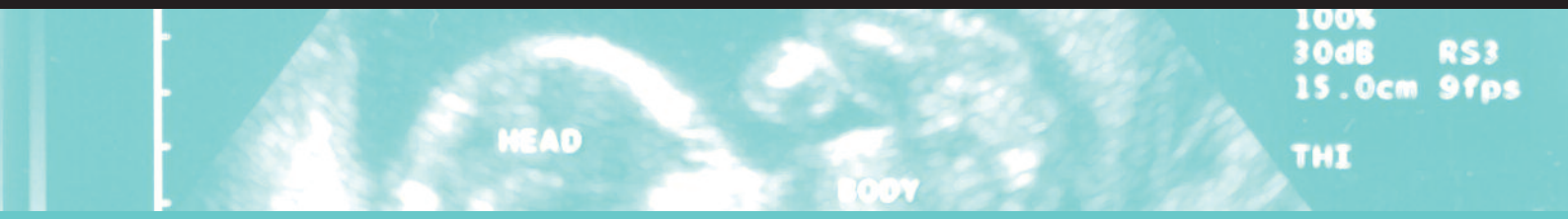
RESEARCH FINDINGS June 2009



THE TIMING OF MOTHERHOOD, MOTHERS' EMPLOYMENT AND CHILD OUTCOMES

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In the not so distant past, very few mothers in the UK had paid work, especially in the early years of their child's life. Becoming a mother in your early twenties and staying at home was the normal course of events and the conventional wisdom at the time disapproved of anything, such as employment, which might weaken the bond between mother and child. However, over the past 50 years much has changed. The baby boom in the 1950s and 1960s was followed by falling fertility rates from 1970 onwards. The age at which mothers had their first and subsequent babies also began to rise. By the 21st century, it had become the norm for mothers to have jobs. Two thirds (65%) of mothers with dependent children were in employment in 2002. Over half (53%) of those with a child under five had jobs. The Millennium Cohort Study (MCS), which has been tracking more than 19,000 children born in the UK in 2000 and 2001, found that the proportion of youngsters with working mothers rose from 54 to 58% between the ages of 3 and 5.

The increase in maternal employment has not occurred uniformly across the population. Those who are more likely to be in paid work are also those who are most likely to have had their children relatively late. Indeed, the age at which a woman enters motherhood has become more spread out in recent years, with those from the most disadvantaged situations still tending to become mothers at a young age, and subsequently, being most likely to be out of the labour market. For the families of mothers in employment, a key decision is who takes responsibility for their children whilst they are at work. There are social differences here too. Those who can afford it often purchase formal childcare from trained providers while for others, costs remain a barrier to this type of care. Some parents put a premium on informal care, believing it is important to know their child's carer. They may also appreciate the flexibility of the informal arrangements they can have with family and friends. The impact of these childcare modes on children is a growing area of research amongst social scientists.

This document presents the results of our project in three key areas: the timing of motherhood, maternal employment, childcare and the consequences for the children by addressing the following questions:

- What are the main determinants of the age at motherhood and have these changed across time?
- What are the main determinants of maternal employment in a child's early life?
- How do childcare decisions, maternal employment and age at motherhood affect cognitive and behavioural outcomes for children?

Timing of motherhood

Although the post-war era started with rising fertility and falling age of childbearing, the decades since 1970 have been characterised by a general postponement of motherhood. Later first births push second and subsequent births to later ages, although there has also been a downward trend in the proportion of women having more than two children. The age by which half of a cohort had given birth to at least one child reached a low of around 23 for cohorts of women born in the 1940s and has been rising ever since to nearly 29 for cohorts born in the mid-1970s.

Figure 1 shows a time series for England and Wales from 1958 until 2004 based on the more generally available data on first births within marriage, and all births outside marriage, for which birth order is not collected at registration. We can see that since 1970 there has been an upward trend in the mother's age at birth. We can also see that those who had children outside of marriage were younger, on average, than those who were married when they had their first child. This has remained true even though the rise in the number of children born to

cohabiting couples has boosted the proportions of non-marital births in the later years.

