Towards a triple carer model that works for gender equality: the case of free universal childcare in the UK

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Abstract

This paper makes the case for providing universal and free childcare services in the UK to contribute to building a care economy as a better alternative to austerity and spending cuts, one that would foster gender equality and quality employment. It estimates the total cost of such services using different assumptions on staff pay and coverage and the related direct employment effects. It discusses the different multipliers that could be derived from such 'investment' and the related tax revenue for the government. It argues that the net public funding of such an extensive and high quality childcare provision for all children aged 6 months to 5 years (prior to primary school entry) can be achieved by reversing some of the tax give-aways implemented during the previous coalition government (2010-15) and which have mainly benefited men. The discussion explores the ways in which universal childcare provision, combined with a reformed parental leave and family benefit system could promote gender equality in both employment and unpaid care.

Introduction

Between 2010 and 2015, a conservative liberal democrat coalition government implemented a vast austerity plan in the UK to deal with the budget deficit and rising public debt in the aftermath of the financial crisis of 2007-08. The claim was that there was no alternative but this Plan A to 'sanitise' public finances and the economy. Such plan involved drastic spending cuts in social security and public services. Low income households and in particular lone parents and single pensioners were found to have borne the brunt of the cumulative spending cuts in services and tax-benefit changes (Reed and Portes, 2014). Not only this damaged women's economic security and employment opportunities but it also disrupted the fabric of the social infrastructure, with potential long-term negative consequences for the economy, while doing nothing to improve upwards convergence in men's and women's economic perspectives.

This paper argues that an alternative roadmap should be put in place, in order to achieve a caring economy that works for the people, and for gender equality. Feminist scholars and activists in the UK Women's Budget Group – an independent think tank analysing gender implications of fiscal and social policies – have argued for a Plan F, a feminist plan for a caring economy (WBG, 2015a). Investing in care services, guaranteeing decent working conditions and supporting more equitable sharing of unpaid care between men and women are at the core of such an economy. Part of this alternative requires the government to secure funding for the social infrastructure – care, health, education and training services, social security and housing – along with that already put in place for the physical infrastructure of transport and technology. Investing in social infrastructure would improve both well-being and productivity, not only day to day, but in ways that persist over time,

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benefiting not only people today but in years to come. In some ways it is in line with the 'new' social policy paradigm in Europe of the 'social investment strategy' aimed at increasing equal opportunities of future generations through integrating their parents (and themselves later on) into the labour market. However, the idea of the care economy goes beyond the too often narrow and instrumental perspective of the social investment approach, which has become the social policy paradigm in Europe since the turn of the century. It recognizes providing quality care not just as a means to achieve greater (female) employment by reducing constraints on labour supply but also a necessary feature of a civilised society that offers social protection and equality to its population.

In lights with these aims, the paper explores the fiscal space available for such an alternative and focuses on universal childcare provision for pre-school children as one of the bedrocks of the social infrastructure that is currently deficient. Along with reduction in working time to accommodate childcare needs and a better sharing of caring tasks between parents, costings are estimated using different assumptions about children's coverage and staff pay. Funding routes are explored for the UK, including by mobilising the tax giveaways identified as benefiting men disproportionately such as rises in personal tax allowances and cuts in fuel and alcohol duties. Other options are examined and alternative employment multipliers discussed. The model proposed is one in which dual-earners dual-carers parents operate in partnership with public care services that are universally provided and of high quality.

