# Mothers' Employment and Childcare Use in Britain

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# Contents

# CHAPTER 1

# Introduction

The availability and affordability of good-quality childcare has grown in importance in recent decades as increasing numbers of mothers have chosen to return to paid employment rather than undertake full-time care of their children. More recently, government policy has emphasised the importance of work as the means for families with children to escape poverty, particularly for single-parent families, and there have been several initiatives to assist parents in obtaining suitable childcare arrangements in order to make employment financially rewarding and viable. The purpose of this book is to provide a comprehensive picture of mothers' employment and childcare use in Britain in order to highlight recent developments and to inform the policy debate.

An initial question that should be answered is why the childcare market should be deserving of government intervention. If mothers make the best employment and childcare decisions possible in the face of the real costs and constraints confronting them, why should government policy attempt to alter these choices? In response, it is argued that there are two main benefits from mothers' continued employment and use of childcare.[1] First, continued employment for mothers not only avoids a future wage penalty in terms of lost work experience, but also reduces the anticipation of a career interruption that may reduce investment in education and training for women. Second, there is some evidence that the use of formal childcare for pre-school children is beneficial to child development.[2] However, these potential benefits may not be fully incorporated into parents' decisions, for several 'market failure'-type reasons: some of the

[1] A complete discussion of these arguments can be found in section III of Duncan and Giles (1996).

[2] Conclusions on the effects of early childcare on the subsequent development of children are mixed. Waldfogel (1999) provides a comprehensive review of the current evidence and concludes that 'interest is shifting from the question of whether early childcare (or maternal employment) harms children to the question of what types of early childcare can be most helpful for what types of children' (p. 7).

benefits of child development may be social rather than private; parents may lack complete information on the costs and benefits; parents may be short-sighted in their outlook and not appreciate the future benefits; or parents may be credit-constrained and not able to afford to undertake the current investments in childcare use. Consequently, they may decide to use less childcare than the efficient level. In addition, even in the absence of any such market failures, there are distributional reasons for concern. First, mothers have traditionally performed the role of principal carer for children and have been the parent who takes time out from formal employment to care for young children, but this perpetuates women's weaker position in the labour market relative to male workers. Second, if early formal childcare is beneficial to future development, for reasons of equality of opportunity it could be argued that it should be available to all children regardless of parental resources.

Government policy in Britain has sought both to address the employment issue and to encourage the use of formal childcare independent of any association with work. Initial measures were primarily tied to employment, including the introduction of tax relief for employer-provided workplace childcare in 1990 and a reform in the family credit programme for working parents[3] in 1994 that allowed some recipients to claim up to £40 per week childcare expenditure deduction[4] from their income assessment. The effectiveness of these measures was limited by the fact that the former applies only to workplace facilities, while the latter only benefited the small minority of the family credit caseload who were not already receiving the maximum benefit. However, the replacement of the family credit programme with the working families' tax credit in October 1999 introduced a childcare credit that is far more generous than any previous subsidy for childcare costs.

[3] Eligibility for family credit and its replacement, the working families' tax credit, requires at least one parent to be working 16 hours a week.

[4] The childcare allowance could be claimed if a lone parent was working 16 or more hours a week or if both members of a couple were working 16 or more hours a week. The allowance applied to children under the age of 11 and only to expenditures for registered childcare providers or schools. In 1996, the allowance was increased to £60 per week. In 1998, the allowance was extended to children under the age of 12 and increased to £100 for families paying for more than one child under the age of 12.

The credit increases entitlement by 70 per cent of registered childcare costs up to a maximum[5] of £100 per week for parents with one child and up to £150 per week for parents with two or more children. Such a high level of subsidy not only considerably reduces the costs of employment for low-earning families but may also have a sizeable impact on the childcare market.

On the other hand, recent policy changes have also included measures to subsidise and encourage the use of formal childcare independent of any work requirement. The childcare voucher scheme was introduced nationwide in April 1997, entitling all 4-year-old children to an annual £1,100 childcare voucher towards the cost of a place in a participating childcare institution.[6] In May 1998, the government launched the National Childcare Strategy with the publication of the Green Paper *Meeting the Childcare Challenge*. The three central aims of the strategy are to raise the quality of care, to make childcare more affordable and to make childcare more accessible by increasing the number of places and improving information about childcare options.[7] More recently, the Childcare Commission recommended the introduction of tax relief at the basic rate on up to £2,000 of childcare expenses.[8]

In light of these policy developments, it is especially important to understand the changing nature of mothers' employment and the connections to childcare use. In previous studies, childcare in Britain has been analysed using the 1989 UK Lone Parents Survey,[9] the 1991 and 1998 General Household Surveys,[10] the British Social Attitudes Survey,[11] the Survey of Parents of Three and Four Year Old Children and Their Use of Early Years Services,[12] the PSI/DSS Programme of

[5] These maximum amounts are as of October 1999 and have since been uprated.
[6] The value of this subsidy has been regularly uprated and it has been subsequently renamed the nursery education grant.
[7] See Green Paper (1998, p. 7) for further details.
[8] Childcare Commission, 2001, p. 6.
[9] Jenkins and Symons, 1995.
[10] Bridgwood and Savage, 1993; Duncan, Giles and Webb, 1995; Duncan and Giles, 1996; Bridgwood et al., 2000.
[11] Jarvis et al., 2000.
[12] Stratford, Finch and Pethick, 1997; Prior, Courtenay and Charkin, 1999; Blake et al., 2000; Blake et al., 2001.

Research into Low Income Families Surveys,[13] the 1999 DfEE/Centre for Social Research Survey of Parents' Demand for Childcare[14] and the Families and Children Survey.[15] This book seeks to extend this previous analysis, particularly by emphasising the connection between employment and childcare use, by considering pre-school children and school children separately and by carefully examining the role of price in the childcare market.

The plan of the book is as follows. Chapter 2 presents a theoretical framework for modelling employment and childcare choices and highlights how and why certain factors may be important. Essentially, it provides the rationale for the selection of certain explanatory characteristics in the following analyses. Chapter 3 introduces the two data sources, both of which cover the 1995–99 period. The first source is the Family Resources Survey (FRS), providing extensive family information including data on employment, income and childcare choices. The second source is local-authority-level statistics on the provision for different types of formal childcare.

Chapters 4 and 5 focus on the relationships between the employment decisions of mothers and the availability of childcare options. The FRS data are used in Chapter 4 to create a picture of the employment choices of mothers and their responses to questions of whether they are constrained in their work decisions by the need to care for children. The local authority (LA) statistics are presented in Chapter 5 to highlight the diversity in levels and type of childcare provision across the country. In the final section of analysis in that chapter, the LA statistics are combined with the employment information from the FRS to relate mothers' work behaviour directly with the availability of childcare.

Attention shifts to working mothers and their childcare choices in Chapters 6 to 8. The type of care used, the hours of care and the cost of care are carefully examined in Chapter 6, particularly highlighting the differences in behaviour between term time and the school holidays for school children. A more technical approach is applied in

[13] Marsh and McKay, 1993; Finlayson, Ford and Marsh, 1996; Marsh et al., 2001.
[14] La Valle et al., 2000.
[15] McKay, 2002.

Chapter 7 to consider the impact of childcare price on the childcare choices of working mothers. In Chapter 8, simulations of the impact of the introduction of the working families' tax credit on the employment and childcare choices of mothers are presented.

Finally, Chapter 9 concludes and makes some suggestions about implications for future policy in the childcare area.

# CHAPTER 2

## Modelling Employment and Childcare Choices

For families with children, decisions about employment and childcare choices are inexorably linked. For most mothers, working requires finding an alternative non-maternal source of care for their children. On the other hand, the use of non-maternal childcare independently of any desire to facilitate employment (either as a consumption choice for pre-school children or via compulsory schooling for school-age children) may provide opportunities or enhanced benefits for mothers to undertake employment. Hence, factors that influence either one of the work and childcare decisions will automatically impinge on the other. This chapter presents a framework within which to analyse these choices and to highlight how and why certain factors may be important.

A comprehensive approach is presented in Duncan, Paull and Taylor (2001a). The model derived in that paper augments a standard labour supply model to incorporate non-maternal childcare not only as a means of facilitating employment for the mother, but also as a good in itself which families may desire to purchase for the pure benefit derived for the child or to provide child-free leisure time for the mother. Although it is not necessary to reproduce the model here, it identifies the sets of potential influences on employment and childcare choices.

A standard labour supply model includes two primary parameters determining employment choices: the mother's hourly wage and other family income. A higher wage is generally thought to encourage employment as it raises the hourly return to working, while higher other family income reduces the likelihood of employment by reducing the family's need for additional income. In augmenting the standard model to incorporate the childcare dimension, these two factors will have additional influences, and several sets of other variables must also be included.

First, there are factors influencing the amount of non-maternal care needed if the mother chooses to work. These include the hours

of work and the number of pre-school and school children requiring care. In addition, whether the mother works at home and can care for the child(ren) while working will also affect the need for non-maternal care.

A second set of conditions relate to the availability of different types of childcare. Informal sources of care, such as that provided by other family members, friends and neighbours in a non-market type of setting, may be greater for some mothers than others. The availability of informal care may be greater for mothers with a partner, particularly a non-working partner, or for those with older children who can look after the younger children. The number of families in the household may indicate the availability of other close relatives (particularly the mother's own parents) to care for the children. Years at the current address may capture the development of informal networks of help from friends and neighbours. More indirectly, the mother's age and education level may be related to the availability of informal care, in that older or longer-educated mothers may be less likely to live near their immediate family. Ethnic grouping may also capture the degree of extended family ties providing informal help.

Use of non-maternal care will also be affected by the availability of formal types of care, such as childminders, nurseries, playgroups, crèches, nannies, au pairs and after-school and school-holiday clubs. Indeed, much attention has been paid to the suggestion that a lack of formal affordable, good-quality care may constrain mothers in their ability to undertake paid employment, but there has been relatively little analysis of this aspect, due to limited data on the availability of childcare rather than the actual amount used.

A third set of influences arise from the use of childcare not as a means to facilitating employment, but as a consumption good in itself and of direct benefit to the child. Mother's age and education may again be important, influencing the *quality* of maternal care[16] (and possibly related informal care[17]) and perceptions of the benefits of formal types of care. Ethnicity may also be important in

[16] This is not to make any presumptions as to whether quality of maternal care is positively or negatively related to mother's age or education.

[17] For example, highly educated mothers are more likely to have highly educated parents (grandparents are an important source of informal care).

determining the value of formal childcare, although the direction of influence is ambiguous. For example, non-native speakers may derive additional benefits from formal care where children have greater opportunities to learn the native language. On the other hand, such children may derive less benefit from formal care if they feel uncomfortable or find activities difficult to follow amongst speakers of a different language. Due to a limited sample size, the ethnic division used in the analysis below is only between whites and non-whites. However, it should be noted that there might be significant differences between women of different ethnic origins within the non-white group.

A final set of factors contains those influencing the ability to afford paid sources of care, particularly formal care, either to facilitate work or as a consumption good in itself. These include the mother's potential earnings (measured by the hourly wage) and other family income, including any partner's earnings. Moreover, the number of children requiring care determines the amount of resources available for each child. The market price of childcare is also potentially extremely important.

Hence, a wide range of factors may play a role in mothers' work choices and families' decisions about how to provide care for their children. This is not to deny that the most important influence may simply be parents' (and even children's) preferences and tastes, influences that are not typically directly observed in large household data-sets of the type used in this book. Nevertheless, analysis of the identified factors does provide insight into how family characteristics are, on average, related to work and childcare decisions, either by directly affecting the choices or by being correlated with the unobserved preferences. Hence, it may offer a basis for identifying where and how policy in the childcare market may be directed.

# CHAPTER 3

# Data Sources

## 3.1 The Family Resources Survey

### *3.1.1 The Sample*

The main data source used in this book is the Family Resources Survey. The FRS is an annual cross-section survey of approximately 25,000 British households in each year. The survey collects a wide range of data on family circumstances, employment, income and childcare use. Five years of FRS data are used from the 1994/95 survey to the 1998/99 survey, generating a sample of 74,604 non-retired women, including 31,422 mothers with dependent children.

The analysis divides children into three categories: 'pre-school children', defined as those under the age of 5 and not in full-time education;[18] 'school children', defined as those under the age of 12 and in full-time education; and 'older children', defined as dependent children aged 12 and over. The reason for the first division is that the introduction of schooling provides not only free, but also compulsory, non-maternal childcare once the child reaches this age. The sample of 'school children' is, however, restricted to those under the age of 12 because very few children aged 12 or over were reported to be using any non-maternal childcare in the FRS data.[19]

In considering employment choices in Chapter 4, the unit of analysis is the mother. The FRS sample contained 7,067 mothers with pre-school (but no school) children, 5,625 mothers with both pre-school and school children and 11,635 with school (but no pre-

[18] Full-time education becomes compulsory for children at the start of the term in which they become 5, but it is the norm for children in many areas to begin school in the September following their fourth birthday. Hence, all 5-year-olds are required to attend full-time education, but only a proportion of 4-year-olds will be in school. In the FRS sample, 54 per cent of 4-year-old children are in full-time education.

[19] Only 2.5 per cent of school children with working mothers use any formal care and only 20 per cent receive informal care.

school) children.[20] In analysing the childcare choices in Chapter 6, the unit of observation is primarily the child, but, as explained in detail in the next subsection, childcare information in the FRS is only collected consistently for children of working mothers.[21] Hence, the sample primarily used in the childcare chapter consists of 6,206 pre-school children and 13,621 school children with working mothers.[22]

### *3.1.2 Childcare Questions*

One of the drawbacks of the FRS data is that not all households with children are routed into answering questions about childcare. Only women who work or who have a working partner are asked whether they use childcare, so no information on childcare choices is collected for non-working families. In addition, the phrasing of the question on whether childcare is used (addressed to working mothers and mothers with working partners) is problematic:

> *Does anyone else normally have to look after [child] because [either you or your partner] are working?*

Only those who respond 'yes' to this question are then routed into the remaining childcare questions. Some women who do use childcare might answer 'no' to this question, because they do not use childcare *only* to enable themselves or, in particular, their partner to go out to work.

In order to check whether this is a problem in the routeing into the childcare questions, the FRS data were compared with information from the General Household Survey (GHS), which included a special childcare supplement in 1991/92 that collected childcare information regardless of work status. Table 3.1 shows the pattern of reported childcare use by mothers of pre-school children in both the GHS and

[20] There were also 7,095 mothers with only older children and 43,182 women without any dependent children.

[21] Women on maternity leave are classified as not working for this sample because they are not constrained in their provision of maternal care.

[22] These were children of 12,585 working mothers, of whom 3,042 have pre-school (but no school) children, 2,247 have pre-school and school children and 7,296 have school (but no pre-school) children.

**Table 3.1. Childcare Use in the FRS and the GHS: Mothers of Pre-School Children**

| % using childcare | Single mothers | | Mothers with partners | | | |
|---|---|---|---|---|---|---|
| | Not in work | In work | Neither in work | Partner only in work | Mother only in work | Both in work |
| GHS | 59.0 | 88.5 | 43.1 | 52.4 | 43.1 | 81.5 |
| FRS | — | 89.3 | — | 3.0 | 48.1 | 68.6 |

the FRS, broken down by marital status, employment status and partner's employment status.

The pattern of childcare use is broadly consistent between the two surveys except for non-working mothers with a working partner.[23] While over 50 per cent of this group in the GHS report positive non-parental childcare use, only 3 per cent of similar women in the FRS say they use childcare 'because their partner is working'.

Hence, the FRS sample used in the childcare analysis in this book is restricted to children with working mothers. Such a restriction is very common in the literature, for the major household surveys typically address childcare questions only to working mothers.[24]

For those routed into the childcare section of the FRS questionnaire, information is collected separately for each child. The first question asks who looks after the child, with multiple responses permitted to the following options:

- close relative;
- other relative;
- friend/neighbour;
- childminder;
- nursery/playgroup;
- crèche;
- other.

[23] The percentage of mothers who are working and have a working partner who report using childcare is also noticeably lower in the FRS than in the GHS (68.6 per cent compared with 81.5 per cent). However, the gap is not substantial given the potential differences that may arise between the two surveys in terms of question wording, survey sampling frames and time period used.

[24] The only major exceptions to this are the National Longitudinal Survey data from the USA used in Hotz and Kilburn (1991) and the 1999 DfEE/Centre for Social Research Survey of Parents' Demand for Childcare used in La Valle et al. (2000).

According to the questionnaire instructions, the 'close relative' category should include the respondent's partner and other children. The 'other' category presumably captures other formal options, such as nannies, au pairs and after-school and school-holiday clubs.

Defining informal care to include that provided by a relative, friend or neighbour, the multiple answers across these categories are combined into six mutually exclusive types of use:

- informal care only;
- informal and formal care;
- centre care only (nursery/playgroup and/or crèche);
- childminder only;
- other formal care only;
- multiple formal care (more than one formal category).

For each child, questions are then asked about childcare use over *all types* of care used:

- hours of childcare in term time and in school holidays;
- whether the childcare costs anything;
- the amount spent each week in term time and in school holidays.

Hence, it is only possible to identify the costs and hours of childcare by type of care if a single type of care is reported.

### *3.1.3 Employment Information*

Information on the mother's employment and work hours is only collected for the time of the survey and is not available separately for term time and during holidays. It is therefore not possible to match work behaviour with differential childcare choices between term time and holidays. However, given the limited availability of jobs operating only during school-term time, it seems reasonable to assume that a mother's reported current employment is a good representation of her year-round behaviour and hours.[25]

[25] It might, in theory, be possible to differentiate the holiday childcare use of teachers or other groups of workers specifically employed in the education industry to analyse how much of holiday care for school children is covered by employment contracts providing holidays similar to school holidays, but limited sample size makes this difficult with the FRS data.

The main descriptive analysis in this book separates out the employment choice into full-time (30 hours or more a week) and part-time work (less than 30 hours). This distinction is especially important for mothers of school children only, for whom the child's school provides approximately 30 hours of care each week during term time.[26]

## 3.2 Local Authority Statistics

Two sources of information at the local authority level are used in the analysis in Chapter 5.[27] The first source of data is the annual publication, *Children's Day Care Facilities*, published originally by the Department of Health (1996, 1997 and 1998) and subsequently by the Department for Education and Employment (1999a and 1999b). The statistics in these publications were compiled from surveys completed by each LA for 31 March of each year. Although virtually all authorities submitted returns in each year, some were unable to supply complete figures for all sections of their returns. Information was collected from each of the 109 English LAs on

- the number of day nurseries and places for children under age 5;[28]
- the number of playgroups and places for children aged 3 to 5;
- the number of childminders and places for children under age 8;
- the number of out-of-school clubs and places for children aged 5 to 7;
- the number of holiday schemes and places for children aged 5 to 7.

[26] The 30 hours is based on five days of 9 a.m. to 3 p.m. Of course, some schools provide slightly longer normal (excluding after-school clubs) hours, but once potential travel-to-work time is included, it seems unlikely that many mothers would be able to work 30 hours or more without additional care.

[27] A third source was also identified: data collected by the Chartered Institute for Public Finance Accountants (CIPFA) on local authority expenditure on children's day-care facilities for 1994/95, 1995/96 and 1996/97. Unfortunately, these data were incomplete for a large number of the LAs and could not be used.

[28] The numbers of providers are published in tables A of Department of Health (1996, 1997 and 1998) and Department for Education and Employment (1999a). The numbers of places are published in tables B. The publication for March 1999 (Department for Education and Employment, 1999b) did not include the tables by LA and these tables were provided directly by the DfEE.

In addition, the publications also present tables showing availability rates for each LA as

- the number of places per 10,000 of the relevant child population for each of these childcare settings.[29,30]

It should be noted that for the purpose of the data collection, a holiday scheme is counted once for each holiday period during which it operates. Precise definitions for each of the different types of childcare are presented in Box 3.1.

The second source of data is provided in an annual publication entitled *Pupils under Five Years of Age in Schools in England* (Department for Education and Employment, 1996, 1997, 1998a and 1998b).[31] The information is again collected by survey from each LA, for January of each year. The publications contain average pupil:staff ratios for each LA for maintained nursery schools and designated nursery classes in maintained primary schools.[32] The survey does not cover provision in private nurseries and playgroups. The ratios relate full-time equivalent numbers of adult staff (including all teaching staff and nursery assistants) to the total number of pupils, counting each part-time pupil as 0.5 full-time equivalent. All pupils in nursery classes are under the age of 5 and most are either 3 or 4 years old.

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[29] The rates for day nursery and playgroup places came from tables F, the rates for childminder places from tables H, the rates for out-of-school clubs from tables K and the rates for holiday clubs from tables M. Again, the March 1999 figures were provided directly by the DfEE.

[30] For 1995 to 1998, the relevant population was children under the age of 5 for day nursery and playgroup places, children under the age of 8 for childminder places and children aged 5 to 7 for out-of-school club and holiday scheme places. For March 1999, the population was changed to all children under the age of 8 for the published availability of holiday scheme places and for both the out-of-school club and holiday scheme places in the tables provided directly by the DfEE. These last figures were adjusted back to the availability rates for the population of 5- to 7-year-olds using the implicit population numbers in the childminder and day nursery availability figures for March 1999.

[31] The figures for January 1999 were obtained directly from the Department for Education and Employment.

[32] The figures are from table 3, column xxii of Department for Education and Employment (1996, 1997 and 1998a) and from table 4, column xxii of Department for Education and Employment (1998b).

There was one minor technical difficulty in analysing these LA statistics across the 1995–99 period, caused by the LA reorganisation during the period which involved the creation of a number of unitary authorities. Consistency in the LA definitions was maintained by aggregating the data for the newly created unitary authorities with the corresponding authorities prior to reorganisation.[33]

**Box 3.1. Definitions of Childcare Types**

In collecting the data, the care options are defined very specifically:

- Day nurseries look after children under the age of 5 for the length of the working day and can be provided by the public, private and non-profit sectors.
- Playgroups provide sessional care for children aged 3 to 5, although some may take children aged 2½, with sessions lasting for either a morning or an afternoon but not all day. Most are run on a self-help basis by groups of parents with one or two paid staff, but a few are run by local authorities.
- Childminders are those looking after children aged under 5 or school children outside school hours, on a domestic premises (usually in the childminder's own home), providing a service all year round for the full adult working day.
- Out-of-school clubs provide sessional care before and after school.
- Holiday schemes provide care all day during school holidays and sometimes at half-term.

[33] The LAs affected were Avon, Bedfordshire, Berkshire, Buckinghamshire, Cambridgeshire, Cheshire, Cleveland, Derbyshire, Devon, Dorset, Durham, East Sussex, Essex, Hampshire, Hereford & Worcester, Humberside, Kent, Lancashire, Leicestershire, North Yorkshire, Nottinghamshire, Shropshire, Staffordshire and Wiltshire.

# CHAPTER 4

# Mothers' Employment Patterns

## 4.1 Children and Women's Employment

An overview of the impact of children on the propensity for women to undertake paid employment is presented in Figure 4.1.[34] The figure shows the proportion of women in employment by the age of youngest child and partnership status. There are two sets of rates for mothers with children under the age of 1: one measure includes mothers on maternity leave as being in employment ('<1 incl. mat. leave'), while the second excludes this group from the employment count ('<1 excl. mat. leave').

The picture shows two distinctive features: first, that the employment rate rises steadily with the age of the youngest child; second, that single mothers are much less likely than their partnered counterparts to be working formally across all ages of youngest child. For women with partners, the propensity to work rises from 51 per cent for mothers of 1-year-olds to 80 per cent for those with a youngest child aged 16 to 18. For single mothers, the increase is even more marked: from 20 per cent for those with a 1-year-old to 70 per cent for those with only children in the oldest category.

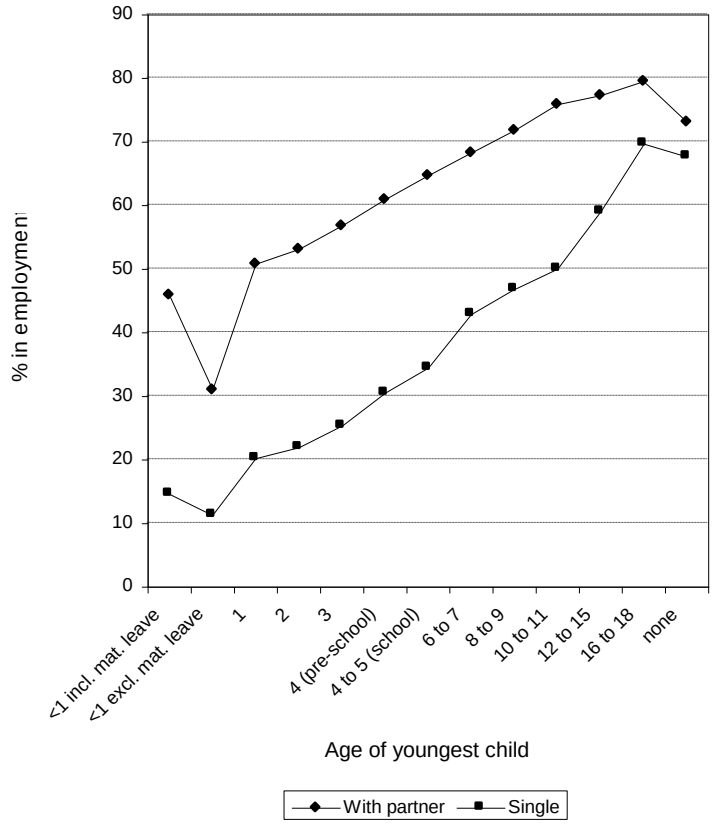
The final point on each line shows the employment rate for women without children: 73 per cent for those with partners and 68 per cent for single women.[35] Hence, it appears that children are less

[34] An overview of the variation in employment rates over the five years of the data and across regions is included in Section 5.5 as part of an analysis of the relationship between childcare availability and mothers' propensity to work.

[35] It may be asked how the activity of childless women can be categorised in the absence of working. For single childless women, 9 per cent are looking for work, 13 per cent report that they are sick and 12 per cent are 'unoccupied'. The corresponding figures for childless women with partners are 3 per cent looking for work, 9 per cent sick and 17 per cent unoccupied. In comparison, 7, 7 and 48 per cent of single mothers can be categorised as

of a constraint on their mother's employment as they grow older,[36] but they have a greater impact for single mothers than for mothers with a partner.

**Figure 4.1. Employment Rates for Women**




unemployed, sick and unoccupied, while the proportions for mothers with partners are 3, 4 and 31 per cent.

[36] Indeed, the proportions of women working are slightly lower for childless women than for mothers with children aged 16 to 18. However, this may reflect the fact that childless women tend to consist of two particular groups. First, at the younger end of the age spectrum, there are women newly entered into the labour market and subject to higher rates of unemployment. Second, at the other end of the age range, there are older cohorts of women, for whom employment is less common.

The graph shows two employment rates for women with a child under the age of 1 because it is not clear which is the most appropriate measure to use. In theory, the measure including those on maternity leave captures all those with an ongoing employment relationship and could be argued to be the preferable measure.[37] However, not all women on maternity leave do return to their jobs or employment following the completion of their leave, so that the measure may overstate the employment rate. On the other hand, some women may take a brief period away from employment without officially being on maternity leave, so that the measure may understate the rate. The second measure, excluding those on maternity leave, reflects not only the proportion of women who actually work in the first year but also the fraction of the year that they work.[38] Hence, it understates the employment connection but does provide a lower bound on involvement. The graph suggests that including those on maternity leave provides the picture most consistent with subsequent behaviour as the youngest child ages, but the following examination of the rates disaggregated by other factors indicates that this picture may be too simple.

Table 4.1 presents a comparison of full-time and part-time employment rates for women with and without children.[39]

Although the presence of children reduces the likelihood of being employed for all women, the effect is most marked for single mothers. For those with partners, children have the greatest impact in raising the probability that a woman will work part-time rather than

[37] In the analysis of childcare use, however, it is desirable only to include those women actually at work, since this is consistent with the sample selection of employed mothers who may require non-maternal care to facilitate their working.

[38] For example, if half of all mothers spent six months on leave and six months working during the first year while the remainder did not work and had no leave, the employment rate including those on maternity leave would be 50 per cent and the rate including only those working would be 25 per cent.

[39] Based on data from the Labour Force Survey for Spring 1999, Equal Opportunities Commission (2000) reports employment rates of 69 per cent for mothers with partners and 47 per cent for single mothers, with a division between part- and full-time work similar to that reported here. The slightly higher total employment rate for mothers with partners than the 64 per cent reported here may be due to the LFS data being only for 1999 rather than the 1995–99 period, during which employment rates were rising (see Section 5.5.1).

**Table 4.1. Full-Time and Part-Time Employment Rates for Women**

| | With partner | | Single | |
|---|---|---|---|---|
| | With children | Without children | With children | Without children |
| *% of women:* | | | | |
| Not working | 35.6 | 26.9 | 61.0 | 32.3 |
| Working part-time | 36.6 | 22.0 | 20.3 | 11.8 |
| Working full-time | 27.8 | 51.1 | 18.6 | 55.9 |
| Sample size (number of women) | 23,733 | 25,837 | 7,689 | 17,345 |

Notes: Part-time employment is defined as less than 30 hours each week, while full-time employment is defined as 30 hours or more each week. Those on maternity leave with a youngest child under the age of 1 are included as employed.

full-time. Indeed, the proportion of women with partners working full-time is 23 percentage points lower for those with children than for their childless counterparts, with almost 15 percentage points of the difference being accounted for by a higher fraction working part-time and almost 9 percentage points by a greater propensity not to be employed. For single women, the presence of children reduces the likelihood of work by an even larger 37 percentage points, with only 8 percentage points being accounted for by a greater propensity to work part-time and most of the difference—29 percentage points—being explained by a smaller probability of any employment for those with children.[40]

The total employment rates by age of youngest child shown in Figure 4.1 are broken down into full-time and part-time employment rates in Tables 4.2 and 4.3 respectively. The figures are disaggregated by the number of children and by whether any partner is working or not.

Table 4.2 shows that the propensity to work full-time tends to rise steadily as the youngest child ages for all family groups, while the probability of part-time work shown in Table 4.3 does not exhibit

[40] This pattern is consistent with that reported in Jarvis et al. (2000). Using data from the 1988 British Social Attitudes Survey, they report that 22 per cent of women with a child aged 16 or less work full-time, while 29 per cent work part-time. In comparison, 48 per cent of women without children work full-time and 19 per cent work part-time (table 5.1).

**Table 4.2. Full-Time Employment Rates for Women**

| % of women in full-time employment | With working partner | | With non-working partner | | Single | |
|---|---|---|---|---|---|---|
| | One child | Two or more children | One child | Two or more children | One child | Two or more children |
| *Youngest child pre-school-aged:* | | | | | | |
| < 1 incl. mat. leave | 40.5 | 15.8 | 18.0 | 8.0 | 10.0 | 4.6 |
| < 1 excl. mat. leave | 20.4 | 9.8 | 12.7 | 4.7 | 5.4 | 3.5 |
| 1 | 28.8 | 14.1 | 15.9 | 9.9 | 13.0 | 6.0 |
| 2 | 29.2 | 17.1 | 10.3 | 10.6 | 10.0 | 6.4 |
| 3 | 38.4 | 17.3 | 20.0 | 6.8 | 15.8 | 4.8 |
| 4 | 34.8 | 16.6 | 13.9 | 10.5 | 15.3 | 7.7 |
| *Youngest child school-aged:* | | | | | | |
| 4–5 | 36.8 | 22.0 | 16.5 | 14.4 | 18.0 | 7.6 |
| 6–7 | 39.6 | 24.3 | 15.8 | 14.0 | 24.0 | 13.3 |
| 8–9 | 37.8 | 28.9 | 17.5 | 14.7 | 24.2 | 15.8 |
| 10–11 | 40.1 | 35.1 | 20.6 | 19.7 | 23.6 | 22.8 |
| 12–15 | 44.1 | 43.1 | 24.7 | 26.5 | 35.1 | 33.2 |
| 16–18 | 46.5 | 46.7 | 29.2 | 14.8 | 48.5 | 53.3 |
| *All ages of youngest child* | 39.3 | 25.0 | 20.9 | 14.1 | 24.3 | 13.4 |

Notes: Full-time employment is defined as 30 hours or more each week. The ‘All ages of youngest child’ row includes those on maternity leave with a youngest child under the age of 1 as employed.

**Table 4.3. Part-Time Employment Rates for Women**

| % of women in part-time employment | With working partner | | With non-working partner | | Single | |
|---|---|---|---|---|---|---|
| | One child | Two or more children | One child | Two or more children | One child | Two or more children |
| *Youngest child pre-school-aged:* | | | | | | |
| < 1 incl. mat. leave | 22.2 | 27.6 | 6.0 | 9.4 | 10.0 | 6.5 |
| < 1 excl. mat. leave | 20.7 | 20.1 | 4.0 | 8.0 | 9.6 | 5.4 |
| 1 | 36.1 | 35.2 | 19.8 | 13.2 | 11.2 | 10.9 |
| 2 | 35.3 | 38.2 | 19.5 | 17.1 | 14.7 | 13.4 |
| 3 | 32.2 | 42.0 | 12.7 | 20.4 | 18.9 | 12.0 |
| 4 | 38.0 | 44.1 | 22.2 | 39.0 | 19.7 | 19.0 |
| *Youngest child school-aged:* | | | | | | |
| 4–5 | 37.1 | 47.6 | 30.8 | 24.0 | 24.2 | 21.3 |
| 6–7 | 40.4 | 47.2 | 27.6 | 33.5 | 21.4 | 27.7 |
| 8–9 | 41.1 | 48.8 | 33.0 | 33.2 | 27.0 | 28.0 |
| 10–11 | 40.8 | 45.8 | 42.2 | 33.2 | 24.0 | 29.1 |
| 12–15 | 36.9 | 39.8 | 27.0 | 32.1 | 23.3 | 26.6 |
| 16–18 | 36.8 | 38.7 | 32.3 | 33.3 | 21.6 | 10.0 |
| *All ages of youngest child* | 35.2 | 41.5 | 25.8 | 25.1 | 20.4 | 20.3 |

Notes: Part-time employment is defined as less than 30 hours each week. The ‘All ages of youngest child’ row includes those on maternity leave with a youngest child under the age of 1 as employed.

such a consistent increase. Indeed, the likelihood of working part-time is quite stable over all ages of school children.[41] Hence, increasing participation in full-time rather than part-time work drives much of the rise in total employment shown in the graph.[42] It is also interesting to note that there is no consistent sudden jump in employment rates when the youngest child starts school, particularly for part-time work.

Having more than one child substantially reduces the likelihood of full-time employment for mothers with younger children. Indeed, for mothers with the youngest pre-school children, the presence of additional children halves the full-time employment rate. However, this difference disappears once the youngest child is aged 12 or over. In contrast, the propensity to work part-time for mothers of more than one child tends to be similar to or slightly greater than the propensity for those with a single child, both across pre-school and across school children.[43] Once again, the characteristics of children

[41] This contrasts with figures shown in Duncan, Giles and Webb (1995, table 2.2) and Duncan and Giles (1996, figure 5). Using data from the 1991/92 General Household Survey, they report full-time employment rates of 12.5, 9.8, 11.1, 11.5 and 10.7 per cent for mothers with youngest children aged 0, 1, 2, 3 and 4 and part-time employment rates of 16.0, 24.3, 27.0, 40.7 and 32.8 per cent. In the FRS data used here, the comparative rates are 20.2, 16.8, 16.6, 18.1 and 17.5 per cent for full-time and 19.9, 27.9, 28.7, 30.3 and 35.0 per cent for part-time.

[42] In a comparison of seven industrialised countries including the UK using data from the Luxembourg Income Study, Harkness and Waldfogel (1999) note that the age of the youngest child has a significant influence on the employment of women in all seven countries, with younger children reducing the likelihood of employment to a greater degree than older children. This effect is found to be much greater in the four Anglo-American countries and Germany than in Finland and Sweden. Moreover, the effects on the full-time employment rate are particularly large in the UK.

[43] This is broadly consistent with the figures presented in Duncan, Giles and Webb (1995, table 2.3). They show that 17.7 per cent of mothers with a single child under the age of 5 are working full-time and 26.7 per cent are working part-time, while 7.4 per cent of those with two or more children (and at least one under the age of 5) work full-time and 27.4 per cent work part-time. In the data used here, 26.6 per cent of mothers with a single pre-school child are working full-time and 25.2 per cent are working part-time, while 12.9 per cent of mothers with two or more children (and at least one pre-school child) work full-time and 28.1 per cent work part-time. This pattern is also consistent with that reported in Jarvis et al. (2000), who show that 29 per cent of women with a single child work full-time, while 28 per cent work part-time. In comparison, only 14 per cent of women with two children work full-time and 32 per cent work part-time (table 5.2).

have the greatest impact on the amount of time worked rather than on the decision of whether to participate in the labour market.

For both full-time and part-time work, mothers with a working partner are more likely to be employed than their counterparts with non-working partners or no partner.[44] The distinction across those with partners may reflect a correlation in labour market conditions or employability characteristics between partners rather than childcare issues. For example, a mother with a non-working partner may have the benefit of that partner's provision of childcare but may also be more likely to be situated in an area where paid employment is not easily obtained. The difference may also reflect the structure of the benefit system, which potentially imposes higher effective tax rates (through benefit withdrawal) on mothers with a non-working partner than on those with a working partner. Single mothers face a similar tax disincentive to work, in addition to having potentially fewer informal childcare resources from a partner's family.[45]

Finally, Tables 4.2 and 4.3 throw additional light on the issue of measuring employment rates for mothers with children under the age of 1. The discrepancy between including and excluding those on maternity leave from the full-time employment count tends to be greater for first-time mothers than for mothers with more than one child. This is consistent with the interpretation that mothers on maternity leave are more likely to return quickly to employment for subsequent than for first children since they have already shown a

[44] This is broadly consistent with table 2.1 in Duncan, Giles and Webb (1995), which shows that 13.0 per cent of mothers with an employed partner and a child under the age of 5 are working full-time and 32.9 per cent are working part-time, while 6.8 per cent of similar mothers with an unemployed partner work full-time and 12.4 per cent work part-time, and 7.3 per cent of similar single mothers are working full-time and 15.0 per cent part-time. A similar picture is presented in figure 4 in Duncan and Giles (1996). In the data used here, 22.7 per cent of mothers with pre-school children and an employed partner are working full-time and 34.3 per cent are working part-time, while 10.9 per cent of similar mothers with an unemployed partner work full-time and 16.2 per cent work part-time, and 8.7 per cent of similar single mothers work full-time and 12.9 per cent work part-time.

[45] Single mothers may also carry a higher burden of childcare chores (such as washing clothes or shopping) beyond pure custodial care, which may make their time at home more valuable and reduce the inclination to undertake paid employment. Ideally, this issue would be analysed, both for single mothers and mothers with partners, using data from time-use surveys.

greater commitment to the labour market by returning to work after the arrival of the first child. For mothers with partners, the discrepancy between including and excluding those on maternity leave is greater for full-time than for part-time work. Indeed, the full-time rates tend to drop between the measure including those on maternity leave and the 1-year-old rate, while the part-time rates rise substantially. It appears that for mothers with partners, including maternity leave in the employment measure masks the fact that many women will be switching from full-time to part-time employment following the birth of a child, particularly a first child. But the pattern is different for single mothers, with no similar switch on average: the proportions qualifying for maternity leave and/or working during the first year are similar to those working full- and part-time in the following year.[46]

## 4.2 Multivariate Analysis of Employment Rates: Mothers of Pre-School Children

There are many factors influencing the employment decision, and the relationships so far described may be driven by more complicated interactions. For example, mothers with more than one child also tend to be older, which may impact on work choices independently of the effect of children. Hence, a multivariate regression analysis is presented to isolate the impact of particular characteristics by controlling for related factors.

Table 4.4 shows the results from a multinomial logit model for choosing not to work, to work part-time or to work full-time for mothers with pre-school children. The sample excludes mothers with a child aged under 1 because of the complications in measuring the employment rate described above, although this does not dramatically affect the conclusions.

The characteristics included in the regression include those described in Chapter 2 as those most likely to influence childcare and employment choices. In addition, the regression also includes variables for the year and region in order to highlight time trends in

[46] It would be ideal to look at this issue using panel data, where the same individuals are surveyed both before and after the arrival of children.

**Table 4.4. Multinomial Logit Model for Probability of Working Part- and Full-Time for Mothers with Pre-School Children**

| Regressors | Relative to probability of part-time work | | | |
|---|---|---|---|---|
| | Probability of no work | | Probability of full-time work | |
| | relative risk ratio | standard error | relative risk ratio | standard error |
| *Children:* | | | | |
| Age of youngest: | | | | |
| 1 | 1.056 | 0.070 | 1.001 | 0.084 |
| 3 | 0.935 | 0.065 | 1.046 | 0.091 |
| 4 | 0.739*** | 0.065 | 0.875 | 0.096 |
| No. of pre-school children | 1.708*** | 0.118 | 0.619*** | 0.062 |
| No. of school children | 1.305*** | 0.045 | 0.604*** | 0.031 |
| *Mother:* | | | | |
| Age | 0.689*** | 0.030 | 1.013 | 0.059 |
| $(Age)^2$ | 1.006*** | 0.001 | 1.000 | 0.001 |
| Left education aged: | | | | |
| 16 | 1.451*** | 0.136 | 0.539*** | 0.056 |
| 17–18 | 1.079 | 0.106 | 0.739*** | 0.079 |
| after 21 | 1.212 | 0.156 | 1.031 | 0.141 |
| Non-white | 2.222*** | 0.239 | 1.634*** | 0.213 |
| *Family:* | | | | |
| Partner | 0.240*** | 0.019 | 0.911 | 0.100 |
| Partner not working | 2.552*** | 0.220 | 1.045 | 0.128 |
| No. of older children | 1.395*** | 0.101 | 0.982 | 0.095 |
| No. of families | 1.045 | 0.101 | 1.335** | 0.154 |
| Years lived here | 0.975*** | 0.008 | 0.996 | 0.010 |
| Other income (100s) | 1.021* | 0.011 | 0.981 | 0.015 |
| *Region:* | | | | |
| North shires | 0.909 | 0.086 | 0.894 | 0.107 |
| Central shires | 0.896 | 0.076 | 0.845 | 0.091 |
| South shires | 1.002 | 0.076 | 0.753*** | 0.073 |
| Central metropolitan | 1.045 | 0.134 | 1.061 | 0.170 |
| Inner London | 2.122*** | 0.363 | 1.770*** | 0.352 |
| Outer London | 1.530*** | 0.176 | 1.540*** | 0.207 |
| *Time:* | | | | |
| Year | 0.934*** | 0.018 | 1.010 | 0.024 |
| Pseudo $R^2$ | 0.111 | | | |
| No. of observations | 9,402 | | | |

Notes: Stars denote that the relative risk ratio is significantly different from 1 at the 1% (***), 5% (**) and 10% (*) levels. Omitted child's age is 2 and omitted mother's age left education is 19–21. 'School children' are aged 4–11. 'Older children' are aged 12–18. 'Other income' includes all family income other than mother's earnings and government benefits, and it is measured in hundreds of pounds per week. Omitted region is northern metropolitan. Regressions exclude mothers whose youngest child is less than 1. The ratios for the probabilities of not working and working full-time are significantly

different at the 1% level for the number of pre-school children, the number of school children, mother's age, mother left education aged 16 and aged 17–18, non-white, partner, partner not working, number of older children, other income, year and south shires. The ratios for the probabilities are significantly different at the 5% level for the number of families and the number of years at current address. The ratios for the probabilities of not working and of working full-time are significantly different between the shire and central metropolitan regions on the one hand and both London regions on the other. In addition, the ratios are significantly different between inner and outer London for the probability of not working and between the south shires and central metropolitan regions for the probability of working full-time. Exclusion of the year and region variables alters the significance of three of the other ratios: for the probability of not working, the ratio on left education after age 21 is significantly greater than 1 at the 10% level and that on other income is significantly greater than 1 at the 5% level; for the probability of full-time work, the ratio on number of families is significantly greater than 1 at the 1% level.

behaviour over the period and to identify any regional differences that are independent of regional variation in other characteristics.[47]

The first column of relative risk ratios shows the impact of each characteristic (regressor) on the probability of not working compared with working part-time, while the second column of relative risk ratios compares full-time with part-time work. A ratio greater than 1 indicates that the factor is associated with a greater likelihood of either option relative to working part-time, while a ratio less than 1 indicates a factor associated with a smaller probability of that choice. The ratios are estimated with a degree of error, but the stars indicate those figures that we are confident have the estimated positive or negative effect. The significant impacts on the probability of not working relative to working full-time are listed in the table notes.

Gauging the magnitude of the estimated impacts is complicated in non-linear models such as logit or multinomial logit models because the size of the response in the variable of interest (in this case, the proportion of mothers in each work category) depends not only on the size of the change in the explanatory variable (for example, the number of pre-school children) but also on the initial value of the explanatory variable and on the values of all other variables in the model. Hence, the size of the impact for a specific change is measured by setting the values of all other explanatory variables to

[47] One concern with the inclusion of these regional variables (in not just this regression, but in all regressions) is that the measured impact of other characteristics that are geographically concentrated may understate the true relationship if the region variables capture some of the effect. However, the coefficients on the other characteristics rarely altered substantially with the inclusion of the year and region variables; the few small changes in significance are listed in the notes to tables.

their sample means, effectively capturing the impact for the 'average' mother in respect of all other characteristics.[48]

The results show that, once controls for other characteristics are included, the age of the youngest child has remarkably little significant impact on the work probabilities. However, mothers with more pre-school children or more school children (those aged under 12) are less likely to work and are more likely to be working part-time if they do work. Evaluated at the sample means for all other variables, an increase in the number of pre-school children from one to two increases the estimated probability that a mother does not work from 53 per cent to 69 per cent, while reducing the likelihood that she works part-time from 30 to 23 per cent and the full-time likelihood from 17 to 8 per cent. Similarly, increasing the number of school children from zero to one raises the non-work probability from 48 to 59 per cent, with most of the difference accounted for by a fall in the estimated full-time probability from 22 to 12 per cent. The reason that the age of the youngest child appears unimportant, contrary to the earlier tables, is that it is closely related to the number of pre-school children: families with more pre-school children have, on average, a lower age for the youngest child. Hence, both the age of the youngest child and the number of pre-school children can measure a related impact, but the number of pre-school children is capturing the effect more precisely.[49]

Working may be less likely for mothers with more children for several inter-related reasons. First, *total* childcare costs are typically higher if the mother works: mothers with more children may be unable to afford the childcare (or care of sufficient quality) for them to work. Additionally, if non-maternal care is viewed as inferior to the mother's care, the 'cost' of working in terms of quality of care

[48] The sample means for the explanatory variables are available upon request from the authors.

[49] Estimating the model without the number of pre-school children variable shows that the probability of working part- or full-time increases with the age of youngest child but that the child's age does not affect the part-time versus full-time distinction. The relative risk ratios (standard errors) on the variables for the age of youngest child being 1, 3 and 4 are $1.150^{**}$ (0.074), $0.873^{**}$ (0.060) and $0.679^{***}$ (0.059) respectively for the probability of not working, and 0.947 (0.078), 1.096 (0.095) and 0.927 (0.102) for the probability of working full-time. The relative risk ratios are significantly different at the 1 per cent level for all three variables.

provided to the children rises with the number of children, while the 'benefit' to the mother of child-free time or the additional income or the investment in future career is unaltered. Finally, even if direct care can be provided for the children, the non-custodial chores will be greater for mothers of more than one child, raising the value of time spent at home ('domestic production') and reducing the likelihood of paid employment.

Even controlling for the children's characteristics, older mothers are more likely to be working, part- or full-time, than their younger counterparts, but the age of the mother does not directly influence the part-time versus full-time choice. Mothers who have left full-time education at the age of 19–21 (the omitted category in the regressions) are more likely to be working, and more likely to be working full-time rather than part-time, than similar mothers who left education prior to age 19. For example, evaluated at the sample means, 60 per cent of mothers who leave school at the age of 16 are predicted not to be working, compared with 46 per cent of mothers who leave school between the ages of 19 and 21. Much of this difference again reflects a difference in the estimated likelihood of working full-time: 12 per cent for the group educated for least time compared with 24 per cent for those in the longer-educated group. Both the mother's age and education effects could reflect greater incentives to work from higher potential wages for the longer-educated and for older mothers with potentially more work experience.

Interestingly, non-white mothers are much less likely to work than white mothers, but if they do work, they are more likely to be employed full-time than their white counterparts. Evaluated at the sample means, assuming all mothers in the sample are white generates estimated probabilities of 54, 31 and 15 per cent for not working, part-time work and full-time work, compared with proportions of 68, 17 and 14 per cent if the sample is assumed to be totally non-white.[50] This ethnic difference in the employment choice of mothers could reflect a disparity in work choices among women,

[50] These estimates imply that 33 per cent of working mothers work full-time if the sample is assumed to be all white, while 45 per cent of working mothers work full-time if the sample is assumed to be totally non-white.

independent of children, or a divergence in the costs and benefits of using non-maternal childcare.[51] The latter is investigated further below in the examination of childcare use by working mothers.

As seen above, having a partner increases the propensity to work, but there is no significant difference between single and partnered mothers' propensities to work part- or full-time if they are working. If the partner is *not* working, there is a lower likelihood of the mother being in employment than if the partner were working. Evaluated at the sample means, the probability that an otherwise 'average' mother will not work is 76 per cent if the mother is single compared with 45 per cent if she has a working partner and 67 per cent if she has a non-working partner. As mentioned above, this may be due to the provision of additional childcare resources from the presence of a partner, while being partnered with a *worker* may also indicate better employment opportunities.

The number of older children (aged 12–18) in the family reduces the likelihood of work, suggesting that any increased employment incentive from additional childcare resources provided by older children is outweighed by other effects that they may have. For example, the presence of older children could be a discouraging factor in itself or it may reflect the effect of previous interruptions in labour market involvement. However, the presence of other families in the household raises the likelihood of full-time work relative to not working and part-time work, consistent with these being an alternative source of childcare for the mother, particularly at longer hours of work.[52] The number of years at current address has a positive impact on the propensity to work, possibly reflecting that those living for a longer time in an area have greater opportunities to build up networks of informal help.

[51] As mentioned in Chapter 2, due to a limited sample size, the ethnic division used in the analysis is only between whites and non-whites. However, it should be noted that there might be significant differences between women of different ethnic origins within the non-white group.

[52] As will be discussed in Chapter 6, on the use of childcare by working mothers, these other families may be related families who can provide informal care, such as the mother's own parents, or may reflect an unrelated individual such as a live-in nanny or au pair providing formal care.

The estimation results show significant income effects: those with higher levels of other family income (all income excluding any earnings by the mother and government benefits[53]) are less likely to work. But the effects are small: evaluated at the sample means, raising other income from £100 to £300 each week increases the estimated proportion of mothers not working from 55.2 to 56.6 per cent. Hence, greater alternative resources appear to reduce the need for the mother to work.

The regional variables show that there is considerable geographical dispersion in the propensity of mothers to work, even allowing for differences in the other characteristics. The major divide is between London and all other regions, with part-time employment being more prevalent outside of the capital. For example, evaluated at the sample means, the proportion not working is estimated to be 52.9 per cent in the central shires compared with 60.3 per cent in outer London, while the estimated percentages are 32.1 per cent and 21.4 per cent respectively for those working part-time and 15.0 per cent and 18.3 per cent for those employed full-time.

Finally, there have been significant changes in the work patterns of mothers over the five years of the data. In particular, the propensity for mothers not to work has declined, even allowing for changes in the mother's and family's characteristics. Evaluated at the sample means, the estimated proportion not working fell from 59.4 per cent to 52.3 per cent between 1994/95 and 1998/99, while the percentage working part-time is estimated to have risen from 26.9 per cent to 31.2 per cent and the proportion working full-time increased from 13.7 per cent to 16.5 per cent. These changes are considerable, but they only cover a five-year period, during which national levels of employment were rising and unemployment falling.

[53] The income measure excludes mother's earnings and government benefits because they are dependent upon the employment choice and would distort the estimated impact of other income on the work decision. For example, inclusion of government benefits in the income measure might generate a spurious conclusion that higher non-benefit income reduces the likelihood of work rather than the correct interpretation that benefits are higher for those choosing not to work.

## 4.3 Multivariate Analysis of Employment Rates: Mothers of School Children

Table 4.5 presents the results of the same work model for mothers with school children aged 4 to 11 and no pre-school children. Most of the characteristics have similar effects as they do for mothers of pre-school children, but there are some differences.

First, even with the variable for the number of school children included in the model, the age of youngest child has a significant influence, with a greater propensity to work for each rise in age band. In addition, working mothers of 10- to 11-year-olds are more likely to be working full-time rather than part-time than their counterparts with younger school children. Hence, there is evidence to suggest that the costs and benefits of non-maternal care may differ by child's age for school children in a way that is not evident for pre-school children.

For mothers with school, but not pre-school, children, the presence of a working partner not only increases the propensity to work but also makes full-time work more likely for those who are working. This difference from the case for mothers of pre-school children is not surprising, as the provision of free 'school-time' care makes sources of informal care more important for enabling a mother to work beyond part-time rather than enabling her to work at all. Evaluated at the sample means, the likelihood that the 'average' mother is not working is 56 per cent if she is single, 26 per cent if she has a working partner and 48 per cent if she has a non-working partner. The estimated probabilities of part-time and full-time work are 29 and 15 per cent respectively for single mothers, 43 and 31 per cent for those with a working partner and 36 and 16 per cent for those with a non-working partner.

