6%	6%	4%
At least level 1	90%	93%	92%	93%	94%
At least level 2	89%	92%	92%	92%	93%
At least level 3	75%	82%	81%	84%	87%
At least level 5	7%	11%	13%	17%	20%
At least level 6	5%	7%	8%	11%	13%

There has been a trend in increasing staff qualification levels over recent years. The number of staff with no qualifications has dropped from 8% to 4%.

School-based providers have experienced similar trends. It is worth noting they generally have higher proportions of staff at each qualification level than staff in full day care settings.[1] Childminders have also seen increases in qualification levels in 2013 with 66% qualified at level 3, compared with 44% in 2008.[1]

The government introduced Early Years Teachers who are expected to meet the same entry and qualification requirements as teachers of school-age children. Since 2007, 16,159 individuals achieved Early Years Professional Status and Early Years Teacher Status.[2]

In 2013, The National College of Teaching and Leadership published new, more robust criteria for level 3 qualifications – the 'Early Years Educator' criteria which sets the minimum requirements which learners must demonstrate. Trainees now need GCSEs in English and maths to enter the workforce at level 3.

Providers however have reported that the opportunity for career progression for staff appears to be low. They have identified this as a challenge for them to compete for staff in the local labour market.[3]

1 Childcare and early years provider survey 2014

2 National College of Teaching and Leadership

3 Deloitte primary research (unpublished)

The formal childcare market has been shaped by various factors, which we have considered in the review

Factors shaping the market

1. Parental demand
2. Market structure
3. Government funding
4. Early years workforce
5. Regulation

5. Regulation – evidence suggests that regulations are not the main driver of provider behaviour

The main government means of regulating the early years and childcare market is the Early Years Foundation Stage (EYFS). Providers that follow the EYFS are inspected against it by Ofsted.

There are different registers/requirements for early years (age under five) and later years (aged over five). There are also slightly different requirements for different types of providers, reflecting the diverse childcare market, but these fall into two broad categories:

- providers that are required to follow the Early Years Foundation Stage (including maintained providers; private, independent, and voluntary providers; and childminders on the early years register), and
- those which are not (including childminders caring for children five and over on the General Childcare Register; and nannies).

Any childminder wanting to look after children under five has to follow the EYFS. Funded places are currently only delivered through providers that follow the EYFS.

The EYFS sets both learning and development requirements and safeguarding requirements for providers. Some providers are eligible to receive exemptions from the learning and development requirements, but there are no exemptions from safeguarding requirements.

The EYFS safeguarding requirements include minimum staff to child ratios; minimum staff qualification levels; and minimum space requirements.

Evidence suggests that while providers generally value the EYFS, they have reported that complying with regulation is complex and costly, their business models often go beyond the minimum required.[1]

In addition to specific childcare regulations, providers are also required to meet wider regulations which apply to all small businesses. These include essential health and safety requirements, planning applications and consents, and rules relating to audit and accounting.

1 See section 2 for details

Section 1: the childcare market

Description of the market

Factors shaping the market

Providers' operating models

Department for Education

Providers' operating models

Within the statutory requirements and the nature of local parental demand, described above. There is diversity in how providers choose to run their business. Key features relating to providers' operating choices include:

Opening hours

Opening hours vary widely across settings. For example, this can include 'sessional' providers providing 15 hours per week, and full day care over 50 hours per week (8am to 6pm). Full day care can allow a provider to spread their overheads and offer a flexible mix of provision, including before- and after-school.

Term and non-term time provision

Providers typically either open all year round or for 38 weeks, matching the school terms. This is determined by the mix of government-funded and parent/LA funded hours the provider chooses to offer. Where there is sufficient local demand, year-round provision can be more sustainable as overheads can be spread over more weeks of the year.

Size of setting

The size of the premises the provider owns/rents ('floor space'), the total number of places the provider registers with Ofsted, and number of staff all vary widely. All providers will have a minimum scale at which they can sustainably operate, with potential for 'scale economies' above this threshold level. Again, the size of setting is a provider's choice, but one shaped by local demand.

Number of sites

The majority of providers operate from a single nursery site, but around 25% of the day care market is comprised of nursery groups[1], with 3 sites or more. Groups are typically configured to spread some of their overheads across their sites, for example by sharing back-office functions, management, administration, catering, and the costs of staff training.

Co-location

Following a similar rationale to chains, some nursery sites will co-locate on or next to a school or children's centre. Again, this can be mutually beneficial, allowing resources to be shared and working in partnership to build relationships with local parents, children and agencies.

Staffing

Within the above setting configurations, choices over staffing models become the key component in how the setting chooses to run. This is explored in much more detail in Section 2, where the cost implications of these choices are assessed in detail. Key features include the choice of staff to child ratios, determined by children's needs, staff quality, and the flexibility to respond to fluctuating demand. Many good and outstanding settings use a range of staff to child ratios with a mix of qualification profiles, typically above minimum statutory requirements. Some settings also have more flexible staffing arrangements in place so that they can respond to fluctuations in demand.

1. LaingBuisson 2014

Learning from best practice – examples of efficient and innovative practice

In conducting this review, we have seen remarkable examples of innovative and efficient providers, offering a great service to parents. Below are a handful of case studies exemplifying best practice.

1. Childcare Hub in Northumberland coordinated by the local authority taking a joint approach to issues

The Hub includes primary schools, a children's centre, a playgroup and two childminders. It has established mutual understanding and a joint approach to issues when they arise; using a common policy to tackling behavioural issues for example.

The Hub encourages its members to visit each others' settings, and get new ideas to use within their own settings, creating an element of healthy competition. This raises standards and quality.

The Hub also encourages its members to think about parent/carer need within the local area, and how they might be able to meet them as a partnership. As a result parents are more aware of the options available locally, resulting in the needs of children and their families being met in a consistent and helpful way.

2. Childcare Hub in York provides seamless, blended childcare for parents

It comprises four providers based just a short walking distance from one another. Three are early years settings and one is a breakfast, day and after school provider attached to a primary school.

The Hub has a strong track record of delivering positive impacts for parents/carers and children through their blended childcare offer. This allows parents of children attending one setting to drop off or collect their children at another. Children are transferred between the settings by staff throughout the day.

Sharing best practice and driving quality improvement are both important aspects of the Hub; members share learning from Ofsted inspections for example. For some of the parents the flexible childcare arrangement has allowed them to resume full-time working hours.

3. Flexible, full-day provision all year round in the North West

An academy in St Bede, Bolton has set up a subsidiary company. It is overseen by the academy trust and provides early education to the local area. It runs five nurseries altogether, all of them offering flexible, full-day provision all year round. Funded hours can also be used flexibly across the week and across the whole year.

Section 2: Analysis of the delivery costs of early education and childcare

Introduction

This review presents the key findings from the Department for Education's childcare and early education representative cost model.

The model was designed to enable a better understanding of the unit costs per hour of childcare, by age group and across different types of providers.

This considers the resource inputs associated with each hour of care, and cost drivers at the setting-level.

The model has been used to produce a set of representative cost estimates, but also supports sensitivity and scenario analyses.

This section of the review is divided into the following sub-sections:

Summary: Key findings from the cost model.

Approach: The principles of a 'bottom-up' economic modelling approach, our framework, its limitations and challenges.

Representative provider cost analysis 2014/15: The range of unit cost estimates for archetypal providers. These aim to provide a set of national level benchmarks, based on how providers operate at present.

Cost sensitivity analysis: Tests the modelling assumptions and assesses how unit cost estimates vary for a range of operating models. This section also considers cost differences across the country and for different types of children.

Cost efficiency analysis: Assesses the sensitivity of unit costs to demand management, staff scheduling and scale economies.

Review of childcare cost research: Compares the estimates presented in this report to other, recent research on the cost of childcare.

Revenue and profitability: In the context of the cost analysis, considers evidence on pricing, income and profitability.

Cost inflation and the National Living Wage: Assessment of the potential pressures on unit costs over the next five years.

Appendix: Details the inputs and assumptions used in this report, and their sources.

Summary

Unit costs vary widely both across and within core provider segments. The table below shows representative estimates of the unit costs of provision for group-based providers.

Costs are shown for commonly reported staff to child ratios used by providers - for private and voluntary providers these are: 1:6 (the average) or 1:8 (statutory minimum) for three and four year olds; and 1:3.2 (average) or 1:4 (statutory minimum) for two year olds. For school nurseries, we assume a 1:10 (average) or 1:13 ratio (statutory minimum) - these lower ratios are available for all types of graduate-led nurseries, but much more typically utilised by schools. Lower ratios in schools partly offset higher levels of staff qualifications, pay and pension contributions which drive up unit costs in school-based nurseries.

Staffing requirements constitute by far the largest share of total costs across all provider segments. Differences in unit costs across the setting as a whole are, therefore, driven by how efficiently staff are utilised. Staff costs include allowances for non-contact time and on-costs, and assume the average qualification profile for each provider segment. The qualification mix is well above statutory minimums.

The analysis shows that costs are determined by how far above statutory requirements providers choose to operate. Costs are also highly sensitive to levels of occupancy, and how flexibly the setting manages their staffing requirements in response to fluctuating demand. Representative costs (see table below) assume an average level of occupancy, and reports the cost per occupied hour. However, the model assumes a provider would needs to staff 'as if' all available places are occupied (raising costs). In practice, we show that providers benefit from more flexible staffing arangements.[1]

Representative costs per contact hour, England 2014/15

(staff to child ratio in parentheses)

Core provider segment	**Aged two**		**Aged three and four**	
	Hourly cost at average ratios	Hourly cost at statutory ratios	Hourly cost at average ratios	Hourly cost at statutory ratios
Private	£5.87 (1:3.2)	£5.00 (1:4)	£4.25 (1:6)	£3.56 (1:8)
Voluntary	£5.39 (1:3.2)	£4.54 (1:4)	£3.81 (1:6)	£3.14 (1:8)
Primary schools with nursery provision	-	-	£4.37 (1:10)	£3.60 (1:13)

1 See for example NLH Partnership (2015). Cost of delivering the early education entitlement.

Department for Education

Section 2: Analysis of the delivery costs of early education and childcare

Department for Education

Approach: Conceptual framework

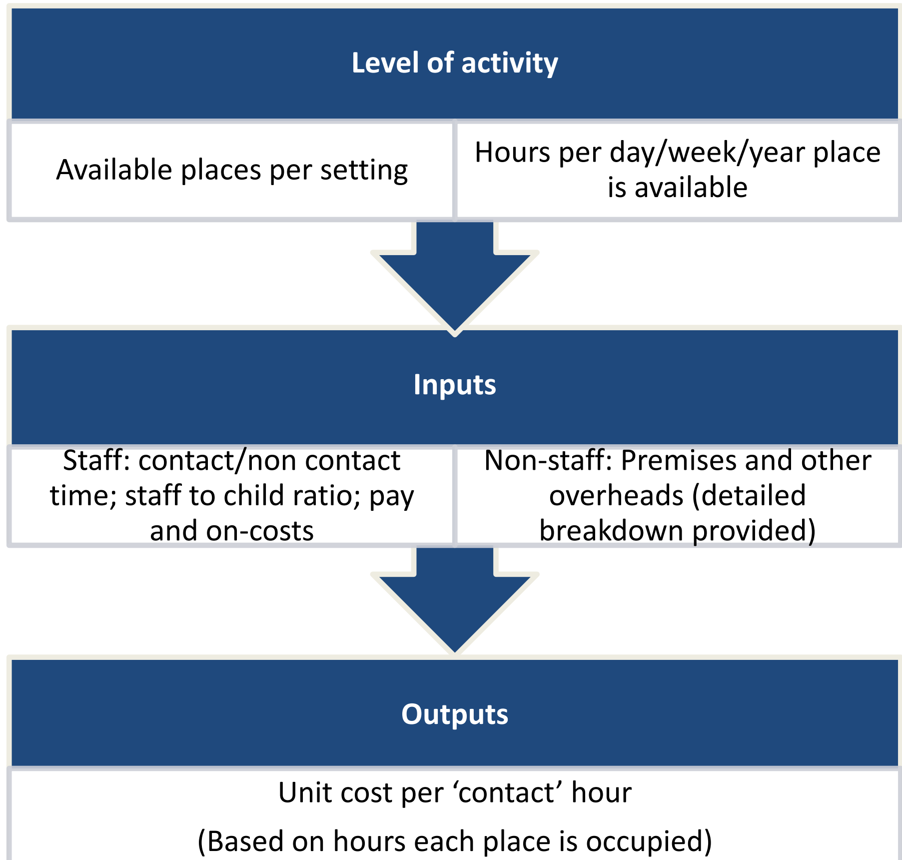
Estimating costs from the bottom up

Our conceptual approach is informed by National Audit Office guidance on how to determine costs and prices in public services markets; this states that Government "must understand the costs of provision, including the various elements that make up the costs, for the different types of provider in the market" (NAO, 2013).[1] We have also drawn on Loughborough University's research summary on cost calculators for children's services (Holmes et al., 2014).[2]