Making the case for free universal preschool childcare

The main problems with childcare provision in the UK and elsewhere have been identified for many years and its accessibility and affordability scrutinised by many researchers. The cost to parents is very high in the UK compared to its European neighbours and has been increasing steadily at faster pace than general inflation over the last ten to fifteen years (Rutter and Stocker, 2014; Rutter, 2015). Rutter and Stocker (2014) also point to the lack of places for young children, even among private providers, due to a lack of adequate public funding. Indeed, current state support is too low or inadequate (Rutter and Stocker, 2014; WBG, 2014): current public subsidies to offer free childcare for 3-4y olds only cover for 15h a week and for 38 weeks. This is effectively equivalent to 10h of parental work if 48 weeks and commuting time need to be accounted for. Moreover, the subsidy per hour is below the going rate so that additional hours are overcharged to parents, which partly cancels out the support provided. In addition, a complex system of cash transfers combining Universal Credit and Tax-Free Childcare entails strong disincentives for second earners to work more than short part-time weeks (if at all). Besides inadequate provision, the UK is also characterised with high levels of inequality of use. Van Lancker (2013) estimates using EU-SILC data for 2009 on FTE childcare use by income quintiles that children under 3 in the bottom 20% of families had a coverage rate six times lower than those in the top 20%, compared to 1.5 in Germany, Belgium and Italy and 1.2 in Denmark and Sweden. And this ratio rose to 7 for children in families where the mother was employed.

Research has shown time and again that lack of affordable and accessible childcare provision is associated with lasting negative effects on gender inequalities over the life course due to a one-and-half breadwinner model encapsulated by current childcare and parental leave policies (De Henau et al, 2007a and b; Lewis, 2006). Also lack of formal childcare of high quality for a significant number of

hours during the week is detrimental to children's outcomes, especially from disadvantaged background, and even for very young toddlers and infants (Havnes and Mogstad, 2011 and 2014; Karoly et al., 2005, Babchishin et al., 2013; Li et al., 2013; see also Van Lancker 2013 for a discussion).

The solution is thus to invest massively in free full-time formal childcare for all children, with highly trained and well paid staff (De Henau et al. 2007a; NEF, 2014). Therefore this paper looks at the costing and funding possibilities of such investment for children aged between 6 months and 5 years (when they enter primary school). It also explores the synergies between free formal childcare and a reformed parental leave system, especially for children in their first year. A large part of the underlying calculations and figures comes from a previous study on costing free universal childcare (albeit for children under 3 and for England only) carried out by the New Economic Foundation in 2014 (NEF, 2014). We have extended their scope to all pre-school children in the UK, analysed different coverage scenarios and looked in more details at employment effects and funding sources.

Costing the free delivery of full-time universal childcare

The cost of providing free childcare will depend on five main criteria:

1. Number of children in each age group
2. Staff ratio per child for each age group
3. Ratio of supervisor care staff (highly qualified) to less qualified staff for each age group
4. Level of remuneration of staff
5. Opening hours per week (and per year) and percentage of children covered

In the maximum scenario we assume 100% of children are covered and for a full-time equivalent week of work, including commuting time of one hour per day, hence childcare is available for 40h per week. This takes account of a full-time working week norm based on the current female full-time week of 35h (ONS, 2014). This doesn't mean that childcare is made to remain a woman's issue that needs to fit around women's typical hours; only that if men worked shorter hours, they would free up time to get more involved in caring activities and that should be the way forward within a triple carer model. Also, accounting for a typical 4-week holiday period, we assume childcare provision is available for 48 weeks.

The first three criteria are somewhat externally decided (population statistics and quality regulation) and the data are shown in Table 1. We also assume that childcare centres have one manager and each centre has 41 children of mixed ages (NEF, 2014). Supervisor staff if assumed to have higher education-oriented qualification than other caring staff and each age group of children will have some mix of carers as shown in Table 1.

Table 1 Number of children and staff ratios

	# children in UK (mid-2013)	Staff: child ratio	% staff supervisor	# places in centre
C1a (6-12m)	396308			
C1b (12-24m)	821578			
C1 (6-24m)	1,217,886	0.333	0.333	9
C2 (24-36m)	811,850	0.250	0.5	16
C3 (36-60m)	1,360,000	0.125	0.5	16

Source: population from ONS (2014); rest from NEF (2014)

The fourth criterion about staff pay is the focus of this costing exercise in which high quality childcare provision is explored and thus higher levels of pay for carers are included, following some of the suggestions of NEF (2014). We take two possible salary profiles for the staff. The first, 'high quality', option is based on teachers' salary (primary school); the second, 'decent quality', option is based on the living wage (paid for the lowest qualified category of staff and keeping the same relative pay for supervising staff as per the teacher option). Table 2 shows the hours and pay for each category of staff.

