Child Support and Subsequent Nonmarital Fertility

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INTRODUCTION

There is broad concern about increases in relationship instability (McLanahan and Beck, 2010) and the related growth in complex families created when adults have children with multiple partners (Cancian, Meyer, and Cook, 2011). The addition of new partners and new children is likely to have a significant effect on families' economic wellbeing. Complex families are also an issue in child support policy in that, for example, determining the amount of child support becomes more complex when the families are more complex (Brito, 2005; Cancian and Meyer, 2011, Caspar, 2006, Meyer, Skinner and Davidson, 2011; Takas 1994). Identifying factors that influence fertility with new partners, therefore, has important implications for social policies including child support policy.

One potential factor influencing subsequent fertility is child support receipt. Additional income from child support might change the incentives for mothers to form new marital or nonmarital relationships, and have additional children. However, the direction and magnitude of any effect is not well established. Theory suggests that additional income, such as child support, could encourage or discourage a new partnership. Theory is also unclear regarding the effect on subsequent fertility. Moreover, disentangling the causal relationship between child support income and family structure empirically is challenging because unobserved differences between child support recipients and non-recipients or among recipients receiving different amounts of child support may bias estimates.

In this report, we take advantage of a policy experiment that resulted in randomly assigned differences in child support income to investigate the effects of child support receipt on subsequent nonmarital fertility with a new partner. We use administrative data recording full siblings and half-siblings of the children of approximately 15,300 mothers who were not married at the beginning of the experiment. Because the differences in child support received are, by construction, unrelated to any other factors, we are able to identify the causal effect of additional economic resources from child support receipt on subsequent nonmarital fertility with a new partner. We examine nonmarital fertility because the administrative data we have include only a limited subset of marital births (those that are followed by divorce). Moreover, the vast majority of mothers in our sample had only nonmarital births at the time of random assignment (Meyer and Cancian, 2001).

POLICY CONTEXT

When children live with only one biological parent, the nonresident parent (usually the father) is typically required to pay child support to the resident parent (usually the mother) to contribute to child rearing expenses. When low-income single-parent families receive public assistance to support their children, some policies call for child support paid by the nonresident parent to repay taxpayers for public assistance, rather than to benefit the family. The 1996 welfare reform included provisions that allowed states to retain all the child support paid by a father[1] so as to offset the costs of welfare provision—and most states adopted that approach. A substantial minority of states instead maintained the pre-reform policy of allowing the mother to keep the first $50 per month, and retained only child support above that limit.

The state of Wisconsin successfully sought a waiver from federal regulations and adopted a unique policy allowing most mothers to keep all the child support paid by the father, without that support affecting the level of cash welfare received by the mother and her family. This policy was implemented as part of the state's Temporary Assistance to Needy Families (TANF) program, named Wisconsin Works, or W-2. The child support component of W-2 was the subject of an experimental evaluation, the Child Support Demonstration Evaluation (CSDE), with a random sample of mothers assigned to a "control" group and receiving only part of any child support paid (the greater of $50 per month or 41 percent), and those in the "experimental" group receiving all current child support paid (and having their payment

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[1]For simplicity, in this paper we use gendered language and refer to nonresident parents as "fathers" and resident parents as "mothers." Policies are not explicitly gendered, and rights and responsibilities are assigned by residential status. However, particularly among low-income families including those participating in welfare programs, most resident parents are mothers and most nonresident parents are fathers.

unaffected by any child support paid, that is, a full "disregard"). In the first and the second year following assignment, mothers in the experimental group received an average of $638 and $825 in child support, relative to the average of $482 and $703 received by those in the control group.[2] This random variation in child support received by control and experimental groups enables us to identify the effect of child support income on subsequent nonmarital fertility with a new partner.