The aim of our 'bottom up' approach (e.g. Beecham, 2000)[3] is to identify the constituent parts that form the delivery of a service and assign a value to each of these parts. The sum of these values provide the unit cost of the service. This approach facilitates a more detailed and transparent picture of unit costs, linked to estimates of required levels of activity, and is particularly well suited to childcare, where inputs vary by the level of a child's need.

The NAO (2013) highlighted the principles of cost modelling in the care sector, which include the advice that: "no model can reflect nor should attempt to reflect the full range of provider operating models or local circumstances. The cost matrix is intended to provide a transparent starting point for providers, commissioners and potentially, self-funders." [4](Source: Working group of representatives of social care providers and costing experts).

The main outputs from the model are the estimated unit costs per hour, by age group and provider segment. This is built on total resource requirements for a given level of activity, illustrated below.



1 National Audit Office (2013). Deciding prices in public services markets: principles for value for money. Principles paper, www.nao.org.uk 2 Holmes, L et al. (2014). Cost Calculator for Children's Services Research and development overview and summary.

3 Beecham, J. (2000). Unit costs – not exactly child's play: A guide to estimating unit costs for children's social care. 4 Working group of representatives of social care providers and costing experts

Approach: Inputs and outputs

Inputs

The average number of available Ofsted-registered places across different age groups are estimated for each provider type.

Total staff hours required across age groups are estimated taking into account contact and non-contact hours, managerial and administrative costs, with additional allowances for training, sickness, and holiday absences.

The relevant staff to child ratio is applied to estimate staffing requirements across age groups. In the representative cost analysis, this assumes the staff to child ratio at which providers typically operate.

Staff costs are estimated based on mean hourly pay by qualification level, with allowances for national insurance and pension contributions. Total staff costs are based on the relevant opening period for the setting.

Uplifts are then applied to estimate non-staff overheads, based on the estimated share of costs, for the relevant opening period. The uplifts are applied on the total staff costs in the setting, across all age groups. Overheads are allocated equally across all contact hours and as such, do not vary across age groups.

The costs associated with staffing requirements assume that all staff are paid. In practice, unpaid placement students and other volunteers accounted for eight per cent and two percent of staff in full day care settings, respectively.[1] This may reduce providers' financial costs in practice, but the aim of the 'economic' model is to account for the 'opportunity cost' of staff time, more fully.

Outputs

Unit costs are estimated by age group based on the number of children present in that age group, for each representative setting.

The unit costs are expressed per 'contact' hour that a child is present. This is, therefore, sensitive to estimated occupancy levels.

The inputs and assumptions used in the analysis and their sources are provided in the appendix.

Assumptions are set out in detail, for each provider segment, in the appendix.

1 Childcare and Early Years Provider Survey 2013

Approach: Data and information

In assessing inputs and costs, we drew on a range of sources, making judgements about their representativeness, robustness, provider coverage and required level of detail.

The assumptions in the model have been developed using publicly available data where possible, on average provider types, supplemented by information collected through a survey of providers and follow-up interviews undertaken by Deloitte, our consultancy partners throughout the review.

For example, we considered that the most robust data on average childcare workforce pay and qualifications was available through the Childcare and Early Years Provider Survey 2013.

More detailed information on the balance between contact and non-contact time was reported in CEEDA (2014) Counting the Cost.

Given the that the information relates to different time periods, all input costs have been re-based to 2014/15 prices, using the HM Treasury GDP Deflator to inflate these costs where necessary.

Whilst the representative costing model is calibrated to data which, in our judgement, was the most appropriate, it remains important to interpret these estimates in light of further sensitivity testing and scenario analyses. Taken as a whole, the analysis provides a strong assessment of typical provider costs, whilst recognising the diversity of business models, and variation across areas and child needs.

Illustration of the range of source underpinning key assumptions[1]

Inputs	Source
Average number of places per setting	Childcare and Early Years Provider Survey 2013
Distribution of children by age	Childcare and Early Years Provider Survey 2013
Opening hours, weeks per year	Review evidence including Deloitte survey and follow-up interview
Average occupancy rate	CEEDA (2014); Childcare and Early Years Provider Survey 2013
Staff to child ratios	NLH Partnership (2015); NAHT (2015); Childcare and Early Years Provider Survey 2013
Staff pay by qualification level	Childcare and Early Years Provider Survey 2013
Non contact time	CEEDA (2014); Childcare Provider Finances Survey 2012
Breakdown of non-staff overheads	Childcare Provider Finances Survey 2012

1 Full citations for these sources and how we derive our assumptions are detailed in the Appendix.

Approach: Strengths and limitations

One of the key challenges we faced in producing this analysis has been the wide variation in operating models, across and within provider segments.

There is no single set of estimates that can represent all providers but the modelling framework offers the flexibility to analyse how sensitive the estimates are to a range of cost drivers. Unlike survey-based cost research, a ‘modelled’ approach allows us to analyse each cost driver in turn, holding other modelling inputs fixed.

An economic modelling approach also helps to overcome some of the challenges that survey-based estimates face, where the provider’s costs of childcare are not always reported accurately or in full.

For example, school-based settings do not always report all of their nursery overheads. Some schools do not allocate premises costs directly to the nursery, as these are often covered by the schools budget and/or provided by the local-authority.

Similarly, childminders typically don’t report labour and premises costs, even though these are key inputs to their delivery of childcare. An economic model (in contrast to a financial accounting approach) can impute these values to reflect the opportunity cost associated with all labour and capital inputs, even where these are not directly reported by providers.

We have taken a transparent approach in allocating overheads, to estimate the unit costs for each age group and session.

Unit costs by age group reflect the specific staffing levels required during contact time. Other overheads are then allocated equally across all contact hours and therefore do not vary across the age groups.

In practice, some settings deploy a different staffing and qualification mix across age groups and sessions, for example by deploying more highly-qualified staff with older children. Older children also require more floor space, which could affect the allocation of premises costs, in practice.

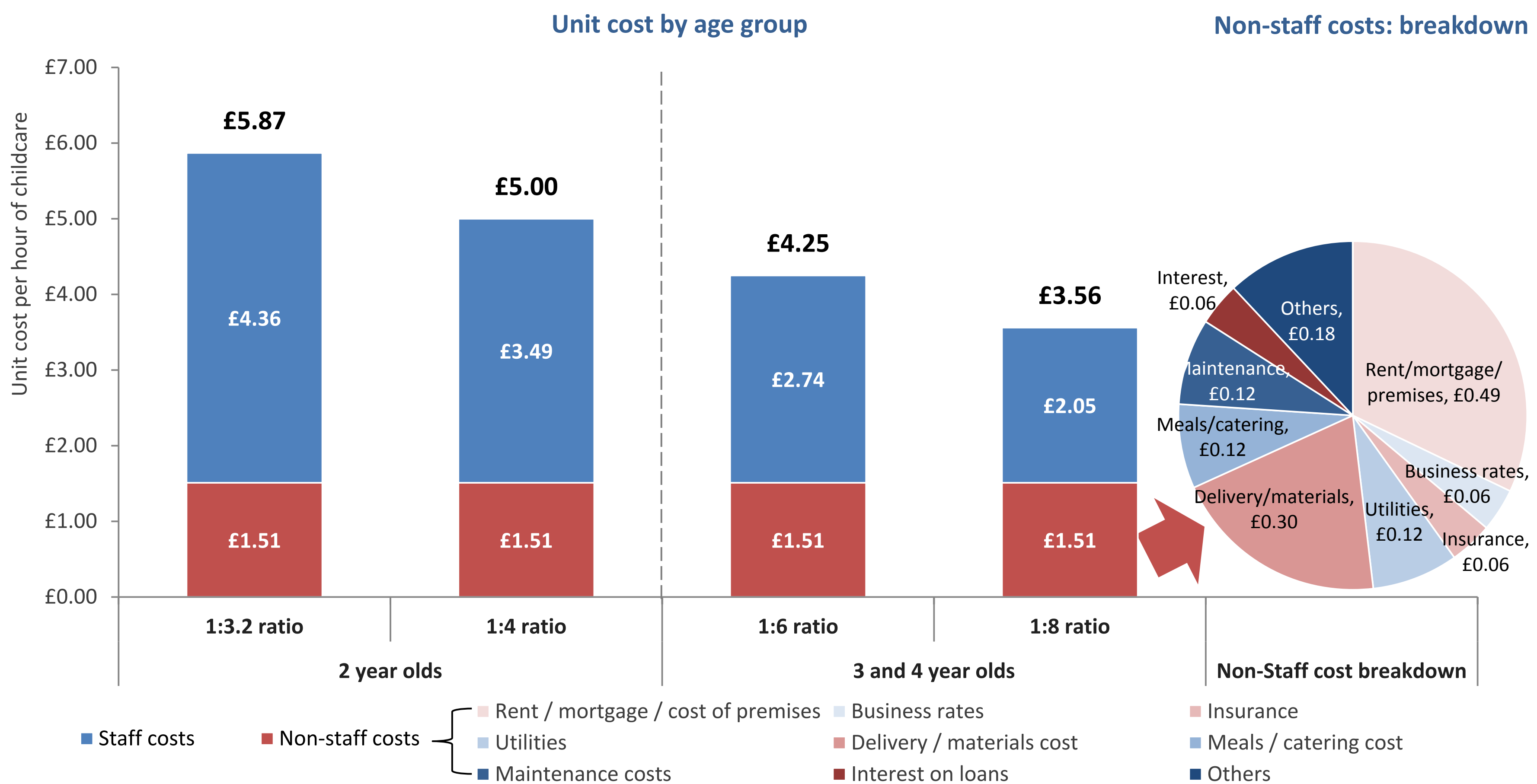
Costs are often spread across different mixes of provision, for example where a setting offers before- and after-school clubs alongside their pre-school childcare. We do not capture these practices within the model, but this represents another way in which pre-school childcare costs can managed.

Section 2: Analysis of the delivery costs of early education and childcare

Department for Education

Private group-based providers

Representative unit costs per contact hour by age (England, 2014/15 prices)



See appendix for detailed assumptions

Private group-based providers

Private group-based providers are for-profit entities. They comprise the largest segment in terms of share of places provided.