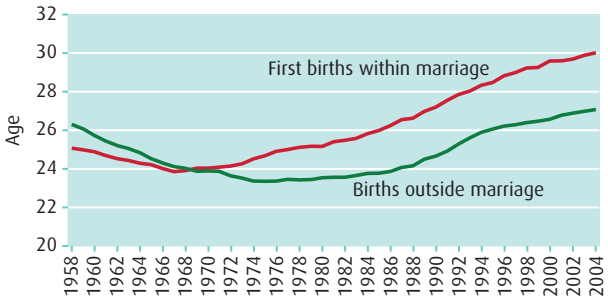

FIGURE 1. AVERAGE AGE AT FIRST BIRTHS WITHIN MARRIAGE AND ALL BIRTHS OUTSIDE MARRIAGE, ENGLAND AND WALES, 1958-2004
Source: Office for National Statistics (2005)

Table 1 presents the mean age at childbearing in three UK birth cohort studies and the national registration taken from the ONS (2005) for first births and all births. The age of the cohort child's mother in the three cohort studies reflects the general trend found in the national data, with ages starting to rise from 1970. Mothers in the MCS were significantly older, in terms of all births and first births only, than those in the National Child Development Study (NCDS 1958) and the British Cohort Study (BCS 1970). The difference in age at first births is nearly four years (3.8) between 1970 and 2000-1.

Year	NCDS 1958	BCS 1970	MCS 2000-1
Mean age of mothers at first birth	24.4	23.1	26.9
Mean age of all mothers at birth of cohort	27.5	26.0	28.9
Births of any order registered in England and Wales	27.8	26.2	29.1

TABLE 1. AGE OF MOTHERS AT FIRST AND ALL BIRTHS, 3 BIRTH COHORT STUDIES AND REGISTRATION STATISTICS
Source: Office for National Statistics (2005)

Jenkins *et al.* (2008a) consider the timing of motherhood for women born in 1958 who have been taking part in the NCDS. Using event history analysis, the authors found that the strongest predictor of transition to a first birth was the woman's education. Extending their work to the BCS70 cohort, Jenkins *et al.* (2008b) examine whether early motherhood is less attractive when labour-market prospects are better or worse. Their results suggest 'bad times' tend to discourage rather than bring births forward.

Using data on both men and women in the NCDS and BCS70 studies, Kneale and Joshi (2008) consider the patterns of postponement and childlessness across the two cohorts. Once again a major factor in both postponement and childlessness for women, and also men, was education. More educated become parents later, if at all, than their less educated peers. However, they suggest that if the 1970 cohort do turn out to have a higher incidence of childlessness (as predicted), this may be due to the unintended consequences of delaying a decision on starting a family rather than an active decision not to have children.

Using data on the MCS, (Hansen, 2008), Hawkes (2008) considers possible determinants of the mother's age at first birth. She finds that the age at first child is associated with both antecedent and current disadvantage. Once again the woman's education is a strong positive correlate of the age at first birth. In addition to a low level of education, those who become mothers earlier are more likely to have experienced disadvantage in their own childhood. They are more likely to have seen their parents separate, to have experienced life in care, and to have had an unemployed father at the age of 14. Certain ethnic minority groups (especially Pakistani or Bangladeshi) are associated with early motherhood. Being born outside the UK is, surprisingly, found to be associated with later motherhood for some of this sample of MCS mothers (though not to Pakistanis and Bangladeshis). One possible explanation for this positive association of age at motherhood and immigration is that the migration process disrupts and delays family formation. Another is that it is the more enterprising and career-motivated individuals who migrate — and this pattern may be accentuated by the selectivity of immigration controls. Finally, higher unemployment, measured locally and nationally, at the time of conception is found to be associated with earlier motherhood.

