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The effects of maternity leave on children's birth and infant health outcomes in the United States☆

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ABSTRACT

This paper evaluates the impacts of unpaid maternity leave provisions of the 1993 Family and Medical Leave Act (FMLA) on children's birth and infant health outcomes in the United States. My identification strategy uses variation in pre-FMLA maternity leave policies across states and variation in which firms are covered by FMLA provisions. Using Vital Statistics data and difference-in-difference-in-difference methodology, I find that maternity leave led to small increases in birth weight, decreases in the likelihood of a premature birth, and substantial decreases in infant mortality for children of college-educated and married mothers, who were most able to take advantage of unpaid leave. My results are robust to the inclusion of numerous controls for maternal, child, and county characteristics, state, year, and month fixed effects, and state-year interactions, as well as across several different specifications.

1. Introduction

Maternity leave policies are designed to address the challenges faced by working mothers and their newborn children. Before 1993, only thirteen U.S. states and Washington, DC had enacted maternity leave provisions, which enable women to take time off during pregnancy and the first months of their child's infancy while maintaining their health insurance and their right to resume work at the conclusion of the leave. The length of leave varied between 6 and 16 weeks, and was unpaid except for some women in a few states, who received about half-pay with a benefit cap.[1] In 1993, President Bill Clinton signed into law the Family and Medical Leave Act (FMLA), which mandated a minimum of 12 weeks of unpaid maternity leave for the slightly more than half of working women who were eligible. Since 1993, only California (in 2004) and New Jersey (in 2008) have mandated paid maternity leave, so by law the vast majority of eligible working women are only entitled to unpaid maternity leave.[2] In this study, I measure how unpaid maternity leave affected children's outcomes at birth and infancy, and whether this policy has differential impacts on children from different socio-economic backgrounds. This is the first study to analyze the causal effects of the existing maternity leave provisions on children in the United States.

There are several mechanisms through which unpaid maternity leave may exert opposing impacts on child outcomes. The guarantee of maternity leave may reduce maternal stress during pregnancy. However, if a woman is forced to work more hours during pregnancy than she otherwise would have in order to qualify for the leave, then her stress level may be heightened. Given that stress during pregnancy adversely impacts birth outcomes (Copper et al., 1996), the net effects of maternity leave on birth outcomes

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[1] After the 1978 Pregnancy Discrimination Act, five states (Rhode Island, California, New Jersey, New York, and Hawaii) allowed women to take up to 6 weeks of paid leave to recover from childbirth through the Temporary Disability Insurance system.

[2] Washington was planning to enact the Family Leave Insurance, which would provide 5 weeks of paid leave to new parents, in October 2009. However, due to state budget shortfalls, the program has been postponed to October 2012.

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are theoretically ambiguous. After birth, maternity leave may affect the amount of time a child spends with his mother rather than in non-maternal care. Maternity leave will also affect the quality of time the child spends with the mother, depending on changes to her stress level and her satisfaction with the trajectory of her career. The quantity and quality of time a mother spends with her child in his first year of life matter for the child's well-being (Berger et al., 2005; Baum, 2003). For example, a mother may have more time to take care of her ill child, to breastfeed, or to seek prompt medical care when she is able to take time off work. Further, the effect of maternal time depends on the quality of non-maternal care relative to the quality of maternal time. There exists substantial variation in the quality levels of non-parental care options available for children of working parents in the U.S., and the quality level plays an important role in child development (Lefebvre et al., 2006; Loeb et al., 2007; Gormley and Gayer, 2006). Finally, *unpaid* maternity leave may exert an effect on the mother's income and therefore the family's material resources available for child rearing. Hence, not all new mothers may be able to take advantage of unpaid leave, and it may have different implications for the welfare of children depending on whether they grow up in low-income and low-educated one-parent households or high-income and high-educated two-parent households, as these families likely face different constraints.

