

## SYMPOSIUM ON PARENTAL LEAVE, EARLY MATERNAL EMPLOYMENT AND CHILD OUTCOMES: INTRODUCTION

*Paul Gregg and Jane Waldfogel*

One of the most contested topics in social policy today is what support governments should provide to parents with young children, both in terms of paid leave entitlements and child care. Once children are of school age, there is widespread agreement that government should provide free and appropriate schooling for all. There is also growing agreement that the government should play a role in providing or subsidising pre-school child care or education for children in the year or two prior to school entry. In many European countries, including the UK, governments provide at least a part-time nursery school place for all children from age three where parents want to use one. However, no such agreement exists when it comes to arrangements for the care of children under the age of three and, in particular, for children under the age of one. Some countries (such as Germany) provide an extended period of paid maternity leave but little support for non-parental child care, thus making it easier for mothers to care for children themselves in the first few years of life. The US takes the opposite approach, providing relatively little support for maternity leave and more generous support for child care, thus making it easier for mothers to work when children are very young. Others countries (such as the Nordic group) provide both generous parental leave and extensive support for non-parental child care, effectively leaving the choice to parents. The UK is currently moving in this direction, having recently extended maternity leave to 12 months while also expanding the availability of child care subsidies.

What should government be doing to support parents in arranging care for young children? Is it better for children to be home with parents for a period of time and, if so, for how long? Is there any evidence that government policies influence parents' decisions about the care of their young children and, through that mechanism, children's health and development? Unfortunately, as we detail below, prior research sheds little light on these questions. Thus, the major goal of each of the three articles in this Feature is to conduct analyses that provide new evidence on these questions. Each article uses different methods and data to meet this analytic challenge, as we detail below.

### **1. The Analytic Challenge**

Although there is a fairly extensive literature in economics and related disciplines on the impact of maternity leave policies on labour market outcomes for women,

fewer studies have examined the links between maternity leave (or other parental leave policies) and outcomes for children. Maternity leave policies are premised on the idea that a period of time at home after a birth is beneficial to the health of the mother and to the health and development of the child. But evidence on these links is scarce and, until recently, we knew little about the links with child health in particular. An innovative paper by Christopher Ruhm (2000), using data from several OECD countries from the mid-1970s to mid-1990s, provided the first evidence that when countries have more generous maternity leave policies, infant mortality rates are lower. Because Ruhm included country fixed effects and year effects, his results suggested that there was indeed a causal relationship between maternity leave and child health, such that when a country extends its maternity leave period, infant mortality rates will fall. However, Ruhm's analysis ended with data in 1995 and did not include the US and Japan, two major OECD countries. Additionally, his study focused only on paid, job-protected leave, leaving open the question of whether other types of leave (such as the unpaid leave provided in the US) had similar or different effects. A final challenge is that the study did not control for other social policies that might have come into place at the same time as parental leave and that might account for some or all of its effects.

Therefore, the first paper in this Feature – 'Parental leave and child health across OECD countries' by Sakiko Tanaka – extends prior work by adding data on the US and Japan, updating all the data to 2000 and examining the role of unpaid leave as well as paid leave. Tanaka also examines whether the results for leave are robust to including controls for other types of social policies affecting children. She provides new evidence as to one possible mechanism by which parental leave might affect child health, examining the extent to which leave entitlements reduce the occurrence of low birthweight.

As convincing as Tanaka's cross-country analysis of aggregate data is, there is also a need for studies that examine the links between parental leave, early maternal employment and child outcomes, using microdata. Studies using aggregate data are always subject to the 'ecological fallacy' problem and are also unable to elucidate fully mechanisms by which policies affect individual outcomes. Further, it is difficult to obtain data on child outcomes (other than infant mortality) consistently across countries. Thus there is an important role to be played by studies that use microdata to examine the links between parental leave, early maternal employment and child outcomes. Several studies in economics (as well as developmental psychology) have used microdata and found some adverse effects of early maternal employment on cognitive and behavioural outcomes for children in the US, with particularly strong effects if employment is resumed full-time in the first year of life (Waldfoegel *et al.*, 2002; Brooks-Gunn *et al.*, 2002; Ruhm, 2004). However, none of these studies has resolved the question of timing – that is, whether and how employment early on in the first year of life affects child outcomes. In the US, the federal maternity leave law provides only 12 weeks of leave and many women return within 12 weeks after giving birth. In that context, it is important to know not just whether maternal employment in the first year affects child outcomes but also, more specifically, whether returning in the first 12 weeks affects child outcomes, in particular, child health. Yet, estimating this effect is

challenging, because women who return to work early are likely to be a select group and standard econometric methods may not adequately control for that selection.