Maternal employment

Maternal employment, even in the early years of a child's life, is now more usual than not in the UK. Table 2 shows the percentage of the three birth cohort studies' members who had an employed mother in the first five years of their life. Although the numbers are not exactly comparable, the proportion of employed mothers appears to have doubled from 29% in 1958-1963 to around 58% in 2000-6, with most of the increase occurring before 1970-1975.

Year	NCDS GB	BCS GB	MCS UK
Employment in first 5 years (%)	29	48	58
Base sample of mothers	13,966	11,474	14,396

TABLE 2. PERCENTAGE OF MOTHERS IN WORK WHILST THE CHILD IS UNDER AGE 5 ACROSS THE THREE COHORTS

Figure 2 shows the proportion of MCS mothers who had entered, or re-entered, employment within nine months of the cohort member's birth. The steeper gradient between three and four months matches with the end of the paid maternity leave at the time of the study. However, there are variations in the hours that mothers work, as Table 2 shows. The majority of MCS mothers who were employed in the first nine months of their child's life were employed

part-time, with very few undertaking very long hours (over 40 hours per week).

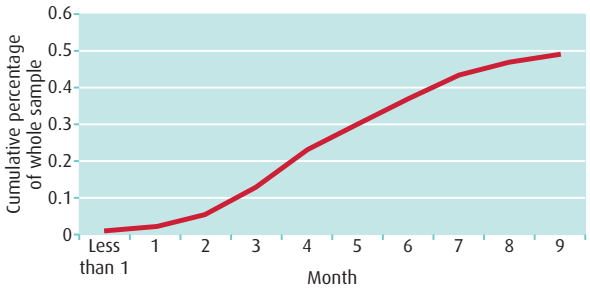

FIGURE 2. MONTH OF RETURN/ENTRY TO EMPLOYMENT AFTER CHILDBIRTH

Crosby and Hawkes (2007) consider the determinants of maternal employment in the first nine months. The main determinants are employment in the year prior to the birth and maternal education. Those employed in the year before the birth are much more likely to be employed by nine months after the birth than those who were previously out of the labour market. Of course, being in the labour market a year before the birth is also likely to be related to maternal education. The more educated are therefore more likely to enter employment in the first nine months. Other significant predictors of non-employment include having no partner, being very young (under 20), older (over 35 or 40) or belonging to an Asian ethnic group. In this strand of our work, we have also made international comparisons with MCS, which looks for determinants of the timing of employment after childbirth and attempts to infer the role of government policy in this decision (Baxter *et al.*, 2006; Crosby and Hawkes, 2007).

Childcare and child outcomes

Once a mother has decided to enter employment after childbirth, one of the most important decisions she has to make is who shall look after her child whilst she is at work. Figure 3 presents evidence of early-years' childcare for mothers across the three cohort studies who worked when the child was under five. This shows the growing importance of formal childcare in the pre-school years across the three cohorts. The Department for Children, Schools and Families (DCSF) publishes data on the use of different forms of pre-school provision for three and four-year-olds. Figure 2 presents this data graphically. This figure shows that the majority of those aged three or four in England and Wales attend a state nursery or primary school (nearly 60 per cent in all years between 2002 and 2006), with a minority attending independent schools (5% a year).

Verropoulou and Joshi (2009) consider the association between pre-school employment of NCDS cohort members and later outcomes for their children, observed in 1991. They find that reading is slightly poorer where less educated mothers work in the child's first year of life. They find few other interactions with employment, but do detect intergenerational transmission of behavioural as well as cognitive characteristics. The age at first child has a significant independent association with one of the four outcomes investigated — the child's maths score was lower for children with mothers aged 20 or less. However, as all the children in this study had relatively young mothers, it may be difficult to generalise from these findings.

