ANALYSES OF EMERGING POLICIES FOR SUPPORTING NONCUSTODIAL PARENTS
TO SUPPORT THEIR CHILDREN

By

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ABSTRACT

In the U.S., a substantial proportion of children live with only one of their biological parents, and they are more likely to be poor than those in married-couple families. Over time, child support policy has been expanded to secure financial support from their nonresident parents. The nonresident parent's income and family relationships can affect child support payments and other contributions to his or her child's life. Therefore, this dissertation examines child custody (Chapters 2 and 3) and a tax credit for nonresident parents that pay child support (Chapter 4) to provide some information for policymaking in these areas.

Chapter 2 examines the increase in joint legal custody among nonmarital court cases in Wisconsin and explores factors that are linked to this trend. Using the Wisconsin Court Record Data, I find joint legal custody increased substantially around the time when joint legal custody was made presumptive by law. Results of my analysis suggest that the policy change speeded up an initially slow increase in social preference for joint legal custody and that together they are the primary drives for the recent rise in joint legal custody among nonmarital cases.

Using the same data source, Chapter 3 investigates the effects of joint legal custody on child support payments and compliance among noncustodial fathers of nonmarital children who live with their mother. This study finds statistically significant positive associations across a range of methods. Joint legal custody is associated with higher child support payments by around $150-$800 per year, or a higher compliance ratio by 5-20 percentage points.

The Noncustodial Parent Earned Income Tax Credit (NCP EITC), a refundable tax credit for parents who pay child support, has been implemented in a couple of states in the U.S. This study proposes several alternatives for its eligibility requirements. Four eligibility regimes are

simulated, in which eligibility is limited to those with (a) full compliance with child support orders, (b) either full compliance or a high burden of payments, (c) either full compliance or payments above a threshold, and (d) payments above a threshold only. It finds that the NCP EITC is likely to be a small program for all four scenarios and that expanding eligibility to parents with high burden of payments reaches some very low-income noncustodial parents that pay support.

This dissertation concludes that the NCP EITC would be beneficial to some lower-income nonresident parents who pay child support. It is recommended that policymakers address discrepancies in the NCP EITC and child support policy for parents with similar characteristics. Joint legal custody can be presumed for average nonmarital court cases. More studies on the decision-making process and other forms of contribution of parents with joint legal custody would deepen our understanding of this emerging custodial arrangement.

CHAPTER 1. INTRODUCTION

1.1 Child Poverty in Single-Parent Families

In the US, children's experience living with single parents is prevalent. Single parents with children account for one third of households with children; from children's standpoint, slightly more than a quarter of children in the US live in single-parent households, and counting ever spending time in single-parent households yields a higher estimate (Bumpass & Sweet, 1989; U.S. Census Bureau, 2016). Children in single-parent families are at a higher risk of poverty and economic hardship, compared to children in married-parent families (DeNavas-Walt & Proctor, 2015), their noncustodial parents (Bartfeld, 2000), and themselves before parents separate (Gadalla, 2008). The majority of children of single parents live with their mothers; for those who live with their fathers, the poverty rate is lower than that in single-mother households but higher than the rate in married-couple households (DeNavas-Walt & Proctor, 2015).

Part of the reason single-parent families are more likely to be poor is that there is only one potential earner, whereas in two-parent families there are two. Even if the nonresident parent is providing child support, the amount provided is almost always substantially less than his earnings, so the drop in income outweighs any advantage of one fewer person in the household. More fundamentally, individuals who have been economically disadvantaged are more likely to form relationships that are less stable or experience hardships that place strain on their relationships than those who have been economically better off (Kiecolt-Glaser, Bane, Glaser, & Malarkey, 2003; Lichter, Qian, & Mellott, 2006; Lyngstad & Jalovaara, 2010). Parental separation to varying degrees lowers the nonresident parent's access to his children and diminishes his motivation to contribute to their lives. Therefore, the economic wellbeing of

children in single-parent families is tied to the nonresident parent's ability and willingness to support his children (Case, Lin, & McLanahan, 2003; Geller, Garfinkel, & Western, 2011; Lin, 2000; Nepomnyaschy & Garfinkel, 2010; Sinkewicz & Garfinkel, 2009), the resident parent's ability to provide for her children, and her willingness to incorporate the nonresident parent as part of the family's support system (Carlson, McLanahan, & Brooks-Gunn, 2008). Policy and social trends regarding childrearing also affect these mechanisms (Freeman & Waldfogel, 2001; Huang, 2010; Nepomnyaschy & Garfinkel, 2010; Sayer, Bianchi, & Robinson, 2004).

1.2 Child Support and Related Policies

Policy has been implemented to encourage and require children's resident parents to work, their nonresident parents to be involved in their lives and pay financial support, and to offer income support for their parents, often through tax benefits, with the intent that this combination will ultimately improve children's economic wellbeing. Specific programs and practices include Temporary Assistance for Needy Families, child support policy, changes in laws and family courts to allow more shared time and joint decision-making for nonresident parents, and the Earned Income Tax Credits and other tax credits. This dissertation focuses on formal child support from the nonresident parent in addressing child poverty in single-parent families.

In general, child support guidelines consider the nonresident parent's income, the expenditures on children, and in the income shares model adopted by some states, the resident parent's income. However, the child support order could still be higher than what the nonresident parent can afford. Child support orders are seldom modified according to changes in the nonresident parent's income (Ha, Cancian, & Meyer, 2010; Rothe, 2004); imputed income is used to calculate the order if the nonresident parent fails to provide his income information; a

self-support reserve for the nonresident parent may not be considered; in some states, incarceration is not a legitimate reason for child support modifications (Cancian, Meyer, & Han, 2011; Venohr & Griffith, 2005). Given that individuals are inclined to partner with someone from similar social and economic backgrounds, low-income nonresident fathers who are faced with child support challenges often owe support to children whose mothers are also low-income (Garfinkel, Glei, & McLanahan, 2002).

In addition, the strong link between the parent-child relationship and child support payments poses both challenges and opportunities for child support enforcement. A nonresident parent who has close relationships with his children and continuous access to his children post-separation (through overnights and visitation) pays higher child support than a nonresident parent who perceives an end to the parent-child relationship as his relationship with the mother dissolves (Garasky, Stewart, Gundersen, & Lohman, 2010; Nepomnyaschy, 2007; Tach, Mincy, & Edin, 2010). For a nonresident parents who has never been married to the mother of his child, the tie to his child can be more fragile. Paternity is presumed in a marriage, and maternity is established by birth; in contrast, it requires extra steps for the nonresident father to establish paternity and pursue legal guardianship of the child after his or her birth. Empirically, prior studies find that child support payments and informal support from the nonresident father of a nonmarital child are lower than those of divorced nonresident fathers (D. R. Meyer & Bartfeld, 1998; Nepomnyaschy & Garfinkel, 2010).

1.3 Introduction of Dissertation Chapters

My dissertation explores two emerging policy areas that may affect lower-income noncustodial parents' involvement and contribution to their children, presumptive joint legal

custody (Chapters 2 and 3) and the Noncustodial Parent Earned Income Tax Credit (NCP EITC) (Chapter 4).

The second chapter of my dissertation examines the legislation enacted in 1999 in Wisconsin to presume joint legal custody for all cases (unless evidence is found for other arrangements). Legal custody stipulates who makes major decisions for the child, whereas physical custody is a separate legal concept that states who physically lives with the child. Because joint legal custody had become a common arrangement in divorce cases prior to policy change, this dissertation focuses on its impacts on nonmarital cases. This chapter explores other underlying forces that could propel a trend in joint legal custody among parents of nonmarital children. I use data of cohorts 1989-2008 from the Wisconsin Court Record Data to document custodial arrangements for cases of nonmarital children. Based on the finding that mother physical custody had remained the major arrangement but that joint legal custody had increased substantially over time in nonmarital cases, I then use logistic regression and decomposition analysis to explore how much of the increase in joint legal custody is associated with changes in parental characteristics versus the legislation that made joint legal custody presumptive in 2000.

The third chapter investigates whether joint legal custody encourages more child support payments and higher levels of compliance among nonresident fathers whose nonmarital children live with their mothers. This study uses data of cohorts 2000-08 from the Wisconsin Court Record Data to allow comparisons of adequate numbers of nonmarital cases with and without joint legal custody. Because a descriptive analysis reveals that parents with joint legal custody differ from those with mother legal custody in many economic and demographic characteristics, I use three analytic tools, ordinary least squares regressions, propensity scores matching models, and two-stage least squares models with an instrumental variable, to adjust for confounding

factors influencing estimates of the effects. Both the second and third chapters provide new information on legal custody for nonmarital children, a topic on which there has been very little research.

The fourth chapter examines distributional effects of a different policy that explicitly aims to encourage nonresident parents to financially support their children: the NCP EITC. The NCP EITC has been implemented in Washington, D.C. and New York State since 2006 and was proposed to Congress in 2007 and 2009. Its benefit structure is similar to the federal child-based EITC, but its target population is lower-income noncustodial parents who pay child support. My dissertation simulates short-term effects of the NCP EITC on parental income. I use a sample of nonresident fathers of nine-year-old children and their reports of own economic and demographic situations from the Fragile Family and Child Wellbeing Study. I use simulation analysis to estimate short-term, non-behavioral effects, focusing on four different child-support-payment requirements of NCP-EITC policy: (a) full compliance with child support orders, (b) either full compliance or a high burden of payments, (c) either full compliance or payments above a threshold, and (d) payments above a threshold only. This chapter centers on the eligibility requirement and other important factors to consider in an NCP-EITC program design.

The fifth chapter summarizes key findings from chapters two to four and discusses research limitations of these studies. It suggests directions of future studies that will enrich our understanding of parent-child relationships and parental contribution to children in vulnerable families. Based on the results of my studies, this final chapter makes policy recommendations for child support, child custody, tax benefits and synthesizes the different approaches that will potentially improve wellbeing of noncustodial parents and their children.

