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Does Debt Discourage Employment and Payment of Child Support? Evidence from a Natural Experiment

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INTRODUCTION

In Fiscal Year (FY) 2007, more than 60,000 full-time equivalent staff worked in child support programs in the United States to collect child support and related debt owed from approximately 15.8 million cases (U.S. Department of Health and Human Services, Administration for Children and Families, 2008). Despite substantial enhancements and technological improvements to the child support enforcement program, and improved outcomes across many indicators, many single parents do not receive child support, or receive only partial and irregular payments. Over \$105 billion in back child support was reported owed for prior years, and \$6.9 billion of this debt was collected and distributed in FY 2007. Although current support collections were up slightly from FY 2006, total child support debt continues to grow nationwide, having increased by more than 250 percent in real terms over the last decade.

Unpaid child support and high levels of child support debt contribute to hardship and disruption for both custodial parents (CPs) and noncustodial parents (NCPs) and their children. Particularly for families whose incomes are below the poverty level, child support is frequently a vital financial resource, contributing to almost one-third of income among families who receive current support payments (Sorensen and Oliver, 2002). A recent study of Wisconsin child support cases showed that 20 percent of families relied on child support for more than half of their income, although only 51 percent of poor families received some support in at least 10 months of the year (Cancian and Meyer, 2005). The absence of or deficiencies in child support payments have also been shown to increase conflict between parents and to reduce NCPs' contact with their children (Ovwigbo et al., 2005; Bartfeld, 2003).

Concerns about these burdens on families, however, were secondary to the federal government's primary motivation for establishing the federal Child Support Enforcement (CSE)

program—to recover the costs associated with public assistance payments to poor single-parent families by collecting payments from the noncustodial parents. States collect support payments from NCPs with the assistance of the federal government in covering administrative costs. Families in the child support system who are receiving public assistance have been required to assign their rights to child support collections to the state. The set of CSE tools available to states to enforce collections and impose penalties on delinquent parents has expanded over time and now includes wage withholding and work requirements, tax intercepts, the revocation of driver's, professional, recreational and occupational licenses and passports, the imposition of liens on property, asset seizure, and incarceration.

Some apparent unintended consequences of the interactions of the welfare and child support systems have been a greater likelihood that low-income, never-married NCPs will accumulate a disproportionate amount of child support debt and face more child support enforcement actions. Poor job skills and lack of employment opportunities frequently contribute to their inability to pay child support, and ability to pay is highly correlated with compliance with support orders (Pate, 2002; Bartfeld and Meyer, 2003; Ha et. al., 2006)¹. There is also some evidence that low-income parents facing substantial debts and wage withholding are more likely to become discouraged and leave formal employment. In addition, other policies governing support obligations, such as high interest rate charges on unpaid child support (12 percent in Wisconsin), have contributed to rapidly growing debt balances (Sorensen et al., 2007). This problem is aggravated by parents' poor understanding of policies and procedures for adjusting

¹Note, however, that while higher orders may reduce compliance (often measured as the *proportion* of ordered support paid), at typical levels, higher orders are not associated with lower absolute payments (Ha, et. al., 2006).

child support orders and the subsequent failure to make adjustments to orders in the face of unemployment, disability, or incarceration (Pate, 2002).

The limited cooperation of parents with the child support collection system not only raises child support debt but also the level of state resources that are expended on collection efforts (U.S. Department of Health and Human Services, Administration for Children and Families, 2008). In addition, states bear the major burden of other health and social service costs associated with assisting these families. Recently, many analysts have argued for increased efforts to secure child support, citing the need for non-welfare income sources for low-income families given the elimination of Aid to Families with Dependent Children (AFDC) and the subsequent absence of an entitlement to cash assistance (Cancian and Meyer, 2006; Sousa and Sorensen, 2006). However, others have argued that some CSE actions have become counter-productive, exacerbating a problematic cycle in which parents with large arrears balances are less willing and able to cooperate with the formal child support system and subsequent payments are reduced (Bartfeld, 2005; Waller and Plotnick, 2001). Understanding the impact of CSE and growing child support arrears on child support payment patterns is critical to resolving this debate.

In this paper, we aim to make both a substantive and methodological contribution to the literature by using a natural experiment to investigate the relationship between child support arrears and child support case outcomes (including current support payments and formal employment among NCPs). Disentangling the causal effects of debt is challenging, because high child support arrears may be both a cause and a consequence of low compliance with child support orders. We take advantage of the fact that birthing costs, which are charged to the father when an unmarried mother's childbirth costs are covered by Medicaid, vary substantially by

county and over time and yet have historically been unrelated to other characteristics of the case. In effect, some fathers with newly established paternity may begin their relationship with the CSE system with a large debt (due to the birthing costs assessment), while other fathers with similar case characteristics or backgrounds may not have to bear these early and high debt burdens. It is this exogenous source of variation that we use to identify the impact of child support arrears on child support case outcomes.

In the following sections we review previous literature in this area, describe the policy context that affords our natural experiment, and discuss the data and methods used to derive our results. We then report findings, which suggest that higher arrears are generally associated with lower child support payments and lower earnings for fathers, although the patterns of effects vary with fathers' age and their degree of labor market attachment. We discuss the implications of these results for the causal interpretation of the relationships described in prior research, as well as for recent policy debates, in the concluding section.

LITERATURE REVIEW

To identify the true effects of child support arrears and enforcement on child support case outcomes, one would ideally conduct an experiment in which both debt and current support orders (of varying amounts) were randomly assigned to noncustodial parents at the onset. One could then study whether parents facing higher debt burdens and/or support obligations were more likely to fail to pay (and to encounter additional CSE actions) and the subsequent consequences of these failures for future support payments, employment activities and other case outcomes. Although this type of experiment would not be feasible for legal and ethical reasons, alternative sources of variation in the establishment of payment expectations (for current support and arrears) might be used to nonexperimentally investigate these relationships. The successful

identification of *causal* relationships using nonexperimental methods is frequently challenging, however, and typically relies on one's ability to make a strong case that one or more of the sources of variation being used is exogenous (i.e., operates to randomly influence the causal variable of interest). In this research, we argue that a sizeable component of the initial debt amount assigned to NCPs (who are assessed birthing costs) varies randomly by county and is uncorrelated with unobserved characteristics of NCPs that influence compliance or child support case outcomes.

Our study adds to a growing literature that has attempted to understand and estimate the effects of child support enforcement policy on case outcomes. Researchers have investigated the effects of child support enforcement on noncustodial parents' paternity establishment, divorce and remarriage, contact with their children, employment and earnings, compliance with ongoing child support obligations, and other outcomes using a variety of methods and data (Aizer and McLanahan, 2006; Bartfeld, 2005; Holzer et al., 2005; Huang et al., 2005; Carlson et al., 2004; Plotnick et al., 2004; Bartfeld and Meyer, 2003; Argys and Peters, 2001; Bloom et al., 1998; Freeman and Waldfogel, 1998, 2001; Seltzer et al., 1998). For example, a number of studies have taken advantage of variation in CSE policies across states and over time (using state and year fixed effects) to identify the effects of stricter child support enforcement on outcomes such as sexual behavior and fertility (Garfinkel et al., 2003; Plotnick et al., 2004), employment and labor force participation (Holzer et al., 2005; Freeman and Waldfogel, 1998), and child support compliance rates (Huang et al., 2005).

In addition, to address concerns about possible unobserved, time-varying heterogeneity across (or within) states that might be correlated with child support policy and case outcomes, a few of these studies have also employed a differences-in-differences strategy (using a

comparison group) to estimate outcomes. Holzer et al. (2005) used samples of young black men and comparable white men from the Current Population Survey to estimate the effects of child support policy on the employment rates of blacks versus whites (in models that also included state and time dummy variables).² And Freeman and Waldfogel compared custodial and noncustodial fathers in the same states using data from the Survey of Income and Program Participation, with the expectation that if unobserved factors were not driving the results, they would only find effects of CSE policies on noncustodial fathers. Similarly, Aizer and McLanahan (2006) drew from the Fragile Families and Child Wellbeing Study data to compare the effects of stricter child support enforcement on the fertility and child investment decisions of single women relative to married women living in the same state.