The representative cost model assumes an average of 49 registered places, for a provider open five days per week and 51 weeks per year. The number of places and opening times vary widely in practice, with many providers open for part of the day ('sessional') and/or term-time only.

As shown in the table opposite, many private providers operate either at or above statutory ratios. A 1:6 ratio is common, and the model estimates a unit cost of £4.25 in this case. Holding other inputs equal, the cost falls to £3.56 at a ratio of 1:8, the statutory minimum. In research by NLH Partnership (2015) around one quarter of providers operate at statutory ratios.

Higher unit costs for two year olds are driven a statutory ratio of 1:4 (£5.00 unit cost). In practice, settings operate at an average ratio of 1:3.2 (Childcare and Early Years Provider Survey 2013), increasing our estimated cost to £5.87.

The model assumes staffing requirements are based on the number of available, rather than occupied places. However costs are then divided through by filled places only, to estimate the unit cost per 'contact' hour.

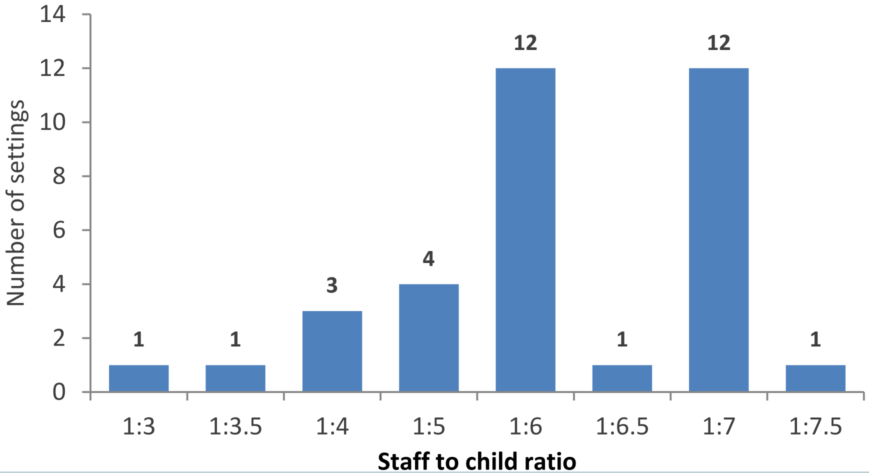
Staffing requirements are uplifted by 10% for non-contact hours, 6% for admin and managerial time, and 10% for training, sickness and holiday entitlements.

Staff costs are assumed to account for 72% of the provider's overall costs, with the remaining 28% accounted for by a range of other overheads, proportionately allocated to each contact hour delivered.

The unit cost includes a proportionate share of meals and catering (£0.12), and 'other' costs, which can include specialist support and trips outside of the setting. These cost estimates do not, therefore, equate directly to the cost of delivering a government funded childcare place, as some of these items would be paid for separately by parents.

Note that the unit costs do not allow for a profit or surplus, which is considered separately in our analysis.

Ratios adopted within settings with higher than statutory ratios when providing care for three and four year olds[1]

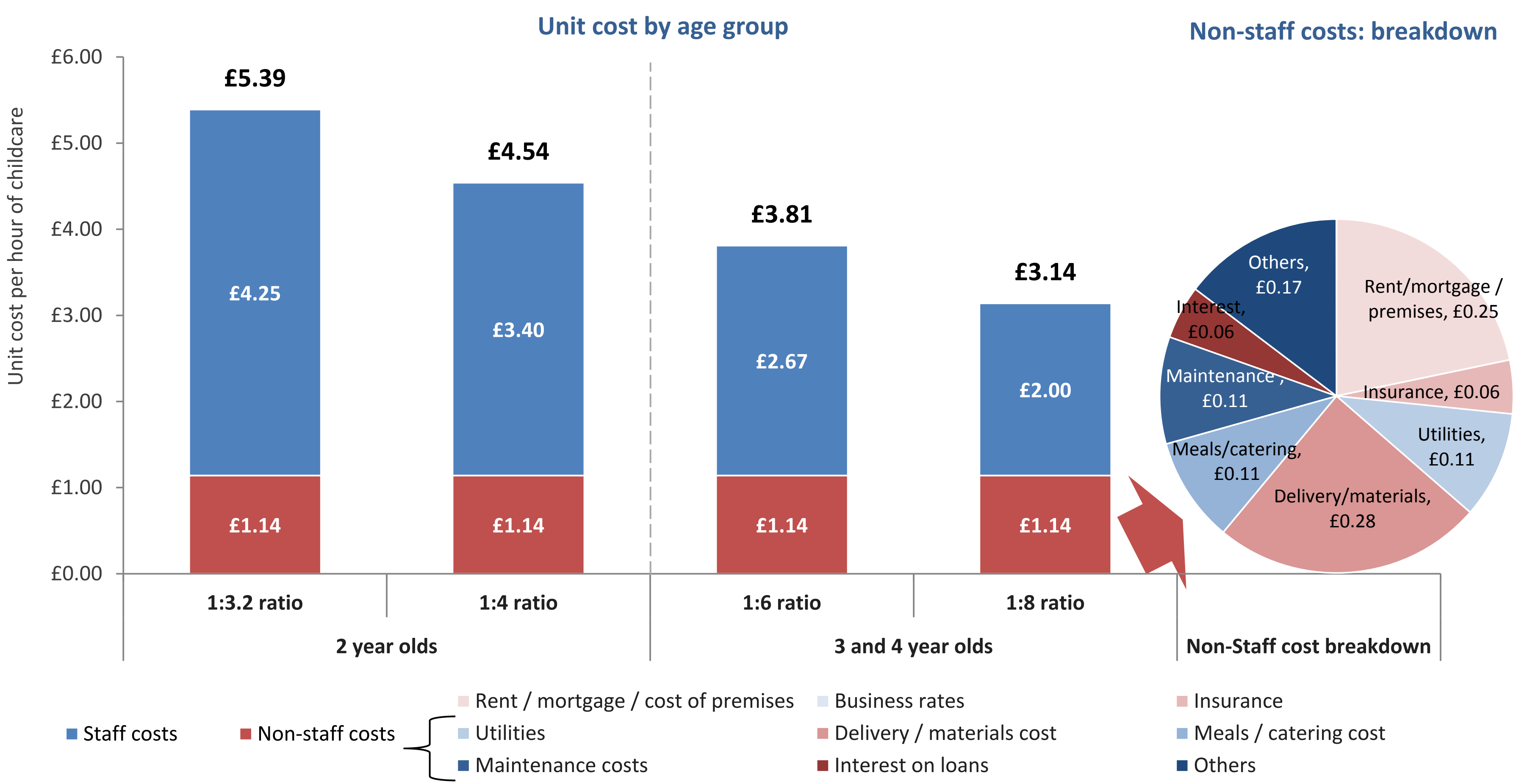


1 NLH Partnership (2015). Cost of delivering the early education entitlement. Analysis base on 35 private and voluntary providers operating above statutory ratios. 26% out of the sample of 54 providers were operating at the statutory ratios of either 1:8 or 1:13 (graduate-led).

Department for Education

Voluntary group-based providers

Representative unit costs per contact hour by age (England, 2014/15 prices)



See appendix for assumptions

Voluntary group-based providers

The childcare market has a range of voluntary providers, including not-for-profit providers and social enterprises. These are typically open term-time only, although some also offer out-of-school and holiday care.

Voluntary providers do not necessarily own their premises – they may operate out of church halls, community centres, school sites, etc. On average they have fewer registered places than private full-day care settings - the model assumes 36 places, compared to 49 in the private provider model.

The representative cost analysis assumes that voluntary providers are typically open for 38 weeks and employ term-time only staff. The unit costs will change depending on the contractual arrangements providers have with their staff, including any salaried staff paid over the whole year (which would increase costs compared to the representative benchmark).

We otherwise assume that the private and voluntary models have identical qualification profiles, pay, non-contact time and on-costs - in practice, there are likely to be some differences in these respects, but data specifically on voluntary providers is more limited.

Unlike private providers, voluntary group-based providers tend to be charities and do not pay business rates. This is a marginal cost advantage over private providers, where business rates are estimated to represent 1.12% of the unit costs.

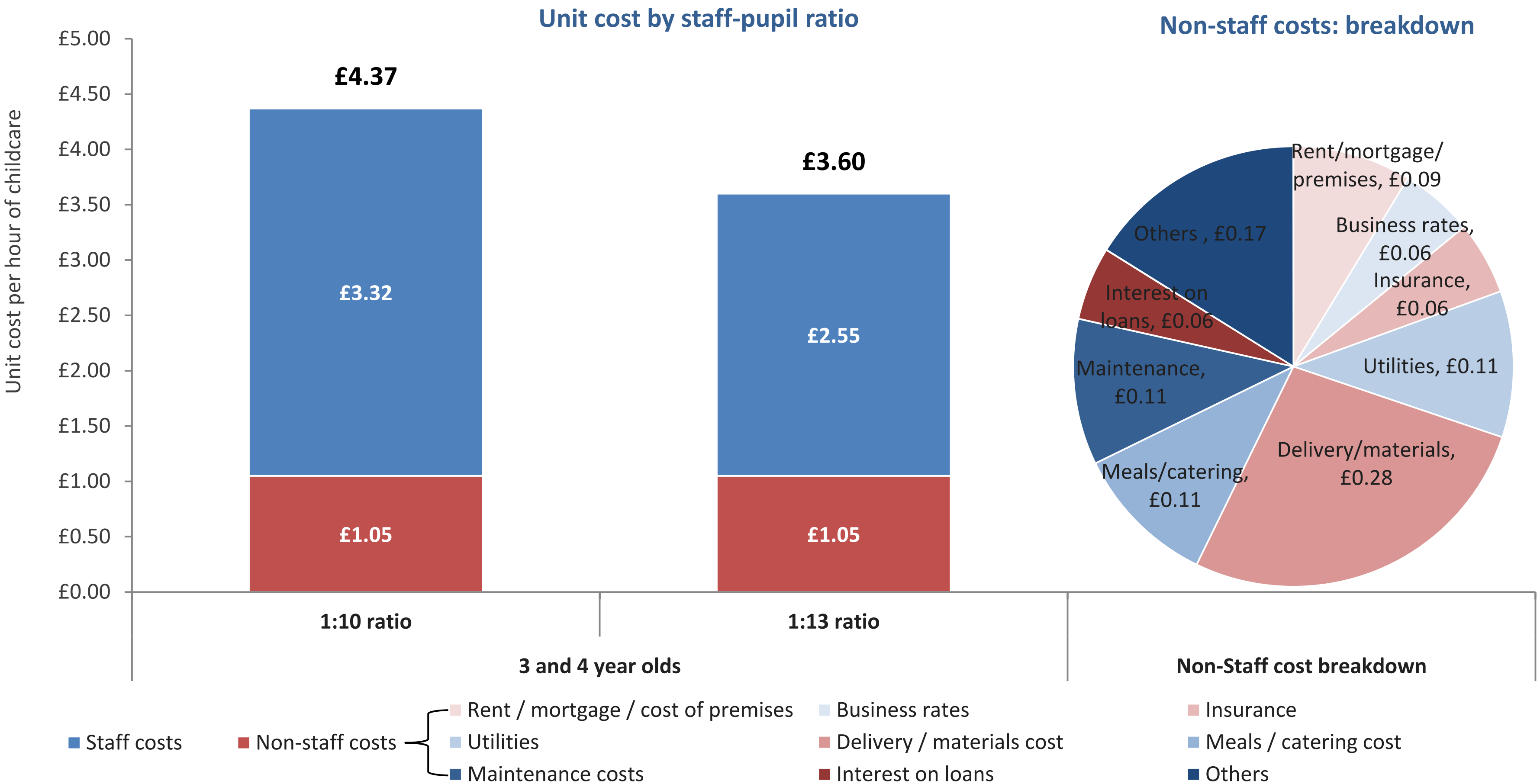
Premises costs are also assumed to be lower for voluntary providers – they account for 5% of total costs in this model compared to 9% for private providers. This is based on detailed cost breakdowns reported in the Childcare Finances Survey 2012.[1] It implies a lower overall uplift to cover non-staff overheads for voluntary providers, reducing the unit costs when compared to private providers.