CHAPTER 2. DOES A NONRESIDENT PARENT HAVE THE RIGHT TO MAKE

DECISIONS FOR HIS NONMARITAL CHILDREN?: TRENDS IN LEGAL CUSTODY

AMONG PATERNITY CASES

2.1 Introduction

The research community has strived to understand the family life of low-income,

unmarried, and minority fathers (Coley, 2001). An unwed father's relationship with his child's

mother is not defined by marriage, and therefore, compared to divorced fathers, the parent-child

relationship is less visible to policymakers who are concerned about poverty and child

development. The poverty rate of their children is extraordinarily high. Close to half of children

in families with a female householder are living in poverty, compared to one tenth of children in

married-couple families (Smith & Medalia, 2015). Since the number of nonmarital births reached

a record high in the past decade in the U.S (Martin, Hamilton, Osterman, Curtin, & Mathews,

2013; Ventura, 2009), and the majority of those parents remained unmarried to each other

(Harknett & McLanahan, 2004), new policies and programs have emerged to address poverty

and family instability among nonmarital children, calling for research on paternity establishment,

visitation and contact of the nonresident parent, child support transfers, and fatherhood programs

(Amato & Gilbreth, 1999; Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000; Coley,

2001; Lerman, 2010; Nelson, 2004).

This study documents the trends in legal custody among unmarried parents in Wisconsin,

where joint legal custody was made presumptive by law in 1999. Legal custody is the right and

obligation to make major decisions for the child, such as medical care, religion, and education

(Emery, 2011; Stevenson, Braver, Ellman, & Votruba, 2013). It is a concept different from but often jointly determined with physical custody, which specifies the parent that the child physically lives with. If in practice, parents with joint legal custody follow the legal requirement that they cooperate in decision-making for the child, communication and exchange of information will then ensue, preventing nonresident parents from dropping out of their children's lives. Nonetheless, little is known about legal custody in nonmarital cases. Studies on child custody mostly focus on physical custody for divorced families (Cancian & Meyer, 1998; Cancian, Meyer, Brown, & Cook, 2014; Fox & Kelly, 1995; Juby, Le Bourdais, & Marcil-Gratton, 2005; Melli & Brown, 2008). Among the few studies that examine legal custody, samples are restricted to divorce cases (Huang, Han, & Garfinkel, 2003; Seltzer, 1990, 1991a, 1998).

2.2 Background and Prior Research

2.2.1 Policies Relating to Legal Custody

For most nonmarital children, their father voluntarily signs an acknowledgment of paternity in hospitals, which becomes legal if not contested. In many states, an unmarried woman automatically has sole legal custody of the child she gives birth to, regardless of paternity establishment, unless the court rules otherwise.[1] Signing paternity acknowledgment gives the father the right to request legal custody, visitation or physical custody in court; a child support order could also be established, just as it could for cases in which the father did not acknowledge paternity in the hospital but was found to be the father by a court. When the court establishes a

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[1] For example, this is true in Wisconsin (Wisconsin Department of Children and Families, 2010) and Ohio (Ohio Revised Code Section 3109.042). Paternity establishment does not affect an unmarried mother's custodian status unless the court determines that a different person shares custody or has sole custody of the child.

child support order for nonmarital children, it can also review their custodial arrangement. Parents on public assistance (including TANF and Medicaid nationwide, plus SNAP and/or child care subsidies in some states) are required to cooperate with the child support office to identify the absent parent and establish child support (Roberts, 2005). Therefore, the entry of a paternity case into court due to paternity establishment, child support orders (for some parents as a consequence of welfare receipts), or child welfare predisposes the parents to a change of child custody from mother legal custody, which is presumed at the child's birth.

The incidence of joint legal custody is affected by welfare and child support policy that enrolls unmarried parents into court. A series of child support legislations between 1974 and 1996 made paternity establishment more accessible for nonmarital children[2] (Garfinkel, Meyer, & McLanahan, 1998; Office of Child Support Enforcement, 2002; Pirog & Ziol-Guest, 2006). As a result, more than two thirds of unmarried parents established paternity; most of these paternities were established in hospitals (Mincy, Garfinkel, & Nepomnyaschy, 2005; Rossin-Slater, 2012). Paternity was also established for 82% of nonmarital children in IV-D cases (Huang & Edwards, 2009). In the same period, welfare caseloads had substantially declined due to the strong economy, the EITC expansions, and welfare reforms (Grogger, 2003; B. D. Meyer & Rosenbaum, 2001; Ziliak, Figlio, Davis, & Connolly, 2000), potentially changing the population entering court for child support orders and custody awards.

Custody preferences, presumptions, and policies are theorized to have a direct impact on the prevalence of joint legal custody. The most important change in custody laws in the 20th century is the movement from maternal preference to the best interest of the child, encouraged by

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[2] For example, the federal legislation of 1988 (the Family Support Act) required blood and genetic testing in disputed paternity cases. The PRWORA of 1996 required in-hospital paternity acknowledgment be available in all states. The 1988 law also appropriated grants to a few states, and the 1996 reform expanded them to all states for access and visitation programs (Garfinkel, Meyer, & McLanahan, 1998).

the Uniform Marriage and Divorce Act of 1970 (Mason, 1996), then followed by states' adoption

of the Act in various forms (Atkinson, 1984; Fox & Kelly, 1995). By 1988, 38 states had

introduced a preference for joint legal custody (Mason, Fine, & Carnochan, 2001). By 1993, all

but five states included joint custody as an option, with or without the distinction between legal

and physical custody (Brinig & Buckley, 1998a). To conclude, by the early 1990s in most states,

legal custody had been awarded separately from physical custody, and joint legal custody had

been a legally available option for unmarried parents. During the 2000s, several states moved

further to impose a statutory presumption for joint legal custody, requiring the writing of

findings for a reward of sole legal custody (Botts & Nestor, 2011). All of the policy changes

apply to unwed fathers, who have been statutorily given parental rights to children since the

1970–80s (Shanley, 1995).

Since this study uses data from Wisconsin, here I briefly review its welfare reforms and

approach to child custody. Before the PRWORA of 1996, Wisconsin had taken various measures

that restrict welfare eligibility and benefits and transition former recipients to the labor market,

effectively reducing the caseloads since 1986 (Wiseman, 1996). In terms of custody policy, the

legislation in 1977 overturned the requirement to grant custody to one parent only and made joint

custody an alternative for parents (Kapner, 1983). Ten years later, the statute began to

distinguish legal and physical custody (1987 Wisconsin Act 355). In 1999, a guideline was

created that "the court shall presume that joint legal custody is in the best interest of the child"

unless both parents agree to sole legal custody, or one parent requests it and the court finds

evidence that justifies sole legal custody to protect the child's best interest (1999 Wisconsin Act

9).

2.2.2 Trends in Legal Custody

Joint custody, either legal or physical, was a very rare custody outcome among unmarried parents in the 1980s. For example, only 6% of families with a nonmarital child had joint legal custody in the mid-1980s, compared with 27% of separated or divorced families (Seltzer, 1998). Parents in over a half of divorce cases were awarded mother physical and joint legal custody in the late 1980s in Wisconsin; however, this was the custodial arrangement for only 1.9% of paternity (nonmarital) cases in the same period.[3] Because there are very few studies on legal custody for paternity cases, in this section I review the body of the literature on divorce cases to provide a context for understanding custody trends.

Studies on legal custody for divorce cases are fewer than those on physical custody (Bauserman, 2002), mostly using data from the 1980s when joint legal custody began to increase in popularity (Gunnoe & Braver, 2001). Joint legal custody was increasingly more common, although the prevalence varied substantially across localities (Albiston, Maccoby, & Mnookin, 1990; Bahr, Howe, Mann, & Bahr, 1994; Berger, Brown, Joung, Melli, & Wimer, 2007; Koel, Clark, Phear, & Hauser, 1988; Maccoby, Depner, & Mnookin, 1988; Seltzer, 1990).[4] By the late 1980s, joint legal custody was awarded in half to three-quarters of divorce cases with mother physical custody and was the arrangement for the majority of cases with shared physical custody

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[3] This is based on the author's own tabulation using the Wisconsin Court Record Data. If the sample is restricted to cases in which children were placed with the mothers, parents in two thirds of the cases obtained joint legal custody in Wisconsin. In California, the rate was about three quarters (Albiston, Maccoby, & Mnookin, 1990).

[4] Of all case types, the share of divorce cases with joint legal custody increased from less than 1% in the early 1970s to 21% in the early 1990s in Utah (Bahr, Howe, Mann, & Bahr, 1994), from 55% in the late 1970s to 90% in the mid-1980s in one Massachusetts county (Koel, Clark, Phear, & Hauser, 1988), from 18% of divorce cases in 1980 to 87% in 2000 in Wisconsin (Berger, Brown, Joung, Melli, & Wimer, 2007), from 26% in 1979 to 71% in 1984 in Santa Clara County, California (Maccoby, Depner, & Mnookin, 1988). Mother physical with joint legal custody had become the norm among divorced families in California in the mid-1980s (Albiston et al., 1990). In contrast, the prevalence of father custody remained stagnant in one study that uses regional data (Maccoby et al., 1988); this is similar to the national proportion of cases with father sole custody, around 12% between the 1980s and 1990s (Huang, Han, & Garfinkel, 2003).

(Albiston et al., 1990; Huang et al., 2003; Pearson, 1991; Seltzer, 1998). It was awarded in close

to 80% of all divorce cases in the early 1990s in Wisconsin (Berger et al., 2007). In areas where

data on legal custody are available, the rise in joint legal custody (the 1980s–1990s) generally

took place before the increases in shared physical custody (the 1990s–2000s) for divorced

families (Cancian & Meyer, 1998; Cancian et al., 2014; Cook & Brown, 2005; Seltzer, 1990).[5]

2.2.3 Theoretical Frameworks for Legal Custody

The parents' economic resources, human capital, bargaining power, and parent-child

relationship, as well as conflict and disagreement between parents all theoretically predict legal

custody. Based on monitoring theory (Brinig & Buckley, 1998), nonresident parents with higher

income and thus larger child support orders acquire joint legal custody because this arrangement

facilitates monitoring how child support is spent. Because joint legal custody is expected to

increase the nonresident parent's access to children, it creates a context in which the children are

more likely to secure economic resources from affluent nonresident parents. Moreover, parents'

age and education levels, particularly the nonresident parent's education, represent the human

capital that could allow better decision making for the child. Therefore, empirical studies

generally support the positive associations between income, education or age, and joint legal

custody, either in univariate comparisons or multivariate regressions (Arditti, 1992; Huang et al.,

2003; Koel et al., 1988; Phear, Beck, Hauser, Clark, & Whitney, 1983; Seltzer, 1990, 1991a,

1998).