Table 2 Carers' annual pay and weekly hours (2014)

	Supervising carer	Other carer	Centre manager
Teacher salary £ pa	27,105	20,828	48,156
Living wage £ pa	15,760	12,110	27,999
# hours per week	29.7	29.7	35

Source: Department of Education (2014)

Notes: Carers' hours are based on teachers' hours in both salary options and calculated as follows: 1265h of teaching for 260 paid days = 82% of working time per day so total per week = 1265/260/0.82*5 = 29.7. This assumes that carers spend 18% of their day on other activities than direct contact with children (administrative, meetings etc.). Teachers' salaries are mid-point of the scale.

This information allows us to calculate a cost per child per hour for each type of staff and for each age group. We assume, following NEF (2014), that

- Non-wage costs are 23% of unit cost (per child per hour)
- Gross earnings attract pension contributions of 14.1%

Because managers' costs are per centre and not per age group, the following table shows the cost per child per hour with the managers' cost being apportioned to each age group (in proportion of children of each age in the centre).

Table 3 cost of free childcare

		Teacher wage		Living wage	
	# children covered	Cost per hour per child (£)	Total cost pa (£m)	Cost per hour per child (£)	Total cost pa (£m)
6-24m	1,217,886	9.89	23,120	5.59	13,071
24-36m	811,850	8.00	12,465	4.53	7,059
36-60m	1,360,000	4.20	10,977	2.38	6,220
All	3,389,736		46,561		26,350

Note: the cost per hour per child is that of hours of direct care of the child, not hours of carer's work.

At teacher's wage, £47bn would be required per annum to provide universal free childcare, reduced to £26bn if provided at living wage.

This is a huge amount, equivalent to 3% of GDP in the high quality scenario and compares to a mere £5bn of existing annual current expenditure that goes towards the main three forms of childcare support (tax-free childcare or vouchers, childcare tax credit and free childcare for 15h for 3-4y olds and 40% of 2y olds), some of which going to older children.

The net cost to the Exchequer could be reduced through revenue raised from carers' new jobs and parents care time being freed up to take-up paid employment. Let alone indirect and induced multiplier effects in the rest of the economy.

Employment effects

Direct job creation

The main immediate employment effect is to create jobs in the care sector. The number of full-time equivalent (FTE) caring jobs created as a result of the maximum scenario is given in Table 4.

Table 4 Number of jobs (FTE) created in care services

	Supervising carer	Other carer	Manager	Total
C1 (6-24m)	222,504	445,007		667,511
C2 (24-36m)	166,862	166,862		333,725
C3 (36-60m)	139,763	139,763		279,526
Total	529,129	751,632	94,487	1,375,249

The 1.4m new jobs created correspond to 41 full-time jobs for every 100 children offered a full-time slot for free in a childcare centre.[2]

The second employment effect is to free up time of unpaid carers (mainly parents but could also be relatives or friends) to take up employment or increase their working time. This is a supply-side effect and some of these jobs might be partly met by increased demand in the childcare sector

[2] This is higher than the headline staff:child ratio derived from Table 1 of 23 carers for every 100 children. The difference is due to the fact that carers' full-time week is only 30h while children are to be looked after for 40h and not all the time of the carers is used for time with children (18% was factored in for admin and meetings)

through the first effect. Depending on how the rest of the economy responds, the so-called 'direct' multiplier can vary according to the extent to which unpaid carers find (full-time) employment in other sectors. It can be just 1 if all freed unpaid carers go on to take up all the newly created childcare employment. This will also depend on the number of unpaid carers whose time would be freed up relative to the number of jobs created in the childcare sector. And on their willingness (and other constraints) to supply more labour.