The second paper in this symposium – ‘Maternity leave, early maternal employment, and child health and development in the US’, by Lawrence Berger, Jennifer Hill, and Jane Waldfogel – takes up this challenge. Using rich longitudinal data on a large sample of children born between 1988 and 1996, they analyse whether outcomes across seven different measures of health and development differ for children whose mothers returned to work in the first 12 weeks after birth, compared to those whose mothers had not returned by that time. They use the rich data to control for possible selection factors and use a method, propensity score matching, which allows them to compare ‘treatment’ and ‘control’ groups with more confidence than in standard regression methods.

Another major limitation of the body of research on early maternal employment and child outcomes is that it has been mainly conducted in the US. Estimating models for a UK sample, as distinct from a US sample, is important because the contexts are so different. The UK first introduced major maternity rights in 1979 and these have been extended progressively in the period since. The most recent policy change in April 2003 saw the extension of paid leave to 6 months and of unpaid leave to a year. This maternity leave entitlement has been shown to affect the timing of mothers’ return to work decisions, with the dominant effect being to encourage women who would have delayed their return for up to 2 to 5 years to return instead at around 7 months in order to keep their existing jobs (Gregg *et al.* 2003; Burgess *et al.*, 2002). This change in behaviour has raised a question as to whether this early post-natal employment may have adverse effects on children’s development. As discussed above, studies from the US have concluded that maternal employment in the first year of life is associated with poorer outcomes later in childhood and, in particular, poorer cognitive outcomes. But patterns of employment after childbirth are very different in the UK where mothers’ use of maternity rights legislation means that return occurs later than in the US and where far more women return part-time. The few studies that have been conducted for the UK have focused on older cohorts, who grew up in a very different maternity leave and child care environment than exists today (Ermisch and Francesconi, 2000; Joshi and Verropoulou, 2000). They have also typically not been able to control for early maternal employment and child care in detail.

The third paper in this symposium – ‘The effects of a mother’s return to work decision on child development in the UK’ by Paul Gregg, Elizabeth Washbrook, Carol Propper and Simon Burgess – fills this gap, taking advantage of detailed maternal employment, child care and child development data from a recent birth cohort study, for a sample of children born in the Avon area in the UK, in the early 1990s. Their study provides the first evidence as to the effects of early maternal employment on child outcomes in a contemporary British cohort, controlling for a wide range of other child and family characteristics.

Thus, taken together, the papers in this symposium fill in some major gaps in the literature by providing new evidence on

- (i) the effects of maternity leave extensions on child health outcomes across OECD countries;
- (ii) the effects of maternity leave and early maternal employment on child health and development outcomes in the US; and
- (iii) the effects of early maternal employment on child development outcomes in the UK.

In the Sections that follow, we briefly discuss the papers' main findings and their implications for policy, and highlight directions for further research.

## 2. Main Findings and Implications for Policy

Three main findings emerge from the papers in this symposium. Each has implications for policy.

The first is that longer periods of maternity leave lead to improved child health. This result is robust across studies using aggregate data and microdata – that is, in Tanaka's cross-country analysis of aggregate data, as well as Berger *et al.*'s analysis of US microdata. Thus, Tanaka finds that longer periods of paid leave are associated with reductions in infant mortality and that this result is robust to the inclusion of controls for country and year fixed effects, controls for health expenditures and controls for other measures of social policy programmes affecting children. Moreover, Tanaka finds that, although longer periods of parental leave reduce the incidence of low birth weight (since women who have long periods of leave take some of their leave before the birth), reductions in the incidence of low birth weight are not the sole mechanism by which maternity leave improves child health. The results in Berger *et al.*'s paper for the US shed some light on other possible mechanisms by which maternity leave may be linked with child health, finding that children whose mothers stay out for more than 12 weeks are more likely to be breast fed, are breast fed longer, are more likely to be fully immunised and are more likely to receive recommended preventative (well-baby) care. The policy implication of this finding is clear: extending paid job-protected maternity leave will lead to improvements in child health. How large the gains are will depend on what the leave entitlement is currently and how long the extensions are. Tanaka's results suggest that extending leave by 10 weeks will reduce infant mortality by 2.6%; thus, assuming linear effects of increases within the first year, extending paid leave to 12 months would reduce infant mortality rates by 13.6% in the US (where currently there is no entitlement to paid leave under federal law) and by 6.8% in the UK (where currently the paid leave entitlement is 6 months).

The second main finding from these papers is that timing within the first year of life matters. However, the effects of timing differ for child health, cognitive development, and social and emotional development. The Berger *et al.* paper finds that returning in the first 12 weeks has significant negative effects on child health measures and on subsequent child behaviour problems but not on the one cognitive outcome examined (a measure of child language at age 3). Although other studies for the US have found negative effects of first-year maternal employment on cognitive outcomes, this latter result makes sense, given the timing of language

development (which begins much later than the first 12 weeks which is the effect being estimated here). These timing results suggest that there are gains to be made in terms of child health and also later behaviour problems if mothers are able to stay home at least part-time during the first 12 weeks post-birth. This finding is particularly consequential for the US, where many new mothers return full-time by 12 weeks and where the policy context (in particular, the limited coverage provided by the FMLA and the TANF rules that allow states to require welfare mothers to work soon after birth) encourages or mandates early returns. The evidence provided in the Berger *et al.* paper, in conjunction with prior evidence on the effects of early maternal employment (Smolensky and Gootman, 2003), suggests that it may be prudent for policymakers to revisit such policies.