Given the same family income, joint legal custody is theoretically affected by the parent's

relative income (measured by each parent's income divided by the couple's total income).

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[5] Recent studies find evidence for a growth in shared physical custody among divorce cases in the past two decades. For example, in Wisconsin, shared physical custody increased from 2.3% of the divorce cases in the early 1980s to more than 40% in the late 2000s (Cancian & Meyer, 1998; Cancian, Meyer, Brown, & Cook, 2014; Cook & Brown, 2005; Seltzer, 1990). The prevalence of shared physical custody is similar in Washington (George, 2010).

Division of household labor is more distinct among couples who are not equally involved in paid work and thus the two parents may have very different income levels. From a bargaining perspective, the lower-income parent may be willing to exchange custody rights for income or child support from the higher-income parent (Mnookin & Kornhauser, 1979). In this framework, joint legal custody is more likely if the nonresident parent's income is substantially higher than the resident parent's. On the other hand, the court is likely to award legal custody in a way that mimics the relationship prior to separation because stability and continuity of care are important factors determining the best interest of the child (Elrod & Dale, 2008). Therefore, in this perspective, joint legal custody is less likely in cases in which division of household labor is distinct. One empirical study finds that joint legal custody is less likely if the resident parent is not employed (Huang et al., 2003), but others find that it is not statistically associated with the mother's income when income of both parents is controlled in the models (Seltzer, 1990, 1991a, 1998).

A higher quality relationship between the nonresident parent and the child could increase the likelihood of joint legal custody due to the belief that maintaining the relationship through such an arrangement promotes the child's social and emotional wellbeing (or simply because custody law stipulates a consideration of relationship factors[6]). For example, after couples separated and before a custodial decision was made, fathers who were later awarded joint legal custody spent more overnights with their children (Albiston et al., 1990). This theoretical reasoning may explain the empirical finding that joint legal custody is more common among parents who have been married (and thus have been living with their children) for a long time (Arditti, 1992; Huang et al., 2003; Koel et al., 1988; Phear et al., 1983). However, the evidence is

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[6] For example, see factors in custody and physical placement determinations in the Wisconsin Statute 767.41 (5).

mixed. Marital duration has no effects on legal custody in other studies (Seltzer, 1990, 1991a, 1998); joint legal custody is not more likely for fathers who reported higher-quality relationships with the children before separation (Seltzer, 1998).

Joint legal custody is also linked to lower conflict between parents, as well as the ability to cooperate in decision making post-separation. Joint legal custody is more likely among parents who file for divorce rapidly upon separation or who file under a no-fault provision (Arditti, 1992; Koel et al., 1988; Phear et al., 1983), and more likely in mediation rather than an adversarial process (Pearson, 1991). Conversely, in one study that observes quality of the parental relationship, frequent disagreement is positively associated with the likelihood of joint legal custody (Seltzer, 1998), perhaps because both parents are trying to ensure their perspectives on child-rearing is considered.

Prior research also suggests that the policy environment could influence parents' propensities of custody awards. Seltzer (1998) finds that joint legal custody is more likely for parents who filed for divorce in states with legislation favoring joint legal custody, which is not supported by Huang et al. (2003). On the other hand, living in states with more effective child support enforcement increases the likelihood of joint legal custody, presumably because parents with child support orders are more interested in making decisions for their children (Huang et al., 2003). The findings reported here may only be applied to divorced parents.

2.2.4 Approaches to Estimating a Policy Effect

In the literature on custody, evidence for the effect of a custody law is grounded in the rate of a change in custody patterns (Maccoby & Mnookin, 1992), with an assumption that changes due to other factors such as preference would probably not change sharply. Other studies identify the policy effect in multivariate regressions that include an indicator for filing the

case in a state that favors joint legal custody (Huang et al., 2003; Seltzer, 1998). Still other common approaches to estimating a policy effect that are not utilized in the custody literature include the exploitation of variation across states and time (Adda & Cornaglia, 2010; Donohue & Levitt, 2001), difference-in-differences estimation (Card & Krueger, 1994; B. D. Meyer & Rosenbaum, 2001), and regression discontinuity (Angrist & Lavy, 1999; Van Der Klaauw, 2002). In all of these approaches, investigators identify a comparison unit either theoretically or inferred by the data. Specifically, comparing different periods within a state controls for the idiosyncratic state policy environment that is associated with the outcome of interest. The difference-in-differences approach compares trends (differences over time) in the affected population with a population that is not influenced by the policy but is similar to the target population in some characteristics. In a classical regression discontinuity design, a group that slightly fails the eligibility rule is compared with a group that just passes the test (such as an age limit, an application deadline, or an income threshold). In the methods section, I will explain how these different methods may or may not be applied to the data in this study.

2.2.5 Summary

To the author's best knowledge, there has yet to be an empirical study focusing on legal relationship of nonresident parents and children in paternity cases. I answer these questions: (1) What are the trends in legal custody among nonmarital cases? (2) To what extent can these trends be explained by changes in policy favoring joint custody, a general time trend, and changes in case characteristics? Since paternity must be established before a custody award and child support is often settled with custody, as public intervention in paternity establishment and child support expands, the family relationship is made formal for more unmarried parents. This study aims to improve the understanding of custody outcomes among nonmarital children, an

economically and socially disadvantaged group that has been under-researched in the literature of child custody.

2.3 Methodology

2.3.1 Data and Sample

This study uses data of cohorts 1989–2008 from the Wisconsin Court Record Data (WCRD), a probabilistic sample of court cases that involved decisions for children in 21 counties of Wisconsin.[7] The collection of court cases was adjourned between 1993 and 1996, in 1999 and 2000, and in 2002. Cases were followed beginning with their first court actions and for at least 2 years following, which allows data users to observe a custodial arrangement that typically occurs some time after the first action. I retrieve information on the court action in which a custody decision was first made within one year after paternity establishment.

The original sample size of cohorts 1989–2008 is 8,910 cases. I drop 440 cases in which the observation period is less than one year after paternity establishment or the child's gender is missing, and 665 cases with missing physical or legal custody information.[8] The data show that parents in 1,258 cases have two or more children. This number includes parents who returned to court for their second or third child and parents who first went to court for issues involving their

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[7] A WCRD cohort consists of divorce and paternity cases that were filed between July of a calendar year and June of the next year; cohorts were named by the year in which the staff went into the field to collect data. The only exceptions are cohorts 1989–1992 in Milwaukee County. For example, cases from Milwaukee in cohort 1992 are those that entered the court between February 1992 and January 1993, instead of between July 1991 and June 1992 as for cases in other counties.

[8] I find that different treatments of cases with missing legal custody yield similar estimates for child custody. These approaches are treating cases with missing legal custody as separate categories, assuming mother legal custody, assuming joint legal custody, or eliminating cases with missing legal custody. Most of the cells in Table 2.1, if the first three treatments have been taken, would be different from those under the base approach (elimination) by no more than 2 percentage points. The percentage of cases with mother physical and joint legal custody would be higher by around 4 percentage points in 2004-2009 if I assume mother legal custody for cases with missing values. This is due to a recent increase in cases with mother physical and missing legal custody.

multiple children. Because data that identify these two groups were not collected in the earlier

cohorts, I eliminate all such cases.[9] This allows me to focus on the trends for the first-time entry

of paternity cases into court since custody awards for returning parents may be influenced by the

decision previously made for their first child. I use the remaining sample ($N = 6,547$) to

summarize the custody trends in Table 2.1, where cases are categorized into five groups by

physical/legal custody: mother/mother, mother/joint, shared/mother, shared/joint, and father or

split physical custody. Then I drop cases with uncommon custody outcomes, 170 cases with

father, split, or other physical or legal custody and 118 cases with shared physical and mother

legal custody, because the incidence of these outcomes has been low and stable across all cohorts.

The final sample size for statistical analyses is 6,259 cases with mother/mother, mother/joint, or

shared physical/joint legal custody.

2.3.2 Independent Variables

The WCRD collects data on child support, child custody, legal information (such as

petitioners and the purpose of a court action), and demographic and economic characteristics of

parents. The income measure is the maximum of the annual income in the WCRD and the annual

earnings from the administrative records (i.e., the Unemployment Insurance records), prior to the

custody award. Multiple imputations are performed for cases in which parents' income is still

missing after I pool two data sources.[10] To account for mother's economic independence or

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[9] In cohorts for which data on returning parents were collected (cohorts 2001-2008), parents in 11% of the cases were identified as returning parents. These parents had already established paternity or a child support order for their first child in court; they returned to court for issues involving their younger child. Four percent are cases that were first filed in court for the couple's multiple children together. The remaining 85% had only one child when their cases were reviewed. Because such data are not available in earlier cohorts, I am unable to distinguish returning parents among parents for whom the data show multiple children. I include multiple-child cases in one of the multivariate models to examine if results differ.

[10] Fifty income imputations are generated with a multivariate normal model which includes child custody, visitation, child support owed, legal representation, age of parents, age of parents at birth of the first child, multiple-partner fertility, county, year, and the type of missing data in UI. I flag cases in which only the father's/mother's,

bargaining power over the father, I differentiate cases in which the mother's income is greater

than 120%, or less than 80% of the father's income, compared to those in which the mother's

income is between 80 and 120% of the father's income. I hypothesize that not only the father's

income but also his poverty status has an effect on the custodial arrangement. I define father

poverty as having an income lower than the 2013 federal poverty line for childless single

individuals (all dollar values are adjusted to 2013).

Other case characteristics include age and gender of the child, age of parents, whether

parents have children with partners other than each other (multiple-partner fertility), and the

county court where the case was filed. I only include whether the father has legal representation

because nearly all mothers (96.7%) have legal representation and most (94.7%) use public

attorneys. Another case characteristic is the duration (in months) between the petition and the

custody award. This variable captures the complexity of a case that requires a longer time for

parents to resolve child-related issues.[11] I do not include a variable to flag voluntary paternity

acknowledgment (VPA) cases because VPA pilots were launched in only a few counties prior to

the 1998 law, which mandated VPA programs in all hospitals in Wisconsin (Wisconsin

Department of Children and Families, 2010). Data on AFDC/TANF receipts, SNAP participation,

and incarceration[12] are only available for cases filed after 1996. Variables on mother's welfare

receipts and father's incarceration are excluded from multivariate analyses of cases between

1988 and 2009 but are included in one of the logit models for cases between 1996 and 2009.