Other studies, including that of Bartfeld (2005) who used Wisconsin data comparable to ours, employ an instrumental variables (IV) approach to address the endogeneity problem of unobserved factors influencing both compliance/arrears and child support case outcomes. Drawing on a cross-sectional sample of families from the National Survey of Families and Households, Seltzer et al. (1998: 173) used as instruments state practice and statute variables—state effectiveness in child support collections, state CSE expenditures, and information on state statutes governing the collection and distribution of child support payments—to “purge the child support coefficients of unobserved characteristics of fathers and families” that might influence parental involvement (their outcome of interest). The performance of their instruments was weak in some models, and thus, they offered a limited interpretation of the results in these cases. In her study of the relationship of child support arrears owed to the state and compliance with ongoing

²Holzer et al. explain that they attribute the observed effect of child support enforcement policy (an index variable) on whites to unobserved heterogeneity and infer its effects on blacks only from any additional effect that this variable has on that group.

support obligations, Bartfeld (2005) used as an instrument a dummy variable indicating if the child support order had been in effect for more than one year at the time a mother entered welfare, which she suggested would be related to arrears but not to current compliance. Although Bartfeld did not report on the performance of the instrument, the results from her estimation using actual arrears differed from those of the IV estimation, the latter of which showed that there was no relationship between child support arrears and compliance with current support orders.

Bartfeld's (2005) analysis is of particular interest for our study, as she also investigated the relationship of birthing cost assessments to subsequent compliance with current support orders. In addition, she distinguished between discretionary obligors and nondiscretionary obligors in her analysis, where nondiscretionary obligors are those who have consistent formal sector employment, and thus, may have little control over their support payments (which may be withheld or intercepted automatically). Although she was not able to find a suitable instrument to use in modeling the impact of birthing costs on compliance, Bartfeld's multivariate analysis with a rich set of control variables showed that discretionary obligors with birthing costs assessments had significantly lower compliance rates in the first two years (after the mother entered welfare). And while this analysis was not able to fully address the standard concerns about endogeneity, it does suggest that these relationships might merit further exploration with improved data and methods.

In general, the substantive results of the above studies suggest that there likely are significant relationships (with important consequences) among child support enforcement activities, the build-up of debt, and subsequent compliance with current support orders and related family outcomes. CSE actions and expenditures have been shown to be positively related

to child support collections (Holzer et al., 2005; Freeman and Waldfogel, 2001), negatively related to out-of-wedlock births (Aizer and McLanahan, 2006), and to have some modest effects on parental involvement and employment outcomes. In the analysis that follows, we aim to advance our understanding of these relationships.

CONCEPTUAL FRAMEWORK AND APPROACH TO ANALYSIS

Child support agencies in some states charge the fathers in nonmarital births for medical costs (including prenatal and perinatal expenses) that are paid for by Medicaid. These assessments (or “birthing” costs) may result in large additions to the state child support debt of fathers, with no expected benefits for the custodial parents or their children. Wisconsin is among the few states that routinely charge birthing costs, with the amounts varying by county and over time.³ As discussed below, there is no systematic information collected about birthing cost charges over time and across counties. Interviews with individuals familiar with the system suggest that the level of birthing costs assessed vary with a wide range of idiosyncratic factors. Correlation analyses do not show any significant relationship between birthing cost charges and common measures of the strength of child support enforcement.⁴ Thus, we make the assumption that this randomly varying assignment of birthing costs, for child support cases in which the arrears are primarily or entirely composed of birthing costs, will result in child support debt burdens that are unrelated to fathers’ income or ability to pay child support, or to the exposure to child support enforcement efforts.

³ We know of no systematic source of information on the jurisdictions that typically charge Medicaid birthing costs to nonresident fathers. New York and Wisconsin are among the only states known to routinely assess birthing costs. (Personal communication with Vicki Turetsky, March 2009.)

⁴ For example, using measures for a point in time (in 1998), we found no significant correlation between birthing costs typically assigned in a county and the percent of IV-D cases with paternity established, with a court order, or with collections.

Theoretically, we adopt the perspective that orders to make payments on current child support obligations and payments on arrears may be viewed as a proportional tax on earnings. Child support orders in Wisconsin are typically assessed at 17 percent of income for the first child. In addition, if birthing costs constitute more than half (52%) of the required current child support order amount, the assessment of birthing charges will mechanically trigger actions to recover the arrears, including the establishment of an arrears payment plan and county enforcement actions.⁵ In a regression analysis using Wisconsin child support cases with current support orders, we confirmed that the amount of the monthly child support order is a very strong, statistically significant and positive predictor of the dollar amount of any monthly arrears payment order.⁶ Thus, similar to obligations to pay current support orders, we expect requirements to make payments on arrears balances to function like a proportional tax on the income (or earnings) of noncustodial parents.

Basic principles of taxation theory suggest that the imposition of a proportional tax on earnings is likely to induce one or both of two contrasting effects on an individual's work behavior. The first of these possible behavioral responses is a substitution effect, in which the individual reduces work effort given that the costs of enjoying more leisure are relatively lower following the assessment of the tax. Alternatively, the child support and arrears payment

⁵ See http://dcf.wisconsin.gov/publications/dwsc_864_p.htm for additional details on income withholding and other child support payment guidelines.

⁶The dependent variable in the regression was the dollar amount that a custodial parent was ordered to pay monthly toward arrears for a given case. The predictor variables included the fixed monthly dollar amount of the current child support order due, the amount of the arrears debt balance at the time the order to pay on arrears was established, the current support debt balance, the total number of child support subaccounts for which the noncustodial parent was ordered to pay current support, an indicator for paternity cases, the number of children involved in the case, an indicator for African-American and an indicator for never married parents. In addition to the fixed monthly dollar amount of the current child support order due, the amount of the arrears debt balance at the time the order to pay on arrears was established was also a strong, positive and precise predictor of the arrears payment order amount. The complete results are available from the authors upon request.

burdens may induce individuals to work more hours in order to attain the same level of net earnings (or take-home pay) after the payment amounts (analogous to taxes) are deducted. The econometric evidence on the implications of proportional taxation is by and large inconclusive, in part because the two effects in combination may cancel each other out.

We hypothesize that we may observe differential effects of arrears payment burdens for noncustodial parents with differing histories of labor force attachment and earnings. If a NCP's options for increasing his work hours are limited or difficult to realize, the substitution effect may dominate, leading the NCP to reduce labor force participation. If instead the NCP has stable employment, he may not only be able to increase work hours, but he may also be able to take advantage of income exclusions and deductions that allow him to protect some of his income from taxation and moderate the change in the relative costs of leisure and work effort (see Feldstein, 1999). For NCPs who work but not continuously with a stable employer, either effect might dominate.

Recent research has also shown, however, that child support orders are not always updated with changes in income; in fact, Ha, Meyer and Cancian (2006) show that it is unusual for orders to change in ways that are consistent with earnings changes, including the major increases or declines (such as a move to unemployment). On the other hand, Rich, Garfinkel and Gao (2006:4) report that updating of child support obligations is "more common than not" for families receiving public assistance, and they thus suggest the effect of child support and debt burdens on NCPs should be to discourage work. If the updating of orders happens infrequently or does not closely correspond to earnings, one might alternatively argue that the effect of these burdens will operate more like a lump-sum tax. For those working in the formal economy, a lump-sum tax, although it has no distortionary effect, is expected to induce an increase in labor

(i.e., an income effect) to offset the lower income (Fullerton, 1991).⁷ Clearly, this is an unresolved issue for which bringing more empirical analysis to bear is essential to better understand the impact of debt burdens on NCP employment and earnings outcomes.

As detailed below, we develop a measure of the typical birthing costs charged for Medicaid births by county and month. This measure is highly correlated with child support arrears but is uncorrelated with observed (and we assume unobserved) characteristics of birth parents that affect child support payments and other outcomes of interest (e.g., earnings). In other words, birthing costs satisfy two basic conditions of instrumental variables (Heckman, 1997): they determine arrears (the “treatment” of interest in this study) but are mean-independent of the error terms in our outcome equations. Exploiting this instrument, we estimate the relationship between child support arrears and subsequent child support payments. We also estimate the relationship between arrears and nonresident fathers’ formal earnings, and we investigate how this relationship might differ for fathers’ with stable employment histories versus those with more limited labor force attachment or no recent earnings.

DATA AND METHODS

We use state administrative records for paternities established in Wisconsin between November of 1997 and December of 2003. All cases meet the following selection criteria: the mother is the custodial parent, the father is assessed birthing costs in one of the 23 counties for which we have developed information on typical birthing charges, and the child is the first born to the father (enabling us to match the birthing charges to a particular child). We also restrict our sample to those for whom we observe father and child’s date of birth, date of paternity

⁷ Because income in the informal economy is not directly subject to CSE, a lump-sum tax creates an incentive to substitute informal for formal employment.

establishment, and father's Social Security number (to allow matching with earnings records). A full explanation of the sample selection criteria is included in Appendix A. Our final sample for analysis includes 12,631 fathers.

