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Should We Subsidise Pre-School Childcare, and If So, How?

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I. INTRODUCTION

The subsidy of childcare for pre-school-age children has moved rapidly up the political agenda in the UK, and government policy has developed considerably in this area. In his 1990 Budget, John Major introduced income tax relief for childcare provided by the employer at the workplace. Since October 1994, certain family credit claimants have been entitled to deduct up to £40 per week of childcare expenditure from their income for the family credit means test,² and from April 1997, all parents of four-year-olds will be eligible for an annual £1,100 childcare voucher to be used as full or part payment for childcare services.³ The Labour Party has also long advocated increased state-funded childcare in the form of nursery education for three- and four-year-olds. It favours local education authorities (LEAs) setting targets for the provision of nursery education and points to certain LEAs that already provide nursery education for 90 per cent of three- and four-year-olds. The Liberal Democrats have promised to increase public education expenditure by £2 billion (7 per

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² The 1995 Budget raised this disregard to £60 per week.

³ The scheme has been piloted in four local education authorities — Kensington and Chelsea, Wandsworth, Westminster and Norfolk — since April 1996.

cent), with the first priority for this extra money being nursery education services.

A fair summary of the political debate would be that the case for expanding access to childcare for pre-school-age children has been accepted right across the political spectrum but the mechanics of implementing increased support are disputed. But it is only through examining why we might want to subsidise childcare at all that we can begin to understand what sorts of policy might meet our aims. In this article, we attempt to determine which sorts of childcare subsidies are appropriate for different policy goals from both a theoretical and an empirical perspective, and how far policy proposals meet these aims.

We begin, in Section II, by describing briefly the patterns of childcare use amongst pre-school-age children in the UK, using a variety of survey evidence and administrative statistics. This allows any policy discussion to be informed by existing patterns of childcare use. In Section III, we examine the conceptual case for childcare subsidies, focusing on potential market failures and distributional outcomes in a free market for childcare so that we can define practical policy objectives in any childcare strategy. This discussion is followed, in Section IV, by an estimation of the costs and labour supply implications for women of different childcare strategies. In Section V, we attempt to evaluate the government's childcare strategy in terms of the empirical evidence of the effects of different childcare strategies and the policy criteria set out. We conclude in Section VI.

II. THE USE OF PRE-SCHOOL CHILDCARE PLACES

There is no statutory duty to provide non-parental childcare for pre-school-age children in the UK. Parents choose the forms of childcare that are most appropriate for their children, ranging from solely parental care at home to a substantial amount of out-of-home childcare provided by external childcare sources. Naturally, these choices are constrained by many factors, including the age and number of children, the employment status of parents, parental income and what forms, cost and quality of childcare are available locally. These constraints often leave many parents feeling their ability to choose is severely limited, but even if all childcare services were free and widely available, we would expect the childcare choices of parents of pre-school-age children to be diverse.

In this section, we use the 1991-92 General Household Survey (GHS) to present an outline of the childcare choices made by parents. For a more detailed analysis of these data, see Duncan, Giles and Webb (1995) or OPCS (1993). The survey provides a very rich source of data on childcare use as it includes a special section for parents of pre-school-age children who were asked in detail about their childcare use during daytime. From the 1991-92 GHS, we selected a

sample of 1,288 households that contained at least one dependent child under five years of age.

1. Use of Childcare

In analysing the use of various forms of childcare, it is important to seek to disaggregate childcare use into largely homogeneous groups. The GHS identifies a number of forms of childcare which are listed below. Respondents were asked for how many weeks a year and for how many hours each week they used each arrangement. Some of the groups represented reasonably homogeneous services, such as nursery schools, while others, such as childminding, are more diverse.

- *Parental care only*: family did not record any childcare other than by the parents.
- *Informal care*: parents used other family members or friends on a voluntary basis.
- *Nursery school*: run either by a local authority or privately, on an educational basis where a qualified teacher is present.
- *Local authority (LA) nursery*: a crèche, nursery, playgroup or playscheme provided by the local authority where no qualified teacher is present.
- *Playgroup*: other crèche, playgroup or playscheme provided by a private or voluntary body, where the parent may or may not be present during a session.
- *Childminder*: either registered or unregistered, within or outside the home. This category excludes babysitters and school-aged family and friends, but includes post-school-aged family and friends provided they are paid for their services.
- *Multiple care forms*: more than one of the formal care forms above.

The choices made by parents in the survey are shown in Table 1. Among our selected sample, 37 per cent of families used only parental care, while another 13 per cent supplemented parental care with other forms of free informal care supplied by other family and friends. Half of the sample used some form of formal care. Not all of this formal childcare involved charges, however, as 25 per cent of formal care involved no fee. This leaves roughly 40 per cent of families who paid for some childcare. Nursery schools (including reception classes at primary schools for four-year-olds) were most likely to be free of charge and were also the most-used type of formal care. The other main source of care used was playgroups, which have tended to develop in areas with little other childcare provision. Around 90 per cent of playgroup places involved some element of cost or charge.