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both parents', neither parents' income were originally missing in both data sources in my multivariate models for joint custody.

[11] The duration is strongly influenced by whether parties show up for hearings and whether the putative father claims that he is not the biological father, requiring blood tests. It also depends on the workload of each judge or court commissioner. For the first set of reasons, the likelihood of joint legal custody may be disproportionately lower, reflecting the unobserved characteristics of parents that predispose an award of sole mother custody.

[12] Only data on sentences served in the Milwaukee Jail and State Prison are available.

2.3.3 Analytic Methods

I first summarize the trends in all custody outcomes (Table 2.1). In Table 2.2 and the subsequent analyses, as noted above, I eliminate cases with unusual outcomes (father or split physical custody and cases with shared physical custody and mother legal custody), focusing only on cases with mother or shared physical custody. I use the dichotomous outcome, joint versus mother legal custody, instead of the outcome variables involving three categories, mother physical/mother legal, mother/joint, and shared/joint. This approach is taken because, first, similar to shared physical custody, joint legal custody recognizes the father's rights to children, and second, the incidence of shared physical custody has only increased in more recent years.

The prevalence of joint legal custody may have increased in five ways: (1) there were more unmarried parents who entered the court system and who had characteristics positively associated with joint legal custody (for example, parents who would have been married, had they belonged to earlier generations, but under current cultural norms have the option of remaining unmarried and cohabitating); (2) parents increasingly preferred joint legal custody regardless of the policy change; (3) the policy change led to an overall increase in the propensity of joint custody for all cases; (4) the same parental characteristics were evaluated differently due to the policy change; or (5) a combination of these influences initiated the change. For reason 1 in particular, I investigate whether the composition of cases with a variety of variables changes by comparing whether each period is different from the preceding period (Table 2.2). However, this approach finds at a time whether one characteristic changed between the periods. The Blinder–Oaxaca decompositions examine changes in all characteristics weighted at their relative importance. I describe this decomposition method in more detail later in this section.

I estimate logit models to understand the factors hypothesized to associate with the change in custody (Table 2.3). The multivariate models also estimate the increase in joint custody had all other covariates been held constant. The coefficients on years suggest whether there has been an increase in joint legal custody over time that cannot be explained by parental or case characteristics. If the independent variables are all of the factors considered in a custody hearing (that is, no omitted variable bias), the year coefficients can be interpreted as a changing taste for joint custody (reason 2) or a policy effect (reason 3). If there were sufficient observations only a few months before and after the policy change, I would be able to separate the shift in preference from the policy impact with techniques such as regression discontinuity. However, the sample sizes are inadequate. The alternative is to examine changes in other outcomes that are closely related to joint custody but theoretically would not be affected by the policy, but there are no such measures in the WCRD.[13] To infer a policy change, I rely on the speed and timing of the change because a social trend void of a policy change is typically slower. An abrupt change in 2000 is expected given that the presumption rule was first implemented in that year.

The Blinder–Oaxaca decompositions for logit regressions are also conducted to understand the extent to which the proportion of the observed change is attributed to changes in characteristics (reason 1) versus changes in the process (reason 4) (Sinning, Hahn, & Bauer, 2008). Following their notations, assume that Y represents joint legal custody, and X represents a vector of variables that are associated with the outcome. Using subscript 0 for an early period and 1 for a later period, the probabilities of joint legal custody in the early and later periods can

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[13] One close concept is visitation awards, another form of father's access to children. The share of cases without visitation awards or with restricted visitation was 13.2% in 1988–1993, which declined to 5.0% in 2000/5–2001, but bounced back to around 10% in the more recent periods. The fact that visitation is jointly determined with custody weakens this identification strategy.

be represented as $E(Y_0) = E(b_0X_0)$ and $E(Y_1) = E(b_1X_1)$, respectively. The predicted change in

joint custody between the periods, then, is $E(Y_1) - E(Y_0)$, and through manipulation becomes

$$E(Y_1) - E(Y_0) = [E_{b1}(Y_1|X_1) - Eb_1(Y_0|X_0)] + [Eb_1(Y_0|X_0) - Eb_0(Y_0|X_0)] \qquad (3)$$

The term in the first square brackets represents the predicted change in the joint custody

level if only characteristics had changed, evaluated with the late-period coefficients b_1. The

second term represents the predicted change in the joint custody level using early-period

characteristics X_0, evaluated with the change in coefficients. The first term clearly represents the

change in characteristics (the X vector); I call the second term changes in the "process." The

late-period coefficient vector b_1 and the early-period vector b_0 include both the constant and the

other coefficients of the logit regressions for joint legal custody for the late and early periods,

respectively. The alternative approach to testing the null hypothesis that $b_0 = b_1$ without weights

is to fully interact the logit regression with the period dummy. For parsimony, I do not present

interaction models but discuss those results briefly in the results section.

I partition cases into two groups by whether a custodial arrangement was made before

May 2000, the month in which the presumption for joint legal custody took effect. I also examine

periods immediately before and after 1996, 2002, and the policy change (May 2000). The

bootstrap method is applied to simulate the standard errors for the changes in characteristics

versus the change in the process. If results show that characteristics of the parents remained

unchanged, the same parents were treated similarly before and after the policy change, and that

the estimates of period coefficients are significant, they would confirm the rise in joint custody is

driven by a general increase for all cases. Finally, I estimate the probabilities of joint custody had

the population remained at the sample means, 1988–93 means, 1996–April 2000 means, May

2000–2001 means, and for two more hypothetical cases in which parents are the least and the most likely to obtain joint legal custody to explore the counterfactual custody trends.

2.4 Results

2.4.1 Custody Trends

Table 2.1 summarizes the trends in physical and legal custody between 1989 and 2009, showing six distinct periods.[14] There were three periods in which the prevalence of mother physical and joint legal custody was statistically different from the previous period: in 1996– April 2000, May 2000–2001, and 2002–2003. There is a sharp rise of the share of cases with mother physical and joint custody when the presumption rule was implemented in May 2000. A detailed tabulation shows that it was constantly low in all years during 1996–April 2000: The rates of mother physical and joint legal custody were 8.9, 15.7, 16.9, 15.0% in 1996, 1997, 1998, and 1999-April 2000, respectively, and it increased by three times within one year after the policy change, to 50.1% in the May 2000-2001 period. The increase at the time of policy change occurred with a decline in the prevalence of mother physical and mother legal custody; the percentages of other custody outcomes remained steady. Due to the lack of data between 1993 and 1996, it is indiscernible whether the first increase was a drastic or a gradual change, but the scale of the change was significant.

It was not until 2002–2003 that there was a sizeable increase in the proportion of cases with shared physical and joint custody. In the meantime, the share of cases with mother physical

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[14] For parsimony, I categorize cases into 6 groups by year in which a custodial arrangement was made: 1988–1993, 1996–April 2000, May 2000–2001, 2002–2003, 2004–2005, and 2006–2009. I differentiate parents who were awarded custody before and after May 1, 2000 because the Act that established the presumption of joint legal custody was signed into law on October 27, 1999 and took effect on May 1, 2000 (Wisconsin Legislative Reference Bureau, 1999).

Table 2.1 Trends in Physical and Legal Custody in Wisconsin

Year of action	1988–1993	1996–April 2000	statistical change from 88–93	May 2000–2001	statistical change from 96–00	2002–2003	statistical change from 00–01	2004–2005	statistical change from 02–03	2006–2009	statistical change from 04–05
	Mean	Mean		Mean		Mean		Mean		Mean	
mother/mother	0.946	0.757	***	0.456	***	0.302	***	0.263		0.267	
mother/joint	0.019	0.156	***	0.501	***	0.590	**	0.609		0.572	
shared/mother	0.020	0.021		0.003	***	0.001	*	0.003		0.004	
shared/joint	0.004	0.049	***	0.023	***	0.083	***	0.103		0.132	**
father or split physical	0.012	0.018		0.017		0.024		0.023		0.026	
Sample size	1,221	777		634		850		1,318		1,747	

Note: ***$p < 0.01$, **$0.01 < p < 0.05$, *$0.05 < p < 0.1$.

and mother joint custody dropped significantly, by 15.4 percentage points within a couple of years. However, the change in 2002–2003 is not as rapid as the previous increase in May 2000–2001 and thus more likely to be a result of a social change (or a joint impact of policy and a social change). In the following analyses, I drop cases with uncommon arrangements: shared/mother and father or other physical custody. I combine cases in 2002–2003 and 2004–2005 for parsimony since the patterns of child custody are not statistically different.

2.4.2 Changes in Parental Characteristics

The next natural inquiry is to ask whether the increase in joint legal custody is due to a selection of different unmarried parents into court. Table 2.2 summarizes important demographic and economic characteristics and significance levels of adjusted Wald tests of mean differences between the current and preceding periods. Data show that father's average annual income increased substantially in the 1990s and has remained similar since the late 1990s, which coincides with a decline in the poverty rate among fathers. Mother's income also grew in the same period, not only in its absolute term but also relative to the father's income. There were fewer cases in which the mother's income is less than 80% of the father's income and more cases in which the mother's income is similar to the father's. Different from the trend in father's income, this trend persisted till the next period (i.e., May 2000-2001).[15]

There are no consistent trends in other demographic characteristics of the unmarried parents and children in court. Changes in ages of the child and the mother are trivial (at most by one year) although they are statistically significant. Over the periods when data are available, the

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[15] All statements made here are also true if I use non-imputed father's and mother's income or the median income. In Table 2.2, I present the average instead of the median income here because it will be used in the Blinder–Oaxaca decomposition analysis. The median father's income was around 12,000 dollars in 1988–1993 and increased to 14,000–15,000 dollars in the later periods; the median mother's income was around 4,000 dollars, increased to 9,000 in 1996–1999, increased again to 10,000–11,000 dollars in the later periods.