We also developed our measure of typical birthing costs from these administrative data. Because we know of no documentation of historical birthing costs by county, we used the administrative data to determine the modal birthing cost in each county and month. We included in our analysis the 23 counties (of a total of 72) for which we had sufficient numbers of observations and sufficiently regular cost amounts, so that we could measure a typical birthing cost amount that was unrelated to the characteristics of the individual cases in that county and month.⁸ It is also important to note that these 23 counties included 80 percent of the total number of Wisconsin child support cases with paternity established. For a few counties and periods, when it appears that a new birthing charge was phased in over time, we allow there to be two “typical” birthing costs in a given county and month.⁹

For the 12,631 cases in our sample, the simple correlation between actual birthing costs charged to the father and the typical county/month costs is 0.75. Across all the county/months included in this analysis, the median proportion of cases in which the actual birthing cost charge matched the typical cost was 81 percent. Typical birthing charges are also highly correlated with total arrears—0.60 at the beginning of year 1, and 0.27 at the beginning of year 2. As anticipated, these simple statistics suggest that county/month variation in birthing costs will serve as an

⁸We include 23 counties for 6 years and 3 months, for a total of 1725 county/months. Of these we exclude 40 individual county/months because of insufficient sample sizes and/or inconsistent patterns of birthing costs, for a total of 1,685 county/months. See Appendix B for details regarding the determination of typical birthing costs.

⁹We assign to each case the most frequent birthing cost (first typical cost) for the relevant county and month if the absolute difference between observed birthing cost for that case and the first typical cost is less than \$150, or otherwise the closest of the two typical charges. Details of the procedures followed in determining typical birthing costs are provided in Appendix B.

effective instrument—generally invariant to fathers’ individual characteristics but highly correlated with arrears.

Table 1 shows the means of the primary variables used in our analysis, including actual and typical birthing costs. Actual birthing costs charged to fathers ranged from \$10 to \$22,584, with a mean of \$2,330. Our measure of typical birthing costs in a county/month ranged from \$1,100 to \$4,700, with a mean of \$2,378. Seventy nine percent of fathers had pre-birth annual earnings, which averaged \$8,572 per year for those with any earnings. Low earnings are expected given a relatively young sample who had fathered children outside of marriage (over forty percent of the fathers were under 21 at the time the child was born, and thus even younger when pre-birth earnings were measured), and who had a low-income partner eligible for Medicaid. The top panel of Table 1 shows our dependent variables. Eighty percent of fathers paid some child support in the first year, and 73 percent paid in the second year. Among those paying some support, median amounts were \$1,703 and \$1,841 in the first and second year respectively. This is a substantial portion of earnings for many fathers; among the 75 percent of fathers with formal earnings in the first year following the birthing costs order, median earnings were just below \$10,000.¹⁰

In estimating the relationship between child support arrears and nonresident fathers’ subsequent child support payments and formal earnings, we employ two basic approaches. In the first set of models, we simply include typical birthing costs in an ordinary least squares (OLS) regression with other control variables to assess their effects on child support paid and father’s formal earnings. As indicated above, typical birthing costs vary by county and over time and are

¹⁰Note that the Wisconsin child support guidelines generally call for a father of one child to pay 17 percent of income in support.

highly correlated with total arrears.¹¹ In the second (IV) specification, we estimate a two-stage model. In the first stage, we predict total arrears with our typical birthing cost measure (varying by county and over time) as the focal instrumental variable, and we also include other county-level measures of baseline¹² labor market conditions (average earnings by industry and industry employment shares) that we expect may influence arrears but are unrelated to fathers' characteristics that affect child support payments and earnings. This first stage model also includes measures of fathers' labor market histories, baseline demographic characteristics (e.g., age, race, family composition), and county dummies. Predicted arrears from this first-stage estimation were then entered into the second stage outcome models to assess the relationship between arrears and the outcomes of interest.

In both of the above approaches to identification, we include interactions of the birthing cost measures with measures of fathers' employment histories (prior to the birth of their first child) in the outcome models. Specifically, we constructed four measures of fathers' employment histories: an indicator for fathers who worked 1-3 quarters during the 7-18 months prior to the birth of their first child; an indicator for fathers who worked all four quarters of the 7-18 months before the birth of their first child for a single (the same) employer; an indicator for fathers who worked for all four quarters and had more than one employer in the 7-18 months before the birth of their first child, and an indicator for fathers who had no (zero) earnings reported during the 7-18 months prior to the birth of their first child. The three measures for fathers with at least some employment prior to the birth of their first child were entered into the

¹¹ We use our measure of typical birthing costs, which are unrelated to father's individual characteristics, rather than actual birthing costs assessed for the individual case. Estimates using actual birthing costs are qualitatively similar.

¹²Our *baseline* is defined as the first full quarter after we observe both positive child support owed *and* an order to pay birthing costs.

outcome model and also interacted with typical birthing costs (or with predicted arrears) in the estimation of these models. The objective of estimating these models is to test the differing predictions of theory discussed above, for which the current base of empirical evidence provides mixed support or limited insight into the relationship of fathers' labor market attachment to the added burden of debt.

RESULTS

We first consider whether child support debt discourages payment of child support. Birthing costs, assessed at the beginning of a father's child support payment experience and varying randomly across county and month (that is, independently of fathers' own characteristics), provide an opportunity to identify the effects of child support debt on child support payments. Table 2 shows two sets of estimates from the two model specifications with the interactions described above. The first set is based on our simple estimation of the effects of typical birthing costs using OLS regression. The second set of estimates are from the two-stage IV model, with typical birthing costs and other exogenous factors used in the first stage model to predict total arrears, and predicted arrears included in the second stage model to estimate child support paid. The results of the first-stage estimation are reported in Appendix C, and decisively confirm the validity of our focal instrument, typical birthing costs, as a strong statistically significant predictor of total arrears. Other instruments such as the (logged value of) total employment in a given county and year and employment shares in industry sectors (e.g., construction) are also strong predictors in the first-stage model. Since the equation is over-identified (i.e., there are more instruments than problematic explanatory variables), we expect these strong instruments to yield coefficient estimates with negligible bias and approximately normal standard errors, given our large sample size (Murray, 2006).

The parameter estimates in these models (in Table 2) are generally consistent with prior research. Child support payments are higher for fathers with higher earnings, for older fathers, and for non-black fathers. We also include measures of legal commitments to other mothers and the number of children (measured at the beginning of the year). Both of these variables are associated with reduced child support payments in both years. Fathers for whom there is a longer time lag between paternity establishment and baseline—where the baseline is the first month after the full quarter with both birthing costs and positive child support owed—pay less support in both years.

The OLS and two-stage models produce patterns of estimated effects of child support debt on subsequent child support payments that are generally comparable. The OLS estimates suggest that an additional \$1000 of typical birthing charges increases child support paid by an average of \$141 (about 9 percent of average child support paid) in the first year and \$200 (13 percent) in the second year for fathers with no employment in the 7-18 months prior to the birth of their first child; the comparable two-stage model estimates suggest increases of \$113 and \$203, respectively, in child support paid by these fathers for each \$1,000 in predicted arrears. For fathers who were employed in the 7-18 months prior to the birth of their first child, the estimated effects in both the OLS and two-stage models—taking into account the statistically significant interactions between labor market attachment and birthing costs—are all negative, implying reductions in child support paid.^{13,14} For example, the OLS models show that fathers employed

¹³Child support distribution hierarchies mean that most child support collected would be distributed for current support before going to pay birthing costs. Nonetheless, we also estimated a model in which we included payments towards birthing costs in our measure of payments—to verify that birthing costs were associated with lower total payments, rather than simply with lower payments towards current support. Our results were qualitatively similar, with birthing costs having a statistically significant negative effect on total payments in all four models.

1-3 quarters prior to birthing charges paid \$68.86 less in child support in year 1 and \$24.91 less in year 2 for each \$1,000 in typical birthing costs; the two-stage models suggest these fathers paid \$100.87 less in child support in year 1 and \$21.48 less in year 2 for each \$1,000 in predicted arrears. In addition, the negative effects are likewise substantial for fathers who worked all four quarters for a single employer, and they are largest for those who had more than one employer (sequentially or concurrently) in the 7-18 months before the birth of their first child. Focusing on the two-stage model and fathers who worked four quarters for multiple employers, we find that fathers pay \$126 less in child support in year 1 and \$71 less in year 2 for each \$1,000 in predicted arrears. Although we pay a small price in precision (slightly wider confidence intervals) using the predicted values of arrears, as is typical for IV estimation, both sets of estimates of the moderating effects of child support debt on payments by working fathers are statistically significant and suggest substantively important effects.