Using data on FTE employment rates for parents whose youngest child is under the age of 5, we can estimate the gap between fathers and mothers as an indicator of the potential increase in labour supply for mothers. This is one way of estimating some sort of maximum labour supply effect and doesn't preclude other methods such as looking at overall employment rate or more refined labour supply models. By doing so we assume that the lower employment rate of mothers (including lone mothers) of young children (0-4) compared to fathers is mainly due to (child) caring constraints.

The FTE employment rate of mothers of children aged 0-4 was 40% in 2014 and that of fathers was 93%[3]. The employment gap is thus 53 percentage points. If we take the total fertility rate (TFR) of 1.9 as an indicator of the average number of children per woman, we have 53 mothers for every 100 children. Therefore for every 100 additional children in childcare, 28 more FTE (=0.53*53) could be freed up for mothers (i.e. for any unpaid carer) to take up. This implies that the employment multiplier can be as high as 1.69 if none of these freed jobs are filling the increased demand in childcare staff (28 additional jobs for every 41 care jobs created) and as low as 1 if all newly employed parents become paid carers or if parents do not supply more working hours and just substitute informal for formal care. Even so that would be a significant boost in quality employment for parents and /or informal carers.

Female employment rate (16-64) in 2014 was 68% in headcount and 53% in FTE (based on female full-time hours). Depending on the multiplier and if we assume all the new jobs are taken up by women (see below), the increase in employment rate (16-64) would be between 6.7 points with a multiplier of 1 and 11.3 points with a multiplier of 1.69. Table 5 shows the employment creation effects according to three different multipliers.

Table 5 job creation in care and other sectors

Multiplier	1	1.33	1.69
# FTE jobs created			
Care	1,375,249	1,375,249	1,375,249
Other	0	453,832	942,332
Total	1,375,249	1,829,081	2,317,581
Point rise in f empl. rate	6.7	8.9	11.3

[3] Headcount rates are derived from the ONS series on working families and FTE calculations are based on proportions of employed men and women with young children working part-time (15% and 55% respectively) and using average working hours of part-time men and women overall (around 16 hours). We assume a full-time working week based on the female full-time average of 35 hours. Elsewhere in this exercise we have assumed a full-time week of 40h. Note that full-time working men work 5h more on average than their female counterparts and this was accounted for in their FTE calculation. All data are from ONS (2014b).

The middle multiplier scenario of 1.33 would lead to an increase by nine points in the overall female employment rate, thereby nearly closing the current ten-point headcount employment gap between all men and women aged 16-64. In FTE, the increase in female employment rate to 62% would still be 20 points below the male rate of 82%. This shows that there is significant spare capacity for additional employment effects to be matched with increased female labour supply, provided relevant constraints are alleviated (especially other types of care), or with increased male involvement in unpaid care activities.

Of course not all of these jobs would be new since childcare providers already exist. In April-June 2014, there were 337,000 people employed as nursery nurses, childminders and playworkers[4], 98% of whom were women and 55% full-time employed (ONS, 2014b). That's about 260,000 FTE (about 19% of the total FTE staff in care that would be created by the universal childcare reform), although it would be slightly more when accounting for the existing teaching professionals in nursery education and managerial staff[5].

A third type of employment effect is the indirect multiplier stemming from employment created through increased demand for inputs from other sectors into the additional childcare services (food, construction, transport, etc.), usually estimated with input-output tables. The ONS provides estimates on such indirect effects using data from 2010, for different sectors of the economy. The social sector which includes childcare services in the classification has a multiplier of 2.76 (for non-market activities, that is provided publicly). However, given the structure of social care services (mainly procuring to private providers), it is not clear how this multiplier would look like if the full childcare provision was publicly funded and publicly delivered. Perhaps the multiplier for the education sector is closer to what we are trying to achieve, given the wage levels of teachers assumed in the high quality scenario. In this sector, the multiplier is much lower at 1.17, still adding an extra 234,000 jobs to the total.