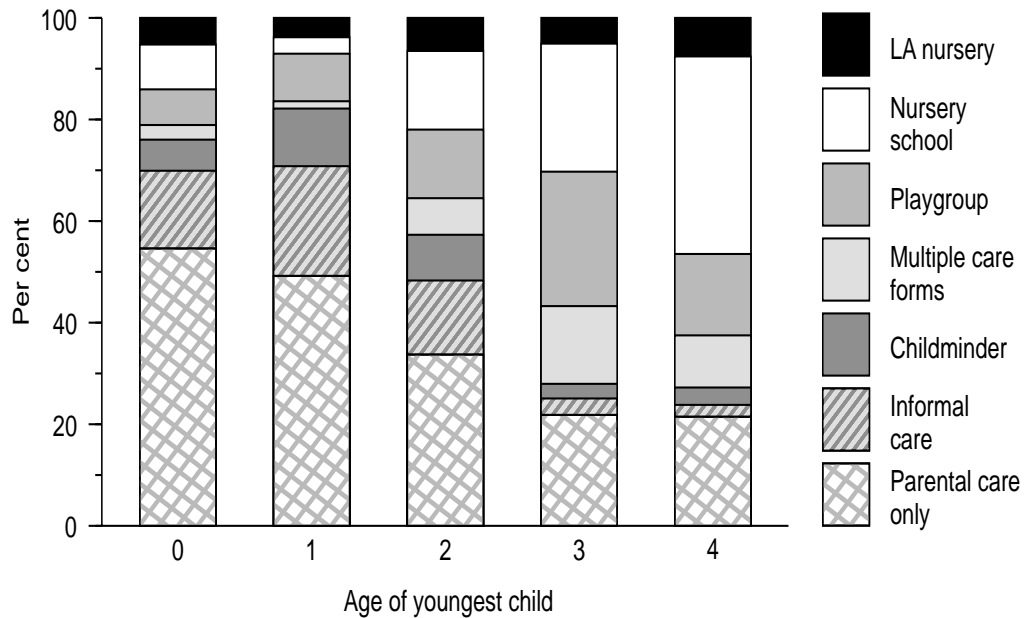
The use of different childcare forms is clearly also determined by factors other than availability and cost. Figure 1 shows perhaps the most important factor in determining the form of childcare used — the age of the children. For simplicity, we have shown the childcare use by the age of the youngest child, so

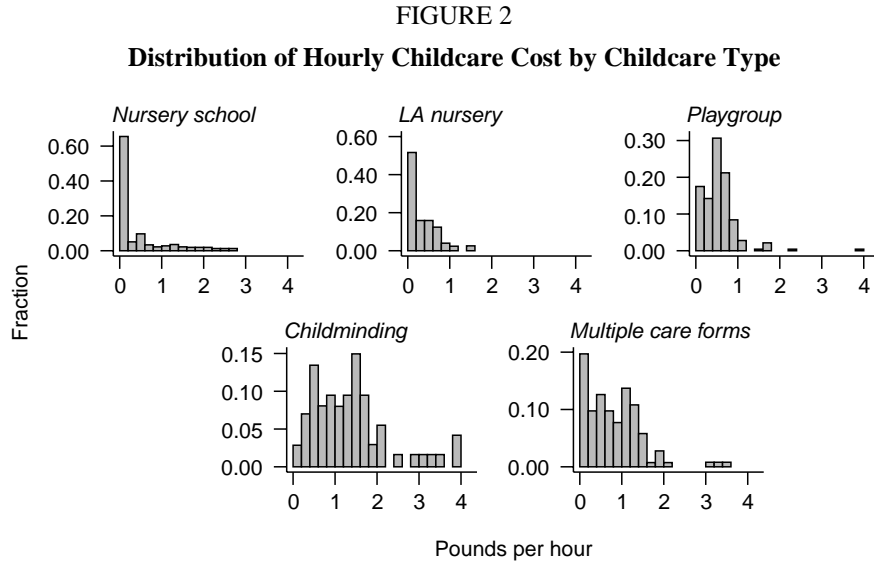
TABLE 1
Childcare Use and Percentage Paid

<i>Care form</i>	<i>Percentage of Families</i>	<i>Percentage paid</i>
<i>Informal</i>		
Parental care only	37	0
Informal care	13	0
<i>Formal</i>		
Nursery school	18	52
LA nursery	5	64
Playgroup	13	91
Childminder	6	97
Multiple care forms	8	96
Total, informal care only	50	0
Total, formal care only	50	75
Total, all care forms	100	38

Source: 1991-92 GHS

FIGURE 1
Childcare Use by Age of Youngest Child





aIn the figure, childcare costs have been capped at £4 per hour.
Source: 1991-92 GHS.

we have combined childcare use for that child and their pre-school-age brothers and sisters (hence the use of nursery schools for children under one year old). The sole use of informal care decreases with the age of the youngest child from 70 per cent of families with a youngest child below one year old to 24 per cent amongst families with a four-year-old as their youngest child. As a corollary of this, the use of nursery schools increases with the age of children, so that over 50 per cent of the four-year-olds in our sample had some nursery school provision.⁴ The use of playgroups peaks at age three.

We have seen the proportion of different forms of childcare that involves fees, but the distribution of these charges is also instructive. Figure 2 shows the distribution of hourly charges for each childcare type. It highlights the diversity of charges that parents face for childcare. While nursery schools and local authority nurseries are either free at the point of use or have very low fees, other forms of care, notably childminding and multiple forms of care, have a wide diversity of charges and a much higher mean hourly cost. Playgroups generally provide part-time care at a positive but low hourly charge.

⁴ This figure includes many of the children with multiple care forms. Research for January 1994 from the Department for Education and Employment (1995) shows that 77 per cent of all four-year-olds were attending nursery schools for at least part of the year prior to their first full primary school year. The discrepancy relates to four-year-olds who have not enrolled for the whole year and an increase in provision between 1991-92 and 1994.

The number of hours of childcare used also differs across different childcare types. On average, LA nurseries and playgroups provide 10 hours of childcare a week, and nursery schools 20 hours. These contrast with childminding and multiple care forms, which have much more diverse charges and weekly hours averaging 30. This variety of charges and hours of childcare used helps us gain an understanding of childcare costs faced by parents. It is clear from Figure 2 that the average hourly cost of childcare for many parents is low. But if they wish to use childcare that enables full-time employment, charges are much higher. Hence we see in the data that the average cost to parents of childcare used is low but the marginal cost may be much higher and could act as a barrier to employment.

2. Childcare Use and Women's Employment

Figure 3 shows the mean weekly childcare hours, weekly childcare expenditure, percentage of childcare paid and hourly childcare price by weekly hours of work of mothers of under-fives in the 1991-92 GHS. It must be stressed that these are averages, and just as the choice of childcare type for children of the same age is diverse, so are all these elements of the purchase of childcare services. But there are some important correlations at the mean between employment and childcare use, the most obvious being that there is a positive correlation between the hours of waged employment and weekly childcare hours and expenditure. But the direction of causation cannot be determined from these correlations. Whether employment necessitates childcare use, or the desire for formal childcare necessitates waged employment to pay for it, is unclear. It is also apparent that childcare is viewed by many families as having benefits that exceed those of enabling the mother to take waged employment. Mothers not in paid employment consume seven hours of childcare per week on average, and nearly 30 per cent pay for their childcare.