There are a couple of puzzling outcomes. First, the number of families in the household increases the likelihood that a mother will not be employed as well as raising the probability of full-time work for those who are working. One possible explanation is that the mothers not working may be acting as carers for other families in the household, such as elderly relatives, although why such an effect might dominate for mothers with only school children and not for

**Table 4.5. Multinomial Logit Model for Probability of Working Part- and Full-Time for Mothers with Only School Children**

| Regressors | Relative to probability of part-time work | | | |
|---|---|---|---|---|
| | Probability of no work | | Probability of full-time work | |
| | relative risk ratio | standard error | relative risk ratio | standard error |
| *Children:* | | | | |
| Age of youngest: | | | | |
| 4–5 | 1.136** | 0.073 | 0.903 | 0.066 |
| 8–9 | 0.855** | 0.055 | 1.047 | 0.073 |
| 10–11 | 0.760*** | 0.056 | 1.224*** | 0.093 |
| No. of school children | 1.230*** | 0.048 | 0.667*** | 0.032 |
| *Mother:* | | | | |
| Age | 0.687*** | 0.026 | 0.978 | 0.044 |
| $(Age)^2$ | 1.005*** | 0.001 | 1.000 | 0.001 |
| Left education aged: | | | | |
| 16 | 1.356*** | 0.121 | 0.441*** | 0.037 |
| 17–18 | 0.912 | 0.088 | 0.637*** | 0.056 |
| after 21 | 1.092 | 0.150 | 1.185 | 0.143 |
| Non-white | 2.389*** | 0.231 | 1.874*** | 0.198 |
| *Family:* | | | | |
| Partner | 0.310*** | 0.020 | 1.398*** | 0.104 |
| Partner not working | 2.290*** | 0.162 | 0.640*** | 0.056 |
| No. of older children | 1.372*** | 0.048 | 0.921** | 0.037 |
| No. of families | 1.290*** | 0.084 | 1.258*** | 0.090 |
| Years lived here | 0.974*** | 0.006 | 0.976*** | 0.007 |
| Other income (100s) | 0.966*** | 0.012 | 0.913*** | 0.013 |
| *Region:* | | | | |
| North shires | 0.855* | 0.071 | 0.993 | 0.087 |
| Central shires | 0.727*** | 0.056 | 0.830** | 0.068 |
| South shires | 0.799*** | 0.053 | 0.741*** | 0.054 |
| Central metropolitan | 0.895 | 0.098 | 0.904 | 0.109 |
| Inner London | 1.753*** | 0.236 | 1.346* | 0.206 |
| Outer London | 1.204* | 0.199 | 1.087 | 0.117 |
| *Time:* | | | | |
| Year | 0.951*** | 0.017 | 1.002 | 0.019 |
| Pseudo $R^2$ | 0.095 | | | |
| No. of observations | 11,635 | | | |

Notes: Stars denote that the relative risk ratio is significantly different from 1 at the 1% (***), 5% (**) and 10% (*) levels. Omitted child's age is 6–7 and omitted mother's age left education is 19–21. 'School children' are aged 4–11. 'Older children' are aged 12–18. 'Other income' includes all family income other than mother's earnings and government benefits, and it is measured in hundreds of pounds per week. Omitted region is northern metropolitan. The ratios on the probabilities of not working and working full-time are significantly different at the 1% level for the age of the youngest child, number of school children, mother's age, mother left education aged 16 and aged 17–18, non-white, partner,

partner not working, number of older children, other income and year. The ratios are significantly different at the 5% level for inner London. For the probability of not working, the ratios are significantly different between all other regions on the one hand and the London regions on the other. In addition, the ratios are significantly different between the north and central shires, between the central shires and central metropolitan region and between inner and outer London. For the probability of working full-time, the ratios are significantly different between all the shires and central metropolitan regions on the one hand and inner London on the other. In addition, the ratios are significantly different between the north and central shires, between the north and south shires, between the south shires and central metropolitan region, between the central shires and outer London and between the south shires and outer London. Exclusion of the year and region variables does not alter the significance of any other ratios.

those with pre-school children cannot be determined from the data. Second, the number of years at the current address increases the likelihood of working part-time relative to full-time work. However, the size of these effects is not large: for example, raising the number of years at the current address from five to 10 increases the probability of part-time work from 39 per cent to 42 per cent, while the likelihood of full-time work declines from 24 to 23 per cent.

The effects of other income are also different from those observed for mothers of pre-school children. Rather than other income being negatively related to the probability of undertaking paid employment, higher other income increases the likelihood of part-time work, relative to both not working and full-time work. However, the magnitude of impact is again not large. Evaluated at the sample means, increasing other income from £100 to £300 per week raises the propensity to work part-time from 38.1 per cent to 40.8 per cent and reduces the estimated fraction working full-time from 25.6 to 22.9 per cent.

The divide in employment behaviour between London and the rest of the country is also evident for mothers with only school children. In addition, the central and south shires also stand out as having high estimated proportions of mothers working part-time. For example, evaluated at the sample means, the proportion not working is estimated to be 32.3 per cent in the central shires compared with 41.5 per cent in outer London, while the estimated percentages are 43.1 and 33.5 per cent respectively for those working part-time and 24.6 and 25.0 per cent for those employed full-time.

As was the case for mothers with pre-school children, the propensity for mothers not to work has declined over the five-year period, even allowing for changes in the mother's and family's

characteristics. Evaluated at the sample means, the estimated proportion not working fell from 38.8 per cent to 34.1 per cent between 1994/95 and 1998/99, while the percentage working part-time is estimated to have risen from 38.0 per cent to 40.8 per cent and the proportion working full-time increased from 23.2 per cent to 25.2 per cent. Again, these changes are considerable, but they occur during a period of generally rising employment rates.

## 4.4 Mothers' Perceptions of Barriers to Employment

The picture presented in the previous sections illustrates the extent to which women with children engage in the labour market. Of central interest is the extent to which mothers feel constrained in their employment decisions by the presence of children and the availability of suitable childcare. The FRS provides some information on the desire of non-working mothers to take up paid employment and of part-time working mothers to work more hours.[54]

All non-workers who are not looking for work in the FRS are asked if they would like to have a regular job. They are also asked if anything prevents them from seeking work, from a choice of four options,[55] one of which is '… having to look after children'. Some 83 per cent of mothers with pre-school children who are not working report that they are prevented from seeking work because they have to look after children, but only 24 per cent say in addition that they would like to have a regular job. The corresponding proportions for mothers with only school children (aged under 12) are 66 per cent and 25 per cent. It is not clear whether the large proportions 'prevented from seeking work due to children' are actually *constrained* in their ideal choice rather than just expressing the view that they would work in the absence of children. However, the one-quarter stating that they would like a regular job is a greater indication that mothers may not be achieving their ideal employment status.[56]

[54] A general review of the literature on the barriers to paid work for parents can be found in Millar and Ridge (2001, ch. 8).

[55] The four options are 'disability or illness', 'caring for a disabled or elderly person', 'having to look after children' and 'none of these'.

[56] There is a wide variety of evidence on mothers' perceptions of barriers to employment. A much higher proportion (81 per cent) of non-working mothers reported that they would go

**Table 4.6. Non-Working Mothers' Perceptions of Child-Related Barriers to Work**

| | With working partner | | With non-working partner | | Single | |
|---|---|---|---|---|---|---|
| | One child | Two or more children | One child | Two or more children | One child | Two or more children |
| % of non-workers prevented from seeking work by having to look after children | | | | | | |
| *Youngest child:* | | | | | | |
| Pre-school | 76.2 | 84.3 | 77.5 | 80.5 | 82.8 | 88.6 |
| School | 58.4 | 65.6 | 53.9 | 63.6 | 64.8 | 73.6 |
| Older | 20.1 | 43.0 | 23.3 | 34.0 | 32.9 | 46.0 |
| % of non-workers prevented from seeking work by having to look after children … *and* would like to have a regular paid job | | | | | | |
| *Youngest child:* | | | | | | |
| Pre-school | 14.4 | 20.0 | 20.6 | 19.6 | 34.4 | 38.0 |
| School | 21.1 | 18.7 | 20.0 | 16.7 | 31.1 | 35.9 |
| Older | 5.9 | 7.5 | 4.5 | 10.5 | 13.5 | 23.5 |

Note: A school child is defined as aged 4–11, while an older child is defined as aged 12–18 and in full-time education.

The proportions of workers prevented from seeking work by the presence of children and the proportions who would also like to have a regular paid job are presented by partnership status and number of children in Table 4.6.

Non-working mothers of pre-school children are more likely to report that having to look after children prevents them from seeking work than non-working mothers with only school children across all groups. However, the overall proportion reporting that they would

out to work if they had alternative forms of childcare in the British Social Attitudes Survey for 1994 (Jarvis et al., 2000, table 5.11). In a separate study of families with a child under the age of 14, 66 per cent of non-working mothers said that they would prefer to work or study if they had access to good-quality, convenient, reliable and affordable childcare (La Valle et al., 2000, table 10.8). In a survey of single mothers conducted in the autumn of 1994, when asked for (possibly multiple) reasons why they were not working 16 or more hours each week, 36 per cent responded that they could not afford childcare and 13 per cent reported that there was no childcare available, but 41 per cent simply answered that the children were too young (Ford, 1996, table 2.2). In a study of childcare usage by parents of 3- and 4-year-olds, half of the (non-working and working) parents thought there were not enough childcare places in the local area, while about half thought that there were enough (and 1 per cent reported that they thought there were too many) (Blake et al., 2001, table 2.6).

*also* like to have a regular job is only slightly higher for mothers of pre-school children than for those with only school children, while the proportion is actually lower for mothers of pre-school children in one category. This is somewhat surprising, given the provision of free 'school-time' care for mothers of school children, strongly indicating that having children in school does not address all barriers to working for these mothers. However, it should also be noted that the base sample of non-working women is different for mothers with only school children because a higher proportion of these mothers are working. Hence, mothers with only school children who are not working may be the ones most constrained in their ability to undertake paid employment.

Non-working mothers of more than one child are more likely to report children as the reason for not looking for employment (especially for mothers of older children), but the pattern is not so consistent for the proportion that state that they would also like to have a regular job.

Whether a partner is employed or not has little impact on mothers' reasons for not working, possibly because a partner's unemployment tends to be viewed as only temporary and that partner could not therefore be a regular source of childcare. However, single non-working mothers are more likely to cite children as the cause than their partnered counterparts. Moreover, a substantially higher proportion of single mothers report that they would also like a job than of mothers with partners. For example, some 38 per cent of single mothers with more than one child, including a pre-school child, appear constrained in their desire to work, compared with only 20 per cent of similar mothers with partners.

Many factors may influence the degree to which mothers feel constrained in their work choice by the presence of children. As with the employment rate, a multivariate regression analysis is presented to isolate the impact of particular characteristics by controlling for related factors. The analysis focuses on the probability that a non-working mother reports that she is prevented from seeking work due to having to look after children *and* would like to have a regular job—that is, the stronger indicator of a constraint presented above.

**Table 4.7. Logit Models for Probability of 'Wanting to Work' for Non-Working Mothers**

| Regressors | Mothers of pre-school children | | Mothers of only school children | |
|---|---|---|---|---|
| | odds ratio | standard error | odds ratio | standard error |
| *Children:* | | | | |
| Age of youngest: | | | | |
| 0 | 0.775*** | 0.067 | — | — |
| 1 | 0.988 | 0.084 | — | — |
| 3 | 1.120 | 0.102 | — | — |
| 4 | 1.317** | 0.155 | — | — |
| 4–5 | — | — | 0.938 | 0.089 |
| 8–9 | — | — | 0.853 | 0.087 |
| 10–11 | — | — | 0.764** | 0.090 |
| No. of pre-school children | 1.214*** | 0.073 | — | — |
| No. of school children | 1.118*** | 0.034 | 1.018 | 0.057 |
| *Mother:* | | | | |
| Age | 0.923** | 0.034 | 1.094* | 0.059 |
| $(Age)^2$ | 1.001* | 0.001 | 0.999** | 0.001 |
| Left education aged: | | | | |
| 16 | 1.214 | 0.150 | 1.216 | 0.197 |
| 17–18 | 1.241* | 0.162 | 0.982 | 0.175 |
| after 21 | 0.607*** | 0.118 | 1.021 | 0.261 |
| Non-white | 0.554*** | 0.060 | 0.560*** | 0.073 |
| *Family:* | | | | |
| Partner | 0.444*** | 0.032 | 0.455*** | 0.042 |
| Partner not working | 1.045 | 0.094 | 0.954 | 0.111 |
| No. of older children | 0.962 | 0.069 | 1.008 | 0.053 |
| No. of families | 0.635*** | 0.066 | 0.992 | 0.093 |
| Years lived here | 0.981* | 0.010 | 0.999 | 0.009 |
| Log(other income) | 0.987 | 0.048 | 1.050 | 0.070 |
| *Region:* | | | | |
| North shires | 0.855 | 0.090 | 0.804 | 0.107 |
| Central shires | 0.983 | 0.094 | 1.178 | 0.143 |
| South shires | 0.847* | 0.072 | 1.222* | 0.127 |
| Central metropolitan | 0.997 | 0.133 | 1.006 | 0.167 |
| Inner London | 0.950 | 0.134 | 0.905 | 0.148 |
| Outer London | 0.789* | 0.097 | 1.028 | 0.148 |
| *Time:* | | | | |
| Year | 1.061*** | 0.022 | 0.986 | 0.027 |
| Pseudo $R^2$ | 0.057 | | 0.044 | |
| No. of observations | 6,980 | | 4,337 | |

Notes: Stars denote that the odds ratio is significantly different from 1 at the 1% (***), 5% (**) and 10% (*) levels. Omitted child's age is 2 for mothers of pre-school children and 6–7 for mothers of only

school children. Omitted mother's age left education is 19–21. 'School children' are aged 4–11. 'Older children' are aged 12–18. 'Other income' includes all family income other than mother's earnings and government benefits, and it is measured in hundreds of pounds per week. Omitted region is northern metropolitan. For mothers with pre-school children, the odds ratios on the area variables are significantly different between the central and south shires and between the central shires and outer London. For mothers with only school children, the ratios on the area variables are significantly different between the north and central shires, between the north and south shires and between the south shires and inner London. Exclusion of the year and region variables alters the significance of only one of the other ratios: for mothers of pre-school children, the ratio on mother left education aged 16 is significantly greater than 1.

Table 4.7 presents the results from two logit model regressions, one for mothers with pre-school children and the other for mothers with school, but not pre-school, children. An odds ratio that is greater than 1 indicates a factor that raises the probability that a mother would like to have a regular job, while an odds ratio less than 1 suggests a characteristic related to mothers who feel less constrained. The stars indicate the odds ratios that we are very confident have the estimated direction of relationship.

The likelihood that a non-working mother with a pre-school child will feel constrained in her ability to work rises significantly with the age of youngest child. For example, evaluated at the sample means, the likelihood that a non-working mother with a child under 1 feels constrained is 19.2 per cent compared with 28.7 per cent for a mother with a youngest child aged 4. Again, this may reflect a diminishing pool of non-working mothers as the youngest child ages, leaving behind those most constrained in undertaking paid employment. On the other hand, it may also show that non-working mothers with older pre-school children are more likely to want to work than their counterparts with younger children, but that there is no corresponding rise in childcare options as the youngest child ages. In contrast, for non-working mothers with only school children, the oldest age group of children generates the smallest proportion of those expressing a desire to be working, possibly because the mothers not working when their youngest child reaches this age are those with the least attachment to the labour market.

Consistent with the pattern in Table 4.6, non-working mothers of pre-school children with more pre-school or school children are more likely to desire to work. Evaluated at the sample means, raising the number of pre-school children from one to two increases the likelihood of desiring to work from 21.8 per cent to 25.3 per cent.

This may reflect higher total childcare costs for mothers of more than one child, creating higher barriers to work for these mothers than for those with fewer children.

Older mothers of pre-school children are less dissatisfied not working. For example, evaluated at the sample means, raising the mother's age from 25 to 35 reduces the probability of feeling constrained from 24.2 per cent to 20.7 per cent. However, the direction of impact is reversed for mothers of only school children: older non-working mothers are more dissatisfied not working. Mothers of pre-school children with the greatest education length have much lower rates of feeling constrained than their shorter-educated counterparts, but education is not a significant factor for mothers of only school children. Being non-white also reduces dissatisfaction for non-working mothers for both types of children. Evaluated at the sample means, the likelihood of dissatisfaction is 24.2 per cent for a white non-working mother with pre-school children compared with 15.0 per cent for a similar non-white mother.

Controlling for other factors does not alter the earlier conclusion that having a partner, regardless of whether that partner is working or not, greatly reduces the expressed desire of non-working mothers to be in employment. Evaluated at the sample means, the probability that a non-working mother will express a desire to be working is estimated to be 33.7 per cent if she is single, 18.4 per cent if she has a working partner and 19.1 per cent if she has a non-working partner. The greater the number of families in the household, the less likely a non-working mother of pre-school children would like to be working. However, the number of older children and other family income have no significant impact.

Non-working mothers with pre-school children living in the south shires or outer London are also less likely to report wanting to work than those in other areas of the country. For example, evaluated at the sample means, the estimated proportion of non-working mothers with pre-school children stating that they would like to work is 25 per cent in the northern metropolitan area and only 21 per cent in outer London. However, the regional dispersion is reversed for non-working mothers with only school children: those living in the south shires are most likely to report that they would like to work. For example, evaluated at the sample means, an estimated 27 per cent of

those living in the south shires would like to work compared with 19 per cent of those in the north shires.

The likelihood that non-working mothers of pre-school children report that they would like to work has risen over the period. For example, evaluated at the sample means, 21 per cent of non-working mothers with pre-school children are estimated to want to work in 1994/95 compared with 25 per cent in 1998/99. One possible explanation is that the improving labour market opportunities over the period may have led more mothers to feel constrained from working by their childcare responsibilities.

## 4.5 Mothers' Perceptions of Barriers to Working Longer Hours

In the FRS, all part-time workers are asked whether or not they are happy with the hours they work. If they are not happy, they are asked what prevents them from working longer hours, from a choice of four options,[57] one of which is '… having to look after children'. If this option is chosen, the individual is asked 'if some suitable form of childcare were available, would this enable you to work more hours?'.

Some 18 per cent of mothers of pre-school children who are working part-time reported that they are prevented from working longer hours by having to look after children, compared with 25 per cent for part-time mothers with school, but not pre-school, children. The proportion stating that they would be enabled to work longer if suitable childcare were available was 11 per cent for mothers of pre-school children and 10 per cent for mothers of only school children.[58] These proportions, although representing a substantial minority, suggest that most part-time working mothers are happy with the hours they work and that childcare is not a constraining issue for the

[57] As in the case for non-workers prevented from working, the four options are 'disability or illness', 'caring for a disabled or elderly person', 'having to look after children' and 'none of these'.

[58] In the 1994 British Social Attitudes Survey, 26 per cent of part-time working mothers reported that they would work more hours if they could change their childcare arrangements (Jarvis et al., 2000, table 5.11). La Valle et al. (2000) report that 23 per cent of working mothers with a child under the age of 14 responded that they would increase their working hours if they had access to more adequate childcare (table 9.9).

vast majority of these workers. This is somewhat surprising for mothers of only school children, for whom it might be argued that the provision of free 'school-time' care shifts the potential childcare barrier from the point of entry into paid employment to the movement from part-time to full-time work. One answer might be that normal school hours are not typically sufficient to cover even part-time work,[59] particularly given school holidays, and that those women who undertake part-time work are the ones with better childcare options that would allow them to work longer if desired.

Table 4.8 presents the proportions by partnership status and number of children. Across most groups, part-time working mothers of only school children are slightly more likely to report that having to look after children prevents them from working more hours than mothers with pre-school children. Indeed, it is interesting to note that the proportions are not much different from those for mothers of only

**Table 4.8. Part-Time Working Mothers' Perceptions of Child-Related Constraints on Hours of Work**

| | With working partner | | With non-working partner | | Single | |
|---|---|---|---|---|---|---|
| | One child | Two or more children | One child | Two or more children | One child | Two or more children |
| % of part-time workers who would like to work more hours and are prevented from doing so by having to look after children | | | | | | |
| *Youngest child:* | | | | | | |
| Pre-school | 14.1 | 16.0 | 18.2 | 23.7 | 35.0 | 30.7 |
| School | 20.8 | 21.5 | 25.4 | 23.0 | 39.9 | 35.8 |
| Older | 20.2 | 21.2 | 27.7 | 21.4 | 37.3 | 39.1 |
| % of part-time workers who would like to work more hours and are prevented from doing so by having to look after children … *and* would work more if some suitable childcare were available | | | | | | |
| *Youngest child:* | | | | | | |
| Pre-school | 8.8 | 10.4 | 12.1 | 10.6 | 22.4 | 25.4 |
| School | 7.7 | 8.4 | 4.8 | 4.5 | 21.3 | 16.1 |
| Older | 1.3 | 1.3 | 0.0 | 0.9 | 4.1 | 7.0 |

Note: A school child is defined as aged 4–11, while an older child is defined as aged 12–18 and in full-time education.

[59] Especially if the job requires fewer days of normal working length rather than shorter hours each day.

older children (aged 12–18), suggesting that the effect may have as much to do with child-related household chores as direct supervision of the child. Indeed, across all groups, mothers with pre-school children are more likely to view the availability of suitable childcare as the solution to this constraint, while a smaller proportion of mothers of only school and older children see childcare as a factor.

Part-time mothers are more likely to report that they would like to work longer hours and are prevented from doing so by having to look after children if they have a non-working partner than if they have a working partner. This may reflect a greater need to work longer hours, rather than a greater lack of childcare, on the part of mothers who do not have the benefit of a partner's earnings in the household. On the other hand, among mothers with only school or older children, those with a non-working partner are less likely to report that they would work more if some suitable childcare were available than mothers with working partners. However, single part-time working mothers are much more likely than those with partners to report that they are prevented from working longer hours because of children and to indicate a desire for suitable childcare to be available. For example, some 25 per cent of single mothers with more than one child, including a pre-school child, report that suitable childcare would enable them to work longer hours, while only 10 per cent of their partnered counterparts find this.

The results from logit models estimating the impact of a variety of factors on the constraints on working longer hours for part-time mothers are presented in Table 4.9. The estimates are for the probability that a mother is prevented from working longer hours by having to look after children and would *also* work longer if suitable childcare were available.

As in the case of non-workers, the age of the youngest child is an important factor in the perception of employment barriers. Part-time working mothers with a child under the age of 1 are significantly less likely to feel constrained in their ability to work longer hours than those with only older pre-school children. Evaluated at the sample means, the proportion of mothers with pre-school children who would work longer if suitable childcare were available is estimated to be 7 per cent for those with a child under the age of 1 and 13 per cent

**Table 4.9. Logit Models for Probability of 'Wanting to Work More and Need Suitable Childcare' for Part-Time Working Mothers**

| Regressors | Mothers of pre-school children | | Mothers of only school children | |
|---|---|---|---|---|
| | odds ratio | standard error | odds ratio | standard error |
| *Children:* | | | | |
| Age of youngest: | | | | |
| 0 | 0.617** | 0.120 | — | — |
| 1 | 0.779 | 0.127 | — | — |
| 3 | 1.166 | 0.182 | — | — |
| 4 | 1.212 | 0.224 | — | — |
| 4–5 | — | — | 0.735** | 0.101 |
| 8–9 | — | — | 0.665*** | 0.095 |
| 10–11 | — | — | 0.558*** | 0.100 |
| No. of pre-school children | 0.881 | 0.139 | — | — |
| No. of school children | 1.101 | 0.089 | 1.093 | 0.100 |
| *Mother:* | | | | |
| Age | 0.858 | 0.085 | 0.884 | 0.083 |
| $(Age)^2$ | 1.002 | 0.002 | 1.001 | 0.001 |
| Left education aged: | | | | |
| 16 | 1.261 | 0.255 | 0.146 | 0.230 |
| 17–18 | 1.134 | 0.240 | 1.067 | 0.227 |
| after 21 | 0.597 | 0.199 | 0.633 | 0.230 |
| Non-white | 1.332 | 0.332 | 1.365 | 0.331 |
| *Family:* | | | | |
| Partner | 0.422*** | 0.066 | 0.435*** | 0.056 |
| Partner not working | 1.009 | 0.213 | 0.558*** | 0.125 |
| No. of older children | 1.492*** | 0.224 | 0.892 | 0.085 |
| No. of families | 0.674 | 0.171 | 0.750 | 0.148 |
| Years lived here | 0.957** | 0.022 | 0.983 | 0.016 |
| Log(other income) | 1.080 | 0.080 | 1.069 | 0.074 |
| *Region:* | | | | |
| North shires | 1.262 | 0.266 | 0.945 | 0.186 |
| Central shires | 1.323 | 0.253 | 1.036 | 0.182 |
| South shires | 1.394* | 0.241 | 1.183 | 0.182 |
| Central metropolitan | 1.112 | 0.328 | 1.003 | 0.260 |
| Inner London | 1.430 | 0.582 | 1.093 | 0.399 |
| Outer London | 2.116*** | 0.537 | 1.523* | 0.355 |
| *Time:* | | | | |
| Year | 0.985 | 0.040 | 0.958 | 0.038 |
| Pseudo $R^2$ | 0.049 | | 0.055 | |
| No. of observations | 3,430 | | 4,434 | |

Notes: Stars denote that the odds ratio is significantly different from zero at the 1% (***), 5% (**) and 10% (*) levels. Omitted child's age is 2 for mothers of pre-school children and 6–7 for mothers of

school children. Omitted mother's age left education is 19–21. 'School children' are aged 4–11. 'Older children' are aged 12–18. 'Other income' includes all family income other than mother's earnings and government benefits, and it is measured in hundreds of pounds per week. Omitted region is north metropolitan. For mothers with pre-school children, the odds ratios on the area variables are significantly different between all three shire areas and the central metropolitan area on one hand and outer London on the other. For mothers with only school children, the ratios on the area variables are significantly different between the north and central shires on one hand and outer London on the other. Exclusion of the year and region variables alters the significance of only one of the other ratios: for mothers of pre-school children, the ratio on non-white is significantly greater than 1.

for those with a youngest child aged 4. Once again, an increasing desire for greater labour market involvement as the youngest child ages is apparently not matched by rising childcare options.

For mothers of only school children, an increase in the youngest child's age appears to relax the childcare constraint. For example, evaluated at the sample means, some 11.1 per cent of part-time working mothers with a youngest child aged 6 or 7 are estimated to require suitable childcare compared with 6.5 per cent of those with a youngest child aged 10 or 11. This is not surprising: it may be easier to find or share care arrangements for older children.

Even controlling for other factors, the regression results confirm the pattern shown earlier that having a partner helps to relax the constraint for mothers with pre-school children and mothers with only school children. Evaluated at the sample means, the estimated probability of being constrained by a lack of suitable childcare for pre-school mothers is 19.8 per cent for single mothers, 9.4 per cent for mothers with working partners and a similar 9.5 per cent for mothers with non-working partners. In addition, if the partner is not working, mothers with only school children are even less likely to state that children prevent them from working longer hours. Evaluated at the sample means, the probability of this constraint for mothers of only school children is 16.2 per cent for single mothers, 7.8 per cent for those with working partners and 4.5 per cent for mothers with non-working partners.

For mothers of pre-school children, the number of older children is positively associated with an unfulfilled desire to work more, suggesting that older children are more of an additional demand on mothers' time than a source of childcare for younger siblings. However, mothers with pre-school children who have lived at the same address for longer are less likely to report that they would like to work longer hours but for a lack of suitable childcare. Evaluated at

the sample means, increasing the length of time at the current address from five to 10 years reduces the estimated probability of this constraint from 10 per cent to 8 per cent. This suggests that those with greater potential sources of informal care are less likely to feel constrained.

Across the regions, outer London (and, to a lesser degree, the south shires) stands out from the rest of the country as having the highest proportion of mothers who report that they would like to work longer hours if suitable childcare were available. However, there is no evidence of any pattern over time in the propensity of part-time working mothers to report feeling constrained in this way.

## 4.6 Summary

This chapter has reviewed the employment patterns of mothers and summarised how a variety of factors influence the propensity to undertake paid employment. It has also considered whether mothers feel constrained in their ability to work by the presence of children and to what extent employed mothers might work longer hours but for a lack of suitable childcare.

The presence of children has a substantial impact on the propensity of mothers to undertake paid employment and on the choice between part-time and full-time work:

- The likelihood of paid employment rises steadily with the age of youngest child, increasing from 45 per cent for mothers with a youngest child aged 1 to 78 per cent for mothers with a youngest child aged 16–18.
- There is no sudden increase in employment rates when the youngest child starts school (Figure 4.1).
- The gradual rise in the total employment rate is mostly explained by an increase in full-time rather than part-time employment (Tables 4.2 and 4.3).
- The majority of women with children who are working will be in part-time work rather than full-time work, while the vast majority of women without children who are working are in full-time employment rather than part-time (Table 4.1).

Hence, it appears not only that mothers are less likely to participate in paid employment than their female counterparts without children, but also that, if they are working, they are far more likely to be in part-time rather than full-time work than their childless counterparts. In addition, the transition of the youngest child into school does not appear to affect the trends in behaviour substantially as the child ages, suggesting that the provision of free 'school-time' care may not be so influential as could be thought in opening up employment opportunities for mothers.

The evidence suggests that a substantial minority of mothers feel constrained in their employment decisions by the need to care for children:

- About one-quarter of non-working mothers report that they would like a regular paid job but are prevented from seeking work by having to look after children (Section 4.4).
- 18 per cent of part-time working mothers of pre-school children and 25 per cent of part-time working mothers with only school children report that they would like to work longer hours but are prevented from doing so by having to look after children (Section 4.5).
- 11 per cent of part-time working mothers of pre-school children and 10 per cent of part-time working mothers with only school children report that they would work more hours if some suitable form of childcare were available (Section 4.5).

As with employment rates, the propensity to report feeling constrained depends upon the age of the youngest child:

- Mothers of younger pre-school children are less likely than mothers with only older pre-school children to report that they feel constrained in their ability to work or to work more hours by the presence of children or a lack of suitable childcare (Tables 4.7 and 4.9).
- But this relationship is reversed for mothers of only school children: as the youngest child ages, the proportion of mothers feeling constrained declines (Tables 4.7 and 4.9).

This is indicative that a growing inclination to work or to work more on the part of mothers as the youngest pre-school child ages is not met with a corresponding rise in childcare options. However, constraints felt by mothers with only school children are not related to the age of children in the same way.

For mothers with pre-school children, not only is the age of the youngest child important in employment choices, but so is the number of children:

- Employment rates are lower for mothers with more pre-school or school children (Tables 4.2 and 4.3).
- The multivariate analysis shows that it is the number of pre-school children rather than the age of the youngest pre-school child (although the two are directly related) that is most important in influencing the propensity to work (Table 4.4).
- The likelihood that a non-working mother feels constrained by the presence of children in her ability to work increases with the numbers of pre-school and school children (Table 4.7).

This correlation between employment outcome and perceived constraint suggests that the total costs of childcare (summed over all children) rather than age-related costs may reduce the propensity to work by mothers with younger pre-school children. On the other hand, the non-financial costs of using non-maternal childcare, possibly in terms of quality of care, may be greater for families with more than one child, reducing the likelihood that they will be outweighed by any financial or psychological returns to the mother working.

The presence or absence of a partner is extremely important in the employment behaviour of mothers:

- Single mothers are less likely than mothers with partners to work, but the gap narrows as the youngest child ages: 51 per cent of partnered mothers and 20 per cent of single mothers work when the youngest child is aged 1 compared with 80 per cent and 70 per cent when the youngest child is aged 16–18 (Figure 4.1).
- Single mothers are more likely than mothers with partners to report that their ability to work or to work more hours is

constrained by the presence of children and a lack of suitable childcare (Tables 4.6 to 4.9).
- These gaps remain even allowing for differences in other characteristics in a multivariate analysis.

These differences both in the work outcome and in the reported constraints may arise from a variety of factors. Single mothers may have access to fewer informal childcare resources than their partnered counterparts or receive less help with child-related household chores which makes their time at home more valuable. In addition, the withdrawal of benefit payments as earnings rise may be a greater discouragement for single mothers to work than for those with partners.

Non-white mothers also appear to face different constraints in the labour market from their white counterparts:

- Non-white mothers are less likely to work than white mothers but are more likely to be employed full-time if they do work (Tables 4.4 and 4.5).
- The proportion of mothers reporting that they feel constrained in their ability to work is lower for non-white mothers than for white mothers (Table 4.7).

The precise reasons for this difference by ethnic group cannot be uncovered from the available data and may relate more to cultural than economic issues. However, it is important to realise that there are differences in behaviour marked by ethnicity (and possibly between different ethnic minorities as well) and that policy might need to address a different set of underlying causes if a change in behaviour is an objective for these groups.

Only some of the potential sources of informal childcare have the expected effect:

- The number of families in the household is positively correlated with the propensity to undertake full-time employment (Tables 4.4 and 4.5).
- Number of years at the current address is positively correlated with the propensity to undertake part-time employment (Tables 4.4 and 4.5).

- The presence of a non-working partner *reduces* the likelihood of employment, possibly due to a correlation in labour market opportunities between partners (Tables 4.4 and 4.5).
- The number of older children (12–18 years old) also *reduces* the likelihood of employment, suggesting that they are an additional burden on the mother's time rather than a source of childcare (Tables 4.4 and 4.5).

Nevertheless, it is true that at least some of these sources of potential informal childcare do have an impact on the employment outcome.

Employment choices and attitudes to working are not uniform across the country:

- The major divide in employment behaviour is between London and all other regions, with part-time employment being more prevalent outside of the capital (Tables 4.4 and 4.5).
- Non-working mothers with pre-school children living in the south shires or outer London are also less likely to report wanting to work than those in other areas of the country, but for non-working mothers with only school children, those living in the south shires are most likely to report that they would like to work (Table 4.7).
- Outer London (and, to a lesser degree, the south shires) stands out from the rest of the country as having the highest proportion of mothers who report that they would like to work longer hours if suitable childcare were available (Table 4.9).

Finally, although the period of study only covers five years, there are some distinct time trends in mothers' employment behaviour:

- The propensity for mothers to be employed has risen, following a more general trend in the labour market over this period (Tables 4.4 and 4.5).
- In addition, the propensity for non-working mothers with pre-school children to report a desire to be employed has increased (Table 4.7).

This may be because improving labour market conditions have increased mothers' desire to work and to feel constrained by their childcare responsibilities.

# CHAPTER 5

# Childcare Provision by Local Authority

## 5.1 Introduction

In analysing the childcare market and its influence on mothers' employment choices, it would be useful to know about the relationship between the availability of different childcare options and the likelihood that mothers will choose to work. Indeed 'supply constraints' have been a major concern in the framing of childcare policy, with some arguing that subsidies will not be effective if childcare places are not available. However, information on childcare options is not directly collected in the survey data on childcare and employment behaviour analysed above. The indicators of sources of informal care have been analysed, but there is no link to the local availability of formal sources of care.

In this chapter, the information collected from local authorities (LAs) is used to analyse the variation in formal childcare provision across the country. The next section examines the diversity in the availability of childcare places, while Sections 5.3 and 5.4 consider the differences in the average childcare provider size and in the average pupil:staff ratio for 3- and 4-year-olds in maintained nursery classes. In Section 5.5, the information at the LA level is combined with the survey data to analyse the relationships between the childcare provision statistics and the employment choices of mothers.

## 5.2 Childcare Availability

### *5.2.1 National and Regional Averages*

An overview of childcare availability during the second half of the 1990s is presented in Table 5.1.[60]

[60] A summary of some of the longer-term trends can be found in Department for Education and Employment (1999b).

**Table 5.1. Availability by Year: Average Number of Places per 10,000 Population**

| | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|
| Day nurseries | 512 | 550 | 626 | 734 | 806 |
| Playgroups | 1,177 | 1,221 | 1,238 | 1,261 | 1,120 |
| Childminders | 724 | 713 | 724 | 687 | 662 |
| Out-of-school clubs | 218 | 318 | 347 | 474 | 571 |
| Holiday schemes | 883 | 1,022 | 1,067 | 1,211 | 1,979 |

Notes: The averages are weighted by the relevant child population in each LA. Due to the regrouping of the LAs to create consistency across the five years, the maximum number of LAs in each year is 109. However, the numbers of LAs reporting availability figures for 1995, 1996, 1997, 1998 and 1999 were 105, 97, 100, 73 and 109 for day nursery places; 104, 91, 100, 71 and 109 for playgroup places; 107, 101, 99, 101 and 109 for childminder places; 102, 91, 97, 63 and 107 for out-of-school club places; and 100, 86, 93, 64 and 107 for holiday scheme places.

In March 1999, there were approximately eight nursery places and 11 playgroup places for each 100 children under the age of 5 and almost seven childminder places for each 100 children under the age of 8. On the assumption that each of these places represents a full week of care (and that childminders cater only for pre-school children), this suggests that the aggregate level of centre and childminder provision for pre-schoolers is sufficient for about one-quarter to receive care for a full-time week.[61] Alternatively, if the care were shared equally between all children, it would allow each child an average 1.25 days of care each week. However, it should be noted that these figures do not reflect the availability of other formal care alternatives (such as nannies and au pairs) or informal arrangements.

For children aged 5 to 7, there were approximately six out-of-school club places and almost 20 holiday scheme places per 100 children in March 1999. It should be recalled that holiday scheme places are counted as one for each holiday, including the three major breaks and the three half-terms. Hence, for a measure of the year-round coverage provided by holiday schemes, the number of places needs to be divided by six, although division by three might be a more reasonable adjustment if holiday schemes rarely operate (or are

[61] In the FRS data, 43 per cent of children aged 1 to 4 have mothers who are working. Hence, this level of provision is not sufficient to provide every pre-school child of a working mother with a full-time place.

needed) during the half-terms.[62] On the assumption that each of these places represents a full week of care, this suggests that the aggregate level of school-related care for 5- to 7-year-olds outside of normal school hours is sufficient for considerably less than one-tenth of these children to receive a full-time week of care.[63] However, it should again be noted that this ignores other formal care alternatives (such as childminders, nannies and au pairs) and informal arrangements.

The other interesting feature of Table 5.1 is the dynamics in childcare provision over the five-year period. The availability of day nursery places has steadily risen over the period, increasing by some 57 per cent between 1995 and 1999. On the other hand, the availability of playgroup places has remained relatively constant over the period, while the provision of childminder places has declined slightly, falling by around 9 per cent between 1995 and 1999. Provision of out-of-school clubs has increased dramatically, rising by a multiple of more than two-and-a-half between 1995 and 1999. The availability of holiday scheme places has also risen rapidly, by approximately 37 per cent between 1995 and 1998 and then by a substantial jump of 63 per cent in the single year between 1998 and 1999. Part of this sudden jump in the final year may be an artefact of a change in survey questions: for the first time, the survey for 1999 requested not just the total number of holiday scheme places, but also the number for each holiday period separately, emphasising the counting of places by holiday period. Even so, a substantial rise in availability in 1999 would be in line with the previous trend. Overall, the period has seen an increase in provision of childcare types that tend to be more centre- and education-based and which are potentially more likely to provide longer daily hours of care, particularly for younger school children.

These aggregate figures disguise considerable variation in availability across regions and LAs. The average availability over all

[62] Information on the holiday scheme places provided in each of the six holiday periods was collected in the March 1999 survey, but was not reported in the related publication.

[63] In the FRS data, 51 per cent of children aged 5 to 7 have mothers who are working. Hence, once again, this level of provision is not sufficient to provide every young school child of a working mother with a full-time place.

five years for the total places for pre-school-type care (the sum of day nursery, playgroup and childminder places) is highest in the south shire counties (3,069 places), the central shire counties (2,795 places) and the north shire counties (2,535 places). In comparison, the average numbers of places are much lower in the outer London boroughs (2,184 places), the inner London boroughs (2,147 places), the northern metropolitan districts (2,002 places) and the central metropolitan districts (2,000 places). However, this simple summation of the number of places ignores the considerable differences in the nature of the care provided by the different types. In particular, day nurseries provide full-day care while playgroups only offer part-day sessions. In addition, day nurseries and playgroups offer care with a distinct social and possibly educational content that is less likely to be included in childminder settings. Hence, it is more useful to analyse the availability by type of care rather than as a sum.

Figure 5.1 presents the population-weighted average availability (aggregated over the five years) across the seven regions[64] separately for day nursery, playgroup and childminder places. An interesting pattern emerges from this graph: areas with relatively high levels of day nursery places (inner London and the central metropolitan districts) have relatively low levels of playgroup and childminder provision, while the shire counties (particularly those in the south) and outer London tend to have much higher playgroup and childminder provision and low day nursery place availability. There are several potential explanations for this pattern. The difference for inner London may not be surprising as it is a region dominated by business rather than residential areas. This may generate higher demand for the type of care required by working rather than non-working mothers—that is, full-day nursery places rather than part-day playgroup places. In addition, it may be an expensive region for childminders to live. Similar arguments might also apply to the central metropolitan districts. For the more rural and sparsely populated shire counties, local childminders might be a more convenient alternative to travelling longer distances to day nurseries.

[64] The LAs in each region are listed in Department of Health (1996).

**Figure 5.1. Population-Weighted Availability by Region: Day Nurseries, Playgroups and Childminders**

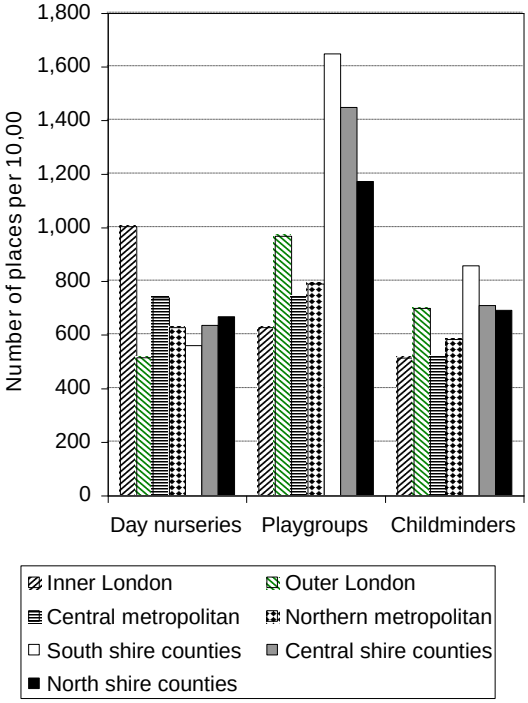
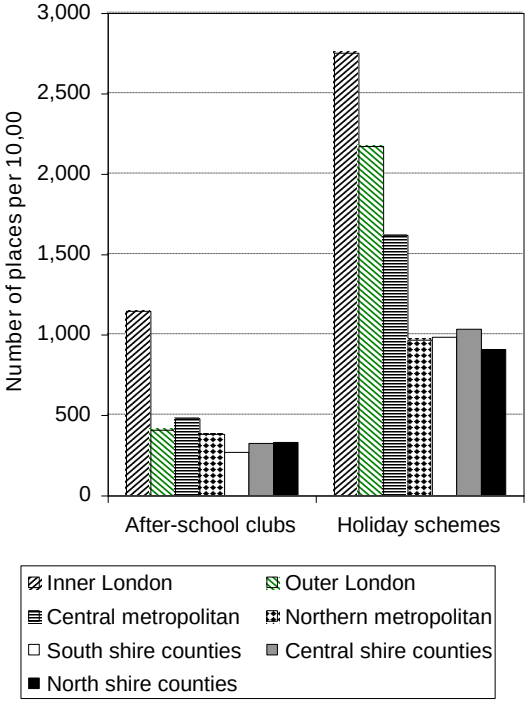



Figure 5.2 shows the corresponding picture for out-of-school clubs and holiday schemes. Inner London again stands out as unusual, with very high levels of both after-school club and holiday scheme availability, while the shire counties and northern metropolitan districts have the lowest levels of provision. These high levels of provision in inner London may reflect a greater propensity among children who attend school in this area to have mothers working long hours and requiring additional care out of normal school hours. In addition, there may be economies of scale in running such clubs and the larger schools in the London area may find it more efficient to provide such care than smaller schools in other areas. Moreover, one club may serve several schools, which may be a more viable option in areas of dense population than in more sparsely populated areas such as the shire counties.

**Figure 5.2. Population-Weighted Availability by Region: Out-of-School Clubs and Holiday Schemes**




### *5.2.2 Day Nursery Availability by Local Authority*

In order to look more closely at the record of individual LAs within these aggregated regions, care must be taken to ensure that occasional unusual figures (a sudden and unreasonably large change in a particular statistic for a single year within an LA suggesting a data 'error') do not drive any substantive conclusions. Although rare, such data errors can generate an unrepresentative low or high average over all years. Therefore, in considering the outstanding LAs, those that appear in the bottom 10 in three or more years are defined as the 'consistently low', while those appearing in the top 10 in three or more years are defined as the 'consistently high'. Unlike using the simple average level of availability over the years, this selection of those repeatedly in the bottom or top 10 removes those with a

dubious report for one year and does not exclude those with a single counterbalancing year.[65]

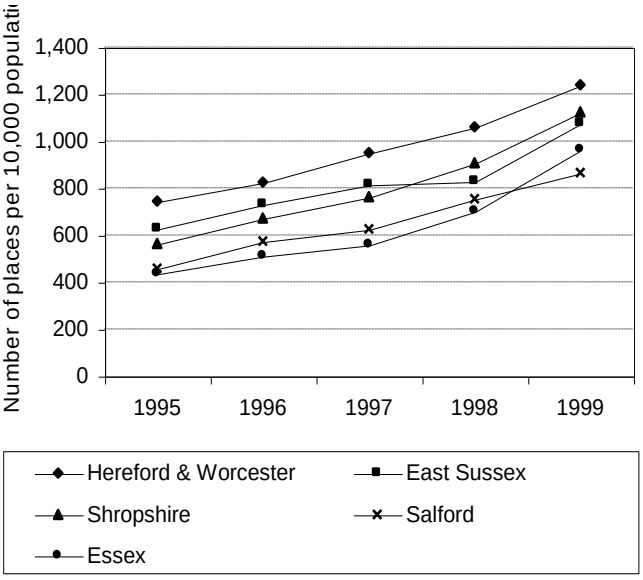
**Table 5.2. Availability of Day Nursery Places per 10,000 Population: Consistently Low and Consistently High Local Authorities**

| Local authority | Average availability over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Lowest:* | | | |
| Isles of Scilly | 0 | 1 | 5 / 5 |
| Harrow | 140 | 2 | 5 / 5 |
| South Tyneside | 150 | 3 | 5 / 5 |
| Rotherham | 210 | 6 | 5 / 5 |
| Walsall | 189 | 4 | 4 / 4 |
| Doncaster | 206 | 5 | 3 / 4 |
| Barnsley | 674 | 68 | 3 / 4 |
| *Highest:* | | | |
| Westminster | 1,095 | 100 | 3 / 5 |
| Calderdale | 1,140 | 102 | 3 / 5 |
| Hammersmith & Fulham | 1,179 | 103 | 3 / 4 |
| Wandsworth | 1,068 | 99 | 4 / 5 |
| Camden | 1,339 | 106 | 4 / 5 |
| Hackney | 1,383 | 107 | 4 / 5 |
| Bury | 1,250 | 104 | 5 / 5 |
| Islington | 1,450 | 108 | 5 / 5 |
| City of London | 3,095 | 109 | 5 / 5 |
| Average over all LAs | 630 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA. This differs from the simple mean of the five figures in Table 5.1 because the sample of LAs included in the calculation changes between years. All averages are rounded to the nearest whole number.

[65] For example, the availability of day nursery places for Barnsley was 86 in 1995, 88 in 1996, missing in 1997, 173 in 1998 and 2,348 in 1999, suggesting that 1999 was unusual. Using the average level over all available years (674), Barnsley would be ranked as the 68th lowest and would certainly not appear in a list of low LAs based on the average. However, since Barnsley was in the bottom 10 in three years, it is not excluded from the 'consistently low' list.

**Figure 5.3. Local Authorities with Increasing Day Nursery Availability**




There is considerable variation in the provision of day nursery places across LAs (Table 5.2), with provision in the highest LA being some 22 times greater than that in the (non-zero) lowest. Many of the LAs with the lowest levels of availability are in the north-east (such as Humberside and the Yorkshire area), while highest provision occurs in London. At the bottom end, the Isles of Scilly is unusually low, reporting zero day nursery places in all five years. At the other extreme, the City of London reported extremely high levels in all five years, probably reflecting a low residential population base and high work-based provision of day nursery places.

Very few LAs experienced repeated decline in the availability of day nursery places: none declined in all four years for which changes can be calculated and only two reported declines in three out of the four years. On the other hand, provision increased in all four years in 23 LAs and in at least three years in 52 LAs. Changes in provision

are shown in Figure 5.3 for five of the highest 'climbers'.[66] The pattern of increase is typical for many LAs, showing a rapid and sustained increase in provision across many areas of the country.

### *5.2.3 Playgroup Availability by Local Authority*

There is considerable dispersion in the availability of playgroup places across areas (Table 5.3), although the ratio of the availability in the highest LA to the availability in the lowest is only 8.5. Once again, there is a regional element in the groupings of consistently low and high LAs. Many of the LAs with the highest levels of provision are in the south, while those with the lowest levels tend to be in the north, although greater London is represented in both groups.

The lack of a distinct pattern of growth over the years for the aggregate provision of playgroup places shown in Table 5.1 reflects a generally mixed pattern within LAs. Very few areas reported consistent growth in playgroup provision. Only one LA (Wigan) exhibited an increase in availability across all four years for which changes can be calculated, while only 16 other LAs experienced a positive change in three out of the four years. Figure 5.4 shows the changes for five of the highest-growing LAs.[67] The pattern is illustrative of the lack of any consistent steady rise in playgroup provision within LAs.

Similarly, few areas show a pattern of consistent decline. Only five LAs exhibited a fall in playgroup provision in all four years, while only 24 experienced a fall in three out of the four years. Figure 5.5 shows the degree of decline for the five LAs with consistent falls and highlights that the changes are relatively small.

[66] The only LA with a higher average increase was St Helens, which reported 309 places in 1995, 490 in 1996, 620 in 1997, 708 in 1998 and 2,778 in 1999. The sudden jump in the last figure is dubious and St Helens was omitted from the graph for this reason.

[67] Avon had the fourth highest average growth, reporting availability rates of 1,097 in 1995, 1,521 in 1996, 4,354 in 1997, 1,336 in 1998 and 1,447 in 1999. The sudden jump in the 1997 figure is dubious and Avon was omitted from the graph for this reason.

**Table 5.3. Availability of Playgroup Places per 10,000 Population: Consistently Low and Consistently High Local Authorities**

| Local authority | Average availability over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Lowest:* | | | |
| Sunderland | 270 | 1 | 5 / 5 |
| Knowsley | 281 | 2 | 5 / 5 |
| Newham | 286 | 3 | 5 / 5 |
| South Tyneside | 359 | 6 | 4 / 5 |
| Kensington & Chelsea | 396 | 8 | 4 / 5 |
| Manchester | 397 | 9 | 4 / 5 |
| Tower Hamlets | 294 | 4 | 3 / 3 |
| Walsall | 347 | 5 | 3 / 3 |
| Sandwell | 445 | 11 | 3 / 5 |
| *Highest:* | | | |
| Hampshire | 1,584 | 88 | 3 / 5 |
| North Yorkshire | 1,827 | 100 | 3 / 4 |
| West Sussex | 1,897 | 101 | 3 / 5 |
| Leicestershire | 2,293 | 108 | 3 / 4 |
| Wiltshire | 1,769 | 98 | 4 / 5 |
| City of London | 2,122 | 103 | 4 / 5 |
| Bromley | 2,499 | 109 | 4 / 5 |
| Cornwall | 2,129 | 104 | 5 / 5 |
| Somerset | 2,194 | 105 | 5 / 5 |
| Isle of Wight | 2,292 | 107 | 5 / 5 |
| Average over all LAs | 1,199 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA. This differs from the simple mean of the five figures in Table 5.1 because the sample of LAs included in the calculation changes between years. All averages are rounded to the nearest whole number.

**Figure 5.4. Local Authorities with Increasing Playgroup Availability**

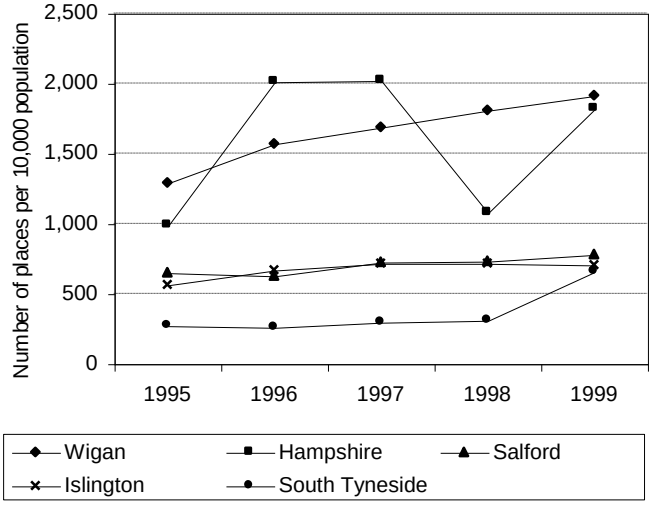
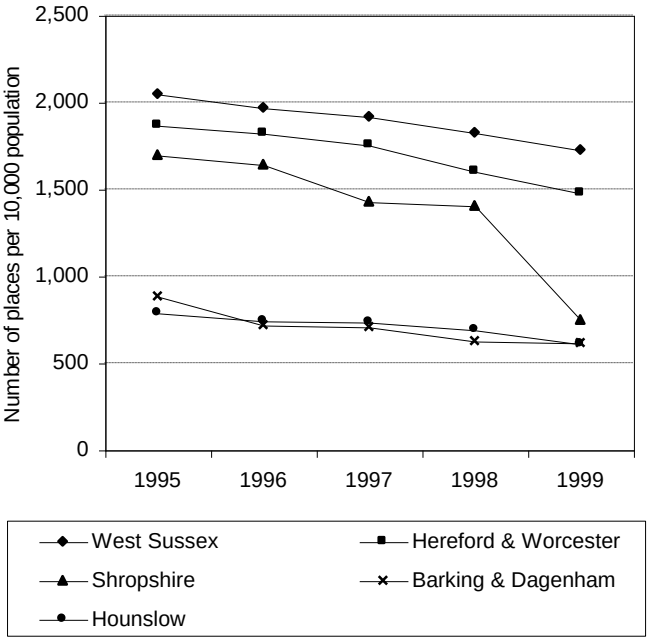



**Figure 5.5. Local Authorities with Declining Playgroup Availability**



### *5.2.4 Childminder Availability by Local Authority*

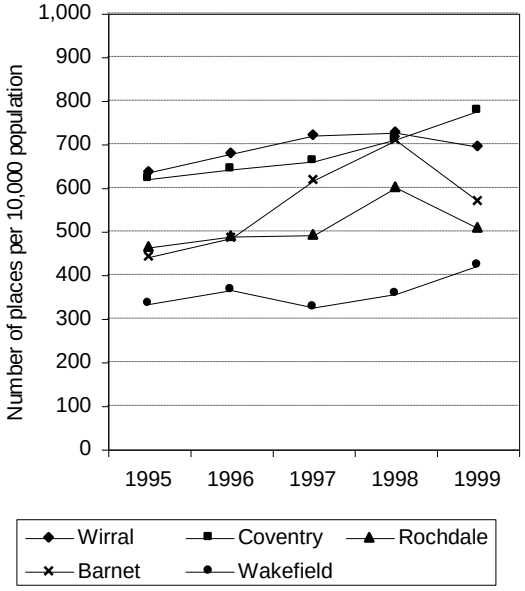
There is a sizeable dispersion across LAs in the provision of childminder places (Table 5.4), with the highest level being almost 11 times the lowest. LAs in London dominate the group of consistently low LAs, while the higher availability grouping contains LAs from all areas outside of London. Interestingly, the Isles of Scilly and City of London are both outliers again, but in the opposite direction to that for day nursery places. The City of London situation

**Table 5.4: Availability of Childminder Places per 10,000 Population: Consistently Low and Consistently High Local Authorities**

| Local authority | Average availability over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Lowest:* | | | |
| City of London | 148 | 1 | 5 / 5 |
| Liverpool | 203 | 2 | 5 / 5 |
| Kensington & Chelsea | 219 | 3 | 5 / 5 |
| Knowsley | 236 | 4 | 5 / 5 |
| Cleveland | 279 | 5 | 4 / 5 |
| Westminster | 302 | 6 | 4 / 5 |
| Lambeth | 313 | 7 | 3 / 4 |
| Hounslow | 343 | 10 | 3 / 5 |
| Wakefield | 361 | 13 | 3 / 5 |
| | | | |
| *Highest:* | | | |
| Cheshire | 1,084 | 102 | 3 / 4 |
| North Yorkshire | 1,122 | 103 | 3 / 5 |
| Shropshire | 1,083 | 101 | 4 / 5 |
| Wiltshire | 1,247 | 105 | 4 / 5 |
| Hampshire | 1,312 | 107 | 4 / 4 |
| Trafford | 1,334 | 108 | 4 / 4 |
| Berkshire | 1,294 | 106 | 5 / 5 |
| Isles of Scilly | 1,623 | 109 | 5 / 5 |
| | | | |
| Average over all LAs | 704 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA. This differs from the simple mean of the five figures in Table 5.1 because the sample of LAs included in the calculation changes between years. All averages are rounded to the nearest whole number.