The costing model does not include a profit or surplus margin, and profitability has been considered separately. These margins, above cost, are also likely also vary between the private and voluntary sectors.

1 Department for Education (2013). Childcare Provider Finances Survey 2012

Primary schools with nursery provision

Representative unit costs per contact hour by age (England, 2014/15 prices)



See appendix for assumptions

Primary schools with nursery provision

Primary schools with nursery provision have varying opening hours, with some offering only the free entitlement for children.

Typically they have children aged above two years with only a small proportion of schools offering provision for younger children. Schools also offer reception classes although the analysis presented considers the cost of nursery provision only.

Schools generally have more highly qualified staff than private and voluntary settings.

For example, whereas we estimate that 58% of staff were qualified at NVQ level 3 (A-level equivalent) in private full day care settings and 12% at NVQ level 6 (degree-level equivalent); in school nurseries, 38% of staff were at level 3 and 28% at level 6.

School settings tend to pay higher salaries and have higher pension costs (see appendix A2).

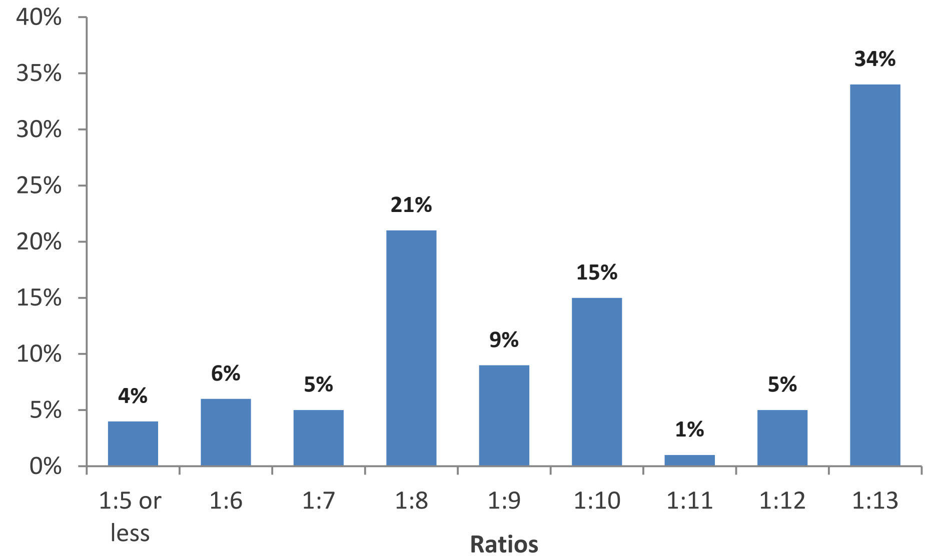
We assume employer pension contributions for all nursery staff are equivalent to those currently associated with the Teacher Pensions Scheme (TPS) at 14.1% of gross salary, which is higher than typical private pension contributions.

These additional cost pressures (relative to private and voluntary settings) are, however, largely offset by more efficient utilisation of statutory staff to child ratios.

As shown below, school nurseries most commonly report a staff to child ratio of 1:13 (the statutory minimum in graduate-led provision) although there was wide spread with an average of around 1:10 – we estimate that the unit costs associated with these ratios are £3.60 (at 1:13) and £4.37 (at 1:10).

Moreover, as these settings are based on school sites, overheads are often shared with the rest of the school. Many school nurseries do not report premises costs, although the cost model applies an uplift of 2% relative to staff costs.

Ratios adopted when providing childcare for three- and four-year-olds in schools (NAHT, 2015) [1]



1 National Association of Head Teachers, NAHT (2015). An early years place for all: NAHT survey on extending childcare provision in schools. www.naht.org.uk

Other group based providers

Two further types of group-based provider are also considered in the review, Maintained Nursery Schools (MNS) and Independent Schools.

They each form a relatively small share of provision at a national-level. This meant data from sample surveys, such as those underpinning the economic costing model, tends to limited by small sample sizes and less robust. For this reason we do not report a ‘representative’ unit cost these types of providers.

The review has, however, considered a range of information through the Call for Evidence, roundtable events and follow-up interviews relevant to these settings.

Maintained nursery schools

MNS typically operate in areas of greater disadvantage and are designed to support early education in these areas. Unlike nurseries in primary schools, they tend to operate on standalone sites or are attached to children’s centres.

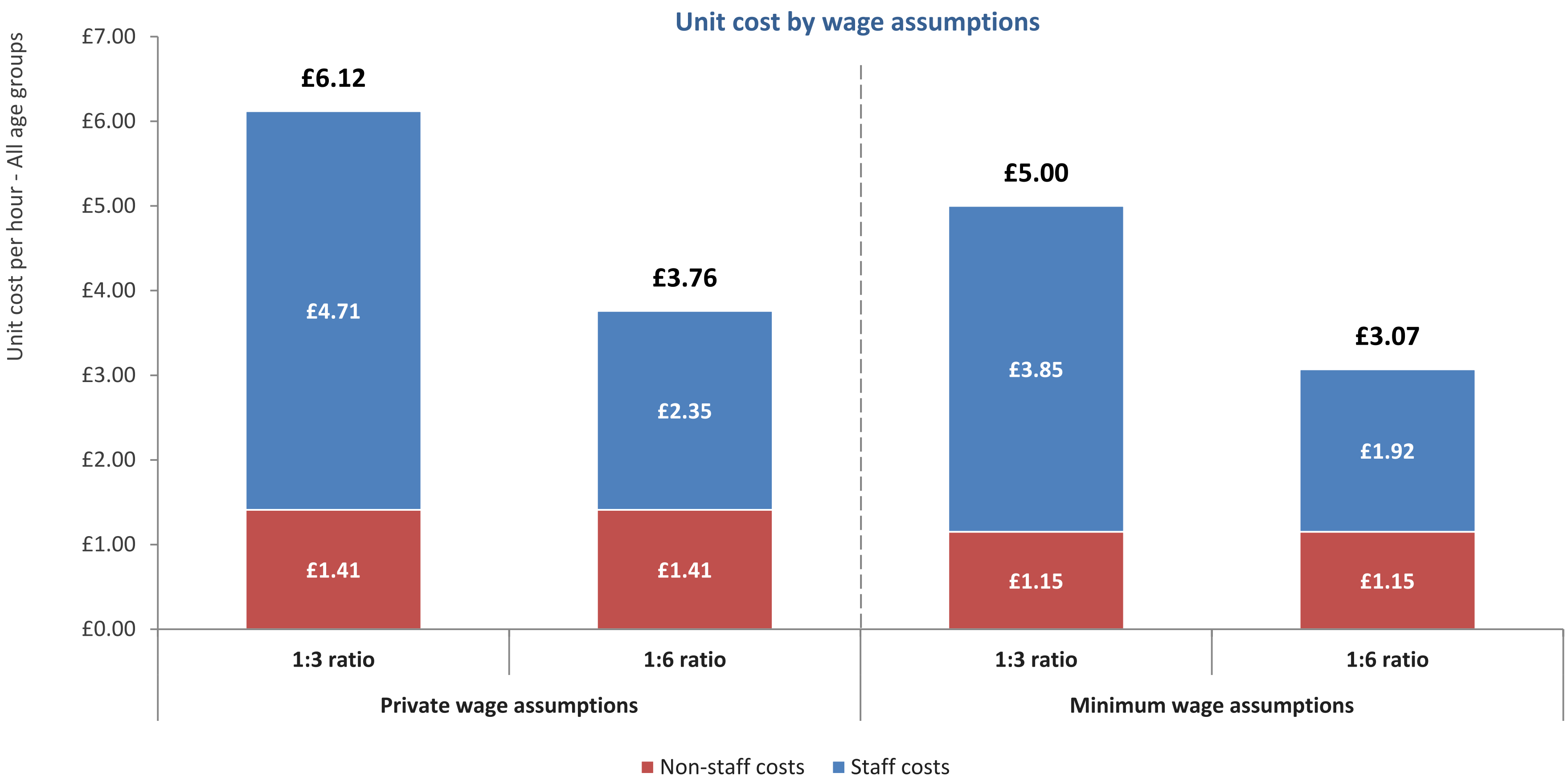
MNS settings tend to pay higher salaries. They also have higher pension costs than private nurseries. Like schools, they have lower staff to child ratios for three- and four-year-olds (i.e. more children per staff) than private nurseries. MNS typically have few children aged under two.

Independent schools with nursery provision

Some independent schools also offer nursery classes for children below school age, on the school premises. These settings typically provide care for children aged two and over. Whilst their business model is largely akin to other school-based settings, evidence from Deloitte’s primary research indicated that independent schools with nurseries operate at higher staff to child ratios (i.e. fewer children per staff), which can result in higher unit costs.

Childminders

Representative unit costs per contact hour by age (England, 2014/15 prices)



See appendix for assumptions

Childminders

Most childminders operate alone and are restricted by a statutory minimum staff to child ratio of 1:6. Nested within this requirement is a statutory minimum ratio of 1:3 for children aged under five. The representative model assumes childminders operate at these statutory levels when they are fully occupied, but more typically at an occupancy rate of 75% across the year.[1]

Primary research by Deloitte indicated that childminders often operate at the statutory 1:3 ratio. Note that, because the ratio applies across all pre-school age children, we assume no underlying cost variation between children aged two, and children aged three and four. This is one notable difference to the modelling for group-based provision.

Other key differences include that most childminders are self-employed[2]. This presents a particular challenge when estimating staff and premises costs. The economic cost of provision is, in this case, based on an ‘opportunity cost’ and takes into account the value of the childminder’s time, imputing their hourly ‘wage’ to reflect the income they receive from the business. In line with group based settings, staff costs account for contact and non-contact time, management and administration, and allowances for training, holidays and sickness absence. All of these elements are likely to differ for childminders, but we adopt the same uplifts that apply in the group-based models, to place childminders’ representative costs on an equal footing.

Similarly, the same overall level of uplift is made for non-staff overheads, as we apply to private providers. This assumes, for example, that premises costs are broadly equivalent to those incurred if the child attended a group-based provider. However the breakdown in these overheads recognises that childminders have a different balance in their expenditure.

Based on these assumptions, the four representative costs shown in the previous chart highlight two key cost drivers. The first is whether the childminder is utilising the staff to child ratio for under fives only (1:3) or also providing care for children aged over five (1:6). The second is the level of income the childminder aims to achieve.

Two indicative ‘wage’ scenarios are shown. The first considers the qualification profile of childminders, and imputes their wage based on the mean pay of childcare workers employed in a full day care setting, at the same qualification level. For example, the majority (58%) of childminders are qualified at NVQ level 3, implying an hourly wage of £8.02, based on the mean pay of level 3 staff working in full day care. Under this scenario, staff costs per hour are estimated to contribute £4.71 towards a total hourly unit cost of £6.12, per pre-school child. An alternative scenario benchmarks childminder income to the National Minimum Wage (£6.50 in 2014/15), implying a staff cost of £3.85 and a unit cost of £5 for pre-school children.