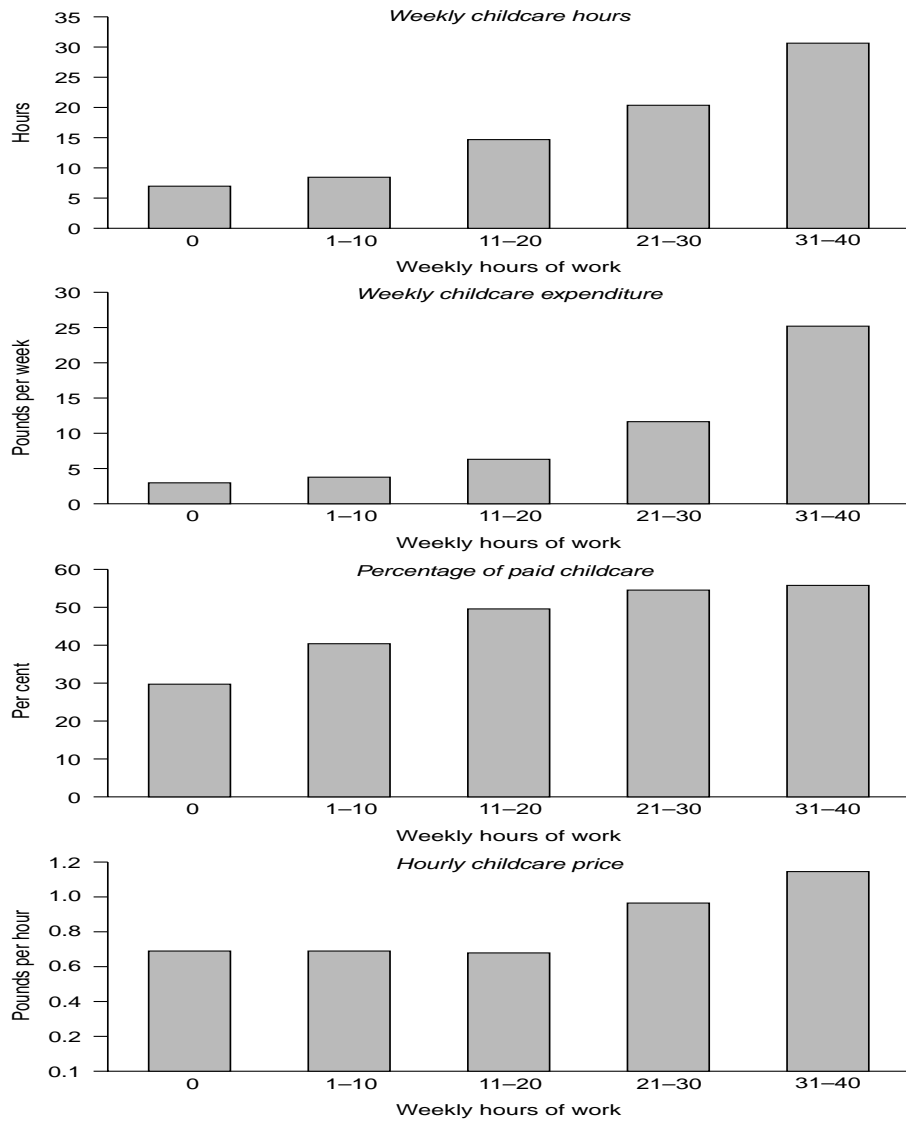
The final graph in Figure 3 shows the hourly price of childcare at different hours of work. The low average hourly cost of childcare reflects a substantial degree of subsidy for certain types of childcare, where parents often face nominal charges only. This does not imply that the marginal cost of childcare is equally low, as was shown in Figure 2. Indeed, the rising hourly cost of childcare confirms the interpretation of Figure 2 that parents may have to switch to more expensive forms of care, such as childminding, as their hours of work increase. An alternative interpretation of the rising hourly cost is that it partly reflects a greater ability to purchase more expensive and higher-quality childcare.

3. Other Factors Influencing Women's Employment

We have so far concentrated on childcare use and its relationship to paid employment. Rather than giving the impression that childcare is the only important factor governing labour market outcomes for women, we show in

FIGURE 3

Weekly Hours, Expenditure, Percentage Paid and Hourly Price of Non-Parental Childcare, by Weekly Hours of Work



Source: 1991-92 GHS.

FIGURE 4
Percentage of Mothers in Paid Employment by Marital Status and Employment Status of Partner



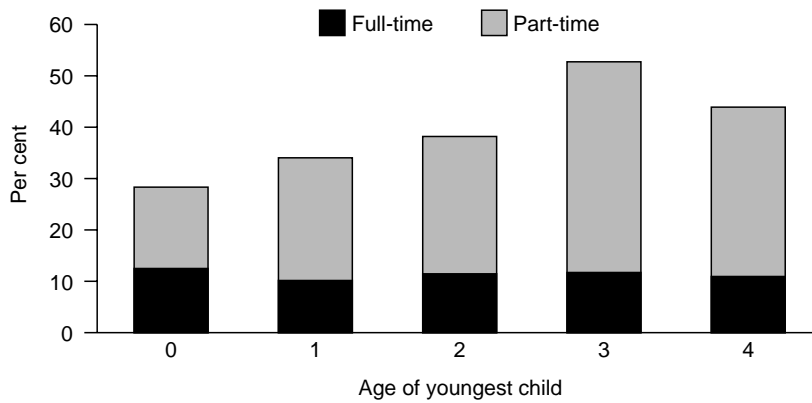
Source: 1991-92 GHS.

Figures 4 and 5 two of the most important other factors that affect the female participation decision. We show these graphs to highlight the complexity of labour market participation decisions and the need to use econometric techniques to try to disentangle the effects of different determinants of female labour force participation.