THE RELATIONSHIP BETWEEN CHILD SUPPORT INCOME AND SUBSEQUENT FERTILITY WITH NEW PARTNERS

As we noted above, theory is ambiguous regarding the likely effects of additional economic resources on re-partnering and subsequent fertility. Custodial mothers receiving regular child support may be more attractive partners, so those in the experimental group may be *more* likely to re-partner (Oppenheimer, 1997). On the other hand, if mothers are expecting and receiving more child support, they may be more able to live independently, and thus those in the experimental group may be *less* likely to re-partner. In addition to affecting mothers' economic resources, there are other avenues through which Wisconsin's experimental child support policy might influence new partnerships. The fathers may be encouraged to take more financial responsibility for their children if the child support they pay directly benefits their children. These fathers may be more connected to the mothers of their children than fathers whose support payments are only partially transmitted to their children; as a consequence, the parents in the experimental group may be more likely to marry or live together. Previous research suggests there may also be less conflict between these parents (Meyer and Cancian, 2001; Seltzer and Schaefer 2001), again potentially leading to an increased likelihood of marriage or cohabitation.

Partnership is closely related to fertility: mothers who are romantically involved, cohabiting, or married are more likely to have a subsequent birth than if they are not partnered. However, not all

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[2]By the end of the observed period few mothers were receiving W-2 benefits, and all W-2 participants were eligible to receive all current child support paid on their behalf. In 2004, which is the year before the end of the observation, mothers in the experimental group received an average of $1,113 and those in the control group, $1,151.

mothers who have a new partnership have a new birth, and the time to the subsequent childbirth varies. Thus, child support may affect fertility indirectly, through changing the probability of partnership, which then changes the probability of fertility. It is also possible that child support may affect fertility more directly. If mothers in the experimental group consider child support a good source of potential income, they may be more likely to have additional children in the expectation that child support income will offset some of the related expenses. Moreover, increased income may mean that mothers in the experimental group can afford another child. On the other hand, there is consistent evidence across countries and time periods that those with more income have lower fertility (see, e.g., Jones, Schoonbroodt, and Tertilt, 2011), which would lead to lower fertility for those in the experimental group.

In sum, increased child support income could theoretically lead to increases or declines in subsequent fertility with new partners. Theory suggests mixed effects. This highlights the importance of empirical estimates of the relationship between child support receipt and mothers having additional children.

DATA, SAMPLE AND METHODS

We use data collected in the CSDE. Specifically, we use merged administrate records drawn from the welfare, child support and Unemployment Insurance systems in the State of Wisconsin, for 15,304 unmarried mothers, and the father(s) of their children. These 15,304 mothers are those who entered Wisconsin's TANF program (Wisconsin Works, W-2) in its first 9 months of operation, between September 1997 and July 1998 and were randomly assigned to the experimental or control group.[3] These

[3]Of 24,007 cases that entered W-2 between September 1997 and June 1998, we exclude several types of cases, including: the nonresident parent is dead, there is a child receiving SSI, the case has been exempted from pursuing child support because of "good cause," the resident parent was mistakenly reassigned to AFDC after being inactive for two or more months, the resident parent had a significant delay between leaving AFDC (or receiving a research code assignment) and entering W-2, and resident parents with two active W-2 cases simultaneously. This leaves us 16,890 cases. We further limit the sample to those cases where resident parent is the mother and exclude married mothers.

mothers are identified by the state administrative data system for public assistance programs (CARES) and constitute our primary sample.

We are interested in the potential causal effect of additional child support income on nonmarital fertility with a new partner, as measured over a six year period, beginning 9 months after the initial W-2 assignment.[4] We identified any additional nonmarital births to the same or new fathers since the initial assignment[5] for mothers in our sample, from the child support enforcement data system (named KIDS). These administrative data include almost 90 percent of all nonmarital births in the state, and should capture a higher proportion for births to mothers receiving public assistance (because pursuing paternity is generally a prerequisite for receiving aid). In addition to data drawn from KIDS, we use matched data from the CARES and the Unemployment Insurance (UI) system to get basic economic and demographic information of the mothers.