A fourth type of employment effect is the induced impact on economic growth, the so-called fiscal multiplier, due to increased internal demand through consumption and public and private investment. Estimating such effect would require a full-blown macroeconomic simulation tool outside of the scope of this paper (Bargawi and Cozzi, 2014; Hansen and Andersen, 2014). The same goes for estimating a fifth employment longer term effect related to child outcomes, including with increased productivity due to a higher quality and more inclusive early education system.

Tax revenue

The revenue effect of the increased jobs in childcare and potential increased jobs for mothers can be estimated. This would include primarily income tax and national insurance contributions of

[4] Respectively categories 6121, 6122 and 6123 of the SOC 2010 occupations in the Labour Force Survey.
[5] It is difficult to estimate the exact current number of workers in childcare occupations given the existing statistical classification that treats primary school teachers and nursery classes teachers (the latter being for 3 and 4 year-olds usually) as part of the same occupation. There were about 431,000 primary and nursery school teaching professionals in 2014 compared to 411,000 secondary education teaching professionals so we can assume that relatively few in the first group were employed as professionals in nursery education (ONS, 2014b).

employees and of employers. We assume non-care jobs are paid at the full-time median wage per annum of £23,889. Table 5 summarises the tax revenue and thus the net additional funding needs for the government (assuming the current £5bn annual childcare budget is used).

Table 5 Tax revenue from job creation and net funding needs

	Teacher wage			Living wage		
Multiplier	1	1.33	1.69	1	1.33	1.69
Tax revenue from jobs (£m)						
Care	10,309	10,309	10,309	3,626	3,626	3,626
Other	0	3126	6,491	0	3126	6491
Total	10,309	13,435	16,800	3,626	6,753	10,118
Current funding cc (£m)	5,000	5,000	5,000	5,000	5,000	5,000
Net funding need (£m)	31,253	28,127	24,762	17,723	14,597	11,232

The net funding needs remain at a very high level in the tens of billions. However they could be related to the current tax-giveaways of the personal tax allowance and the alcohol and fuel duties going mainly to men, and totalling £20bn per year in 2015-16 (OBR, 2015). This is more than the £15bn of net funding in the living wage scenario (assuming the middle multiplier effect). For the teacher scenario, the shortfall of £8bn that would still remain if these tax-giveaways were reversed imply that the 40m adults could be asked to contribute an additional £200 per person per annum on average. That's £3.8 per week per person, the equivalent of a pint of beer or cider to use a popular analogy. In its Green Budget 2015, the IFS estimates that increasing either the VAT standard rate or the basic income tax rate by 1 percentage point could raise £5bn a year (IFS, 2015).

Alternatively, this could be coming from companies: as a reminder the successive cuts in the corporation tax rate amount to about £7bn per year in foregone revenue in 2015-16, nearly enough to fill the remaining £8bn shortfall. The direct gendered nature of this tax give-away is less clear although wealthier shareholders and business owners are mainly men (WBG, 2015).

In any case, the net funding needs – even in the higher quality scenario – are well below the foregone revenue due to tax avoidance and evasion, ranging from £34bn to £120bn depending on the estimates (Sikka, 2015).

The other factor to consider is the increase in GDP fostered by the positive employment effect (via consumption boost and rise in productivity stemming from a better work-life balance), thereby reducing the deficit as a proportion of GDP. However, as mentioned above estimating such second-order effects is difficult without a proper macrosimulation tool (but see Bargawi and Cozzi, 2014 and Hansen and Andersen, 2014 for such examples).

Interaction with means-tested benefits

Even when looking at first-order labour supply responses, an important aspect to keep in mind is the role of the current tax credit system (or the similar Universal Credit system being phased in). Although increased employment in families would potentially reduce the tax credit bill given the

means-tested nature of the system, the net effect would be somewhat ambiguous. The structure of these means-tested cash transfers inherently disincentivise second earners in low income households to take up (full-time) employment, even with free childcare, because benefits are tapered down at a rate of 65p for every earned pound (and more once tax and NICs are due).