The third main finding is that the links between full-time maternal employment in the first year and poorer child cognitive development that have been found in studies for the US are also found in analyses of a contemporary cohort of British children. The Gregg *et al.* paper provides evidence that full-time maternal employment in the first 18 months is linked with poorer child cognitive outcomes in the UK. The adverse effects identified are at the lower end of those found in the US and involve a much smaller fraction of the population of children because of the high incidence of part-time working. Part-time employment in the first 18 months is clearly not harmful. The paper explores variations in this early full-time employment result and concludes that the effect is stronger for mothers with at least GCSE levels of education and where the replacement child care is mainly through unpaid care by friends or relatives (mainly grandparents).

The implication is that a multi-faceted policy approach – one that provides the option of paid parental leave alongside the option of high-quality paid child care and supporting mothers to be able to work part-time if they wish – would be best in terms of children's cognitive development. This will be welcome news to UK policy makers who have been pursuing just such an approach, extending maternity leave while also expanding support for child care subsidies and introducing a right to return part-time unless employers can make a case that it would incur substantive costs. However, it also implies that such efforts need to continue, since currently paid maternity leave in the UK lasts for only 6 months (with an additional 6 months available only on an unpaid basis). Further it suggests the importance of determining that the business over rule of part-time working requests is operating appropriately and that there is an adequate supply of early years child care places.

### **3. Directions for Further Research**

Taken together, the three papers in this symposium point to several useful directions for further research. First, more work on the role of fathers is clearly warranted. More attention to whether and how fathers are involved in child rearing is an important priority for further research, which has to date been too narrowly focused on mothers and their role. Second, more work tracing through the long-run consequences of some of the effects examined here would be useful. For instance, how large are the effects of parental leave on child health and how

do these play out over time? Do the effects on child cognitive or behavioural development persist, or do they fade out over time? Third, an important challenge for further research is to continue examining the differential effects of full-time versus part-time work. This is particularly important in the UK context, where so many mothers of young children work part-time. Finally, the analyses in this symposium do not address the question of how the effects of non-standard employment – work that is undertaken during evenings, nights, and weekends – differ from the effects of standard employment. Given the increase in such non-standard employment in today's 24/7 economy, this is a topic that can no longer be ignored.

These gaps notwithstanding, the papers in this symposium do tell us much that we did not know previously about parental leave, early maternal employment, and child outcomes. The link between extended parental leave and child health looks to be solid. Timing within the first year does seem to matter. And the risks associated with full-time maternal employment in the first year look to apply to at least some families in the UK, as well as the US. All of these findings provide ample reason for policy makers to give serious consideration to initiatives to extend paid leave to at least the end of the first year of life, and perhaps thereafter.

*University of Bristol*  
*Columbia University*

## References

- Brooks-Gunn, Jeanne, Han, Wen-Jui and Waldfogel, Jane (2002). 'Maternal employment and child cognitive outcomes in the first three years of life: the NICHD study of early child care', *Child Development*, vol. 73(4), pp. 1052–72.
- Burgess, Simon, Gregg, Paul, Propper, Carol and Washbrook, Elizabeth (2002). 'Maternity rights and mothers' return to work', CMPO Working Paper no. 02/055.
- Ermisch, John and Francesconi, Marco (2000). 'The effects of parents' working on children's educational attainment', ISER Working Paper 2000–28, University of Essex.
- Gregg, Paul, Guitierrez-Domenech, Maria and Waldfogel, Jane (2003). 'The employment of married mothers in Great Britain 1974–2000', CMPO 03/78.
- Joshi, Heather and Verropoulou, Georgia (2000). *Maternal Employment and Child Outcomes: Analysis of Two Birth Cohort Studies*, London: The Smith Institute.
- Ruhm, Christopher (2000). 'Parental leave and child health', *Journal of Health Economics*, vol. 19(6), pp. 931–60.
- Ruhm, Christopher (2004). 'Parental employment and child cognitive development'. *Journal of Human Resources*, vol. 39(1), pp. 155–92.
- Smolensky, Eugene and Gootman, Jennifer (eds) (2003). *Working Families and Growing Kids*, Washington, DC: National Academy Press.
- Waldfogel, Jane, Han, Wen-Jui and Brooks-Gunn, Jeanne (2002). 'The effects of early maternal employment on child cognitive development', *Demography*, vol. 39(2), pp. 369–92.