Simple descriptive analysis, ignoring the experimental variation in child support, shows that mothers who receive more child support are less likely to have children with a new partner. For example, if we consider only mothers in the experimental group (who received all current child support paid), comparing those who received at least $1000 in child support in the year prior to assignment with those who received less, we find that 18 percent of mothers with higher child support receipt have a child with a new partner by the end of the observation time, compared to 26 percent for mothers with lower receipt. However, this may reflect differences in the characteristics of mothers who receive more support—characteristics such as higher education or earnings—which may be related to both greater receipt of child support and a lower risk of additional nonmarital partnerships that produce children.

We utilize event history analyses to compare outcomes for the experimental and control groups and investigate the causal effect of additional child support income on subsequent nonmarital fertility

[4]We assumes that average pregnancy duration is 9 months; thus any birth within the first 9 months after entry is the result of a decision made before random assignment.

[5]The baseline date used in this analysis is slightly different from the assignment date for some cases, but the difference is not substantial.

with a new partner. Specifically, first we compare the Kaplan-Meier survivor functions for the control and experimental groups. The Kaplan-Meier survivor function is suitable for describing continuous-time event data (Singer and Willet, 2003). As a nonparametric method which does not require any constraining assumptions about the distribution of event times, the Kaplan-Meier survivor function provides a useful description of survival probabilities for each group over time. In our case, we consider the probability that the time when each group experiences the first nonmarital birth with a new partner exceeds a specific time ("survived" until that time).[6] By virtue of random assignment, we can attribute any difference in the survivor function to the difference in the child support income received by those in the experimental and the control groups.

We also test the experimental effects for seven subgroups. All these subgroups are based on the characteristics at the initial assignment. Four subgroups are those identified in the main CSDE analysis as those potentially particularly affected by the experimental effect: (1) mothers who entered W-2 in a lower tier (and therefore were more likely to be subject to a reduced pass-through and disregard if they were in the control group[7]); (2) mothers who had no history of AFDC receipt in the two years prior to entering W-2 (and therefore were potentially more responsive to the policy change because they had no recent experience with a partial pass-though and disregard); (3) mothers with a child support order at entry to W-2; and (4) mothers with a history of substantial child support receipt (i.e., more than $1,000 in the year prior to entry to W-2).[8] We also consider two subgroups of mothers whom we expect to have to be at higher risk of subsequent fertility: (1) mothers age 25 and under; and (2) mothers whose youngest child is 5 years old or less. Finally, we also consider mothers with less than a high school education an important

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[6]In continuous time, the survival probability at time t_j, $S(t_{ij})$, is the probability that an individual event time, T_i, will exceed t_j:

$$S(t_{ij}) = \Pr[T_i > t_j]$$

[7]Control group members only received a partial pass-through and disregard of child support if they were receiving a cash W-2 payment; otherwise, they received the full pass-through and disregard.

[8]See Meyer and Cancian, 2001, pp. 19–22, 31–33 for more discussion of theses subgroups.

subgroup because we expect child support income might be especially salient for those mothers, given their limited earnings potential.

After comparing survivor functions for the experimental and control groups, we estimate a Cox regression model. While random assignment allows us to make a simple comparison of outcomes between the experimental and control groups, we can obtain more precise estimates by accounting for any differences in the initial characteristics of the experimental and control groups.[9] A Cox model enables us to compare the hazard functions of the experimental and control groups, with controlling for various economic and demographic characteristics. We consider an extensive set of control variables used in the original CSDE analysis.[10] All of these variables are measured at the initial assignment.

The basic Cox model expresses a transformation of the hazard as a linear function of predictors. Two features of the Cox regression model should be noted. First, the Cox model compares 'hazard' functions, not survivor functions. A hazard function assesses the risk, at a particular moment, that an individual who has not yet done so will experience the target event (Singer and Willet, 2003). The risk is represented by a 'hazard rate', which provides information about the expected number of events that occur in a finite period of time.[11] In contrast, the survival probability at time t is the conditional probability that an individual's event time will exceed t. In our case, the Cox model enables us to assess whether the hazard function of the experimental group is different from that of the control group. Second, the basic Cox model assumes that the effect of a predictor is constant over time. In terms of the log hazard, this means that a one-unit difference in a predictor shifts the hazard function by the same distance over

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[9]Although the experimental and control groups are not significantly different in most respects, original CSDE analysis reveal that there are some differences in initial characteristics. See Technical Report 1 in Meyer and Cancian (2001) for detail.