**Figure 5.6. Local Authorities with Increasing Childminder Availability**



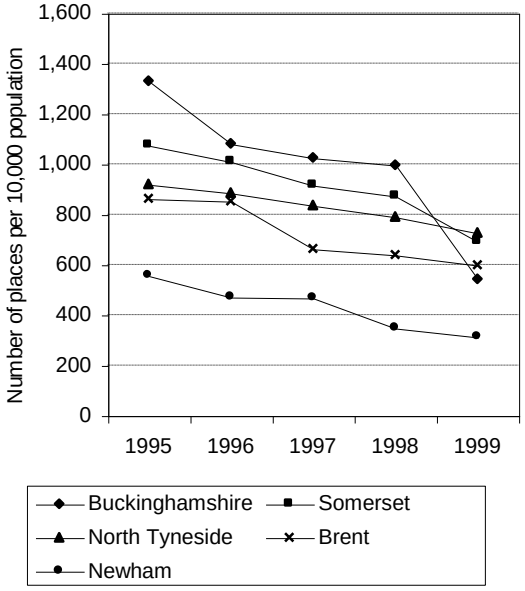

is not surprising: presumably housing costs are too high for many childminders to live there.

The earlier national averages showed an overall decline in the availability of childminder places. Within this overall pattern, availability increased in very few LAs during the period: only one (Coventry) reported increases in all four years, while only an additional 12 reported increases in three out of four years. Figure 5.6 presents the changes in availability for five of the LAs with the highest average growth rates,[68] showing how the increases are relatively small and not consistent.

On the other hand, the availability of childminders dropped in all four years in 11 LAs and fell in three out of four years in a further 24 LAs. Changes for the five LAs with the greatest average decline are

[68] Kingston upon Thames had the second highest average growth, reporting availability rates of 764 in 1995, 845 in 1996, 858 in 1997, 2,382 in 1998 and 951 in 1999. The sudden jump in the 1998 figure is dubious and Kingston was omitted from the graph for this reason.

**Figure 5.7. Local Authorities with Declining Childminder Availability**




shown in Figure 5.7. Driving the decline in the aggregate national figures, these LAs are illustrative of consistent and sizeable falls in childminder availability within many areas.

### *5.2.5 Out-of-School Club Availability by Local Authority*

Childcare provision for school children has tended to receive less attention than that for pre-school children in the policy debate. However, the availability of care options for this older group is not only important in its immediate impact on the employment decisions of mothers with only school children, but may have additional consequences for mothers of only pre-school children if they plan ahead when considering their employment and childcare options.

The magnitude of variation in childcare provision is even greater for school children than for pre-school children, showing a large unevenness in the provision of out-of-school club places across different areas of the country (Table 5.5). Indeed, the ratio between the highest level of availability and the lowest (non-zero) level is almost 89.

Although those in the lower groups represent many of the regions, London LAs dominate the high providers of out-of-school club places, in line with the regional averages shown in Figure 5.2. A low residential population base may explain the extremely high figure for the City of London, but the pattern across the other London areas suggests that the capital does genuinely have greater out-of-school club provision than other areas of the country.

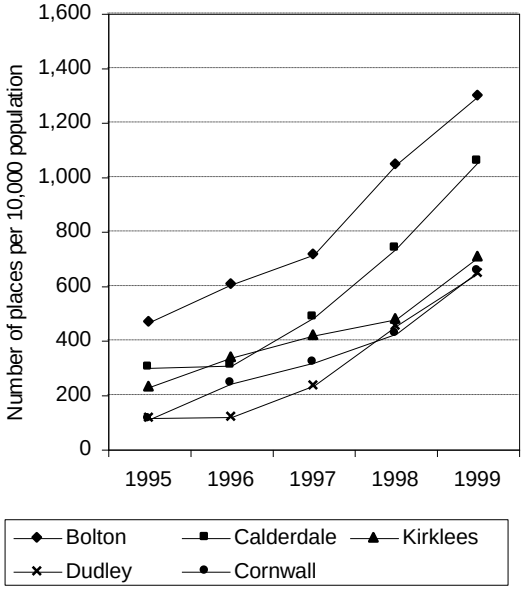
Given the consistent and large rise in the aggregate level of availability of out-of-school club places shown in Table 5.1, it is not surprising that a large number of LAs exhibit consistent rises in their provision: 10 LAs reported increases in every year and an additional 27 reported rises in three out of the four years. The changes for five

**Table 5.5. Availability of Out-of-School Club Places per 10,000 Population: Consistently Low and Consistently High Local Authorities**

| Local authority | Average availability over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Lowest:* | | | |
| Isles of Scilly | 0 | 1 | 5 / 5 |
| Doncaster | 61 | 3 | 4 / 4 |
| Hampshire | 53 | 2 | 3 / 4 |
| Wakefield | 131 | 7 | 3 / 5 |
| Sefton | 134 | 9 | 3 / 5 |
| Liverpool | 193 | 18 | 3 / 5 |
| *Highest:* | | | |
| Wandsworth | 1,134 | 101 | 3 / 4 |
| Southwark | 1,505 | 104 | 4 / 4 |
| Camden | 1,890 | 108 | 4 / 4 |
| Kensington & Chelsea | 1,522 | 105 | 5 / 5 |
| Westminster | 1,675 | 106 | 5 / 5 |
| Islington | 1,799 | 107 | 5 / 5 |
| City of London | 5,415 | 109 | 5 / 5 |
| Average over all LAs | 375 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA. This differs from the simple mean of the five figures in Table 5.1 because the sample of LAs included in the calculation changes between years. All averages are rounded to the nearest whole number.

**Figure 5.8. Local Authorities with Increasing Out-of-School Club Availability**




LAs with some of the highest average increases are shown in Figure 5.8.[69] The graph highlights the sustained and substantial growth in places that has occurred within many LAs. In addition, very few LAs have experienced consistent drops in provision: no areas reported decreases in every year and only three LAs reported declines in three of the four years.

### *5.2.6 Holiday Scheme Availability by Local Authority*

As was the case with out-of-school clubs, the variation across LAs in the level of provision of holiday scheme places is extremely large (Table 5.6). Indeed, the highest LA has a reported availability level that is over 200 times that of the lowest (non-zero) LA.

Once again, reflecting the regional picture in Figure 5.2, London areas dominate the list of high providers, while most of those at the

[69] Berkshire had the highest average growth, reporting availability rates of 187 in 1995, 311 in 1996, 363 in 1997, 643 in 1998 and 1,706 in 1999. The sudden jump in the 1999 figure is dubious and Berkshire was omitted from the graph for this reason.

lower end are LAs from the north. There is also some overlap with the provision of out-of-school clubs: three LAs appear in the group for low availability for both after-school clubs and holiday schemes, while four LAs are in the high availability group for both types of care.

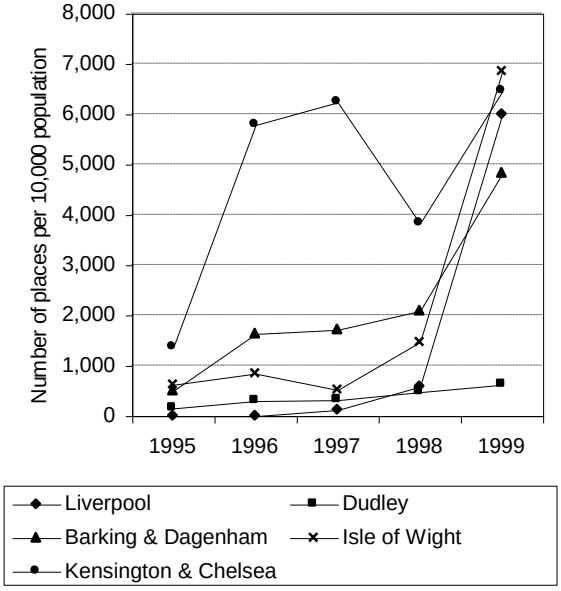
Given the rapid growth in aggregate holiday scheme availability shown in Table 5.1, it is surprising that only two LAs (Barking & Dagenham and Dudley) report an increase in provision in all four years, although a further 25 report a positive change in three out of the four years. The changes for the five LAs with the highest average growth are shown in Figure 5.9. The extremely large increases in

**Table 5.6. Availability of Holiday Scheme Places per 10,000 Population: Consistently Low and Consistently High Local Authorities**

| Local authority | Average availability over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Lowest:* | | | |
| Isles of Scilly | 0 | 1 | 5 / 5 |
| Gateshead | 31 | 2 | 4 / 4 |
| Cumbria | 43 | 3 | 4 / 5 |
| Oldham | 64 | 4 | 4 / 5 |
| Wakefield | 142 | 5 | 3 / 5 |
| Liverpool | 1,342 | 63 | 3 / 5 |
| *Highest:* | | | |
| Wandsworth | 3,745 | 97 | 3 / 5 |
| Kingston upon Thames | 4,472 | 100 | 3 / 4 |
| Hounslow | 4,820 | 105 | 3 / 5 |
| Merton | 4,522 | 101 | 4 / 5 |
| Kensington & Chelsea | 4,739 | 102 | 4 / 5 |
| Camden | 4,775 | 103 | 4 / 4 |
| Westminster | 5,955 | 107 | 5 / 5 |
| Richmond upon Thames | 6,785 | 109 | 5 / 5 |
| Average over all LAs | 1,234 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA. This differs from the simple mean of the five figures in Table 5.1 because the sample of LAs included in the calculation changes between years. All averages are rounded to the nearest whole number.

**Figure 5.9. Local Authorities with Increasing Holiday Scheme Availability**




1999 within LA for three of these five are suggestive that the change in survey structure may have affected the data collected rather than there being a genuine jump in provision. On the other hand, few LAs experienced repeated declines: only five LAs reported decreases in holiday club availability in three of the four years.

### *5.2.7 Patterns in Availability across Childcare Types within Local Authorities*

In addition to considering childcare availability across LAs within each type of care, it is useful to examine the relationships in the provision of care between different types. There has already been some indication that areas with greater availability of day nursery places tend to have lower availability of playgroup and childminder places, while there are also signs of a complementarity in the provision of out-of-school club and holiday scheme places. In order to assess how LAs fare across all types of care, a mean availability

rank was calculated for each LA as the simple average of the five ranks for the five childcare types.[70,71]

Table 5.7 focuses on LAs with the lowest levels of reported availability. The first 10 LAs listed are those with the lowest mean ranks across all childcare types, while the remainder ('some types low') include all LAs that appear in at least one 'lowest' group for some single type of care, with the ranks in bold indicating where they appeared in these lowest groups.

Two LAs—Sunderland and Wakefield—stand out as having very low levels of availability across all types of childcare. However, these very low levels of provision across all types of care are a rarity. The next four in the list (Doncaster, Sandwell, Humberside and South Tyneside) tend to have low availability for three types and reasonable levels of provision for the remainder, while the final four only have low levels for one or two types. Indeed, the last four LAs never appear in the consistently lowest group for any single type of care. Nevertheless, these lowest 10 LAs rarely have high levels of availability in any type of care. For those in the 'some types low' list, it is also the case that most of the reported availability levels would be described as moderate to low, but there is also a fair sprinkling of higher provision levels.

There is no strong pattern of very low availability in one particular type of care being closely related to low provision in another type of care. The most common pairings of low availability within LAs are for out-of-school clubs with holiday clubs, day nurseries with playgroups and playgroups with childminders. This division into pre-school types and school types of care is not surprising, although there are also a number of low availability correlations between playgroups and the school-based care and childminders and the school-type care.

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[70] Note that this mean rank does not range simply from 1 to 109 as for the rank for each childcare type. Indeed, if availability were completely unrelated across all types of care, every LA would have a common mean rank of approximately 54.5 (109 divided by 2).

[71] An alternative approach would have been to calculate the average of the sum of all places across the different types. However, this would mix care options that are used by different ages of children and that provide different kinds of care, particularly in terms of the hours provided.

**Table 5.7. Patterns of Childcare Availability across Types of Childcare: Low Levels**

| Local authority | Average rank across all years for childcare type: | | | | | |
|---|---|---|---|---|---|---|
| | dn | ply | cm | sch | hol | All |
| *Lowest 10:* | | | | | | |
| Sunderland | 16 | **1** | 15 | 10 | 12 | 10.8 |
| Wakefield | 14 | 24 | **13** | **7** | **5** | 12.6 |
| Doncaster | **5** | 12 | 42 | **3** | 29 | 18.2 |
| Sandwell | 34 | **11** | 17 | 24 | 47 | 26.6 |
| Humberside | 31 | 70 | 11 | 20 | 11 | 28.6 |
| South Tyneside | **3** | **6** | 77 | 39 | 24 | 29.8 |
| Greenwich | 43 | 27 | 39 | 14 | 28 | 30.2 |
| Barnsley | **68** | 33 | 34 | 11 | 7 | 30.6 |
| Barking & Dagenham | 10 | 32 | 12 | 25 | 82 | 32.2 |
| Suffolk | 11 | 84 | 18 | 26 | 23 | 32.4 |
| *Some types low:* | | | | | | |
| Rotherham | **6** | 44 | 48 | 32 | 34 | 32.8 |
| Walsall | **4** | **5** | 20 | 56 | 80 | 33.0 |
| Tower Hamlets | 35 | **4** | 8 | 87 | 33 | 33.4 |
| Newham | 12 | **3** | 21 | 63 | 73 | 34.4 |
| Knowsley | 53 | **2** | **4** | 46 | 78 | 36.6 |
| Cumbria | 48 | 83 | 14 | 36 | **3** | 36.8 |
| Liverpool | 92 | 10 | **2** | **18** | **63** | 37.0 |
| Sefton | 73 | 56 | 22 | **9** | 27 | 37.4 |
| Gateshead | 41 | 38 | 69 | 53 | **2** | 40.6 |
| Manchester | 89 | **9** | 24 | 42 | 50 | 42.8 |
| Oldham | 49 | 52 | 60 | 75 | **4** | 48.0 |
| Cleveland | 33 | 19 | **5** | 84 | 108 | 49.8 |
| Lambeth | 40 | 7 | **7** | 103 | 106 | 52.6 |
| Harrow | **2** | 71 | 57 | 59 | 85 | 54.8 |

Notes: The abbreviations denote day nursery places ('dn'), playgroup places ('ply'), childminder places ('cm'), out-of-school club places ('sch') and holiday scheme places ('hol'). The LAs are ordered by the mean rank, which is the simple average of the ranks in the previous five columns. The 'lowest 10' show the lowest by this mean rank. The bold notation indicates a type of care where the LA was in the 'consistently lowest' group shown in the preceding tables. The 'some types low' show the group of remaining LAs that have appeared in the lowest group for at least one type of care.

The LAs with the highest levels of reported availability are reported in Table 5.8. The bottom section of the table lists the 10 LAs with the highest mean ranks across all childcare types, while the top part ('some types high') includes those that appear in at least one 'highest' group for some single type of care. Again, the ranks in bold indicate where the LAs appeared in the highest groups.

**Table 5.8. Patterns of Childcare Availability across Types of Childcare: High Levels**

| Local authority | Average rank across all years for childcare type: | | | | | |
|---|---|---|---|---|---|---|
| | dn | ply | cm | sch | hol | All |
| *Some types high:* | | | | | | |
| Cornwall | 17 | **104** | 43 | 51 | 19 | 46.8 |
| West Sussex | 25 | **101** | 72 | 19 | 57 | 54.8 |
| Merton | 30 | 29 | 66 | 65 | **101** | 58.2 |
| Hammersm. & Fulham | **103** | 14 | 16 | 89 | 81 | 60.6 |
| Southwark | 86 | 25 | 32 | **104** | 69 | 63.2 |
| Bromley | 29 | **109** | 78 | 31 | 76 | 64.6 |
| Calderdale | **102** | 53 | 61 | 78 | 54 | 69.6 |
| Leicestershire | 69 | **108** | 87 | 13 | 71 | 69.6 |
| Somerset | 57 | **105** | 90 | 58 | 41 | 70.2 |
| Isle of Wight | 19 | **107** | 56 | 97 | 79 | 71.6 |
| Camden | **106** | 21 | 30 | **108** | **103** | 73.6 |
| Wiltshire | 32 | **98** | **105** | 41 | 94 | 74.0 |
| Islington | **108** | 30 | 38 | **107** | 92 | 75.0 |
| Shropshire | 83 | 78 | **101** | 66 | 48 | 75.2 |
| Cheshire | 85 | 81 | **102** | 76 | 42 | 77.2 |
| Hackney | **107** | 18 | 76 | 102 | 91 | 78.8 |
| Trafford | 101 | 63 | **108** | 80 | 46 | 79.6 |
| *Highest 10:* | | | | | | |
| Berkshire | 76 | 62 | **106** | 82 | 74 | 80.0 |
| Gloucestershire | 95 | 93 | 95 | 79 | 39 | 80.2 |
| Dorset | 77 | 99 | 55 | 69 | 104 | 80.8 |
| Bury | **104** | 57 | 63 | 91 | 93 | 81.6 |
| City of London | **109** | **103** | **1** | **109** | 96 | 83.6 |
| Solihull | 82 | 61 | 100 | 100 | 86 | 85.8 |
| Richmond u. Thames | 88 | 89 | 75 | 86 | **109** | 89.4 |
| Wandsworth | **99** | 69 | 85 | **101** | **97** | 90.2 |
| North Yorkshire | 81 | **100** | **103** | 77 | **90** | 90.2 |
| Kingston upon Thames | 91 | 67 | 104 | 99 | **100** | 92.2 |

Notes: The abbreviations denote day nursery places ('dn'), playgroup places ('ply'), childminder places ('cm'), out-of-school club places ('sch') and holiday scheme places ('hol'). The LAs are ordered by the mean rank, which is the simple average of the ranks in the previous five columns. The 'highest 10' show the highest by this mean rank. The bold notation indicates a type of care where the LA was in the 'consistently highest' group shown in the preceding tables. The 'some types high' show the group of remaining LAs that have appeared in the highest group for at least one type of care.

At the higher end, four LAs (Kingston upon Thames, North Yorkshire, Wandsworth and Richmond upon Thames) stand out as having high levels of availability across all childcare types. Solihull and Berkshire also exhibit a high degree of consistency of high

provision across care types, while the remaining four LAs in this top-10 list have particular weaknesses in at least one type. Turning to the 'some types high' section, there is a distinct lack of consistency across types, with many LAs being ranked very low for the availability of some types of care.

Similar to the case for LAs with low levels of availability, there is no strong pattern of very high availability in one particular type of care being closely related to high provision in another type of care. The most common pairings of high availability within an LA are for out-of-school clubs with holiday schemes, day nurseries with out-of-school clubs and day nurseries with holiday schemes. This suggests that some areas may specialise in providing centre- and education-based types of care for both pre-school children and school children.

The final group of LAs, shown in Table 5.9, are those with 'mixed' levels of childcare availability, with very high availability for some types of care and very low levels of provision for others. These 'mixed' LAs break into two groups. The Isles of Scilly and Hampshire have very high levels of playgroup and childminder places but very low levels of day nursery, after-school club and holiday scheme places. In contrast, the four London LAs listed have very high availability of day nursery, after-school club and holiday scheme places and very few playgroup and childminder places (with the exception of the City of London which also has high playgroup

**Table 5.9. Patterns of Childcare Availability across Types of Childcare: Mixed Levels**

| Local authority | Average rank across all years for childcare type: | | | | | |
|---|---|---|---|---|---|---|
| | dn | ply | cm | sch | hol | All |
| Isles of Scilly | **1** | 80 | **109** | **1** | **1** | 38.4 |
| Hampshire | 26 | **88** | **107** | **2** | 10 | 46.6 |
| Hounslow | 50 | 34 | **10** | 95 | **105** | 58.8 |
| Kensington & Chelsea | 105 | **8** | **3** | **105** | **102** | 64.6 |
| Westminster | **100** | 23 | **6** | **106** | **107** | 68.4 |
| City of London | **109** | **103** | **1** | **109** | 96 | 83.6 |

Notes: The abbreviations denote day nursery places ('dn'), playgroup places ('ply'), childminder places ('cm'), out-of-school club places ('sch') and holiday scheme places ('hol'). The LAs consist of those that have appeared in both the 'consistently lowest' group for at least one type of care and in the 'consistently highest' group for a least one other type of care. The LAs are ordered by the mean rank, which is the simple average of the ranks in the previous five columns. The bold notation indicates a type of care where the LA was either in the 'consistently lowest' or 'consistently highest' group shown in the preceding tables.

availability). Specialisation in a particular type of care may reflect different local needs or supply conditions. For example, day nurseries may be popular in some areas of London relative to childminding or playgroups because they may offer longer hours in locations where working mothers may face longer commutes to work. On the other hand, childminding may be more prevalent in areas such as the Isles of Scilly where housing costs are lower and childminders can afford to live.

## 5.3 Average Size of Childcare Providers

### *5.3.1 National and Regional Averages*

The data from the surveys of LAs on childcare provision were used to generate 'average size' measures by dividing the number of reported places by the number of providers within each setting. This average size is interesting in two respects. First, it may reflect the quality of care. For childminders, an increase in the number of childcare places per childminder is likely to correspond to poorer-quality care as the implicit child:carer ratio rises. For the centre options, the effect of size on quality is a priori ambiguous. A smaller-scale setting might provide a friendlier and less institutional atmosphere to the benefit of quality. On the other hand, a larger institution might derive quality benefits from economies of size such as allowing specialised staff. Hence, variation in average size for centre-type care may indicate differences in quality, but it is not possible to argue a priori whether larger or smaller providers are likely to have better quality. The second reason for interest is that the average size may be related to the cost of care per child if there are economies of scale in provision. For example, larger nurseries may cost less for each child if property rents are less than proportional to size.

The average size of day nurseries has risen substantially over the period, from 31.0 places per nursery in 1995 to 35.6 places in 1999, while the average size of playgroups has fluctuated slightly around 24 places per provider (Table 5.10). The average number of places per childminder has also risen, from 3.9 per childminder in 1995 to 4.1 in 1999. The mean sizes for out-of-school clubs and holiday schemes have fluctuated considerably, with some very large swings

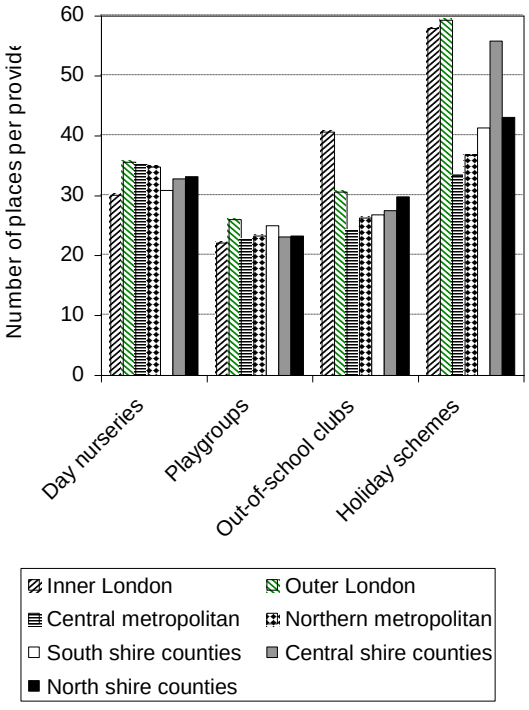
in single years, suggesting possible inconsistencies in the data collection as much as genuine changes. Nevertheless, the average size of out-of-school clubs has shown some tendency to rise.

**Table 5.10. Average Size by Year: Average Number of Places per Facility**

| | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|
| Day nurseries | 31.0 | 32.5 | 32.3 | 34.8 | 35.6 |
| Playgroups | 24.4 | 23.7 | 24.0 | 24.8 | 23.2 |
| Childminders | 3.9 | 3.9 | 4.0 | 4.1 | 4.1 |
| Out-of-school clubs | 26.5 | 27.6 | 26.6 | 30.6 | 29.6 |
| Holiday schemes | 43.7 | 51.5 | 41.4 | 41.1 | 46.0 |

Notes: The averages are weighted by the relevant child population in each LA. Due to the regrouping of the LAs to create consistency across the five years, the maximum number of LAs in each year is 109. However, the numbers of LAs reporting size figures for 1995, 1996, 1997, 1998 and 1999 were: 104, 96, 99, 70 and 108 for day nurseries; 104, 91, 100, 71 and 109 for playgroups; 107, 101, 100, 82 and 109 for childminders; 96, 88, 96, 62 and 108 for out-of-school clubs; and 88, 78, 89, 62 and 108 for holiday schemes.

**Figure 5.10. Population-Weighted Average Size of Provider across Regions**



There is relatively little difference in average day nursery and playgroup size across the regions (Figure 5.10), but inner London stands out as having unusually large out-of-school clubs, while both London regions and the central shire counties have relatively large holiday schemes. The high average size for London may reflect a high average school size, leading to larger after-school clubs.

The inner and outer London regions have the lowest average childminder size,[72] at 3.5, while all other regions cluster around an average size of 4.1 children per childminder.[73] One possible explanation for this dichotomy could be a demand for higher-'quality' childminders in the more affluent London area.

### *5.3.2 Average Day Nursery Size by Local Authority*

There is considerable variation across LAs in the average day nursery size. Table 5.11 shows that the authorities with the smallest mean size tend to be rural areas located in the south, while all the authorities in the consistently large group are metropolitan districts in the north. This size difference may be a matter of geography. More densely populated areas may be able to support a smaller number of larger nurseries, while sparsely populated areas may be better served by a greater number of smaller day nurseries.

The aggregate trend of increasing day nursery size is reflected within LAs. While 10 LAs reported a rise in average size in all four years and an additional 22 reported increases in three out of the four years, no authorities reported decreases in three or more years. Figure 5.11 presents the increases for the five LAs with the highest average increase in day nursery size. The picture shows a steady upward trend within each area.

[72] Figure 5.10 does not include the regional variation in average childminder size because of the substantial difference in scale from the average sizes for the centre-type care.

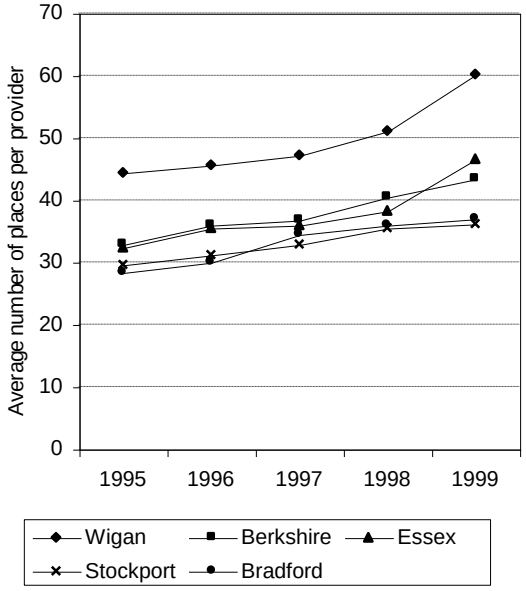
[73] South shire counties have an average size of 4.0; central and northern metropolitan districts and central shire counties average 4.1; and north shire counties have an average size of 4.2.

**Table 5.11. Size of Day Nurseries: Consistently Low and Consistently High Local Authorities**

| Local authority | Average size over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Smallest:* | | | |
| Dorset | 23.7 | 2 | 5 / 5 |
| Somerset | 24.3 | 3 | 4 / 5 |
| Cornwall | 24.7 | 4 | 4 / 5 |
| West Sussex | 25.1 | 6 | 3 / 4 |
| Barnsley | 29.3 | 31 | 3 / 4 |
| *Largest:* | | | |
| Manchester | 40.9 | 98 | 4 / 5 |
| St Helens | 46.1 | 104 | 4 / 5 |
| Tameside | 46.5 | 105 | 4 / 4 |
| Salford | 42.6 | 101 | 5 / 5 |
| Newcastle upon Tyne | 43.0 | 102 | 5 / 5 |
| Bury | 44.7 | 103 | 5 / 5 |
| Wigan | 49.7 | 106 | 5 / 5 |
| Average across all LAs | 33.0 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA. This may differ from the simple mean of the five figures in Table 5.10 because the sample of LAs included in the calculation changes between years. All averages are rounded to one decimal place.

**Figure 5.11. Local Authorities with Increasing Day Nursery Size**




### *5.3.3 Average Playgroup Size by Local Authority*

The range in average playgroup size around the mean level is surprisingly broad, but there is no distinct regional pattern in those areas at the top or bottom of the range (Table 5.12).

In terms of changes over time, just one LA (Wigan) reported an increasing average playgroup size over all four years, while a further 13 reported rises in three of the four years. On the other side, three LAs reported a decline in average size in all four years, while a further 12 reported falls in three of the four years. Mirroring the national picture, there are no distinct trends in average playgroup size within the vast majority of areas.

**Table 5.12. Size of Playgroups: Consistently Low and Consistently High Local Authorities**

| Local authority | Average size over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Smallest:* | | | |
| Camden | 18.1 | 4 | 5 / 5 |
| Manchester | 19.4 | 5 | 5 / 5 |
| Isles of Scilly | 15.3 | 1 | 4 / 4 |
| Kensington & Chelsea | 18.1 | 3 | 4 / 5 |
| South Tyneside | 19.7 | 8 | 4 / 5 |
| | | | |
| *Largest:* | | | |
| City of London | 25.7 | 87 | 3 / 5 |
| St Helens | 28.9 | 101 | 4 / 5 |
| Croydon | 28.9 | 102 | 4 / 4 |
| Bexley | 29.1 | 103 | 4 / 4 |
| Bromley | 34.8 | 107 | 4 / 4 |
| Redbridge | 35.7 | 108 | 4 / 4 |
| Bury | 30.4 | 105 | 5 / 5 |
| Wigan | 38.4 | 109 | 5 / 5 |
| | | | |
| Average across all LAs | 24.0 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA. This may differ from the simple mean of the five figures in Table 5.10 because the sample of LAs included in the calculation changes between years. All averages are rounded to one decimal place.

### *5.3.4 Average Childminder Size by Local Authority*

While it is difficult to claim any quality connection for the size of day nurseries and playgroups, it seems more intuitive that a greater average number of places with each childminder may impact upon the quality of care, either on account of the childminder caring for more children at any point in time or because it reflects a greater turnover of children.

The LAs with consistently low and high levels of average childminder size are listed in Table 5.13. The areas with the smallest average size report considerably less than three places per

childminder, while in a few areas the number approached six. Although the pattern is far from conclusive, there is a tendency for LAs with lower levels to be located in London (consistent with the regional averages), while those with higher levels tend to be in the north.

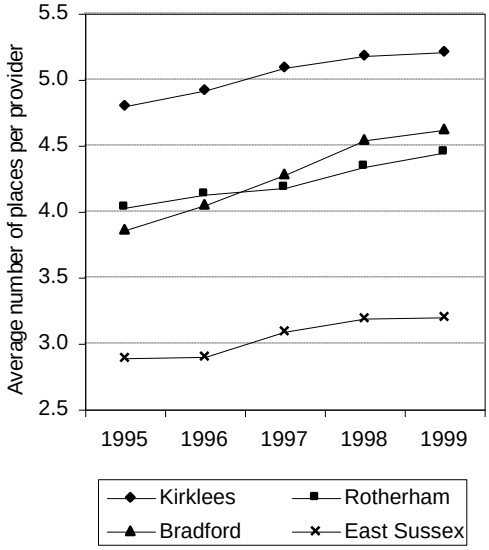
The steady increase in the aggregate childminder size is reflected within LAs. Although only two LAs (Somerset and Bedfordshire) reported declines in the average childminder size for all four years and a further eight reported falls in three of the four years, four

**Table 5.13. Size of Childminders: Consistently Low and Consistently High Local Authorities**

| Local authority | Average size over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Smallest:* | | | |
| Hounslow | 2.61 | 4 | 5 / 5 |
| Sutton | 2.74 | 6 | 5 / 5 |
| Hammersmith & Fulham | 2.45 | 3 | 4 / 4 |
| City of London | 2.40 | 2 | 3 / 5 |
| Bolton | 2.71 | 5 | 3 / 5 |
| Northumberland | 3.13 | 20 | 3 / 4 |
| *Largest:* | | | |
| Trafford | 5.28 | 99 | 3 / 4 |
| North Yorkshire | 5.31 | 100 | 3 / 5 |
| Avon | 5.44 | 103 | 3 / 5 |
| Doncaster | 5.52 | 105 | 3 / 3 |
| Isles of Scilly | 5.42 | 102 | 4 / 5 |
| Norfolk | 5.51 | 104 | 4 / 5 |
| Shropshire | 5.69 | 106 | 4 / 5 |
| Wirral | 5.80 | 107 | 4 / 4 |
| Durham | 5.91 | 108 | 5 / 5 |
| South Tyneside | 5.96 | 109 | 5 / 5 |
| Average across all LAs | 3.99 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA. This may differ from the simple mean of the five figures in Table 5.10 because the sample of LAs included in the calculation changes between years. All averages are rounded to one decimal place.

**Figure 5.12. Local Authorities with Increasing Childminder Size**




authorities recorded increases in all four years and another 23 reported rises in three of the four years. Changes for the four authorities with consistent rises are shown in Figure 5.12. Not only does this picture show how rapidly the childminder size has risen in some areas, but it also highlights the disparity between areas in the size level.

### *5.3.5 Average Out-of-School Club Size by Local Authority*

Turning to childcare provided to younger school-age children, there is much less consistency within LAs in the size measures than for other types of care. Indeed, the lists of LAs with consistently low and high average out-of-school club size, shown in Table 5.14, are surprisingly short. Nevertheless, reflecting the regional averages shown in Figure 5.10, the LAs with the smallest average club size are all northern metropolitan districts, while most of those with a larger average size are in London.

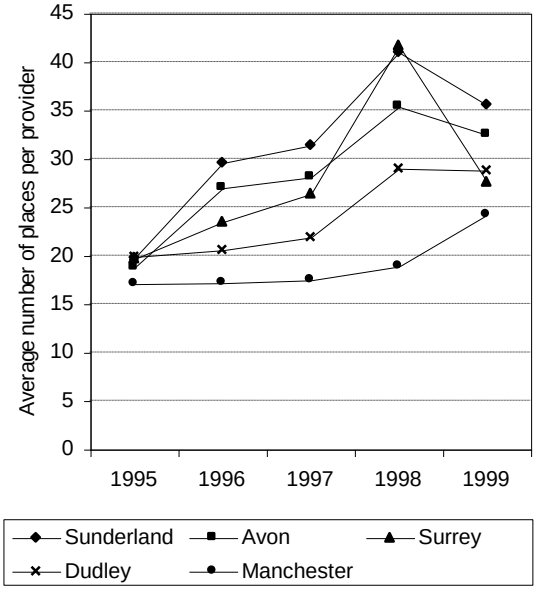
**Table 5.14. Size of Out-of-School Clubs: Consistently Low and Consistently High Local Authorities**

| Local authority | Average size over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Smallest:* | | | |
| Doncaster | 16.1 | 1 | 3 / 4 |
| Calderdale | 18.4 | 3 | 3 / 5 |
| Manchester | 19.0 | 5 | 3 / 5 |
| Barnsley | 20.1 | 10 | 3 / 4 |
| | | | |
| *Largest:* | | | |
| Southwark | 52.6 | 106 | 3 / 4 |
| Kensington & Chelsea | 51.1 | 104 | 4 / 5 |
| Durham | 47.8 | 102 | 5 / 5 |
| Westminster | 51.5 | 105 | 5 / 5 |
| City of London | 57.0 | 108 | 5 / 5 |
| | | | |
| Average across all LAs | 28.0 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA. This may differ from the simple mean of the five figures in Table 5.10 because the sample of LAs included in the calculation changes between years. All averages are rounded to one decimal place.

The upward trend in out-of-school club size shown in the aggregate data in Table 5.10 is reflected only to a limited degree within LAs. One LA (Manchester) reported increases in average club size in all four years, while a further 16 reported rises in three out of four years. Those with the highest average growth are shown in Figure 5.13. Even among these 'high climbers', there are considerable drops in average size in the final year in three of the authorities. On the other hand, no LAs reported decreases in average size in all four years, while only four authorities reported falls in three of the four years.

**Figure 5.13. Local Authorities with Increasing Out-of-School Club Size**




### *5.3.6 Average Holiday Scheme Size by Local Authority*

As with the out-of-school clubs, the lack of consistency in the measure of average holiday club size is reflected in the relatively short lists of LAs exhibiting consistently low and high levels of holiday club size, shown in Table 5.15. However, the overall variation in size between LAs is considerable, with some authorities reporting an average 20 places per holiday scheme while others report an average 110 places.

Not surprisingly, given the large fluctuations in the aggregate average size shown in Table 5.10, few LAs show consistent trends in average holiday club size. Indeed, no authorities reported an increase in all four years, while only six reported rises in three of the four years. On the other hand, three authorities (Kirklees, Merton and Calderdale) reported declines in all four years, while only a further seven reported falls in three of the four years.

**Table 5.15. Size of Holiday Schemes: Consistently Low and Consistently High Local Authorities**

| Local authority | Average size over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Smallest:* | | | |
| North Tyneside | 21.8 | 5 | 4 / 5 |
| Sandwell | 20.4 | 4 | 3 / 5 |
| | | | |
| *Largest:* | | | |
| Barking & Dagenham | 61.8 | 93 | 3 / 5 |
| Bromley | 74.7 | 100 | 3 / 5 |
| Kensington & Chelsea | 85.8 | 103 | 3 / 5 |
| Hounslow | 103.5 | 106 | 3 / 5 |
| Leicestershire | 110.8 | 107 | 3 / 4 |
| Bexley | 90.2 | 104 | 4 / 4 |
| Wandsworth | 81.2 | 102 | 5 / 5 |
| | | | |
| Average across all LAs | 45.9 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA. This may differ from the simple mean of the five figures in Table 5.10 because the sample of LAs included in the calculation changes between years. All averages are rounded to one decimal place.

## 5.4 Average Pupil:Staff Ratios in Nursery Schools and Classes

Changes in the average pupil:staff ratio for 3- and 4-year-old pre-school children in maintained nursery schools and classes are shown in Table 5.16. There has been a clear and consistent decline in the ratio, falling from 11.2 in 1995 to 10.7 in 1999. Taking the pupil:staff ratio as a measure of quality, this shows considerable improvement in the average quality of childcare for the children in this type of care,

**Table 5.16. Pupil:Staff Ratios by Year: Population-Weighted Averages for Nursery Schools and Classes**

| | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|
| Pupil:staff ratio | 11.2 | 11.1 | 10.9 | 10.9 | 10.7 |

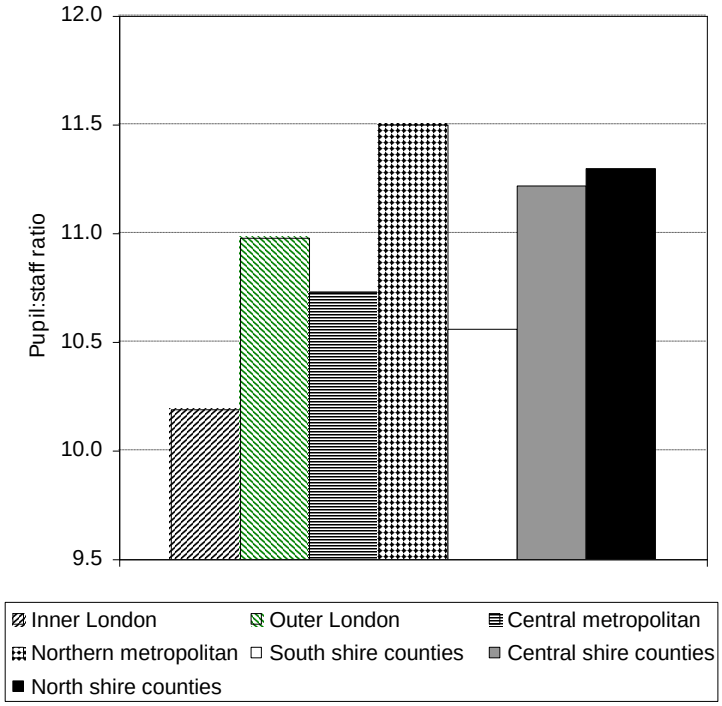
Note: Due to the regrouping of the LAs to create consistency across the five years, the maximum number of LAs in each year is 109. However, the numbers of LAs reporting ratios for 1995, 1996, 1997, 1998 and 1999 were 106, 106, 107, 106 and 108.

but it should be noted that this ratio does not cover children in private nurseries and playgroups.

The regional averages for the pupil:staff ratio show considerable variation (Figure 5.14), ranging from 10.2 pupils per staff member for inner London to a ratio of 11.5 for the northern metropolitan districts. This suggests, again, that the quality of pre-school care may be better in some more affluent areas of London and the south.

Across LAs, the average ratio ranges from under 9 pupils per staff member to over 13 pupils (Table 5.17).[74] The authorities with the lowest ratios tend to be in London and the south, while those in the

**Figure 5.14. Average Pupil:Staff Ratio in Nursery Schools and Classes across Regions**




[74] The lowest average ratio of 5.7 was reported by the City of London in 1999, but no ratio was reported for the years 1995 to 1998 and the authority could not be included in Table 5.17 as *consistently* reporting a low ratio.

high group tend to be located in the northern and central regions of the country (with the notable exception of Enfield).

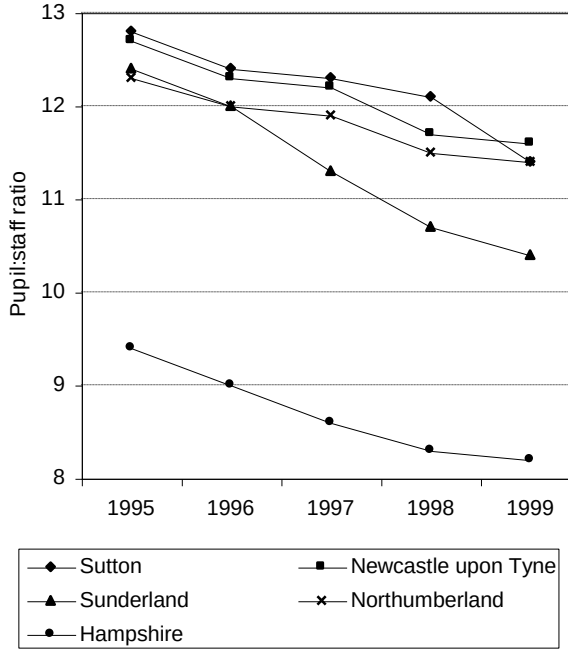
The downward decline in the aggregate average ratio is reflected in a similar trend in a large proportion of the LAs. Declining ratios were reported in all four years by six LAs, while a further 36 reported decreases in three out of the four years. The changes for the

**Table 5.17. Pupil:Staff Ratios in Nursery Schools and Classes: Consistently Low and Consistently High Local Authorities**

| Local authority | Average ratio over all years | Rank | No. of years in bottom or top 10 / No. of years with valid data |
|---|---|---|---|
| *Lowest:* | | | |
| Hampshire | 8.69 | 2 | 5 / 5 |
| Isle of Wight | 8.79 | 3 | 5 / 5 |
| Coventry | 9.06 | 4 | 4 / 5 |
| Stockport | 9.09 | 5 | 4 / 5 |
| Kensington & Chelsea | 9.09 | 6 | 4 / 5 |
| Hammersmith & Fulham | 9.24 | 8 | 3 / 5 |
| Waltham Forest | 9.28 | 9 | 3 / 5 |
| Bromley | 9.36 | 12 | 3 / 5 |
| Tower Hamlets | 9.44 | 16 | 3 / 5 |
| *Highest:* | | | |
| Wigan | 12.22 | 96 | 3 / 5 |
| Barnsley | 12.26 | 97 | 3 / 5 |
| Hereford & Worcester | 12.48 | 99 | 3 / 5 |
| Leicestershire | 12.56 | 100 | 3 / 5 |
| Doncaster | 12.75 | 102 | 3 / 5 |
| Dorset | 12.79 | 104 | 3 / 5 |
| Devon | 12.83 | 105 | 3 / 5 |
| Rotherham | 12.59 | 101 | 4 / 5 |
| Dudley | 12.77 | 103 | 4 / 5 |
| Sefton | 12.91 | 106 | 5 / 5 |
| Oldham | 13.04 | 107 | 5 / 5 |
| Enfield | 13.27 | 108 | 5 / 5 |
| Average across all LAs | 10.96 | — | — |

Notes: The lowest LAs are those in the bottom 10 in at least three years. The highest LAs are those in the top 10 in at least three years. The average over all LAs is weighted by the relevant child population in each LA.

**Figure 5.15. Local Authorities with Declining Pupil:Staff Ratios in Nursery Schools and Classes**

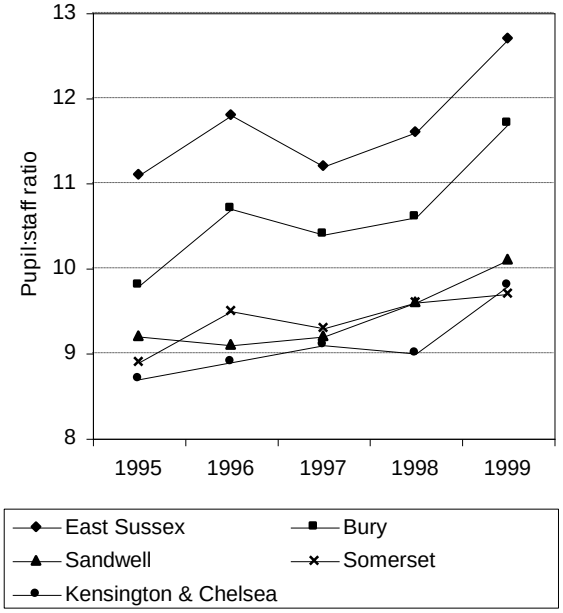



five authorities with the greatest average declines are shown in Figure 5.15.

On the other hand, while no LA reported an increase in the ratio in all four years, 13 did record a rise in three of the four years. Changes for the five authorities with the greatest average increases are shown in Figure 5.16.

Taking the average pupil:staff ratio as a measure of quality, the evidence suggests that there has been an overall improvement in the quality of care for children in maintained nursery schools and classes, but it also shows a substantial diversity in the quality level across different areas of the country.

**Figure 5.16. Local Authorities with Rising Pupil:Staff Ratios in Nursery Schools and Classes**




## 5.5 Mothers' Employment and Childcare Provision

A major advantage of the FRS survey data is that they can be combined with the LA statistics to analyse how local levels of childcare availability and average size of providers relate to employment outcomes for mothers. In this section, the LA statistics are matched with each mother in the FRS data by LA and year,[75] so that the relationships between the LA measures and mothers' work choices are captured both by differences across LAs and through changes over the years within LAs.

There are two important caveats to interpreting the results. First, the LA area may not be the ideal size for capturing the local childcare market. In particular, larger LAs may incorporate irrelevant areas,

[75] Each year of the FRS data is collected on an April-to-March basis, so the LA statistics for January and March 1995 were matched with the FRS data for 1994/95, those for January and March 1996 with the FRS data for 1995/96 and so on.

while smaller LAs, particularly in densely populated regions such as London, may be too small in the sense that childcare provision in adjoining areas might also be relevant. Hence, a failure to find significant results may be due in part to LAs being an inappropriate measure of *local* conditions and should not be interpreted as evidence that there are no relationships.

The second caveat is that care should be taken in concluding causal relationships from the correlations between the childcare statistics and work behaviour. For example, a positive relationship between the proportion of mothers who are in employment and the availability of a particular childcare type could be interpreted in two ways. It could mean that areas with low employment rates require only low provision of childcare places. Or it could mean that areas with low levels of childcare places restrict the employment opportunities for mothers. Hence, the relationships may be generated by demand or supply factors in the childcare market and it is not possible to identify the source of the association from the simple correlation.[76]

[76] White (2000) and White and Lissenburgh (forthcoming) also use matched FRS data with the LA statistics to analyse how the local supply of childcare services affects working mothers' use of formal childcare. In White (2000), data for 1995/96 are used to estimate the impact of childcare availability on the probability of using formal care in separate regressions for each type of childcare. His results indicate that the number of childminder places affects the use of formal childcare as a whole and that the number of out-of-school club places affects the use of formal childcare exclusive of childminding, but that the number of day nursery places has no strong effect. As the regressions included controls for various family and area characteristics, he concludes that 'it is therefore reasonable to interpret the findings as showing that lack of availability of childcare services was constraining the demand for childcare' (p. 32). However, analysis of the five years of FRS data and LA statistics presented here in single regressions including availability statistics for all five childcare types and a slightly different set of variables for family characteristics (those used in the regression models of Chapter 6) generated very different results. In particular, the availabilities of day nursery and childminder places were significantly positively related to the use of formal childcare for pre-school children when the family controls were omitted, while inclusion of the family controls indicated that the numbers of day nursery places and playgroup places were significantly positively related. For use of formal care by school children, the availabilities of day nursery, childminder and out-of-school club places were significantly positively related when family controls were omitted from the regression, but their inclusion meant that only the availability of playgroups was significantly positively related. (Full regression results are available from the authors upon request.) Hence, the results are subject to the choice of regression model. Moreover, it might

In analysing the work patterns below, the data are divided into mothers of pre-school children and mothers of school children. As in Chapter 4, the sample of pre-school mothers excludes those with a child aged less than 1 due to the uncertainty surrounding the work definition for those on maternity leave. Unlike the analysis in Chapter 4, the sample for school children includes those mothers who may also have pre-school children. It also includes mothers of all school children regardless of the age of the youngest child, even though the LA statistics relate to children under the age of 8, for it is likely that the situation for the under-8s is closely related to childcare options for those up to the age of 11.[77]

### *5.5.1 By Year*

The employment rate for mothers of both pre-school and school children rose over the five-year period (see Tables 5.18 and 5.19).

According to the FRS data, the proportion of mothers with pre-school children in part-time employment increased from 26.9 per cent in 1995 to 30.6 per cent in 1999, while the fraction in full-time work grew from 14.3 per cent to 19.0 per cent.[78] As already seen,

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be expected that use of formal childcare by working mothers would be related to the number of places available (assuming that most places are used and that use by working mothers is proportional to or otherwise related to use by all mothers) and that these regressions capture only the degree to which the two data sources are measuring the use of formal care in the same way. In addition, inclusion of family control variables only means that the remaining relationships show that there is common variation independent of measured characteristics and, as argued in the case of the employment regressions below, the correlation cannot be interpreted as being driven by the supply side rather than unexplained variations in demand.

[77] The samples contain 7,438 mothers of pre-school children and 11,806 mothers of school children, with 3,143 mothers with both pre-school and school children appearing in both samples. The samples are smaller than those used in Chapter 4 because the sample of mothers with pre-school children includes only those with complete LA availability and size statistics for day nurseries, playgroups and childminders and non-missing information for the pupil:staff ratio, while the sample of mothers with school children includes only those with complete LA availability and size statistics for childminders, out-of-school clubs and holiday schemes.

[78] Over the same period, part-time employment rates for working-age women without children altered little, but the propensity to work full-time increased, although to a much smaller degree than for mothers. According to the FRS data, the percentages of working-age women in part-time employment were 18.7 in 1995, 17.3 in 1996, 17.8 in 1997, 17.8 in

**Table 5.18. Mothers' Employment Rates and Availability of Childcare Places by Year: Mothers of Pre-School Children**

| | % in employment | | Number of places per 10,000 | | |
|---|---|---|---|---|---|
| | Part-time | Full-time | Day nurseries | Playgroups | Childminders |
| 1995 | 26.9 | 14.3 | 489 | 1,200 | 737 |
| 1996 | 27.4 | 17.5 | 574 | 1,216 | 680 |
| 1997 | 30.3 | 17.6 | 622 | 1,302 | 744 |
| 1998 | 32.0 | 17.3 | 736 | 1,392 | 755 |
| 1999 | 30.6 | 19.0 | 789 | 1,170 | 680 |

Notes: Mothers of pre-school children exclude those with the youngest child aged under 1 because of the problems of defining employment status for those on maternity leave (see Chapter 4). The averages are weighted by the sample of mothers in the FRS data and, hence, the availability statistics may differ slightly from those in Table 5.1.

there was also a substantial rise in the availability of day nursery places, which increased from an average 489 places per 10,000 child population in 1995 to 789 places in 1999 for this group (see Table 5.18). However, the availability of playgroup and childminder places exhibited no similar pattern. This suggests either that an increasing propensity to work on the part of mothers created greater demand for and provision of day nursery places or, alternatively, that an increasing supply of day nursery places permitted a greater proportion of mothers to undertake formal employment.

**Table 5.19. Mothers' Employment Rates and Availability of Childcare Places by Year: Mothers of School Children**

| | % in employment | | Number of places per 10,000 | | |
|---|---|---|---|---|---|
| | Part-time | Full-time | Childminders | Out-of-school clubs | Holiday schemes |
| 1995 | 34.4 | 18.8 | 733 | 231 | 972 |
| 1996 | 34.9 | 20.3 | 725 | 360 | 1,141 |
| 1997 | 36.8 | 20.8 | 738 | 355 | 1,162 |
| 1998 | 35.6 | 20.1 | 719 | 487 | 1,032 |
| 1999 | 37.8 | 23.3 | 669 | 613 | 2,423 |

Notes: School children are defined as those aged 4 to 11. Mothers of school children may also have pre-school children. The averages are weighted by the sample of mothers in the FRS data and, hence, the availability statistics may differ slightly from those in Table 5.1.

1998 and 18.1 in 1999. The percentages in full-time work were 51.2 in 1995, 52.7 in 1996, 53.5 in 1997, 53.8 in 1998 and 54.1 in 1999.

For mothers of school children, there have also been rises in the propensity to work part-time, from 34.4 per cent in 1995 to 37.8 per cent in 1999, and the propensity to work full-time, from 18.8 per cent in 1995 to 23.3 per cent in 1999. At the same time, provision of out-of-school club and holiday scheme places has grown substantially for this group (Table 5.19), rising from 231 places per 10,000 child population to 613 places for out-of-school clubs and from 972 places to 2,423 places for holiday schemes. Once again, this suggests either that an increasing propensity to work on the part of mothers created greater demand for and provision of out-of-school club and holiday scheme places or, alternatively, that an increasing supply of these childcare places allowed a greater proportion of mothers to undertake formal employment.

### *5.5.2 By Region*

Not only are there sizeable differences in childcare provision across the regions, but employment rates for mothers also vary considerably across different areas of the country (Tables 5.20 and 5.21).