Table 6 summarises the main average effective tax rate (AETR) for a couple in which the second earner moves from no paid employment to relevant number of paid hours, and the first earner is on 40h paid at the same wage rate. The AETR is the percentage of additional gross earnings taken away in reduced benefits and increased costs (taxation and childcare) when taking up a certain number of hours of paid employment.

For couples on minimum wage with two young children in free full-time childcare (i.e. no childcare cost), taking up employment for the second earner after maternity leave implies that 65% of the additional gross income (from earnings and child-related benefits and UC) would be taken away whether they were to work 10, 20, 25, 30 hours and up to 69% if working 40h (as they start paying income tax and NICs). The same holds if the spouses earned the living wage, although the AETR would be reduced to 57% at 40h. At median wages (as in our estimated employment effect above), such high AETR is only for small hours of employment (below 10 hours): at 20h, the AETR is down to 37% and to 34% at 40h, although still a third higher than for much higher wages.

Table 6 Effect of childcare costs on AETR of couples with 2 children (1y and 3y)

	Second earner's hours	Min. W	Living W	Median W	80th pct W
Hourly W £		6.5	7.85	11.61	19.59
Gross hh inc. £	0	13,520	16,328	24,149	40,747
Net hh inc. £	0	22,176	22,844	24,705	32,433
2c current cc					
AETR	20	80.5%	78.0%	76.3%	45.0%
AETR	30	83.4%	82.1%	80.2%	53.1%
AETR	35	94.3%	91.2%	86.3%	55.4%
AETR	40	109.6%	103.9%	89.2%	57.1%
2c no cc cost					
AETR	20	65.0%	65.1%	37.0%	17.5%
AETR	30	66.0%	65.2%	35.3%	22.3%
AETR	35	67.5%	60.4%	34.9%	23.7%
AETR	40	68.6%	56.9%	34.5%	24.7%
% pts AETR diff	20	15.5	12.9	39.3	27.5
% pts AETR diff	30	17.4	17.0	44.9	30.8
% pts AETR diff	35	26.8	30.8	51.5	31.7
% pts AETR diff	40	41.1	47.0	54.7	32.4

Note: Own calculations using the following assumptions: currently planned system of Universal Credit covering 85% of childcare costs up to a limit and 20% 'tax-free' childcare up to £2000 per child (to be introduced in

2015); childcare costs of £4.4 an hour per child (Rutter and Stocker, 2014) for 48 weeks; 15h of free childcare per week for 38 weeks for the oldest child aged 4 (the youngest is 1 year old); both earners on same hourly wage rate (examples of rates are as of November 2014); first earner is employed 40h a week; Income tax, NICs and tax credit figures are all from the 2014-15 fiscal year.

Nevertheless, providing free childcare for all children would help considerably reduce the AETR compared to the current planned system of UC and tax-free childcare (difference in percentage points of the AETR are shown in the last three rows of the table). This is especially the case for middle income families whose earnings are too high to benefit more from UC and too low to compensate for the hourly cost of childcare.

These results show that despite significant reduction in the employment disincentive for second earners, this remains high for low earning families. Therefore, in order to make universal childcare more effective in increasing parental employment, reforming the means-tested benefit system becomes necessary too. More generally a system of in-work benefits raises questions about the moral and economic rationale for the state to keep subsidising employers paying low wages, especially in sectors less exposed to global competition such as personal and retail services where women predominate. It also creates complexity to the tax system with related administration costs. An ongoing argument is to separate the tax system from the delivery of support to families with children, as in most Scandinavian countries, using universal child benefit (De Henau et al., 2010).

Alternative free childcare options

If the sources of revenue explored above (reversing tax give-aways and including reduced benefit payments) are too speculative or politically unfeasible, other spending avenues could be explored. One could be to reduce the number of hours of free coverage. Another could be to reduce the number of children targeted by the free childcare places (either selecting children or assuming not all parents will want their children to stay in a centre for 40h from 6 months to 60 months). The third could be to charge a fee to parents, which for the purpose of this exercise (looking at total costs) would be equivalent to reducing the proportion of children that are covered free of charge. If we were to look at distributional aspects then this third option should be considered separately.