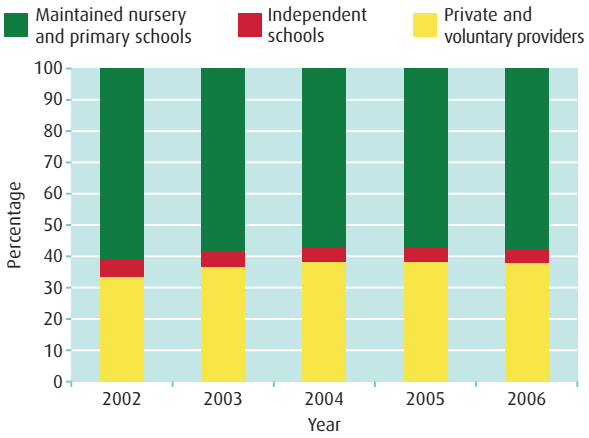

FIGURE 3. PERCENTAGE OF CHILDREN AGED THREE AND FOUR TAKING UP EARLY EDUCATION PLACES BY TYPE OF EARLY EDUCATION PROVIDER

Crosby and Hawkes (2008) considered the association between maternal employment in the first nine months of an MCS child's life and their cognitive and behavioural outcomes measured at age three. This study shows that maternal employment has a positive association with child behaviour and cognitive outcomes, measured using a vocabulary test and a school readiness measure. It is negatively associated with child health, as measured by the body mass index (BMI). However, after controlling for the selection process into employment, only the association between child health and maternal employment is maintained, albeit weakened. The results suggest that maternal education, rather than employment, is the main driver for all four child outcomes, at least in the UK. Of course, education also plays a strong role in the selection process into employment.

Hansen and Hawkes (2009) consider the role that childcare choice has on MCS children's cognitive and behavioural outcomes. Their results show that the different types of childcare used by families with working mothers have different impacts on child cognitive and behavioural outcomes at age three. Formal childcare is found to have positive effects on school readiness measures compared to other types of childcare, particularly for children from disadvantaged backgrounds. Informal childcare in the form of care by a grandparent appears to have positive effects on a child's vocabulary development but also to be negatively associated with behaviour, largely through poorer peer relations.

When all factors are taken into account each of these three factors — mother's age, employment in the first nine months and use of formal care — were significantly associated with better child outcomes. However, other factors are more important for the child outcomes examined. In particular, mother's education is the most associated with all outcomes examined. Moreover, controlling for other factors moderates the differences

attributable to age at motherhood and mode of childcare, and completely accounts for any differences by time of return to employment in the first year. Once we allow for other things, particularly for the education of their mothers, there are few differences between children whose mothers were employed in their first nine months and those who were not.

Policy implications

This research has shown that education is a key correlate of the life-course of both women and their children. Whilst mother's age at first birth, maternal employment and childcare play a role, maternal education appears to be a very strong determinant of a child's future success. To what extent it is a fundamental determinant, serving to enlighten and raise skills in childrearing, a reflection of capabilities inherited from home rather than school, or a signal for social sorting, has not been fully established. Whatever lies behind educational attainment, it accounts for much of the difference in outcomes between early and late mothers and in the development of their children. This also suggests that policies which limit educational failure, such as provision of basic skills, and prolonging and supporting years in education are likely to stem the polarisation between early and late mothers and their children and help the next generation.

The independent association of young age at motherhood with poorer or delayed cognitive and behavioural scores at age three may just reflect unmeasured disadvantages experienced by the minority of women who become mothers in their teens and early twenties. However, their lack of maturity, may compound the disadvantages facing their children. If so, government policies to reduce unintended teenage motherhood through information and support could improve the prospects for both the women and the children they have at a later age. However, there is no evidence here to suggest that the gains to postponing motherhood continue indefinitely, at least beyond the early thirties.

We find little evidence for maternal employment in the first year systematically either harming or promoting child development. We find childcare having both positive and negative associations with different aspects of child development. This suggests that policies that make childcare available to mothers across the spectrum are likely to benefit both mothers and children, but that attention needs to be paid to its quality. The development of integrated childcare centres under the Sure Start programme and other childcare policies aimed at improving the quality of childcare may have positive spill-over effects on some child outcomes. It may also help to reduce the polarity between advantaged and disadvantaged family backgrounds.

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