London is unusual compared with the rest of the country, both in childcare provision and in the employment rates for mothers of pre-school children (Table 5.20). The propensities to work part-time are only 13 per cent and 19 per cent in inner and outer London respectively, while the rate is over 27 per cent in all other regions of

**Table 5.20. Mothers' Employment Rates and Availability of Childcare Places by Region: Mothers of Pre-School Children**

| | % in employment | | Number of places per 10,000 | | |
|---|---|---|---|---|---|
| | Part-time | Full-time | Day nurseries | Play-groups | Child-minders |
| Inner London | 13.0 | 17.0 | 979 | 660 | 540 |
| Outer London | 19.0 | 25.0 | 485 | 942 | 695 |
| Central metropolitan | 28.2 | 17.0 | 744 | 773 | 543 |
| North metropolitan | 27.3 | 16.7 | 629 | 834 | 596 |
| South shires | 33.3 | 15.7 | 598 | 1,661 | 863 |
| Central shires | 32.6 | 16.7 | 657 | 1,442 | 742 |
| North shires | 31.3 | 16.5 | 657 | 1,137 | 643 |

Notes: Mothers of pre-school children exclude those with the youngest child aged under 1 because of the problems of defining employment status for those on maternity leave (see Chapter 4). The averages are weighted by the sample of mothers in the FRS data and, hence, the availability statistics may differ slightly from those in Figure 5.1.

the country. Although the full-time employment rate is fairly typical in inner London (17 per cent), the rate is very high for outer London (25 per cent). Somewhat perversely, day nursery places (which might be expected to cater for a longer working day) have unusually high availability in inner London and low availability in outer London. On the other hand, playgroup places (which, by definition, cover a shorter day) are provided at relatively low levels in inner London and at moderate levels in outer London. Hence, differences in mothers' employment rates between London and the rest of the country do not easily explain the differences in the availability of formal childcare for pre-school children. This suggests that there may be differences in the use of informal care or of other formal options such as nannies and au pairs.

Outside of London, the pattern is more intuitive. The regions with the highest part-time and lowest full-time employment rates for mothers of pre-school children (the south shires, central shires and north shires) are also generally the areas with the highest availability of playgroup and childminder places and lowest availability of day nursery places.

Not surprisingly, the patterns of employment across the regions for mothers of school children are very similar to those for pre-school children (Table 5.21), with the London area having unusually

**Table 5.21. Mothers' Employment Rates and Availability of Childcare Places by Region: Mothers of School Children**

| | % in employment | | Number of places per 10,000 | | |
|---|---|---|---|---|---|
| | Part-time | Full-time | Child-minders | Out-of-school clubs | Holiday schemes |
| Inner London | 17.9 | 21.0 | 495 | 1,216 | 2,632 |
| Outer London | 26.4 | 24.2 | 679 | 429 | 2,341 |
| Central metropolitan | 34.2 | 20.2 | 526 | 516 | 1,700 |
| North metropolitan | 33.0 | 20.8 | 595 | 417 | 1,075 |
| South shires | 40.6 | 19.3 | 834 | 329 | 1,302 |
| Central shires | 40.7 | 21.3 | 733 | 343 | 1,049 |
| North shires | 37.1 | 22.7 | 734 | 397 | 1,671 |

Notes: School children are defined as those aged 4 to 11. Mothers of school children may also have pre-school children. The averages are weighted by the sample of mothers in the FRS data and, hence, the availability statistics may differ slightly from those in Figures 5.1 and 5.2.

low proportions of part-time workers and the shire counties having the highest proportions of mothers working part-time.

As was seen earlier, London and the central metropolitan districts stand out as having high provision of both out-of-school club places and holiday scheme places. However, these areas do not have unusually high full-time employment rates and are areas of low part-time employment for mothers. The regions with some of the highest employment rates among mothers of school children (the central and north shire counties) have some of the lowest availabilities of out-of-school club and holiday scheme places, but they also have some of the highest availabilities of childminder places. Hence, there is no straightforward correlation between mothers' employment and availability of formal childcare places for school children across the regions.

### *5.5.3 Multivariate Analysis: Mothers of Pre-School Children*

In order to examine the correlation between the local childcare conditions and the likelihood of employment for mothers across time and area, the employment models presented in Tables 4.4 and 4.5 were re-estimated with the LA statistics as explanatory variables. The relationships between the relative probabilities of not working, part-time work and full-time work for mothers of pre-school children and the relevant LA statistics are presented in Table 5.22. Not only are the availability measures[79] included, but also the average provider size and the pupil:staff ratio to capture any potential correlation with the quality of care.

As in the earlier tables, the first pair of columns shows how the measures influence the likelihood of not working relative to part-time work, while the other pair presents the impact on the probability of working full-time relative to part-time. Relative risk ratios greater than 1 indicate factors that raise the probability, while ratios less than 1 indicate characteristics associated with a lower likelihood. The stars highlight those ratios about which there is greatest certainty that they have the positive or negative relationship.

[79] The LA availability variables are the number of places per 100 (rather than 10,000) population in order to generate coefficients of a magnitude that is easy to read.

**Table 5.22. Multinomial Logit Model for Probability of Working Part- and Full-Time for Mothers with Pre-School Children**

| Regressors | Relative to probability of part-time work | | | |
|---|---|---|---|---|
| | Probability of no work | | Probability of full-time work | |
| | relative risk ratio | standard error | relative risk ratio | standard error |
| *LA no. of places per 100 population:* | | | | |
| Day nurseries | 0.991 | 0.010 | 1.027** | 0.014 |
| Playgroups | 0.972*** | 0.005 | 0.959*** | 0.007 |
| Childminders | 0.988 | 0.013 | 1.064*** | 0.018 |
| *LA average size of:* | | | | |
| Day nurseries | 1.006 | 0.004 | 1.012** | 0.005 |
| Playgroups | 1.014** | 0.006 | 1.033*** | 0.008 |
| Childminders | 0.944 | 0.034 | 0.781*** | 0.038 |
| *LA average pupil:staff ratio* | 1.002 | 0.022 | 0.992 | 0.029 |
| Pseudo $R^2$ | 0.008 | | | |
| No. of observations | 7,438 | | | |

Notes: Stars denote that the relative risk ratio is significantly different from 1 at the 1% (***), 5% (**) and 10% (*) levels. The sample excludes those with the youngest child aged under 1 due to the uncertainty over the work definition for those on maternity leave (see Chapter 4) and includes mothers of pre-school children who also have school children. The relative risk ratios on the probabilities of not working and of working full-time were significantly different at the 1% level for the availability of day nursery places, the availability of childminder places, the average size of playgroups and the average size of childminders. The ratios were significantly different at the 10% level for the availability of playgroup places and the average size of day nurseries. The inclusion of the size and pupil:staff ratio variables in the model alters the ratios on the availability measures in the following way: without the variables, the ratio on the availability of childminder places is significantly less than 1 for the probability of not working, the ratio on the availability of childminder places is not significantly different from 1 for the probability of working full-time, and the ratios for the probability of not working and the probability of working full-time for the availability of playgroup places are not significantly different from 1.

With the single exception of the pupil:staff ratio variable, all of the LA measures are significantly related to the employment choice. Areas with greater availability of day nursery and childminder places have higher proportions of mothers who work full-time rather than part-time or not at all. Although the correlation with the number of day nursery places is quite weak, the relationship with childminder places is much stronger. For example, evaluated at the sample means for all other measures, an increase in the availability of day nursery places from five to 10 places per 100 population is associated with a rise in the propensity to work full-time from 16.3 per cent to 18.7 per cent, while an identical rise in the availability of childminder places

is correlated with a rise in the full-time likelihood from 14.9 per cent to 19.9 per cent.[80] Hence, there is a clear association between full-time work and the use of day nurseries and childminders, suggesting either that areas with higher-than-average proportions of mothers working full-time create a greater demand for day nursery and childminder places or that areas with fewer places have smaller incentives for mothers to work full-time.

Areas with higher levels of playgroup places are associated with a greater likelihood that mothers of pre-school children work part-time relative to both full-time work and not working. The magnitude of the effect is moderate: an increase in the availability of playgroup places from five to 10 places per 100 population is associated with a decline in the estimated probability of no work from 55.9 per cent to 54.6 per cent, a rise in the likelihood of part-time work from 24.6 per cent to 27.7 per cent and a drop in the propensity to work full-time from 19.4 per cent to 17.7 per cent.[81] This relationship between part-time work and the number of playgroup places confirms prior expectations that playgroups may be a better type of childcare for part-time working mothers.

There is a positive relationship between the average size of day nurseries and playgroups and the propensity of mothers of pre-school children to work full-time rather than to work part-time or not to work. One possible explanation may be that larger providers can offer longer daily hours of care or care for more weeks of the year. Alternatively, mothers may be more willing to leave their children for longer at larger providers. In addition, larger playgroup size is also associated with an increased likelihood that mothers will not work relative to working part-time. However, the sizes of the correlations are relatively small, with a considerable change in average provider size associated with relatively small alterations in the estimated work probabilities.[82]

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[80] The average availability for this sample of mothers of pre-school children is 6.4 day nursery places and 7.2 childminder places per 100 population.

[81] The average availability for this sample of mothers of pre-school children is 12.4 playgroup places per 100 population.

[82] Evaluated at the sample means for all other measures, an increase in the average size of day nursery from 20 to 30 places alters the estimated probabilities for no work, part-time work and full-time work from 53.3 per cent, 31.2 per cent and 15.4 per cent to 53.7 per cent,

Areas with a higher average number of children per childminder tend to have a lower proportion of mothers working full-time relative to both working part-time and not working. The magnitude of the association is quite large. Evaluated at the sample means, an increase in the average childminder size from three to five places per childminder[83] is associated with increases in the estimated proportions not working from 52.8 per cent to 54.4 per cent and working part-time from 27.0 per cent to 31.2 per cent, while the likelihood of working full-time drops from 20.2 per cent to 14.3 per cent. If childminder size is an indication of quality, one possible explanation is that mothers who work longer may use higher-quality care either because they can afford it on account of higher earnings or because they are more concerned about care quality when their child spends longer hours with a childminder. Alternatively, a shortage of high-quality childminders may discourage mothers from working full-time.

### *5.5.4 Multivariate Analysis: Mothers of School Children*

A similar model of work behaviour for mothers of school children is presented in Table 5.23. The LA statistics for day nurseries and playgroups in the model for pre-school children have been replaced with corresponding statistics for out-of-school clubs and holiday schemes, and the pupil:staff ratio in nursery schools and classes has been omitted.

As might be expected, the availability of childminder places is positively related to the propensity for mothers to work (either part-time or full-time) rather than not work, while areas with greater availability of holiday scheme places have a higher proportion of mothers working part-time relative to not working. However, the childminder association is much stronger. Evaluated at the sample

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29.7 per cent and 16.6 per cent. A similar change for playgroup places alters the estimated proportions from 53.6 per cent, 30.8 per cent and 15.6 per cent to 54.0 per cent, 27.0 per cent and 19.0 per cent. The average provider size for this sample of mothers of pre-school children is 32.9 for day nurseries and 24.0 for playgroups.

[83] The average childminder size for this sample of pre-school children is 4.1 places per childminder.

**Table 5.23. Multinomial Logit Model for Probability of Working Part- and Full-Time for Mothers with School Children**

| Regressors | Relative to probability of part-time work | | | |
|---|---|---|---|---|
| | Probability of no work | | Probability of full-time work | |
| | relative risk ratio | standard error | relative risk ratio | standard error |
| *LA no. of places per 100 population:* | | | | |
| Childminders | 0.939*** | 0.009 | 0.991 | 0.010 |
| Out-of-school clubs | 1.022*** | 0.007 | 1.025*** | 0.008 |
| Holiday schemes | 0.998* | 0.001 | 1.000 | 0.001 |
| *LA average size of:* | | | | |
| Childminders | 1.027 | 0.028 | 0.964 | 0.032 |
| Out-of-school clubs | 1.001 | 0.003 | 1.003 | 0.003 |
| Holiday schemes | 1.001 | 0.001 | 1.002** | 0.001 |
| Pseudo $R^2$ | 0.004 | | | |
| No. of observations | 11,806 | | | |

Notes: Stars denote that the relative risk ratio is significantly different from zero at the 1% (***), 5% (**) and 10% (*) levels. School children are defined as those aged 4 to 11. The sample includes mothers of school children who also have pre-school children. The relative risk ratios on the probabilities of not working and of working full-time were significantly different at the 1% level for the availability of childminder places. The ratios were significantly different at the 5% level for the average childminder size. The inclusion of the size variables in the model did not alter the significance of the ratios on the availability measures.

means, raising the number of childminder places from five to 10 places per 100 population reduces the estimated likelihood that a mother does not work from 46.2 per cent to 38.9 per cent and increases the probabilities of working part-time from 33.9 per cent to 39.1 per cent and of working full-time from 20.0 per cent to 22.0 per cent.[84] A corresponding rise for holiday scheme places from 15 to 30 places[85] alters the estimated probabilities for no work from 43.0 per cent to 42.4 per cent, for part-time work from 36.1 per cent to 36.5 per cent and for full-time work from 20.9 per cent to 21.1 per cent.[86]

[84] For this sample of school children, the average number of childminder places is 7.1 places per 100 population.

[85] Corresponding in the sense that holiday scheme places are counted for each holiday period and similar year-round coverage to that of childminders would require a scheme in each of the three major holiday periods.

[86] The average number of holiday scheme places for this sample is 14.4 places per 100 population.

Although it is intuitive that areas with greater numbers of out-of-school club places should have higher proportions of mothers who are working full-time relative to part-time, it is not obvious why mothers are also more likely not to work relative to working part-time in these areas. However, the associations are relatively weak.[87]

Finally, similar to the case for pre-school children, areas with a higher average number of children per childminder have smaller proportions of mothers working full-time relative to not working, while larger holiday schemes are associated with a greater likelihood that mothers work full-time rather than part-time. Although the association is quite strong for the average childminder size,[88] it is very weak for average holiday scheme size.[89]

## 5.6 Summary

This chapter has used data collected from surveys of local authorities to examine patterns in childcare provision over the 1995–99 period. It has focused on the availability of day nursery, playgroup, childminder, out-of-school club and holiday scheme places and the average size of these providers, considering both changes over time and the variation in provision across LAs. Average pupil:staff ratios for maintained nursery schools and classes have been analysed in a similar way. Finally, the LA statistics have been combined with

[87] Evaluated at the sample means for all other variables, an increase in the availability of out-of-school club places from five to 10 per 100 population is associated with an increase in the estimated proportion of mothers not working from 43.3 per cent to 44.7 per cent, a fall in the likelihood of part-time work from 35.7 per cent to 33.1 per cent and a rise in the probability of full-time work from 21.1 per cent to 22.1 per cent. The average number of out-of-school club places for this sample is 4.1 places per 100 population.

[88] Evaluated at the sample means for all other variables, an increase in the number of places per childminder from three to five is associated with an increase in the estimated proportion of mothers not working from 41.9 per cent to 43.9 per cent and falls in the likelihood of part-time work from 36.2 per cent to 36.0 per cent and in the probability of full-time work from 21.8 per cent to 20.1 per cent. The average number of places per childminder for this sample is 4.1.

[89] Evaluated at the sample means for all other variables, an increase in the average holiday scheme size from 20 to 30 places per scheme is associated with no change in the estimated proportion of mothers not working, a fall in the likelihood of part-time work from 36.8 per cent to 36.5 per cent and an increase in the probability of full-time work from 20.4 per cent to 20.6 per cent. The average number of places per holiday scheme for this sample is 44.1.

employment rates for mothers from the survey data to examine the relationships between levels of childcare provision and the likelihood that mothers choose to work.

Levels of availability recorded for March 1999 show that there were

- approximately eight nursery places and 11 playgroup places for each 100 children under the age of 5 (Table 5.1);
- almost seven childminder places for each 100 children under the age of 8 (Table 5.1);
- approximately six out-of-school club places and almost 20 holiday scheme places[90] per 100 children aged 5 to 7 (Table 5.1).

Hence, these levels of provision can provide regular full-time formal care for only a minority of the current child population.

There have been some dramatic changes in the overall levels of childcare provision across the five-year period:

- The availability of day nursery places has risen steadily, increasing by some 57 per cent between 1995 and 1999 (Table 5.1).
- The provision of childminder places has declined slightly, falling by around 9 per cent between 1995 and 1999 (Table 5.1).
- Provision of out-of-school clubs has increased dramatically, rising by a multiple of more than two-and-a-half between 1995 and 1999 (Table 5.1).
- Provision of holiday scheme places has also risen rapidly, by 124 per cent between 1995 and 1999 (Table 5.1).

In line with these trends, most LAs have experienced a rapid and consistent rise in day nursery provision, while many have seen a consistent and sizeable fall in childminder provision. Although a large number of LAs have reported consistent rises in the provision of out-of-school clubs, trends within LAs have been far from consistent for changes in the availability of holiday scheme places. Overall, the period has seen an increase in the provision of childcare

[90] It should be noted that holiday scheme places are counted as one for each holiday.

types that tend to be more centre- and education-based, particularly for younger school children.

There is large variation in the provision of these types of formal childcare across LAs:

- Playgroup provision has the smallest range, but the highest LA's reported availability rate is still 8 times that of the lowest LA (Table 5.3).
- Holiday scheme places have the greatest diversity: the highest LA's reported availability is over 200 times that of the lowest (non-zero) LA (Table 5.6).

Examining the relationships in the availability of care between different types shows that there is a tendency for some LAs to have *generally* low or high levels of availability:

- LAs with very low provision of one type of care tend to have low to moderate availability for other types of care, although there is not such a marked correlation at high levels of availability (Tables 5.7 and 5.8).
- Within LAs, low levels of provision of different types of care primarily for pre-schoolers (day nurseries, playgroups and childminders) tend to be positively correlated with each other (Table 5.7).
- Two LAs (Sunderland and Wakefield) stand out as having relatively low levels of availability across all types of childcare (Table 5.7).
- Four LAs (Kingston upon Thames, North Yorkshire, Wandsworth and Richmond upon Thames) stand out as having relatively high levels of availability across all types of childcare (Table 5.8).

Some areas may have generally higher levels of availability across all childcare types than others because of complementarities in childcare demand and supply. Mothers who use care for pre-school children are more likely to need out-of-school clubs when their children reach school age. Out-of-school clubs tend to be demanded by the same mothers and staffed by the same people as school holiday schemes. Areas of dense population may benefit from a thick childcare market in the sense that a large number of potential buyers in a small area

may encourage a greater supply of all types of care, both from centre-based care and from potential childminders who may be more willing to pay the set-up and registration costs if there is a certain and continuous demand for their care. Finally, there may be a historical or cultural explanation: some areas may have traditionally had high fractions of mothers who were employed, generating the set-up of childcare options, the ongoing operation of which now encourages current mothers to work.

In addition, some regions and LAs have very 'specialised' availability:

- Inner London and the central metropolitan districts tend to have high levels of day nursery places but low levels of playgroup and childminder places, while the shire counties (particularly those in the south) and outer London tend to have high playgroup and childminder provision and low day nursery place availability (Figure 5.1).
- Inner London has very high levels of out-of-school club and holiday scheme places, while the shire counties and northern metropolitan districts have the lowest levels of provision (Figure 5.2).
- Within LAs, the availabilities of out-of-school club places and of holiday scheme places tend to be positively correlated (Tables 5.7 and 5.8).
- Within LAs, high levels of provision of day nursery places also tend to be correlated with high availability of out-of-school club and holiday scheme places (Table 5.8).
- Four London LAs (City of London, Westminster, Kensington & Chelsea and Hounslow) have very high availability of day nursery, out-of-school club and holiday scheme places and generally very few playgroup and childminder places (Table 5.9).
- The Isles of Scilly and Hampshire have very high levels of playgroup and childminder places and very low levels of day nursery, out-of-school club and holiday scheme places (Table 5.9).

There are many potential factors that may explain the diversity in the *type* of childcare provision. In particular, urban areas may differ from rural regions on account of the degree of commerce and population

density. In commercial areas, the main source of demand for childcare will be from mothers who work in the area, who are more likely to require longer daily hours of care and year-round care than non-working mothers. Hence, in more commercial areas, such as inner London and the metropolitan districts, day nurseries and out-of-school clubs may be in greater demand relative to playgroups or childminders. In addition, housing costs may be higher in commercial areas, making it less likely that childminders will be able to afford to live there, although day nursery workers would be able to commute into the area. In areas of sparse population, such as the shire counties, using local childminders may be more convenient than travelling long distances to centre-based care such as day nurseries or out-of-school clubs. Related to this, there may be economies of scale in running out-of-school clubs, such that one club may serve several schools and may therefore run more economically in areas of dense population such as inner and outer London. In addition, London tends to have larger schools which may be more efficient in setting up and running out-of-school clubs.

The average size of provider (defined as the number of places per provider) may be important both as a reflection of quality and for possibly being related to the cost of care. Over the five-year period, there have been some marked changes in provider size:

- The average size of day nurseries has risen substantially from 31.0 places per provider in 1995 to 35.6 places in 1999 (Table 5.10).
- The average size of playgroups has remained around 24 places per provider (Table 5.10).
- The average number of places per childminder has risen from 3.9 per childminder in 1995 to 4.1 in 1999 (Table 5.10).
- However, the mean sizes for after-school clubs and holiday schemes have fluctuated considerably (Table 5.10).

The rising trends in average day nursery size and number of places per childminder are reflected within many LAs. There is no immediate quality interpretation for the increase in day nursery size (larger day nurseries may be better or worse than smaller ones), but a larger average number of children per childminder is suggestive of a decline in quality.

There is some variation in these average sizes across regions and LAs:

- LAs with low average day nursery size tend to be located in rural areas, while LAs with high average size tend to be metropolitan districts in the north (Table 5.11).
- The London regions report an average childminder size of 3.5, while all other areas report an average size of around 4.1 children per childminder (text at end of Section 5.3.1).
- Inner London has unusually large out-of-school clubs, while both London regions and the central shire counties have relatively large holiday schemes (Figure 5.10).

Larger day nurseries are more likely in densely populated areas simply because they can be conveniently located for a larger number of mothers. The difference in size of out-of-school clubs for London may arise from the larger school size in the region and the dense population. The difference in childminder size for London may reflect a higher demand for quality in childcare use in an area of higher average incomes.

The average pupil:staff ratio for 3- and 4-year-old children in maintained nursery schools and classes has consistently declined over the five-year period:

- The pupil:staff ratio fell from 11.2 in 1995 to 10.7 in 1999 (Table 5.16).
- This downward trend is reflected within a large proportion of LAs (Figure 5.15 and text).

There is some variation in the ratio across regions and LAs:

- Across regions, the ratio ranges from 10.2 for inner London to 11.5 for the northern metropolitan districts (Figure 5.14).
- Across LAs, the ratio varies from under 9 pupils per staff member to over 13 pupils (Table 5.17).

The variation across LAs suggests that the quality of care (as measured by the ratio) tends to be higher in the more affluent south and London regions than in the northern and central areas of the country.

Comparing the changes in childcare availability and mothers' employment rates over the five-year period shows that

- there was a rise in the proportion of mothers of pre-school and school children working both part-time and full-time (Tables 5.18 and 5.19);
- at the same time, the availability of day nursery, out-of-school club and holiday scheme places increased substantially, although there was no notable rise in either playgroup or childminder places (Tables 5.18 and 5.19).

However, this correlation cannot identify the direction of causation. In particular, it suggests either that an increasing propensity to work on the part of mothers created greater demand for and provision of day nursery, school club and holiday scheme places or that an increasing supply of these places allowed a greater proportion of mothers to undertake formal employment.

The different regions of the country show a considerable dispersion in mothers' employment rates in addition to the variation in childcare availability:

- Inner London has an unusually low proportion of mothers working part-time and a more normal level of mothers working full-time, but has high availability of day nursery, out-of-school club and holiday scheme places and low availability of playgroup and childminder places (Tables 5.20 and 5.21).
- Outer London has an unusually low proportion of mothers working part-time and an unusually high fraction working full-time, but it has low availability of day nursery places and high availability of holiday scheme places (Tables 5.20 and 5.21).
- The shire counties have the highest part-time and lowest full-time employment rates for mothers of pre-school children and also tend to have the highest availability of playgroup and childminder places and the lowest availability of day nursery places (Table 5.20).
- The shire counties have some of the highest employment rates for mothers of school children but also have some of the lowest availabilities of out-of-school club and holiday scheme places (Table 5.21).

Hence, there is no straightforward relationship across the regions between mothers' propensity to work and the availability of these formal childcare options, suggesting that there may be differences in the use of informal care or of other formal options (such as nannies and au pairs) or even in the need to use childcare.

The relationships across time and local authorities were examined using a multivariate analysis that controlled for related levels of provision across different childcare types.

- Areas with greater availability of day nursery and childminder places have higher proportions of mothers of pre-school children who work full-time rather than part-time or not at all (Table 5.22).
- Areas with greater availability of playgroup places have higher proportions of mothers of pre-school children who work part-time rather than full-time or not at all (Table 5.22).
- Areas with greater availability of childminder places have higher proportions of mothers of school children who work, full- or part-time, rather than not work (Table 5.23).
- Areas with greater availability of holiday scheme places have higher proportions of mothers of school children who work part-time relative to not working (Table 5.23).
- The association between employment and childminder availability is much stronger than that between employment and availability of the other types of care, both for mothers of pre-school children and for mothers of school children (Tables 5.22 and 5.23).

These relationships are quite intuitive if day nurseries and childminders tend to provide sufficient hours of care to cover full-time work, while playgroups and holiday schemes with shorter daily hours may be more suited to mothers working part-time.

Finally, the average size of providers within local authority also has important associations with mothers' employment rates:

- Areas with larger day nursery and playgroup average sizes have higher proportions of mothers of pre-school children working full-time rather than working part-time or not working (Table 5.22).
- Areas with larger holiday scheme average size have higher proportions of mothers of school children working full-time rather than part-time (Table 5.23).

- Areas with a higher average number of children per childminder have lower proportions of mothers (of pre-school and school children) working full-time rather than working part-time or not working (Tables 5.22 and 5.23).
- Once again, the association between employment and childminder provision is much stronger than that between employment and provision of the other types of care, both for mothers of pre-school children and for mothers of school children (Tables 5.22 and 5.23).

This suggests that larger care centres may be more likely than smaller providers to offer sufficient hours of care to cover full-time work. On the other hand, the relationship between the average number of children per childminder and employment rates may be a quality issue: either mothers who work longer can afford higher-quality care or are more concerned about the quality of care when their child uses more hours or a shortage of high-quality care may discourage mothers from working full-time.

# CHAPTER 6

# Patterns of Childcare Use for Working Mothers

## 6.1 Introduction

This chapter analyses the data on childcare use from the FRS for pre-school children and school children (aged under 12) with working mothers. The information on the use of formal and informal care is considered in the following section, while the divisions between different types within formal care are considered in Section 6.3. Section 6.4 compares the childcare choices during term time and the holidays, and Section 6.5 analyses the weekly hours of childcare, particularly in relation to the mother's work hours. The following two sections (6.6 and 6.7) turn to the cost of care, the first detailing how much families spend on childcare on a weekly basis and the second presenting an analysis of the hourly cost per child. The final section summarises.

Due to the richness of the FRS data, there is a wealth of information that could be presented in each of these areas. Each section begins with simple cross-tabulations, typically across age of child, type of care and mother's work and partnership status. These tables are intended to build a picture of childcare behaviour for broad groups that do not control for any other factors. For example, mothers who work full-time may be more likely to use formal care. These tables are followed by a multivariate analysis that captures the impact of a wide range of characteristics, controlling for related differences in other factors. For example, it may be uncovered that mothers who work full-time are more likely to use formal care because of higher earnings and not because of the longer hours per se.

However, it should be noted that the multivariate analysis does not include the price of childcare as an explanatory variable and that no multivariate analysis is conducted for the cost of care in this chapter. The reason is that the hourly cost measured in the data is not the same as a price, but represents a complicated interaction between

price, hours of care and the quality of care chosen. Separating a price measure from these other effects requires a more sophisticated approach than the basic multivariate analysis used in this chapter. The impact of the price of childcare on mothers' childcare choices is addressed separately in Chapter 7.

## 6.2 Childcare Use

### *6.2.1 Informal and Formal Care*

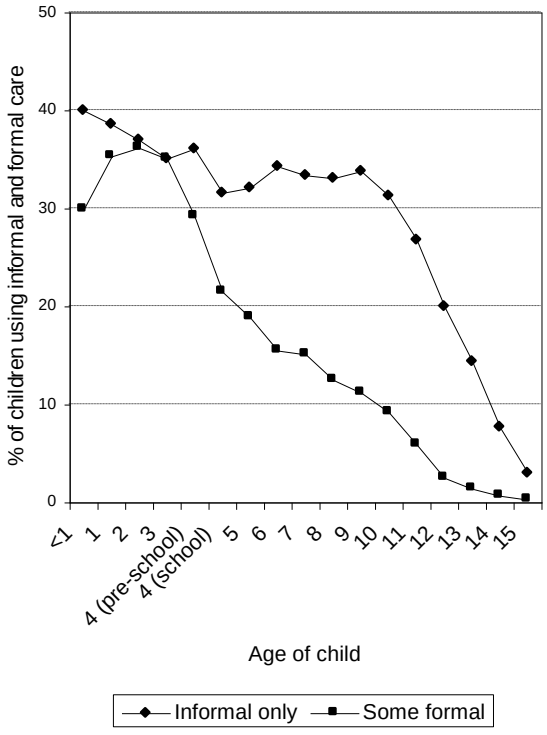
Working mothers face an array of options for providing non-maternal care for their children, both to enable them to work and to facilitate child-free time. It is useful to divide these options into two main categories. First, informal care is defined as that provided by partners, older children, close relatives and friends. This type of care is arranged on a non-market basis in most cases, with no fixed monetary payment for the care provided. Its availability, however, may be rationed for any individual mother and conditional on particular circumstances. The second category consists of formal care: that provided by institutions (such as day nurseries, playgroups, crèches and out-of-school clubs), childminders and in-home help such as nannies and au pairs. This type of care is typically available in a market setting with fixed terms and monetary payment arrangements. Its availability may be limited in some areas by market imperfections that prevent a sufficient supply of places or may appear limited by prohibitively high prices. Hence, the use of these two categories of care will be influenced by different sets of factors and needs, although the choices between the two are obviously interrelated.

In analysing childcare choices, the unit of observation is the child rather than the mother. According to the FRS survey data, some 37 per cent of pre-school children (those under the age of 5 and not in full-time education) with working mothers received care only from informal sources, while 34 per cent regularly spent some time in a formal type of care. For younger school children (aged 4 to 11) with working mothers, 32 per cent received only informal care, while 13 per cent spent some time in formal care.

### *6.2.2 By Age of Child*

In Figure 6.1, these proportions are broken down by the child's age, up to age 15. The graph shows how the use of informal care declines steadily but not dramatically with age for pre-school children, but remains fairly constant for school children up until age 11. In contrast, the use of formal modes peaks for ages 1 to 3 and drops substantially from 29 per cent for a 4-year-old pre-school child to 22 per cent for a 4-year-old school child. The proportion of school children using formal care declines markedly with age, falling to 3 per cent for 12-year-olds. Indeed, use of any type of non-maternal childcare declines rapidly with age for school children and is unusual

**Figure 6.1. Childcare Use for Children of Working Mothers**



for children over the age of 11.[91] Hence, the remaining analysis considers only those below this bound, using the term 'school children' to define those aged 4 to 11.

These changes in childcare use with child's age reflect two dynamics. First, a mother may alter her childcare arrangements as a child ages or the number of children alters. For example, a child may receive informal care for the first couple of years, then move into a nursery at the age of 3 to 4, before using a mixture of out-of-school clubs and au pair arrangements when starting reception class at school. But there is also a second dynamic in the picture presented in Figure 6.1. As shown in Chapter 4, employment participation for mothers rises steadily as the youngest child ages, and the sample of working mothers changes as the age of child rises. For example, the increase in use of formal modes of care for pre-school children may reflect mothers without access to informal care delaying their re-entry into the labour market until the child is aged 2 or more and then using formal care.

Table 6.1 breaks down the type of care into no care, unpaid informal, paid informal, a mix of informal and formal, and solely formal.[92,93]

[91] La Valle et al. (2000) present childcare use by age of child for children with both working and non-working mothers (table 2.4). The picture is very similar to Figure 6.1, with a steep rise in the use of formal care for the 3- to 4-year-old group, a substantial drop in the use of care at age 5 and a gradual decline in use, particularly of formal care, after the age of 5.

[92] See Section 3.1.2 for an explanation of the options in the survey questions.

[93] Childcare use by working mothers is reported in Jarvis et al. (2000, table 5.12) using data from the 1994 British Social Attitudes Survey. Although differences in the data presentation (they present by mother rather than by child and allow multiple responses) make direct comparisons difficult, the proportion of mothers using formal types of care appears considerably higher in the BSAS data than the proportions of children reported here. Childcare use is also reported in Finlayson, Ford and Marsh (1996, table 4b) using data from large postal surveys of child benefit recipients from the early 1990s. Although the responses are presented by mother rather than child, the authors find very similar proportions to those in Table 6.1 reporting that they use formal care: 24 per cent of working mothers with a child aged 0–4 and 10 per cent of working mothers with a youngest child aged 5–10 used 'professional only' care in 1994. On the other hand, the usage of informal care and the combination of informal and formal is much higher than the figures reported here.

**Table 6.1. Type of Childcare by Age of Child**

| | Pre-school children aged: | | | | | |
|---|---|---|---|---|---|---|
| % in care type: | <1 | 1 | 2 | 3 | 4 | All ages |
| No care | 29.8 | 25.8 | 26.6 | 29.8 | 34.3 | 28.7 |
| Informal, unpaid | 31.8 | 29.9 | 28.0 | 26.3 | 27.4 | 28.5 |
| Informal, paid | 8.2 | 8.8 | 9.0 | 8.8 | 8.7 | 8.8 |
| Informal and formal | 4.8 | 6.6 | 6.9 | 8.1 | 7.3 | 6.9 |
| Formal | 25.4 | 29.0 | 29.5 | 27.0 | 22.3 | 27.2 |
| | School children aged: | | | | | |
| % in care type: | 4–5 | 6–7 | 8–9 | 10–11 | All ages | |
| No care | 48.3 | 50.7 | 54.7 | 63.4 | 54.9 | |
| Informal, unpaid | 24.1 | 25.5 | 25.2 | 23.7 | 24.7 | |
| Informal, paid | 7.9 | 8.4 | 8.2 | 5.3 | 7.4 | |
| Informal and formal | 3.6 | 3.4 | 2.7 | 1.8 | 2.8 | |
| Formal | 16.2 | 12.1 | 9.3 | 5.8 | 10.3 | |

Note: 'All ages' for school children includes only those under 12.

The high percentages in the 'no care' category highlight the fact that a large proportion of working mothers answer negatively to the question of whether 'anyone else' looks after their children because they are working.[94] Such a large proportion may seem surprising, especially for pre-school children, for whom there is no free 'school-time' care. In many cases, it may reflect mothers who are able to work and care for their children simultaneously, either at home or in the workplace. However, some mothers may not regard care provided by a partner or other household members as constituting care by 'someone else'.[95] Hence, although this category of 'no care' should primarily reflect care by the mother for pre-school children, it may also incorporate some other within-household sources of care such as a partner or older siblings.[96] For school children, it will additionally

[94] See Section 3.1.2 for a full explanation of the question structure used in the survey.

[95] The question wording may also lead some mothers to answer negatively to the question because they view the childcare as something they would use even if they were not working.

[96] In investigating the possible explanations for why working mothers reported using no other sources of care, the data showed that 19 per cent of pre-school children whose mothers reported using no other care had mothers who worked at home, 13 per cent had mothers with *non-working* partners and 5 per cent had older (aged 12–18) siblings. For school children, the corresponding proportions were 14 per cent, 15 per cent and 30 per cent during term and 10 per cent, 13 per cent and 25 per cent during the holidays.

include the time children spend at school. Hence, the term childcare will be used to refer to care that is not provided by the mother or implicitly given to school children during school hours.

The table shows again that most childcare for children of working mothers is provided informally by family and friends.[97] Indeed, some 52 per cent of pre-school children using childcare receive solely informal care, while the figure is even higher, at 71 per cent, for school children using childcare. Almost one-quarter of this informal care for both pre-school and school children is in exchange for some type of monetary payment, a proportion that is fairly constant across all ages.[98] Mixing informal and formal care is not uncommon amongst pre-school children (7 per cent) but it is less common among school children.

The differences between 4-year-old pre-school children and 4- to 5-year-old school children are indicative of the impact of the provision of 'school-time' care during normal school hours. The proportion of children receiving no childcare jumps 14 percentage points from 34 per cent to 48 per cent, which is a sizeable change although possibly not as large as might be expected from such a major change in circumstances. Most of the source of this jump is a distinct decline in formal care, which drops 6 percentage points, while informal care and the mix of informal and formal care both fall by around 4 percentage points.

[97] This contrasts with the use of childcare reported by all (working and non-working) mothers with a child under the age of 5 in the 1991/92 General Household Survey. Some 37 per cent reported that they did not use any form of childcare beyond parental care, but only 13 per cent reported using informal sources of care, while half reported using either a centre-type care or childminders (table 2.4 in Duncan, Giles and Webb (1995) or table 1 in Duncan and Giles (1996)). This latter evidence is corroborated further by results from a 1999 survey of working and non-working parents presented in La Valle et al. (2000), which reports that 41 per cent of children under the age of 5 did not use any childcare, while 17 per cent used only informal sources of care and 41 per cent used some type of formal care (possibly in addition to informal sources) (derived from table 2.4 using the unweighted base).

[98] La Valle et al. (2000) also find that the overwhelming majority of informal providers are not paid: they report that just 6 per cent of households (with working and non-working mothers) using only informal care pay fees or wages to the provider (table 6.3).

### *6.2.3 By Mother's Work and Partnership Status*

Table 6.2 considers the choice of type of care by the mother's work and partnership status. The length of the mother's working day (whether part- or full-time) will influence the type of care chosen through the hours of care required and the corresponding cost. Whether the mother has a partner may be influential on the availability of informal care, either directly by the partner (particularly if the partner has different or flexible working hours) or by broadening the range of family and friends available.

Mothers of pre-school and school children are less likely to use no care or rely solely on unpaid informal care than to use paid informal or formal care if they work full-time rather than part-time.[99] For example, 42 per cent of full-time mothers of pre-school children with a partner use formal care compared with 19 per cent of their part-time counterparts. Hence, longer work hours are clearly associated with greater use of paid types of care for both single mothers and mothers with partners.

**Table 6.2. Type of Childcare by Mother's Work and Partnership Status**

| | Mother works part-time | | Mother works full-time | |
|---|---|---|---|---|
| % in care type: | With partner | Single | With partner | Single |
| *Pre-school children:* | | | | |
| No care | 38.4 | 7.1 | 18.9 | 5.6 |
| Informal, unpaid | 30.2 | 56.2 | 20.2 | 26.6 |
| Informal, paid | 5.9 | 14.8 | 11.7 | 15.9 |
| Informal and formal | 6.1 | 6.6 | 7.4 | 14.3 |
| Formal | 19.4 | 15.3 | 41.8 | 37.7 |
| | | | | |
| *School children:* | | | | |
| No care | 65.9 | 43.8 | 44.0 | 22.8 |
| Informal, unpaid | 21.4 | 36.2 | 25.0 | 34.5 |
| Informal, paid | 4.4 | 12.6 | 9.9 | 14.8 |
| Informal and formal | 1.8 | 2.8 | 3.7 | 7.5 |
| Formal | 6.4 | 4.6 | 17.4 | 20.5 |

Note: 'School children' includes only those under 12.

[99] A similar relationship in the use of care between full-time and part-time working mothers is reported in La Valle et al. (2000) for mothers of children aged 14 and under (table 1.14).

On the other hand, working single mothers are much less likely to manage without any childcare and are far more likely to use informal types of childcare.[100,101] For example, only 7 per cent of single mothers working part-time with pre-school children report using no care compared with 38 per cent for their partnered counterparts. Some 56 per cent of this single-mother group use only unpaid informal care compared with 30 per cent for similar mothers with partners. However, the propensity to use formal modes of care is quite similar for single mothers and for those with partners. The lower propensity for mothers with partners to report that they use any childcare may indicate that these mothers are more capable of combining work and maternal care or may suggest that a partner's care is not always being regarded as care by 'someone else'.

### *6.2.4 Multivariate Analysis*

In order to estimate the influence of many more characteristics on the use of childcare and to allow for potential correlations between factors, the decisions to use informal care, formal care and no care

[100] Again, a similar relationship in the use of care between two-parent and one-parent families is reported in La Valle et al. (2000) for mothers of children aged 14 and under (table 1.14).

[101] There is a wide variety of evidence on the use of childcare for single mothers. Jenkins and Symons (1995) report that about one-fifth of working single mothers pay for childcare, using data from the 1989 UK Lone Parents Survey, while McKay and Marsh (1994) report that 29 per cent of working single parents pay for childcare, using data from the 1991 DSS/PSI Sift. These proportions are lower than those in Table 6.2, possibly because they include lone mothers with any dependent children (not just those under the age of 12) and also because they cover a slightly earlier period. According to the 1991/92 General Household Survey, for all (working and non-working) mothers with a child aged under 5, childcare choices are similar for mothers with partners and for single mothers: the proportion of mothers with partners using no childcare beyond parental care is 37 per cent compared to 35 per cent for single mothers, the proportion using only informal sources is 13 per cent for mothers with partners and 15 per cent for single mothers, while half of both groups use either centre-type care or childminders (derived from table 2.6 of Duncan, Giles and Webb (1995)). Ford (1996) also presents different types of childcare use for single mothers in work (tables 2.3 and 2.4), but the presentation of multiple responses does not permit direct comparisons with the figures here.

**Table 6.3. Multinomial Logit Model for Probability of Using Informal and Formal Childcare: Pre-School Children**

| Regressors | Relative to probability of no childcare | | | |
|---|---|---|---|---|
| | Probability of informal care | | Probability of formal care | |
| | relative risk ratio | standard error | relative risk ratio | standard error |
| *Mother's work:* | | | | |
| Hours | 1.054*** | 0.014 | 1.060*** | 0.016 |
| $(Hours)^2$ | 0.999*** | 0.000 | 0.999*** | 0.000 |
| Works at home | 0.138*** | 0.031 | 0.193*** | 0.047 |
| *Child aged:* | | | | |
| 0 | 0.921 | 0.117 | 0.575*** | 0.084 |
| 1 | 1.062 | 0.119 | 0.828 | 0.104 |
| 3 | 0.902 | 0.099 | 0.870 | 0.106 |
| 4 | 0.853 | 0.107 | 0.731** | 0.104 |
| *Mother:* | | | | |
| Age | 1.147** | 0.083 | 1.398*** | 0.118 |
| $(Age)^2$ | 0.997** | 0.001 | 0.996*** | 0.001 |
| Left education aged: | | | | |
| 16 | 1.004 | 0.143 | 0.333*** | 0.049 |
| 17–18 | 1.008 | 0.149 | 0.560*** | 0.083 |
| after 21 | 0.749 | 0.164 | 1.190 | 0.240 |
| Non-white | 1.066 | 0.182 | 0.602*** | 0.115 |
| *Family:* | | | | |
| Partner | 0.075*** | 0.016 | 0.052*** | 0.012 |
| Partner not working | 0.349*** | 0.046 | 0.343*** | 0.053 |
| No. of older children | 0.752** | 0.093 | 0.635*** | 0.089 |
| No. of families | 1.131 | 0.177 | 1.000 | 0.179 |
| Years lived here | 1.011 | 0.013 | 0.979 | 0.015 |
| *Resources:* | | | | |
| Log(mother's earnings) | 1.761*** | 0.145 | 4.415*** | 0.448 |
| Log(other income) | 1.180*** | 0.053 | 1.473*** | 0.077 |
| No. of pre-school children | 0.681*** | 0.052 | 0.445*** | 0.041 |
| No. of school children | 0.708*** | 0.042 | 0.495*** | 0.035 |
| *Time:* Year | 0.957 | 0.027 | 1.009 | 0.032 |
| *Region:* | | | | |
| North shires | 1.139 | 0.163 | 1.211 | 0.204 |
| Central shires | 0.592*** | 0.075 | 0.975 | 0.142 |
| South shires | 0.639*** | 0.072 | 0.828 | 0.109 |
| Central metropolitan | 0.692** | 0.129 | 1.032 | 0.222 |
| Inner London | 0.548** | 0.145 | 0.662 | 0.182 |
| Outer London | 0.646** | 0.113 | 0.485*** | 0.095 |
| Pseudo $R^2$ | 0.222 | | | |
| No. of observations | 5,604 | | | |

Notes to Table 6.3: Stars denote that the relative risk ratio is significantly different from 1 at the 1% (***), 5% (**) and 10% (*) levels. Omitted child's age is 2 and omitted mother's age left education is 19–21. 'School children' are aged 4–11. 'Older children' are aged 12–18. 'Other income' includes all family income other than mother's earnings. Mother's earnings and other income are measured in hundreds of pounds per week. The omitted region is northern metropolitan. The relative risk ratios on the probabilities of using informal and formal care are significantly different at the 1% level for child aged 0, mother's age and education, non-white, having a partner, mother's earnings, other income and numbers of pre-school and school children. The probabilities are significantly different at the 5% level for child aged 1, years lived at current address, year, central shires, south shires, central metropolitan and outer London. For the probability of using informal care, the ratios are significantly different between the north shires and all other areas. For the probability of using formal care, the ratios are significantly different between the north shires on the one hand and the south shires and inner London on the other, and between outer London on the one hand and all shire areas and the central metropolitan area on the other. Exclusion of the year and area variables altered the significance of one ratio: for the probability of using formal care, the ratio on child aged 1 is significantly less than 1.

were modelled using a multinomial logit probability model.[102] Use of formal care is defined to include the mixed informal and formal category. The results of two separate models, one for pre-school children and one for school children, are presented in Tables 6.3 and 6.4. As in similar models in Chapter 4, a relative risk ratio greater than 1 shows a characteristic that makes the use of informal or formal care more likely relative to no care, while a ratio less than 1 indicates a factor associated with a smaller probability of using that type of care. The ratios are estimated with a degree of error, but the stars indicate those factors that we are confident have the estimated positive or negative effect. The table notes list all significant differences in the ratios between informal and formal care use.

The finding that mothers who work full-time are more likely to use childcare than mothers who work part-time is confirmed by the relative risk ratios being greater than 1 for the mother's work

[102] A logit model for the use of any childcare (informal and formal) is presented in La Valle et al. (2000), using data for a sample of all parents with children aged 14 or under (table 2.21). Although direct comparisons with the model presented here are not possible because of the differences in model structure and sample (particularly using all children under 15 rather than using children with working mothers and a division into pre-school and school children under the age of 12), many of the family characteristics have very similar effects on childcare use.

**Table 6.4. Multinomial Logit Model for Probability of Using Informal and Formal Childcare: School Children**

| Regressors | Relative to probability of no childcare | | | |
|---|---|---|---|---|
| | Probability of informal care | | Probability of formal care | |
| | relative risk ratio | standard error | relative risk ratio | standard error |
| *Mother's work:* | | | | |
| Hours | 1.070*** | 0.008 | 1.080*** | 0.013 |
| (Hours)$^2$ | 0.999*** | 0.000 | 0.999*** | 0.001 |
| Works at home | 0.276*** | 0.042 | 0.335*** | 0.077 |
| *Child aged:* | | | | |
| 4–5 | 0.950 | 0.064 | 1.288*** | 0.114 |
| 8–9 | 0.978 | 0.058 | 0.754*** | 0.064 |
| 10–11 | 0.726*** | 0.045 | 0.363*** | 0.035 |
| *Mother:* | | | | |
| Age | 1.007 | 0.044 | 1.063 | 0.067 |
| (Age)$^2$ | 0.999 | 0.001 | 0.999 | 0.001 |
| Left education aged: | | | | |
| 16 | 1.109 | 0.089 | 0.525*** | 0.053 |
| 17–18 | 0.936 | 0.078 | 0.776*** | 0.077 |
| after 21 | 0.732** | 0.090 | 1.036 | 0.127 |
| Non-white | 0.828* | 0.081 | 0.731*** | 0.095 |
| *Family:* | | | | |
| Partner | 0.346*** | 0.023 | 0.278*** | 0.029 |
| Partner not working | 0.471*** | 0.036 | 0.464*** | 0.056 |
| No. of older children | 0.741*** | 0.030 | 0.447*** | 0.032 |
| No. of families | 1.003 | 0.076 | 0.925 | 0.111 |
| Years lived here | 1.013** | 0.007 | 0.962*** | 0.010 |
| *Resources:* | | | | |
| Log(mother's earnings) | 1.509*** | 0.077 | 3.815*** | 0.292 |
| Log(other income) | 1.022 | 0.028 | 1.339*** | 0.054 |
| No. of pre-school children | 1.033 | 0.055 | 0.954 | 0.073 |
| No. of school children | 0.879*** | 0.030 | 0.749*** | 0.039 |
| *Time:* | | | | |
| Year | 0.949*** | 0.016 | 0.998 | 0.024 |
| *Region:* | | | | |
| North shires | 0.998 | 0.076 | 0.888 | 0.110 |
| Central shires | 0.758*** | 0.053 | 1.076 | 0.115 |
| South shires | 0.685*** | 0.043 | 0.971 | 0.092 |
| Central metropolitan | 0.797** | 0.082 | 1.178 | 0.180 |
| Inner London | 0.397*** | 0.061 | 1.080 | 0.186 |
| Outer London | 0.579*** | 0.059 | 0.833 | 0.114 |
| Pseudo $R^2$ | 0.160 | | | |
| No. of observations | 12,306 | | | |

Notes to Table 6.4: Stars denote that the relative risk ratio is significantly different from 1 at the 1% (***), 5% (**) and 10% (*) levels. Omitted child's age is 6–7 and omitted mother's age left education is 19–21. 'School children' are aged 4–11. 'Older children' are aged 12–18. 'Other income' includes all family income other than mother's earnings. Mother's earnings and other income are measured in hundreds of pounds per week. Omitted region is northern metropolitan. The relative risk ratios on the probabilities of using informal and formal care are significantly different at the 1% level for all the child age variables, mother left education aged 16, mother left education after age 21, number of older children, years lived here, mother's earnings, other income, the number of school children and all area variables except the north shires. The probabilities are significantly different at the 5% level for partner and year and are significantly different at the 10% level for mother left education aged 17–18. For the probability of using informal care, the ratios are significantly different between the north shires on the one hand and central shires, south shires and central metropolitan on the other, between inner and outer London on the one hand and all other areas on the other, and between inner London on the one hand and outer London on the other. For the probability of using formal care, the ratios are significantly different between the north shires and central metropolitan, between central shires and outer London and between central metropolitan and outer London. Excluding the year and region variables alters the significance of three ratios: for the probability of using informal care, the ratios on mother left education after 21, non-white and years lived here are significant at the 1% level.

hours[103] for both pre-school and school children. Although the overall impact of longer work hours is not large, it is greater for school children than for pre-school children. Evaluated at the sample means, the estimated proportions of pre-school children using informal and formal care are 47 per cent and 31 per cent for those with mothers working 20 hours a week compared with 48 per cent and 34 per cent for those with mothers working 35 hours each week. For school children, the estimated proportions are 35 per cent and 8 per cent for those with mothers working 20 hours a week compared with 42 per cent and 10 per cent for those with mothers working 35 hours each week. The larger effect is not surprising as mothers of school children can work part-time without the need for any care outside of school hours, but full-time work requires additional arrangements.

The relative risk ratios for work hours on the probabilities of informal and formal care are not significantly different from 1, showing that there is no propensity for mothers working longer hours to prefer formal over informal care just on account of the hours they are working. Hence, the preference for formal types of care by mothers who work full-time is due more to related factors such as higher earnings than to the hours of work alone.

[103] The relative risk ratios on the linear work hours terms are greater than 1 and the ratios on work hours squared are less than 1, showing that use of informal and formal care increases as the hours of work rise but at a declining rate. The point at which the probabilities start to decline with hours is at over 35 hours a week in all the work multinomial logit models.

Mothers who work at home are much less likely to use childcare, even controlling for the work hours. This is not surprising as it is easier to work and provide care simultaneously in the home than in the workplace. Evaluated at the sample means, the proportions of pre-school children estimated to be in informal and formal care are 48 per cent and 32 per cent for those whose mothers do not work at home, while the proportions are 20 per cent and 18 per cent for those with mothers who do work at home. The corresponding figures are 36 and 8 per cent compared with 15 and 4 per cent for school children.

Even controlling for other factors, the child's age has an important influence on the propensity to use formal care. In particular, children aged less than 1 or aged 4 are significantly less likely to use formal care relative to informal and no childcare than their 2- and 3-year-old counterparts. For example, evaluated at the sample means, the estimated probabilities that a child aged less than 1 uses no care, informal and formal care are 24 per cent, 51 per cent and 25 per cent, compared with 20 per cent, 45 per cent and 35 per cent for a child aged 2. This is consistent with the arch shape in the use of formal care in Figure 6.1, but the logit model shows that it is the child's age per se rather than any other related characteristics that is important in the decision to use formal care. In particular, the change is not driven by changes in mothers' characteristics for those returning to work when their children are older. Possible explanations may be that the costs of formal care change with the age of pre-school children (for example, through lower staff:child ratios) or that the benefits alter (for example, through educational or social aspects) or a combination of both.

For school children, the declining propensity to use formal care relative to informal or no childcare as the child ages is confirmed by the ratio significantly greater than 1 for the 4–5 age group and ratios significantly less than 1 for the 8–9 and 10–11 age groups relative to the omitted 6–7 age group. Given that these children are less likely than their pre-school counterparts to use formal care for educational or social reasons, this suggests that older school children may be more easily or more cheaply cared for by informal or maternal sources. For 10- and 11-year-old children, there is also a large

decline in the propensity to use informal care even relative to formal care.

Older mothers of pre-school children are more likely to use childcare and are more likely to use formal care over informal sources. For example, evaluated at the sample means, the estimated proportions of pre-school children using no care, informal and formal care are 24 per cent, 55 per cent and 21 per cent for those with a 25-year-old mother, compared with 20 per cent, 41 per cent and 39 per cent for those with a 35-year-old mother. However, there is no significant impact of mother's age for school children.

Formal care is also less likely relative to informal or no care for children with mothers spending shorter times in education than for those whose mothers spent longer in education.[104] Evaluated at the sample means, the estimated proportion of pre-school children using formal care is 23 per cent for those with mothers who left education at age 16 compared with 47 per cent for those with mothers who left full-time education aged 19–21. The corresponding proportions for school children are 6 per cent and 12 per cent.