Table 2.2 Statistical Comparisons of Case Characteristics across Periods

	1988–1993		1996–April 2000		May 2000–2001		2002–2005		2006–2009		significant change from previous period			
											1996–April 2000	May 2000–2001	2002–2005	2006–2009
	Mean	Std. err.	Mean	Std. err.	Mean	Std. err.	Mean	Std. err.	Mean	Std. err.				
Joint legal custody	0.023	0.005	0.213	0.018	0.534	0.031	0.714	0.013	0.725	0.014	***	***	***	
Father's income	13,931	774	18,415	932	17,531	1,274	17,698	675	16,690	654	***			
Father's income below poverty line	0.505	0.024	0.435	0.025	0.442	0.033	0.457	0.016	0.467	0.017	**			
Mother's income	6,939	587	11,911	616	13,520	725	12,923	392	12,829	393	***	*		
Mother's income <80% father's	0.650	0.026	0.573	0.024	0.475	0.035	0.495	0.016	0.472	0.017	**	**		
Mother's income >120% father's	0.288	0.024	0.326	0.024	0.403	0.035	0.385	0.016	0.397	0.017		*		
Mother's income similar to father's	0.064	0.013	0.101	0.015	0.122	0.021	0.121	0.010	0.131	0.011	*			
Father's receipts of SNAP	NA	NA	0.116	0.015	0.147	0.023	0.239	0.013	0.253	0.014	NA		***	
Mother's receipts of AFDC/TANF or SNAP	NA	NA	0.659	0.021	0.662	0.027	0.716	0.012	0.731	0.013	NA		*	
Father incarceration	NA	NA	0.217	0.020	0.306	0.031	0.256	0.014	0.265	0.015	NA	**		
Boy child	0.478	0.022	0.496	0.023	0.525	0.030	0.510	0.014	0.499	0.015				
Girl child	0.522	0.022	0.504	0.023	0.475	0.030	0.490	0.014	0.501	0.015				
Age of child	2.086	0.142	2.405	0.149	2.886	0.271	1.875	0.082	1.635	0.080			***	**
Father's age	26.712	0.354	27.510	0.334	28.263	0.485	27.314	0.202	27.245	0.212			*	
Mother's age	24.080	0.272	25.072	0.276	25.602	0.426	24.579	0.162	24.846	0.183	**		**	
Only father <25	0.022	0.006	0.045	0.010	0.032	0.011	0.042	0.006	0.057	0.007	*			
Only mother <25	0.169	0.016	0.190	0.017	0.240	0.026	0.220	0.012	0.213	0.012		*		
Both parents <25	0.478	0.022	0.401	0.022	0.375	0.029	0.411	0.014	0.382	0.015	**			
Both parents ≧25	0.331	0.021	0.364	0.023	0.353	0.030	0.327	0.013	0.349	0.015				
Only father has other children	0.129	0.014	0.126	0.015	0.184	0.024	0.203	0.011	0.234	0.013		**		*
Only mother has other children	0.130	0.015	0.104	0.016	0.084	0.019	0.132	0.011	0.109	0.011			**	

Both have other children	0.057	0.011	0.046	0.011	0.132	0.024	0.114	0.011	0.103	0.011	***		
Neither has other children	0.684	0.021	0.723	0.021	0.600	0.031	0.551	0.014	0.554	0.015	***		
Father has legal representation	0.091	0.011	0.062	0.010	0.065	0.015	0.070	0.007	0.059	0.007 *			
Duration between petition and custody award (months)	5.259	0.193	4.264	0.149	4.654	0.185	4.186	0.102	4.919	0.152 ***		**	***
Milwaukee county	0.685	0.017	0.599	0.020	0.637	0.024	0.568	0.013	0.536	0.015 ***		**	
Rural county	0.054	0.004	0.064	0.006	0.076	0.008	0.079	0.004	0.094	0.005			**
Other urban county	0.261	0.016	0.336	0.019	0.287	0.021	0.353	0.012	0.370	0.013 ***	*	***	
Sample size	1,130		731		609		2,102		1,687				

Notes: 1. ***$p < 0.01$, **$0.01 < p < 0.05$, *$0.05 < p < 0.1$.

2. I present the imputed income in this table.

3. NA: Data are not available.

share of cases in which the father was incarcerated in the previous year increased in May 2000–2001; the prevalence of mother's and father's receipts of public assistance increased once in 2002–2005. In 1996–April 2000, the time required for a custody decision was shorter. During the same period, the share of cases from Milwaukee declined. However, they did not strictly increase or decrease in the later periods. One exception to the lack of patterns is the change in multiple-partner fertility. In May 2000–2001, there is a significant increase in the prevalence of only the father or both parents having children with other partners and, in the more recent periods, minor but significant increases in only the father or only the mother having other children.

2.4.3 Logit Models for Joint Legal Custody

To examine whether the upward trend exists ceteris paribus, I estimate logit models for joint legal custody with controls associated with the outcome. All logit regressions include period-fixed effects, cluster standard errors at the county level, and are estimated with weights.[16] Table 2.3 summarizes the logit coefficients for three different samples: the base sample of one-child cases, the sample that also includes cases in which parents are flagged as having multiple children, and the sample of only cases with mother physical custody. The third model aims to "control" for physical custody by eliminating cases with shared physical and joint legal custody. The fourth model drops cohorts 1988-1993 to include variables on public assistance and father incarceration, which are not available for those cohorts.

Joint legal custody had been on the rise until the early 2000s and remained unchanged since then, suggested by only the coefficients on the first three periods being statistically different from one another. In contrast, joint legal custody continued to increase even in the late 2000s for multiple-child cases (including returning cases). For one-child cases, the odds of joint

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[16] I use probability weights in the logit regressions in order to conduct the Blinder–Oaxaca decomposition analysis with weighted averages from Table 2.2.

Table 2.3 Logit Models for Joint Legal Custody

	(1) One Child 1988–2009			(1) + Two Children 1988–2009			(1) – Shared Physical Custody 1988–2009			(1) – Early Cohorts 1996–2009		
Periods												
Sample size	6,259			7,428			5,555			5,129		
	Coef.	Std. err.	Sig. level	Coef.	Std. err.	Sig. level	Coef.	Std. err.	Sig. level	Coef.	Std. err.	Sig. level
Economic characteristics												
Father's income (10,000)	0.167	0.048	***	0.127	0.036	***	0.180	0.053	***	0.169	0.051	***
Father's income below poverty line	-0.215	0.095	**	-0.220	0.067	***	-0.161	0.102		-0.193	0.098	**
Relative income (base: mother's similar to father's)												
Mother's income < 80% father's	-0.045	0.121		0.011	0.100		-0.036	0.119		-0.066	0.110	
Mother's income > 120% father's	-0.118	0.122		-0.116	0.092		-0.106	0.116		-0.071	0.113	
Father on SNAP in the past year										0.041	0.078	
Mother on SNAP/TANF/AFDC in the past year										0.075	0.072	
Father ever incarcerated in the past year										-0.407	0.049	***
Children's characteristics												
One boy (base: one girl)	0.028	0.056		-0.032	0.063		0.010	0.041		0.019	0.082	
Age of the child	-0.079	0.003	***	-0.052	0.005	***	-0.068	0.005	***	-0.080	0.004	***
Parents' characteristics												
Age of parents (base: both ≧25)												
Only mother <25	0.012	0.104		0.013	0.089		0.022	0.082		-0.005	0.110	
Both parents <25	0.358	0.038	***	0.330	0.036	***	0.390	0.040	***	0.358	0.050	***
Multiple-partner fertility (base: neither has other children)												
Only father has other children	-0.114	0.120		-0.074	0.101		-0.059	0.100		-0.107	0.124	
Only mother has other children	0.466	0.036	***	0.455	0.030	***	0.509	0.035	***	0.423	0.040	***
Both have other children	0.670	0.034	***	0.614	0.028	***	0.669	0.034	***	0.598	0.040	***
Case characteristics												
Father has legal representation	0.900	0.196	***	0.966	0.207	***	0.853	0.173	***	0.657	0.182	***

Duration between petition and custody award	-0.068	0.011 ***	-0.069	0.010 ***	-0.059	0.014 ***	-0.066	0.014 ***
County (base: other urban counties)								
Milwaukee	-0.198	0.160	-0.150	0.174	-0.069	0.189	-0.040	0.177
Rural	-0.384	0.272	-0.358	0.273	-0.517	0.303 *	-0.427	0.282
Period (base: 2006–2009)								
1988–1993	-5.010	0.350 ***	-5.161	0.383 ***	-5.033	0.344 ***		
1996–2000/4	-2.567	0.214 ***	-2.593	0.201 ***	-2.659	0.202 ***	-2.575	0.220 ***
2000/5–2001	-0.878	0.111 ***	-0.977	0.152 ***	-0.761	0.137 ***	-0.865	0.113 ***
2002–2005	-0.108	0.093	-0.236	0.053 ***	-0.065	0.069	-0.108	0.093
Constant	1.417	0.212 ***	1.595	0.203 ***	1.034	0.211 ***	1.375	0.177 ***

Notes: 1. ***$p < 0.01$, **$0.01 < p < 0.05$, *$0.05 < p < 0.1$.

2. Standard errors are clustered by county.

3. These models also contain indicator variables denoting cases in which income is imputed for only the father, only the mother, or both parents.

legal custody in 1996–April 2000 and May 2000–2001 are 92 and 58% lower than the odds in 2006–2009. To state this differently, the predicted probabilities are 0.019, 0.184, 0.549, 0.725, and 0.746 in the five periods, respectively, with all characteristics held at their means. The first increase is smaller than the raw difference, and the increase at the time of policy implementation is slightly larger. Eliminating shared physical custody from the sample leads to the same conclusion. The increase in the likelihood of joint legal custody in 2002-2003 is almost identical to the estimate without controls (by 17.5 versus 18.0 percentage points).

In addition to custody trends, the models show that joint legal custody is less likely as the father's income decreases or when it is below the poverty line. These findings are consistent across different samples and specifications, except that father's poverty status fails the statistical test for cases with mother physical custody. The results imply that joint legal custody would be more common if the father's income has improved over time. The effect size is larger for father's poverty status than for a 10,000-dollar increase in the father's income.

Mother's income relative to the father's is controlled in the models, which characterizes that a custodial arrangement is made by comparing the two parents. Nonetheless, it is not associated with the likelihood of joint legal custody. The likelihood of joint custody is alike for cases with only the mother's income imputed and those with neither parents' income imputed. I also estimate Seltzer's specification in her study on legal custody for divorce cases (1991) by replacing the mother's relative income with her actual income (not shown but available from the author). This type of model follows the hypothesis that the mother's economic status is evaluated independently of the father's when a custody decision is made. Although the coefficient is positive, the mother's income does not statistically predict joint legal custody. Both Seltzer's

study and my investigation show that the mother's income is less important than the father's

income.