The following options are examined:

- Option 1 is the scenario above with 40h coverage including one hour per day for commuting
- Option 2 is all children covered for three days a week, assuming the 35h week model, hence 7 hours a day (therefore 24h opening hours a week to allow for three hours commuting time, rounded up to 25h to match Labour and SNP 2015 general election proposals)
- Option 3 is existing (pre-2015 election) provision of 15h free but extended to all pre-school children
- Option 4 is a 30h weekly coverage for 75% of children in each age group
- Option 5 is a full-time coverage for 100% of 3-4y olds but only for 60% of those aged between 6 months and 36 months
- Option 6 is the same as option 5 in terms of number of children covered but only for three days a week.

Note that the option of three days a week (25h opening times) could be seen as five days a week for fewer hours (say 4 to 5 hours) but the idea of three days a week is convenient and would tie in well with more sharing in parental caring time so that parents work on a 4/5 shift, each looking after their child one day a week on their own.[6] For lone parents, an equivalent option would need to remain at 4 days a week (32h childcare). Table 5 summarises the main results for each option and for both types of pay for carers, using the mid-range of the employment multiplier.

All of the options offer a more generous scenario than any party's proposal in their 2015 election manifesto. The Conservative government elected in May 2015 is offering 30h free childcare for 3-4y olds (also SNP policy in Scotland). Labour proposal was for 25h (supported by the SNP for England). The Liberal Democrats' long term plan is to aim for 20h for all children aged from 9 months to 5 years, starting with 15h to all 2y olds. However, all explicitly focused on access to children whose parents are both in paid employment. Only the Greens pledged a free childcare scenario for all children regardless of the working status of their parents but they did not give a figure of hours per week. None of these parties made clear whether they would extend the free hours offer from 38 weeks to 48 weeks a year. Given some of the costing included in some of the manifestos, it is unlikely that the proposals envisaged paying the care staff at teachers' wage levels.

Table 7 Options for free childcare

	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
	100% cov. / 40h pw	100% cov. / 25h pw	100% cov. / 15h pw	75% cov. / 30h pw	60% cov. 6-36m; 100% 3-4y / 40h pw	60% cov. 6-36m; 100% 3-4y / 25h pw
Total cost p.a. (£m)						
Teacher wage	46,561	29,101	17,461	26,191	32,328	20,205
Living wage	26,350	16,468	9,881	14,822	18,298	11,436
# FTE jobs in care (30h pw)	1,375,249	859,530	515,718	773,577	952,123	595,077
# FTE private jobs (35h pw)	453,832	283,645	170,187	255,281	314,201	196,375
Tax revenue from jobs (£m)						
Teacher wage	13,435	7,233	3,910	6,859	9,406	5,073
Living wage	6,753	3,057	1,404	3,100	4,734	2,153
Net funding need p.a. (£m)						
Teacher wage	28,127	16,868	8,551	14,332	17,921	10,132
Living wage	14,597	8,412	3,477	6,722	8,564	4,283

This table yields the following observations:

- The net cost (net funding need) of £17bn and £18bn in Option 2 and 5 respectively (teacher's salary) are just under the current total tax give-away in PTA and duties
- Funding teacher wages in Option 4 (which roughly corresponds to the Tories and SNP plans if we assume employment rate increases as a result) is similar to the full coverage at living wage in Option 1.

[6] See also discussion in NEF (2014)

- The net funding need of £10bn in Option 6 is just below the equivalent in foregone revenue due to the rise in the personal tax allowance, amounting to £11bn in 2014-15. And the same give-away would cover the gross funding need for the living wage scenario in option 6.
- The cheapest option is obviously Option 3 and the living wage scenario would require a net amount (£3.5bn) equivalent to half the annual give-away in duties.

Parental leave equivalent

The above exercise considers childcare coverage from the age of 6 months. In some EU countries typical non parental childcare starts from three months onwards (Belgium, France, Denmark) or one year (Sweden). Maternity leave in the UK is currently for one year, of which 6 weeks are paid in proportion of earnings and 33 weeks at a low flat rate. It now has a transferable component whereby both parents can take some leave (although sharing the same pay).