Figure 4 shows that mothers of pre-school-age children in married or cohabiting couples are much more likely to be in employment if their partner is also in employment. This is often attributed in part to a consequence of the UK means-tested benefit system which gives a much lower incentive for a woman to take paid employment if her spouse is also unwaged,⁵ although it also reflects the fact that partners are likely to share many characteristics that affect employment probabilities, not least living in the same place. The figure also shows the low participation rates of lone parents, who also have high dependence on means-tested benefits and are less likely to have someone else to share the childcare responsibilities. Figure 5 shows the importance of the age of the youngest child for participation. Around 10 per cent of mothers return full-time to waged employment in the first year of their child's life and this proportion remains roughly constant as the age of the youngest child increases. Conversely, part-time employment shows an upward trend with the age of the youngest child.

⁵ For a discussion of the mechanics of this, see, for example, Dilnot and Kell (1987).

FIGURE 5
Percentage of Mothers in Paid Employment by Age of Youngest Child



Source: 1991-92 GHS.

III. SHOULD THE GOVERNMENT SUBSIDISE CHILDCARE?

Before we can discuss the relative merits of different forms of childcare subsidy, we have to ask whether any subsidy should be considered at all. After all, the vast majority of children are desired by their parents, and the parents understand that their joint income might well fall after having children. The decision to bring up children can be considered as a choice like many others individuals make, and the role of the state may simply be to ensure a minimum standard of service from private childcare providers to protect children from undesirable carers. If we wish to suggest that government should have a greater role, either by providing or by subsidising childcare services, it must be shown either that the childcare market fails or that the outcomes of the free childcare market have distributional implications that society would prefer to avoid. And we must remember that if valid arguments for childcare subsidies exist, this does not imply a blank cheque. The costs of any subsidy must be balanced against potential benefits.

The difference between market failure arguments and distributional concerns is often blurred, but it is important to distinguish the motives behind any arguments for subsidy. For example, it is often claimed that there is a market failure argument for childcare subsidies to avoid the deterioration of women's labour-market-relevant human capital whilst they take a spell out of employment to care for young children. Childcare subsidies would enable a faster return to the labour market, and hence any skill loss of women after childbirth would be mitigated. But this is a private decision for parents to make. If the financial losses from a spell out of employment are large enough that the net present value

of the loss of human capital is greater than non-parental childcare costs, the family would arrange to pay for private childcare services to allow a more rapid return to employment. Therefore the efficient solution would be to allow families to choose the appropriate outcome. Society might wish to help enable mothers return to the labour market if they so desire, but this is a distributional concern regarding equality of opportunity for women and women's independent incomes, not a market failure issue.

1. Market Failures in Women's Employment and Childcare Demand

There is a case for childcare subsidy on the basis of market failure in the labour market for mothers and the childcare market. In both of these markets, the free market might be improved on by correcting externalities, information or preference failure, or imperfections in capital markets.

(a) Externalities

If we examine externalities first, we need to establish benefits to society from subsidising childcare that exceed the private benefits to parents. In the labour market, the continued participation of skilled women after childbirth may have positive externalities that improve the performance of the economy as a whole. An example would be subsidising the continued employment of skilled women when there are bottlenecks, such as skill shortages, in the economy. But these labour market externality arguments alone are relatively weak as they rely on specific macro problems (or disequilibria) that would be mitigated by increased women's participation. The externalities are likely to be small, and certainly almost impossible to measure. The 'problem' of skilled women taking time out of the labour market could also be addressed by other government action, such as retraining women wishing to re-enter waged employment. In addition, these externality arguments apply almost exclusively to women with relatively high skill levels, precisely the women who often earn enough to be able to exercise choice on whether to re-enter employment without government subsidy. Lower-skilled women will find it easier to re-enter the labour market in a job similar to that in which they had previously been employed.

In the childcare market, it is much easier to make externality arguments for childcare subsidy. Early childhood is an extremely important time for learning and it is almost universally recognised that 'attitudes and behaviour patterns established during the first years of life are central to educational and social development' (Department of Education and Science, 1990). So, if supplementary non-parental childcare provides children with a better start than solely parental care, and this benefits society in addition to benefiting children, there is a strong externality argument for promoting the greater use of childcare for pre-school-age children.

Evidence on the effects of early childcare on the subsequent development of children is fairly limited and often disputed. UK research results are mixed and often suffer from very small sample sizes or have difficulty in controlling for the social class of the children involved. For example, Osborn and Milbank (1987) studied more than 13,000 children born in 1970 and compared the educational and social outcomes of children who had gone to full day-care facilities (such as local authority nurseries) with those of children who had gone to part-time childcare or had stayed at home. They found that towards the end of primary school, the day-care children had lower maths and reading scores and more behavioural problems than the other children. This study was, however, criticised because it could not control adequately for the social status of the children attending day care in the UK, as most children attending LA day-care facilities were from families judged to be 'in need'. Howe (1990), in a smaller study, compared 80 children from a variety of backgrounds, half going to nurseries with high staff-child ratios and the other half going to lower-quality nurseries. The children from the high-quality care had performed well on educational and social assessments, while those from low- resourced nurseries fared particularly poorly. In the US, Berrueta-Clement et al. (1984) studied 126 children from disadvantaged backgrounds, half of whom were enrolled in highly-funded nursery schools while the rest stayed at home. At age 19, the group that had attended nursery school were twice as likely to be in employment, 40 per cent less likely to have been arrested and half as likely to have had teenage pregnancies. These are examples of positive externalities found as a result of childcare.

New American research has attempted to control for some of these analytical problems. Currie and Thomas (1995) studied the US Head Start programme which provides nursery education for over 600,000 disadvantaged American children. Using large panel surveys of children, they compared the educational and health outcomes of children who participated in Head Start or other non-parental childcare with those of their siblings who received only parental care. By exploiting within-family differences, they were therefore able to control for social class. Whilst the raw academic performance of Head Start children was, on some measures, 15 percentile points lower than that of those without childcare, Head Start improved their performance by five percentile points relative to their brothers and sisters who did not participate in the scheme. Currie and Thomas concluded 'Head Start closes over one-third of the gap between children attending the program and their more advantaged peers'. This applied both for whites and for African- Americans. The gains persisted throughout school for white children but failed to do so for African-American children, which the authors attributed mostly to inferior quality of subsequent schooling that dissipated the benefits of the nursery education.