Joint legal custody is more likely among cases in which both parents are less than 25

years of age or have younger children, and the father has legal representation. Only the father

having children with a partner other than the mother is not associated with the custody outcome,

but the propensity is lower for cases in which only mother or both parents have other children,

compared to neither parents having other children. Joint legal custody is also less likely for

fathers who have ever been incarcerated in the prior year. The longer the duration between the

first petition and the custody award is, the less likely that parents are awarded joint legal custody.

These results are largely robust to different samples and model specifications.

To conclude, the results confirm that economic resources of the father play an important

role in determining legal custody. I find mixed evidence for the bargaining perspective as

mother's relative income is not associated with joint legal custody, but father's legal

representation is linked to a higher likelihood of joint legal custody. There is a lack of support for

human capital theory affecting custody decisions. Contrary to the literature on custody for

divorce cases, joint legal custody is more likely among younger unmarried parents. One major

limitation of this study is not having data on quality of parent-child or parental relationship.

2.4.4 The Blinder–Oaxaca Decomposition

The previous analyses reveal an increase in joint legal custody for all cases over the first

four periods, as well as several relationships between the economic, demographic, and case

characteristics with the likelihood of joint legal custody. I further explore how much the

increasing prevalence of joint legal custody is due to changes in the characteristics versus

changes in the decision-making process (namely, the coefficients, including the constant). In

Table 2.4 The Blinder–Oaxaca Decomposition of the Change in Legal Custody

	Column 1		Column 2		Column 3		Column 4	
Period	1988–2009		1988–2000/4		2000/5–2005		1996–2001	
Year differentiating early and late	May 2000		1996		2002		May 2000	
	Coef.	Explained	Coef.	Explained	Coef.	Explained	Coef.	Explained
Predicted change in joint custody level using change in characteristics, evaluated with late-period process	0.012 (0.009)	1.9%	0.020 (0.015)	10.4%	0.018 (0.013)	9.9%	-0.008 (0.024)	-2.6%
Predicted change in joint custody level using early-period characteristics, evaluated with change in process	0.601 (0.013)	98.1%	0.170 (0.024)	89.6%	0.162 (0.030)	90.1%	0.330 (0.038)	102.6%
Raw change in joint custody levels	0.613 (0.011)	100%	0.190 (0.022)	100%	0.180 (0.031)	100%	0.321 (0.043)	100%
Number of cases in early period	1,861		1,130		609		731	
Number of cases in late period	4,398		731		2,102		609	

Table 2.4, I first estimate logit regressions with the sample and the specification of the first model in Table 2.3 separately for cases in which the custody decision was made before and after May 2000, when the presumption policy took effect. I then perform the Blinder-Oaxaca decomposition using the coefficient estimates from these logit regressions.[17]

All results in Table 2.4 indicate a substantial share of the increase in joint legal custody is attributed to changes in the way that a custodial arrangement was made. The prevalence of joint legal custody increased by 61.3 percentage points between periods 1988–April 2000 and May 2000–2009 (the raw change). Depending on whether the change is evaluated at the early- or late-period coefficients, only 1.9 to 3.8% of the increase can be explained by changes in characteristics of parents between the two periods (not shown but available from the author). I then restrict the sample to cases obtaining custody awards right before and after the policy change, i.e., 1996–April 2000 and May 2000-2001. The changes in parental characteristics do not statistically affect the increase in joint custody. In each column of column 2 and 3, which contrast 1988–1993 and 1996–April 2000, May 2000–2001 and 2002–2005, a larger proportion of the increase in joint legal custody is explained by changes in characteristics, although the decomposition coefficients are not statically significant. I conclude that the change in process is more likely to be the driving force underlying the upward trends in joint legal custody. However, the Blinder–Oaxaca decomposition does not inform details of the change in process: whether it is driven primarily by the differences in the early- versus the late-period coefficients or the difference in the constants.

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[17] Because income is multiply imputed with 50 imputations, I perform the nonlinear (logit) decomposition for each of the 50 imputations with weights. I sort the 50 sets of results by predicted change in joint legal custody using early-period characteristics, evaluated with change in process. I select the median value and present the decomposition results of that particular imputation. I also use the bootstrap method to obtain standard errors of the decomposition coefficients, setting the number of bootstrap samples set to be 50.

To identify the individual characteristics that were considered differently in a custody award across periods, I estimate logit models with fully interacted terms of period dummies and covariates using two successive periods at a time. The results do not reject that the interaction terms are jointly associated with the likelihood of joint legal custody in each of the models (not shown but available from the author upon request). However, there has not been a consistent pattern in the signs and significance levels of the interaction terms that would suggest characteristics are increasingly more or less likely to affect the propensity of joint legal custody. In 2002–2005, the characteristics are treated very differently such that the overall difference between the earlier and the later period is no longer significant. An overall, across-the-board increase (marked by the difference in the constants across periods) characterizes the earlier trend in legal custody but is less the case in the more recent periods.

2.4.5 Counterfactual Exercises

On a final note, I examine the counterfactual outcome supposing the parents had the average characteristics of parents in 1988–1993, 1996–April 2000, May 2000–2001, or the entire sample, using the legal process estimated for 1988–2009. I find that the increase around the time of policy change is 35.9 to 36.7 percentage points, slightly larger than the raw change. The first increase over 1988–April 2000 is 15.6 to 16.7 percentage points; the rate of joint legal custody has reached a plateau since 2005 (Table 2.5).

Table 2.5 also examines the predicted probabilities for two hypothetical cases: (1) a case in which joint legal custody is unlikely, specifically, the father does not have any income and has no legal representation, only he has other children, the mother's income is similar to the father's income, both parents are over age 25, the couple has one boy together and file their case in a rural county, (2) one in which the father's income is at the 90th percentile of the sample

Table 2.5 Counterfactual Analysis of Changes in Legal Custody

	1988-1993	1996-April 2000	May 2000-2001	2002-2005	2006-2009
Raw means	0.023	0.213	0.534	0.714	0.725
Predicted probabilities when variables are evaluated at					
Sample means in 1988-2009	0.019	0.184	0.549	0.725	0.746
Sample means in 1988-1993	0.018	0.174	0.534	0.712	0.734
Sample means in 1996-2000/4	0.019	0.186	0.553	0.728	0.749
Sample means in 2000/5-2001	0.018	0.176	0.536	0.714	0.735
Case 1. The father does not have any income and has no legal representation, only he has other children, the mother's income is similar to the father's income, both parents are over age 25, the couple has one boy together, and file their case in a rural county	0.006	0.059	0.295	0.456	0.472
Case 2. One in which the father's income is at the 90th percentile of the sample ($48,809), the father has legal representation, the couple has similar income, has one boy together, file case in an urban county, both parents have other children, and are more than 25 years of age	0.159	0.685	0.922	0.962	0.966

($48,809), the father has legal representation, the couple has similar income, has one boy together, file the case in an urban county, both parents have other children and are more than 25 years of age. The results show that even for disadvantaged parents like those in case one, the likelihood of joint legal custody increases by 23.6 percentage points in May 2000-2001. For more advantaged couples, the increase is more likely to occur before the presumption policy went into effect. Parents who are the most likely to obtain joint custody are less susceptible to policy change.

2.5 Discussion and Conclusion

2.5.1 Summary of Findings

The prevalence of joint legal custody increased dramatically, from essentially nothing in 1988–1993 to roughly one fifth of custody cases in the late 1990s, jumping in 2000 to over than half of the cases, and staying relatively high at around two-thirds since 2002-2005. The increase in joint legal custody was primarily at the expense of mother sole legal custody, which decreased markedly during this period. Some other characteristics of cases also changed during this period. The father's income increased and poverty rate dropped in 1996–April 2000 but had remained constant since then, whereas the mother's income persisted to increase and the share of cases with mother having lower income continued to decline in the third period (May 2000–2001). Around the time of policy change, there were fewer cases in which neither parents has children with other partners. Both father's income and both parents having children with other partners are associated with the likelihood of joint legal custody ceteris paribus.

However, the Blinder–Oaxaca decomposition shows that these changes in characteristics explain at most 10% of the increase between 1988 and 2009 as well as in shorter periods within

this timeframe. I also examine whether characteristics had been assessed differently from the preceding period for all periods between 1988 and 2009, by fully interacting the models with period dummies. Reading results from both the decomposition and the interacted models, I find the majority of the increase is explained by a general increase in the likelihood of joint custody for all cases in 1996–April 2000 and a different assessment of the parental characteristics in the more recent period (2002–2005). The nature of the change immediately after the presumption rule took effect is likely to be a mixture of these two mechanisms. However, the signs of these interaction effects do not suggest consistent time trends. Finally, the counterfactual exercises show that had the parental characteristics been unchanged over time, the prevalence of joint custody would still increase by a similar degree. It is concluded that the impact of the changes in parental characteristics on the trends in legal custody is negligible.

Is the increase at policy change resulting from the policy itself or a shift in preference for joint legal custody, or more generally, an egalitarian, gender-neutral arrangement among paternity cases? Limitations in the data prohibit a further assessment of the hypothesis, but the scale and pattern of the increases suggest that while a social change is likely to be the driving force, it would hardly result in a rapid increase in joint legal custody by one third within a year. To conclude, although the presumption policy has its intended effect, it did not work in vacuum. A social change took place before and after joint legal custody was regulated to be presumptive; it is likely to be the force both underlying and reinforcing the policy change.

2.5.2 Future Studies and Policy Implications

The research on relationships between unwed fathers and their children proliferates, partly because children are more vulnerable to living away from the absent father and in poverty than those in married-couple families. For all unwed fathers, an extra step by the father is

required to establish a legal relationship with his children, by acknowledging paternity in a hospital or establishing paternity in court. Joint legal custody allows a nonresident parent to participate in the decision-making after his relationship with the mother ends. This is one way to maintain the parent-child relationship for parents who do not obtain some (shared) physical custody, in addition to visitation and child support.