[10]Control variables used in the Cox models are assignment rates, mother's age and race, whether the mother had a history of high child support payments on her behalf, months of AFDC receipt during the 24 months prior to the baseline date, location, initial W-2 tier, age of the youngest child, mother's education, average annual earnings of the highest-earning father, mother's employment history, means of identification of paternity, number of legal fathers associated with mother, whether child support order existed at baseline date, and number of children.

[11]For continuous time, hazard is not a probability. It is a rate, assessing the conditional probability of event occurrence per unit of time.

time, which can be thought of as a kind of parallel shifting. In terms of the raw hazard, it means that the hazard ratio for any one-unit difference in a predictor is constant over time.[12]

RESULTS

Comparison of Survivor Functions

Figure 1 describes Kaplan Meier estimates of the survivor functions for the experimental and control groups. It indicates there is no substantial difference between experimental and control groups in time to first nonmarital fertility with a new partner. The last observed event time is 2,190 days after the baseline, and the survival probability at that time for each of experimental and control group is 0.75 and 0.76, respectively, meaning that about one-quarter of mothers have had a new nonmarital birth with a new partner. Both the log-rank test and the Wilcoxon test for equality of survivor functions confirm that there is no statistically significant difference between the experimental and control groups.

We also compared survivor functions for the experimental and control groups within each of the seven subgroups. There was no significant difference in outcomes for the experimental and control groups for any of the subgroups.

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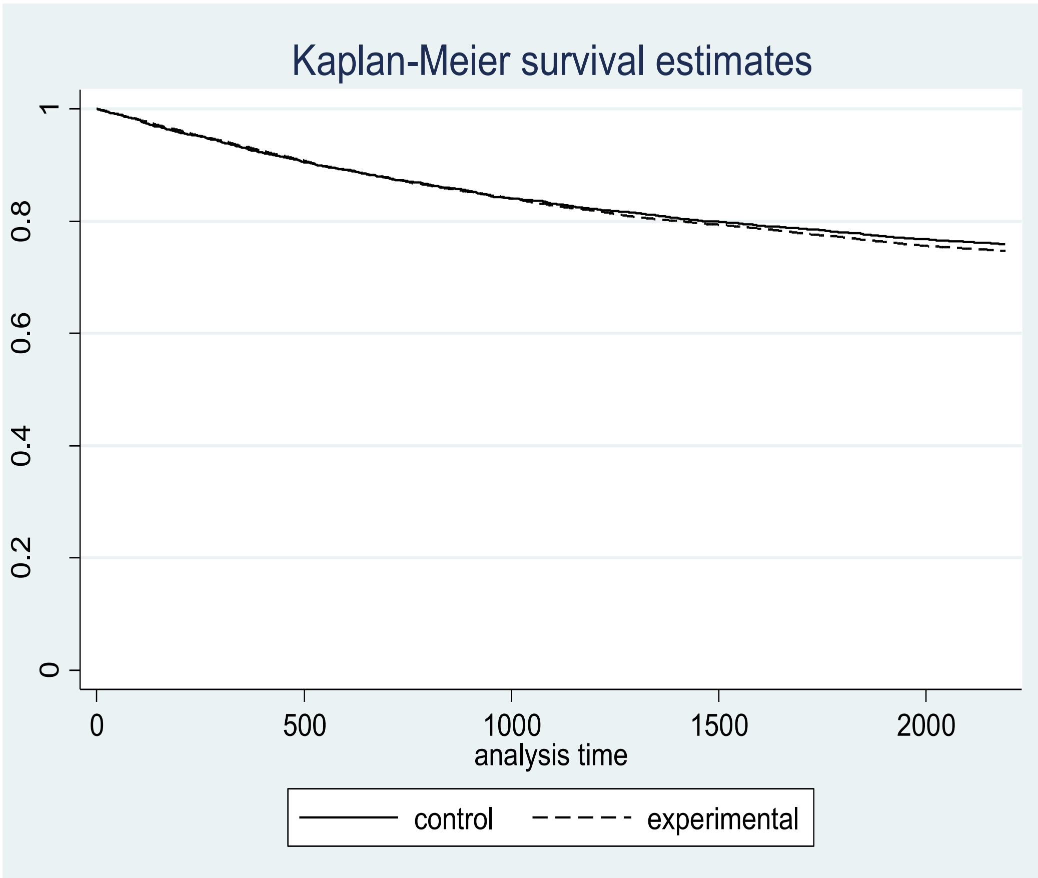
[12]A Cox model can be extended to allow for time-varying effects, but we do not consider the extended model in our analysis.