I examine the effects of unpaid maternity leave due to FMLA on birth outcomes and infant mortality rates using Vital Statistics natality and mortality data in difference-in-difference (DD) and difference-in-difference-in-difference (DDD) frameworks. My identification strategy relies on the facts that some states enacted maternity leave policies prior to FMLA, and that FMLA eligibility rules only apply to women who work in firms with 50 or more employees. Women employed by firms with fewer than 50 employees, and women living in states that had maternity leave prior to FMLA should not be affected by the policy, and can serve as a comparison group. Unfortunately, there does not exist a dataset that combines information on mother's firm size and children's outcomes during the relevant time period. To approximate maternity leave eligibility based on firm size, I use data from the County Business Patterns (CBP) for 1989–1997 to estimate the likelihood that a resident of a particular county is employed in a firm with 50 or more employees in each year. I link this information to the Vital Statistics data by county and year, and then split the sample into likely eligible and likely ineligible mothers. I compare the likely eligible and likely ineligible groups before and after FMLA and across states. I also conduct sub-sample analysis on children of college-educated and married mothers and children of less-educated and single mothers to test my theoretical predictions.

My results suggest that unpaid maternity leave due to FMLA led to small improvements in birth outcomes and substantial reductions in infant mortality rates for children of college-educated and married mothers, and had much smaller or non-existent effects on children of less-educated and single mothers. I also find effects on parity at birth that indicate that more previously childless women gave birth, while fewer women had later parity births. The effects on parity are especially present for the less-educated and single mothers, suggesting that these women were most constrained in their childbearing ability before a guarantee of maternity leave. However, given that these women are more likely to be low-income, the lack of effects on their children's health suggests that they could not afford to take the full 12 weeks of unpaid leave.[3] Further, the results on parity imply that any favorable effects of FMLA may be slightly understated, given that higher parity children are likely to have better health at birth (Gluckman and Hanson, 2005). I find no consistent effects on risk factors or complications during pregnancy or at birth or on overall fertility. My findings of larger effects on infant mortality rates than on health at birth for children of college-educated and married mothers suggest that the effects of FMLA are concentrated on the care of children after birth.

My results are robust to a number of different specifications that especially test the validity of the eligibility approximation. Further, the robustness checks suggest that the results are not driven by differential selection into motherhood based on observable characteristics or by changes to county-level firm size distributions. Additionally, the magnitudes of the effects on parity are too small to produce substantial selection bias in the main results on infant mortality, suggesting that FMLA truly affected the likelihood of survival in infancy for children of mothers who were likely eligible for and able to take the full length of leave.

Recent studies on the effects of maternity leave policies in Canada (Baker and Milligan, 2010), Germany (Dustmann and Schönberg, 2008), and Sweden (Liu and Skans, 2010) find no effects on children's outcomes at various ages throughout their lives. However, the effect of U.S. maternity leave policies on children has not been previously examined, and my findings suggest that the institutions and available alternatives where these policies are enacted can determine the degree of their effectiveness. Additionally, a recent study on the long-term effects of a maternity leave expansion in Norway finds that children of mothers who were eligible for the leave (and thus likely affected by the expansions) are less likely to drop out of high school (Carneiro et al., 2010). Thus, properly accounting for eligibility is important for identifying effects of maternity leave.

The paper proceeds as follows. Section 2 discusses FMLA. Section 3 reviews the relevant background literature. Section 4 describes the data. Section 5 discusses the empirical methods and presents summary statistics. Section 6 presents the results on the effects of unpaid maternity leave. Section 7 presents some robustness checks. Finally, Section 8 concludes.

2. The family and medical leave act of 1993

FMLA affected the lives of women as mothers and workers by being the first federal law to grant unpaid maternity leave to women in every state in the U.S. Signed in January of 1993, the law actually went into effect on August 5, 1993. The federal government mandated that all eligible new mothers receive 12 weeks of unpaid leave with guaranteed health insurance coverage.[4] Eligibility requirements include having worked for at least 1250 h in the past 12 months for an employer with at least 50 employees, and approximately half of all private sector workers are estimated to be eligible for leave under FMLA (Han et al., 2009; Ruhm, 1997).[5] As a result of FMLA, the share of full-time workers employed by firms with more than 100 employees that were covered by leave policies rose from 35% in 1988 to 86% in 1995, while the share of full-time workers in firms with less than 100 employees covered by leave policies rose from 19% in 1990 to 47% in 1995 (Waldfogel, 1999).

The link between FMLA and child outcomes relies on the assumption that FMLA actually increased maternity leave-taking among women with infants. There is evidence that supports this assertion: in medium-sized firms, leave-taking increased by 23%

[3] Han et al. (2009) find that college-educated and married women take more maternity leave than less-educated and single women in the U.S.

[4] Women are free to take the leave during their pregnancy and/or after childbirth.

[5] FMLA also provides unpaid leave for medical reasons and to take care of ill family members for male and female workers.