From this evidence, we believe that non-parental pre-school childcare can be good for many children (although we accept that this is a contentious assertion,

particularly for very young children) and if the benefits for children persist into adult life, society would also benefit from the positive externalities associated with more successful outcomes from the education system. Externality arguments provide a certain rationale for childcare subsidy therefore, particularly for children whose home environment was not providing adequate educational and social development. But, similarly to the externality arguments in the labour market, the externalities (rather than the private gains to the children themselves) are particularly hard to measure and are perhaps relatively small.

(b) Information / Preference Failure

A second market failure argument for childcare subsidies could be that families fail to gauge the financial losses of career breaks and / or fail systematically to perceive the benefits of supplementary non-parental childcare. In the labour market, if families underestimate the effect of being unwaged whilst children are young on future income streams from employment and pensions, a potential response from the government could be to subsidise childcare places to reduce the initial costs of returning to the labour market. Alternatively, the government might fund public information campaigns as a cheaper and more effective means of changing individuals' attitudes to reflect the true costs of spells out of the labour market. In the childcare market, if the educational and social outcomes of children attending certain forms of childcare are underestimated, there would also be a case for subsidy, although a public information campaign might again prove more cost-effective than childcare subsidies.

(c) Capital Market Imperfections

Even if there were no valid externality arguments and families acted on full information, the cost of childcare services might, in the short term, be greater than the immediate returns from employment. Families may have to borrow to purchase private childcare services, in which case there needs to be a well-functioning capital market, where loans can be arranged secured on the future earnings potential of the woman. Credit providers have little means of verifying this, so unless the loan were also secured on a tangible asset, it is unlikely that credit would be forthcoming. Alternatively, a policy of government loans to remove the capital constraints may prove more effective than childcare subsidies in addressing these concerns.

Together, these externality, information and capital market failure arguments provide some rationale on the basis of market failure for policies designed to increase the labour participation of mothers of young children and demand for childcare for pre-school-age children above the free market level. Indeed, the

decisions to demand childcare and to supply labour have joint elements,⁶ so if there is insufficient demand for childcare, fewer women would supply labour which would compound the labour market failures, and vice versa.

But most of the market failure arguments are relatively small, are probably already covered by current subsidised childcare arrangements and could also be addressed by policies other than childcare subsidies. It is not that parents or society fail to recognise the benefits of increased use of pre-school childcare and education for children, but that they cannot afford it. This is not a market failure but a distributional concern, and it is to these rationales for government subsidy that we now turn.

2. Distributional Issues in Childcare Use

There are many distributional issues that might concern us regarding access to childcare and employment. Returning to the effects of childcare on children: regardless of market failure, if we consider that some pre-school education is good for the development of children, we would be very concerned about equality of opportunity in society if children in poorer families were unable to benefit from it. Richer families would be able to buy their children a head start which would persist throughout life. On distributional grounds, we might want all children to be able to benefit from nursery education from the age at which the educational and social benefits become great. It is easy to make a strong case that it is better to direct resources at younger children to give an equal start in life than to fund older children once patterns of behaviour have been established. If resources are more limited, distributional concerns would lead us to prioritise children from more disadvantaged and poorer backgrounds for access to childcare services to help give them an educational start more similar to that of advantaged children.

Though the market failure argument for helping women back into the labour market might not be seen as entirely convincing, there are potential distributional concerns that might suggest a similar policy strategy. Childcare subsidies that encouraged a return to the labour market would minimise the potentially damaging financial consequences of a spell out of the labour market for those with childcare responsibilities relative to those without. These distributional concerns are strengthened by the fact that, in the vast majority of couples, it is the woman who has the role of principal carer. As a result, a woman typically experiences human capital loss while a couple's children are young and this perpetuates women's subordinate economic status in the family and in society in terms of future employment possibilities and pensions. Subsidised childcare might enable women who want to return to the labour market to do so, and thereby provide them with an income dependent on neither the state nor a

⁶ See Duncan and Giles (1994).

spouse. This distributional concern suggests childcare subsidies at an earlier age to minimise employment gaps for women. This argument does not suggest that women should be forced to return to waged employment but that childcare subsidies (or other policies) improving the desirability of the option to do so could substantially improve women's relative economic status.

IV. THE IMPACT OF DIFFERENT CHILDCARE SUBSIDIES

In the previous section, we discussed whether to subsidise childcare and concluded that there were a number of reasons to do so, with the strongest arguments being based upon distributional concerns. In this section, we attempt to assess the effects of different approaches to subsidising childcare. The estimates shown here are based on our econometric models of the labour supply and childcare demand of mothers of pre-school-age children, and a more detailed description of the techniques involved and the detailed results can be found in Duncan, Giles and Webb (1995).

Estimating the potential labour supply response to a childcare reform is very important in evaluating different childcare policies. It is clearly relevant for estimates of increased women's participation in the labour market, but is also important in determining costs and distributional effects. Increased women's labour supply could potentially reduce the exchequer costs of a scheme through lower social security expenditure and higher income tax and National Insurance revenue. Distributional effects will also be changed if women alter the number of hours a week they work. Our estimates attempt to capture these effects.