Automatic wage withholding has made child support payments increasingly nondiscretionary for fathers working in the formal labor market. As discussed earlier, increased child support debt burdens may induce some fathers to work more hours in order to attain the same level of take-home pay, while the substitution effect may dominate for others with limited options for increasing work hours, leading them to reduce labor force participation. Other low-income fathers facing large debts and substantial wage withholding may simply become discouraged and leave formal employment. Table 3 shows estimates of the effects of child support debt on nonresident fathers' total earnings in the first and second years after baseline from OLS and two-stage least squares models that parallel those in Table 2. In each of the

¹⁴In an alternative specification, we excluded cases with zero child support paid. The estimated effects were larger but followed similar patterns.

models, the effect of birthing costs assessments on earnings (for fathers with no employment in the 7-18 months before the birth of their first child) is positive, although statistically significant only in year 2; a \$1,000 increase in birthing charges is associated with an increase in formal earnings of \$430 in the first post-baseline year and \$597 in the second year in the OLS models, and \$500 and \$947, respectively, in the two-stage models. For fathers employed 1-3 quarters prior to the birth of their first child—taking into account the interaction between birthing costs charges and recent labor market attachment—the resulting effect is also positive and larger in year 2 than year 1. In year 2, the OLS model shows that these fathers earn \$537 more for each \$1,000 in typical birthing costs, while the two-stage model suggests that they earn \$756 more in year 2 for each \$1,000 in predicted arrears. And for fathers working for a single employer all four quarters prior to the birth of their first child, the moderating effects of birthing cost charges are again positive but considerably smaller for three of the models (\$52 to \$121), and in the two-stage model predicting year 1 earnings, the net effect is negative (reducing earnings by \$95).

Table 3 also shows, however, that for fathers working all four quarters in the 7-18 months before the birth of their first child with more than one employer (sequentially or concurrently), the moderating effects of additional debt are negative. The OLS models show that these fathers earn \$206 less in year 1 and \$290 less in year 2 for each \$1,000 in typical birthing costs, and the two-stage models suggest reductions in earnings of \$148 and \$65, respectively, in years 1 and 2.¹⁵ These reductions in formal earnings are not only statistically significant but are also substantively important, representing up to 2.5 percent of average pre-baseline earnings (and 3 percent of median pre-baseline earnings) for each additional \$1,000 in debt. In general, the

¹⁵In an alternative specification, we excluded cases with zero earnings. The estimated effects were larger but again followed similar patterns.

results in Table 3 suggest that fathers with less labor market attachment in the pre-baseline year may have more opportunity for increasing their labor force participation and earnings, and it appears that on net, they do this in response to the imposition of birthing costs. For fathers working all four quarters in the pre-baseline year for a single employer, the moderating effects of birthing costs charges are smaller, likely reflecting their limited ability to increase earnings in the short term. And for fathers working for more than one employer in the pre-baseline period, we suggest that the observed negative effect of birthing cost charges may reflect reductions in extra work effort among these fathers in response to this new tax on their earnings; that is, the substitution effect appears to dominate.¹⁶

We also estimated the two-stage least squares models shown in Tables 2 and 3 separately for fathers age 17-20 years and for those age 21 years and older at the birth of their first child. In Table 4, we first present the key results for the interactions between pre-baseline employment categories and predicted arrears, along with the main effects for these variables for the earnings outcomes (showing results for fathers age 17-20 and those 21 years and older side-by-side). What is immediately apparent in this table is that the moderating effects of birthing costs charges on earnings are experienced primarily by younger fathers. In fact, while the coefficients on the interaction terms are all statistically significant for fathers age 17-20 years, only one interaction term for older fathers is statistically significant (for those working all four quarters for more than one employer in the second year). We generally find that although fathers are earning more and paying more child support in the second year post-baseline than in the first year after the imposition of birthing cost charges, the imposition of birthing cost charges has a “discouraging”

¹⁶ Because child support debt might be expected to discourage all formal employment, as a sensitivity test, we also estimated probit models of any employment in the first or second year. The results again suggested a significant effect of debt on employment, in both years, whether estimated using OLS or a two-stage model with predicted arrears

(negative) effect on work and child support payments in both years that is clearly stronger for younger fathers who are first getting a “toehold” in the labor market. In addition, the negative moderating effect of arrears is actually strongest for young fathers who were working for a single employer all four quarters in the 7-18 months before the birth of their first child, with large reductions in earnings of \$366 in year 1 (\$849 – \$1215) and \$896 (\$1044 – \$1940) in year 2. Alternatively, Table 5 shows that there is little difference in the moderating effects of arrears on fathers’ child support payments for younger vs. older fathers; the interactions are negative, statistically significant and of fairly similar size for both groups of fathers, and generally consistent with the findings presented in Table 2.

Taken as a whole, the results of our analysis suggest that the effects of large additions to child support debt burdens (through birthing costs charges) on nonresidential fathers’ future earnings and payment of current support will depend importantly on their ability to meet or offset these new payment obligations with increased labor force participation. Perhaps of paramount concern for policymakers is the finding that younger fathers with stronger labor market attachment prior to birthing cost assessments are likely to reduce their earnings and current child support payments the most in the face of higher debt burdens. Clearly, many families may be negatively affected by these fathers’ responses to increasing child support debt.

CONCLUSIONS

In this study, we use variation in the birthing costs over time and across counties in Wisconsin to identify the effect of child support debt on nonresident fathers’ child support payments and formal earnings. Because birthing costs are only assessed for mothers covered by Medicaid, our results apply to a low income sample. However, about 70 percent of all child support arrears are estimated to be owed by fathers with no formal earnings or earnings below

\$10,000 per year (Sorensen et al, 2007), suggesting that low income families are an appropriate focus for an analysis of child support debt. We find evidence that higher assessed birthing costs are significantly and substantively associated with both reduced child support payments and reduced formal earnings, particularly for younger fathers with stronger prior labor force attachment. Because child support debt can be the result of low earnings and the failure to pay support, establishing the direction of causality has been difficult. By exploiting an exogenous source of variation in birthing charges, which contributes to substantial differences in debt burdens early in the child support payment experience, we are able to more confidently identify the effects of debt on child support paid and on formal employment.

Ironically, the same feature (birthing charges being unrelated to father's characteristics) that makes birthing costs an excellent instrument for identifying the causal effects of arrears also makes it a problematic public policy. In 2000, the congressionally mandated Medical Support Working Group recommended that child support enforcement agencies be precluded from attempting to recover Medicaid covered birthing costs from noncustodial parents (MSWG, 2000; Recommendation 20). And in an amicus brief of the Center on Fathers, Families, and Public Policy (2001), an argument is made that the practice of charging fathers for birthing costs goes against the intent of Congress to encourage mothers to obtain appropriate health care during and following pregnancy, without concern for the implications for noncustodial parents and their future ability to pay child support. As such, very few states currently act to recover Medicaid birthing costs, and the Deficit Reduction Act did not include this policy among the many aspects of the child support enforcement addressed. In addition, other recent bills have included provisions to eliminate Medicaid birthing-cost recovery, in part because this policy has not factored in the father's ability to pay. In 2006, Wisconsin Act 304 reduced birthing cost

assessments for low income fathers, limiting the amount of recovery to one half the actual and reasonable costs of the pregnancy and birth (Wisconsin Legislative Reference Bureau, 2006).¹⁷

The elimination of birthing cost assessments was an important provision of The Responsible Fatherhood and Healthy Families Act, co-sponsored in 2007 by then-Senator Obama, and was featured in policy proposals he made during his presidential campaign.

Our interest, however, is less in the policy of birthing costs per se, than in contributing to our understanding of the likely implications of growing child support arrears for the functioning of the child support system and the well-being of resident and nonresident parents and their families. At a time when federal support for child support agencies has been wavering, and many agencies are facing reductions in staff and other resources, there is growing pressure to implement or maintain policies that offset government costs. The assessment of birthing costs is consistent with a widespread focus on cost-recovery. It is estimated, for example, that in the short run, abandoning the current policy for recovering birthing costs would cost the Wisconsin child support and Medicaid programs over \$20 million per year.¹⁸ On the other hand, such efforts to recover short-term or one-time government costs may be counterproductive if they lead to reduced cooperation with the child support system. Our results suggest that higher arrears, in themselves, substantially reduce both child support payments and formal earnings for the fathers and families that already likely struggle in securing steady employment and coping with economic disadvantage, a serious unintended consequence of child support policy.

¹⁷The act was not retroactive, and did not effect the cases included in our analysis, all of which were ordered to pay birthing costs in 2003 or earlier.

¹⁸Correspondence with the Wisconsin Bureau of Child Support, Department of Workforce Development.