It should be noted that the effects of mother's age and education are independent of the mother's earnings or work hours and are not driven by the hours of care required or the ability to afford formal care. One alternative explanation is that older women who spent longer in education are more likely to have moved away from their family and have weaker links to informal types of care. A second possibility is that the types of informal care available to these types of mothers may be of poorer quality. For example, children of older mothers are more likely to have older grandparents who may not be so physically capable of caring for small children. Finally, mothers who are older or spent longer in education may perceive the benefits

[104] The model in Table 6.4 uses information on the overall use of childcare. When logit models for the use of childcare were estimated separately for school children during the term and during the holidays (using the information on whether the reported hours of care are non-zero in each period), only the length of mother's education generated qualitatively different results from the model in Table 6.4. Longer-educated mothers of school children (particularly those who left education after age 18) were significantly more likely to use non-maternal care during term than their shorter-educated counterparts, but were significantly *less* likely to do so during the holidays. This may reflect a greater ability on the part of those who have had longer educations to take holidays or unpaid leave during the holidays or to work whilst also caring for their children for temporary periods.

from formal care differently from mothers who are younger or spent less time in education.

Use of formal childcare for pre-school children is much lower amongst those from ethnic minorities, and their use of any childcare for school children is also lower. Evaluated at the sample means, 32 per cent of pre-school children with working mothers are estimated to use formal care if the mother is white, compared with 22 per cent for those with non-white mothers. This may be due to greater family ties providing informal care amongst ethnic minorities or because fewer benefits from using formal care are perceived amongst these groups.

The raw statistics presented in Table 6.2 suggested that single mothers were much more likely to use informal care than their partnered counterparts but were no different in their use of formal care. However, the model results show that when controls are included for differences in other characteristics, single mothers are not only significantly more likely to use informal *or* formal care relative to no care but are also more likely to use formal over informal care than their counterparts with partners. In addition, the likelihood of using childcare for those with partners is reduced further if the partner is not working. For example, evaluated at the sample means, the estimated probabilities for a pre-school child to use no care, informal and formal care are: 2 per cent, 51 per cent and 47 per cent if the mother is single; 26 per cent, 45 per cent and 29 per cent if the mother has a working partner; and 50 per cent, 31 per cent and 20 per cent if the mother has a non-working partner. As suggested above, the partner effect may be due to a sharing of the childcare responsibilities or to additional informal care resources. The reason that the use of informal and formal care is reduced substantially further if the partner is not working is probably the obvious one that the partner is available to provide an alternative source of care to formal options.

A greater number of older children in the family reduces the likelihood that childcare is used for both pre-school and school children, suggesting that care by an older sibling may be being included in the 'no care' category because it is not regarded as care by 'someone else'. Hence, older siblings may be an important source of informal care. Indeed, the number of older children has a greater

impact for school children than for pre-school children,[105] suggesting that they may be more trusted to care for young school-age children rather than for toddlers or babies. A greater number of years at the current address increases the use of informal care relative to formal care, possibly by proxying the time available for the development of local informal networks of help. However, the number of families living in the household does not have any significant effect on the use of care.

Another group of factors in the models captures the ability to afford formal care. Both mother's earnings and other family income (including any partner's earnings) increase the use of childcare and the use of formal over informal care for pre-school and school children.[106] However, the mother's earnings have a much larger impact than other sources of family income. For example, evaluated at the sample means, an increase in the mother's earnings from £100 to £150 each week raises the estimated proportion of pre-school children in formal care from 29.7 per cent to 39.6 per cent, while an identical change in other income raises the proportion from 27.2 per cent to 29.5 per cent. For school children, the mother's earnings change is estimated to raise use of formal care from 8.4 per cent to 12.8 per cent, while an identical change in other income increases use from 6.7 per cent to 7.5 per cent. This suggests that the source of family income is important for spending patterns and that the choice of childcare is more directly related to the mother's earnings than to other sources of family income.

Increases in the numbers of pre-school children and school children reduce the use of childcare and make the use of formal care relative to informal care less likely for pre-school children. This may be due to the need to share resources among a greater number of children. Evaluated at the sample means, raising the number of pre-

[105] Evaluated at the sample means, increasing the number of older children from zero to one reduces the estimated proportions of pre-school children using informal and formal care from 46.7 per cent and 32.0 per cent to 45.6 per cent and 26.7 per cent. For school children, the corresponding changes in probabilities are 36.9 per cent and 32.0 per cent to 10.0 per cent and 5.3 per cent.

[106] La Valle et al. (2000) report that childcare usage and the likelihood of paying for childcare among working and non-working mothers are higher among higher-income households (tables 1.13 and 6.9).

school children from one to two reduces the estimated likelihood of a pre-school child using formal care from 35 per cent to 24 per cent, while an increase in the number of school siblings from zero to one reduces the probability from 37 per cent to 26 per cent. Only the number of school children has a significant, but smaller, impact for school children.

Although the childcare choices have not changed significantly for pre-school children over the five-year period, the likelihood of using informal care has declined for school children of working mothers. Evaluated at the sample means, the estimated proportions of school children using no care, informal care and formal care are 54.4 per cent, 37.7 per cent and 7.9 per cent in 1994/95 compared with 58.6 per cent, 33.0 per cent and 8.4 per cent in 1998/99.

Across the country, pre-school children in the north shires and northern metropolitan region are estimated to be much more likely to use informal care than those in other regions, while those in outer London are less likely to use formal care than children in other areas. For example, evaluated at the sample means, an estimated 53 per cent of pre-school children of working mothers in the north shires use informal care compared with 44 per cent in outer London, while 31 per cent are predicted to use formal care in the north shires compared with 21 per cent in inner London. The pattern is similar for school children, with informal care much more likely in the north shires and northern metropolitan areas and much less likely in the London regions. For example, evaluated at the sample means, an estimated 42 per cent of school children of working mothers in the north shires use informal care compared with 22 per cent in inner London, while 7 per cent are predicted to use formal care in the north shires compared with 11 per cent in inner London.

## 6.3 Type of Formal Care

Some childcare policies have focused on one specific mode of formal care. For example, the nursery education grant (formerly childcare vouchers) favours a certain kind of centre-type care. In evaluating childcare policies, it is necessary to understand how a programme specific to a particular type of care may have a greater impact on certain groups of families. It is also essential to understand the

potential magnitude of responses to a change in the incentives governing the choice of childcare type. Hence, this section analyses the *type* of care chosen by those using formal care.

### *6.3.1 By Age of Child*

Table 6.5 presents the proportions of children in formal care by type of care. As before, those using a mix of both informal and formal care are included in the formal sample.

Of all pre-school children using some type of formal care, 44 per cent are in some centre-type care (covering day nurseries, playgroups and crèches), 43 per cent are cared for by childminders, almost 8 per cent are in some other type of care (including nannies and au pairs) and 6 per cent use a mixture of the above. There is a distinct switch in choices at age 3, with the proportion using childminders dropping sharply while the share in centre and multiple types of care jumps markedly. This movement towards centre care may reflect greater benefits at the older age from increased socialisation and educational content of centre care or may be a response to change in relative prices for the older children. It could be argued that the childcare voucher scheme (and subsequently the nursery education grant), creating a financial incentive for 3- and 4-year-olds to use nursery places, might itself be part of the reason for this change. However,

**Table 6.5. Type of Formal Childcare by Age of Child**

| | Pre-school children aged: | | | | | |
|---|---|---|---|---|---|---|
| % in care type: | <1 | 1 | 2 | 3 | 4 | All ages |
| Centre | 38.6 | 36.4 | 43.0 | 53.5 | 45.3 | 43.8 |
| Childminder | 51.8 | 51.9 | 47.0 | 29.3 | 37.8 | 43.2 |
| Other | 8.5 | 8.6 | 6.4 | 7.5 | 6.3 | 7.5 |
| Multiple | 1.1 | 3.1 | 3.6 | 9.8 | 10.6 | 5.6 |
| | School children aged: | | | | | |
| % in care type: | 4–5 | 6–7 | 8–9 | 10–11 | All ages | |
| Centre | 16.5 | 12.8 | 11.5 | 6.7 | 12.5 | |
| Childminder | 61.0 | 60.0 | 56.3 | 62.2 | 59.7 | |
| Other | 19.6 | 24.6 | 28.7 | 27.2 | 24.7 | |
| Multiple | 2.9 | 2.5 | 3.5 | 3.9 | 3.1 | |

Notes: Centre care includes day nurseries, playgroups and crèches, but after-school clubs and school holiday clubs are included as a residual in the 'other' category with nannies and au pairs. 'All ages' for school children includes only those under 12.

the scheme was introduced in April 1997 and the pattern shown in Table 6.5 was evident in the years prior to this date.

Of school children using some form of formal childcare, almost 60 per cent are in the care of childminders, while almost 25 per cent use the 'other' type of care (including nannies, au pairs, after-school clubs and holiday schemes). Almost 13 per cent use centre care and only 3 per cent use multiple types of care. The only distinct change in this distribution over the child's age is a decline in the use of centre care and a slight increase in the use of other types of care.

### *6.3.2 By Mother's Work and Partnership Status*

The formal care choice is compared across mother's work and partnership status in Table 6.6. Whether a mother is working part- or full-time may be important as some types of formal care may offer longer daily hours or may be less expensive per hour at longer hours. Although there are some important differences between part-time and full-time working mothers, there are few consistent patterns, with full-time working mothers slightly less likely to use centre care than part-time working mothers. Similarly, while there are some substantial differences in the choices by single and partnered mothers

**Table 6.6. Type of Formal Childcare by Mother's Work and Partnership Status**

| | Mother works part-time | | Mother works full-time | |
|---|---|---|---|---|
| % in care type: | With partner | Single | With partner | Single |
| *Pre-school children:* | | | | |
| Centre | 46.8 | 50.0 | 40.0 | 46.6 |
| Childminder | 41.3 | 40.7 | 45.0 | 44.3 |
| Other | 5.7 | 5.8 | 9.7 | 4.6 |
| Multiple | 6.2 | 3.5 | 5.3 | 4.6 |
| *School children:* | | | | |
| Centre | 13.2 | 16.7 | 11.5 | 12.4 |
| Childminder | 61.7 | 52.1 | 58.6 | 61.8 |
| Other | 22.8 | 28.1 | 26.7 | 20.7 |
| Multiple | 2.3 | 3.1 | 3.2 | 5.1 |

Notes: Centre care includes day nurseries, playgroups and crèches, but after-school clubs and school holiday clubs are included as a residual in the 'other' category with nannies and au pairs. 'School children' includes only those under 12.

in specific cases, there are few marked patterns, with single mothers showing a slightly greater propensity to use centre-type care than mothers with partners.

### *6.3.3 Multivariate Analysis: Pre-School Children*

In order to consider the impact of a host of factors on the choice of type of formal care, two multinomial logit models for the type of formal care were estimated (one for pre-school and one for school children). The results are shown in Tables 6.7 and 6.8. The relative risk ratios in the first column show the impact of each characteristic on the probability of choosing a childminder relative to centre-type care, while those in the second and third columns show the relative likelihood of using either some other type of care or multiple types of formal care. Similar to before, a relative risk ratio greater than 1 (less than 1) shows that the factor makes the option more (less) likely than using centre care, while the stars indicate those ratios that we are confident have the estimated positive or negative effect. The table notes list all significant differences in the ratios across childminder, other and multiple use.

Mothers of pre-school children who work longer hours are more likely to use childminders than centre or other types of care (confirming the raw statistics in Table 6.6), while those who work at home have a distinct preference for centre and other types of care rather than childminding if they do use formal care. For example, evaluated at the sample means, it is estimated that 47 per cent of pre-school children using formal care with mothers working at a workplace use centre care, while 46 per cent use childminders and 3 per cent use other types of care. The corresponding estimated proportions for children whose mothers work at home are 63 per cent, 24 per cent and 7 per cent.

The distinctive impact of the age of child for pre-school children is on the use of multiple types of formal care. Those aged under 1 are less likely than 2-year-olds to be using multiple types, while the use of multiple types is highest for those aged 3 and 4. Relative to centre care, childminding is more common at the lower ages and less likely for children above the age of 2. For example, evaluated at the sample

**Table 6.7. Multinomial Logit Model for Type of Formal Care for Pre-School Children of Working Mothers Using Formal Care**

| | Relative risk ratio (Standard error) Relative to probability of centre-type care: probability of childminder | probability of other care | probability of multiple types |
|---|---|---|---|
| *Mother's work:* | | | |
| Hours | 1.063* | 0.992 | 1.028 |
| | (0.024) | (0.038) | (0.045) |
| $(Hours)^2$ | 0.999** | 1.000 | 1.000 |
| | (0.000) | (0.000) | (0.001) |
| Works at home | 0.387** | 1.981 | 0.898 |
| | (0.175) | (1.092) | (0.693) |
| *Child aged:* | | | |
| 0 | 1.410** | 0.998 | 0.347* |
| | (0.242) | (0.373) | (0.223) |
| 1 | 1.484*** | 1.431 | 1.028 |
| | (0.213) | (0.437) | (0.380) |
| 3 | 0.448*** | 0.833 | 2.165*** |
| | (0.066) | (0.256) | (0.645) |
| 4 | 0.720* | 0.784 | 2.829*** |
| | (0.129) | (0.306) | (0.973) |
| *Mother:* | | | |
| Age | 0.958 | 0.967 | 1.692* |
| | (0.108) | (0.251) | (0.519) |
| $(Age)^2$ | 1.001 | 1.001 | 0.992* |
| | (0.002) | (0.004) | (0.005) |
| Left education aged: | | | |
| 16 | 1.063 | 0.606 | 0.693 |
| | (0.173) | (0.226) | (0.217) |
| 17–18 | 1.045 | 0.675 | 0.598* |
| | (0.159) | (0.219) | (0.181) |
| after 21 | 1.140 | 1.388 | 0.887 |
| | (0.195) | (0.394) | (0.283) |
| Non-white | 1.064 | 0.413 | 1.151 |
| | (0.239) | (0.226) | (0.564) |

*Table 6.7 continues opposite, with notes overleaf.*

**Table 6.7 continued**

| | Relative risk ratio (Standard error) Relative to probability of centre-type care: probability of childminder | probability of other care | probability of multiple types |
|---|---|---|---|
| *Family:* | | | |
| Partner | 1.059 | 0.673 | 1.315 |
| | (0.202) | (0.302) | (0.551) |
| Partner not working | 0.685 | 0.677 | 1.639 |
| | (0.160) | (0.318) | (0.625) |
| No. of older children | 1.009 | 1.120 | 0.864 |
| | (0.190) | (0.414) | (0.375) |
| No. of families | 0.750 | 3.847*** | 1.443 |
| | (0.180) | (1.181) | (0.736) |
| Years lived here | 1.027 | 0.907** | 0.969 |
| | (0.023) | (0.044) | (0.047) |
| *Resources:* | | | |
| Log(mother's earnings) | 0.756*** | 3.242*** | 1.284 |
| | (0.103) | (0.875) | (0.346) |
| Log(other income) | 0.994 | 1.307* | 0.967 |
| | (0.060) | (0.182) | (0.114) |
| No. of pre-school children | 1.255* | 2.137*** | 1.029 |
| | (0.154) | (0.510) | (0.256) |
| No. of school children | 1.821*** | 3.160*** | 1.384* |
| | (0.180) | (0.556) | (0.271) |
| *Time:* | | | |
| Year | 0.866*** | 0.773*** | 0.959 |
| | (0.033) | (0.063) | (0.077) |
| *Region:* | | | |
| North shires | 1.345 | 2.193 | 1.442 |
| | (0.268) | (2.282) | (0.629) |
| Central shires | 1.415** | 5.179** | 1.763 |
| | (0.247) | (3.464) | (0.665) |
| South shires | 2.002*** | 9.210*** | 2.258** |
| | (0.315) | (5.894) | (0.781) |
| Central metropolitan | 1.302 | 8.694*** | 0.617 |
| | (0.334) | (6.910) | (0.486) |
| Inner London | 2.804*** | 20.426*** | 1.487 |
| | (0.795) | (14.471) | (0.956) |
| Outer London | 3.238*** | 17.253*** | 0.783 |
| | (0.737) | (11.718) | (0.487) |
| Pseudo $R^2$ | | 0.121 | |
| No. of observations | | 1,944 | |

Notes to Table 6.7: Stars denote that the relative risk ratio is significantly different from 1 at the 1% (***), 5% (**) and 10% (*) levels. Omitted child's age is 2. Omitted mother's age left education is 19–21. 'School children' are aged 4–11. 'Older children' are aged 12–18. 'Other income' includes all family income other than mother's earnings. Mother's earnings and other income are measured in hundreds of pounds per week. Omitted region is northern metropolitan. The relative risk ratios on the probabilities of using a childminder and other types of care are significantly different at the 1% level for working at home, the number of families, years lived here, the number of school children, mother's earnings, children aged 4 and inner London. The ratios are significantly different at the 5% level for the number of pre-school children, other income, children aged 3, south shires, central metropolitan and outer London and are significantly different at the 10% level for the work hours, non-white and central shires. The ratios on the probabilities of using a childminder and multiple types of care are significantly different at the 1% level for children aged 3. The ratios are significantly different at the 5% level for children aged less than 1, partner not working, mother's earnings and outer London and are significantly different at the 10% level for mother's age and left education aged 17–18. The ratios on the probabilities of using other types of care and multiple types of care are significantly different at the 1% level for children aged 3, children aged 4, the number of school children, the mother's earnings, inner London and outer London. The ratios are significantly different at the 5% level for the number of pre-school children, year, south shires and central metropolitan and are significantly different at the 10% level for the number of families and other income. For the probability of using a childminder, the ratios are significantly different between north and central shires on the one hand and south shires, inner London and outer London on the other, between the south shires on the one hand and central metropolitan and inner London on the other hand, and between central metropolitan on the one hand and outer London and inner London on the other. For the probability of using other types of care, the ratios are significantly different between north and central shires on the one hand and south shires, inner London and outer London on the other, and between south shires on the one hand and inner London and outer London on the other. For the probability of using multiple types of care, the ratios are significantly different between south shires on the one hand and central metropolitan and outer London on the other. Excluding the year and region variables alters the significance of nine ratios. For the probability of using a childminder, the ratios on mother's work hours are significant at the 5% level, on work hours squared and non-white at the 10% level and are not significant on children aged 4, mother's earnings and the number of pre-school children. For the probability of using other types of care, the ratio on other income is significant at the 5% level, on left education aged 16 is significant at the 10% level and on years lived here is not significant.

means, 35 per cent of children aged under 1 are estimated to be in centre care, 58 per cent with childminders and only 1 per cent in multiple types of care, while 49 per cent of 4-year-olds are in centre care, 38 per cent with childminders and 10 per cent in multiple types of care. This reconfirms the raw figures in Table 6.5, which suggested that centre types of care, either alone or mixed with other arrangements, are regarded as more suitable for older pre-school children.

Older mothers are more likely to use multiple types of care, even controlling for earnings and other family income, but few of the other family characteristics have a significant effect on the choice of type of formal care. The one exception is the ratio significantly greater than 1 for the number of families living in the household on the use of the 'other' care type. As this type includes live-in nannies and au pairs, who would be included as additional families in the

survey, this measure is clearly reflecting the use of a particular type of formal care as well as other related families who might provide informal care. These conflicting influences may explain the unimportance of the variable in the use of formal care models.[107]

Mothers with higher earnings are more likely to use other types of care than centre care, childminders or multiple types, although the size of the impact is relatively small.[108] Similarly, those with higher other family income prefer other types to all the alternatives, although the magnitude of the impact is even smaller.[109] Having more pre-school and school children within a family also increases the likelihood that the 'other' type of care is used relative to alternative options and also reduces the probability of centre-based care relative to childminders and multiple types. For example, evaluated at the sample means, an increase in the number of pre-school children from one to two reduces the estimated proportion of pre-school children in centre care from 48.5 per cent to 42.5 per cent and increases the proportions with childminders from 44.8 per cent to 49.2 per cent and in other types of care from 2.4 per cent to 4.5 per cent. This may be a consequence of higher price discounts for care for more than one child from the same family in childminder and other non-centre types of care, particularly for the older school children.

Over the five-year period, there has been a significant increase in the use of centre-based care over the use of childminders and other types of care, even controlling for changes in other characteristics. Evaluated at the sample means, it is estimated that 40 per cent of the pre-school children using formal care used centre care, 52 per cent

[107] Inclusion of this number-of-families variable in other regressions may not be correct if it is capturing a measure of childcare use rather than a family characteristic. However, exclusion of the variable from all other regressions did not substantively alter the results: of the coefficients in all of the models, only four changed from being significantly different from 0 at the 10 per cent level to being just outside the boundary for significance, while just one changed in a similar manner in the opposite direction.

[108] For pre-school children, evaluated at the sample means, increasing earnings from £100 to £150 each week alters the proportions in centre, childminder, other and multiple care from 44.3, 50.9, 1.3 and 3.5 per cent to 46.3, 47.5, 2.3 and 4.0 per cent.

[109] For pre-school children, evaluated at the sample means, increasing other family income from £100 to £150 each week alters the estimated proportions from 47.1, 46.3, 2.2 and 4.4 per cent to 47.1, 46.1, 2.5 and 4.3 per cent.

were in the care of childminders and 4 per cent used other types of care in 1994/95. By 1998/99, these estimated proportions had changed to 54 per cent in centre-type care, 40 per cent with childminders and 2 per cent in other types of care.

Across the country, the use of centre-type care is most popular in the north shires and northern metropolitan region, while childminder and other types of care are considerably more popular in the London regions and, to a slightly lesser degree, in the south shires. For example, evaluated at the sample means, the estimated proportions of pre-school children in centre-type, childminder and other types of care are 61 per cent, 35 per cent and 1 per cent in the northern metropolitan region, compared with 32 per cent, 60 per cent and 6 per cent in outer London.

### *6.3.4 Multivariate Analysis: School Children*

The results of the same model for school children using formal care are presented in Table 6.8. For school children, the residual other category is presumed to include after-school clubs and school-holiday clubs.[110] Many of the results are different from those for pre-school children.

Mothers of school children working longer hours are less likely to rely on other types of formal care than centre or childminder care, but those working at home distinctly prefer it to the other two options. The likelihood of use of the other category relative to centre types increases with age of the child. Evaluated at the sample means, 15 per cent of school children using formal care aged 4 or 5 are estimated to be in centre care and 18 per cent in other care, compared with 6 per cent and 25 per cent for those aged 10 or 11. However, mother's age, education, ethnicity and partnership status have little impact on the type of formal care chosen. Interestingly, having more older children in the family increases the use of other types of formal care, while living at the current address longer reduces the use of multiple types of care relative to any sole type. As was the case with pre-school children, the number of families may reflect rather than cause the use of the other type of formal care.

[110] See Chapter 3 for a full explanation of the question asking about the type of childcare used.

**Table 6.8. Multinomial Logit Model for Type of Formal Care for School Children of Working Mothers Using Formal Care**

| | Relative risk ratio (Standard error) Relative to probability of centre-type care: | | |
|---|---|---|---|
| | probability of childminder | probability of other care | probability of multiple types |
| *Mother's work:* | | | |
| Hours | 0.997 | 0.939* | 0.972 |
| | (0.035) | (0.036) | (0.060) |
| $(\text{Hours})^2$ | 1.000 | 1.001 | 1.001 |
| | (0.000) | (0.001) | (0.001) |
| Works at home | 2.259 | 8.098* | $8.10\times10^{-17}$ |
| | (2.441) | (8.730) | $(1.85\times10^{-8})$ |
| *Child aged:* | | | |
| 4–5 | 0.800 | 0.613** | 1.040 |
| | (0.155) | (0.142) | (0.466) |
| 8–9 | 1.177 | 1.395 | 1.649 |
| | (0.255) | (0.339) | (0.738) |
| 10–11 | 2.227*** | 2.287** | 2.887** |
| | (0.665) | (0.746) | (1.499) |
| *Mother:* | | | |
| Age | 0.815 | 0.764 | 1.189 |
| | (0.142) | (0.151) | (0.463) |
| $(\text{Age})^2$ | 1.003 | 1.005* | 0.999 |
| | (0.002) | (0.003) | (0.005) |
| Left education aged: | | | |
| 16 | 0.970 | 1.114 | 0.398* |
| | (0.246) | (0.325) | (0.196) |
| 17–18 | 1.002 | 1.277 | 0.536 |
| | (0.246) | (0.355) | (0.245) |
| after 21 | 0.671 | 0.730 | 0.560 |
| | (0.188) | (0.229) | (0.278) |
| Non-white | 1.624 | 0.930 | 0.788 |
| | (0.562) | (0.374) | (0.522) |

*Table 6.8 continues overleaf.*

**Table 6.8 continued**

| | Relative risk ratio (Standard error) Relative to probability of centre-type care: probability of childminder | probability of other care | probability of multiple types |
|---|---|---|---|
| *Family:* | | | |
| Partner | 0.926 | 0.670 | 0.589 |
| | (0.237) | (0.196) | (0.293) |
| Partner not working | 1.096 | 1.595 | 1.829 |
| | (0.411) | (0.650) | (1.204) |
| No. of older children | 1.236 | 1.961*** | 1.405 |
| | (0.298) | (0.502) | (0.576) |
| No. of families | 0.903 | 2.071** | 0.544 |
| | (0.306) | (0.713) | (0.435) |
| Years lived here | 0.987 | 0.966 | 0.823*** |
| | (0.030) | (0.033) | (0.056) |
| *Resources:* | | | |
| Log(mother's earnings) | 1.376 | 1.791** | 1.089 |
| | (0.290) | (0.424) | (0.448) |
| Log(other income) | 0.912 | 0.972 | 0.901 |
| | (0.089) | (0.107) | (0.168) |
| No. of pre-school children | 1.804*** | 3.008*** | 0.726 |
| | (0.390) | (0.719) | (0.399) |
| No. of school children | 0.995 | 1.687*** | 1.053 |
| | (0.137) | (0.260) | (0.296) |
| *Time:* | | | |
| Year | 0.799*** | 0.906 | 0.910 |
| | (0.050) | (0.065) | (0.113) |
| *Region:* | | | |
| North shires | 0.617* | 0.506* | 0.498 |
| | (0.174) | (0.177) | (0.380) |
| Central shires | 1.937** | 1.400 | 0.958 |
| | (0.558) | (0.466) | (0.680) |
| South shires | 1.420 | 1.462 | 1.633 |
| | (0.341) | (0.405) | (0.863) |
| Central metropolitan | 0.599 | 0.484* | 1.776 |
| | (0.199) | (0.204) | (1.220) |
| Inner London | 0.442** | 0.420** | 2.053 |
| | (0.162) | (0.180) | (1.395) |
| Outer London | 1.013 | 1.616 | 1.979 |
| | (0.346) | (0.614) | (1.322) |
| Pseudo $R^2$ | | 0.081 | |
| No. of observations | | 1,658 | |

Notes to Table 6.8: Stars denote that the relative risk ratio is significantly different from 1 at the 1% (***), 5% (**) and 10% (*) levels. Omitted child's age is 6–7. Omitted mother's age left education is 19–21. 'School children' are aged 4–11. 'Older children' are aged 12–18. 'Other income' includes all family income other than mother's earnings. Mother's earnings and other income are measured in hundreds of pounds per week. Omitted region is northern metropolitan. The relative risk ratios on the probabilities of using a childminder and other types of care are significantly different at the 1% level for working at home, the number of older children, the number of families, the number of pre-school children and the number of school children. The ratios are significantly different at the 5% level for mother's work hours, mother's work hours squared, non-white and year and are significantly different at the 10% level for outer London. The ratios on the probabilities of using a childminder and multiple types of care are significantly different at the 1% level for years lived here. The ratios are significantly different at the 5% level for left education aged 16 and inner London and are significantly different at the 10% level for the number of pre-school children and central metropolitan. The ratios on the probabilities of using other types of care and multiple types of care are significantly different at the 1% level for the number of pre-school children. The ratios are significantly different at the 5% level for the years lived here, left education aged 16, left education aged 17–18 and inner London and are significantly different at the 10% level for the number of families, the number of school children and central metropolitan. For the probability of using a childminder, the ratios are significantly different between the north shires on the one hand and the central and south shires on the other, between the central shires on the one hand and the central metropolitan, inner London and outer London regions on the other, between the south shires on the one hand and central metropolitan and inner London regions on the other, and between inner and outer London. For the probability of using the other type of care, the ratios are significantly different between the north shires, central metropolitan and inner London regions on the one hand and the central and south shires and outer London on the other. For the probability of using multiple types of care, the ratios are significantly different between the north shires on the one hand and the south shires, inner London and outer London on the other. Excluding the year and region variables altered the significance of three ratios: for the probability of using a childminder, the ratio for children aged 10–11 is significant at the 5% level; for the probability of using other types of care, the ratio for mother's hours squared is significant at the 1% level and for mother's age squared is not significant.

The more a mother earns, the greater the probability she will use other types of care relative to centre or childminder care, although the magnitude of the effect is small.[111] Other family income has little impact on the choice of type of care. The number of children in the family has similar effects to that for pre-school children: having more pre-school and school children increases the use of other types of care, while higher numbers of pre-school children make the choice of childminders more likely. Again, this may reflect larger discounts in the pricing structure for care for more than one child from the same family for childminders and other types of care than for centre settings.

The propensity to use childminder care for school children has declined over the five-year period, with an increased likelihood of

[111] Evaluated at the sample means, an increase in the mother's earnings from £100 to £150 each week alters the estimated proportions of school children in centre, childminder, other and multiple care from 13.4, 65.2, 19.9 and 1.4 per cent to 11.8, 64.9, 22.1 and 1.3 per cent.

use of centre-type care. Evaluated at the sample means, the estimated proportions in centre-type, childminder and other types of care are 7 per cent, 72 per cent and 20 per cent in 1994/95 compared with 15 per cent, 58 per cent and 26 per cent in 1998/99. Across the country, controlling for differences in other characteristics, there is a greater propensity to use childminder and other types of care in the central shires, while centre-type care is more popular in the north shires and inner London. For example, evaluated at the sample means, an estimated 19 per cent of school children in formal care in the north shires use centre-type care, while 61 per cent use childminders. In comparison, an estimated 7 per cent of similar children in the central shire region use centre-type care and 73 per cent use childminders.

## 6.4 Term-Time and Holiday Use

One of the advantages of the FRS data is that the survey asks questions about childcare separately for term time and for school holidays. This distinction is especially important for school children due to the dramatic change in the provision of 'school-time' care. In this section, the extent of differences in childcare choices between the two time periods is carefully examined.

The nature of the survey does not permit an examination of the difference in the type of care used, but only in the total hours of care and total weekly childcare expenditure across all types of care. Actual childcare hours and expenditure are considered in detail in later sections. For the purposes of examining differences in term-time and holiday use, children using childcare are divided into four groups: those only using it during the term; those only using it during the holidays; those using it in both periods for identical hours and cost; and those using it in both periods but for different hours or cost.

Table 6.9 breaks the comparisons into those for children using only unpaid informal care, those using paid informal care and those using formal care.[112] The vast majority of pre-school children use

[112] It should be noted that this division into informal and formal care includes as formal those using the mixed informal and formal combination, including the possibility that just informal or formal may be used during one of the time periods. Hence, there is the possibility that some 'formal' users may be sole 'informal' users during one of the time periods. However, the mixed informal and formal group is a very small proportion of school

identical hours of care during the term and holidays and, if paying, pay an identical weekly amount. Some 11 per cent of those using unpaid informal care, 17 per cent of those using paid informal care and 13 per cent of those using formal care use childcare during both term time and the holidays, but for either different hours or different hourly cost (or both). Much smaller fractions (around 10 per cent) only use childcare during term time, while almost no pre-school children of working mothers receive care exclusively during the holidays.

The picture is very different for school children, as would be expected. Over 40 per cent of those in unpaid informal care use care during both term time and the holidays but at different hours or hourly cost (or both), while almost 60 per cent of children in some type of paid care (informal or formal) receive care in both term time and the holidays but for different hours or hourly cost (or both). Of the remainder, those in unpaid informal care are most likely to use childcare during term time and the holidays for the same number of

**Table 6.9. Childcare Use during Term Time and School Holidays**

| % of children | Informal, unpaid | Informal, paid | Formal |
|---|---|---|---|
| *Pre-school children* | | | |
| Use only in term | 7.8 | 8.9 | 12.3 |
| Use only in holidays | 1.3 | 0.6 | 0.4 |
| Use in term and holidays: same hours and hourly cost | 79.9 | 73.8 | 74.4 |
| Use in term and holidays: different hours or hourly cost | 11.0 | 16.7 | 12.9 |
| *School children* | | | |
| Use only in term | 11.8 | 14.0 | 22.9 |
| Use only in holidays | 20.9 | 12.6 | 10.9 |
| Use in term and holidays: same hours and hourly cost | 23.6 | 15.3 | 8.0 |
| Use in term and holidays: different hours or hourly cost | 43.8 | 58.1 | 58.1 |

children (3 per cent) and only a slightly larger fraction (7 per cent) of pre-school children, for whom childcare arrangements, as about to be shown, are reasonably constant across term time and holidays.

hours, while those in formal care are most likely to use childcare exclusively during term time.

The nature of the differences in hours and cost is examined more closely in Table 6.10 for the sample of children using childcare during both periods but at different hours or hourly cost. The vast majority (90 per cent) of pre-school children in unpaid informal care with such differences use more hours during the holidays, while some 70 per cent of similar school children also receive more hours of care during the holidays than during term time. For pre-school and school children in paid informal care, the most common difference is

**Table 6.10. Differences in Childcare Use between Term Time and School Holidays**

| % of children using childcare during term and holidays with different hours or hourly costs | Informal, unpaid | Informal, paid | Formal |
|---|---|---|---|
| *Pre-school children* | | | |
| More hours during term: | | | |
| - same hourly cost | 9.9 | 1.2 | 3.6 |
| - higher hourly cost in term | — | 0.0 | 4.0 |
| - higher hourly cost in holidays | — | 3.7 | 17.1 |
| More hours during holidays: | | | |
| - same hourly cost | 90.1 | 2.4 | 11.2 |
| - higher hourly cost in term | — | 58.5 | 25.5 |
| - higher hourly cost in holidays | — | 6.1 | 7.2 |
| Same hours: | | | |
| - higher hourly cost in term | — | 7.3 | 17.5 |
| - higher hourly cost in holidays | — | 20.7 | 13.9 |
| *School children* | | | |
| More hours during term: | | | |
| - same hourly cost | 28.3 | 1.5 | 1.1 |
| - higher hourly cost in term | — | 0.2 | 0.5 |
| - higher hourly cost in holidays | — | 3.3 | 1.7 |
| More hours during holidays: | | | |
| - same hourly cost | 71.7 | 8.9 | 16.8 |
| - higher hourly cost in term | — | 73.4 | 59.3 |
| - higher hourly cost in holidays | — | 10.6 | 18.4 |
| Same hours: | | | |
| - higher hourly cost in term | — | 0.4 | 0.5 |
| - higher hourly cost in holidays | — | 1.7 | 1.6 |

longer hours during the holidays and a higher hourly cost during term. This may reflect an association between longer hours and a lower hourly cost. Very few use more hours during term, although a sizeable proportion of the pre-school children (21 per cent) use the same hours and pay more during the holidays.

For pre-school children in formal care, the most common difference is again the use of more hours during holidays and a higher term-time hourly cost, but the distribution is fairly even over the entire range of possible differences. For school children in formal care, some 60 per cent use more hours in holidays and pay a higher hourly cost in term, while very few use more hours during term or the same hours at different hourly cost.

Overall, the picture of childcare use for pre-school children is reasonably constant across term time and holidays, with very few children using childcare only during the holidays. The analysis below of childcare hours and expenditure for pre-school children therefore uses only the term-time information, as the holiday statistics would look almost identical. For school children, the two periods are very different: substantial proportions use childcare both exclusively in term time and exclusively during holidays, while most receiving care during both periods experience differences not only in hours but also in hourly cost. Which period is the more important dimension for policy analysis is debatable: the term-time situation reflects the majority of the working year, but holiday time is the crunch period when no free 'school-time' care is available.[113] For these reasons, childcare hours and expenditure for school children are analysed separately for term time and for the holidays.

## 6.5 Weekly Hours of Childcare

### *6.5.1 Distributions of Weekly Hours*

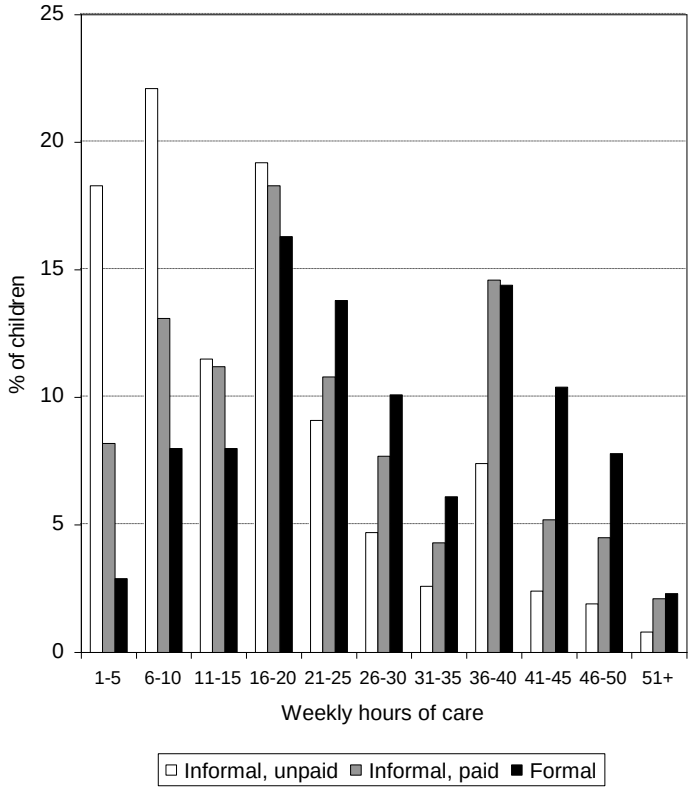
Pre-school children in unpaid informal care use an average 17.2 hours of care each week, compared with an average 24.0 hours for those in paid informal care and 28.4 hours for those in formal care.

[113] It is interesting to note that when asked about their ideal changes in working arrangements, 49 per cent of working couples and 66 per cent of working lone parents reported that they would like to work in just the term time (La Valle et al., 2000, tables 9.10 and 9.11).

The same pattern of increasing hours across these broad categories is evident for school children during term (8.8, 10.6 and 11.1 hours respectively) and during the holidays (20.4, 24.7 and 28.9 hours respectively). As would be expected, the average hours for pre-school children and school children during holidays are very similar but those for school children during term are much shorter. The distribution of weekly childcare hours, grouped into five-hour bands, is presented in Figure 6.2 for pre-school children and in Figures 6.3 and 6.4 for school children.

For pre-school children, there are distinct clusters in the childcare hours distributions around 20 hours and 40 hours for all three categories of care, which matches with a similar clustering of work

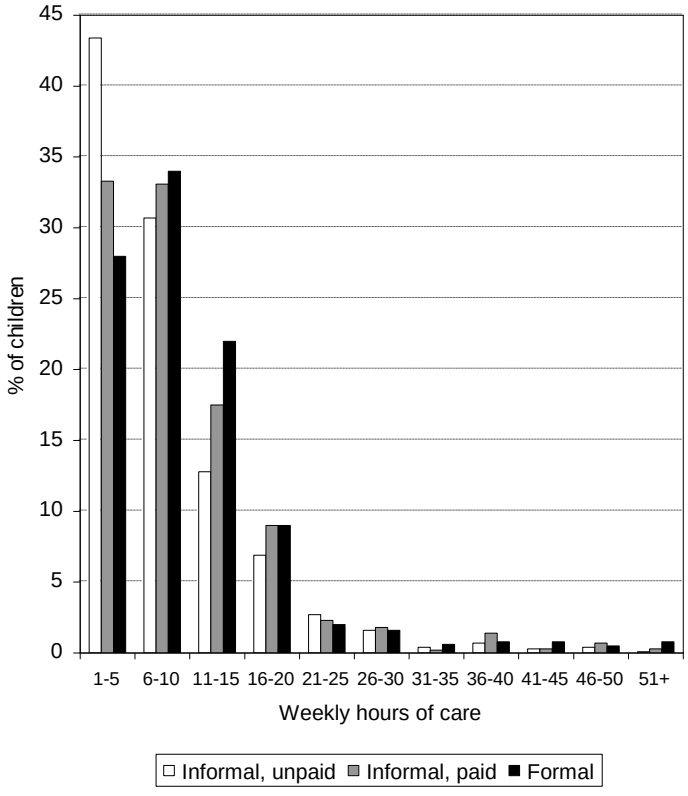
**Figure 6.2. Distribution of Average Weekly Childcare Hours for Pre-School Children of Working Mothers**



hours around these part-time and full-time marks. Over half of those in unpaid informal care use 15 hours or less each week, compared with a third of those using paid informal care and less than one-fifth of those using formal care. On the other hand, pre-school children in formal care are much more likely to be using in excess of 40 hours: some 21 per cent of those in formal care use more than 40 hours compared with 12 per cent of those in paid informal care and 4 per cent of those in unpaid informal care.

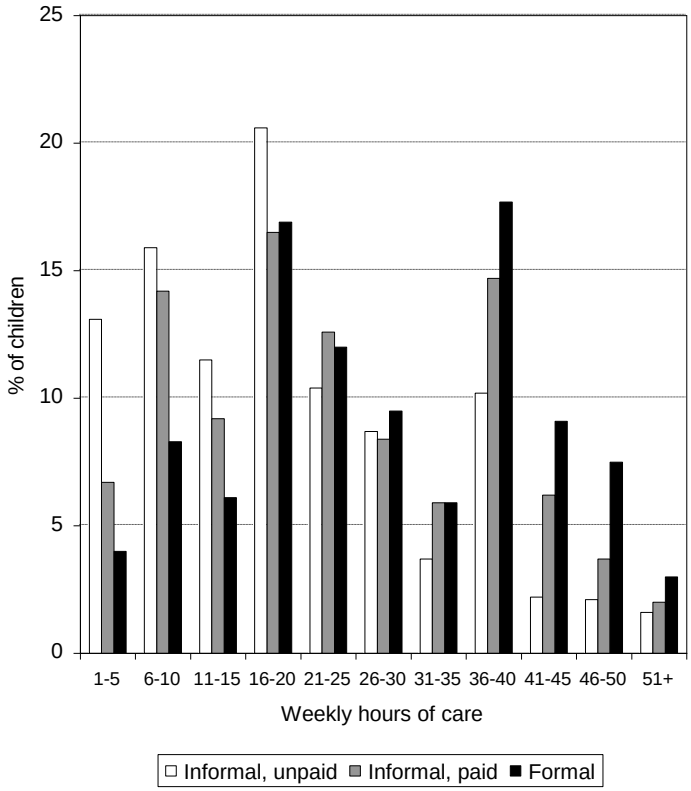
The distribution of hours for school children during the holidays (Figure 6.4) is remarkably similar to that for pre-school children. During term time, the distribution for school children (Figure 6.3) is

**Figure 6.3. Distribution of Average Weekly Childcare Hours for School Children of Working Mothers: Term Time**



concentrated in the very lowest groups of hours, as would be expected given that these hours are additional to normal school hours. Yet, even within the narrow range, those using unpaid informal care are more likely to be at the lower end of the hours range, with those in formal care slightly more likely to be at the higher end.[114]

**Figure 6.4. Distribution of Average Weekly Childcare Hours for School Children of Working Mothers: Holidays**




[114] Those school children using very long hours during term are, presumably, being covered for late evenings or possibly weekends.

### *6.5.2 By Age of Child and Type of Care*

Average weekly hours are presented by the age of child and type of care in Table 6.11 for pre-school children and in Tables 6.12 and 6.13 for school children during term time and holidays respectively.[115]

Childcare hours for pre-school children are greatest for those in the 'other' formal care type, which includes nannies and au pairs, at an average 35.3 hours per week across all age groups. Those using more than one type of formal care (multiple formal) are the second greatest users, at an average 30.2 hours each week, followed closely by children in centre care (28.9 hours per week) and in the care of childminders (28.2 hours per week). The average weekly hours are lower for both paid informal care (24.0 hours) and unpaid informal care (17.2 hours) than for any single type of formal care. This pattern is fairly consistent within each age group.

Average weekly hours of care decline markedly as the child's age increases, from an average 25.4 hours for children of working

**Table 6.11. Average Weekly Childcare Hours by Age of Child and Type of Care: Pre-School Children**

| | Pre-school children aged: | | | | | |
|---|---|---|---|---|---|---|
| Type of care: | <1 | 1 | 2 | 3 | 4 | All ages |
| Informal, unpaid | 18.9 | 18.6 | 18.2 | 15.2 | 14.2 | 17.2 |
| Informal, paid | 26.3 | 28.8 | 24.7 | 20.9 | 18.0 | 24.0 |
| Informal and formal | 28.0 | 26.0 | 25.7 | 24.3 | 22.7 | 25.1 |
| Centre | 31.0 | 31.0 | 27.7 | 29.0 | 25.0 | 28.9 |
| Childminder | 32.2 | 28.4 | 29.2 | 27.5 | 20.5 | 28.2 |
| Other formal | 40.4 | 40.6 | 33.2 | 28.8 | 32.9 | 35.3 |
| Multiple formal | 36.0 | 28.8 | 34.4 | 31.2 | 26.1 | 30.2 |
| All types | 25.4 | 25.1 | 24.1 | 22.2 | 19.0 | 23.4 |

Note: Averages are for those using the type of care (non-zero values).

[115] Duncan, Giles and Webb (1995) provide tabulations of the average weekly hours of childcare for children under the age of 5 (section 2.3) using data from the 1991/92 General Household Survey, but direct comparisons with the tables here is difficult because their tables are for households rather than for each child and include non-working as well as working mothers.

mothers under the age of 1 to 19.0 hours for those aged 4. With few exceptions, this pattern also exists within childcare type and is not a consequence of switching between different types of care. However, it should be recalled that the sample underpinning these figures consists only of working mothers and that the sample of working mothers will change with the child's age as mothers gradually re-enter employment as the youngest child ages. In particular, the decline in weekly hours of care may not reflect a change in hours for any given child, but rather that mothers using fewer hours of care return to work when their child is older. The multivariate analysis below may help to untangle some of these different effects.

Turning to Table 6.12, school children in centre care use, on average, the longest care hours during term time (15.5 hours), followed by those in other formal and multiple formal types of care (12.5 hours) and by those in paid informal care and in the care of childminders (10.6 and 10.4 hours respectively). The shortest hours are used by those in a mixture of informal and formal care (9.8 hours) and those using only unpaid informal care (8.8 hours). However, these differences are relatively small and the pattern is far from consistent across the age groups. But there are distinct patterns in the weekly hours across the child's age for school children during

**Table 6.12. Average Weekly Childcare Hours by Age of Child and Type of Care: School Children during Term**

| | School children aged: | | | | |
|---|---|---|---|---|---|
| Type of care: | 4–5 | 6–7 | 8–9 | 10–11 | All ages |
| Informal, unpaid | 9.7 | 8.9 | 8.7 | 8.3 | 8.8 |
| Informal, paid | 12.7 | 9.7 | 10.7 | 9.6 | 10.6 |
| Informal and formal | 11.5 | 10.3 | 8.7 | 8.5 | 9.8 |
| | | | | | |
| Centre | 24.0 | 10.0 | 8.6 | 7.6 | 15.5 |
| Childminder | 10.5 | 11.1 | 9.8 | 9.7 | 10.4 |
| Other formal | 14.6 | 12.9 | 11.3 | 10.8 | 12.5 |
| Multiple formal | 19.0 | 10.7 | 10.2 | 11.0 | 12.5 |
| | | | | | |
| All types | 11.4 | 9.8 | 9.4 | 8.8 | 9.8 |

Note: Averages are for those using the type of care (non-zero values).

**Table 6.13. Average Weekly Childcare Hours by Age of Child and Type of Care: School Children during Holidays**

| | School children aged: | | | | |
|---|---|---|---|---|---|
| Type of care: | 4–5 | 6–7 | 8–9 | 10–11 | All ages |
| Informal, unpaid | 18.9 | 20.0 | 20.5 | 21.6 | 20.4 |
| Informal, paid | 25.8 | 24.3 | 24.7 | 24.3 | 24.7 |
| Informal and formal | 24.9 | 26.5 | 26.2 | 28.1 | 26.3 |
| Centre | 35.3 | 29.8 | 27.6 | 32.9 | 32.1 |
| Childminder | 28.1 | 30.4 | 27.9 | 30.2 | 29.1 |
| Other formal | 31.0 | 28.9 | 28.7 | 29.1 | 29.4 |
| Multiple formal | 35.4 | 36.9 | 35.2 | 35.1 | 35.7 |
| All types | 23.6 | 23.4 | 23.0 | 23.4 | 23.3 |

Note: Averages are for those using the type of care (non-zero values).

term. In particular, aggregated across all types, the average hours decline steadily from 11.4 hours each week for those aged 4–5 to 8.8 hours for the 10–11 age group. This trend is broadly repeated within childcare type.

For school children during the holidays (Table 6.13), although the ordering is slightly different, the three types with the longest hours are the same as for pre-school children: multiple formal care (35.7 hours), centre (32.1 hours) and other formal (29.4 hours). Exactly matching the pre-school situation, childminders then provide the next-longest average hours (29.1 hours), followed by the mixed informal and formal type (26.3 hours), paid informal (24.7 hours) and unpaid informal (20.4 hours). This pattern is broadly repeated within the age groups. Unlike term-time hours, the average hours of care for school children during the holidays remain almost constant across the age groups. Within childcare type, the only trend is a slight rise in hours with age for unpaid informal care and the mixed informal and formal type.

### *6.5.3 By Mother's Work and Partnership Status*

Average weekly hours are analysed by whether the mother has a partner and whether she is working part- or full-time in Table 6.14. The first point to note is that even within each work and partnership

**Table 6.14. Average Weekly Childcare Hours by Mother's Work and Partnership Status**

| | Mother works part-time | | Mother works full-time | |
|---|---|---|---|---|
| | With partner | Single | With partner | Single |
| *Pre-school children:* | | | | |
| Unpaid informal care | 12.3 | 14.7 | 28.6 | 35.1 |
| Paid informal care | 15.0 | 15.0 | 32.2 | 36.0 |
| Formal care | 19.5 | 19.3 | 36.1 | 37.6 |
| *School children in term:* | | | | |
| Unpaid informal care | 6.3 | 10.4 | 9.8 | 15.3 |
| Paid informal care | 6.3 | 10.9 | 11.8 | 15.6 |
| Formal care | 7.2 | 9.9 | 12.7 | 14.2 |
| *School children in holidays:* | | | | |
| Unpaid informal care | 14.4 | 16.4 | 28.2 | 34.2 |
| Paid informal care | 15.9 | 20.1 | 31.7 | 34.2 |
| Formal care | 19.3 | 21.7 | 34.2 | 37.1 |

Note: Averages are for those using the type of care (non-zero values).

group, average hours are generally lowest for those in unpaid informal care and highest for those in formal care. Hence, the dichotomy in hours between these types of care is not due to different choices by work or partnership status. As would be expected, mothers in part-time work use fewer hours of childcare than full-time working mothers regardless of the type of care or whether there is a partner present.

The main revelation, however, is the distinction between those mothers with partners and single mothers: single mothers, with the exception of those with pre-school children in formal care, use more hours of childcare than their partnered counterparts, both for those working part-time and for those working full-time. The difference is greater for informal care than formal care. For example, single full-time mothers using unpaid informal care for a pre-school child use an average 35.1 hours each week, compared with 28.6 hours for their partnered counterparts. On the other hand, single full-time mothers using formal care use an average 37.6 hours each week compared with 36.1 hours for their partnered counterparts. One possible reason for this could be the use of additional hours by single mothers to

generate child-free time outside of work hours, which might otherwise be provided by a partner's childcare.

### *6.5.4 Care Hours relative to Mother's Work Hours*

If mothers use childcare in order to facilitate their working, the main determinant of the hours of care used will be the hours of work. However, use in excess of work hours might also be expected to cover travel-to-work time for the mother or to allow child-free non-work time for the mother. On the other hand, hours of childcare may not necessarily be sufficient to cover work hours if the mother is able simultaneously to work and to provide care for the child for part of the working time, either at a workplace or at home.

In order to examine the relationship between work hours and childcare hours, Table 6.15 presents the distribution of childcare hours relative to mother's work hours for pre-school children. The number in each cell shows the percentage of children with childcare hours and mother's work hours in the indicated bands. For example, the first bold number, of 5.4 per cent, shows that just over one in twenty pre-school children of working mothers receive between 1 and 10 hours of childcare each week, while their mothers work between 1 and 10 hours. It should be noted that work hours are based on the mother's 'normal work hours', which are not specific to term time or holidays and are presumed to be constant across the year.

The figures in bold on the diagonals in the table indicate combinations where the childcare hours and mother's work hours are matched. Just over a third of children (34 per cent) fall into this category, but there is a tendency for care hours to fall short of work

**Table 6.15. Banded Hours of Childcare and Mother's Hours of Work: Pre-School Children**

| % of children in each cell | Mother's hours of work: | | | | |
|---|---|---|---|---|---|
| Hours of childcare: | 1–10 | 11–20 | 21–30 | 31–40 | 40+ |
| None | 8.7 | 10.9 | 4.1 | 4.1 | 1.7 |
| 1–10 | **5.4** | 6.8 | 2.7 | 1.6 | 0.4 |
| 11–20 | 0.6 | **11.4** | 3.9 | 2.9 | 0.6 |
| 21–30 | 0.1 | 2.9 | **7.1** | 2.9 | 0.6 |
| 31–40 | 0.1 | 0.4 | 1.2 | **8.4** | 1.2 |
| 40+ | 0.0 | 0.1 | 0.5 | 6.9 | **1.9** |

hours, particularly for mothers working 30 hours or less each week. It is also the case that working mothers reporting that they use no childcare are more likely to be working 20 hours or less each week than longer hours.[116]

Similar tabulations for school children of working mothers are presented in Tables 6.16 and 6.17 for term time and the holidays. For term time, it is presumed that school provides 30 hours of care and that mothers will time their work hours to fit in with school hours. Hence, mothers working 30 hours or less do not require any childcare to facilitate working (beyond travel-to-work time). In this case, some 58 per cent of children receive weekly hours of care matching their mother's work hours, although a substantial proportion of this group consist of children of mothers working part-

**Table 6.16. Banded Hours of Childcare and Mother's Hours of Work: School Children during Term**

| % of children in each cell | Mother's hours of work: | | | | |
|---|---|---|---|---|---|
| Hours of childcare: | 1–10 | 11–20 | 21–30 | 31–40 | 40+ |
| None | **11.8** | **23.4** | **14.0** | 10.0 | 3.2 |
| 1–10 | 2.3 | 7.3 | 6.5 | **7.9** | 2.0 |
| 11–20 | 0.1 | 1.6 | 1.4 | 4.9 | **1.1** |
| 21–30 | 0.0 | 0.2 | 0.5 | 0.6 | 0.2 |
| 31–40 | 0.0 | 0.0 | 0.0 | 0.3 | 0.1 |
| 40+ | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 |

**Table 6.17. Banded Hours of Childcare and Mother's Hours of Work: School Children during Holidays**

| % of children in each cell | Mother's hours of work: | | | | |
|---|---|---|---|---|---|
| Hours of childcare: | 1–10 | 11–20 | 21–30 | 31–40 | 40+ |
| None | 12.0 | 21.6 | 13.2 | 11.5 | 3.7 |
| 1–10 | **1.9** | 3.4 | 1.9 | 1.3 | 0.4 |
| 11–20 | 0.2 | **5.9** | 2.7 | 1.7 | 0.5 |
| 21–30 | 0.0 | 1.4 | **3.7** | 2.1 | 0.4 |
| 31–40 | 0.1 | 0.3 | 0.7 | **4.7** | 1.0 |
| 40+ | 0.0 | 0.1 | 0.3 | 2.9 | **0.8** |

[116] Data on mothers with a child aged under 5 in the 1991/92 General Household Survey also show that average weekly hours of childcare increase as the mother's work hours rise (table 2.13 in Duncan, Giles and Webb (1995) or figure 3 in Duncan and Giles (1996)).

time receiving no additional care beyond school hours. For full-time mothers, who do require additional care to cover work hours, there is a tendency to use less than sufficient hours of childcare.