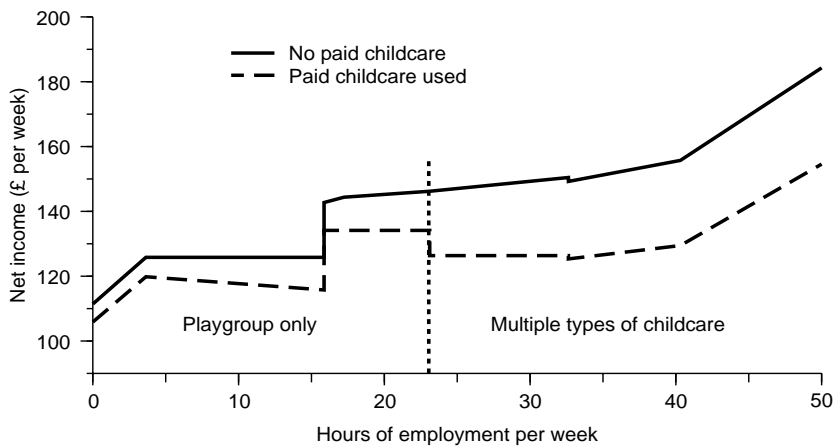
It must be stressed that estimates of labour supply are not simply a question of trying to calculate how many women would seek employment as a result of a particular childcare subsidy.⁷ The incentive effects of childcare subsidies are much more varied, depending on the appropriate types of childcare for each family, the labour market participation of a woman's partner, other taxes and benefits and each individual's preferences. The direction of labour supply response is not even clear. Childcare subsidies increase the financial return to each hour of paid employment, thereby improving the incentive for individuals to increase paid employment (the *substitution effect*), but they also reduce the number of hours of paid employment necessary to achieve a given material standard of living or the number of hours of childcare (the *income effect*). Hence estimating the incentive effects of childcare subsidies is complex, and the results shown reflect our best estimates of the factors that affect the labour supply decision, given the data and the statistical techniques we used.

⁷ Although studies along these lines, for example Holtermann and Clarke (1992) or Bradshaw et al. (1996), can be useful for cross-country comparisons and give immediate and accessible estimates of the effects of different subsidy regimes.

We simulated four broad methods of subsidising childcare using two microsimulation models — TAXBEN and SPAIN — based on the 1992 Family Expenditure Survey (FES), a representative sample of the UK population. TAXBEN is a tax and benefit model which calculated the immediate effect on families’ incomes of different childcare subsidies, given the childcare they used. It also calculated the amount of childcare that would be used if mothers of pre-school- age children worked more or fewer hours. As the FES does not contain childcare questions as detailed as those in the GHS shown in Section II, we estimated the probability of use of childcare, the type of childcare used and the weekly expenditure on that care using an econometric model derived from GHS data. We were therefore able to produce a profile of childcare costs and probabilities of using childcare for each mother in the FES at all possible hours of employment. The model was sufficiently flexible to allow switching of type of childcare as hours of work increased, which would give major discontinuities in the cost of childcare at different hours levels. This mimics well the choices faced by parents. Finally, we treated our estimated childcare expenditures as a cost that the family would have to pay and calculated budget constraints on the basis of post-childcare income. These budget constraints show the combinations of hours of work and net income after childcare costs available to mothers of pre-school-age children. An example of the sort of budget constraint generated for one of the mothers in our sample is shown in Figure 6, where the dashed line shows that if childcare costs are included, at some points this mother would be worse off if she worked more hours (particularly where our estimate showed a switch to multiple types of childcare used), and that taking account of the effect of childcare costs on the financial returns to work is very complicated.

FIGURE 6

Budget Constraint: Paying and Not Paying for Childcare



Using estimates of childcare use at different hours levels, we simulated the effects of introducing different forms of additional childcare subsidy. TAXBEN provided distributional results for each reform and an initial costing. But the reforms also altered the budget constraints for the mothers in our FES sample. For example, the solid line in Figure 6 indicates the budget constraint with universal subsidy of all childcare costs. The changes in budget constraints from different reforms were entered into SPAIN, our labour supply simulation model. SPAIN simulated desired changes in hours of employment using a structural labour supply model⁸ for the mothers of pre-school-age children on the basis of the changed budget constraint from the reform. Where we simulated a change in desired hours, the results were fed back into TAXBEN to derive revised costings, distributional results and use of childcare. In our simulations, we assumed elastic supply of childcare if parents were modelled to change their demand. If supply were less elastic than we assumed, then some of the favourable effects we consider may be offset by increases in the price of childcare. In the long run, many of the subsidies we examined would have a bigger effect on the childcare market, which might have an additional effect on labour supply and childcare demand, but these effects could not be included. Our results should be viewed, therefore, as the effects of increased childcare subsidies on the childcare market as it was in 1991-92, and not as accurate predictions of the future.

We simulated the following policies:

- *Childcare disregards in family credit.* This reform was implemented in October 1994 to allow recipients of family credit, housing benefit and council tax benefit to deduct up to £40 childcare expenditure a week from their income before it was means-tested. Hence, if families were spending £40 on childcare a week, their income for family credit and other in-work benefits would appear to be lower, and they would therefore receive more from these benefits. If they already received maximum family credit, their benefit would not increase, however.
- *Childcare allowances / vouchers.* This broad policy area encompasses three separate policy reforms. First was a £10 a week allowance paid in respect of each child under five years old in a family. These allowances would be paid regardless of whether childcare was bought with the money. The second reform was a £10 a week voucher given to a family for each under-five-year-old child. This voucher would only be redeemed against paid childcare, so families with no need for paid childcare would not benefit. The third version of this reform limits the voucher only to those families where all potential

⁸ See Duncan, Giles and Webb (1995) for details of model estimation and model results.

carers were working more than 16 hours a week, to increase childcare subsidies for those in work but not for unwaged individuals.

- *Full subsidy of all childcare costs.* This group of reforms effectively reduces the cost of childcare to zero for all forms of childcare. Variants of this reform restricted the subsidy policy only to children of nursery-school age (three- and four-year-olds) and only to those families with fairly low net incomes. We chose a very simple means test. Full subsidy would be reduced for families with net earnings above £200 a week at a rate of 30p for each £1 of net income above this level. The means test was deliberately simple and not linked to the existing benefit system so that it would be feasible for childcare institutions to operate it. In all, four variants of this reform were modelled.
- *Tax-relieving childcare.* In this reform, each family was allowed to offset up to £50 a week childcare costs against income tax. The relief was restricted to the lower rate (20 per cent) band to avoid richer families gaining more from a given childcare expenditure. To encourage tax relief only for families who have no access to informal care, the relief was only available if both partners in a couple were taxpayers. In these circumstances, the relief is given to the woman.