We could use this childcare costing exercise to think about a groundbreaking change in the parental leave system by using the money spent on childcare during the last six months of the first year of a child to increase parental leave pay. The leave system itself could be based on a model similar to that of Iceland but with less generous replacement rate, unless additional funding is being earmarked too. In order to provide incentives to parents to take it up and to fathers to play their part, evidence has shown that the best systems are individualised with relatively high replacement rates (see De Henau et al., 2007b, for a discussion). Therefore, the new model could take the form of:

- Each parent gets 6 months individual leave (with flexibility on blocks of leave to be taken, perhaps two days a week or one month full-time at a time or all of these, provided notice is served)
- 3 months can be transferred to the other parent (so that each parent has a take-it-or-leave-it period of 3 months)

To calculate the level of pay, we assume the cost of the child is based on the teacher salary option which for children in their first year was estimated at £9.9 per hour per child (see above). That's £395 per week per child (at 40h). If combined with existing provision of statutory maternity and paternity pay (and assuming the 90% replacement rate of SMP for the first six weeks is calculated at mean full-time female earnings) then the average amount available per week when all these sources are combined is £347 for the couple (per child) over the first year.

The leave could be set at 67% of previous earnings (like in Germany) between an arbitrary minimum of 67% of the 10th percentile of full-time earnings (regular pay excluding overtime) which was £282 in 2014 (just above full-time earnings at minimum wage) and a maximum of £505 (65% of the 80th percentile) (ONS, 2014c). The minimum is quite low (38% of median full-time earnings) but still 35% higher than the current weekly amount of SMP. If not proportional to earnings but flat rate, then the £347 amounts to 70% of median full-time wages.

If childcare is paid at the living wage then the average weekly pay available in the first year changes from £347 to £261 (52% of median earnings) and if we keep the minimum at the same level as above, the maximum ought to be £333 per week (43% of the 80th percentile).

Because the amount is taken per child, there is no change in government funding whether parents decide to use formal childcare or take the leave option. For individual parents, the options are not identical as the childcare option would allow working parents to retain their full salary, advantaging higher earners, while the leave option would advantage those on low income given the minimum guaranteed payment. Research in other countries has advocated against such division between higher and lower earning parents due to long term career progression disadvantages (Ray et al., 2010). However, most studies looked at the perverse effects of long absences from work on low pay (of more than a year) such as in the French, Finnish, Austrian and Spanish systems. In this case though, the leave would be limited to 6 months (max 9 months) for each parent.

This exercise only works for Option 1 of the childcare scenarios (100% coverage of children under 1y for 45h). The weekly amount available would be reduced if opening hours were shorter and if not all children of that age group were covered as in the other options. Note that quite apart from this equivalence exercise where childcare funding was diverted to fund parental leave, more generous leave payments could be funded through additional national insurance contributions for example.

Conclusion

This short exercise has demonstrated that investing in free childcare is a costly but feasible endeavour using existing resources more effectively. However, building the social infrastructure and providing the care that people need is not just about creating employment, boosting economic growth and therefore investing in productive assets – children – for the return they can bring. The case made here is about what a civilised society needs to do. Providing free and universal childcare will enhance children's social interaction and education with knock-on effects on future outcomes, including spending on education and remediation. Significant amounts are required – the full-time coverage at teacher wages amounts to 3% of GDP – but using the main three tax give-aways of the coalition 2010-2015 government alone would be enough to cover for the bulk of the costs, while the employment creation in care services and elsewhere would pay for the rest through tax revenue.

The paper also explored opportunity to transform the current parental leave system and make it more gender equal, thereby fostering a genuine route towards a triple-carer/dual-earner model. At the core of this plan would be the move towards reducing the full-time working week to a four-day week – starting with parents of young children – during which both mothers and fathers alternate one day of care at home.

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