Table 1: Descriptive Statistics of Primary Variables Used in the Empirical Analysis

	Mean	Median	Minimum	Maximum
Dependent Variables				
Percent paying any child support in Year 1	79.78			
Percent paying any child support in Year 2	73.49			
Child support paid in Year 1	1584.93	1122.08	0	22129.92
Child support paid in Year 2	1539.29	988.29	0	21691.53
Child support paid in Year 1 (conditional on some payment)	1986.63	1702.67	1.97	22129.92
Child support paid in Year 2 (conditional on some payment)	2094.44	1840.99	0.93	21691.53
Percent with any formal earnings in Year 1	75.45			
Percent with any formal earnings in Year 2	70.16			
Formal earnings in Year 1	9371.28	5249	0	49883
Formal earnings in Year 2	9616.32	4569	0	49908
Formal earnings in Year 1 (conditional on some earnings)	12420.63	9921	4	49883
Formal earnings in Year 2 (conditional on some earnings)	13706.14	11003	4	49908
Independent Variables				
Actual birth costs*	2330.29	2285	10	22584
Typical birth costs	2378.05	2300	1100	4700
Arrears at beginning of Year 1	2444.77	2320.34	0	22887.33
Arrears at beginning of Year 2	3045.14	3035.69	0	25176.5
Father's employment during 7-18 months prior to birth of child				
zero quarter of earnings (percent)	21.28			
1-3 quarters of earnings (percent)	37.36			
4 quarters of earnings with a single employer reporting earnings in all 4 quarters (percent)	11.59			
4 Q of earnings with multiple employers reporting earnings in all 4 quarters (percent)	29.77			
Annual earnings of Father 7-18 months prior to birth of child	6748.179	3394	0	39750
Annual earnings of Father 7-18 months prior to birth of child (conditional on being Positive)	8572.489	5703	7.00	39750

Time difference among events including birth of child, paternity establishments, first child support order, and LI order	Mean	Median	Minimum	Maximum
LI ordered within 6 months after first child support order and paternity established within 6 months after birth of child	37.02			
First child support owed before LI order	11.95			
First child support order after 6 months following LI order, or paternity established after 6 months following birth of child	51.03			
Whether father has additional legal obligations for a child in the post baseline periods.				
No more child within a year (percent)	74.05			
Fathers who have additional legal obligations for a child of the same partner within a year (percent)	8.96			
Fathers who have additional legal obligations for a child of another mother within a year (percent)	16.99			
No more child within two years (percent)	68.78			
Fathers who have additional legal obligations for a child of the same partner within two years (percent)	11.25			
Fathers who have additional legal obligations for a child of another mother within two years (percent)	19.97			
Age of Father at Birth of Child				
17-20	41.35			
21-24	32.61			
25-28	13.29			
29+	12.75			
Race of Father				
White	41.64			
Black	38.59			
Others	10.31			
Missing	9.46			
County of Child Support Order				
Milwaukee	40.45			
Racine	7.07			
Dane	6.67			
Brown	4.93			
Kenosha	4.25			
Other 18 Counties included	36.63			
Year of child's birth				
1998	22.59			
1999	19.44			
2000	18.38			
2001	18.07			
2002	15.54			
2003	5.98			
*Actual birthing costs are not included in the models and are shown here for reference only. Cases in which the year of child's birth is 1998 include 3.26 percent (n=412) cases in which child was born in November or December of 1997. N=12,631				

Table 2

OLS & Two-Stage Models of Effects of Child Support Debt on Child Support Paid in the First and Second Year after Baseline with Interactions

	Model: OLS with typical county/month birthing charges				Model: Two Stage Model with predicted arrears			
	Father's Payments 1st Year after Baseline		Father's Payments 2nd Year after Baseline		Father's Payments 1st Year after Baseline		Father's Payments 2nd Year after Baseline	
N=12,631	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
Intercept	517.75	10163.00	-7584.12	12503.00	3088.37	10876.00	-9135.04	13154.00
Typical Lying-in (LI) costs/1000 (for county/month), or Predicted arrears/1000 (at baseline and baseline+1 year)	141.31 ***	43.86	200.61 ***	48.13	112.91 **	57.36	202.87 ***	65.24
Father's employment during 7-18 months prior to birth of child (reference category: zero quarter of earnings)								
1-3 quarters of earnings	233.13 ***	78.16	290.24 ***	84.51	290.53 ***	87.21	344.82 ***	94.36
4 quarters of earnings with a single employer	105.27	120.20	461.76 ***	129.97	69.43	125.14	392.57 ***	135.51
4 quarters of earnings with multiple employers	208.03 **	89.66	399.46 ***	97.02	199.14 **	98.15	400.28 ***	106.29
Interaction: Father has positive pre-earnings for 1-3 quarters*typical birthing costs (or predicted arrears)	-210.17 ***	31.62	-225.52 ***	34.18	-213.78 ***	32.99	-224.35 ***	35.69
Interaction: Father has positive pre-earnings all 4 quarters with a single employer*typical birthing costs (or predicted arrears)	-194.88 ***	42.80	-289.41 ***	46.29	-162.22 ***	45.12	-238.54 ***	48.83
Interaction: Father has positive pre-earnings all 4 quarters with multiple employers*typical birthing costs (or predicted arrears)	-260.66 ***	33.12	-298.35 ***	35.88	-238.75 ***	35.05	-274.36 ***	37.96
Annual Earnings of Father 7-18 months prior to birth of child (conditional on some earnings divided by Father's annual earnings squared 7-18 months prior to birth of child (conditional on some earnings and divided by 1,000,000)	111.22 ***	5.90	97.29 ***	6.38	109.52 ***	5.93	96.26 ***	6.41
	-0.75 ***	0.17	-0.84 ***	0.19	-0.73 ***	0.18	-0.83 ***	0.19
Time difference among events including birth of child, paternity establishments, first child support order, and LI order (reference category: LI ordered within 6 months after first child support order and paternity established within 6 months after birth)								
First child support owed before LI order	101.55 **	43.03	98.56 **	46.49	152.38 **	59.92	97.85	66.33
First child support order after 6 months following LI order, or paternity established after 6 months following birth of child	-93.30 ***	30.35	-101.79 ***	32.61	-102.63 ***	31.49	-98.94 ***	34.09
Whether father has additional legal obligations for a child at the beginning of the first (or second) year after baseline (reference category: no more child)								
Father has one female partner but more than one child	-172.06 ***	43.41	-210.51 ***	42.51	-174.16 ***	43.43	-211.85 ***	42.55
Father has more than one female partner	-303.06 ***	33.60	-306.25 ***	34.38	-306.14 ***	33.61	-309.90 ***	34.40
Age of Father (reference category: 17-20)								
21-24	84.89 ***	29.46	57.72 *	31.87	90.25 ***	29.51	60.66 *	31.96
25-28	223.33 ***	40.02	209.15 ***	43.27	229.66 ***	40.05	213.97 ***	43.32
29+	250.55 ***	41.34	246.28 ***	44.78	262.79 ***	41.56	254.50 ***	45.08
Race of Father (reference category: Black)								
White	684.05 ***	34.56	662.24 ***	37.37	675.15 ***	35.47	663.99 ***	38.43
Others	375.84 ***	43.68	339.16 ***	47.21	380.25 ***	43.69	345.73 ***	47.23
Missing	811.45 ***	50.54	740.70 ***	54.72	801.39 ***	51.63	744.15 ***	56.08
Year of LI Order (reference category: between November 1997 and December 1998)								
Year1999	-85.69 **	40.20	-176.51 ***	44.03	-83.65 **	40.71	-180.37 ***	44.82
Year2000	-149.24 ***	46.81	-195.45 ***	50.73	-138.48 ***	50.95	-203.95 ***	56.09
Year2001	-207.15 ***	55.36	-297.22 ***	60.33	-187.55 ***	64.25	-306.92 ***	71.38
Year2002	-316.33 ***	66.16	-383.40 ***	71.64	-280.00 ***	82.84	-393.83 ***	91.71
Year2003	-372.64 ***	86.63	-420.03 ***	91.06	-325.18 ***	105.09	-430.65 ***	113.11

Notes: Also included in these models but not shown in this table were county dummies and county-level controls for average total employment, average earnings by industry and industry employment shares. * implies statistical significance at $\alpha=0.10$; ** at $\alpha=0.05$ and *** at $\alpha=0.01$.