During the holidays, only 17 per cent of school children have childcare hours matching their mother's work hours. The substantial non-use of care also shows up as insufficient use in the holidays. However, it should be remembered that school holidays are a much smaller proportion of the year than term time and that childcare may primarily be covered by mothers (and partners) taking holiday leave during this period, while the hours of work bands are based on 'normal working hours' and would not allow for this.

### *6.5.5 Multivariate Analysis: Pre-School Children*

In order to measure the effect of these and other factors on the choice of childcare hours, regression models for the total hours of childcare (conditional on using childcare) were estimated.[117] These models included the mother's work hours in order to show how the divergence in childcare hours above or below the hours strictly required to cover the mother's work hours is related to family characteristics. The results for pre-school children are presented in Table 6.18 and for school children in Table 6.19. The coefficients show the change in the number of hours associated with a one-unit change in the variable of interest.

Pre-school children receive, on average, more hours of childcare, the longer their mother works.[118] Indeed, the closeness of the coefficient on work hours to unity (0.888) shows that each additional work hour is associated with almost an additional hour of care. This does not imply, however, that the hours of care and hours of work are close to being equal (as was seen in Table 6.15). It just means that the

[117] The regression model was estimated separately for those using informal care and for those using formal care, but there were few significant differences in the outcomes. Combining both types of care gives a picture of the total level of childcare hours as well as enhancing sample size.

[118] The positive coefficient on the linear work hours term and the negative coefficient on the work hours squared term show that hours of childcare rise with work hours but at a declining rate. The turning point where childcare hours begin to fall with increases in work hours is at 88 hours of work each week.

**Table 6.18. Regression Models for Average Weekly Hours of Childcare: Pre-School Children of Working Mothers**

| *Dependent variable:* Average weekly hours of childcare | Coefficient | Standard error |
|---|---|---|
| *Mother's work:* | | |
| Hours | 0.888*** | 0.060 |
| $(Hours)^2$ | –0.005*** | 0.001 |
| Works at home | –4.763*** | 1.235 |
| *Child aged:* | | |
| 0 | –0.337 | 0.512 |
| 1 | 0.076 | 0.439 |
| 3 | –2.005*** | 0.439 |
| 4 | –3.555*** | 0.530 |
| *Mother:* | | |
| Age | 0.051 | 0.283 |
| $(Age)^2$ | 0.000 | 0.004 |
| Left education aged: | | |
| 16 | –2.361*** | 0.509 |
| 17–18 | –2.079*** | 0.508 |
| after 21 | –0.078 | 0.622 |
| Non-white | 1.269** | 0.647 |
| *Family:* | | |
| Partner | –5.095*** | 0.513 |
| Partner not working | –0.167 | 0.684 |
| No. of older children | –0.987* | 0.573 |
| No. of families | –0.010 | 0.553 |
| Years lived here | 0.005 | 0.055 |
| *Resources:* | | |
| Log(mother's earnings) | 4.207*** | 0.365 |
| Log(other income) | 0.640*** | 0.188 |
| No. of pre-school children | –0.678** | 0.337 |
| No. of school children | –1.709*** | 0.265 |
| *Time:* | | |
| Year | –0.019 | 0.113 |
| *Region:* | | |
| North shires | 0.196 | 0.557 |
| Central shires | 0.366 | 0.515 |
| South shires | 0.543 | 0.454 |
| Central metropolitan | 0.685 | 0.752 |
| Inner London | 2.228** | 0.887 |
| Outer London | 0.930 | 0.666 |
| *Constant* | –13.498*** | 4.666 |
| Adjusted $R^2$ | 0.539 | |
| No. of observations | 4,101 | |

Notes to Table 6.18: The model is conditional upon using childcare. Stars denote that the coefficient is significantly different from 0 at the 1% (***), 5% (**) and 10% (*) levels. Omitted child's age is 2. Omitted mother's age left education is 19–21. 'School children' are aged 4–11. 'Older children' are aged 12–18. 'Other income' includes all family income other than mother's earnings. Mother's earnings and other income are measured in hundreds of pounds per week. Omitted region is northern metropolitan. The coefficients are significantly different between all the shire regions and outer London. Excluding the year and region variables altered the significance of one coefficient: the coefficient on non-white is significant at the 1% level.

deficit between care hours and work hours remains roughly constant as hours of work increase.

Children with mothers who work at home receive an average five hours less childcare than similar children whose mothers work away from home. Pre-school children aged 3 and 4 tend to use fewer hours than their younger counterparts. Controlling for other differences, 3-year-olds use an average two hours less than 2-year-olds each week, while 4-year-olds use an average three-and-a-half hours less then 2-year-olds. This shows that the raw differences over age shown in Table 6.11 were not simply reflecting correlations between the child's age and differences in the other factors, especially the mother's work hours.

Mother's age has no significant independent impact on the hours of care used, but mothers who have been in education longer use longer hours of childcare than those with shorter educations. Children of non-white mothers also use longer hours, possibly reflecting a greater availability of long hours of informal care for this group.

Children of mothers with partners use fewer hours, confirming that the raw difference shown in Table 6.14 cannot be explained by differences in other characteristics. Even controlling for differences in the mother's work hours, children of mothers with partners receive an average five hours less care each week than their counterparts with single mothers. As suggested above, this could reflect the use of additional hours by single mothers to generate child-free time outside of work hours that might otherwise be provided by a partner's childcare. Interestingly, whether the partner is working or not is only important for the propensity to use any care rather than the hours of care. A greater number of older children in the family is associated with fewer hours, but neither the number of families in the household

nor the number of years at the current address is found to have any significant impact on the hours of care.

Both mother's earnings and other family income have positive impacts on the number of hours used, but the mother's earnings effect is much larger. For example, evaluated at the sample means, a rise in mother's weekly earnings from £100 to £150 is associated with an increase in weekly childcare hours of 1.7, compared with a rise of 0.3 hours for a similar increase in other family income. It should be recalled that the earnings effect occurs even controlling for the mother's hours of work and reflects an ability to afford the care rather than a need generated by the mother's employment. Larger families tend to use fewer hours, although the effect is not large and is possibly due to budgetary considerations and the ability to afford care for a larger number of children.

There has been no significant change in the hours of care over time, but there are some significant regional variations. In particular, average hours in inner London tend to be higher than in other parts of the country, even allowing for differences in other characteristics. For example, pre-school children receive an average 2.2 hours more each week in inner London than in the northern metropolitan region.

### *6.5.6 Multivariate Analysis: School Children*

For school children, the results from separate regressions for term time and holidays are shown in Table 6.19.

The hours of childcare are greater the longer the mother's hours of work during both term time and the holidays. Although there is a close matching during the holidays for school children (the coefficient is close to unity at 0.956), the relationship is far from matched during the term (the coefficient is only 0.214), probably because zero hours of childcare are required until work hours reach 30 during term time.[119] As was the case with pre-school children, this does not imply that the hours of care during the holidays and hours of

[119] To illustrate why the coefficient on the work hours is considerably less than 1 when an initial amount of work can be undertaken without the need for any childcare, consider the example of two women, one of whom works 10 hours with no childcare and the other of whom works 40 hours and uses 10 hours of care. In this example, a 30-hour increase in work hours is associated with a 10-hour rise in childcare or a rise of 0.33 (10/30) hours of childcare for each additional hour worked.

work are close to being equal, but just that the deficit between care hours and work hours remains roughly constant as hours of work increase.

School children of mothers who work at home use fewer hours during the holidays (an average of three per week) than children of mothers who work away from home. The hours of care used during term time decline with the child's age, but there is no similar impact on the hours used during the holidays.

Mother's age only affects the hours during term time, with older mothers tending to use fewer hours. Mothers with longer educations use fewer hours during term and more hours during the holidays than those who were educated for less time. Non-white mothers who use care tend to use more hours during the term (on average, almost one-and-a-half hours more each week) than their white counterparts.

The presence of a partner reduces hours used: mothers with a partner use almost four hours less each week than single mothers during both term time and the holidays, consistent with the earlier raw averages showing shorter childcare hours for partnered mothers. A non-working partner further reduces the hours of care used for school children during the holidays.

The number of older children in the family is especially important for reducing the hours of care during the holidays, suggesting that these older children may be more available to provide care during the holidays than for after-school care during term. Interestingly, the only significant impact of the number of families on childcare use is a positive impact on the hours of care used during term, suggesting either longer hours available from live-in informal sources or the presence of live-in formal sources such as au pairs. Years at the current address have no impact on the hours used.

As was the case for pre-school children, mothers with higher earnings use longer hours during the term and holidays than mothers with lower levels of earnings. However, the level of other family income has no significant impact on the hours of care chosen, showing yet again that the *source* of family income is important for childcare decisions.

During term time, the number of pre-school siblings increases the hours of care used for school children. This may be so because

**Table 6.19. Regression Models for Average Weekly Hours of Childcare: School Children of Working Mothers**

| *Dependent variable:* Average weekly hours of childcare | Term time Coeff. | Standard error | Holidays Coeff. | Standard error |
|---|---|---|---|---|
| *Mother's work:* | | | | |
| Hours | 0.214*** | 0.040 | 0.956*** | 0.064 |
| $(Hours)^2$ | –0.001** | 0.001 | –0.007*** | 0.001 |
| Works at home | 1.235 | 0.899 | –2.947** | 1.341 |
| *Child aged:* | | | | |
| 4–5 | 1.770*** | 0.306 | 0.361 | 0.451 |
| 8–9 | –0.032 | 0.289 | –0.194 | 0.422 |
| 10–11 | –0.504 | 0.318 | 0.077 | 0.460 |
| *Mother:* | | | | |
| Age | –0.707*** | 0.218 | –0.180 | 0.318 |
| $(Age)^2$ | 0.008*** | 0.003 | 0.001 | 0.004 |
| Left education aged: | | | | |
| 16 | 1.147*** | 0.361 | –1.364*** | 0.565 |
| 17–18 | 0.917** | 0.369 | –1.211** | 0.584 |
| after 21 | 0.340 | 0.479 | –1.262 | 0.868 |
| Non-white | 1.437*** | 0.458 | 0.689 | 0.699 |
| *Family:* | | | | |
| Partner | –3.711*** | 0.306 | –3.659*** | 0.432 |
| Partner not working | –0.697 | 0.445 | –1.848*** | 0.672 |
| No. of older children | –0.230 | 0.225 | –1.593*** | 0.340 |
| No. of families | 1.577*** | 0.367 | 0.516 | 0.551 |
| Years lived here | –0.017 | 0.033 | –0.082 | 0.048 |
| *Resources:* | | | | |
| Log(mother's earnings) | 1.898*** | 0.258 | 3.320*** | 0.371 |
| Log(other income) | 0.118 | 0.133 | –0.173 | 0.195 |
| No. of pre-school children | 0.922*** | 0.259 | –1.624*** | 0.375 |
| No. of school children | 0.129 | 0.174 | –1.498*** | 0.251 |
| *Time:* | | | | |
| Year | 0.178** | 0.081 | –0.361*** | 0.118 |
| *Region:* | | | | |
| North shires | 0.321 | 0.373 | 0.044 | 0.536 |
| Central shires | 0.105 | 0.349 | 0.469 | 0.503 |
| South shires | 0.185 | 0.310 | 0.619 | 0.448 |
| Central metropolitan | 0.013 | 0.503 | 0.409 | 0.742 |
| Inner London | 1.309** | 0.648 | 3.637*** | 1.040 |
| Outer London | 1.523*** | 0.481 | 1.781** | 0.723 |
| *Constant* | 8.675** | 3.954 | –0.408 | 5.731 |
| Adjusted $R^2$ | 0.177 | | 0.398 | |
| No. of observations | 4,805 | | 4,901 | |

Notes to Table 6.19: The models are conditional upon using childcare. Stars denote that the coefficient is significantly different from 0 at the 1% (***), 5% (**) and 10% (*) levels. Omitted child's age is 6–7. Omitted mother's age left education is 19–21. 'School children' are aged 4–11. 'Older children' are aged 12–18. 'Other income' includes all family income other than mother's earnings. Mother's earnings and other income are measured in hundreds of pounds per week. Omitted region is northern metropolitan. For term time, the coefficients are significantly different between the central shires, south shires and central metropolitan areas on the one hand and inner London on the other, and between all shire areas and the central metropolitan area on the one hand and outer London on the other. For the holidays, the coefficients are significantly different between inner London and all other areas and between all shire regions and outer London. Excluding the year and region variables for the term-time regression alters the significance of three coefficients: the coefficients on mother's work hours squared, children aged 10–11 and partner not working are significant at the 1% level. Excluding the year and region variables for the holiday regression alters the significance of two coefficients: the coefficients on non-white and partner not working are significant at the 5% level.

families already using care for a pre-school sibling may face a lower additional cost for each hour of after-school care for the school child.[120] However, during the holidays, the numbers of pre-school and school siblings reduce the hours of care used, possibly reflecting greater financial constraints for larger families.

There have been some significant changes in the hours of care used for school children over the five-year period, even controlling for changes in characteristics. However, while weekly hours of care during term have risen by an average 0.18 hours each year, weekly hours during the holidays have fallen by an average 0.36 hours each year.

As was the case for pre-school children, weekly hours of care are significantly longer in London than in the rest of the country. For example, school children in inner London receive an average 3.6 hours more care each week during the holidays than those living in the northern metropolitan region. Given that the model controls for the mother's work hours, this divergence reflects either longer commuting times to work or more child-free leisure time for mothers in the capital.

[120] For example, a childminder already caring for a pre-school child all day may charge less for a few additional hours for a school-age sibling than one who cares solely for the school child at the end of the day.

## 6.6 Weekly Family Childcare Expenditure

In this section, the focus turns from the amount of childcare used to the cost. The analysis begins with an examination of the patterns of total family weekly childcare expenditure and then turns in the next section to examine hourly cost for each child.[121] From a policy perspective, the family is the most appropriate unit of analysis for considering the likely impact of targeting childcare subsidies towards poorer families.

### *6.6.1 Distributions of Family Childcare Expenditure*

Working mothers with a pre-school child using paid childcare spend an average £62.65[122] each week on childcare, covering all their pre-school and school children, amounting to an average 13.4 per cent of their total net family income. Working mothers with only school children spend an average £28.25 on childcare during term time and £53.09 during the holidays, corresponding to an average 7.0 per cent and 13.6 per cent of total net family income.

Figure 6.5 presents the distribution of weekly childcare expenditures for those families using paid care, rounded to the nearest £10, for working mothers with a pre-school child. The most common expenditure is around £30 each week, but the distribution is fairly evenly spread across the £5-to-£65 range. Only 15 per cent of mothers pay £105 or more each week to provide care for all of their children.

[121] Duncan, Giles and Webb (1995) provide tabulations of the average weekly childcare expenditure and hourly cost for children under the age of 5 (section 2.3) using data from the 1991/92 General Household Survey, but direct comparisons with the tables here is difficult because their tables are for households rather than for each child and include non-working as well as working mothers.

[122] All expenditures have been indexed to January 1999 prices in line with the retail price index.

**Figure 6.5. Distribution of Weekly Family Childcare Expenditure for Working Mothers with a Pre-School Child**

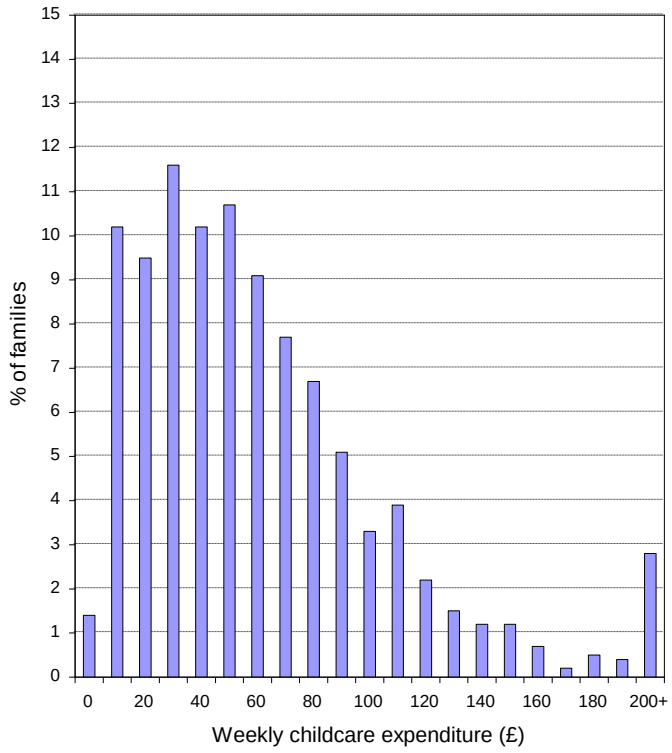
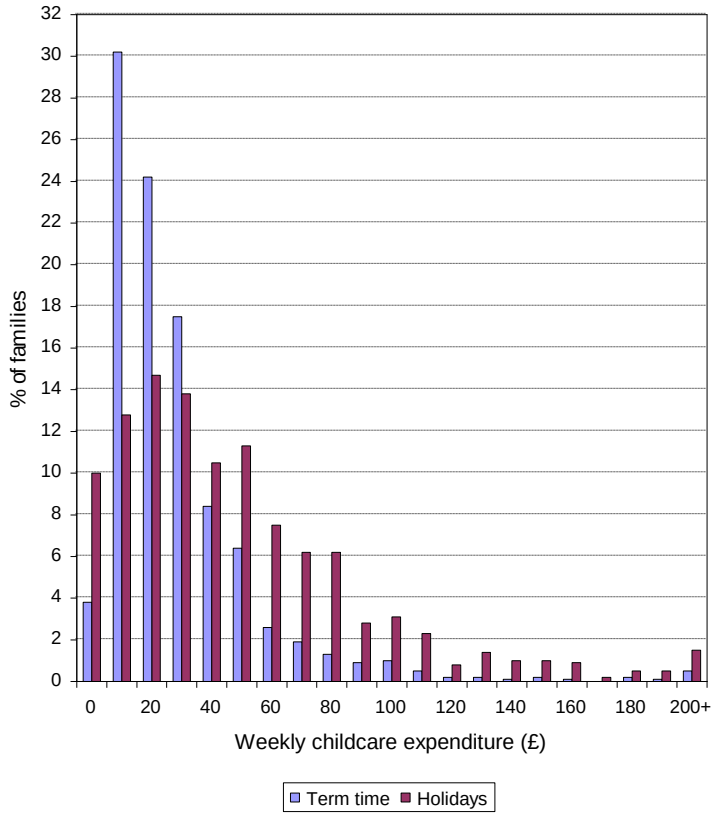



Figure 6.6 presents the corresponding picture for families with only school children, showing the distributions of expenditures separately for term time and for the holidays. During term time, the most common payment is around £10, with very few mothers (less than 10 per cent) paying more than £55 each week. Not surprisingly, expenditures during the holidays correspond much more closely to the picture for mothers with pre-school children, with fairly even proportions of mothers paying an amount in the £5-to-£55 range. A little over 10 per cent pay £105 or more each week.[123]

[123] La Valle et al. (2000) present distributions of weekly childcare costs for (working and non-working) parents with a child aged 14 or under (table 6.14) with broadly similar patterns to those presented here.

**Figure 6.6. Distribution of Weekly Family Childcare Expenditure for Working Mothers with Only School Children**




### *6.6.2 By Family Type and Mother's Work Status*

For families with pre-school children and those with only school children, the variation in weekly expenditure will reflect differences in family size, the weekly hours of childcare (influenced partly by the mother's hours of work) and the hourly cost paid. Table 6.20 considers the variation by family structure (whether the family contains just pre-school children, a mix of pre-school and school children or just school children), the number of children, the mother's partnership status and whether the mother works part- or full-time.

**Table 6.20. Average Weekly Family Childcare Expenditure by Number of Children and Mother's Work and Partnership Status**

| | Average weekly family expenditure (% of family net income) | | | |
|---|---|---|---|---|
| | Mother works part-time | | Mother works full-time | |
| | with partner | single | with partner | single |
| *During term:* | | | | |
| One pre-school child | 40.95 | 30.02 | 71.79 | 62.90 |
| | (9.9) | (14.7) | (13.3) | (23.7) |
| Two or more pre-school children | 69.46 | 31.07 | 119.26 | 112.12 |
| | (13.5) | (13.1) | (18.0) | (24.5) |
| Two or more pre-school and school children | 41.62 | 30.01 | 80.06 | 83.26 |
| | (10.0) | (12.5) | (15.0) | (24.9) |
| One school child | 15.61 | 14.41 | 28.12 | 29.34 |
| | (4.6) | (7.1) | (5.7) | (10.4) |
| Two or more school children | 21.93 | 21.05 | 40.61 | 42.00 |
| | (5.9) | (8.9) | (7.5) | (12.3) |
| *During holidays:* | | | | |
| Two or more pre-school and school children | 50.46 | 36.51 | 93.77 | 85.86 |
| | (12.5) | (14.4) | (17.7) | (27.5) |
| One school child | 34.62 | 25.60 | 53.24 | 52.95 |
| | (9.5) | (13.4) | (11.1) | (18.7) |
| Two or more school children | 43.89 | 42.86 | 76.99 | 86.10 |
| | (11.7) | (17.7) | (14.3) | (25.0) |

Notes: Averages are for those using paid care (non-zero values). Net family income includes all sources of income net of taxes and benefits.

The most striking feature in the table is the differences between mothers who work part-time and those who work full-time. Across all types of family structure, average family weekly childcare expenditure is much higher for families with a full-time rather than part-time working mother, with the difference often being in the order of twice as much.[124] For example, mothers with partners and a mix of pre-school and school children pay an average £41.62 during term if they are working part-time and £80.06 if they are working full-time. This magnitude of difference is not surprising: full-time

[124] Using data from postal surveys of child benefit recipients conducted in the early 1990s, Finlayson, Ford and Marsh (1996) also show that family spending on childcare rises with the mother's hours of work (table 6).

working mothers tend to work twice as many hours as part-time working mothers[125] and are therefore likely to require twice as many childcare hours. However, it is interesting to note that as a proportion of net family income,[126] families with full-time working mothers also spend considerably more on childcare than those with part-time working mothers. This would be a natural outcome if there are sources of family income that are fixed independently of the mother's work decision, such as a partner's earnings or child support payments. In this situation, even if childcare expenditures rise proportionately with mother's earnings, they will form a larger fraction of total family income at higher levels of the mother's earnings.[127]

It is not surprising that families with more children spend more on childcare than smaller families, both in absolute amounts and as a proportion of family income.[128] For example, full-time working mothers with a partner spend an average £71.79 during term (13.3 per cent of family income) if they have just one pre-school child, but spend an average £119.26 (18.0 per cent of family income) if they have two or more pre-school children. However, it is noteworthy that the difference for most family types is far less than a factor of two (especially as the 'two or more' category includes three, four and five children), indicating that the average cost *per child* falls with family size.[129]

Naturally, much smaller weekly amounts are spent on childcare for school children than for pre-school children during the term because of the provision of free 'school-time' care. However,

[125] In the sample of working mothers with children under the age of 12, part-time working mothers worked an average 16.8 hours each week, while full-timers worked 38.3 hours each week.

[126] Net family income includes all sources of income net of taxes and benefits.

[127] To illustrate this point, consider the following hypothetical example. Suppose other family income is £100, mothers who work part-time earn £100 and pay £50 in childcare while mothers who work full-time earn £200 and pay £100 in childcare. Childcare expenditure as a proportion of family income is one-quarter for part-time mothers and one-third for full-time mothers.

[128] However, the figures presented by Finlayson, Ford and Marsh (1996, table 6) show little increase in family spending on childcare as the number of children increases in families with a working mother.

[129] The cost per child is investigated in depth in Section 6.7.

comparing the term-time figures for pre-school children with the holiday costs for school children suggests that when the same number of hours of care are required, expenditures for pre-school children tend to be higher than those for school children in comparable circumstances. For example, a part-time working mother with a partner pays an average £69.46 for childcare each week during term for two or more pre-school children, compared with an average £43.89 each week during the holidays for two or more school children.

Finally, the figures suggest that single mothers tend to spend less on childcare for pre-school children and around the same for school children as their counterparts with partners, although the pattern is not consistent across all family structures and both work choices.[130] It is clear that single mothers spend a higher proportion of family income on childcare than mothers with partners, reflecting, at least in part, their lower levels of income rather than purely differing childcare choices. For example, single mothers working full-time with a mix of pre-school and school children spend an average 27.5 per cent of family income on childcare during the holidays, compared with 17.7 per cent for similar mothers with partners.

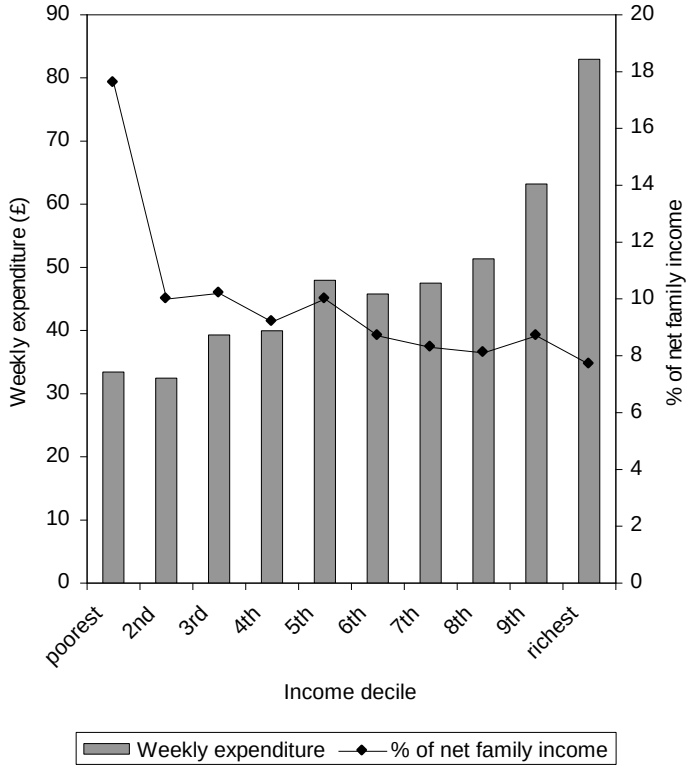
### *6.6.3 By Family Income*

One of the most important questions from a policy perspective is how childcare expenditures are related to the level of family income. In particular, how much of a childcare subsidy would go to helping 'poorer' rather than 'richer' families?

Figure 6.7 presents the average weekly family expenditure on childcare by income deciles. The first block on the left shows the average weekly childcare expenditure for the poorest one-tenth of households by family income (net of all taxes and benefits), the second block shows the weekly expenditure for the next poorest tenth, and so on up to the expenditure for the richest one-tenth of households. The scale for the weekly expenditure is shown on the

[130] This is consistent with the family expenditures presented in Finlayson, Ford and Marsh (1996, table 6), which show that couples with a working mother tend to spend more on childcare than single working mothers.

**Figure 6.7. Family Childcare Expenditure by Income Decile: Couples with One Child**




Notes: Averages are for those using paid care (non-zero values). Net family income includes all sources of income net of taxes and benefits. Childcare expenditures are for term time.

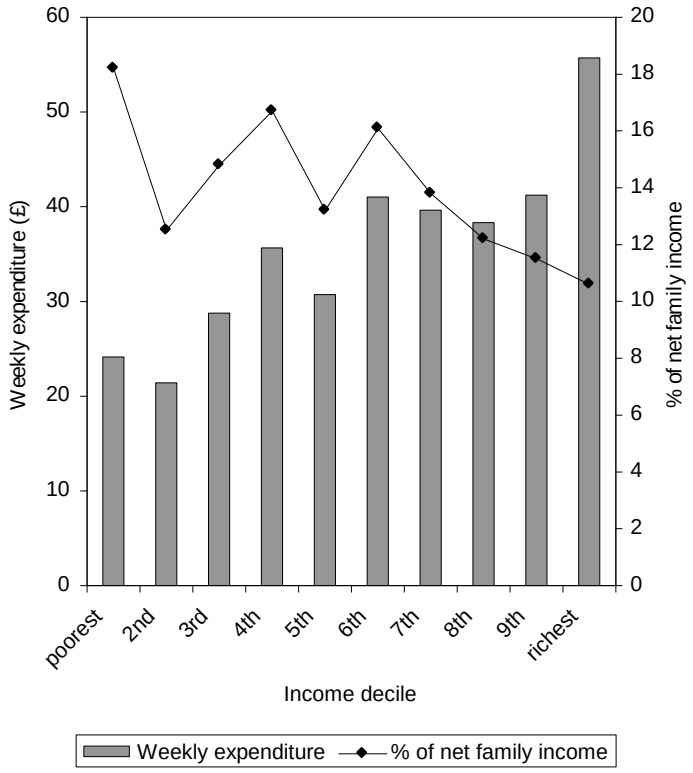
left-hand axis. The plotted line indicates the percentage of net family income spent on childcare for each of the deciles with the scale shown on the right-hand axis. The figure is for term-time expenditure for couples with one child, but the picture is very similar for couples with more than one child and for childcare expenditure during the holidays.

The average weekly expenditure rises with family income: not surprisingly, families with more income spend more on childcare. Any childcare subsidy defined as a straight proportion of childcare expenditure would give greater absolute benefit to families with

higher income, assuming that the pattern of expenditures did not change. On the other hand, the percentage of family income spent on childcare decreases with income: poorer families devote a larger slice of their resources to providing care for their children, possibly providing a justification for giving disproportional help with childcare expenses to those at the bottom end of the income distribution.

Figure 6.8 presents the picture for single mothers with one child. The pattern is similar to that for couples, with a rising absolute amount but a decreasing proportion of income spent on childcare as

**Figure 6.8. Family Childcare Expenditure by Income Decile: Single Mothers with One Child**



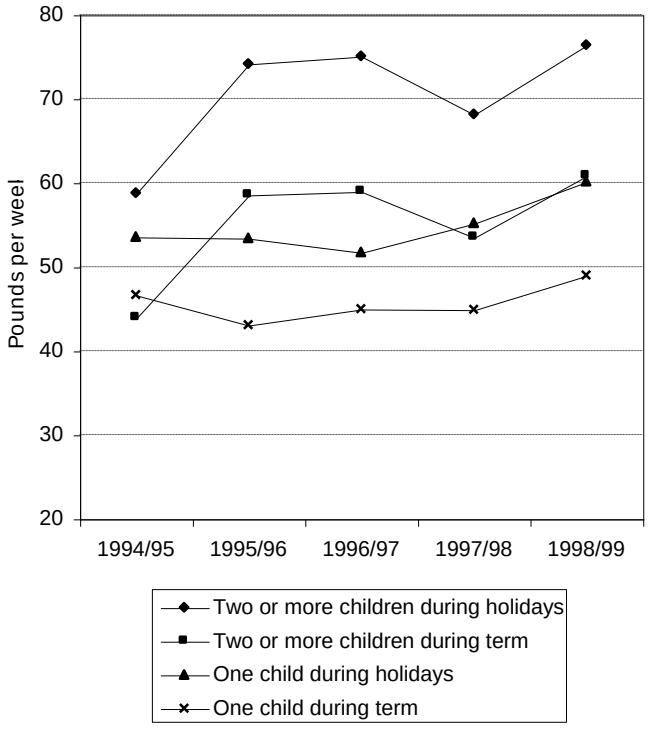

Notes: Averages are for those using paid care (non-zero values). Net family income includes all sources of income net of taxes and benefits. Childcare expenditures are for term time.

family income rises. However, the changes are not as marked as for couples: expenditures rise less rapidly, but income also rises much less rapidly across the income distribution. Indeed, for single mothers with two or more children, the proportion of income spent on childcare is approximately equal for those at the bottom and top ends of the income distribution. Nevertheless, the conclusion that childcare subsidies as a simple proportion of expenditure will benefit families with higher income to a greater degree holds for single mothers as well as couples.

### *6.6.4 By Year*

The amount spent on childcare by families has risen slightly over the five-year period of the study. Figure 6.9 presents the average weekly amount spent for families purchasing childcare, by year. As the

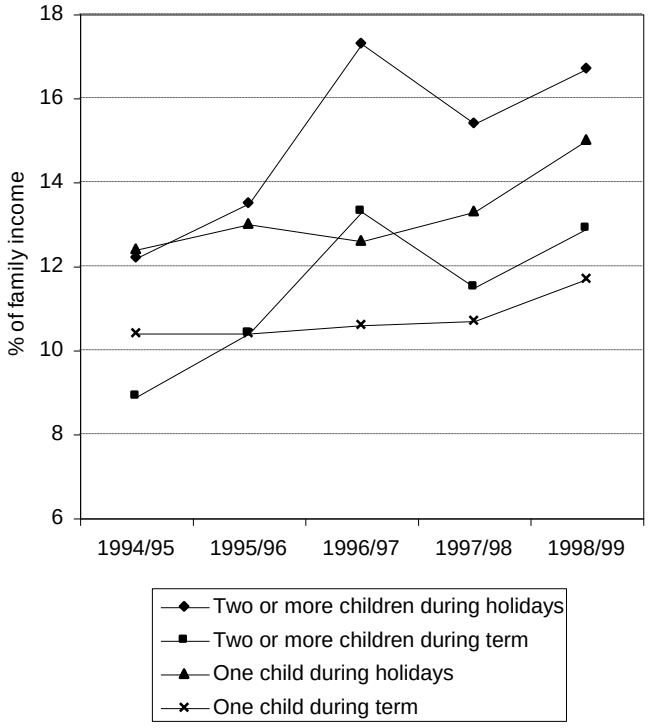
**Figure 6.9. Family Childcare Expenditure by Year**



figures have been indexed to allow for inflation, the slight upward trend represents an increase in spending in real terms.[131] This increase appears more dramatic for those with two or more children than for those with a single child, although it is not surprising that the trends for term time and holidays closely mirror each other, as there is typically little difference between the two for pre-school children.

Not only has the amount spent on childcare risen, but also the proportion of family income allocated to childcare has increased over the five-year period. Consistent with the changes in amounts spent, Figure 6.10 shows that the rise has been most dramatic for families with two or more children. For example, a family with two or more

**Figure 6.10. Childcare Expenditure as a Percentage of Family Income by Year**



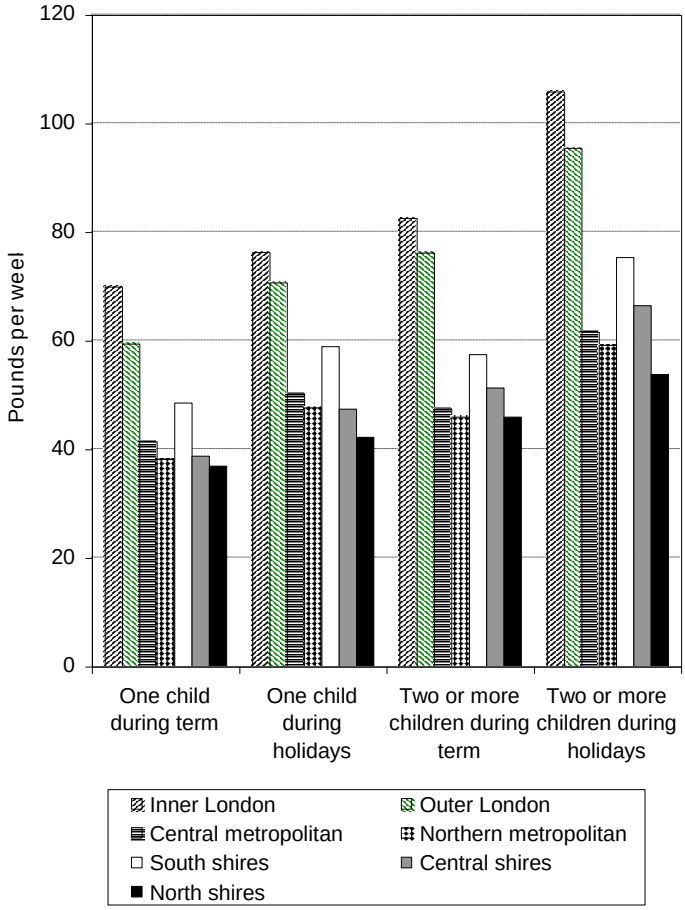

[131] Finlayson, Ford and Marsh (1996) show that family childcare expenditures by working mothers also rose during the 1991 to 1994 period (table 5a).

children paying for care spent an average 8.9 per cent of its net income on care during the term in 1994/95, compared with an average 12.9 per cent in 1998/99. These increasing expenditures may indicate a desire for longer hours of care, rising costs in the childcare market or a demand for higher-quality and more-expensive care.

### *6.6.5 By Region*

There is large regional variation in the amount spent on childcare. Figure 6.11 presents the average weekly expenditure for families

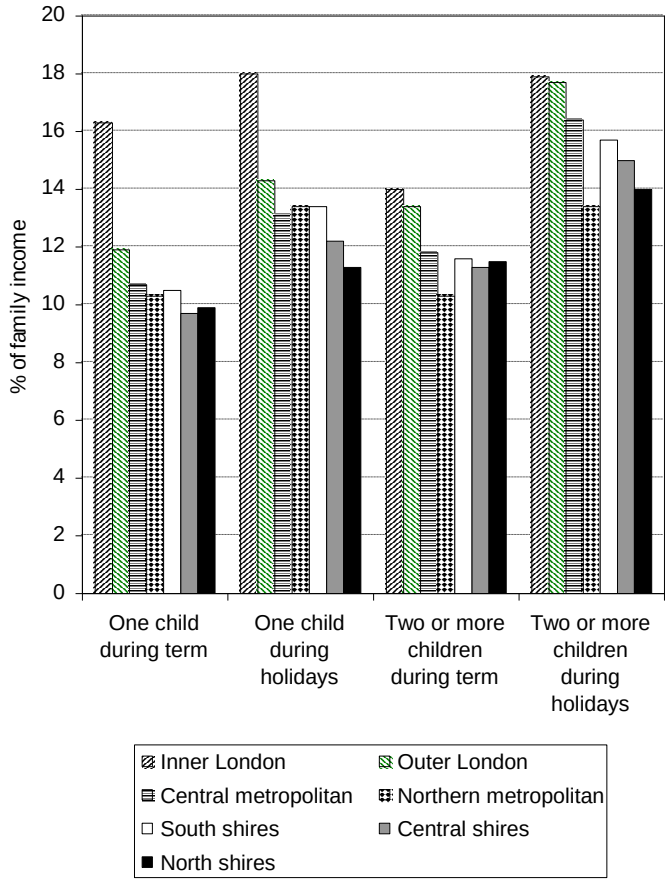
**Figure 6.11. Family Childcare Expenditure by Region**



purchasing childcare with one and two or more children across seven regional groups. Families in both inner and outer London spend much larger amounts than those in other areas of the country, while those in the south shire counties also tend to spend more than those in the remaining regions.

However, incomes vary across the country and these differences may reflect regional variation in family income. Figure 6.12 presents the childcare expenditure as a proportion of family income. Much of the difference in the amounts spent reflects higher income levels, particularly for the south shire counties, as the differences in the

**Figure 6.12. Proportion of Family Income Spent on Childcare by Region**



proportions spent are smaller than the differences in the absolute amounts. Nevertheless, there is a tendency for families in London to spend a higher proportion of their income on childcare than families in other parts of the country, particularly for those with a single child living in inner London.

## 6.7 Hourly Cost of Childcare

Having analysed total weekly childcare expenditure at the family level, this section considers the hourly cost[132] for each child.

### *6.7.1 Distributions of Hourly Cost*

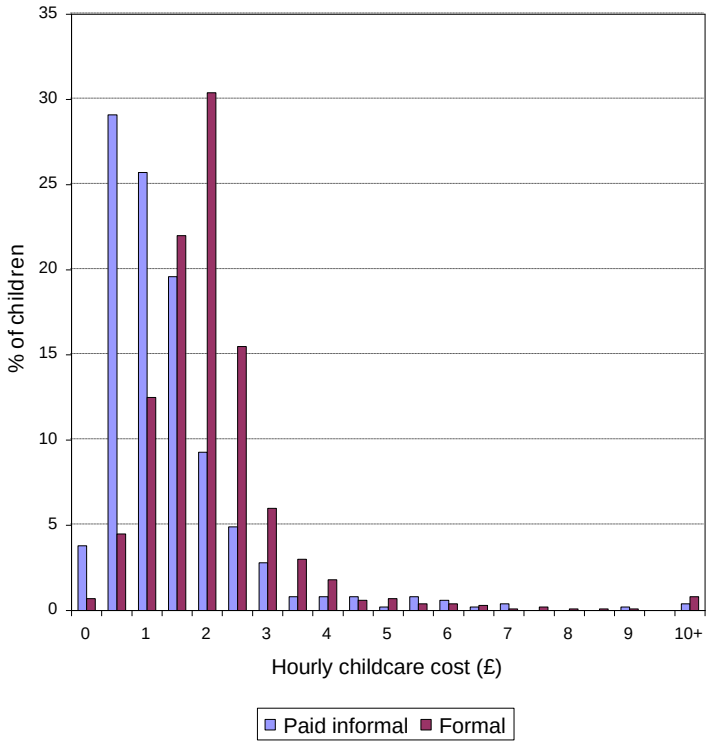
Not only are those using informal care unlikely to pay for it (less than one-quarter of informal care is in exchange for any monetary payment), but the average hourly cost for paid informal care is considerably lower than the cost for formal care. Mothers pay an average hourly cost of £1.36 for each pre-school child in paid informal care, compared with £2.10 for each pre-school child using formal care. For school children, paid informal care costs an average £1.78 per hour and formal care an average £2.23 per hour during term, while the corresponding costs are £1.08 and £1.65 during the holidays. Hence, the highest average hourly amount is for school children during term and the lowest for school children during the holidays.

Figures 6.13 to 6.15 present the distribution of hourly costs, rounded to the nearest 50 pence, for pre-school children, school children during term time and school children during the holidays respectively.

As with the weekly expenditure, the distribution of hourly costs for paid informal care for pre-school children is heavily skewed towards the lower end: the most common cost is around 50 pence, but some 78 per cent of children pay less than £1.75 an hour, while the highest costs are in excess of £10 an hour. The distribution is less

[132] For mixed groups of childcare type, such as 'informal and formal' and 'multiple formal', it is not possible to divide the hours and weekly cost across the different constituent types (see Section 3.1.2). Hence, the hourly cost may average the amount paid for one part across all parts, including a type that may be free.

**Figure 6.13. Distribution of Hourly Childcare Cost for Pre-School Children**

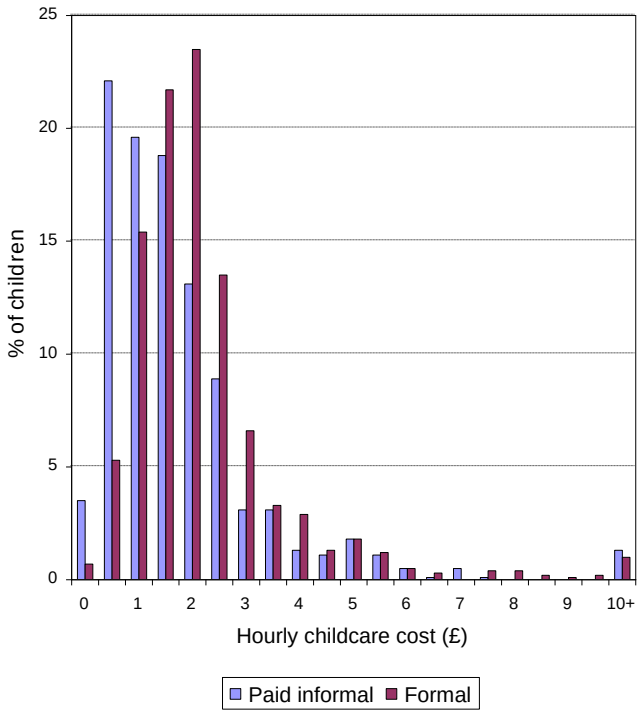



skewed for those in formal care: almost one-third pay around £2 per hour, while 18 per cent pay less than £1.25 and 4 per cent pay more than £4.25 for each hour.[133]

A similar pattern for school children during term is presented in Figure 6.14, although the distributions are not quite so concentrated at the lower ends. In this case, of those using paid informal care, some 64 per cent pay less than £1.75 an hour, while the highest costs are in excess of £10 an hour. The most common hourly cost for those in formal care is again around £2, but the distribution is slightly more

[133] A greater degree of skewness in the distribution of weekly family expenditure for informal childcare over formal care was also reported in Finlayson, Ford and Marsh (1996, table 8).

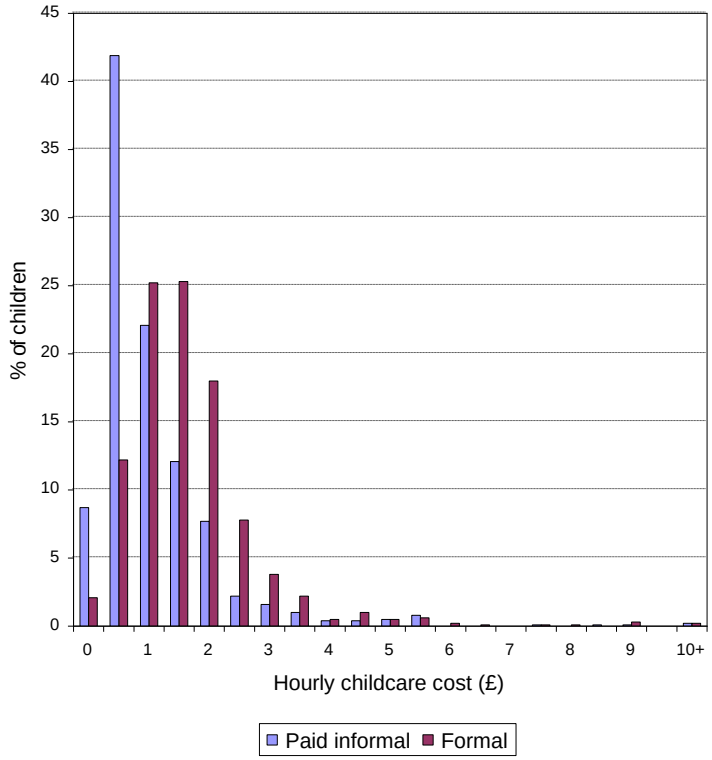
**Figure 6.14. Distribution of Hourly Childcare Cost for School Children during Term**




evenly spread than that for pre-school children: only 24 per cent pay around £2, while 21 per cent pay less than £1.25 and 7 per cent pay more than £4.25 for each hour.

The corresponding picture for school children during the holidays is shown in Figure 6.15. This time, the distributions are very concentrated at the lower ends: more than half of those in paid informal care pay less than 75 pence each hour, while over half of those in formal care pay in the range 75 pence to £1.75. In direct comparison with the previous figures, of those using paid informal care, some 85 per cent pay less than £1.75 an hour. Of those using formal care, some 39 per cent pay less than £1.25, while only 3 per cent pay more than £4.25 for each hour.

**Figure 6.15. Distribution of Hourly Childcare Cost for School Children during Holidays**

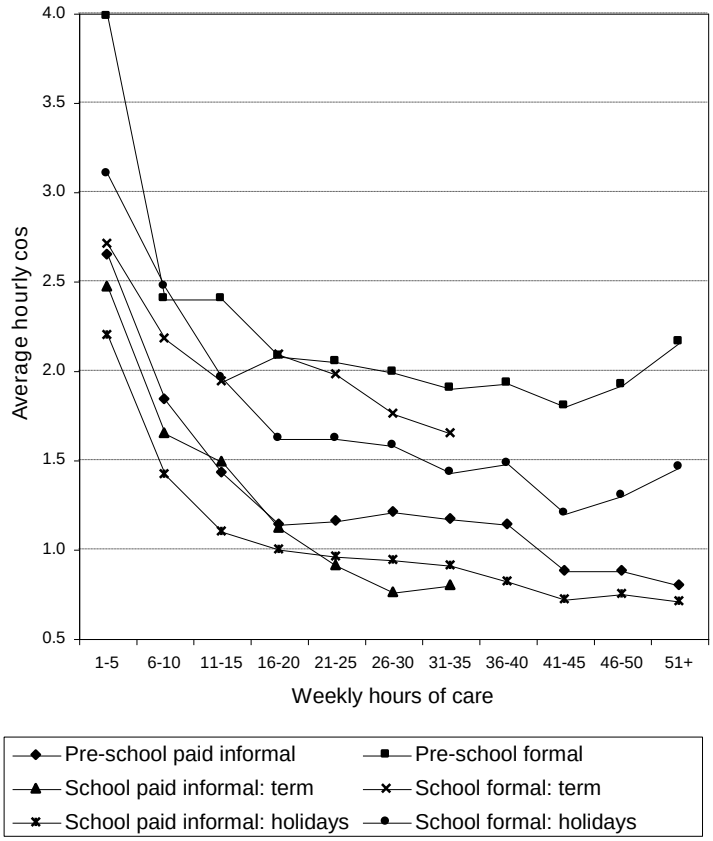



Overall, the three figures show that the broad distribution in weekly expenditure is not due solely to differences in the weekly hours of care, but also reflects considerable variation in the hourly cost of care.

### *6.7.2 By Weekly Hours of Care*

The average hourly cost is plotted against bands of hours of care in Figure 6.16. Because very few school children use childcare in excess of 35 hours each week during term, the lines for this group are truncated at the 31–35 band, presenting the hourly cost for all those using in excess of 30 hours.

**Figure 6.16. Average Hourly Cost by Care Hours**




Notes: For school children during term, the lines are truncated at the 31–35 hours band, presenting the hourly cost for all those using in excess of 30 hours each week.

The most distinctive feature of the graph is the fall in the hourly cost as hours of care increase for both paid informal and formal care for all three groups of children. For example, pre-school children using paid informal care pay an average £2.65 per hour when using one to five hours, £1.84 each hour for six to 10 hours, £1.43 for 11 to 15 hours and £1.14 when using 16 to 20 hours. The corresponding figures for school children using formal care during the holidays are £3.10, £2.47, £1.96 and £1.62. At very long hours, there is also a marked upward turn in the hourly cost for children using formal care.

There are several possible interpretations for this shape. First, it may reflect real economies of scale: over initial hours, the hourly costs fall, while they rise at very long hours for formal care. This would be consistent with the existence of fixed costs for both types of care and rising staff costs in formal types of care when very long hours are required.[134] Alternatively, the picture may indicate a trade-off between quality and quantity in the childcare choice on the part of parents: those requiring longer hours of care may not be able to afford such high quality as those using fewer hours. Finally, it may be explained by variation in the cost of care across regions and parents choosing fewer hours of care in locations where the price is higher.[135]

The other striking aspect of the figure is that the raw differences in the average hourly cost (before differences in hours are taken into account) between pre-school children and school children and between the holidays and term time for school children are due only in part to differences in hours levels. Ignoring use by school children during the term, at every hours level, the most expensive hourly care is for pre-school children in formal care, followed by school children in formal care, pre-school children in paid informal care and school children in paid informal care. This exactly reflects the raw ranking before differences in hours are taken into account.[136] Only in the case of school children during term time is the high hourly cost explained simply by the lower hours used. Although formal care for school children during term has the highest raw average hourly cost, allowing for the hours differences in Figure 6.16 indicates that it is less expensive at each level of hours than that for pre-school children. The picture is similar for paid informal care: school children during term have the highest raw average cost, but allowing for the hours differences places this cost below that for pre-school children. Hence, there is a clear ranking of formal care as more expensive than informal paid care and of care for pre-school children

[134] For example, covering long hours in a nursery may require the payment of overtime or the use of additional staff. Alternatively, a childminder may charge a higher hourly rate for early mornings or evening work.

[135] A complete analysis of the determination of the hourly cost is presented in a general model of price and quality in the childcare market in Chapter 7.

[136] See the opening paragraph of Section 6.7.

as more expensive than that for school children once allowance is made for differences in hours choices.

### *6.7.3 By Age of Child and Type of Care*

Average hourly costs are presented by the age of child and type of care in Table 6.21 for pre-school children and in Tables 6.22 and 6.23 for school children during term time and holidays respectively.

Averaging across all age groups, the hourly cost of care for pre-school children follows approximately the same ranking as the weekly hours (shown in Table 6.11): the most expensive is other formal care (£2.46 per hour), followed by centre (£2.30), multiple formal (£2.26), childminders (£2.11), informal and formal (£1.59) and paid informal (£1.36). This positive relationship between hours and hourly cost by childcare type may appear contrary to the negative relationship between hours of care and hourly cost for individuals shown in Figure 6.16, but the two can be reconciled if there is a declining hourly cost with hours within each childcare type.[137,138] Indeed, the combination of these two observations shows that there is a tendency for those using longer hours of care to use more-expensive types of care. However, it should be noted that the hourly cost ranking by childcare type is not consistent across all the age groups.

The average hourly cost is not closely related to the child's age in an obvious pattern. Aggregated across all types of care, there is a slight convex shape, initially falling with age and then rising, but the changes are relatively small. Within childcare type, there are few distinct patterns, with the notable exception of a declining average hourly cost with age for centre care. The lack of any other distinct patterns may be a consequence of the myriad of factors influencing the average cost.

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[137] To illustrate, consider the following example of four children. Two children use type A care for 10 hours a week at an hourly cost of £5 and one child uses it for 40 hours at an hourly cost of £2. One child uses type B for 40 hours at an hourly cost of £5. Hence, type A has lower average hours (20 versus 40) and lower average hourly cost (£4 versus £5) than type B, but the overall average hourly cost is £5 at 10 hours and £3.50 at 40 hours.

[138] Chapter 7 presents further evidence that there is a declining hourly price with the number of hours within each childcare type.

**Table 6.21. Average Hourly Cost by Age of Child and Type of Care: Pre-School Children**

| | Pre-school children aged: | | | | | |
|---|---|---|---|---|---|---|
| Type of care: | <1 | 1 | 2 | 3 | 4 | All ages |
| Informal, paid | 1.29 | 1.24 | 1.15 | 1.55 | 1.71 | 1.36 |
| Informal and formal | 1.58 | 1.71 | 1.70 | 1.33 | 1.71 | 1.59 |
| Centre | 2.56 | 2.58 | 2.29 | 2.12 | 1.97 | 2.30 |
| Childminder | 2.24 | 1.94 | 2.11 | 2.23 | 2.18 | 2.11 |
| Other formal | 2.50 | 2.62 | 2.14 | 2.52 | 2.49 | 2.46 |
| Multiple formal | 2.03 | 2.49 | 2.14 | 2.26 | 2.18 | 2.26 |
| All types | 2.05 | 1.96 | 1.90 | 1.92 | 1.96 | 1.95 |

Note: Averages are for those using the type of care (non-zero values).