In general, we found that childcare subsidies have predominantly positive effects on labour supply, particularly where the subsidy is available to mothers of very young children (that is, under three years old). Such women typically face some of the largest barriers to employment, have the lowest current access to subsidised childcare and are less likely to have already returned to waged employment. Another clear conclusion was that the beneficial labour supply effects of a reform were not necessarily in direct proportion to the total amount of public subsidy involved. A summary of the key results for each of the reforms is given in Table 2.

The results show that, with the exception of the childcare disregard, childcare reforms are extremely unlikely to 'pay for themselves' through increased tax revenues and reduced benefit cost. This result will disappoint many policymakers, especially those who expect childcare reforms to be a costless means of transforming the labour market and a policy reform where everyone gains and nobody loses. The problem with arguments that childcare subsidies pay for themselves is that there are two important sources of dead-weight loss for almost any practical childcare subsidy.⁹ First, childcare subsidies almost always also subsidise families where the mothers would return to waged employment anyway; and second, mothers who would not return to waged employment can also use the increased subsidised childcare provision. For all reforms, we also estimated that a small number of mothers would reduce their

⁹ See Duncan, Giles and Webb (1994) for a more detailed account of whether policies designed to increase labour supply pay for themselves.

hours as they no longer had to work so many hours to achieve their desired standard of living. For these women, the government loses National Insurance and income tax revenue on top of the additional subsidy costs.

TABLE 2
Summary of Effects of Different Childcare Reforms

<i>Reform</i>	<i>First-round cost (p.a.)</i>	<i>New participants</i>	<i>Existing participants who increase their hours</i>	<i>Existing participants who decrease their hours</i>	<i>Final cost (p.a.)</i>
1 £40 childcare disregard	£20m	10,000	20,000	5,000	—
2a £10 allowance	£1,600m	—	20,000	14,000	£1,600m
2b £10 voucher	£330m	30,000	20,000	—	£300m
2c £10 voucher (working parents only)	£200m	30,000	10,000	—	£170m
3a Universal subsidy	£1,000m	70,000	130,000	—	£900m
3b Means-tested 3a	£250m	60,000	45,000	—	£160m
3c Subsidy to three- and four-year-olds	£400m	20,000	80,000	—	£400m
3d Means-tested 3c	£100m	16,000	—	—	£70m
4 Tax relief up to £50 a week	£160m	10,000	15,000	—	£160m

Note: — denotes an insignificant number.

In our results, we show that the childcare disregard did have roughly zero final exchequer cost, but the way this reform managed to pay for itself was by restricting its impact so tightly that only a tiny proportion of the roughly three million mothers of the under-fives could gain. At the other end of the scale, broad-brush subsidies to the mothers of young children, such as unconditional allowances, can be very expensive and bring relatively little additional benefit in terms of increased labour supply. This is because they provide income regardless of childcare need at a particular hours level, and hence give a pure income transfer to mothers that has negative labour supply effects. The policy with the greatest labour supply effect is scheme 3a in Table 2, where the full cost of childcare payments is subsidised. The cost shown of nearly £1 billion might seem low, but remember that this cost only relates to the cost of subsidising the existing childcare market. If, as we would expect, this grew substantially, the cost of full subsidy would be many times greater.

Therefore the aim of the other reforms was to benefit large numbers of mothers of young children whilst containing overall costs. In most cases, this objective required some method of limiting access to subsidy. One approach to restricting access is to means-test the subsidy. It is possible to obtain significant cost savings even with our generous means-testing regime that only reduced subsidy from families with take-home pay of £200 a week or greater. In the case of universal direct subsidy, the use of a means test of this sort cut the exchequer cost by around three-quarters whilst preserving many of the positive effects on work incentives. This is because means-testing directs childcare subsidies to those unlikely already to be in the labour market and to the less well off, both of which have desirable consequences in terms of our policy objectives. But it is likely that in the longer term, the savings from this form of means-testing relative to universal subsidy would be less dramatic than shown in Table 2 because an increase in demand for subsidised formal care by poorer families would occur regardless of whether their economic status changed. We could not include this feature in our estimates, but it would also make the eventual costs of schemes 3b and 3d many times higher than shown but still considerably lower than universal subsidy.

An alternative (or complementary) approach is to limit subsidy to children of a particular age, as in schemes 3c and 3d. Given that almost half of the mothers of children of this age are already in the labour market, a restriction of this sort reduces the scope for using childcare subsidy to enhance the incentives to take waged employment, so the financial flowback to the Treasury from positive labour supply responses is smaller. The merits of this type of targeting cannot therefore be based on labour supply responses.

A third way of limiting costs is to restrict subsidy only to those in work. Effectively, this is shown in reforms 1, 2c and 4 — the childcare disregard, vouchers for working parents and tax relief. This form of restriction has the advantage of maximising any labour supply effects of subsidy, since no help is received by those who remain outside the labour market. This type of restriction should be favoured if the primary aim is to increase women's labour supply. Distributionally, this approach is less attractive though, since those in employment are, in general, better off than the unwaged. This is particularly true for the tax-relieving option, where those with the greatest gains were predominantly two-earner couples already in employment and consuming childcare.

From our simulations, we can conclude that, in nearly all circumstances, the cost of childcare will be positive and that, in the longer term, broad-brush subsidies can be very expensive. Labour supply response is generally positive, and maximised if subsidy is limited only to those in employment and if financial means-testing targets help at poorer families without losing too much of the positive incentive effect. Having examined the effects of a number of different strategies for subsidising childcare, we now compare the government's childcare

policies with our objectives set out in Section III and the results of our simulations in this section.

V. GOVERNMENT CHILDCARE POLICIES

Government policy is basically following a two-pronged strategy: first, increasing support within the in-work benefit system to encourage labour supply and, second, providing childcare vouchers for four-year-olds to increase the level of childcare provision. How far do its policies achieve these objectives?