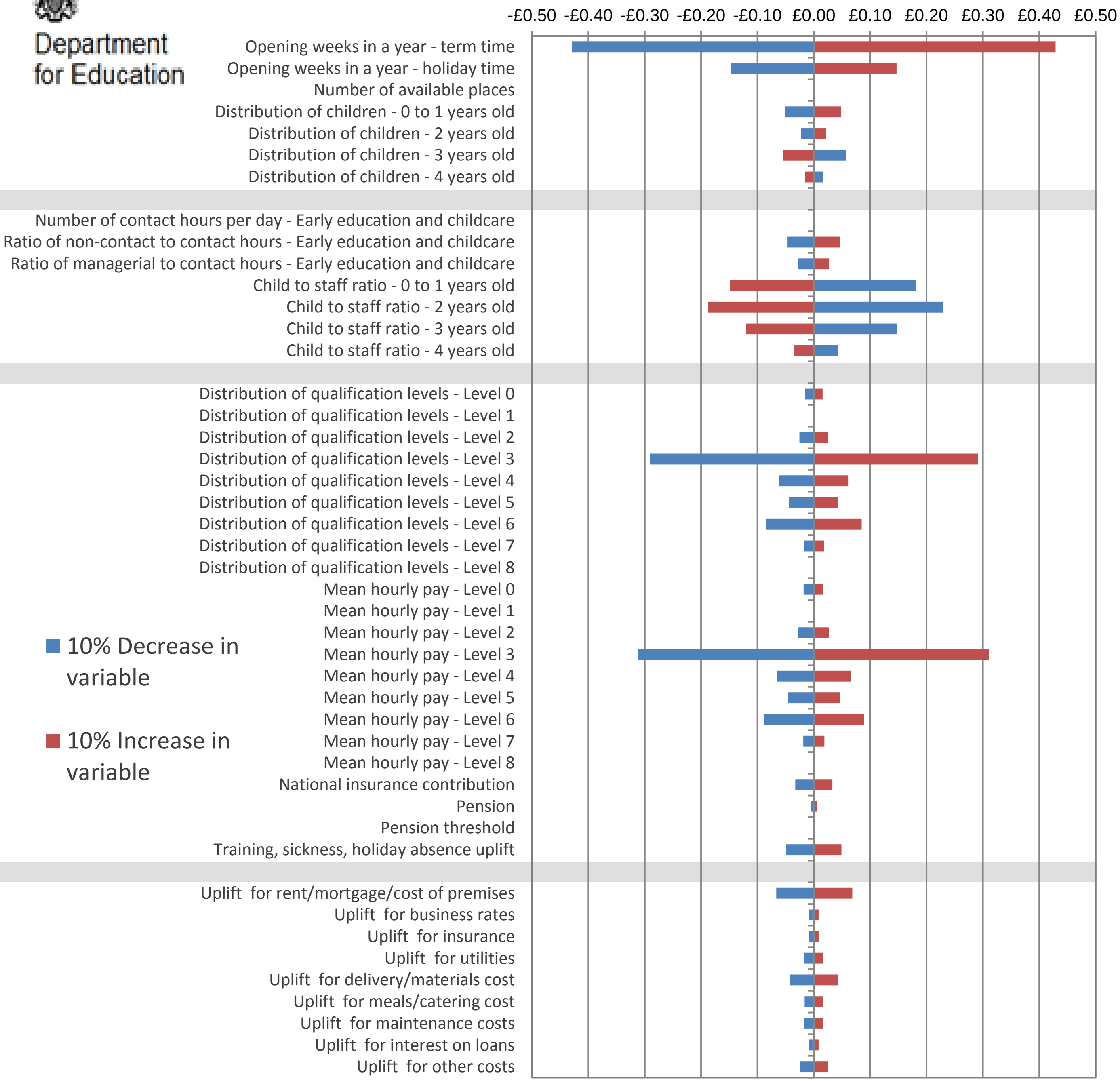
1 75% occupancy is based on the average childminder responding to the Childcare and Early Years Provider Survey 2013, marginally higher than private providers (72%)

2 Childminders can also employ a second carer, which allows them to increase the number of children, as the statutory ratio applies per carer.

Section 2: Analysis of the delivery costs of early education and childcare

Department for Education

Sensitivity analysis – change in unit cost per contact hour for private providers



The chart opposite illustrates the sensitivity of our representative unit costs, to a 10% increase or decrease in the assumptions.

The chart looks at the unit costs across all age groups for private group-based providers, noting that the level of sensitivity is similar for each age group and different types of group-based provider.

The key sensitivities are with respect to opening weeks per year, staff to child ratio, qualification profile and pay.

The analysis shows that costs are less sensitive to the level of uplift to account for non-staff overheads.

Department for Education

Children with additional needs

The nature and level of support required by children can vary significantly for each child, as does the prevalence of additional needs across each setting.

A small-scale survey undertaken by Deloitte, during the course of the review, indicated that the share of children with additional needs ranged from 2% to 30%, with a median of 10%.

Where providers responding to Deloitte's survey had children with additional needs, their staff to child ratio was more typically 1:4 (see chart opposite), reflecting the additional staff contact time that children with additional needs can require within a session.

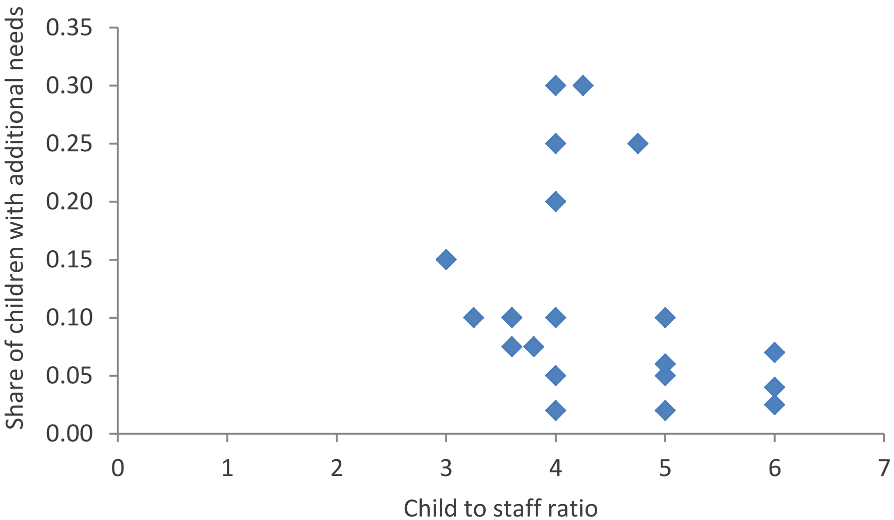
Follow-up interviews and roundtable events held with providers suggested that staff can spend up to two hours extra non-contact time per week, including time liaising with parents, local authorities, schools and other agencies on matters relating to additional needs.

Other costs may be incurred, for example where speech and language therapists and other specialists are employed.

Note that the representative cost analysis reported above aims to capture average or common practice within each core provider segments, with respect to staff-to-child ratios, non-contact time, equipment and other non-staff costs. As such, allowances are made for the average prevalence of additional needs within these cost estimates.

For providers who have a higher-than-average number of children with higher needs, it is important to consider the sensitivity analysis reported in previous sections, which captures variation in costs with respect to staff-to-child ratios and non-contact time.

Staff to child ratio for children with additional needs[1]

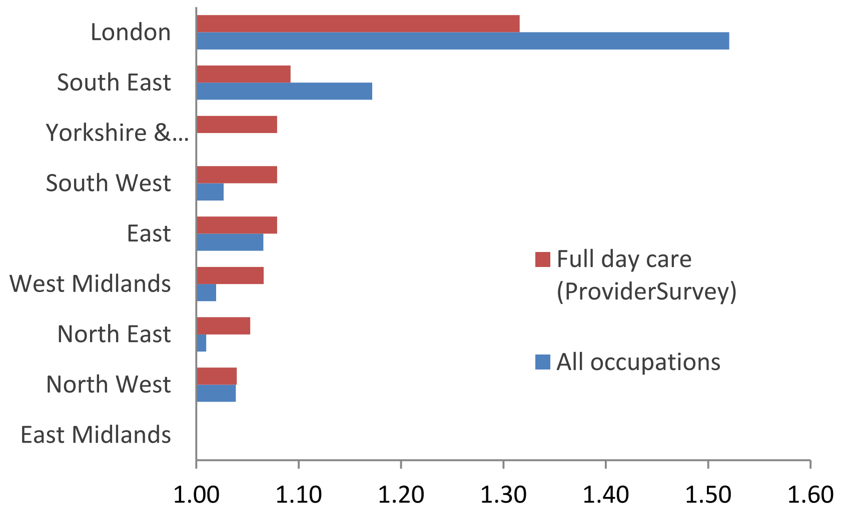


1 Deloitte primary research (unpublished)

Variation in wages by region

Relative wages per hour by region

(Indexed so minimum value is 1)



Our cost estimates aim to be representative of the national picture. For example, staff costs are derived from mean pay levels in England, by qualification level. One interpretation of the sensitivity analysis is that this shows why costs might vary in each local area, for example where qualification levels, rates of pay and premises costs vary.

Average pay varies across the country and by occupation (see table, below). Regional differentials are less accentuated for childcare workers, than we find across other occupations in the economy. For example, across the economy as a whole, hourly pay is over 1.5 times higher in London than in the East Midlands, whereas hourly pay is 1.3 times higher for childcare workers when we make the same comparison (see chart, opposite).

Mean pay per hour, by region and occupational category[1]

Region	Full day care (Provider Survey 2013)	Childcare and related personal services	Primary and nursery education teaching professionals	Teaching and educational professionals	All occupations
UK	**£8.40**	**£8.70**	**£21.33**	**£22.52**	**£15.11**
North East	£8.00	£9.08	£22.03	£22.56	£13.58
North West	£7.90	£8.46	£21.84	£22.59	£13.97
Yorkshire & Humber	£8.20	£8.46	£21.78	£22.76	£13.45
East Midlands	£7.60	£8.93	£19.96	£22.36	£13.45
West Midlands	£8.10	£8.56	£20.59	£21.99	£13.71
East	£8.20	£8.24	£21.15	£22.21	£14.33
London	£10.00	£9.72	£23.54	£24.24	£20.45
South East	£8.30	£8.23	£20.37	£21.99	£15.76
South West	£8.20	£8.32	£20.54	£21.54	£13.81

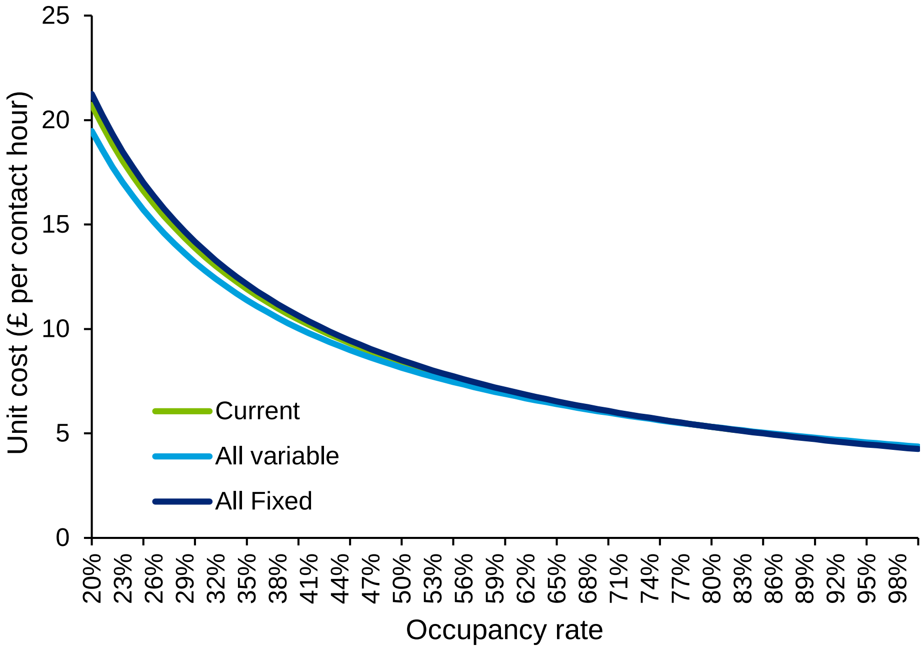
1 Source: Annual Survey of Hours and Earnings (ASHE) based on a 1% sample of employee jobs taken from HMRC PAYE records in 2014, UK. Full day care is based on the Childcare and Early Years Providers Survey 2013, England.