Figure 1
Kaplan-Meier Estimates of Survivor Function for Experimental and Control Group



Cox Regression Analysis

We performed a Cox regression analysis to assess the effect of additional child support income on nonmarital fertility with new partner, by comparing the hazard functions of the experimental and control groups. The results are reported in Table 1. When we add control variables, the estimated hazard ratio is 1.07, which means the risk of mothers in the experimental group experiencing nonmarital fertility with a new partner is 7 percent higher than for mothers in the control group. However, the relationship is only marginally statistically significant (p=.09). Moreover, when we estimate the same Cox regression model for each of the seven subgroups, we find no difference between the experimental and control groups, except for mothers with a youngest child 5 years old or less (see Table 2). Among these mothers, the risk

Table 1
Cox Regression Model of Additional Child Support Income on Nonmarital Fertility with a New Partner (Full Sample)

Parameter	Hazard Ratio	SE
Experimental group (ref. = control group)	1.07†	0.04
Child Support Amount on behalf of the mother in the 12 months prior to baseline (ref. = $0)		
$1–$999	0.88†	0.06
$1,000 or more	0.85*	0.07
Mother's age (ref. = 25 or younger)		
26–30 years	0.54**	0.03
31 or older	0.25**	0.02
Mother's race (ref. = white)		
African American	1.37**	0.08
Other	1.31**	0.10
Months of AFDC receipt during in the 24 months prior to baseline (ref. = 0 months)		
1–18 months	0.98	0.07
19–24 months	0.85*	0.07
Mother's residency (ref. = Milwaukee county)		
Other Urban counties	1.03	0.06
Rural counties	1.02	0.09
Initial W-2 tier (ref. = Lower tier)		
Caretaker of Newborn	0.96	0.07
Upper tier	0.99	0.05
Age of mother's youngest child (ref. = 0–2 years)		
3–5 years	0.80**	0.05
6 or older	0.42**	0.04
Mother's education (ref. = post high school)		
Less than high school diploma	1.29**	0.11
High school diploma or equivalent	1.00	0.08
The highest-earning nonresident father's average annual earnings in the 2 years prior to baseline is $15,000 or more	1.36**	0.09
Number of quarters with any UI-reported earnings for the mother in the two years prior to baseline (ref. = 0 quarters)		
1–6 quarters	1.00	0.05
7–8 quarters	0.79**	0.06

(table continues)

Table 1, continued

Parameter	Hazard Ratio	SE
Legal father is established by divorce (ref. = paternity case, a combination of paternity and divorce, or no legal father)	0.60**	0.08
Number of legal fathers associated with the mother (ref. = 0)		
1	1.14*	0.06
2 or more	1.10	0.09
Existence of child support order at baseline (ref. = no order)	1.02	0.05
Number of mother's minor children living with her (ref. = 1 or less)		
2	0.86**	0.04
3 or more	0.64**	0.04
N	15,304	

† p<.1, * p<.05, ** p<.01
Note: Model also controls for different periods of entry to W-2, corresponding to different proportion of cases assigned to the experimental group.