Table 3

OLS & Two-Stage Models of Effects of Child Support Debt on Father's Earnings in the First and Second Year after Baseline with Interactions

	Model: OLS with typical county/month birthing charges				Model: Two Stage Model with predicted arrears			
	Father's Earnings 1st Year after Baseline		Father's Earnings 2nd Year after Baseline		Father's Earnings 1st Year after Baseline		Father's Earnings 2nd Year after Baseline	
N=12,631	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
Intercept	-122142 *	63412	-182211 **	80651	-124216 *	67831	-203295 **	84778
Typical Lying-in (LI) costs/1000 (for county/month), or Predicted arrears/1000 (at baseline and baseline +1)	429.82	273.66	596.62 *	310.43	500.10	357.73	947.23 **	420.49
Father's employment during 7-18 months prior to birth of child (reference category: zero quarter of earnings)								
1-3 quarters of earnings	668.30	487.69	713.70	545.15	969.94 *	543.94	1102.22 *	608.14
4 quarters of earnings with a single employer	1015.07	749.94	1547.78 *	838.35	1618.23 **	780.51	2578.88 ***	873.37
4 quarters of earnings with multiple employers	1714.53 ***	559.45	2396.84 ***	625.85	1811.39 ***	612.17	2822.31 ***	685.05
Interaction: Father has positive pre-earnings for 1-3 quarters*typical birthing costs (or predicted arrears)	-8.41	197.27	-59.77	220.49	-116.11	205.76	-191.17	230.04
Interaction: Father has positive pre-earnings all 4 quarters with a single employer*typical birthing costs (or predicted arrears)	-377.94	267.05	-475.30	298.59	-595.06 **	281.41	-835.45 ***	314.73
Interaction: Father has positive pre-earnings all 4 quarters with multiple employers*typical birthing costs (or predicted arrears)	-635.68 ***	206.65	-886.20 ***	231.46	-647.67 ***	218.61	-1011.88 ***	244.69
Annual Earnings of Father 7-18 months prior to birth of child (conditional on some earnings divided by 1,000)	770.95 ***	36.83	823.87 ***	41.16	773.00 ***	36.96	828.18 ***	41.31
Father's annual earnings squared 7-18 months prior to birth of child (conditional on some earnings and divided by 1,000,000)	-2.12 *	1.09	-5.09 ***	1.22	-2.17 **	1.09	-5.16 ***	1.22
Time difference among events including birth of child, paternity establishments, first child support order, and LI order (reference category: LI ordered within 6 months after first child support order and paternity established within 6 months after birth)								
First child support owed before LI order	-691.74 ***	268.45	-1214.69 ***	299.90	-831.78 **	373.71	-1576.51 ***	427.53
First child support order after 6 months following LI order, or paternity established after 6 months following birth of child	-665.25 ***	189.34	-757.64 ***	210.35	-630.34 ***	196.39	-675.57 ***	219.73
Whether father has additional legal obligations for a child at the beginning of the first (or second) year after baseline (reference category: no more child)								
Father has one female partner but more than one child	-311.63	270.86	-284.03	274.23	-311.91	270.89	-281.02	274.22
Father has more than one female partner	-982.81 ***	209.63	-1141.33 ***	221.79	-985.47 ***	209.62	-1145.10 ***	221.73
Age of Father (reference category: 17-20)								
21-24	-268.96	183.82	-492.36 **	205.55	-271.04	184.08	-505.55 **	205.96
25-28	-272.68	249.69	-741.19 ***	279.10	-288.16	249.80	-771.43 ***	279.19
29+	-887.27 ***	257.94	-1426.86 ***	288.84	-900.57 ***	259.24	-1472.22 ***	290.57
Race of Father (reference category: Black)								
White	2923.41 ***	215.65	3124.58 ***	241.05	2951.71 ***	221.25	3189.44 ***	247.69
Others	2230.64 ***	272.50	2139.72 ***	304.53	2237.53 ***	272.48	2145.29 ***	304.41
Missing	3964.06 ***	315.32	4655.02 ***	352.95	3998.36 ***	322.01	4743.94 ***	361.43
Year of LI Order (reference category: between November 1997 and December 1998)								
Year1999	-854.93 ***	250.80	-1175.89 ***	284.00	-859.95 ***	253.91	-1228.88 ***	288.89
Year2000	-1783.01 ***	292.08	-1893.07 ***	327.24	-1818.60 ***	317.80	-2048.25 ***	361.50
Year2001	-2304.16 ***	345.38	-2328.67 ***	389.16	-2343.81 ***	400.74	-2554.66 ***	460.05
Year2002	-2968.63 ***	412.78	-2708.84 ***	462.11	-3027.22 ***	516.71	-3038.98 ***	591.08
Year2003	-3127.70 ***	540.54	-2862.28 ***	587.37	-3209.35 ***	655.44	-3256.54 ***	729.00

Notes: Also included in these models but not shown in this table were county dummies and county-level controls for average total employment, average earnings by industry and industry employment shares. * implies statistical significance at $\alpha=0.10$; ** at $\alpha=0.05$ and *** at $\alpha=0.01$.

Table 4

Two-Stage Models of Effects of Child Support Debt on Earnings in the First and Second Year after Baseline by Fathers' Age

N=12,631	Model: Two Stage Model for Fathers Age 17-20 Years				Model: Two Stage for Fathers Age 21 or More Years			
	Father's Earnings 1st Yr after baseline		Father's Earnings 2nd Yr after baseline		Father's Earnings 1st Yr after baseline		Father's Earnings 2nd Yr after baseline	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
Intercept	-59345.00	93684.00	-127889.00	120019.00	-170802.00 *	95190.00	-222665.00 *	117095.00
Typical Lying-in (LI) costs/1000 (for county/month), or Predicted arrears/1000 (at baseline and baseline +1)	848.51 *	473.64	1043.71 *	563.18	162.94	517.24	709.54	604.47
Father's employment during 7-18 months prior to birth of child (reference category: zero quarter of earnings)								
1-3 quarters of earnings	1409.00 **	659.93	1907.86 **	748.81	79.34	857.65	-412.91	954.06
4 quarters of earnings with a single employer	4351.60 ***	1273.55	6994.86 ***	1443.81	-824.64	1080.71	-886.09	1203.78
4 quarters of earnings with multiple employers	3233.47 ***	818.78	3625.87 ***	929.53	-136.29	913.21	711.39	1016.91
Interaction: Father has positive pre-earnings for 1-3 quarters*typical birthing costs (or predicted arrears)	-460.36 *	259.49	-449.47	294.62	217.92	311.45	131.67	346.50
Interaction: Father has positive pre-earnings all 4 quarters with a single employer*typical birthing costs (or predicted arrears)	-1214.74 **	482.12	-1940.39 ***	546.61	-152.60	373.69	-178.23	416.04
Interaction: Father has positive pre-earnings all 4 quarters with multiple employers*typical birthing costs (or predicted arrears)	-978.47 ***	297.31	-1019.95 ***	337.00	-303.43	314.63	-745.37 **	350.90

Note: * implies statistical significance at $\alpha=0.10$; ** at $\alpha=0.05$ and *** at $\alpha=0.01$.

Table 5

Two-Stage Models of Effects of Child Support Debt on Child Support Paid in the First and Second Year after Baseline by Fathers' Age

	Model: Two Stage Model for Fathers Age 17-20 Years				Model: Two Stage for Fathers Age 21 or More Years			
	Father's Payments 1st Yr after baseline		Father's Payments 2nd Yr after baseline		Father's Payments 1st Yr after baseline		Father's Payments 2nd Yr after baseline	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
N=12,631								
Intercept	2529.32	13729.00	-14766.00	17403.00	4013.06	15751.00	-4199.35	18647.00
Typical Lying-in (LI) costs/1000 (for county/month), or Predicted arrears/1000 (at baseline and baseline +1)	64.37	69.41	142.42 *	81.66	137.76	85.59	228.62 **	96.26
Father's employment during 7-18 months prior to birth of child (reference category: zero quarter of earnings)								
1-3 quarters of earnings	263.74 ***	96.71	363.18 ***	108.58	141.28	141.92	172.18	151.93
4 quarters of earnings with a single employer	445.57 **	186.63	801.00 ***	209.35	-316.56 *	178.83	40.29	191.69
4 quarters of earnings with multiple employers	166.47	119.99	504.77 ***	134.78	-26.28	151.11	144.96	161.94
Interaction: Father has positive pre-earnings for 1-3 quarters*typical birthing costs (or predicted arrears)	-138.52 ***	38.03	-144.22 ***	42.72	-239.53 ***	51.54	-250.50 ***	55.18
Interaction: Father has positive pre-earnings all 4 quarters with a single employer*typical birthing costs (or predicted arrears)	-183.95 ***	70.65	-271.77 ***	79.26	-171.05 ***	61.84	-249.06 ***	66.25
Interaction: Father has positive pre-earnings all 4 quarters with multiple employers*typical birthing costs (or predicted arrears)	-112.26 ***	43.57	-176.89 ***	48.87	-303.20 ***	52.06	-319.26 ***	55.88

Note: * implies statistical significance at $\alpha=0.10$; ** at $\alpha=0.05$ and *** at $\alpha=0.01$.

Appendix A

Sample Construction

We draw our sample from 72,363 legally-established fathers and court-ordered payers whose first-born (oldest) child lives with his/her mother, and was born no earlier than November 1, 1997 (when administrative data on birthing costs is available), and no later than the first quarter of 2004 (to allow us to potentially observe two years post-baseline outcomes).