Turning to Table 6.22, school children in centre care during the term pay one of the lowest hourly costs, at £1.91, higher only than the average £1.78 paid for informal care. Those in other types of formal care and multiple types of formal care pay the highest hourly costs, of £2.67 and £2.48 respectively. But these cost rankings are not consistent across different ages of children. The similar ranking between weekly hours and hourly cost across childcare types observed for pre-school children is not in evidence for school children using childcare during term time.

**Table 6.22. Average Hourly Cost by Age of Child and Type of Care: School Children during Term**

| | School children aged: | | | | |
|---|---|---|---|---|---|
| Type of care: | 4–5 | 6–7 | 8–9 | 10–11 | All ages |
| Informal, paid | 1.89 | 1.91 | 1.68 | 1.60 | 1.78 |
| Informal and formal | 2.10 | 2.05 | 1.76 | 2.16 | 2.00 |
| Centre | 1.96 | 1.85 | 1.80 | 2.16 | 1.91 |
| Childminder | 2.26 | 2.19 | 2.07 | 2.26 | 2.19 |
| Other formal | 3.22 | 2.74 | 2.43 | 2.14 | 2.67 |
| Multiple formal | 2.35 | 2.25 | 3.49 | 1.52 | 2.48 |
| All types | 2.22 | 2.14 | 1.94 | 1.95 | 2.07 |

Note: Averages are for those using the type of care (non-zero values).

**Table 6.23. Average Hourly Cost by Age of Child and Type of Care: School Children during Holidays**

| | School children aged: | | | | |
|---|---|---|---|---|---|
| Type of care: | 4–5 | 6–7 | 8–9 | 10–11 | All ages |
| Informal, paid | 1.15 | 1.10 | 1.09 | 0.95 | 1.08 |
| Informal and formal | 1.57 | 1.50 | 1.36 | 1.24 | 1.43 |
| Centre | 1.64 | 1.58 | 2.23 | 1.37 | 1.71 |
| Childminder | 1.85 | 1.78 | 1.76 | 1.51 | 1.76 |
| Other formal | 2.03 | 1.62 | 1.43 | 1.60 | 1.66 |
| Multiple formal | 2.09 | 1.79 | 1.18 | 1.41 | 1.58 |
| All types | 1.60 | 1.45 | 1.38 | 1.22 | 1.43 |

Note: Averages are for those using the type of care (non-zero values).

However, there are distinct patterns in the weekly hours and hourly costs across the child's age for school children during term. In particular, aggregated across all types, the average hourly cost falls from £2.22 for those aged 4–5 to £1.95 for the 10–11 age group. This trend is broadly repeated within childcare type, the main exception being a sudden rise in the hourly cost for the 10–11 age group in three of the types.

The pattern for the average hourly cost for school children during the holidays (Table 6.23) differs from that in the previous two tables. In particular, childminders and centre-type care have the highest hourly cost, ranking above other formal and multiple formal, although the pattern is far from consistent within age groups. However, consistent with the term-time picture, the average hourly cost falls steadily with the child's age, from £1.60 for those aged 4–5 to £1.22 for those aged 10–11. This suggests that either the cost of providing childcare or the chosen level of quality is lower for older school children.

### *6.7.4 By Mother's Work and Partnership Status*

Finally, in Table 6.24, the average hourly cost is analysed by whether the mother has a partner and whether she is working part- or full-time.

**Table 6.24. Average Hourly Cost by Mother's Work and Partnership Status**

| | Mother works part-time | | Mother works full-time | |
|---|---|---|---|---|
| | With partner | Single | With partner | Single |
| *Pre-school children:* | | | | |
| Paid informal care | 1.44 | 1.25 | 1.37 | 1.10 |
| Formal care | 2.15 | 1.64 | 2.10 | 1.96 |
| *School children in term:* | | | | |
| Paid informal care | 1.87 | 1.28 | 1.90 | 1.73 |
| Formal care | 2.19 | 1.61 | 2.33 | 2.18 |
| *School children in holidays:* | | | | |
| Paid informal care | 1.10 | 0.90 | 1.18 | 0.97 |
| Formal care | 1.71 | 1.49 | 1.63 | 1.68 |

Note: Averages are for those using the type of care (non-zero values).

The average hourly cost is consistently higher for formal care than for paid informal care within the work and partnership groups. The hourly cost for pre-school children is generally lower for those with full-time working mothers than for those with part-time working mothers, but the pattern is reversed for school children in both term time and holidays. With one exception, single mothers pay a lower hourly cost than those mothers with partners. For example, a single part-time working mother with a pre-school child in paid informal care pays an average £1.25 per hour compared with £1.44 for her partnered counterpart. A similar mother using formal care pays an average £1.64 compared with £2.15 for her partnered counterpart. Hence, single mothers both use longer hours and pay a lower hourly cost than mothers with partners, even controlling for differences in part- and full-time work and in the choice between informal and formal care.

### *6.7.5 Further Analysis of Hourly Cost*

As already hinted in the discussion, there are several potential sources of the variation in hourly cost. The first is simply that childcare is not a homogeneous good: there is variation in the type and *quality* of care that will generate differences in the cost of care.

Related to this, children are not homogeneous in that the child's age is an important factor in determining the cost of providing care.[139] There may also be economies or diseconomies of scale in producing childcare: the first hours of care may have a different cost from the average cost when large amounts are purchased.[140] Finally, geographical area and the properties of the local childcare market will also impact on the hourly cost.[141]

In analysing the differences in the hourly cost across a broad spectrum of characteristics, it is desirable to identify the sources of the variation, including the impacts of quality and hours choices as well as the local market price. This is especially important for policy evaluation, as measures that impact on the childcare price will have effects on both the hours and quality of care used. However, this requires the use of more sophisticated econometric techniques than the simple probability and regression models used so far. A complete analysis of the determinants of the hourly cost is presented in a general model of price and quality in the childcare market in the next chapter.

## 6.8 Summary

Working mothers face many choices when considering how best to provide care for their children. This chapter has reviewed the types of care chosen by working mothers, how many hours are used and the cost of the care. It has also explored how these choices differ between school term time and the holidays.

The main dichotomy in the type of childcare chosen is between informal care (such as that provided by relatives, friends and neighbours) and formal care (such as day nurseries, playgroups, crèches, childminders, nannies, au pairs and out-of-school clubs):

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[139] For example, children under the age of 2 in nurseries are legally required to have a higher staff:child ratio than those over the age of 2, which raises the cost for younger children.

[140] For example, five hours with a childminder may cost £20 (with an hourly cost of £4) while 10 hours may cost £30 (with an hourly cost of £3) because any fixed costs (such as collecting the child) can be spread over more hours.

[141] For example, areas of high land rents or a short supply of childcare workers are more likely to have higher hourly childcare costs than areas with cheaper inputs.

- 37 per cent of pre-school children with working mothers receive childcare only from informal sources, while 34 per cent spend at least some time in a formal mode of care (Section 6.2.1).
- 32 per cent of young (aged 4–11) school children with working mothers receive childcare only from informal sources, while only 13 per cent spend at least some time in a formal mode of care (Section 6.2.1).
- Most informal care is free: less than one-quarter of informal care is provided in return for a monetary payment (Table 6.1).

For those choosing formal care, a range of different options are used:

- The most popular formal care options for pre-school children are centre care[142] (44 per cent) and childminders (43 per cent) (Table 6.5).
- The most popular formal care option for school children is childminders (60 per cent) (Table 6.5).
- Only a quarter of young school children in formal care are reported as using 'other' types of care, the category that includes after-school clubs and holiday schemes (Table 6.5).

Although the hours of care and price paid are identical in term time and school holidays for most pre-school children of working mothers, it is not surprising to find that hours and costs are very different across the two periods for school children. For children with working mothers using some type of childcare,

- 77 per cent of pre-school children have identical hours and costs during term time and the school holidays (derived from Table 6.9);
- 13 per cent of pre-school children have different hours or hourly cost, 10 per cent use childcare only during term time and less than 1 per cent use it only during school holidays (derived from Table 6.9);

[142] Centre care includes day nurseries, playgroups and crèches.

- 18 per cent of school children have identical hours and costs during term time and the school holidays (derived from Table 6.9);
- 50 per cent of school children have different hours or hourly cost, 15 per cent use childcare only during term time and 17 per cent only during school holidays (derived from Table 6.9).

For pre-school and school children with different usage between the two periods,

- the vast majority have longer hours during the holidays than during term (Table 6.10);
- the vast majority of those using paid care also have a lower hourly cost during the holidays than during term (Table 6.10).

Hence, there are substantial differences between the two periods for school children. However, it is not clear which period is the most important for policy considerations: the term-time situation reflects the majority of the working year, but holiday time is the crunch period when no free 'school-time' care is available.

Weekly hours of care differ not only between term time and school holidays, but also between the different types of care:

- For pre-school children, average weekly hours are 17 for those in unpaid informal care, 24 for those in paid informal care and 28 for those in formal care (Table 6.11).
- The corresponding averages for school children are 9, 11 and 11 during the term and 20, 25 and 29 during the holidays (Tables 6.12 and 6.13).
- Hours of care are similar for pre-school children and school children during the holidays, but are lower for school children during the term (Tables 6.11 to 6.13).
- Average weekly hours of care are lowest for unpaid informal care, higher for paid informal care and highest for formal care (Tables 6.11 to 6.13).

Pre-school children share some common patterns in their average weekly hours with school children during the holidays:

- There are clusterings of care hours around 20 and 40 hours which match with similar clusterings in mothers' work hours (Figures 6.2 and 6.4).

There is a tendency for childcare hours to fall short of the mother's work hours, with substantial proportions of working mothers reporting that they use no childcare. For pre-school children, this may reflect the ability of some mothers to work and care for their children simultaneously. For school children during the holidays, it may also reflect mothers (or their partners) taking holidays or adjusting their work commitments to match the school holidays.

One of the most important factors in determining mothers' employment and childcare decisions is the total cost of childcare:

- The average weekly amount spent on childcare is £62.65[143] (13.4 per cent of net family income) for families with at least one pre-school child (Section 6.6.1).
- Families with only school children spend an average £28.25 (7.0 per cent of net family income) during term time and £53.09 (13.6 per cent of net family income) during the holidays (Section 6.6.1).
- The distributions of these expenditures are heavily skewed, with most payments being at the lower end: the most common payment is around £30 for families with pre-school children, around £10 for families with only school children during term and between £5 and £55 for families with only school children during the holidays (Figures 6.5 and 6.6).

This variation in total weekly expenditures is driven not only by differences in the number of children and the weekly hours of care for each child, but also by substantial variation in the hourly cost of care. In particular, different types of care have very different hourly costs:

- The average hourly cost for paid informal care is £1.36 for a pre-school child and £1.78 during term and £1.08 during the holidays for school children (Section 6.7.1).

[143] This is the average amount spent on all children under the age of 12 for families with a working mother and using paid care. All costs are indexed to January 1999 prices.

- However, the distributions of payments for informal care are skewed towards the lower end, with the most common payments being around 50 pence for all three groups (Figures 6.13 to 6.15).
- The average hourly cost for formal care is £2.10 for a pre-school child and £2.23 during term and £1.65 during the holidays for school children (Section 6.7.1).
- For pre-school children, the 'other' type of formal care (including nannies and au pairs) has the highest average hourly cost, followed by centre care, multiple types of formal care, childminders and paid informal care (Table 6.21).

There are several potential sources of this variation in the hourly cost. The first is that childcare is not a homogeneous good and that variation in the quality of care will generate differences in the cost. Related to this, children are not homogeneous and the child's age may be an important factor in determining the cost of care. Geographical area and the properties of the local childcare market will also impact on the hourly cost. Finally, there may be economies and diseconomies of scale in producing childcare: the first hours of care may have a different cost from the average cost when large amounts are purchased.

Indeed, there is evidence that the number of hours purchased has an important bearing on the hourly cost:

- The average hourly cost falls sharply with hours of care, but there is also an upturn in hourly cost at very long hours (Figure 6.16).
- When allowance is made for the differences in the hours of care, the hourly cost of childcare for school children is no longer more expensive during the term than in the holidays (Figure 6.16).

There are several potential explanations for the negative relationship between hours and hourly cost across all types of care. First, it may reflect economies of scale with respect to weekly hours in the cost of producing childcare. Second, it may reflect a trade-off in quantity versus quality in that parents cannot afford such high-quality care at longer hours. Finally, price variation (for a given level of quality) across geographic areas may lead to purchases of longer hours where the price is lower.

Behind the average figures, there is considerable diversity in the use, hours and cost of childcare, driven by variation in individual families' circumstances. One of the most important factors is the mother's work hours:

- Full-time working mothers are more likely to use paid care than part-time working mothers (Table 6.2).
- Controlling for other related characteristics, the propensity to use informal and formal childcare increases with the mother's work hours but there is no change in the preference between the two (Tables 6.3 and 6.4).
- The hours of childcare also rise with the mother's work hours (Tables 6.14, 6.18 and 6.19).
- Mothers who work full-time tend to spend twice as much on childcare as part-time working mothers (corresponding to twice as many work hours), but this constitutes a much higher proportion of family income (Table 6.20).

These relationships are very intuitive: the more hours of care required, the less likely that the mother will be able to combine working and care simultaneously. However, the propensity for mothers with longer hours to prefer paid care over unpaid informal care is due to related factors (such as earnings or how much informal care is available) rather than the hours of work per se.

Whether a mother works at home also has a substantial effect on her need for childcare:

- The use of informal and formal care is much lower for mothers who work at home (Tables 6.3 and 6.4).
- The hours of childcare are also lower for mothers who use care if they work at home (Tables 6.18 and 6.19).
- Mothers using formal care are more likely to choose centre and other types of care over childminding if they work at home (Tables 6.7 and 6.8).

Again, it is intuitive that mothers can simultaneously work and provide care for their children more easily at home than in the workplace and will therefore use less childcare if they work at home.

Childcare choices are also related to the age of the child:

- Use of formal care peaks at age 2 for pre-school children but declines steadily with age for school children (Figure 6.1).
- The likelihood of using centre care and multiple types of care increases with the child's age for pre-school children using formal care (Table 6.7).
- Three- and 4-year-old pre-school children use fewer hours of childcare than their younger counterparts (Table 6.11).
- For school children, the average hourly cost of childcare declines with age (Tables 6.22 and 6.23).

The increased preference for centre-type care over other types for older pre-school children may reflect a desire for greater educational content as the child ages or a decline in price for centre-based care for older pre-schoolers. The decline in use and hours of childcare for 3- and 4-year-olds is suggestive that mothers may find it easier to combine work with caring for their child or need less child-free time for older pre-school children.

The number of children in the family can affect childcare choices by altering the amount of care required from limited informal sources and the ability to afford paid care for all the children:

- Families with more children are less likely to use childcare and are more likely to use informal than formal care (Tables 6.3 and 6.4).
- Families with more children use fewer hours of childcare for pre-school children and school children during the holidays (Tables 6.18 and 6.19).
- Families using formal types of care are more likely to prefer other types of care relative to centre-type care if they have more children (Tables 6.7 and 6.8).

The preference for other types of formal care (such as nannies or au pairs) relative to centre care for larger families may reflect larger discounts for siblings in these other types of care.

The absence of a partner is also important in the childcare decisions of working mothers:

- Without controlling for other factors, single mothers are more likely to use informal care than their partnered counterparts but are equally likely to use formal care (Table 6.2).
- But when allowance is made for differences in other characteristics, not only are single mothers more likely to use either type of childcare than those with partners, but they are also more likely to use formal than informal care (Tables 6.3 and 6.4).
- Single mothers use more hours of childcare than those with partners (Tables 6.18 and 6.19).
- Single mothers spend a higher proportion of their family income on childcare than mothers with partners (Table 6.20).
- Single mothers pay a lower average hourly cost for childcare for each child (Table 6.24).

Even allowing for differences in work hours and earnings, single mothers make greater use of both informal and formal childcare sources, suggesting that the absence of the partner creates a greater need to use resources from outside the home rather than reducing the potential sources of informal care. Single mothers spend a higher proportion of their income on childcare because of lower levels of family income rather than because of higher childcare expenditure. In addition, the fewer financial resources available to single mothers are reflected in the choice of a lower-cost care rather than lower quantity.

There is evidence that factors influencing either the availability of informal care or the perceived benefits of different types of care are important in some respects. The age of the mother is influential:

- Use of childcare for pre-school children increases with the mother's age (Table 6.3).
- Older mothers of pre-school children are more likely to use formal options over informal care (Table 6.3).

The greater preference for formal sources of care by older mothers may reflect the fact that they are more likely to have moved away from family who might provide informal sources of care or may indicate a perception of greater benefits for the child from formal care.

The length of the mother's education has important effects, even allowing for differences in hours of work and earnings levels:

- Use of formal care rather than informal or no care is greater for mothers with longer educations than for mothers with shorter educations (Tables 6.3 and 6.4).
- For pre-school children, mothers with longer educations use more childcare hours than mothers with shorter educations (Table 6.18).
- For school children during term time, mothers with longer educations are more likely to use childcare but, if they do, use fewer hours than mothers with shorter educations (footnote 104 and Table 6.19).
- For school children during the holidays, mothers with longer educations are less likely to use childcare but, if they do, use more hours than mothers with shorter educations (footnote 104 and Table 6.19).

The greater use of formal care by longer-educated mothers may reflect, again, that they are more likely to have moved away from the family and informal sources of care or that they perceive greater benefits from formal care than their shorter-educated counterparts. The difference in use and hours during the term and holidays for school children may indicate a complicated response to differences in the flexibility of work hours. For example, the lower probability of use of childcare during the holidays for school children may reflect a greater ability on the part of mothers who have been in education longer to take holidays or leave during the school holidays.

There is also evidence that the ethnicity of the mother influences the choice of childcare arrangements:

- Use of formal care is lower for pre-school children with non-white mothers than for those with white mothers (Table 6.3).
- Use of informal and formal care is lower for school children with non-white mothers than for those with white mothers (Table 6.4).
- If they do use childcare, pre-school and school children with non-white mothers use longer hours than those with white mothers (Tables 6.18 and 6.19).

The preference for informal sources may result from real or perceived differences in the benefits of formal care, while the longer hours may be provided by the informal sources.

Some potential sources of informal care are found to be important:

- Use of childcare is lower for mothers with non-working partners than for mothers with working partners (Tables 6.3 and 6.4).
- The hours of childcare for school children are lower for mothers with non-working partners than for mothers with working partners (Table 6.19).
- Families with more older children (aged 12–18) are less likely to use childcare, particularly for school children (Tables 6.3 and 6.4).
- Families with more older children use fewer hours of childcare for pre-school children (Table 6.18).
- Families who have spent more years at their current address are more likely to use informal care over formal care, possibly reflecting the development of informal networks of help (Tables 6.3 and 6.4).

Finally, financial resources also play an influential role:

- Mothers with higher earnings levels and families with higher other income are more likely to use childcare than poorer families and have a greater likelihood of using formal over informal care (Tables 6.3 and 6.4).
- Longer hours of childcare are used by mothers with higher earnings and families with higher other income (Tables 6.18 and 6.19).
- Mothers with higher earnings levels and families with higher other income have a greater preference for 'other' types of formal care (including nannies and au pairs) than other options (Tables 6.7 and 6.8).
- Families with higher income spend more on childcare in terms of pounds per week but spend a smaller proportion of their net income on it (Figures 6.7 and 6.8).

These results have several important policy considerations. First, the impact of the mother's earnings on childcare choices is always much greater than that of other family income. In influencing childcare

choices, policies that operate through the mother's earnings or are directly associated with her earnings are more likely to prove effective than more general family subsidies. Second, the finding that the total level of disposable family income affects the type of childcare used means that even general subsidisation of childcare costs that is *not* linked to a particular type of care may still affect the type chosen by effectively raising family income. Third, a childcare subsidy defined as a straight proportion of childcare expenditure will benefit higher-income families to a greater degree than poorer families if spending patterns are not altered by the subsidy.

There are sizeable differences in behaviour across the country even controlling for differences in family characteristics:

- Children in the northern shire and northern metropolitan regions are more likely to use informal care than those in other regions, while those in outer London are less likely to use formal care than children in other areas (Tables 6.3 and 6.4).
- For pre-school children using formal care, centre-type care is most popular in the northern shire and northern metropolitan regions, while childminders and other types of care are considerably more popular in the London regions and in the south shires (Table 6.7).
- The pattern of formal care use is similar for school children, except that centre-type care is more popular in inner London than elsewhere (Table 6.8).
- Average weekly hours of childcare tend to be longer in London than in other parts of the country (Tables 6.18 and 6.19).
- Families in London and the south shire counties spend much larger weekly amounts on childcare than those in other areas of the country, although the gap in terms of the proportion of family income spent on childcare is smaller (Figures 6.11 and 6.12).

Given that these differences remain even allowing for differences in a wide range of other characteristics, including, in particular, the mother's work hours, there are clearly strong regional factors driving this divide in behaviour between the north and London and the south. Various hypotheses may explain the differences. Mothers in London may use longer hours because they face longer commuting times to work. Informal care arrangements may be more readily available in

the north, where families are less likely to have moved away from the extended family. London may be a more attractive place to work for certain kinds of 'other' types of care, such as nannies and au pairs. Areas of dense population (such as the northern metropolitan region) may be better suited to centre-type care, while areas of high school density (such as London) may be better equipped to set up after-school and school-holiday clubs.

Finally, although the period of study only covers five years, there are some distinct time trends in the childcare choices of working mothers:

- The likelihood of informal care use has declined for school children of working mothers (Table 6.4).
- For pre-school and school children using formal care, there has been a significant increase in the use of centre-based care over the use of childminders and other types of care (Tables 6.7 and 6.8).
- For school children, weekly hours of care during term have risen significantly, but hours of care during the holidays have declined by a slightly greater degree (Table 6.19).
- The amount spent by families on childcare has increased, and it has also risen as a proportion of family income (Figures 6.9 and 6.10).

Again, given that most of these conclusions hold even allowing for any changes in a range of other characteristics, they may represent changes in the needs or desires for specific types of childcare. In particular, the movement towards more formal centre-type care may reflect a greater need for facilities offering longer hours or a greater desire for arrangements potentially offering greater educational content. The increasing expenditures may indicate a desire for longer hours of care, rising costs in the childcare market or a demand for higher-quality and more-expensive care. However, whether these changes over a relatively short period reflect longer-term trends remains to be seen.

# CHAPTER 7

# Price and Quality in the Childcare Market[144]

## 7.1 Introduction

One of the most important influences on childcare use and mothers' employment choices is the price of childcare. In the previous chapter, a description of family expenditure on childcare and the average hourly cost was presented; this chapter expands on this initial presentation by analysing in greater depth the role of price and childcare subsidies in the childcare market.

Childcare subsidies aiming to reduce the cost of childcare have traditionally been viewed as one of the main approaches to making paid employment profitable for mothers. However, the effects of such subsidies may be more wide-ranging than purely encouraging mothers to work, and there is an expanding literature on the estimation of the impact of childcare price (and thereby subsidies) on childcare choices (including the use of paid care,[145] type of care[146] and quality of care[147]), on mothers' employment participation[148] and hours of work[149] and on fertility.[150]

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[144] This chapter is a revised summary of Duncan, Paull and Taylor (2001a), in which further technical details can be found.

[145] See Blau and Robins (1988), Hotz and Kilburn (1991), Michalopoulos, Robins and Garfinkel (1992), Ribar (1992 and 1995) and Blau and Hagy (1998).

[146] See Hotz and Kilburn (1991), Hofferth and Wissoker (1992), Blau and Hagy (1998) and Michalopoulos and Robins (1999).

[147] See Berger and Black (1992), Michalopoulos, Robins and Garfinkel (1992), Hagy (1998) and Blau and Hagy (1998).

[148] See Blau and Robins (1988 and 1989), Ermisch (1989), Maume (1991), Hotz and Kilburn (1991), Leibowitz, Klerman and Waite (1992), Connelly (1992), Berger and Black (1992), Ribar (1992 and 1995), Jenkins and Symons (1995), Kimmel (1995 and 1998), Averett, Peters and Waldman (1997) and Anderson and Levine (1999).

[149] See Heckman (1974), Michalopoulos, Robins and Garfinkel (1992), Duncan and Giles (1996) and Michalopoulos and Robins (1999).

[150] See Blau and Robins (1989).

A major hurdle to estimating the impact of price on any of these outcomes arises from the fact that childcare comes in varying shades of quality, and better quality may cost more. In the FRS childcare data, as with most similar data sources, only the hourly expenditure on childcare is known and not the quality of care chosen. Variation in the hourly cost may reflect both variation in the price (for a given quality level) and differences in the quality level. Moreover, price and quality level may be related. For example, in lower-price areas, families may be able to afford higher quality, raising the childcare expenditure and generating a smaller observed variation in the hourly cost than in the actual price. In these circumstances, the estimated response to changes in the hourly cost would overstate the actual response to price changes. Hence, even if one is not concerned explicitly with the impact of childcare subsidies on the quality choice, it is important not to ignore quality effects in estimating the response of childcare hours to price changes.

In addition, previous work[151] has suggested that hourly prices may depend upon the number of hours purchased. This might arise if hourly costs change with the number of hours provided. For example, if overtime rates must be paid to childcare workers for working longer hours, the hourly cost may rise with hours purchased. Alternatively, if initial enrolment of a child requires time and effort on the part of the provider, a few hours of care may have a higher hourly cost than longer hours. Once again, a simple price measure that is calculated by dividing total expenditure by the number of hours will not be the correct measure of price.

In this chapter, a price measure that controls for both quality and hours effects in the observed hourly childcare expenditure is estimated using a procedure from the demand estimation literature. In addition, it is possible to derive a measure of the level of childcare quality chosen for each child using the observed childcare expenditure. The impact of the childcare price on the propensity to use formal childcare, on the hours of care chosen and on the quality of care selected by working mothers is then analysed, assuming that the mother does not change her employment behaviour in response to a price change.

[151] See Walker (1992) and Ribar (1995).

## 7.2 Estimating a Childcare Price

The first stage is to derive a measure of the price that excludes the unwanted quality and hours effects.[152] Various approaches have been used to address the quality issue[153] and hours issue,[154] but the method used here follows on from work by Blau and Hagy (1998) and Hagy (1998) by applying a procedure developed in the demand estimation literature.[155]

There are two underlying ideas to this method. First, in the absence of direct quality information, it is assumed that individuals will only pay more if they are purchasing a better-quality good. Hence, higher hourly expenditures are assumed to reflect a higher quality choice and can be used to measure how the chosen level of quality varies with family characteristics. Second, the childcare price is assumed to be constant within a given childcare market but can vary across different markets. The source of this variation across markets is not important for the purpose of deriving a price measure and may be related to supply factors or demand conditions. The markets are defined by geographic area (defined as local authority) and the age of the child. For example, all 3-year-olds living in Wandsworth face the same price for childcare, but 2-year-olds in Wandsworth or 3-year-olds living in Norfolk may face a different price for care. However, two different 3-year-old children in Wandsworth may be observed to pay a different hourly cost for care because they are using either different quality of care or different hours of care. The desired price measure is that for a standard level of quality and hours and one that is common to all children of the same age within an LA.

In order to obtain this desired price measure, it is first necessary to estimate how the observed hourly cost (termed the 'unit value')

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[152] A full exposition of this method is described in section 4 of Duncan, Paull and Taylor (2001a).

[153] Blau and Robins (1988 and 1989), Hotz and Kilburn (1991), Hofferth and Wissoker (1992), Leibowitz, Klerman and Waite (1992), Connelly (1992), Walker (1992), Powell and Cosgrove (1992), Berger and Black (1992), Ribar (1992 and 1995), Mocan (1995 and 1997), Averett, Peters and Waldman (1997), Kimmel (1998), Anderson and Levine (1999), Michalopoulos and Robins (1999) and Blau and Mocan (1999).

[154] Walker (1992) and Ribar (1995).

[155] As in Deaton (1987) or Crawford, Laisney and Preston (1999).

changes with the hours of care and the quality chosen. This is achieved by estimating a regression relating the unit value for each household (denoted $V^h$) to the chosen care hours (denoted $F^h$) and a set of family characteristics believed to be related to the quality choice (denoted $Z^h$). However, to ensure accurate estimates of the relationships, the regression must be estimated using the differences around the average levels within each childcare market.[156] Using the notation $\bar{x}^C$ to denote the mean of the variable $x$ within each childcare market, the required regression can be written as

$$\ln V^h - \overline{\ln V}^C = a(Z^h - \bar{Z}^C) + b(\ln F^h - \overline{\ln F}^C),$$

where $a$ and $b$ are the parameters to be estimated and 'ln' denotes the natural log of a variable.

Using the estimated parameters, $\hat{a}$ and $\hat{b}$, the desired price measure (denoted *price*) for each childcare market can be calculated by removing the quality and hours effects from the average observed unit value:[157]

$$\ln price = \overline{\ln V}^C - \hat{a}\bar{Z}^C - \hat{b}\overline{\ln F}^C.$$

Effectively, the price is estimated for each market controlling for the average hours of childcare and the average level of factors that affect the quality choice.

A measure of the quality choice for each household can be derived using the relationship

$$q^h = \ln V^h - b \ln F^h - \ln price.$$

Intuitively, this is a measure of the variation in unit value that cannot be attributed to variation in price or hours of childcare.

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[156] In addition, a selection adjustment term is included in the regression in order to address the issue that the unit value is only observed for those who use paid care. This selection adjustment term is estimated using a probit regression for the probability of using formal care for all working mothers.

[157] An additional adjustment is made to generate a price measure for average household characteristics and hours of childcare for the sample rather than at their zero values.

## 7.3 Unit Value Regressions

The childcare price and quality measures were estimated using the FRS data. The boundaries of the local childcare markets were defined by the age of child and geographic area, as proxied by LAs.[158] This presumes that the opportunities for mothers to purchase childcare from adjoining childcare markets defined by these factors are limited, which certainly seems reasonable for the child's age. The use of LAs to define market boundaries has the same limitations as their use in the analysis of local supply constraints in that they are unlikely to match exactly the area in which any particular mother might seek to draw on childcare resources. Indeed, the potential for families to purchase childcare from other LAs may be especially great in LAs of small geographical size, such as in London. However, such arbitrage may require either relocation of place of residence or longer travelling time with the child to the childcare provider, either of which could generate sizeable costs mitigating against widespread arbitrage.

The results of three unit value regressions used to predict the childcare price for pre-school children,[159] school children during the term and school children during the holidays are presented in Table 7.1. The variables believed to influence the quality choice (corresponding to $Z^h$) include the mother's age, education and

[158] The robustness of the results was tested using other definitions of the markets, including dividing the markets further by year and by aggregating the markets into broader age groups. There were two major differences for the group disaggregated by year: the price elasticity for the use of formal paid childcare (Table 7.6) is significantly negative for the final price measure for school children during the term, and the price elasticity for the hours of childcare (Table 7.7) is significantly negative for the final price measure for both pre-school and school children during term. There were also two major differences for the broader age groups. First, for some of the broader groups, the price elasticity for the use of formal paid childcare (Table 7.6) is not significantly different from zero for the final price measure for pre-school children. Second, the price elasticity for the hours of childcare (Table 7.7) loses significance only upon the introduction of quality controls into the price measure (rather than with the introduction of hours controls) for school children during term.

[159] The results for pre-school children are for term time, but very similar results were produced for pre-school children during the holidays. This is not surprising, given the similarities in childcare use between the two periods, as documented in Chapter 6.

**Table 7.1. Unit Value Regressions for Log(Hourly Childcare Expenditure)**

| | Coefficient (Standard error) | | |
|---|---|---|---|
| | Pre-school children | School children during term | School children during holidays |
| Log(childcare hours) | –0.261*** | –0.248*** | –0.368*** |
| | (0.022) | (0.021) | (0.034) |
| *Mother:* | | | |
| Age | 0.003 | –0.002 | 0.004 |
| | (0.006) | (0.006) | (0.008) |
| $(Age)^2$ | 0.000 | 0.000 | 0.000 |
| | (0.000) | (0.000) | (0.000) |
| Left education aged: | | | |
| 17–18 | 0.068** | 0.060** | 0.093** |
| | (0.031) | (0.032) | (0.039) |
| 19–21 | 0.114*** | 0.155*** | 0.140*** |
| | (0.040) | (0.039) | (0.048) |
| after 21 | 0.078* | 0.077* | –0.044 |
| | (0.046) | (0.044) | (0.054) |
| Non-white | –0.081* | –0.071 | –0.030 |
| | (0.044) | (0.046) | (0.067) |
| *Resources:* | | | |
| Log(mother's earnings) | 0.151*** | 0.193*** | 0.046 |
| | (0.036) | (0.043) | (0.047) |
| Log(other income) | 0.032*** | 0.018 | 0.028* |
| | (0.012) | (0.012) | (0.016) |
| No. of pre-school children | –0.136*** | 0.029 | –0.083** |
| | (0.027) | (0.027) | (0.035) |
| No. of school children | –0.105*** | –0.126*** | –0.124*** |
| | (0.021) | (0.020) | (0.028) |
| Mills ratio from selection regression | 0.078 | 0.146** | –0.082 |
| | (0.065) | (0.059) | (0.071) |
| Constant | –0.132* | –0.131 | –0.170 |
| | (0.074) | (0.090) | (0.117) |
| Sample size | 1,510 | 1,129 | 900 |
| Adjusted $R^2$ | 0.112 | 0.159 | 0.163 |

Notes: Stars denote that the coefficient is significantly different from zero at the 1% (***), 5% (**) and 10% (*) levels. Omitted mother's age left education is 16. School children are aged 4–11. 'Other income' includes all family income other than mother's earnings. Mother's earnings and other income are measured in hundreds of pounds per week.

ethnicity, which might be related to the actual or perceived benefits of better-quality care, and a set of factors related to the ability to afford higher-quality care, including the mother's earnings, other family income and the numbers of pre-school and school children.

The unit value (observed hourly expenditure) declines with the hours of childcare in all three regressions.[160] The size of the decline is similar across pre-school and school children during term (approximately a 2.5 per cent decline in hourly cost for each 10 per cent rise in hours), but it is higher for school children during holidays (a 3.7 per cent decline for each 10 per cent rise in hours). This provides strong evidence either that there are non-linearities in the pricing structure with respect to hours or that the quality choice declines significantly with the number of hours. How much of this decline may be due to switches between different types of childcare at different hours levels is investigated in Table 7.2 below.

The age of the mother has no impact on the unit value, but mothers with the middle levels of education (those leaving aged 17 to 21) tend to pay more. One possible explanation is that these types of mothers value the benefits of good-quality paid care the most highly. Alternatively, the groups with the shortest and longest educations may provide higher-quality maternal and informal care, reducing the need to supplement childcare quality with good-quality paid care. Ethnic minorities tend to pay a lower unit value, but this effect is only significant for pre-school children.

As expected, the mother's earnings and other family income allow a higher quality choice for pre-school children for those who can afford it, although the mother's earnings have a much larger impact than other sources of family income. For school children, these income factors appear to be less important, although the mother's earnings still have a significant positive impact on the unit value during term time. In general, more pre-school or school siblings reduce the unit value, with the exception of the number of pre-school siblings for school children during term. This may reflect either a declining ability to afford higher-quality care when there are more

[160] The rates of decline are very similar without the quality controls included in the regressions.

children or price discounts for care for more than one child from the same family.[161]

As an aside, Table 7.2 presents the results from regressions for the unit value with the hours variable interacted with the mode of formal childcare in order to test whether the non-linearity differs by

**Table 7.2. Unit Value Regressions for Log(Hourly Childcare Expenditure) Including Childcare Type Interactions**

| | Coefficient (Standard error) | | |
|---|---|---|---|
| | Pre-school children | School children during term | School children during holidays |
| Log(childcare hours) | –0.211*** | –0.247*** | –0.405*** |
| | (0.023) | (0.026) | (0.038) |
| Log(childcare hours) for centre care | 0.024 | 0.006 | 0.133** |
| | (0.019) | (0.039) | (0.052) |
| Log(childcare hours) for childminder care | –0.071*** | –0.043 | 0.155** |
| | (0.019) | (0.051) | (0.062) |
| Log(childcare hours) for other care | –0.028 | –0.011 | 0.012 |
| | (0.024) | (0.043) | (0.054) |
| Mills ratio from selection regression | –0.188*** | –0.143*** | –0.230*** |
| | (0.023) | (0.025) | (0.037) |
| Constant | –0.081*** | –0.080*** | –0.107*** |
| | (0.014) | (0.018) | (0.023) |
| Sample size | 1,510 | 1,129 | 900 |
| Adjusted $R^2$ | 0.101 | 0.114 | 0.150 |

Notes: The omitted care category is multiple types of formal care. Stars denote that the coefficient is significantly different from zero at the 1% (***), 5% (**) and 10% (*) levels. The coefficients on the childminder and centre interactions are significantly different at the 1% level for the regressions for pre-school children. The coefficients on the childminder and other care interactions are significantly different at the 5% level for pre-school children during term, at the 10% level for pre-school children during the holidays and at the 1% level for school children during the holidays. The coefficients on the centre and other care interactions are significantly different at the 1% level for school children during the holidays. Regressions including the quality-control variables produced two differences in significance for the coefficients for the childcare hours variables. First, the coefficient on the centre care interaction in the regression for pre-school children during term was significantly positive at the 10% level. Second, the coefficients on the childminder and other type interactions were not significantly different for pre-school children during the holidays.

[161] Although previous work using provider surveys has evidenced sizeable discounts for care for more than one child from the same family (for example, see Walker (1992)), these data do not permit a division between the two competing explanations and it is assumed that the effect is due to quality rather than discounts so as to err on the side of caution in estimating price variation.

childcare type.[162] The variable for childcare hours without any interaction shows the base effect (and the total effect for multiple types of care, which is the type not included as an interaction), while the interacted terms show the *additional* effect for each of the other childcare types.

For pre-school children, the decline in unit value with hours is significantly greater for childminders than for centre care, other and multiple types of formal care. For school children during term, there are no significant differences between the types of care. For school children during the holidays, the unit value declines at a significantly slower rate with hours of use for centre and childminder care than for other and multiple types of care. Nevertheless, within each type of care, there is a significant fall in unit value as hours increase, showing that the decline evidenced across the aggregated hours in Table 7.1 may be due to declining hourly costs within childcare type as well as to switches between types.

## 7.4 Predicted Childcare Price

The predicted childcare price was estimated on the basis of childcare markets defined by LA and age of child and it is useful to examine the variation in this price measure across the child's age.[163] Table 7.3 presents the average estimated price for each age of child. As might be expected, the price declines with the age of child and there is a sizeable difference between the average price for young pre-school children and older school children.[164]

[162] Regressions including the quality-control variables produced similar results for the childcare hours variables to those shown (see table notes).

[163] Because of the adjustment of the other variables in the unit value regressions to their mean values in predicting the price, the average predicted price within each sample is the same as the average observed hourly cost.

[164] In addition, it is notable that the average price is higher for school children during the term than during the holidays. Given that the price measure controls for the hours effect, this may appear contradictory to the argument that the difference in cost was due to the lower hours used during term time. However, the price measure is calculated for the average hours of care *within* each sample and the sample for term time has much lower average hours than the sample for the holidays, generating a higher average price.

**Table 7.3. Predicted Childcare Price by Age of Child**

| £ per hour | Pre-school children aged: | | | | | |
|---|---|---|---|---|---|---|
| | <1 | 1 | 2 | 3 | 4 | All ages |
| | 2.18 | 2.00 | 1.97 | 2.01 | 1.82 | 2.00 |
| £ per hour | School children aged: | | | | | |
| | 4–5 | 6–7 | 8–9 | 10–11 | All ages | |
| During term | 2.19 | 2.13 | 1.89 | 1.93 | 2.02 | |
| During holidays | 1.62 | 1.58 | 1.37 | 1.35 | 1.47 | |

It is also useful to examine the price variation across LAs. In order to do this, care is required in ranking the LAs by some measure of average price. In particular, a price could not be estimated for every age of child in every LA due to an absence of complete information for working mothers using paid formal care within some cells. Using a simple price average for each LA across the age groups would bias the price in an upwards direction for those with estimated prices predominantly in the lower age groups and in a downwards direction for those with more predictions for the older age groups. In order to address this, and to minimise the impact of outlying prices for a single age group, the LAs were first ranked by the estimated price within each age group. They were then ordered by the *average* of these ranks to generate a 'rank of the average rank'.[165]

The top section of Table 7.4 presents the eight LAs with the lowest ranks for the estimated price for pre-school children. The middle section presents the corresponding eight LAs for school children during term, and the bottom section the corresponding eight LAs for school children during the holidays. In each case, the average price across all ages of children is also reported, as are the corresponding ranks and averages for the other categories of children.

[165] For example, consider two hypothetical LAs. A has prices 8, missing, 3 and 2 for age groups 1 through 4. B has prices missing, 5, 4 and 3 for age groups 1 through 4. Their respective ranks (from the lowest) within each age group is 1, missing, 1 and 1 for A and missing, 1, 2 and 2 for B. Hence, the average rank is 1 for A and 1.7 for B, placing A first at the lowest end in the 'rank of the average rank' and B second. This is an appropriate representation, given that A is lower than B in every age group where they both have an observation. However, using a simple average of the prices would have ranked B at the bottom (with an average 4) and A second (with an average 4.3) due to the fact that A reported a value in the high-priced age 1 category rather than age 2.

The ranks in bold highlight that there are few strong correlations in having a very low price across pre-school and school children. Only Rotherham and Sunderland have low prices for pre-school and school children, while only Rochdale is at the lower extreme for school children both during the term and during the holidays. Indeed,

**Table 7.4. Local Authorities with Lowest Predicted Prices**

| | Pre-school children | | School children during term | | School children during holidays | |
|---|---|---|---|---|---|---|
| | Rank | Mean price | Rank | Mean price | Rank | Mean price |
| Isle of Wight | **1** | 0.23 | 32 | 1.80 | 31 | 1.45 |
| Barking & Dagenham | **2** | 1.34 | . | . | . | . |
| Rotherham | **3** | 1.36 | 64 | 2.04 | **1** | 0.83 |
| Sunderland | **4** | 1.38 | **3** | 1.02 | 47 | 1.39 |
| Wakefield | **5** | 1.39 | 85 | 2.64 | 99 | 2.82 |
| Northumberland | **6** | 1.34 | 13 | 1.35 | 21 | 1.17 |
| North Yorkshire | **7** | 1.37 | 70 | 2.05 | 71 | 1.58 |
| Oldham | **8** | 1.40 | 33 | 1.78 | 63 | 1.80 |
| | | | | | | |
| Wolverhampton | 33 | 1.84 | **1** | 1.10 | 15 | 1.17 |
| Salford | 53 | 1.85 | **2** | 0.89 | 89 | 2.32 |
| Sunderland | **4** | 1.38 | **3** | 1.02 | 47 | 1.39 |
| Rochdale | 42 | 1.88 | **4** | 1.38 | **4** | 0.98 |
| Dorset | 75 | 2.08 | **5** | 1.24 | 10 | 1.15 |
| Barnsley | 18 | 1.68 | **6** | 1.60 | 87 | 2.46 |
| Somerset | 40 | 1.89 | **7** | 1.33 | 19 | 1.17 |
| Cornwall | 27 | 1.74 | **8** | 1.32 | 40 | 1.40 |
| | | | | | | |
| Rotherham | **3** | 1.36 | 64 | 2.04 | **1** | 0.83 |
| Newham | 64 | 1.96 | 37 | 1.84 | **2** | 0.86 |
| Dudley | 46 | 1.95 | 17 | 1.63 | **3** | 0.90 |
| Rochdale | 42 | 1.88 | **4** | 1.38 | **4** | 0.98 |
| Derbyshire | 68 | 2.05 | 24 | 1.76 | **5** | 1.10 |
| East Sussex | 52 | 1.95 | 12 | 1.49 | **6** | 1.10 |
| Humberside | 32 | 1.76 | 19 | 1.61 | **7** | 1.05 |
| Warwickshire | 65 | 2.02 | 9 | 1.34 | **8** | 1.00 |

Notes: The rank is the 'rank of the average rank' from lowest to highest across all ages of children (see text), while the mean price is the average of the mean prices for each age of children. The table presents the eight LAs with the lowest rank for pre-school children, for school children during term and for school children during the holidays. The symbol '.' denotes an LA for which the price could not be estimated. In addition, prices could not be estimated for the City of London and Isles of Scilly, for school children in Tower Hamlets, Islington, Westminster and South Tyneside, and for school children during the term for Sefton.

many of the ranks for the 'other categories' of children (those not selected as the bottom eight) are at the higher end of the spectrum.

In terms of regional differences, the LAs with the lowest prices for pre-school care are predominantly in the north, while central

**Table 7.5. Local Authorities with Highest Predicted Prices**

| | Pre-school children | | School children during term | | School children during holidays | |
|---|---|---|---|---|---|---|
| | Rank | Mean price | Rank | Mean price | Rank | Mean price |
| Barnet | **1** | 3.78 | **5** | 2.87 | 25 | 1.76 |
| Islington | **2** | 3.82 | . | . | . | . |
| Leeds | **3** | 2.32 | 34 | 2.18 | 24 | 1.70 |
| Ealing | **4** | 2.42 | 28 | 2.14 | **5** | 2.44 |
| Newcastle upon Tyne | **5** | 2.67 | 11 | 2.68 | 95 | 1.11 |
| Hillingdon | **6** | 2.32 | 21 | 2.95 | **7** | 2.78 |
| Stockport | **7** | 2.34 | 36 | 2.17 | 49 | 1.63 |
| Sutton | **8** | 2.16 | 75 | 1.69 | 92 | 1.08 |
| | | | | | | |
| St Helens | 99 | 1.60 | **1** | 7.36 | **2** | 6.34 |
| Harrow | 26 | 2.22 | **2** | 5.49 | 34 | 1.65 |
| Hounslow | 85 | 1.59 | **3** | 3.17 | 67 | 1.41 |
| Bexley | 96 | 1.64 | **4** | 3.37 | 12 | 2.47 |
| Barnet | **1** | 3.78 | **5** | 2.87 | 25 | 1.76 |
| Bromley | 64 | 1.97 | **6** | 2.62 | 20 | 1.68 |
| Wandsworth | 51 | 2.19 | **7** | 3.08 | 47 | 1.56 |
| Trafford | 67 | 1.82 | **8** | 2.54 | **3** | 2.83 |
| | | | | | | |
| Redbridge | 61 | 1.83 | 44 | 2.03 | **1** | 4.21 |
| St Helens | 99 | 1.60 | **1** | 7.36 | **2** | 6.34 |
| Trafford | 67 | 1.82 | **8** | 2.54 | **3** | 2.83 |
| Wakefield | 103 | 1.39 | 17 | 2.64 | **4** | 2.82 |
| Ealing | **4** | 2.42 | 28 | 2.14 | **5** | 2.44 |
| Sefton | 60 | 1.73 | . | . | **6** | 2.02 |
| Hillingdon | **6** | 2.32 | 21 | 2.95 | **7** | 2.78 |
| Enfield | 49 | 2.30 | 29 | 2.07 | **8** | 1.80 |

Notes: The rank is the 'rank of the average rank' from highest to lowest across all ages of children (see text), while the mean price is the average of the mean prices for each age of children. The table presents the eight LAs with the highest rank for pre-school children, for school children during term and for school children during the holidays. The symbol '.' denotes an LA for which the price could not be estimated. In addition, prices could not be estimated for the City of London and Isles of Scilly, for school children in Tower Hamlets, Barking & Dagenham, Westminster and South Tyneside, and for school children during the term for Sefton.

metropolitan districts and south shire counties are also quite strongly represented among those with low prices of care for school children.

The LAs with the highest estimated prices are presented in Table 7.5. The degree of correlation across categories of children appears slightly greater at the higher end than at the lower end of the price range, with five LAs appearing in the top eight in two columns and with Barnet, Ealing and Hillingdon standing out as having high prices across both pre-school and school children. However, many LAs in the list also rank quite near the low end in the categories of children not selected for the top eight. Indeed, Wakefield is at the bottom extreme for pre-school children and among the highest-priced for school children.

The LAs listed with the highest prices are exclusively London boroughs and northern metropolitan districts. This regional domination is even more remarkable, given that estimated prices are not available for several of the London boroughs (City of London, Tower Hamlets, Islington and Westminster) that might be expected to have the highest childcare costs. However, it is not surprising that prices, even controlling for quality and hours choices, should be so much higher in these areas where high land values may raise property costs for centre-type care and increase the cost of living for care workers.

## 7.5 Price Effects on Childcare Choices

The impact of price on the choices of whether to use paid formal care and of the hours of paid care was estimated using the estimated price measure derived above. This estimation is restricted to children with working mothers and caution should therefore be exercised in extending the specific behavioural conclusions to the wider population of all mothers. In addition, the mother's hours of work are taken as fixed and it should be recognised that there may be additional significant second-round effects through employment responses. On the other hand, the results highlight the potential impacts of childcare subsidies even in the absence of any labour supply reactions. Indeed, such an approach may be desirable if childcare choices are considered more flexible than employment decisions. For example, employment conventions may restrict

flexibility in work hours, or it could be argued that work choices are based on longer-term dynamic issues while childcare is determined by shorter-term considerations.

The impact of price on the probability of using formal paid care is presented in Table 7.6. In order to highlight the importance of correctly controlling for hours and quality effects in the price measure, the models were also estimated using only the raw market means[166] (denoted *price1*) and including only hours controls in the price measure (denoted *price2*). The table shows the estimated coefficient on the price measure from nine separate probit regressions across the three price measures and three categories of children. Each regression also included family background and LA availability variables.

For pre-school children, there are significant negative coefficients for all price measures: higher prices clearly reduce the likelihood that working mothers will use paid formal care. Inclusion of the hours controls in the estimation of the price measure considerably increases

**Table 7.6. Coefficients on Different Price Measures in Probit Models for the Use of Paid Formal Care**

| | Coefficient (Standard error) | | |
|---|---|---|---|
| | Pre-school children | School children during term | School children during holidays |
| Log(*price1*): raw market means | –0.309*** (0.078) | –0.073* (0.044) | 0.046 (0.040) |
| Log(*price2*): add hours controls | –0.453*** (0.079) | –0.106** (0.045) | –0.018 (0.042) |
| Log(*price*): add quality controls | –0.319*** (0.080) | 0.010 (0.045) | 0.036 (0.042) |

Notes: Stars denote that the coefficient is significantly different from zero at the 1% (***), 5% (**) and 10% (*) levels. The equality of the coefficients across the different price measures was tested using the standard deviations of the coefficient estimates. For school children during term, the coefficients on *price2* and *price* were significantly different. All remaining pair-wise comparisons were not significantly different.

[166] Including a selection correction term to allow for the fact that the hourly cost is only observed for mothers who use formal paid care.

the elasticity, while the quality controls tend to reduce the size of the price effect. Hence, failure to control for hours in the price measure understates the responsiveness of the propensity to use formal care to changes in the price,[167] while failure to control for quality overstates the responsiveness.[168] However, the hours and quality effects are counterbalancing: the differences between the coefficients for the *price1* and *price* measures are not significant.

For the use of care by school children during term time, there is only one moderately significant coefficient, but adding quality controls in the price measure turns a significant negative elasticity into an insignificant positive one. Hence, the omission of quality controls in the price measure generates a spurious relationship between the price and the use of paid formal care for school children during term time. For the use of care during the holidays, there are no significant relationships between the price of childcare and the propensity to use formal paid care.

Hence, price is important for the use of formal paid care for pre-school children, but there is no evidence of a similar relationship for school children.

The price elasticities for the hours of formal care are presented in Table 7.7, which shows the estimated coefficients for nine separate regressions across the three price measures and three categories of children. The regressions included family background variables and the mother's work hours, but not the LA availability measures on the assumption that the hours are unaffected by the number of places once a place is obtained.

There is a consistent pattern in the estimated coefficients for pre-school children and school children during both term time and holidays. In all three cases, there is a significant negative relationship

[167] Failure to control for hours in the price measure could understate the impact of any price change if the price declines with hours, but mothers use fewer hours when the price (for a standard level of hours) is higher. Under these circumstances, the hours reaction makes the variation in price appear greater than it really is, leading to an understatement of its impact.

[168] Failure to control for quality in the price measure could overstate the price effect if mothers choose lower quality at higher prices. Under these circumstances, the quality reaction makes the variation in price appear smaller than it really is, leading to an overstatement of its impact.

**Table 7.7. Coefficients on Different Price Measures in Regression Models for the Hours of Paid Formal Care**

| | Coefficient (Standard error) | | |
|---|---|---|---|
| | Pre-school children | School children during term | School children during holidays |
| Log(*price1*): | –0.293*** | –0.390*** | –0.336*** |
| raw market means | (0.050) | (0.052) | (0.042) |
| Log(*price2*): | –0.083 | –0.082 | 0.001 |
| add hours controls | (0.055) | (0.057) | (0.047) |
| Log(*price*): | –0.056 | –0.001 | –0.010 |
| add quality controls | (0.051) | (0.053) | (0.047) |

Notes: Stars denote that the coefficient is significantly different from zero at the 1% (***), 5% (**) and 10% (*) levels. The equality of the coefficients across the different price measures was tested using the standard deviations of the coefficient estimates. For pre-school children and school children during term and holiday, the coefficients on *price1* and *price2* and on *price1* and *price* were pair-wise significantly different. All remaining pair-wise comparisons were insignificantly different.

between the hours of care and the raw price (*price1*). But adding hours and quality controls to the price measure generates a significant reduction in the size of the coefficient to an estimate that is no longer significantly different from zero. Hence, failure to control for hours and quality effects in the price measure leads to a spurious negative relationship between the hours of formal childcare and the price, for both pre-school and school children.[169] Including these controls in the price measure suggests that price is not an important factor in the number of hours chosen for those using formal paid care.

Finally, the impact of price on the quality of care chosen can be analysed. Tables 7.8 and 7.9 present the results from regressions for the quality measure for pre-school and school children respectively. In addition to the *price* measure, the regressions also include the quality-control variables used in the unit value regressions.

[169] This can be explained by the presence of the non-linear pricing structure highlighted in the unit value regressions above: if price declines with the hours chosen, then failure to control for a non-linear pricing structure will mean that the hours choice will drive the price outcome rather than the other way around. Similarly, if poorer quality is chosen at higher hours levels, failure to control for quality in the price measure will mean that the quality choice generates the price outcome rather than causation being in the reverse direction.