Section 2: Analysis of the delivery costs of early education and childcare

Department for Education

Demand management (1/2): Occupancy

Change in unit costs across all age groups for private group-based providers with occupancy



Note that the representative unit cost estimates are based on differentiated occupancy rates across age groups. The analysis reported here is at setting-level and considers occupancy and unit costs across all age groups. The total number of registered places (49) and opening period are fixed.

The modelling approach allows us to consider why providers are currently more or less cost-efficient.

For example, unit costs are shown to decline with higher levels of occupancy, which many settings are able to achieve. Increased occupancy implies that total costs are allocated across a greater number of occupied hours.

Unit costs per contact hour decrease by up to 26% when a private provider is at 100% occupancy compared to the same provider running at 72% occupancy.

As the number of occupied places increases, some overheads (e.g. premises costs) remain fixed, whereas others (e.g. consumables such as food and nappies) increase. If all overheads were fixed (did not increase with the number of children present), the decrease In cost would be 27%. If all overheads were variable (increased with the number of children present), the decrease would be 24%.

Achieving very high levels of occupancy can be difficult for providers, as demand fluctuates during the day, week and year. However some providers achieve higher rates of occupancy than others by generating stronger parental demand through the childcare services they offer.

Department for Education

Demand management (2/2): Staffing flexibilities

The representative cost estimates build up staffing requirements, and therefore total setting costs, based on the number of available hours of provision. This is regardless of whether those hours are occupied. This implies a considerable level of 'over-staffing'. In practice, providers are able to manage their staffing requirements more flexibly, in response to anticipated levels of occupancy.

For example, providers may have predictable periods of high and low occupancy during the day or week. Part-time staff can then be scheduled to cover peak times and avoid over-staffing when the setting is less busy (e.g. occupancy is typically lower on Mondays and Fridays).

As shown opposite, there are significant gains if providers can staff exactly to meet demand, rather than available hours. For a private group-based provider, matching staffing to demand reduces overall unit costs by 19% (76 pence) for three- and four-year-olds.

"Perfect" scheduling is impracticable; there will inevitably be some inefficiencies. Completely "imperfect" scheduling is equally unlikely. Most providers will fall between these extremes, with their level of flexibility determined by: their business management; their mix of full-time and part-time staff; and the mix of salaried and unsalaried staff.

Given that the 'representative' costs are based on the higher benchmark associated with zero staffing flexibility, there is considerable scope for cost efficiency relative to this benchmark.

Department for Education

Economies of scale and scope

Economies of scale

All providers have a minimum scale, based on the number of places they need to fill in order to be financially viable. Above this level, cost efficiencies can be realised by delivering more places. This allows their total running costs to be spread over more hours of provision, bringing down the unit costs per contact hour, to a level that allows the setting to cover these costs at a sustainable market price, and with a sustainable surplus margin.

The relationship between the size of the setting, number of places provided and the unit cost can be complex. Total staffing requirements and other inputs increase as the scale of provision grows. However, economies of scale describes a situation where at least some of these overheads are either ‘fixed’ or ‘semi-fixed’. Hence, whilst total setting costs increase in the number of places provided, the average unit cost can fall.

Next to staffing requirements, the largest cost category is premises. Space requirements are based on the level of activity, based on statutory minimum floor space per child. As such, premises costs will increase in line with activity but, in some cases, spare capacity can be better utilised to realise scale economies.

Economies of scope

Whereas ‘economies of scale’ relate to the change in unit costs as the number of places increases, ‘economies of scope’ refer to efficiencies in how the provider organises the provision of these places. For example, a provider operate on more than one site, and can spread some overheads across these sites. This can include nursery chains that share managerial, administrative, catering or other back office functions. It can also allow staff development needs to be considered across sites, so that training programmes can be developed or procured for a larger pool of staff. This can lower the training cost per staff member, compared to each site meeting these training requirements in isolation.

There can be scope to spread overhead costs within a site, where the building space is used to deliver more than one type of childcare provision. In some cases, providers run before- and after-school clubs, alongside their ‘free entitlement’ sessions. A more expansive childcare offer will incur extra costs, but the cost per hour can fall where the setting’s overheads are shared across these hours.

School-based nurseries can also benefit from co-location on or near the school site. For example, premises costs can be spread across the larger school and nursery population, potentially resulting in lower unit costs. There may be scope to share catering and other on-site facilities, as well as expand the childcare offer to include before- and after-school clubs.

Section 2: Analysis of the delivery costs of early education and childcare

Department for Education

Comparing the representative costings to estimates by NLH Partnership and CEEDA

The representative unit cost estimates reported above fall largely within the range of reported by NLH Partnership (2015)[1] and CEEDA (2014),[2] respectively. All three studies report the average unit cost of one 'contact' hour of early education and childcare in England. However, there are a number of other differences in methodology, sampling and coverage of provider types across all three studies.

Both CEEDA (2014) and NLH Partnership (2015) undertook their primary research with providers during the months of June and July. This may introduce a seasonal bias. The summer can be a period of higher occupancy (before a cohort of children leave to enter school in September), corresponding to lower costs that at other times of the year.

NLH Partnership calibrated their model to total expenditure reported by providers. In contrast, the Department's approach estimates costs of each constituent input. For example, we assume that staff time is met through paid hours only (with no unpaid contributions), implying that labour costs may exceed expenditure on staff in practice, which can be mitigated by unpaid students and volunteers.

The representative cost estimates also make no adjustment to staffing requirements, based on the ability of providers to forecast and plan for demand at a given time of day, week and year (see analysis of 'Demand Management'). Under alternative assumptions - where providers benefit from flexible staffing - we find that unit costs are closer to those reported by NLH Partnership.

NLH reported that, in practice: "approximately one-third of the settings who participated in their study had 'flexible' staffing in place, within their setting. These settings typically felt that this labour flexibility assisted them in managing staffing costs and responding to daily, weekly, or seasonal fluctuations in setting occupancy levels. Examples of approaches to flexible staffing employed by settings included employing larger numbers of part-time than full-time staff, employing staff on contracts with annualised hours, and employing their own 'bank' staff. Only a small number of settings employed staff on flexible 'zero hours' contracts."

Staffing flexibilities, alongside estimated staff to child ratios, may explain some of the cost variation across these studies.

	Representative costs (2014/15)				NLH Partnership (2015/16)		CEEDA (2013/14)	
	2 year olds		3 & 4 year olds		2 year olds	3 & 4 year olds	2 year olds	3 & 4 year olds
Private	£5.87 (1:3.2)	£5.00 (1:4)	£4.25 (1:6)	£3.56 (1:8)	£4.98	£3.21	£5.97	£4.53
Voluntary	£5.39 (1:3.2)	£4.54 (1:4)	£3.81 (1:6)	£3.14 (1:8)	£6.09	£4.00		

1 NLH Partnership (2015). Cost of delivering the early education entitlement. Commissioned by the Department for Education. 2 CEEDA (2014). Counting the cost: An analysis of delivery costs for funded early years education and childcare. www.ceeda.co.uk . Commissioned by the Pre-school Learning Alliance

Section 2: Analysis of the delivery costs of early education and childcare

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Sources of income

Source of income[1]

	Full day care	Sessional
Received funding from LAs and central government	57%	65%
Received no funding from LAs and central government	10%	8%
Unable/unwilling to say how much money received from LA	33%	27%
Proportion of providers who charged a deposit	44%	25%
Mean deposit (of those who charge)	£96	£76
Proportion of providers who charged a registration fee	32%	23%
Mean registration fee (of those who charge)	£38	£26
Acceptance of childcare vouchers	95%	79%
Proportion of all children attending that have their fees paid, in part or in full, through childcare vouchers or direct payments from their employer	21%	10%

The following analysis is indicative. Caution must be taken when interpreting income data. For example, in the Childcare and Early Years Provider Survey 2013 (the most detailed source of information on income) a significant proportion of respondents refused or were unable to provide this information.

The table opposite highlights that providers meet the costs of provision through income from parents, employers and local authorities, to varying degrees.

The survey makes the distinction between ‘full day care’ and ‘sessional’ providers. Full day care settings are open for a continuous period of four hours or more in any day. Sessional providers offer no more than five sessions a week, each session being less than a continuous period of four hours in any day.

Local authority funding was received by 65 per cent of sessional and 57 per cent of full day care providers, predominantly to provide the free entitlement for early education and childcare.

Some providers charge deposits and registration fees, in addition to parental fees per hour or place.

Most providers are willing to accept childcare vouchers, with a significant minority or children’s fees paid in part or in full by employers.

1 Data is drawn from a range of different tables in the Childcare and Early Years Provider Survey 2013 and the samples may differ.

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Profitability

Pricing

NLH Partnership (2015) reported that private and voluntary group-providers: “tended to set prices that allowed them to make a surplus or remain sustainable overall, using a general ‘whole business’ approach. Rather than setting fees according to the actual costs of delivering childcare for different age groups, settings tended to attempt to set fees so that these costs were dispersed across age groups.”

This is a common feature of providers’ pricing strategies. Full day care settings were more likely than other types of childcare provider to vary their fees from child-to-child, yet the proportion doing fell from 48 per cent in 2010 to 41 per cent in 2013 (Childcare and Early Years Provider Survey 2013). [1] Only 23% of sessional providers and 32% of childminders varied their fees.

The Provider Survey report concluded that: “price differentials between children of different ages are actually smaller than may have been expected based on the differing ratio requirements”.[1]

Profit and surplus

The majority of providers responding to the Childcare and Early Years Provider Survey 2013 were able to at least cover their costs.

Providers were asked what proportion of their registered places they would need to fill to ‘break even’; childminders were asked about the number of places they needed to fill to earn the ‘minimum income they were prepared to accept’. The survey found that both full day care and sessional providers needed an average of 67% occupancy; childminders needed 59%.

A high proportion of respondents were either unwilling or unable to give an answer and as such the data should be treated with caution. However, it gives an indication that levels of occupancy assumed in the representative cost analysis (which exceed these breakeven rates) describe a financially sustainable level of demand.

Profitability of group based providers in 2013 [1]

	Full day care	Sessional
Made a profit or surplus	37%	25%
Covering costs	31%	43%
Operating at a loss	15%	21%
Don’t know	15%	9%

1 Childcare and Early Years Provider Survey 2013

Section 2: Analysis of the delivery costs of early education and childcare

Cost inflation and the National Living Wage (1/2)

The bottom-up cost estimates above are provided in 2014/15 prices, the last full tax year, to provide a consistent benchmark across provider types and scenarios. The price of inputs that providers need to purchase is, of course, anticipated to increase. For example, HM Treasury's GDP deflator can be viewed as a measure of general inflation in the domestic economy, and shows the forecast path for inflation over the next few years (see table below).