- 1) Restricting the sample to 21,512 fathers charged birthing costs and owing child support. Of the 72,363 father-child pairs, we eliminated 39,160 fathers who owed no birthing costs, 833 fathers with missing information on birthing costs, and 746 fathers for whom we could not match birthing costs to an individual child. We also eliminate 9,439 who had never owed child support. A manual check of a few these cases suggests most are co-habiting resident fathers. We also eliminated 671 fathers who owed no support in the two years after baseline (because their first order was of very short duration).
- 2) Of 21,512 remaining father-child pairs, we eliminated 285 fathers with an unknown date of paternity establishment, 101 fathers whose paternity was oddly established after the baseline started, 120 fathers with unknown birthdates, and 407 fathers with missing or incorrect Social Security numbers (and consequently no earnings information).
- 3) Of 20,700 remaining father-child pairs we eliminated 4,508 cases whose baseline (birthing costs assessed and first child support order in place) was after the first quarter of 2004, in order to have information on child support payments and earnings for two years after the baseline.
- 4) Of 16,599 remaining father-child pairs, we eliminated 296 fathers with extreme (above the 99th percentile) yearly earnings either in the year prior to baseline or any of the two years after the baseline.
- 5) Of 16,303 remaining father-child pairs, we selected 13,105 fathers who owed birthing costs in one of the 23 counties for which we developed information on typical birthing costs (see Appendix B), and in a month during which we observed typical costs.
- 6) Of the 13,105 remaining father-child pair, we eliminated 27 fathers whose paternity was not established until baseline.
- 7) Of 13,078 remaining father-child pairs, we eliminated 447 fathers who were under the age of 17 at the birth of child.

These steps resulted in a final sample of 12,631 father-child pairs.

Appendix B

Construction of Typical Birthing Charges

We are not aware of any systematic documentation of birthing (birthing) charges by county and over time in Wisconsin. Based on administrative records of charges in individual cases, we derived the typical birthing costs for each county and month using the following procedure:

- 1) Recode individual birthing charges in two-hundred dollar increments and call the modal category the “typical” birthing charge for that county/month in which the month refers to the month/year of child’s birth. This results in 1,632 county/month values (6 years and 2 months for 23 counties for a total of 1,702 county/months, less 70 county/months with at most one birthing charge observation).
- 2) If other amounts of individuals’ birthing charges than the modal category are found for a given county/month, provisionally set a second “typical” birthing charge for that county/month.
- 3) Smooth the data as follows: if the first typical birthing charge for a county/month deviates from the typical charge in *adjacent months*, while the charges in adjacent months are identical to one another, set the typical charge for the current county/month to match that of adjacent months. (Adjacent months are defined as one month before and one after, two months before and one month after, or one month before and two months after.) If the first typical charge is altered, set the second typical birthing cost equal to the original charge (overriding any existing second charge). Note that 7.17 percent of a total of 1,632 county/month birth charges were altered in this process. Additionally, out of the 70 county/months that were excluded in step 1 for the reason that there was at most one birthing charge observation for a county/month, 17 county/months were newly given the first typical charge from the typical charge in adjacent months. This results in 1,649 county/months with the first typical birthing charge.
- 4) Allow a second typical birthing cost in a given county/month if the value of the second typical charge is equal to the first typical charge in that county at some point in the previous or subsequent 12 months. This allows for some cases to be assessed an “old” or “new” charge, possibly because of delays in assessment, or of uneven implementation of a new cost structure. Note that 246 county/months were given a second typical charge as a result.

For each individual father-child pair (n=12,631), set the typical birthing charge to the first typical charge for the relevant county and month (or, if the absolute differences between individuals’ actual birthing charges and the first typical charge are more than \$150, to the closest of the two typical charges for the 193 county/months in which there are two options).

Appendix C

First Stage Models of Arrears at Baseline and 1 Year after Baseline

	Model: OLS (with typical county/month birthing charges)			
	Father's Arrears at Baseline		Father's Arrears 1 Year after Baseline	
N=12,631	Coeff.	S.E.	Coeff.	S.E.
Intercept	22331.00 ***	8474.42	24960.00 *	13834.00
Typical Lying-in (LI) costs (for county/month)	609.32 ***	29.03	616.02 ***	50.19
Father's employment during 7-18 months prior to birth of child (reference category: zero quarter of earnings)				
1-3 quarters of earnings	-47.42	29.37	-13.07	49.42
4 quarters of earnings with a single employer	-187.37 ***	52.34	-265.87 ***	87.96
4 quarters of earnings with multiple employers	-107.29 ***	41.40	-39.06	69.60
Annual Earnings of Father 7-18 months prior to birth of child (conditional on some earnings divided by 1,000)	-10.74 **	4.77	-100.76 ***	8.02
Father's annual earnings squared 7-18 months prior to birth of child (conditional on some earnings and divided by 1,000,000)	0.16	0.14	1.99 ***	0.24
Time difference among events including birth of child, paternity establishments, first child support order, and LI order (reference category: LI ordered within 6 months after first child support order and paternity established within 6 months after birth)				
First child support owed before LI order	803.71 ***	34.61	1051.39 ***	58.55
First child support order after 6 months following LI order, or paternity established after 6 months following birth of child	-161.70 ***	24.56	-16.02	41.30
Whether father has additional legal obligations for a child at the beginning of the first year after baseline (reference category: no more child)				
Father has additional legal obligations for a child of the same female partner			232.90 ***	59.08
Father has additional legal obligations for a child of another female partner			874.38 ***	45.72
Age of Father (reference category: 17-20)				
21-24	36.77	23.78	62.79	40.05
25-28	29.22	32.29	-11.94	54.36
29+	90.84 ***	33.20	147.67 ***	56.05
Race of Father (reference category: Black)				
White	-149.45 ***	27.78	-504.93 ***	47.02
Others	-13.87	35.25	-200.40 ***	59.40
Missing	-203.54 ***	40.72	-774.49 ***	68.75
Year of LI Order (reference category: between November 1997 and December 1998)				
Year1999	106.07 ***	33.78	-41.27	54.70
Year2000	308.11 ***	38.36	130.06 **	63.71
Year2001	430.21 ***	44.98	177.27 **	75.31
Year2002	666.33 ***	53.54	323.76 ***	89.96
Year2003	860.31 ***	69.99	415.96 ***	117.88

Father's County (compared to Milwaukee)

county2	-3235.84 ***	1100.51	-2635.97	1678.58
county3	-1767.22 ***	435.25	-722.76	709.00
county4	-2479.44 ***	742.73	-1822.95	1195.77
county5	-3665.67 ***	1374.91	-2967.93	2105.50
county6	-2675.73 ***	551.28	-889.62	898.23
county7	-2417.91 ***	930.82	-1356.15	1424.17
county8	-2766.16 ***	1044.31	-2714.99 *	1593.85
county9	-2912.01 **	1454.43	-2566.81	2371.50
county10	-3110.19 ***	1164.50	-2873.83	1835.02
county11	-4687.93 ***	1308.92	-4158.64 **	2079.94
county12	-4625.96 ***	1155.24	-2949.60 *	1757.75
county13	-2806.38 *	1506.78	-4886.60 **	2300.76
county14	-4399.20 ***	1234.36	-3159.54 *	1872.75
county15	-3766.37 **	1470.27	-4043.22 *	2299.19
county16	-5171.62 ***	1311.54	-4089.74 **	2007.43
county17	-4534.60 ***	1581.39	-3934.09	2533.35
county18	-4982.37 ***	1607.34	-5120.26 **	2501.05
county19	-4937.34 **	2061.62	-6621.37 **	3215.18
county20	-6093.73 ***	1818.48	-5490.89 *	2835.17
county21	-6436.66 ***	1470.67	-4364.33 *	2377.58
county22	-5618.25 ***	1889.10	-6738.06 **	3026.49
county23	-5399.67 ***	1867.54	-5489.01 *	2892.35
Log of Total Employment in County during 5-2 full quarters prior to Baseline	-1373.41 ***	528.79	-1399.66 *	849.60
Employment Share of Agriculture and Forestry during 5-2 full quarters prior to Baseline	3484.52	17297.00	2632.50	24164.00
Employment Share of Mining during 5-2 full quarters prior to Baseline	-188362.00 *	104853.00	-264708.00	213570.00
Employment Share of Construction during 5-2 full quarters prior to Baseline	3253.18	3239.84	1727.69	10191.00
Employment Share of Manufacturing during 5-2 full quarters prior to Baseline	5815.39 ***	1676.68	1001.57	2590.04
Employment Share of Wholesale trade during 5-2 full quarters prior to Baseline	5753.46 **	2247.58	2136.95	4440.25
Employment Share of Transportation, Information and Utilities during 5-2 full quarters prior to Baseline	-9613.11 ***	2664.24	7948.81 *	4442.33
Employment Share of Retail sale during 5-2 full quarters prior to Baseline	3850.92 **	1875.79	1808.90	3295.25
Employment Share of Finance, insurance and real estate during 5-2 full quarters prior to Baseline	21323.00 ***	5258.76	-10809.00	8167.82
Average Weekly Earnings of Agriculture and Forestry during 5-2 full quarters prior to Baseline	-0.90 **	0.44	0.03	0.78
Average Weekly Earnings of Mining during 5-2 full quarters prior to Baseline	0.23	0.22	0.36	0.34
Average Weekly Earnings of Construction during 5-2 full quarters prior to Baseline	-2.24 ***	0.74	-0.68	1.19
Average Weekly Earnings of Manufacturing during 5-2 full quarters prior to Baseline	-2.60 ***	0.70	-1.39	1.02
Average Weekly Earnings of Wholesale trade during 5-2 full quarters prior to Baseline	2.29 ***	0.70	0.45	1.16
Average Weekly Earnings of Transportation, Information and Utilities during 5-2 full quarters prior to Baseline	1.53 ***	0.41	-0.38	0.64
Average Weekly Earnings of Retail sale during 5-2 full quarters prior to Baseline	-0.06	0.93	-1.47	1.57
Average Weekly Earnings of Finance, insurance and real estate during 5-2 full quarters prior to Baseline	-1.94 ***	0.44	0.68	0.71
Average Weekly Earnings of Service during 5-2 full quarters prior to Baseline	0.41	1.25	-0.14	2.11