Table 2
Summary of Cox Regression Models for Subgroups

Subgroup	Hazard Ratio of Experimental Group	SE
Mother who entered W-2 in a cash-payment level	1.08	0.06
Mothers who had no history of AFDC receipt in the two years prior to entering W-2	1.08	0.11
Mothers with a child support order at entry to W-2	1.06	0.06
Mothers with a history of substantial child support receipt	1.12	0.17
Mothers age 25 or younger	1.06	0.05
Mothers whose youngest child is 5 years old or less	1.08†	0.05
Mothers with less than a high school education	1.08	0.06

† p<.1,

Note: each row shows the coefficient on the experimental group and is from a separate model; covariates include all those shown in Table 1.

of mothers in the experimental group experiencing nonmarital fertility with a new partner is 8 percent higher than for mothers in the control group, though, again, the difference was only marginally significant (p=.07).

DISCUSSION

Child support enforcement is a central element of public policies to improve the economic wellbeing of children living in single-parent families. Children in these families are at elevated risk of living in poverty. They are also at elevated risk of living in complex families, in which one or both of their biological parents have had children with other partners (Cancian, Meyer and Cook, forthcoming). This confluence highlights the importance of considering the potential effects of child support on subsequent partnerships. Estimating the effect of child support receipt on the probability of mothers' subsequent fertility is complicated by unobserved differences between families who do and do not receive support, and between simple and complex families. While descriptive statistics suggest that mothers who receive more child support are less likely to have children with new partners, there are reasons to interpret this relationship with caution. Mothers who receive more child support from the father of their first child, for example, may be different from other mothers in ways that affect their subsequent fertility, independent of child support receipt.

We use the random (uncorrelated with any other differences between mothers) assignment of mothers to receive all or only some of the child support paid on their behalf to identify the causal effect of child support income on subsequent fertility. For most specifications, we find no evidence of a substantively or statistically significant effect. We find a marginally significant positive relationship between child support and subsequent fertility in selected specifications. Since theory suggests that child support may increase or decrease subsequent fertility, it may be that one effect compensates for, or "cancels out," the other. Or, it may be that the relatively modest difference in child support received by mothers in the experimental and control groups is not sufficient to have an effect. However, these results are largely consistent with child support having no net causal effect on subsequent fertility. At a minimum, they suggest that the negative relationship between child support receipt and subsequent fertility found in simple descriptive statistics should not be given a causal interpretation in the absence of additional evidence.

Appendix Table 1
Description of Variables

Variable	Mean
Experimental Group	0.78
Child support amount paid on behalf of the mother in the 12 months prior to baseline	
None	0.74
$1–$999	0.14
$1,000 or more	0.12
Mother's age	
25 or younger	0.47
26–30 years	0.20
31 or older	0.33
Mother's race	
White	0.24
African American	0.64
Other	0.12
Months of AFDC receipt during in the 24 months prior to baseline	
0 months	0.12
1–18 months	0.33
19–24 months	0.55
Mother's residency	
Milwaukee County	0.74
Other Urban counties	0.17
Rural counties	0.07
Initial W-2 level	
Cash payment	0.61
Caretaker of newborn	0.09
Services only	0.30
Age of mother's youngest child	
0–2 years	.37
3–5 years	0.18
6 or older	0.25
Mother's education	
Less than high school diploma	0.53
High school diploma or equivalent	0.36
More than high school diploma	0.11
The highest-earning nonresident father's average annual earnings in the 2 years prior to baseline is $15,000 or more	0.44

(table continues)

Appendix Table 1, continued

Variable	Mean
Number of quarters with any UI-reported earnings for the mother in the two years prior to baseline	
0 quarters	0.19
1–6 quarters	0.60
7–8 quarters	0.20
Legal father is established by divorce	0.07
Number of legal fathers associated with the mother	
0	0.37
1	0.28
2 or more	0.35
Existence of child support order at baseline	0.56
Number of mother's minor children living with her	
1 (or pregnant with first child)	0.35
2	0.29
3 or more	0.36

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