The £40 a week disregard of childcare expenditure in family credit and other in-work means-tested benefits has been carefully designed. Only lone parents and couples where both partners are waged and at least one parent works more than 16 hours a week receive the disregard. As such, it very effectively targets a small group of parents on low incomes who face potentially serious barriers to employment from childcare costs. Our estimates shown in the previous section for the exchequer cost are around zero after labour supply response, which implies it was sensible for the government to increase the value of the disregard to £60 in the 1995 Budget. But because this policy is so restrictive and the targeting so effective, it does not improve overall women's labour supply greatly. However, for the families receiving the additional help through the family credit system, this will constitute a significant increase in their standard of living and the policy can therefore be welcomed on these grounds alone.

The childcare vouchers to be introduced nationwide in April 1997 are a very different animal and show that the primary aim of the government's childcare subsidies is not simply to increase women's participation in the labour market. Each parent of a four-year-old will be given a £1,100 nursery education voucher which will be exchangeable for a place in the state, voluntary or private sector in participating institutions. Parents currently using the private or voluntary sector and paying charges for their childcare services will receive subsidy up to the full £1,100 value of the voucher, provided the childcare service provider has been validated for inclusion in the voucher scheme. The Department for Education and Employment's aim is that the vouchers will cover at least five sessions (each around 2½ hours) of nursery education a week, which is the amount assumed by the School Curriculum and Assessment Authority for desirable outcomes for learning.

There will be no user charges in the state sector. If places exist, the voucher should cover a part-time place in a nursery school and up to a full-time place in a reception class. But previous grant subsidy to these state institutions will be clawed back pound for pound up to the value of the voucher, so they will be no better off if their pupil numbers remain unchanged. Parents with children in the state sector will also be no better off. In future, they will have to exchange the voucher for services they previously received free of charge.

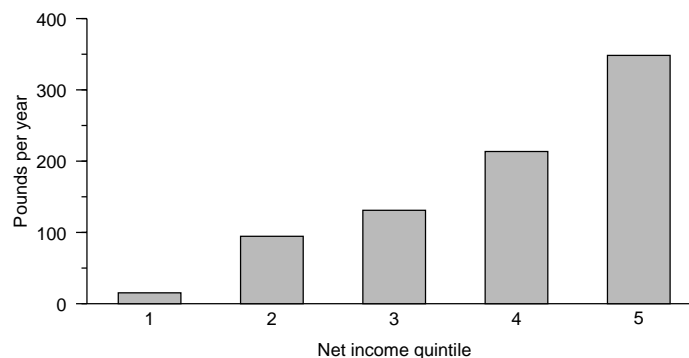
Other parties will certainly gain. Assuming that, in the very short term, the supply of childcare places is fixed and the price of childcare places does not rise, then the value of the vouchers will represent windfall gains to the parents currently paying for private childcare services. Figure 7 shows 1994-95 FES data on household expenditure on childcare services by income quintile for those families with a four-year-old. The expenditure has been capped at £1,100 for each family to represent the gain from the voucher scheme assuming the price of childcare remains unchanged. It is immediately apparent that, in the short term, well-off families benefit from the largest gains, and hence the voucher scheme has precisely the opposite distributional consequences to those that would address the distributional concerns outlined above.

What will be the effect on labour supply in the short term? We cannot expect significant increases in women's labour supply because the parents who will gain initially are more likely to be already in employment, and those using state nursery places will be unaffected. There will be some negative labour supply incentives created, as the current users of private- or voluntary-sector places will receive a pure windfall cash gain. Therefore most of the additional government expenditure on vouchers (some £165 million) is entirely dead-weight loss. It will have no effect on parents using state-sector childcare, but simply provide additional income for already well-off families.

Alternatively, in the short term, private childcare institutions may try to appropriate the rents from the vouchers by capitalising the voucher value into the price of private childcare services for four-year-olds. In this scenario, the price of private childcare services would rise, and excess profits would be made until new private suppliers entered the market. If the value of vouchers is capitalised into prices, there will be no windfall gains to parents and consequently no effect on labour supply because parents will be unaffected in real terms.

FIGURE 7

Annual Gain from Government Voucher Scheme by Net Income Quintile



Source: 1994-95 FES.

What about the longer term? The longer-term effects depend entirely on the responsiveness of childcare supply to the vouchers. We would envisage that the economic rent made in the short term by childcare providers would increase childcare supply and would reduce the price of private childcare services towards current prices. This would increase the provision of childcare places for four-year-olds and improve the options available to parents, which would satisfy to an extent the government's desire for greater provision of childcare services, particularly for the few families whose four-year-olds receive no nursery education. But, however generously the scheme is viewed, these favourable outcomes are only achieved with large dead-weight cost from subsidising affluent families who already consume private childcare services for whom the case for subsidy is the weakest. The additional exchequer expenditure on the voucher scheme is therefore poorly targeted. Means-testing vouchers or increasing the number of state-provided nursery school places would be the most obvious ways of modifying the policy to satisfy the concern to see an expansion of childcare provision for four-year-olds and to have a low exchequer cost.

VI. SUMMARY AND CONCLUSIONS

The case for greater childcare subsidy efficiency is now widely accepted. But it seems that sometimes the fundamental reasons for childcare subsidies become lost in actual policy formation. Policies, such as the government's voucher scheme, are devised that channel the additional funds towards families for whom the arguments for subsidy are weakest.

We believe that a serious case can be made for increased subsidy for childcare, particularly on distributional grounds. This could take the form of universal provision for pre-school-age children in the long run, but if the significant cost of universal provision cannot be justified, explicit forms of targeting subsidy can be implemented. Of the forms of targeting, we suggest, along with the government and opposition parties, that nursery education for all children near school age deserves a high priority. In addition, though, we believe the greatest gains arising out of distributional concerns would come from improving access to childcare facilities for lower-income families, who currently cannot afford childcare services, who face the greatest barriers to employment and whose children have tended to perform relatively poorly at school.

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Subsidising Pre-School Childcare

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