The increase in joint legal custody among paternity cases occurred several years after it was made one of the custodial arrangements by law. A series of Supreme Court decisions during the 1970–80s provided guidelines for thinking about unwed fathers' rights to his children, which generally recommend the biological connection alone be insufficient and parental rights be preserved for a father who has taken a caring role or developed a personal or financial relationship with his child (Shanley, 1995). The 1977 legislation in Wisconsin statutorily replaced the requirement to award custody to one parent with options of both joint and sole custody. The 1987 law formally differentiated legal and physical custody in Wisconsin. Based on the WCRD, mother physical and joint legal custody was already awarded in 28% of all divorce cases in 1988 (45, 50, 55, 61, and 60% in 1989, 1990, 1991, 1992, and 1993, respectively). In contrast, my study finds that joint legal custody was very rare for nonmarital cases in 1988-1993 in Wisconsin, which were virtually unaffected by the 1987 law.

For paternity cases in Wisconsin, joint legal custody initially increased between 1993 and 1996 by around 15 percentage points. As discussed previously in the literature section, the characteristics of unmarried parents granted custody in court might have been different because welfare reforms in Wisconsin (prior to the PRWORA of 1996) had generally discouraged participation. Parents who remained on welfare and thus were required to cooperate in setting child support orders might have more employment barriers than parents who left. On the other

hand, the expansions of child support enforcement in this period might enroll more parents into court to establish child support orders and therefore change legal custody of their children. Several case characteristics are statistically different between 1988–1993 and 1996–2000; nonetheless, controlling for changes in characteristics does not yield a different estimate for the increase in joint legal custody. The extent to which the welfare reform affected custody outcomes is very limited based on the Wisconsin data. Due to the lack of data during this period (1993–1996), I leave this issue to be determined by scholars with data from other localities.

On the other hand, this study finds that moving from joint legal custody as an option to a presumption is associated with a significant increase in joint legal custody among paternity cases. The descriptive analysis of detailed data shows that the prevalence was flat and low in every year during 1996–2000/4 before a sharp increase in 2000/5–2001. The decomposition analysis, along with the interacted models, reveals that the first increase in joint legal custody was an overall increase in the likelihood of joint legal custody for all cases. Then the mechanism for this upward trend became more complex: the same parental characteristics were considered differently in the later periods. In all periods, changes in parental characteristics explain very minimally the increases in joint legal custody.

This study is limited in the way that data on parents' desires and perspectives are not available. Maccoby and Mnookin (1992) find in a study of divorce cases in California that joint custody was awarded in one third of the cases in which both parents sought sole custody. One rationale for awards of joint custody in this type of cases is to resolve disputes between parents. For paternity cases, very little is known about the prevalence of unmarried parents seeking joint legal custody in court. Such data, if available in the WCRD, may improve the validity of the inference that the presumption policy has its intended effect. No observations are available on

whether unwed fathers have been increasingly involved in the upbringing of children before cases of their children are presented in court for child support and custody arrangements. Neither do I have data on whether the child desired or expressed the wish to have contact with his/her father, or other information on the parent-child relationship. Because the WCRD does not collect information on the parental relationship and the anticipated feasibility of cooperation after the relationship ends, my findings would be incomplete or even biased if over time, there has been less conflict when unmarried parents separate. However, this study is still significant to the literature because it finds many of the economic and demographic characteristics affect a custody award but did not lead to the sharp increase in joint legal custody.

It is possible that the majority of unwed fathers would have been considered "fit" parents had the legal context been friendlier to them, so the presumption rule can be viewed as a positive change. Nonetheless, indiscriminate awards of joint legal custody could be problematic if joint legal custody is more than labeling or symbolic to parents and children. The literature has not concluded whether joint legal custody is in the "best interest" of the child. Some scholars argue that joint legal custody is not simply a "label" that appears less offensive to nonresident fathers but has legal consequences for parents and children (Fineman, 1988), whereas others suggest that families with joint legal and mother physical custody do not live their lives differently from those with the arrangement of mother legal and mother physical custody (Kelly, 1993; Maccoby et al., 1988). Some worry that the presumption or the award of joint legal custody forces the resident parent to share decision-making without the nonresident parent's return of sharing responsibilities (Delorey, 1989; Singer & Reynolds, 1987). This presumption could create tension for children whose parents are unable to cooperate, decrease individualized treatments for different families, and undermine the practice that addresses uniqueness of each child (Botts

& Nestor, 2011). Although the presumption for joint legal custody is rebuttable, more research is needed to understand how often and why it is questioned and/or overruled in order to safeguard the child's best interest.

I recommend that future studies investigate the selection process in which paternity cases entered court for child-related issues as the first step to understand the custody awards among unmarried parents. Future studies are required on unmarried parents who are not known by the court or the child support agency to estimate precisely the prevalence of joint legal custody. To supplement the findings of this study, more studies should be conducted to disclose how factors are considered and weighted by their importance in a custody decision for paternity cases, as well as whether parents with joint legal custody actually cooperate in decision-making for their children. Not only determinants but also consequences of joint legal custody deserve policy attention. Research is highly valuable on whether and how joint legal custody resembles the intact family, encourages never-married parents to cooperate in decision making, promotes children's emotional ties to nonresident parents, sustains the nonresident parent's interests and prevents him from dropping out from his childrearing responsibility, and improves child support payments (or more generally, whether it serves to protect the best interest of the child). My analyses suggest that policy change can have the intended effect. This raises the stakes, increasing the responsibility of policy makers to understand the likely consequences of policy decisions.

CHAPTER 3. DOES JOINT LEGAL CUSTODY ENGAGE NONMARITAL FATHERS IN
FINANCIAL SUPPORT FOR CHILDREN?

3.1 Introduction

Historically, children born outside marriage had little relationship with their nonresident
father; they lived with their mother, who made decisions about their care, and the father saw
them infrequently and provided little or no child support. Even with major policy changes to
encourage nonresident parents to support their children emotionally and economically, the
relationship between children born outside marriage and their nonresident father is still generally
more fragile than that of children and divorced fathers (Carlson et al., 2008; Seltzer, 1991b).
However, a substantial literature shows that maintaining a strong relationship between
nonmarital fathers and their children is quite important, as the father-child relationship is
associated with children's academic success, higher self-esteem, and fewer externalizing and
internalizing problems (Amato & Gilbreth, 1999; Arditti & Keith, 1993; Carlson, 2006).

The expansions of child support enforcement throughout the 1970s to the 1990s sought to
encourage noncustodial parents' financial support of their children (Garfinkel et al., 1998; Huang
& Han, 2012; Lerman & Sorenson, 2003; Pirog & Ziol-Guest, 2006). In addition to these policy
changes, one policy effort intended to improve the relationship between nonresident fathers and
their children is joint legal custody, which formally requires that decision-making for the child
be shared between fathers and mothers. Prior to the mid-1990s, nearly all nonmarital family
court cases in Wisconsin with established paternity awarded legal custody (decision-making
power) solely to the mother; very few of these cases had joint legal custody. In 1999, Wisconsin

enacted presumptive joint legal custody, that is, legal custody is to be awarded jointly to both

parents unless there is evidence supporting a different arrangement.

Joint legal custody is intended to increase the connection between nonresident fathers and their

children. In this paper I explore whether it also leads to an increase in child support payments. I

examine this question among nonmarital cases that have had paternity established (hereafter

paternity cases) in which children are placed with their mother. Although there has been some

research on divorce cases, which generally finds that joint legal custody is associated with higher

payments, there has been very little research on paternity cases, and these cases account for an

increasing share of the child support caseload.

One of the key difficulties in exploring the effect of joint legal custody on child support

payments is that the types of cases awarded joint legal custody may be substantially different

from those awarded sole custody. I employ a variety of strategies to address this selection

problem. I begin my analysis by showing the simple difference in payments between cases with

joint legal custody and those with sole mother legal custody. Then I present multivariate

regression models that control for a variety of observed characteristics. I then turn to more

advanced models. A propensity score analysis examines a sample comprising only comparable

cases with and without joint legal custody. An instrumental variable model assumes that a

judge's preferences can be used to predict legal custody outcomes and to purge the relationship

between joint legal custody and payments of unmeasured factors that could bias the relationship.

The strength of multiple methods analyses such as mine is that if these methods of comparison

all show similar results, this increases confidence in my conclusions.

3.2 Background and Prior Research

I first briefly review the factors that previous research has found to be associated with different legal custody outcomes and then highlight the prior work on factors associated with child support payments. I use this previous research to discuss the likely effects of legal custody on child support payments and then review the few previous empirical studies on the relationship between joint legal custody and payments. Because there is relatively little prior research that examines paternity cases separately, I draw on literature that combines divorce and paternity cases or that examines only divorce cases.

3.2.1 Factors Associated with Legal Custody in Paternity Cases

In many states, an unmarried woman who gives birth to a child is presumed to have sole legal custody (decision-making power) and sole physical custody (the primary residence) of the child unless the court orders otherwise.[18] A formal finding of paternity does not necessarily change the child's legal or physical custody; however, when unmarried parents establish paternity or a child support order in court, it is also possible to review legal custody and physical placement of the child. Several states have imposed a statutory presumption for joint legal custody, requiring the writing of findings for a sole-custody decision (Cuadra 2010; DiFonzo 2014; Ver Steegh & Gould-Saltman 2014). Wisconsin explicitly recognized joint custody in its legislation (§247.24) in the 1970s, and as noted above, in 1999 Wisconsin enacted presumptive joint legal custody, which became effective in May 2000 (1999 Wisconsin Act 9).

Joint legal custody was a very rare outcome nationwide among paternity cases in the 1980s and into the 1990s (Seltzer, 1998). This pattern is also observed in Wisconsin, but there it

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[18] This is the case in, for example, Massachusetts, Wisconsin, and Ohio (Massachusetts General Laws, Chapter 209C, section 10; Ohio Revised Code Section 3109.042; Wisconsin Department of Children and Families 2010). One exception is Oregon. In Oregon, whoever has physical custody of the child when paternity is established has legal custody of the child (ORS 109.175). If the father is not living with the child at paternity establishment, the mother has sole legal custody of the child unless the court rules otherwise.

increased in the late 1990s prior to the presumptive joint legal custody legislation and then again after the legislation. Joint legal custody has been the outcome in about 70 percent of paternity cases since 2002 in Wisconsin (Chen, 2015). This trend contrasts with trends in physical custody in Wisconsin and other states: physical custody was awarded solely to the mother in virtually all paternity cases through the mid-1990s; other outcomes have increased since then, but even in the most recent data, about nine in ten cases were awarded sole mother physical custody (Artis & Krebs, 2015; Chen, 2015). As a result, my focus in this paper is on typical paternity cases, those in which the mother is awarded physical custody.