Cost pressures vary depending on local market conditions and each provider's cost base. Given that staff costs constitute the largest component of the cost base of childcare providers, we consider further the impacts of the National Living Wage.

GDP deflators at market prices and money GDP[1]

2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
1.0%	1.7%	1.8%	1.9%	2.1%	2.5%

From April 2016, the government will introduce a new mandatory National Living Wage (NLW) for workers aged 25 and above, initially set at £7.20 – an increase of 50p relative to the current National Minimum Wage (NMW) rate. This represents a £910 per annum increase in earnings for a full-time worker on the current NMW.

The adult NMW rate is currently £6.70. From 1 April 2016 the premium will come into effect on top of the NMW, taking the National Living Wage to £7.20.

The NMW will continue to apply for those aged 21 to 24, with the premium added on top for those aged 25 and over, taking the total hourly rate to the National Living Wage.

The government has also asked the Low Pay Commission to recommend the level of the path of the National Living Wage, with the target of the total wage reaching 60% of median earnings by 2020. On OBR forecasts a full-time NMW worker will earn over £4,800 per annum more by 2020 from the NLW in cash terms.[2]

1 HM Treasury (2015), GDP deflators at market prices, and money GDP: October 2015 (The Blue Book), 3 November. Note that GDP Deflators are updated periodically.
2 https://www.gov.uk/government/publications/national-living-wage-nlw/national-living-wage-nlw

Cost inflation and the National Living Wage (2/2)

The most extensive survey data on pay in the childcare sector is collected through the Childcare and Early Years Provider Survey 2013. The table below breaks down the proportions of the childcare workforce by age, provider type and pay band. This data should be treated with caution, given the limitations of responses on staff pay associated with this sample.[1]

Indicatively, the data suggests that in 2013 around 25% of staff in private providers and 10% in school nurseries were both (a) aged 25 or over and (b) paid below the initial NLW rate of £7.20. This is the group who are most likely to benefit directly from the NLW. The proportion may have fallen due to pay inflation between 2013 and 2015.

Data on pay by qualification level (see appendix A2) suggests workers qualified at NVQ level 2 or below are more likely to benefit from the initial NLW rate.

The NLW impact will vary in each local market, depending on the mix of providers and labour market conditions. It may also drive some increases in wages across the wider workforce, including staff aged under 25 and/or paid above the NLW rate, where providers seek to maintain pay differentials.

Proportions of the childcare workforce by age and pay band, in full day care and school nurseries

	Full day care	Primary schools with nursery provision
Aged over 25, on NMW but below NLW	5%	4%
Aged over 25, above NMW but below NLW	21%	6%
Aged over 25, paid £7.20, the NLW rate	1%	0%
Aged over 25, paid above NLW	54%	81%
Aged 20-24, on NMW	3%	1%
Aged 20-24, paid above NMW	12%	9%
All age 16-19	3%	1%

1 These are DfE estimates using mean hourly pay data from the Childcare and Early Years Provider Survey 2013. These estimates should be treated with caution. To reduce both the burden on providers and the overall length of interview, settings employing more than a certain number of staff were asked to randomly select members of staff at each level, rather than having to give details for the whole team. These estimates are unweighted.

Appendix

Department for Education

Appendix 1: References

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Appendix 2: Staff pay and qualification profiles

Assumptions on mean hourly/annual per hour, England, 2014/15 prices

	Private and Voluntary		School nurseries		Childminders	
Qualification level	Distribution of qualification levels	Mean hourly pay	Distribution of qualification levels	Mean annual pay	Distribution of qualification levels	Mean hourly pay
Level 1 *	0%	£6.10	1%	£10,500	7%	Imputed based on either (1) private provider mean pay by qualification or (2) minimum wage assumption for all childminders, £6.50.
Level 2 *	6%	£6.70	6%	£12,500	7%	
Level 3	58%	£8.00	38%	£15,500	58%	
Level 4	10%	£9.40	4%	£16,500	4%	
Level 5	7%	£9.50	5%	£18,500	2%	
Level 6	12%	£10.70	28%	£30,500	5%	
Level 7	2%	£13.40	13%	£33,500	2%	
Level 8 *	0%	£10.80	0%	£43,500	0%	
No qualification	4%	£6.10	5%	£10,500	15%	

Source: Childcare and Early Years Provider Survey 2013. Mean annual / hourly pay in England (previously unpublished).
Note: 2013/14 figures in the Provider Survey have been inflated to 2014/15 values using the HM Treasury (2015), GDP deflators at market prices, and money GDP: July 2015 (Summer Budget 2015), https://www.gov.uk/government/collections/gdp-deflators-at-market-prices-and-money-gdp

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Appendix 3 (1/3) – Activity in representative model of private group based settings

Variable	Assumption	Source	Notes
Opening weeks / year	51	Deloitte survey and interviews	Private group-based were most commonly open 51 weeks, although a significant number reported being open only 38 weeks.
Opening days / week	5	Deloitte survey and interviews	Providers typically open weekdays.
Number of available places	49	Provider Survey 2013	The mean number of Ofsted registered places, private full day care settings.
Distribution of children			
0-1 years old (%)	18%	Provider Survey 2013	Proportion of attendees by age of child for a full day care setting across all group-based and out of school providers. This does not add to 100% as there are also children aged over 4 years of age.
2 years old (%)	29%		
3 years old (%)	35%		
4 years old (%)	10%		
Average occupancy rate (0-1 and 2 year olds)	85%	DfE	Published data on occupancy is collected at the setting level and not broken down by age. representative assumes higher occupancy for children aged under 3. See also sensitivity analysis, where cost variation to changes in this assumption is shown.
Average occupancy rate (3 and 4 year olds)	72%	CEEDA (2015)	Provider Survey reports an average occupancy rate of 80% for group-based full day care providers, based on the number of places that are filled on a typical day. However, CEEDA provides a more detailed analysis of occupancy, based on diaries recording occupancy throughout the day. A lower average occupancy rate increases the estimated unit cost, so we have conservatively adopted CEEDA's 72% average occupancy.
Number of contact hours / day	7	Deloitte survey and interviews	Based on the review team's primary data, 7 hours is common. Group-based providers offer a range of opening hours and data is not routinely collected on the average. This assumption has been subject to sensitivity testing.

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Appendix 3 (2/3) – Staffing in representative model of private group based settings

Variable	Assumption	Source	Notes
Staff to child ratio			
0-1 years old	1:2.5	Provider Survey 2013	Average for group-based full day care settings.
2 years old	1:3.2	Provider Survey 2013	Average for group-based full day care settings.
3 and 4 years old	1:6	NLH Partnership (2015)	The NLH report findings suggest a weighted average of 1:6 staff to child ratio for 3 and 4 year olds. Follow-ups with provider suggest that providers often staff at higher ratios than required to cover for sickness / training / holidays. These should be considered when changing ratios. Further, the model assumes staffing based on available places, therefore the effective staffing ratio may be even higher for lower occupancy levels.
4 years old	1:6	NLH Partnership (2015)	
Ratio of non-contact / contact hours	0.10	DfE based on CEEDA (2015)	CEEDA estimates that around 54.7 hours are spent on non-contact time across 38 weeks of funded provision. This implies 0.10 hours of non-contact time per every hour of contact time.
Ratio of admin and managerial / contact hours	0.06	DfE based on CEEDA (2015)	CEEDA only provides an unit cost estimate for supernumerary labour. Based on the relativity between this and the unit cost for non-contact time labour, it is estimated that 0.06 hours is spent on administrative / managerial tasks for every hour of contact time. Together, these imply that 86% of staff time is spent on contact time, which is broadly consistent with the Childcare Provider Finances Survey 2012 estimate of 82% of staff time relating to direct contact with children.
Training, sickness, holidays absence days	10% of contact hours	Deloitte survey and interviews	An additional allowance is made for absence through training, sickness, holidays, etc. applied as 10% of contact hours required.

Department for Education

Appendix 3 (3/3) – Overheads and on-costs in representative model of private group based settings

Variable (as share of total costs)	Assumption	Source	Notes
Total staff costs	72%	Childcare Provider Finances Survey 2012	The Provider Finances Survey 2012 reported that staff costs comprise 72% of total annual costs, while cost of premises comprise 9% of total costs for private settings. The remainder of costs have been proportionately allocated across the other categories based on the shares for overall group-based settings. The Provider Survey reports aggregated delivery materials and food costs – these have been apportioned into Delivery / materials cost and Meals / catering costs assuming a 72:28 split based on Deloitte follow-ups interviews with providers. Of the 72% delivery / materials costs, around 19% is estimated to relate to consumables.
Rent/mortgage/cost of premises	9%		
Business rates	1.12%		
Insurance	1.12%		
Utilities	2.24%		
Delivery/materials cost	5.63%	Childcare Provider Finances Survey 2012; Deloitte survey and interviews	
Meals/catering cost	2.19%	Childcare Provider Finances Survey 2012; Deloitte survey and interviews	
Maintenance costs	2.24%	Childcare Provider Finances Survey	
Interest on loans	1.12%	Childcare Provider Finances Survey	
Others	3.35%	Childcare Provider Finances Survey	

Variable	Assumption	Source	Notes
Salary on-costs			Gross salary is estimated for a worker working 35 hours / week over the relevant number of opening weeks, based on the hourly rates of pay assumptions.
Training	1% of gross salary	Deloitte survey and interviews	
NIC	13.80% above £7,956 of gross salary	Regulatory requirements	
Pensions	1% of gross salary when above £10,000	Regulatory requirements	

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Appendix 4 (1/3) – Activity in representative model of voluntary group based settings

Variable	Assumption	Source	Notes
Opening weeks / year	38	Deloitte survey and interviews	Voluntary group-based providers are typically open term-time only.
Opening days / week	5	Deloitte survey and interviews	Providers are typically open only on weekdays.
Number of available places	36	Provider Survey 2013	This the number of Ofsted-registered places for voluntary full day care settings. The survey results indicate an average of 35 registered places and a maximum of 28 places for voluntary group-based providers.
Distribution of children			
0-1 years old (%)	18%	Provider Survey 2013	This is the proportion of attendees by age of child for a full day care setting across all group-based and out of school providers. It does not add to 100% as there are also children aged over 4 years of age. The survey results show a distribution of around 2%, 33%, 56% and 9% across the various age groups for voluntary group-based providers.
2 years old (%)	29%	Provider Survey 2013	
3 years old (%)	35%	Provider Survey 2013	
4 years old (%)	10%	Provider Survey 2013	
Average occupancy rate (0-1 and 2 year olds)	85%	DfE	
Average occupancy rate (3 and 4 year olds)	72%	CEEDA (2015)	The Childcare and Early Years Provider Survey 2013 indicates an average occupancy rate of 80% for group-based full day care providers. However, CEEDA provides a more detailed analysis of occupancy, taking into account periods of vacancy during the day, and estimates an average occupancy level of 72% over the period of the study for PVIs. The survey results show an average occupancy rate of 78% for voluntary group-based providers during term-time, ranging from 20% to 100%, potentially reflecting some responses at that point in time. Providers have noted that occupancy can vary significantly throughout the year as children move in / out of childcare.
Number of contact hours / day	6	Deloitte survey and interviews	Voluntary providers typically offer 6 contact hours a day.