**Table 7.8. Quality Regressions for Pre-School Children**

| *Dependent variable:* Quality of childcare | Coefficient | Standard error |
|---|---|---|
| Log(*price*) | –0.074* | 0.039 |
| *Mother:* | | |
| Age | 0.022 | 0.022 |
| $(Age)^2$ | –0.000 | 0.000 |
| Left education aged: | | |
| 17–18 | 0.068** | 0.030 |
| 19–21 | 0.100** | 0.039 |
| after 21 | 0.072 | 0.044 |
| Non-white | –0.053 | 0.040 |
| *Resources:* | | |
| Log(mother's earnings) | 0.161*** | 0.034 |
| Log(other income) | 0.030*** | 0.011 |
| No. of pre-school children | –0.140*** | 0.027 |
| No. of school children | –0.104*** | 0.020 |
| Mills ratio from selection regression | 0.054 | 0.070 |
| Constant | –1.292*** | 0.483 |
| Sample size | 1,510 | |
| Adjusted $R^2$ | 0.102 | |

Notes: Stars denote that the coefficient is significantly different from zero at the 1% (***), 5% (**) and 10% (*) levels. Omitted mother's age left education is 16. School children are aged 4–11. 'Other income' includes all family income other than mother's earnings. Mother's earnings and other income are measured in hundreds of pounds per week.

In areas with a higher price, a lower quality of care tends to be chosen. This price effect on quality is of a similar magnitude across all three categories of children. However, the estimated impact is small: the results suggest that in areas where the price is 10 per cent higher than average, the chosen level of childcare quality (as measured by the level of childcare expenditure relative to the price) is 0.7 per cent lower than average.

Mother's age and ethnicity do not have significant effects on the quality choice, but there is a tendency for mothers with the middle levels of education (those who left education aged 17 to 21) to choose higher quality. Mother's earnings are positively related to the quality choice, although the relationship is not significant for school children during the holidays. Other family income has a smaller positive impact. Both the numbers of pre-school and school siblings are negatively related to the quality measure for pre-school children

**Table 7.9. Quality Regressions for School Children**

| *Dependent variable:* Quality of childcare | Term time | | Holidays | |
|---|---|---|---|---|
| | Coefficient | Standard error | Coefficient | Standard error |
| Log(*price*) | –0.074** | 0.030 | –0.067* | 0.036 |
| *Mother:* | | | | |
| Age | 0.012 | 0.023 | 0.009 | 0.030 |
| $(Age)^2$ | –0.000 | 0.000 | 0.000 | 0.000 |
| Left education aged: | | | | |
| 17–18 | 0.056* | 0.031 | 0.093** | 0.038 |
| 19–21 | 0.128*** | 0.038 | 0.125*** | 0.046 |
| after 21 | 0.064 | 0.043 | –0.047 | 0.053 |
| Non-white | –0.061 | 0.040 | –0.027 | 0.058 |
| *Resources:* | | | | |
| Log(mother's earnings) | 0.185*** | 0.040 | 0.060 | 0.044 |
| Log(other income) | 0.014 | 0.012 | 0.026* | 0.015 |
| No. of pre-school children | 0.019 | 0.026 | –0.086*** | 0.033 |
| No. of school children | –0.130*** | 0.020 | –0.130*** | 0.028 |
| Mills ratio from selection regression | 0.087 | 0.056 | –0.100 | 0.065 |
| Constant | –1.218*** | 0.464 | –0.414 | 0.607 |
| Sample size | 1,129 | | 900 | |
| Adjusted $R^2$ | 0.092 | | 0.086 | |

Notes: Stars denote that the coefficient is significantly different from zero at the 1% (***), 5% (**) and 10% (*) levels. Omitted mother's age left education is 16. School children are aged 4–11. 'Other income' includes all family income other than mother's earnings. Mother's earnings and other income are measured in hundreds of pounds per week.

and school children during the holidays, while only the number of school siblings tends to be related to the quality measure for school children during term time. As explained above, this may either reflect a lower level of quality for families who need to spread their financial resources over a greater number of children or indicate discounts in the pricing structure for care for more than one child from the same family.

## 7.6 Summary

This chapter has analysed the role of the price of care in the childcare market. In particular, it has sought to separate the observed hourly cost (unit value) into quality choices, hours effects and price differences, drawing on an empirical approach from the demand estimation literature. It has used the resulting price measure to

estimate the impact of the price of childcare on the propensity to use formal care, the hours of care and the level of quality of care chosen.

There is evidence that the hourly cost (unit value) of childcare tends to decline with the hours of care:

- The hourly cost declines with hours within each type of care (Table 7.2).
- For pre-school children, the rate of decline is significantly greater for childminders than for centre, other and multiple types of formal care (Table 7.2).
- For school children during the holidays, the rate of decline is significantly slower for centre and childminder care than for other and multiple types of care (Table 7.2).

The declining hourly cost with hours may be due either to a non-linear price structure with respect to hours or to lower quality being chosen as hours of care increase.

The estimated price was found to vary substantially across the child's age and between LAs:

- The estimated hourly price declines with child's age, falling from £2.18 for a child under the age of 1 to £1.82 for a pre-school child aged 4 and to £1.35 for a school child aged 10–11 during the holidays (Table 7.3).
- The LAs with low prices are predominantly in the north, although central metropolitan districts and south shire counties are also strongly represented among those with low prices for school children (Table 7.4).
- The LAs with high prices are exclusively London boroughs and northern metropolitan districts (Table 7.5).

The variance by child's age is intuitive, as younger children require greater adult supervision which raises the costs of care. In addition, statutory staff:child ratios are higher for the very youngest children. The division of the least and most expensive LAs across regions is also not surprising, as land rents play an important part in childcare costs, both for property costs for centre-type care and for the cost of living for care workers.

The analysis has highlighted how the price of childcare and childcare subsidies may have important impacts on the use of formal childcare and the chosen quality of that care even in the absence of any labour supply effects:

- Price is negatively related to the propensity to use paid formal care for pre-school children (Table 7.6).
- There is no evidence of a significant relationship between price and the hours of formal care purchased (Table 7.7).
- Price is negatively related to the quality of care chosen (Tables 7.8 and 7.9).

Hence, price subsidies could potentially increase childcare expenditures both through increasing the use of formal paid care and by raising the level of quality purchased. Only the former is likely to be related to labour supply changes on the part of mothers, while the latter will still raise the cost of any subsidy programme.

Controlling for hours and quality effects in estimating the childcare price is of considerable importance in estimating the responsiveness of childcare use to price changes:

- For school children during term, failure to control for quality choices in the price measure generates an *overestimate* of the responsiveness of the propensity to use formal paid care to price changes (Table 7.6).
- For both pre-school and school children, failure to control for hours effects and quality choices in the price measure generates a spurious negative relationship between the hours of paid care chosen and the price (Table 7.7).

There is some evidence that the choice of quality of care is also dependent upon several other factors:

- Mothers with medium lengths of education tend to choose higher quality (Tables 7.8 and 7.9).
- Mothers' earnings are generally positively related to the quality choice, while other family income has a smaller positive impact (Tables 7.8 and 7.9).
- Families with more pre-school and school siblings tend to choose lower levels of quality of care (Tables 7.8 and 7.9).

Family characteristics, including mother's education, may affect either the real or the perceived benefits from higher-quality care, while mother's earnings and other family income influence the financial resources available for higher quality. A greater number of children may reduce the amount that can be spent for each child or allow the family to take advantage of discounts for care for more than one child from the same family.

# CHAPTER 8

# The Effect of the Working Families' Tax Credit on Mothers' Employment and Childcare Use[170]

## 8.1 Introduction

The introduction of the childcare tax credit in the working families' tax credit (WFTC) has been heralded as one of the main strands of the government's National Childcare Strategy.[171] The WFTC replaced family credit (FC) in October 1999 and although its structure is similar to FC, it is substantially more generous in subsidising the cost of childcare for low-income working families. In this chapter, the impact of the introduction of the WFTC is simulated using a model of mothers' employment and childcare based on current observed behaviour, in order to compare the most likely work and childcare choices under the FC programme (as of September 1999) with those under the WFTC (as of October 1999).[172,173]

The following section briefly describes the underlying model of behaviour. This model makes explicit how family characteristics and the price of childcare affect work and childcare choices through their independent influence on either employment or childcare, while the analysis of most of the previous chapters focused on the overall impact on either employment or childcare without regard to the route of influence.[174] Section 8.3 describes in detail the generosity of the WFTC relative to the FC programme it replaced, while Section 8.4

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[170] This chapter is a summary of Duncan, Paull and Taylor (2001b).

[171] Green Paper, 1998, p. 15.

[172] Previous work has estimated the impact of the introduction of the WFTC on employment choices but has not considered the childcare dimension (Blundell et al., 2000).

[173] The model could also be used to simulate the impact of other childcare policies that seek to influence behaviour through financial incentives.

[174] The main exception to this is the modelling of the impact of price on the use of childcare in Chapter 7, which explicitly models the impact only on childcare whilst holding mothers' employment constant.

presents the simulated impacts on employment and childcare choices. The final section summarises the main conclusions.

## 8.2 The Underlying Model

The underlying model of childcare and mothers' employment choices is innovative in two main respects.[175] First, it is a development of an earlier study[176] in that it focuses on the joint nature of the childcare take-up and employment decisions for mothers, but explicitly recognises that the need to cover the mother's work hours may force childcare hours to be higher than would otherwise be chosen.[177] Second, the price of childcare used in the empirical analysis is the price derived in the previous chapter, which is adjusted to a standard quality and standard childcare hours.

The model involves the joint estimation of two propensities: first, an employment propensity that divides the mother's employment choices into the three options of not working, working part-time and working full-time; second, a childcare propensity for working mothers that divides the childcare decision into two choices—minimum care (that required to cover the mother's work hours) and extra care (that in excess of the mother's work hours). For non-working mothers, the childcare decision cannot be estimated as the care choices of these mothers are not known in the data. Hence, the likelihood that a mother will be in each of five possible employment and childcare combinations[178] can be estimated.

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[175] Full details of the model and the technical developments underlying it can be found in Duncan, Paull and Taylor (2001b).

[176] Duncan and Giles, 1997.

[177] In estimating the impact of subsidies on employment and childcare, it is essential to model the 'unconstrained' demand for childcare—that is, the level that would be chosen if there were no need to cover the mother's work hours. Information on the childcare choices of non-working mothers could be used, but such information is typically not available. In this chapter, information on those using childcare hours in excess of the mother's work hours is used to estimate the 'unconstrained' childcare demand. In the previous two chapters, the 'unconstrained' demand was estimated using the variation in childcare hours around the mother's work hours.

[178] The five combinations are not working, working part-time and using minimum childcare, working part-time and using extra childcare, working full-time and using minimum childcare and working full-time and using extra childcare.

The following set of variables were included in both the employment and childcare propensities as they are thought to influence both decisions to work and decisions to use childcare:

- the number of children under the age of 12 by age;
- the age of the mother;
- the age at which the mother left full-time education;
- the mother's ethnicity.[179]

In addition, the employment propensity included some variables that were omitted from the childcare propensity:

- the log of unearned family income;
- the partner's earnings (for the model for mothers with partners);
- the mother's wage;[180]
- the average hourly income gain from the mother increasing her employment from 0 to 20 hours, from 20 to 30 hours and from 30 to 40 hours.

The last set of variables (the income gain variables) control for the effects of taxes and transfers on employment and childcare decisions. The relative incomes in and out of work and the average hourly pay-off from increasing hours of work are important determinants of a mother's decision to seek or to increase her level of paid employment. The series of income variables measure the average hourly income gain from increasing mother's employment from 0 to 20 hours, from 20 to 30 hours and from 30 to 40 hours, where income is measured as net income (including childcare subsidies) with childcare costs subtracted.[181] The inclusion of this set of net income variables also allows the model estimates to be used to predict changes in employment and childcare status in response to the introduction of the WFTC.

[179] However, due to the small number of non-white mothers in the survey, accurate results could not be estimated when ethnicity was included in both the employment and childcare propensities and it was necessary to omit ethnicity from the childcare propensity.

[180] Since wage rates are not observed for non-employed women, a wage for non-workers is estimated using a standard selection-corrected wage equation.

[181] In calculating the cost of childcare for any school children that a mother may have in addition to her pre-school child(ren), it is assumed that the first 30 hours each week are 'free' school time.

The childcare equation for the propensity to use formal paid childcare includes the following variables that were omitted from the employment equation:

- whether the mother works at home;
- number of families in the household;
- number of older children in the family;
- number of years lived at the current address;
- receipt of maintenance income;
- childcare price;
- childcare subsidy.

The first four factors may be related to the provision of alternative informal care, while the receipt of maintenance income may indicate a source of income that is earmarked to provide for the care of any children in the household. The childcare price measure is derived from the price measure developed in the previous chapter that controls for quality and potential non-linearities in the pricing structure. For each mother in the sample, a standard-quality-and-hours price is assigned to each child, given the child's age and the local authority in which the mother resides. The price the mother faces is the sum of these prices over all her children, including any school children under the age of 12. Hence, the price will vary by local authority and the number and ages of children.[182] In addition, the average hourly subsidy to compensate for the childcare costs incurred when 20 hours of standard-quality childcare is purchased is included in the childcare equation in order to capture the direct impact of such subsidies on formal childcare use independent of the labour supply response.

The model was estimated using the FRS data for all mothers with a pre-school child. Separate models were estimated for single mothers and mothers with partners and the results are presented in Tables 8.1 and 8.2 respectively.[183]

[182] Because the previous chapter applied grouping methods to predict the quality- and hours-adjusted prices, there were missing price data when grouping cells contained no observations on price. Consequently, the sample is rebalanced so that the proportions of working and non-working households remain representative of the full population.

[183] The complete set of results presented in Duncan, Paull and Taylor (2001b) reveal important and significant differences among the parameters when compared with simpler

The model estimates are generally consistent with expectations and the analysis in earlier chapters.[184] The level of family non-work income (which includes savings income, maintenance payments and any partner's earnings) is negatively related to the employment propensity, indicating that higher out-of-work incomes act as an employment disincentive. Families with very young children are less likely to work, but more likely to demand formal childcare, than are families with older children. Mothers with more years of formal education are more likely to be employed and to use formal childcare. These results hold qualitatively for both single mothers and mothers with partners, although some differences do exist in the magnitudes of these effects. In particular, the propensity for single mothers with young children to use formal childcare systematically exceeds that for mothers with partners, a result that is consistent with the earlier analysis of FRS data on childcare use for these two demographic groups.

There is evidence of a positive relationship between wage rates and employment for women with partners. For single parents, the relationship is less strong, which may be explained by the relative lack of variation in wage rates among the working sample.

The results for single mothers and mothers with partners show that the greater the income gain from working, the more likely is the mother to seek employment. These results condition on gross wage rates and so are identified through variation in taxes and transfers over time and across households. This suggests that a tax reform that increases the financial reward to, say, full-time employment will improve work incentives to a significant degree.

The estimated impact of the childcare price on the probability of choosing formal childcare is strongly negative for both single mothers and mothers with partners. The estimated price effect is

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models that ignore the presence of quantity constraints. Indeed, the estimates suggest that a failure to control appropriately for quantity-constrained data in the estimation method can lead to general parameter bias and a spurious negative correlation between childcare and employment decisions.

[184] The estimated values of thresholds 1 and 2 show the estimated values of the employment propensity required for mothers to work part-time and full-time respectively.

**Table 8.1. Five-State Employment and Childcare Model: Single Mothers**

| Regressors | Employment propensity | | Childcare propensity | |
|---|---|---|---|---|
| | Coefficient | Std error | Coefficient | Std error |
| *No. of children aged:* | | | | |
| < 1 | –0.723*** | 0.093 | 0.460 | 0.298 |
| 1 | –0.409*** | 0.081 | 0.930*** | 0.263 |
| 2 | –0.395*** | 0.073 | 0.663** | 0.269 |
| 3 | –0.411*** | 0.071 | 0.494* | 0.276 |
| 4 | –0.407*** | 0.073 | –0.366 | 0.262 |
| 5–11 | –0.103*** | 0.034 | –2.970 | 6.202 |
| *Mother:* | | | | |
| (Age–35)/10 | –0.142*** | 0.035 | –0.181 | 0.161 |
| $(\text{Age}-35)^2/100$ | –0.233*** | 0.032 | –0.340** | 0.136 |
| Left education aged: | | | | |
| 17–18 | 0.306*** | 0.054 | 0.581*** | 0.151 |
| 19–21 | 0.302*** | 0.078 | 1.135*** | 0.231 |
| After 21 | 0.250** | 0.102 | 1.503*** | 0.293 |
| Non-white | –0.149** | 0.062 | excluded | |
| Log(other income) | –0.023** | 0.010 | excluded | |
| Mother's wage | 0.024* | 0.014 | excluded | |
| Income gain: 0–20 | –0.120*** | 0.009 | excluded | |
| Income gain: 20–30 | 0.147*** | 0.020 | excluded | |
| Income gain: 30–40 | 0.119*** | 0.018 | excluded | |
| Works at home | excluded | | –0.099 | 0.429 |
| No. of families | excluded | | 0.167 | 0.124 |
| No. of older children | excluded | | –1.480*** | 0.395 |
| Years lived here | excluded | | –0.002 | 0.023 |
| Maintenance | excluded | | –0.178 | 0.161 |
| Childcare price | excluded | | –0.194** | 0.079 |
| Childcare subsidy | excluded | | 2.704*** | 0.913 |
| Constant | — | — | –0.944*** | 0.348 |
| Threshold 1 ($\gamma_1$) | 0.027** | 0.066 | — | — |
| Threshold 2 ($\gamma_2$) | 0.882*** | 0.069 | — | — |
| Correlation | 0.227* (0.131) | | | |
| Log likelihood | –3,342.1 | | | |
| Sample size | 3,810 | | | |

Notes: Stars denote that the coefficient is significantly different from zero at the 1% (***), 5% (**) and 10% (*) levels. Omitted mother's age left education is 16. 'Other income' includes all family income other than mother's earnings and is measured in hundreds of pounds per week. 'Income gain' is the average hourly gain from increasing labour supply. 'Childcare subsidy' is the estimated hourly subsidy for one who purchases 20 hours of standard-quality childcare. Dashes indicate parameters that are not relevant to that propensity.

**Table 8.2. Five-State Employment and Childcare Model: Mothers with Partners**

| Regressors | Employment propensity | | Childcare propensity | |
|---|---|---|---|---|
| | Coefficient | Std error | Coefficient | Std error |
| *No. of children aged:* | | | | |
| < 1 | –0.633*** | 0.037 | 0.348*** | 0.099 |
| 1 | –0.387*** | 0.034 | 0.337*** | 0.084 |
| 2 | –0.363*** | 0.033 | 0.292*** | 0.083 |
| 3 | –0.301*** | 0.033 | 0.311*** | 0.084 |
| 4 | –0.310*** | 0.032 | –0.464*** | 0.081 |
| 5–11 | –0.185*** | 0.016 | –2.717*** | 0.358 |
| *Mother:* | | | | |
| (Age–35)/10 | –0.213*** | 0.020 | –0.182** | 0.071 |
| $(\text{Age}-35)^2/100$ | –0.264*** | 0.019 | –0.661*** | 0.070 |
| Left education aged: | | | | |
| 17–18 | 0.201*** | 0.026 | 0.136*** | 0.056 |
| 19–21 | 0.263*** | 0.036 | 0.296*** | 0.073 |
| 21 | 0.175*** | 0.041 | 0.467*** | 0.082 |
| Non-white | –0.185*** | 0.036 | excluded | |
| Partner not working | –0.274*** | 0.056 | –0.464*** | 0.103 |
| Log(other income) | –0.033*** | 0.005 | excluded | |
| Partner's earnings | –0.016*** | 0.005 | excluded | |
| Mother's wage | 0.119*** | 0.014 | excluded | |
| Income gain: 0–20 | –0.012 | 0.009 | excluded | |
| Income gain: 20–30 | 0.092*** | 0.025 | excluded | |
| Income gain: 30–40 | 0.181*** | 0.023 | excluded | |
| Works at home | excluded | | –1.046*** | 0.191 |
| No. of families | excluded | | –0.252** | 0.098 |
| No. of older children | excluded | | –2.465*** | 0.567 |
| Years lived here | excluded | | –0.016* | 0.008 |
| Maintenance | excluded | | –0.244 | 0.398 |
| Childcare price | excluded | | –0.342*** | 0.027 |
| Childcare subsidy | excluded | | 1.251*** | 0.126 |
| Constant | — | — | 0.368** | 0.138 |
| Threshold 1 ($\gamma_1$) | –0.605*** | 0.043 | — | — |
| Threshold 2 ($\gamma_2$) | 0.575*** | 0.043 | — | — |
| Correlation | 0.490*** (0.059) | | | |
| Log likelihood | –13,426.3 | | | |
| Sample size | 12,011 | | | |

Notes: Stars denote that the coefficient is significantly different from zero at the 1% (***), 5% (**) and 10% (*) levels. Omitted mother's age left education is 16. 'Other income' includes all family income other than mother's earnings and is measured in hundreds of pounds per week. 'Income gain' is the average hourly gain from increasing labour supply. 'Childcare subsidy' is the estimated hourly subsidy for one who purchases 20 hours of standard-quality childcare. Dashes indicate parameters that are not relevant to that propensity.

stronger than previous UK estimates, and more in line with results found in US studies.[185] Recall that these prices have been adjusted to control for possible quality differences in the set of observed prices across the working sample, and may therefore be indicative of pure price elasticities. The strength and consistency of these empirical results lend strong support to the claim that childcare price subsidies will have positive incentive effects on the take-up of formal childcare among families with children.

There is also a positive association between the level of childcare subsidy and the take-up of formal childcare among working households. Again, this has implications in the current policy debate on childcare cost subsidisation, particularly given the relative generosity of the childcare credit element of the WFTC.

## 8.3 The Generosity of the Working Families' Tax Credit

The main differences between WFTC at October 1999 and the latest FC (at September 1999) are

- increases in the adult credit: from £49.80 under FC to £53.15 under WFTC;
- increases in the child credit: from £15.15 to £25.60 for children under 11;
- an increase in the threshold before payment is withdrawn: from £80.65 to £91.45 per week;
- a reduction in the withdrawal rate from 70 per cent to 55 per cent;
- a new childcare credit of 70 per cent of actual childcare costs, up to a maximum of £100 per week for one child and £150 for two or more children, to replace the childcare disregard.

With such generous support available for actual childcare costs, the WFTC is likely to have considerable impact not only on the employment choices of mothers, but also on the childcare market in the UK. Previous work simulating only the work incentive consequences of the WFTC has shown that the higher rates of return to working have positive impacts on the propensity to undertake formal paid employment for single mothers and mothers with

[185] For example, in Hotz and Kilburn (1991).

unemployed partners, but that there is a negative net impact on the employment of mothers with low-earning partners because the WFTC also raises the level of household income (via the working partner's entitlement) if the mother does not work for this group.[186] However, there has been little, if any, work on the likely impact of the childcare credit on the use of formal childcare services.

In order to highlight the generosity of the childcare credit component of the WFTC, Table 8.3 presents the estimated net income and magnitude of childcare subsidy over five different work and childcare hours scenarios under the FC programme and the WFTC for a sample of lone parents. Because childcare expenditures are not observed for the full sample of single parents, the simulations are based on a fixed hourly price of £3.38 for childcare.[187] The resulting pattern of incomes represents an illustrative set of options from different work and childcare choices. Note that there is no financial gain from either the FC or the WFTC when the mother

**Table 8.3. Single Parents' Net Income and Childcare Subsidy under FC and the WFTC**

| | Weekly hours of work and childcare | | | | |
|---|---|---|---|---|---|
| | 0 | 10 | 20 | 30 | 40 |
| | Weekly childcare expenditure (£ per week) (at £3.38 per hour) | | | | |
| | 0.00 | 33.75 | 67.50 | 101.25 | 135.00 |
| | *Net income (£ per week)* | | | | |
| Under FC | 144.99 | 155.19 | 193.34 | 221.17 | 241.52 |
| Under WFTC | 144.99 | 155.19 | 238.19 | 270.67 | 286.24 |
| | *Value of childcare credit (£ per week)* | | | | |
| Under FC | 0.00 | 0.00 | 4.11 | 11.22 | 17.96 |
| Under WFTC | 0.00 | 0.00 | 35.14 | 40.93 | 41.05 |
| | *Value of childcare credit (% of childcare costs)* | | | | |
| Under FC | 0 | 0 | 6 | 11 | 13 |
| Under WFTC | 0 | 0 | 52 | 40 | 30 |

Notes: Calculations based on a sample of single-parent households from the 1994 FRS using the IFS microsimulation model TAXBEN. Wage rates are predicted when unobserved.

[186] Blundell et al., 2000.

[187] The subsequent simulations use individualised childcare prices based on the local authority and number and ages of children.

works 0 or 10 hours each week because eligibility for both requires the mother to work at least 16 hours each week.

The absolute values of the childcare disregard component of FC were relatively small. On average, a single parent working 40 hours received only a small increase of £17.96 in the value of the FC if she purchased 40 hours of childcare each week, compared with a similar woman who purchased no care. In proportionate terms, this increase would cover only 13 per cent of the cost of childcare, assuming an hourly price of £3.38. In comparison, the value of the childcare credit component of the WFTC is very large. On average, for a single mother working 40 hours and consuming 40 hours of childcare each week, the value of the credit more than doubles to £41.05. This represents 30 per cent of total childcare expenditures at the assumed price level. For part-time women, the average childcare credit covers more than half of the total cost of childcare.

## 8.4 The Impact on Mothers' Employment and Use of Childcare

The impact of the introduction of the WFTC programme on mothers' employment and childcare choices was simulated using data from the FRS for the 1994/95 to 1998/99 period. This simulation involves, first, estimating the proportions of mothers in each of the five states when the observed net income variables and childcare subsidy variables are replaced by those that would exist under the FC programme, as of September 1999. These estimated proportions are then compared with the proportions estimated by replacing the variables with those that would exist under the WFTC, as of October 1999.[188]

For single mothers, the net changes suggest an increase of 3.1 percentage points in the proportion of mothers in employment following the introduction of WFTC (Table 8.4). The increases are spread fairly evenly between part-time work with extra childcare (1.0 percentage points), full-time work with minimum childcare (1.8 percentage points) and full-time work with extra childcare (0.4 percentage points). These net increases in employment exceed by

[188] The simulations assume complete take-up for both the FC and the WFTC.

**Table 8.4. Mothers' Employment and Childcare Use under FC and the WFTC**

| % of mothers | Single mothers | | Mothers with partners | |
|---|---|---|---|---|
| | FC | WFTC | FC | WFTC |
| No work, unspecified childcare | 58.1 | 55.0 | 29.9 | 29.7 |
| Part-time work, minimum care | 19.6 | 19.5 | 36.5 | 36.6 |
| Part-time work, extra care | 7.3 | 8.3 | 5.2 | 5.2 |
| Full-time work, minimum care | 12.2 | 14.0 | 25.3 | 25.6 |
| Full-time work, extra care | 2.8 | 3.2 | 2.9 | 2.8 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

some margin the results of earlier simulations of the impacts of WFTC on single parents' employment rates.[189] In addition, the propensity to use extra childcare increases by 1.4 percentage points. The net effects for mothers with partners, however, are negligible.[190]

The net changes for single mothers are broken down into the movements between the five states in Table 8.5. In particular, all of the mothers moving into employment are simulated to work part-time under the WFTC (3.1 per cent) and most do so with minimum childcare (2.4 per cent). In addition, a similar proportion of mothers who were working part-time move into full-time work (3.1 per cent), while there are some offsetting employment responses among women who move from full-time to part-time employment (0.9 per cent) to take advantage of the increased generosity of tax credits at

[189] The simulated work responses to the WFTC in Blundell et al. (2000) estimate that the employment rate for single parents increases by 2.2 percentage points, grossing up to around 30,000 women in the population.

[190] For women with employed partners, Blundell et al. (2000) estimate a reduction in the propensity to work of 0.6 percentage points, grossing up to around 20,000 in the population. For women with unemployed partners, the estimated proportion working rises by 1.3 percentage points, grossing up to around 11,000 in the population.

**Table 8.5. Simulated Transitions Following the Introduction of WFTC: Single Mothers**

| % of mothers | Work and childcare use under WFTC | | | | |
|---|---|---|---|---|---|
| Work and childcare use under FC | No work | Part-time work, minimum care | Part-time work, extra care | Full-time work, minimum care | Full-time work, extra care |
| No work | 55.0 | 2.4 | 0.7 | 0.0 | 0.0 |
| Part-time work, minimum care | 0.0 | 16.5 | 0.3 | 2.8 | 0.0 |
| Part-time work, extra care | 0.0 | 0.0 | 7.0 | 0.0 | 0.3 |
| Full-time work, minimum care | 0.0 | 0.6 | 0.1 | 11.2 | 0.3 |
| Full-time work, extra care | 0.0 | 0.0 | 0.2 | 0.0 | 2.6 |

lower hours levels. Overall, there is a general 'movement up' in employment choices for single mothers.[191]

The increase in the use of extra childcare rises almost equally from those moving into employment (0.7 per cent) and from relative increases in childcare use without a change in employment status (0.3 per cent for part-time workers and 0.3 per cent for full-time workers). However, in both cases, it is not known whether these represent increases in the hours of care used. For those simulated as not working under FC, the childcare use is unspecified prior to the introduction of the WFTC. For those working part- and full-time in both scenarios, the simulated movement from minimum to extra childcare could result from a reduction in the hours of work rather than an increase in care hours.

The movements between the five states for mothers with partners highlight that the net changes disguise some important underlying changes (Table 8.6). The simulations predict that 0.6 per cent of

[191] These simulations are broadly consistent with those of Blundell et al. (2000), who estimate that around 2.2 per cent of the sample of single parents move from no work to either part-time (0.7 per cent) or full-time (1.5 per cent) work. Around 0.5 per cent of the sample shift from part-time to full-time work, while 0.2 per cent move in the opposite direction (table 7).

**Table 8.6. Simulated Transitions Following the Introduction of WFTC: Mothers with Partners**

| % of mothers | Work and childcare use under WFTC | | | | |
|---|---|---|---|---|---|
| Work and childcare use under FC | No work | Part-time work, minimum care | Part-time work, extra care | Full-time work, minimum care | Full-time work, extra care |
| No work | 29.3 | 0.6 | 0.0 | 0.0 | 0.0 |
| Part-time work, minimum care | 0.4 | 35.5 | 0.1 | 0.5 | 0.0 |
| Part-time work, extra care | 0.0 | 0.2 | 5.0 | 0.0 | 0.0 |
| Full-time work, minimum care | 0.0 | 0.3 | 0.0 | 25.0 | 0.0 |
| Full-time work, extra care | 0.0 | 0.0 | 0.0 | 0.1 | 2.8 |

mothers with partners respond to the added generosity of WFTC by moving into employment, while a similar proportion move from part-time to full-time work. Conversely, around 0.4 per cent of mothers are predicted to move out of paid employment and 0.3 per cent to reduce their working hours from full-time to part-time, principally due to their partner's increased WFTC entitlement.[192]

## 8.5 Summary

This chapter has simulated the impact of the introduction of the WFTC on mothers' employment and childcare choices using the FRS data. The estimation of the underlying model has shown that

- the price of childcare has a strong and significant negative effect on the demand for childcare and, through that, on the employment choices of women with children (Tables 8.1 and 8.2);

[192] In Blundell et al. (2000), 0.2 per cent of the sample of women with employed partners move into the labour market following the reform, while 0.7 per cent move from work to not working (table 8). On the other hand, 0.4 per cent of the sample of women with unemployed partners move from not working to part-time work and 0.9 per cent from not working to full-time work, while another 0.4 per cent increase their employment from part- to full-time (table 9).

- the level of government compensation for childcare costs has a significantly positive impact on childcare use (Tables 8.1 and 8.2).

This suggests that the subsidisation of childcare costs even through programmes not related to a work requirement could have an important impact on the use of childcare among both working and non-working mothers.

The simulations of the impact of the WFTC suggest that

- 3.1 per cent of single mothers will move from not working to part-time employment following the introduction of the WFTC, while a further 3.1 per cent will move from part-time to full-time work (Table 8.5);
- there is a modest net positive effect on employment rates among mothers with partners, with some mothers moving from no work to part-time work (0.6 per cent) or from part-time to full-time employment (0.5 per cent) while other mothers move out of employment, taking advantage of their partner's increased entitlement to the basic WFTC (Table 8.6);
- there is a marginal increase in the use of childcare beyond that necessary simply to cover for the mother's hours of employment (Tables 8.5 and 8.6).

These simulations show that government subsidies of childcare expenditures, particularly if related to a work requirement, can have sizeable impacts on the employment choices of mothers and the degree of use of formal paid childcare.

# CHAPTER 9

# Conclusions

The role of women in the labour market has become increasingly important in recent decades as a steadily rising proportion of the workforce has come to consist of female workers. For women with children, childcare choices are a major aspect of the working decision. In presenting the wealth of information on the employment behaviour of mothers and their childcare choices in Britain, the aim of this book is to be descriptive rather then prescriptive. In particular, although the availability of childcare has been a central topic, this is not to imply that it is desirable that all mothers should be in paid employment. There is inevitably a balance for mothers between the incentives to undertake formal paid employment and the rewards from undertaking 'unpaid informal work' caring for children at home. For some mothers and their children, the former may always be the best choice, while, for others, the latter may always dominate. For those families in between, government policies may tip the balance. How much and in what direction government policy should influence this balance is a subject for social debate. The purpose of this book has been to present a comprehensive picture of the current situation and to highlight how the balance may be altered, if desired.

In concluding the main issues, this chapter draws together the evidence from previous chapters to address some important questions about childcare.

## 9.1 Are Mothers Constrained in Their Ability to Work?

There can be little doubt that the presence of children has a substantial impact on the propensity of women to undertake paid employment, particularly for mothers with younger children:

- 51 per cent of mothers with partners and a youngest child aged 1 are employed, compared with 73 per cent of partnered women without children.

- 20 per cent of single mothers with a youngest child aged 1 are employed, compared with 68 per cent of single women without children.

Although the likelihood of a mother undertaking formal work increases steadily with the age of the youngest child, the gradual rise in the employment rate is mostly explained by an increase in part-time rather than full-time work:

- 28 per cent of mothers with partners are employed full-time, compared with 51 per cent of partnered women without children.
- 19 per cent of single mothers are employed full-time, compared with 56 per cent of single women without children.

Hence, in terms of employment behaviour, mothers behave differently in two main ways:

® *Mothers are less likely to work than women without children, especially when their children are younger.*
® *Mothers are much more likely to work part-time rather than full-time than women without children.*

How much of this withdrawal from the labour force is due to a *desire* to care full-time for their children or to spend more time at home and how much is due to an *inability* or lack of sufficient financial return to work? Two sources of evidence have been considered to address this question.

First, there are direct questions asking non-working mothers whether they are prevented from seeking work by having to look after children and whether they would also like to have a regular paid job:

- The vast majority of non-working mothers report that they are prevented from seeking work by having to look after children, but a much smaller fraction (about a quarter) claim that they would also like to have a regular paid job.

In addition, direct questioning of part-time working mothers also reveals that a substantial proportion feel constrained from working longer hours by a lack of childcare options:

- 11 per cent of part-time working mothers of pre-school children and 10 per cent of part-time working mothers with only school children report that they would work more hours if some suitable form of childcare were available.

This suggests that a significant proportion of mothers at least perceive that they are constrained in their ability to work.

® *There is evidence that a substantial proportion of mothers perceive that they are constrained in their ability to work.*

The second source of evidence uses local authority statistics on the provision of different types of childcare. The current levels of provision (as of March 1999) can provide regular full-time formal care for only a minority of the current child population:

- There are approximately eight nursery places and 11 playgroup places for each 100 children under the age of 5.
- There are almost seven childminder places for each 100 children under the age of 8.
- There are approximately six out-of-school club places and almost 20 holiday scheme places per 100 children aged 5 to 7.

In addition, there are some positive relationships between the level of childcare provision and the employment rates of mothers across both time and area:

- Over the second half of the 1990s, there has been a rise in the proportion of mothers working both part-time and full-time and a substantial increase in the availability of day nursery, out-of-school club and holiday scheme places.
- Areas with greater availability of day nursery and childminder places have higher proportions of mothers of pre-school children who work full-time, while areas with greater availability of playgroup places have higher proportions who work part-time.
- Areas with greater availability of childminder places have higher proportions of mothers with only school children who work, while areas with greater availability of holiday scheme places have higher proportions who work part-time.

However, it should be noted that although these relationships show that employment and childcare provision may move hand-in-hand, they do not say anything about the direction of causation. In particular, it is not possible to differentiate whether (a) an increasing or high propensity to work on the part of mothers leads to greater demand and provision of places or (b) an increasing or high supply of childcare places allows a greater proportion of mothers to work. Even if various 'demand' factors are controlled for, any remaining relationship could derive from unobserved differences in demand as much as from supply constraints in the childcare market.

® *Although lower provision of childcare places is associated with lower employment rates, this cannot be interpreted as evidence of childcare constraints.*

## 9.2 Does School Remove Any Constraints to Working?

Much of the childcare debate has focused on the provision of childcare for pre-school children, implicitly assuming that once a child reaches school age, free 'school-time' childcare allows the mother to choose to work if she wishes. However, this does not appear to be the case, as there is no sudden increase in employment rates when the youngest child starts school. The reason may be simple: there may be too few jobs that can be fitted in with the short school day or around the long school holidays.

® *If the aim is to encourage mothers to undertake paid employment, childcare policies need to cover school children as well as pre-school children.*

## 9.3 What Impact Does the Price of Childcare Have on Childcare Use and the Employment of Mothers?

A lack of *affordable* childcare has been at the centre of much of the discussion of why mothers choose not to work. Indeed, for families using paid childcare, a substantial proportion of their resources are spent on childcare:

- Families with pre-school children spend an average £62.65[193] each week, amounting to 13 per cent of net family income.
- Families with only school children spend an average £28.25 (7 per cent of net family income) during term time and £53.09 (14 per cent of net family income) during the holidays.

Hence, it might be expected that changes in the childcare price might have substantial impacts on both childcare choices and employment behaviour.

Over and above any employment response on the part of mothers, changes in the childcare price affect the use of care. Price is negatively related to the propensity to use paid formal care for pre-school children, although there is no evidence of a significant relationship between price and the hours of formal care purchased.

® *A lower childcare price is associated with greater use of formal childcare for pre-school children independent of any changes in employment behaviour.*

In addition, using a model that combines childcare and employment choices, it has been shown that the price of childcare has a strong and significant effect on the demand for childcare and, through that, on the employment choices of mothers.

® *A lower childcare price is associated with increased employment on the part of mothers.*

Childcare subsidies that effectively reduce the price of childcare will have the same effects as price reductions.

® *The subsidisation of childcare costs is likely to increase the use of formal childcare and the employment of mothers.*
® *However, a substantial proportion of any subsidisation may be paid towards care that does not alter childcare or employment behaviour in any way.*

[193] This is the average amount spent on all children under the age of 12 for families with a working mother and using paid care. All costs are indexed to January 1999 prices.

## 9.4 Why Is There a Role for Government Policy in the Childcare Market?

As discussed in Chapter 1, there are two main arguments why the use of childcare is important:

- continued employment for mothers, particularly in full-time work, may enhance their skills and is therefore beneficial both to the individual mother and to the economy more generally;
- the use of good-quality formal childcare for pre-school children may be beneficial to child development.

However, these potential benefits may not be fully incorporated into parents' decisions, for several 'market failure'-type reasons: some of the benefits of child development may be social rather than private; parents may lack complete information on the costs and benefits; parents may be short-sighted in their outlook and not appreciate the future benefits; or parents may be credit-constrained and unable to afford to undertake the current investments in childcare use. Consequently, they may decide to use less childcare than the efficient level.

In addition, even in the absence of any such market failures, there are distributional reasons for involvement:

- The continued employment of mothers may help to reduce women's weaker position in the labour market relative to male workers.
- If early formal childcare is beneficial to future development, it could be argued that it should be available to all children regardless of parental resources.

There is also an additional potential reason for encouraging mothers, particularly single mothers, to remain in formal employment:

- The employment of mothers may be a means of allowing single mothers and women with partners in poorer households to be financially independent of State support.

In designing childcare policies to encourage mothers to work, therefore, it is important to understand whether the objective is to strengthen women's position in the labour market vis-à-vis men more generally or whether it is to provide support to poorer families.

## 9.5 Should Childcare Subsidies Be Related to Work Requirements?

If the objective of childcare policy is to encourage mothers to undertake formal employment (for efficiency or distributional reasons), then childcare subsidies or the provision of free care related to work requirements may enhance the likelihood of mothers working, both by increasing the financial return to work and by allowing an additional incentive in the form of the potential benefits of use of formal childcare for the child. In addition, the work requirement will minimise the cost of any policy by focusing resources only on mothers who are employed.

However, the simulations of the impact of the working families' tax credit show that government subsidies of childcare expenditures have a greater impact on the work choices of mothers if directly related to the work behaviour of the mother (as for single mothers) than if related to the family (as for mothers with partners).

® *Childcare subsidies will have a greater impact on mothers' employment if related to a work requirement for the mother.*

In addition, in all the models set out in this book relating differences in behaviour to family income levels, the source of the income is important in the size of the effect. Indeed, the impact of the mother's earnings on childcare choices is always much greater than that of other family income.

® *Childcare subsidisation that operates through the mother's earnings or are directly associated with the earnings are more likely to be effective than more general family subsidies.*

Full-time employment for mothers may be more likely than part-time work to maintain women's position in the labour market and to enhance their skill level. Hence, from both efficiency and distribution perspectives, it might also be desirable to include incentives to

encourage full-time work, or, at least, not to restrict the incentives encouraging only part-time work. For example, upper limits on the amount of subsidisation for childcare costs could be related to the mother's hours of work.

® *If the objective is to encourage full-time work, it may be desirable to have higher levels of childcare subsidisation for full-time working mothers than for those working part-time.*

## 9.6 Should Government Policy Cover Only Formal Types of Childcare?

In public discussions of childcare policy, the focus is often on measures to provide support for formal types of childcare (such as centres, childminders, nannies and au pairs), although the issue of covering costs for informal sources (such as care provided by other family members or friends) is occasionally raised. Yet perhaps one of the most important features of the description of childcare use in Chapter 6 is the documentation that a substantial proportion of working mothers do not use any type of formal care, either because the mother is managing to work without any additional care or because informal care is being used:

- 29 per cent of pre-school children with working mothers use no childcare, while 37 per cent receive care only from informal sources and 34 per cent spend some time in formal care.
- 32 per cent of young (aged 4–11) school children with working mothers receive childcare only from informal sources, while only 13 per cent spend some time in formal care.

This has two important implications. First, informal care has clearly played an important role in enabling mothers to work.

® *General subsidisation of childcare unrelated to the type of childcare allows parents to choose the best form for them and may encourage additional mothers to work by allowing them to choose informal care options.*

However, it should be noted that lower average weekly hours tend to be provided by informal sources (both paid and unpaid), and

informal care may be limited in offering mothers sufficient hours to cover full-time working. Second, there is considerable scope for policy to alter childcare choices but not necessarily in a way that is desirable.

® *Childcare subsidisation or other measures that only cover the use of formal sources of care may encourage large numbers of mothers to switch their care arrangements from informal to formal sources or to formalise their arrangements, possibly without any changes in employment behaviour but with considerable programme costs.*

## 9.7 Should Government Policy Target Particular Types of Childcare?

Recent policy interest has tended to focus on the role of day nurseries and centre-type care for pre-school children—for example, the nursery education grant and the emphasis on the provision of a centre-type care place for every 3- and 4-year-old. One reason for this focus may derive from the possible social and educational benefits to children from early centre-type care. However, childminding plays an especially important role in providing care for children whose mothers are working:

- Childminders are the most popular formal care option for pre-school and school children with working mothers.
- Childminders tend to be most popular among mothers working longer hours.
- The association between employment and availability of care is much stronger for childminders than for the other types of care, both for mothers of pre-school children and for mothers of school children.

Given the importance of childminding, the recent decline in the availability of childminder places may be a worrying development if it reflects a decline in the supply of childminders rather than a fall in demand for this type of care.

® *If the objective is to encourage mothers to work, measures to encourage the supply of childminders (through cost*

*subsidisation, tax incentives or improved regulation[194]) may be as effective as or more effective than those aimed at centre-type care.*

For school children, the hours and costs of care are very different across the term and holiday periods. From a policy perspective, it is not clear which period is the most important: the term-time situation reflects the majority of the working year, but holiday time is the crunch period when no free 'school-time' care is available. Hence, there is a need for coherence across the childcare types in order to ensure sufficient care both in terms of the length of the working day and for year-round coverage.

® *Measures for childcare provision for school children should cover both term time and the school holidays.*

Finally, it has been shown that mothers with higher earnings and families with higher other income have a greater preference for 'other' types of formal care (including nannies and au pairs) than for alternative options.

® *Even general subsidisation of childcare costs that is not linked to a particular type of care may affect the type chosen, by effectively raising family income.*

## 9.8 Should Government Policy Target Particular Types of Families?

It may be desirable for childcare support to be aimed at a particular group of children or families, for two reasons: first, if mothers in the group face particularly large barriers to working or may be particularly responsive to changes in the incentives they face; and second, if a group is deemed particularly deserving of assistance for distributional reasons.

[194] By 'improved regulation', it is meant that becoming and remaining a registered childminder is made easier by the process of registration being eased or by the registration requirements being reduced or by financial assistance to fulfil the registration requirements being provided. However, this should obviously not be achieved to the detriment of child safety.

### *9.8.1 Means Testing*

Means-tested childcare subsidies may be desirable if there are distributional objectives for the use of childcare or if the aim is to reduce the dependence of poorer families on State support by increasing mothers' employment. This book has shown that the financial resources available to the family play an influential role in the employment and childcare choices of mothers:

- Women with higher other family income are less likely to work when their children are young than women with lower financial resources at their disposal.
- For those who do work, mothers with higher earnings levels and other family income are more likely to use childcare and to use longer hours than poorer families and have a greater likelihood of using formal over informal care.
- Families with higher income spend more on childcare in terms of pounds per week but spend a smaller proportion of their net income on it.

Without means testing, childcare subsidies may pay more to high-income families. Aside from redistributing income towards poorer families, restricting the availability of childcare subsidies to those further down the income distribution may also focus resources on those with the largest likely employment response. However, means testing on a family basis may actually generate *dis*incentives for mothers with partners to work, as was shown in the case of the WFTC simulations. Hence, it cannot be justified on efficiency or gender equality arguments.

### *9.8.2 Age of Children*

An obvious initial categorisation by which to identify those families for whom policy might be most effective is by the age of the children. In particular, younger children have the greatest impact in reducing the likelihood that a mother works. This is not surprising in light of the evidence that the price of childcare declines with the child's age, although mothers may also simply desire to spend more time with their children when they are younger.

® *If the aim is to encourage mothers to work, childcare policies should provide greatest support for younger children.*

However, it is also important that viable childcare options are available as the child ages, otherwise mothers may not undertake employment if they foresee that they may have to leave or alter their employment arrangements at a later stage—for example, when a child starts school.

### *9.8.3 Number of Children*

The number of children in the family can affect employment and childcare choices by increasing the amount of care required and the financial resources required to pay for care for all the children. Indeed, the earlier chapters have documented extensively that employment and childcare choices do differ substantially by the number of siblings in a family. Most importantly, not only are employment rates lower for mothers with more pre-school or school children, but the likelihood that a non-working mother reports feeling constrained by the presence of children in her ability to work increases with the number of pre-school children. In addition, working mothers with more children are less likely to use childcare, are more likely to use informal rather than formal care and use fewer hours of childcare than those with fewer children. Larger families clearly have greater incentives to respond to childcare policies.

® *The amount of support for childcare subsidies should be closely related to the number of children in a family.*

Although some policies, such as nursery education grants, provide support that is directly proportional to the number of children, others, such as the working families' tax credit, provide less support for the second than for the first child and no additional support for subsequent children.

### *9.8.4 Single Mothers*

Single mothers are substantially different in their employment and childcare choices from mothers with partners. Single mothers are less likely than mothers with partners to work and are more likely to

report that their ability to work or to work more hours is constrained by the presence of children and a lack of suitable childcare. Even allowing for differences in work hours and earnings, single working mothers are more likely to use childcare than their partnered counterparts, are more likely to use formal rather than informal care and use more hours. They also spend a higher proportion of their family income on childcare than mothers with partners.

® *The lower employment rates for single mothers and greater use of formal childcare by single working mothers suggest that childcare subsidies targeted towards mothers without partners may be particularly effective in raising employment participation.*

In addition, childcare policies encouraging single mothers to undertake paid employment might be desirable if the objective is to reduce the reliance of poorer families on State support. However, if the basis for encouraging mothers to work is the efficiency or gender equality reasons described above, there is no reason why mothers with partners should be excluded.

### *9.8.5 Other Characteristics*

Finally, it has also been shown that employment and childcare choices for working mothers differ according to the mother's age, education and ethnicity, even allowing for the differences in work hours and earnings levels. From a policy perspective, these are not characteristics that can be used to define the targeting of childcare support. However, understanding some of the sources of the differences in behaviour may be informative as to how choices can be influenced and who policies will affect the most.

## 9.9 Regional Differences

The employment choices of mothers and attitudes to working are not uniform across the country. For example,

- part-time employment is far more prevalent in Britain outside of London;

- non-working mothers with pre-school children living in the southern shires or outer London are less likely to report that they want to work than those in other areas of the country;
- outer London has the highest proportion of mothers who report that they would like to work longer hours if suitable childcare were available.

Even allowing for differences in family characteristics, there are also sizeable differences in the childcare choices for children of working mothers across the country:

- Children in the north are more likely to use informal care than those in other regions, while those in outer London are less likely to use formal care than children in other areas.
- For pre-school children using formal care, centre-type care is most popular in the northern shire and northern metropolitan regions, while childminders and other types of care are considerably more popular in the London regions and in the south shires.
- Average weekly hours of childcare tend to be longer in London than in other parts of the country.

Mothers in different parts of the country have tended to prefer different types of childcare, probably for a range of reasons involving population density, migration patterns, the cost of living, commuting times and unmeasured differences in family background.

® *The design of childcare policy may need to take into account variations in childcare needs and preferences across the country.*[195]

There is also considerable variation in the availability of formal childcare places across local authorities:

[195] This is recognised in plans for the National Childcare Strategy: 'Childcare services must be able to respond to local needs and circumstances. They must respect parents' preferences and local traditions in childcare. They must take account of local employment patterns, the location of schools and transport networks, and strengths in existing provision' (Green Paper, 1998, p. 45).

- Playgroup provision has the smallest range, but the highest local authority's reported availability rate is still 8 times that of the lowest local authority.
- Holiday scheme places have the greatest diversity: the highest local authority's reported availability is over 200 times that of the lowest (non-zero) local authority.

Examining the relationships in the availability of care between different types shows that there is a tendency for some local authorities to have *generally* low or high levels of availability. This may reflect some of the differences in preferences listed above or be due to common elements in childcare demand and supply such as between pre-school and school children or between out-of-school clubs and holiday schemes. However, it may also be due to historical circumstances: some areas may have traditionally had low proportions of mothers who were employed, preventing the set-up of childcare options, the lack of which now discourages current mothers from working.

® *Extra support for childcare provision in specific areas of very low availability may allow the development of the childcare market, generating a cycle of increasing childcare options and greater proportions of mothers working.*

The amounts spent on childcare and the price of care also vary by region:

- Families in London and the south shire counties spend much larger weekly amounts on childcare than those in other areas, although the gap in terms of the proportion of family income spent on childcare is smaller.
- Local authorities with low prices are predominantly in the north, although central metropolitan districts and southern shire counties are also strongly represented among those with low prices for school children.
- Local authorities with high prices are almost exclusively London boroughs and northern metropolitan districts.

Hence, the differences in the amounts spent are not due just to different preferences for quality or amount of care, but reflect real differences in the cost for the same care.

® *Financial support for childcare may need to be set at more generous levels in areas with high prices.*

## 9.10 How Important Is the Quality of Childcare?

For some, the quality of childcare is the most important element in the childcare debate. On an aggregate level, the quality of childcare has varied both over time and across areas:

- The average size of day nurseries has been rising (reflecting higher or lower quality).
- The average number of places per childminder has been rising (reflecting lower quality), but is much lower in London than in the rest of the country.
- The average pupil:staff ratio for 3- and 4-year-old children in maintained nursery schools and classes has been declining (reflecting higher quality), but it tends to be lower in the south and London regions than in the northern and central areas of the country.

Over time, the increasing day nursery size, rise in childminder size and falling pupil:staff ratio have gone hand-in-hand with rising employment rates for mothers. Regionally, areas with larger day nurseries, playgroups and holiday schemes or with a lower average number of places per childminder have higher proportions of mothers working full-time. However, the direction of causation for these relationships cannot be identified. They may be demand-driven: mothers who work longer can afford or are more concerned to purchase higher-quality care or prefer larger care centres (possibly because they offer longer hours). Or the relationships may be supply-driven: in areas with fewer large care centres or only lower-quality childminders available, mothers may be constrained from working full-time.

More generally, in terms of encouraging mothers to work, it is not clear whether higher quality of care is a good or a bad thing. On the

one hand, higher quality obviously means that the benefits to the child are greater (or, at least, not so detrimental). On the other hand, higher quality costs more and the ability to use less-expensive, lower-quality options may be essential to allowing some mothers to work.

® *Regulation requiring a minimum standard of quality of care may increase or reduce the propensity of mothers to work.*

However, this book has also shown evidence that as prices rise, mothers may choose lower-quality care. For this reason, childcare subsidies may influence the quality of care chosen without reducing the financial viability of employment opportunities.

® *Childcare subsidies are likely to raise the quality of care chosen.*

Subsidies that generate quality changes alone, while beneficial in their own right, may raise the cost of a subsidy programme without any change in the employment choices of mothers.

## 9.11 How Is the Situation Changing?

Over the five-year period of the study, there are some distinct time trends in the employment behaviour of mothers:

- The propensity for mothers to be employed has risen, following a more general trend in the labour market over this period.
- In addition, the propensity for non-working mothers with pre-school children to report a desire to be employed has increased.

The latter may be because improving labour market conditions have increased mothers' desires to work and to feel constrained by their childcare responsibilities.

There are also some distinct trends in the childcare choices of working mothers:

- The use of informal care has declined for school children of working mothers.
- For pre-school and school children using formal care, there has been a significant increase in the use of centre-based care over the use of childminders and other types of care.

- For school children, weekly hours of care during term have risen significantly, but hours of care during the holidays have declined by a slightly greater degree.
- The amount spent by families on childcare has increased and it has also risen as a proportion of family income.

Finally, to summarise the trends in the aggregate childcare statistics,

- there has been a substantial increase in the number of day nursery, out-of-school club and holiday scheme places;
- the provision of childminder places has declined slightly;
- the average size of day nurseries has risen substantially;
- the average number of places per childminder has risen;
- the pupil:staff ratio for 3- and 4-year-olds in maintained nursery schools and classes has fallen considerably.

Whether average quality is improving or declining is ambiguous: larger day nurseries may be good or bad, while more places per childminder probably reflects declining quality and fewer pupils per staff member an aggregate rise in quality.

Whether these changes over a relatively short period reflect longer-term trends remains to be seen. Moreover, although the childcare market plays a vital role in determining the ability of mothers to undertake paid employment, government policy has only recently begun to recognise its importance. Designing the most effective childcare policies is important not only for the future development of the role of women in the labour market, but also for their impact on the welfare and development of the next generation of children.

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