Note: * implies statistical significance at $\alpha=0.10$; ** at $\alpha=0.05$ and *** at $\alpha=0.01$.

References

- Aizer, Anna, and Sara S. McLanahan. 2006. "The Impact of Child Support Enforcement on Fertility, Parental Investments, and Child Well-Being." *The Journal of Human Resources* 41(1): 28–45.
- Argys, Laura M., and H. Elizabeth Peters. 2001. "Interactions between Unmarried Fathers and Their Children: The Role of Paternity Establishment and Child-Support Policies." *The American Economic Review* 91(2): 125–129.
- Bartfield, Judi. 2005. "Arrearages, Lying-In Orders, and Child Support Compliance among Fathers of W-2 Children in Wisconsin." Working paper, University of Wisconsin–Madison.
- Bartfeld, Judi. 2003. "Falling Through the Cracks: Gaps in Child Support among Welfare Recipients." *Journal of Marriage and Family* 65(1): 72–89.
- Bartfeld, Judi, and Daniel R. Meyer. 2003. "Child Support Compliance among Discretionary and Nondiscretionary Obligor." *Social Service Review* 77(3): 347–372.
- Bloom, David E., Cecilia Conrad, and Cynthia Miller. 1998. "Child Support and Fathers' Remarriage and Fertility." In *Fathers Under Fire: The Revolution in Child Support Enforcement*, edited by Irwin Garfinkel, Sara S. McLanahan, Daniel Meyer and Jane A. Seltzer. New York: Russell Sage Foundation, pp. 128–156.
- Cancian, Maria, and Daniel R. Meyer. 2005. "Child Support in the United States: An Uncertain and Irregular Income Source?" Discussion Paper 1298-05, Institute for Research on Poverty, University of Wisconsin–Madison.
- Carlson, Marcia, Irwin Garfinkel, Sara S. McLanahan, Ronald Mincy, and Wendell Primus. 2004. "The Effects of Welfare and Child Support Policies on Union Formation." *Population Research and Policy Review* 23: 513–542.
- Center for Family Policy and Practice. 2001. "Congress Should Preclude Child Support Agencies from Recovering Medicaid-Covered Prenatal Birth Expenses." (<http://www.cffpp.org/publications/medicaid.html>).
- Freeman, Richard B., and Jane Waldfogel. 2001. "Dunning Delinquent Dads: The Effects of Child Support Enforcement Policy on Child Support Receipt by Never Married Women." *The Journal of Human Resources* 36(2): 207–225.
- Freeman, Richard B., and Jane Waldfogel. 1998. "Does Child Support Enforcement Affect Male Labor Supply?" In *Fathers Under Fire: The Revolution in Child Support Enforcement*, edited by Irwin Garfinkel, Sara S. McLanahan, Daniel Meyer and Jane A. Seltzer. New York: Russell Sage Foundation, pp. 94–127.
- Fullerton, Don. 1991. "Reconciling Recent Estimates of the Marginal Welfare Cost of Taxation." *The American Economic Review*, Vol. 81, No. 1. (March): 302–308.

- Garfinkel, Irwin, I. Chien Huang, Sara S. McLanahan, and Daniel S. Gaylin. 2003. "Will Child Support Enforcement Reduce Nonmarital Childbearing?" *Journal of Population Economics* 16(1): 55–70.
- Ha, Yoonsook, Daniel Meyer, and Mei-Chen Hu. 2006. "Do Higher Child Support Orders Discourage Child Support Payments?" Working paper, University of Wisconsin–Madison.
- Heckman, James J. 1997. "Instrumental Variables: A Study of Implicit Behavioral Assumptions Used in Making Program Evaluations." *The Journal of Human Resources* 32(3): 441–462.
- Holzer, Harry J., Paul Offner, and Elaine Sorensen. 2005. "Declining Employment among Young Black Less-Educated Men: The Role of Incarceration and Child Support." *Journal of Policy Analysis and Management* 24(2): 329–350.
- Huang, Chien-Chung, James Kunz, and Irwin Garkinkel. 2002. "The Effect of Child Support on Welfare Exits and Re-Entries." *Journal of Policy Analysis and Management* 21(4): 557–576.
- McCormick, Mike and Glenn Sacks. 2007. "Fatherhood Bill: Not Enough Carrot, Too Much Stick." *Wisconsin State Journal*, July 1, C2.
- Medical Child Support Working Group; U.S. Department of Labor and U.S. Department of Health and Human Services. 2000. *21 Million Children's Health: Our Shared Responsibility* (Executive Summary of Report) June. Retrieved from <http://www.acf.hhs.gov/programs/cse/pubs/2000/reports/medrpt/>
- Murray, Michael P. 2006. "Avoiding Invalid Instruments and Coping with Weak Instruments." *The Journal of Economic Perspectives* 20 (4): 111-132.
- Ovwigbo, Pamela C., Correne Saunders, and Catherine E. Born. 2005. "The Intersection of Incarceration and Child Support: A Snapshot of Maryland's Caseload." Report of the Family Welfare Research and Training Group, University of Maryland, School of Social Work.
- Pate, David J., Jr. 2002. "An Ethnographic Inquiry into the Life Experiences of African American Fathers with Children on W-2." In *Nonexperimental Analyses of the Full Disregard and Pass-Through, Volume 2*, edited by Daniel R. Meyer and Maria Cancian. Report to the Wisconsin Department of Workforce Development.
- Plotnick, Robert D., Irwin Garfinkel, and Sara S. McLanahan. 2004. "Better Child Support Enforcement: Can It Reduce Teenage Premarital Childbearing?" *Journal of Family Issues* 25(5): 634–657.
- Seltzer, Jane A., Sara S. McLanahan, and T. Hanson. 1998. "Will Child Support Enforcement Increase Father-Child Contact and Parental Conflict after Separation?" In *Fathers Under Fire: The Revolution in Child Support Enforcement*, edited by Irwin Garfinkel, Sara S.

- McLanahan, Daniel Meyer and Jane A. Seltzer. New York: Russell Sage Foundation, pp. 157–190.
- Sorenson, Elaine, and Helen Oliver. 2002. “Policy Reforms are Needed to Increase Child Support from Poor Fathers.” Working Paper, The Urban Institute, April.
- Sorensen, Elaine, Liliana Sousa and Simon Schaner. 2007. “Assessing Child Support Arrears in Nine Large States and the Nation.” Urban Institute report to U.S. Department of Health and Human Services. Downloaded from: <http://aspe.hhs.gov/hsp/07/assessing-CS-debt/report.pdf>
- Sousa, Liliana, and Elaine Sorensen. 2006. “The Economic Reality of Nonresident Mothers and Their Children.” The Urban Institute Policy Brief, Series B, No. B-69, May.
- U.S. Department of Health and Human Services, Administration for Children and Families. 2008. Child Support Enforcement (CSE) FY 2007 Preliminary Report. Downloaded from: http://www.acf.hhs.gov/programs/cse/pubs/2008/preliminary_report_fy2007/
- Waller, Maureen R. and Robert Plotnick. (2001). "Effective Child Support Policy for Low-Income Families: Evidence from Street Level Research". *The Journal of Policy Analysis and Management* 20(1): 89-110.
- Wisconsin Legislative Reference Bureau. 2006. *Summary of the 2005–2006 Wisconsin Legislative Session*. Research Bulletin 2006-1. <http://www.legis.state.wi.us/lrb/pubs/rb/06RB1.pdf>