Department for Education

Appendix 4 (2/3) – Staffing in representative model of voluntary group based settings

Variable	Assumption	Source	Notes
Staff to child ratio			
0-1 years old	1:2.5	Provider Survey 2013	This is the average for group-based full day care settings.
2 years old	1:3.2	Provider Survey 2013	This is the average for group-based full day care settings.
3 years old	1:6	NLH Partnership (2015)	The NLH report findings suggest a weighted average of 1:6 staff to child ratio for 3 and 4 year olds. Follow-ups with provider suggest that providers often staff at higher ratios than required to cover for sickness / training / holidays. These should be considered when changing ratios. Further, the model assumes staffing based on available places, therefore the effective staffing ratio may be even higher for lower occupancy levels.
4 years old	1:6	NLH Partnership (2015)	
Ratio of non-contact / contact hours	0.10	CEEDA (2015) and Deloitte follow-ups	CEEDA estimates that around 54.7 hours are spent on non-contact time across 38 weeks of funded provision. This implies 0.10 hours of non-contact time per every hour of contact time.
Ratio of admin and managerial / contact hours	0.06	CEEDA (2015) and Deloitte follow-ups	CEEDA only provides an unit cost estimate for supernumerary labour. Based on the relativity between this and the unit cost for non-contact time labour, it is estimated that 0.06 hours is spent on administrative / managerial tasks for every hour of contact time. Together, these imply that 86% of staff time is spent on contact time, which is broadly consistent with the Provider Finances Survey estimate of 82% of staff time relating to direct contact with children.
Training, sickness, holidays absence days	10% of contact hours	Deloitte follow-ups	An additional allowance is made for absence through training, sickness, holidays, etc. applied as 10% of contact hours required.

Department for Education

Appendix 4 (3/3) – Overheads and on-costs in representative model of voluntary settings

Variable (as share of total costs)	Assumption	Source	Notes
Total staff costs	77%	Provider Finances Survey 2012	The Provider Finances Survey estimates that staff costs comprise 77% of total costs on average, while cost of premises comprise 5% of total costs for not for profit settings. The remainder of costs have been proportionately allocated across the other categories based on the shares for overall group-based settings. The Provider Survey reports aggregated delivery materials and food costs – these have been apportioned into Delivery / materials cost and Meals / catering costs assuming a 72:28 split based on follow-ups. Of the 72% delivery / materials costs, around 19% is estimated to relate to consumables. Voluntary providers are typically exempt from business rates.
Rent/mortgage/cost of premises	5%	Provider Finances Survey 2012	
Business rates	0%	Provider Finances Survey 2012	
Insurance	1.13%	Provider Finances Survey 2012	
Utilities	2.25%	Provider Finances Survey 2012	
Delivery/materials cost	5.67%	Provider Finances Survey; Deloitte survey and interviews	
Meals/catering cost	2.21%	Provider Finances Survey; Deloitte survey and interviews	
Maintenance costs	2.25%	Provider Finances Survey 2012	
Interest on loans	1.13%	Provider Finances Survey 2012	
Others	3.38%	Provider Finances Survey 2012	

Variable	Assumption	Source	Notes
Salary on-costs			
Training	1% of gross salary	Deloitte survey and interviews	Gross salary is estimated for a worker working 35 hours / week over the relevant number of opening weeks, based on the hourly rates of pay assumptions.
NIC	13.80% above £7,956 of gross salary	Regulatory requirements	
Pensions	1% of gross salary when above £10,000	Regulatory requirements	

Department for Education

Appendix 5 (1/3) – Activity in representative model of primary schools with nursery provision

Variable	Assumption	Source	Notes
Opening weeks / year	38	Deloitte survey and interviews	School-based providers are typically open term-time only.
Opening days / week	5	Deloitte survey and interviews	Typically open only on weekdays.
Number of available places	41	Provider Survey 2013	Number of Ofsted-registered places for school-based settings.
Distribution of children			
0-1 years old (%)	1%	Provider Survey 2013	Proportion of attendees by age of child for primary schools with nursery classes setting. It does not add to 100% as there are also children aged over 4 years of age.
2 years old (%)	2%	Provider Survey 2013	
3 years old (%)	36%	Provider Survey 2013	
4 years old (%)	47%	Provider Survey 2013	
Average occupancy rate	78%	CEEDA (2015) and Provider Survey 2013	The Provider Survey indicates an average occupancy rate of 87% for school-based providers. However, CEEDA provides a more detailed analysis of occupancy, taking into account periods of vacancy during the day, and estimates an average occupancy level of 72% over the period of the study for PVIs. These have been proportionately adjusted based on the differences in group-based and school-based occupancy rates in the Provider Survey.
Number of contact hours / day	7	Deloitte survey and interviews.	Primary school providers typically offer 7 contact hours a day.

Department for Education

Appendix 5 (2/3) – Staffing in representative model of primary schools with nursery provision

Variable	Assumption	Source	Notes
Staff to child ratio			
0-1 years old	1:3	Deloitte survey, follow-ups and statutory requirements	
2 years old	1:4	Deloitte survey, follow-ups and statutory requirements	
3 years old	1:10	Deloitte survey, follow-ups and statutory requirements	The NAHT report findings suggest a weighted average of 1:10 staff to child ratio for 3 and 4 year olds. Follow-ups with provider suggest that providers often staff at higher ratios than required to cover for sickness / training / holidays. These should be considered when changing ratios. Further, the model assumes staffing based on available places, therefore the effective staffing ratio may be even higher for lower occupancy levels.
4 years old	1:10	Deloitte survey, follow-ups and statutory requirements	
Ratio of non-contact / contact hours	0.10	DfE based on CEEDA (2015)	CEEDA estimates that around 54.7 hours are spent on non-contact time across 38 weeks of funded provision. This implies 0.10 hours of non-contact time per every hour of contact time.
Ratio of admin and managerial / contact hours	0.06	DfE based on CEEDA (2015)	CEEDA only provides an unit cost estimate for supernumerary labour. Based on the relativity between this and the unit cost for non-contact time labour, it is estimated that 0.06 hours is spent on administrative / managerial tasks for every hour of contact time. Together, these imply that 86% of staff time is spent on contact time, which is broadly consistent with the Provider Finances Survey estimate of 82% of staff time relating to direct contact with children.
Training, sickness, holidays absence days	10% of contact hours	Deloitte follow-ups	An additional allowance is made for absence through training, sickness, holidays, etc. applied as 10% of contact hours required.

Department for Education

Appendix 5 (3/3) – Overheads and on-costs in representative model of primary school nurseries

Variable (as share of total costs)	Assumption	Source	Notes
Total staff costs	77%	Provider Finances Survey 2012	The Provider Finances Survey estimates that staff costs comprise 77% of total costs on average, while cost of premises comprise 2% of total costs for settings operated by schools / colleges. The remainder of costs have been proportionately allocated across the other categories based on the shares for overall group-based settings. The Provider Survey reports aggregated delivery materials and food costs – these have been apportioned into Delivery / materials cost and Meals / catering costs assuming a 72:28 split based on follow-ups. Of the 72% delivery / materials costs, around 19% is estimated to relate to consumables. Nurseries at schools typically do not report premises costs as these are funded by the school and they do not consider the opportunity cost of the provision.
Rent/mortgage/cost of premises	2%	Provider Finances Survey 2012	
Business rates	1.24%	Provider Finances Survey 2012	
Insurance	1.24%	Provider Finances Survey 2012	
Utilities	2.47%	Provider Finances Survey 2012	
Delivery/materials cost	6.22%	Provider Finances; Deloitte survey and interviews	
Meals/catering cost	2.42%	Provider Finances; Deloitte survey and interviews	
Maintenance costs	2.47%	Provider Finances Survey 2012	
Interest on loans	1.24%	Provider Finances Survey 2012	
Others	3.71%	Provider Finances Survey 2012	

Variable	Assumption	Source	Notes
Salary on-costs			
Training	1% of gross salary	Deloitte survey and interviews	Gross salary is estimated for a worker working 35 hours / week over the relevant number of opening weeks, based on the hourly rates of pay assumptions.
NIC	13.80% above £7,956 of gross salary	Regulatory requirements	
Pensions	14.10% of gross salary	Regulatory requirements	The pensions contribution is applied across all staff, but not all staff at a school would be enrolled in the teachers' pensions scheme with the high rate so this potentially a higher estimate.

Department for Education

Appendix 5 (1/3) – Activity in representative model of childminders

Variable	Assumption	Source	Notes
Opening weeks / year	48	Deloitte survey and interviews	Estimates are for a typical full-time childminder.
Opening days / week	5	Deloitte survey and interviews	
Number of available places	3	Survey, follow-ups and statutory requirements	
Distribution of children			
0-1 years old (%)	30%	Deloitte survey and interviews	
2 years old (%)	30%	Deloitte survey and interviews	
3 years old (%)	30%	Deloitte survey and interviews	
4 years old (%)	10%	Deloitte survey and interviews	
Average occupancy rate	75%	Provider Survey 2013	The estimates for average occupancy rate have not been adjusted according to CEEDA (2015) estimates as follow-ups suggest that occupancy does not vary as much across the day for childminders.
Number of contact hours / day	7	Deloitte survey and interviews	

Department for Education

Appendix 5 (2/3) – Staffing in representative model of childminders

Variable	Assumption	Source	Notes
Staff to child ratio			
0-1 years old	1:3	Deloitte survey, follow-ups and statutory requirements	
2 years old	1:3		
3 years old	1:3		
4 years old	1:3		
Ratio of non-contact / contact hours	0.10	DfE based on CEEDA (2015)	CEEDA estimates that around 54.7 hours are spent on non-contact time across 38 weeks of funded provision. This implies 0.10 hours of non-contact time per every hour of contact time.
Ratio of admin and managerial / contact hours	0.06	DfE based on CEEDA (2015)	CEEDA only provides an unit cost estimate for supernumerary labour. Based on the relativity between this and the unit cost for non-contact time labour, it is estimated that 0.06 hours is spent on administrative / managerial tasks for every hour of contact time. Together, these imply that 86% of staff time is spent on contact time, which is broadly consistent with the Provider Finances Survey estimate of 82% of staff time relating to direct contact with children.
Training, sickness, holidays absence days	10% of contact hours	Deloitte follow-ups	An additional allowance is made for absence through training, sickness, holidays, etc. applied as 10% of contact hours required.

Department for Education

Appendix 5 (3/3) – Overheads and on-costs in representative model of childminders

Variable (as share of total costs)	Assumption	Breakdown in Provider Survey	Source	Notes
Total staff costs	77%	-	Provider Finances Survey 2012	Staff costs are imputed based on scenarios of the minimum wage. A similar approach is taken for premises costs. The remainder of costs are adjusted proportionately. The Provider Survey reports aggregated delivery materials and food costs – these have been apportioned into Delivery / materials cost and Meals / catering costs assuming a 72:28 split based on follow-ups. Of the 72% delivery / materials costs, around 19% is estimated to relate to consumables.
Rent/mortgage/cost of premises	7%	-		
Business rates	0.15%	1%		
Insurance	1.18%	8%		
Utilities	2.00%	0%		
Delivery/materials cost	5.62%	38.15%		
Meals/catering cost	2.19%	14.85%		
Maintenance costs	1.62%	11%		
Interest on loans	0.15%	1%		
Others	3.09%	21%		
Training	Training included in staff cost assumption	3%		

Variable	Assumption	Source	Notes
Salary on-costs			
Training	1% of gross salary	Deloitte survey and interviews	Gross salary is estimated for a worker working 35 hours / week over the relevant number of opening weeks, based on the hourly rates of pay assumptions.
NIC	9% above £7,956 of gross salary	Regulatory requirements	This is the rate for self-employed between particular thresholds that typically apply.
Pensions	1% of gross salary when above £10,000	Regulatory requirements	