The awarding of joint legal custody has been found to be related to the policy context; states or locations that privilege joint legal custody are more likely to award joint legal custody than those that base legal custody on the general best-interest-of-child principle (Chen, 2015; Huang et al., 2003; Racusin, Albertini, Wishik, Schnurr, & Mayberry, 1989; Seltzer, 1998; Seltzer & Maralani, 2001). Judicial preference may be important regardless of the stated policy, although I am aware of little research that has examined this directly. The finding that joint legal custody is granted in one-fifth of divorce cases requesting mother sole legal custody (Koel et al., 1988) may suggest that judicial preference or the relative power of the parties, discussed below, is important.

Prior roles of the parents is another set of factors that affect legal custody. For example, joint legal custody is more likely for fathers who spent more time with children prior to legal separation (Albiston et al., 1990; Ottosen, 2001; Wilcox, Wolchik, & Braver, 1998)(Albiston, Maccoby, and Mnookin 1990; Ottosen 2001; Wilcox, Wolchik, and Braver 1998). Mothers who have been the primary caretakers and less involved in the labor market may be awarded sole legal custody to maintain continuity of decision-making; prior research shows that mothers with

lower incomes are more likely to receive sole legal custody (Wilcox et al., 1998). If economic provision is seen as a form of involvement (Christiansen & Palkovitz, 2001), then fathers with more economic resources may be awarded joint legal custody, a view that is also supported by some prior research (Albiston et al., 1990; Seltzer, 1998).

Since legal custody is determined within a court-based process, the parent with greater bargaining power may be more likely to achieve the legal custody outcome they desire. Given that physical custody is nearly always awarded to the mother, if both parents wish to maximize their own decision-making power, then fathers will seek joint legal custody but mothers will want sole legal custody. Consistent with this view, joint legal custody is more likely when fathers have more economic resources, especially if they have more resources than mothers (Ottosen 2001; Seltzer 1991a, 1998; Seltzer and Maralani 2001). However, mothers with higher income, who should have more power, are empirically less likely to receive sole legal custody (Huang et al. 2003). Although this relationship is contrary to the bargaining framework, it is consistent with the perspective of prior roles being important.

Finally, fathers with higher child support orders may particularly desire joint legal custody to have more say in how expenditures on the child are determined and to monitor these expenditures more closely (Brinig & Buckley, 1998b; Del Boca & Ribero, 1998); indeed, fathers with higher orders are more likely to have joint legal custody (Huang, Mincy, & Garfinkel, 2005; Koel et al., 1988; Seltzer, 1991a). The finding that child support enforcement is positively linked to rates of joint legal custody (Huang et al., 2003) is also consistent with this monitoring perspective.

3.2.2 Correlates of Child Support Payments and Compliance

Several articles on child support have posited that child support payments and compliance with child support orders (the ratio between the amount paid and the amount due) are both related to the nonresident parent's financial ability to pay, child support enforcement, and the parent's willingness to pay support (e.g., Bartfeld and Meyer 2003). The willingness (or desire to pay) could be driven by the child's needs, the strength of ties to the child, the relationship with the ex-partner, and the perceived fairness of the child support order (Bartfeld & Meyer, 2003; Goldberg, 2015).

The empirical literature generally finds strong positive relationships between child support payments or compliance and the ability to pay support, typically measured by father's income, employment, or education (Cancian, Heinrich, & Chung, 2013; Case et al., 2003; Goldberg, 2015; Hanson, Garfinkel, McLanahan, & Miller, 1996; Nepomnyaschy & Garfinkel, 2010). Father's child support debt (Cancian et al., 2013) and incarceration (Nepomnyaschy & Garfinkel, 2010), which affects income (Needels, 1996; Western, 2002) and thus ability to pay, have negative impacts on future child support paid. The amount or likelihood of payment is lower among fathers with other family obligations (Garasky et al., 2010; Goldberg, 2015) partly because his remaining income for child support is lower; however, the total amount paid to all mothers is higher when there is more than one obligation (D. R. Meyer, Cancian, & Cook, 2005). Due to data limitations, some studies treat the mother's economic characteristics as proxies for the father's economic circumstances based on assortative mating theory (which suggests that people of similar characteristics partner with one another), and mothers with higher economic characteristics generally receive more support (Allen, Nunley, & Seals, 2011; Ha, Cancian, & Meyer, 2011; Hofferth, 2006; Huang, 2010).

The strength of the child support enforcement system has also been found to be related to payments and compliance (Case et al., 2003; Cassetty & Hutson, 2005; Freeman & Waldfogel, 1998; Huang, 2010; Huang & Edwards, 2009; Huang et al., 2003; Nepomnyaschy & Garfinkel, 2010; Sorensen & Hill, 2004). Among various policy tools, routine withholding of child support is associated with increases in child support payments or receipts (Case et al., 2003; Seltzer, 1991a; Sorensen & Hill, 2004). In fact, Judith Bartfeld and Daniel R. Meyer (2003) describe their findings as consistent with the idea that for nonresident parents who work in formal employment, the child support enforcement system is now so routine that their payments are "nondiscretionary." Another factor related to the child support enforcement system is the level of the child support order. Those who owe larger amounts make higher payments (D. R. Meyer, Ha, & Hu, 2008; Seltzer, 1991a), although orders that are "too high" compared to resources have been found to result in lower compliance (D. R. Meyer et al., 2008; Takayesu, 2011).

Prior research has documented mixed evidence about the effect of willingness to pay. For example, the number and ages of children, which could be related to the strength of ties or to needs, show a mixed relationship with payments (Allen et al., 2011; Goldberg, 2015; Greene & Moore, 2000; Ha et al., 2011; Hofferth, Forry, & Peters, 2010; Nepomnyaschy & Garfinkel, 2010). Low father-child contact, measured by father's distance from the child or infrequent visitation, is another factor related to the strength of ties and negatively correlates with child support payments (Garasky et al., 2010; Goldberg, 2015; Greene & Moore, 2000; Hofferth et al., 2010). Factors related to the parents' relationship (for example, mother's re-partnering, the couple never lived together or is unable to co-parent) may also dampen the father's willingness to provide for his child and have been found to be associated with lower child support payments (Berger, Cancian, & Meyer, 2012; Goldberg, 2015; Hofferth et al., 2010; Nepomnyaschy &

Garfinkel, 2010). The strength of ties may decline over time: some studies show that fathers pay more informal support immediately after separation and replace it with formal support as time elapses; however, the total amount of support generally declines, more pronouncedly among parents who never cohabited (Nepomnyaschy & Garfinkel, 2010).

This brief review highlights how joint legal custody could be related to payments. Joint legal custody is unlikely to directly affect the ability to pay or the strength of the enforcement system. However, joint legal custody could affect willingness to pay.

3.2.3 The Legal-Custody Effect on Child Support Payment

Several theoretical perspectives—the monitoring, psychosocial, and bonding perspectives—suggest that joint legal custody could be associated with father's increased willingness to pay child support. First, based on the monitoring theory, if joint legal custody increases the information on or input over how child support is spent (Brinig & Buckley, 1998b; Del Boca & Ribero, 1998; Natalier & Hewitt, 2010), it could lead to increased payments. From a psychosocial perspective, the status of legal co-custodian increases the nonresident parent's awareness of his parenting role, alters his expectations of obligations to children, and strengthens his commitment to children (Albiston et al., 1990; Arditti & Madden-Derdich, 1997; Seltzer, 1991b, 1998; Shrier, Simring, Shapiro, Greif, & Lindenthal, 1992). Finally, the bonding theory predicts that fathers with post-separation access to children through legal or physical custody are more willing to invest resources in children (Brinig and Buckley 1998).

On the other hand, joint legal custody may not have any impact on father's payments if the costs of exercising the rights of a legal custodian outweigh its benefits. Since parents are not living together and often do not maintain their romantic relationships, joint decision-making may be psychologically burdensome and financially costly, particularly when the nonresident parent

lives far away (Fox & Kelly, 1995; Juby et al., 2005). A lack of involvement may come because

there are no significant legal consequences associated with non-cooperation with the other parent

in decision-making. It is also possible that joint legal custody provides few benefits: unlike

detailed parenting arrangements typically laid out in a physical custody award, timing and types

of major decisions are less predictable in joint legal custody coparenting (Ver Steegh & Gould-

Saltman, 2014). In practice, frequent consultation between parents does not always occur (Koel

et al., 1988) due to the above reasons or because major decisions are few. As a result of these

costs and benefits, some studies find that many parents with joint custody operate in an

independent fashion with very little consultation on child-rearing issues (Furstenberg & Nord,

1985; Madden-Derdich & Leonard, 2000; Yarosh, Chieh, & Abowd, 2009).

Other scholars argue that joint legal custody is unlikely to have large effects for other

reasons. In some cases, joint legal custody can be seen as symbolic rather than real, merely a

product of the trend from litigation toward mediation in solving disputes (Albiston et al., 1990)

or a simple treatment signaling an attempt to avoid gender bias and to provide an outcome that is

more politically palatable than sole custody (Fineman, 1988). Joint legal custody may be

required among parents with visitation awards only to manage the logistics of visitation

(Albiston et al., 1990). These factors would result in joint legal custody not substantively

changing parents' payment behavior.

Prior research generally finds positive associations between joint custody and child

support payments (Bauserman, 2002; Fabricius, 2003; Kelly, 2000), although the majority of

these studies focus on joint physical custody, do not distinguish legal custody from physical

custody, or focus only on divorce cases (Allen et al., 2011; Bauserman, 2002; Bowman &

Ahrons, 1985; Del Boca & Ribero, 1998). Early studies that conduct simple mean comparisons

show that noncustodial parents with joint legal custody pay more child support or have a higher compliance ratio than noncustodial fathers who do not have custody rights (i.e., sole maternal custody cases) (Pearson & Thoennes, 1988). Among studies using multivariate analyses, most find no evidence for a positive effect of joint legal custody on child support payments or compliance among cases with maternal residence (Braver et al. 1993; Gunnoe and Braver 2001; Lin 2000; Meyer and Bartfeld 1996; Peters et al. 1993; Seltzer 1991a, 1998). However, others find joint legal custody is associated with higher child support payments (Huang et al., 2003; Sonenstein & Calhoun, 1990), including a study comparing divorced parents in a state without a legal custody presumption with those in a neighboring state where the presumption for joint legal custody was fully implemented (Douglas, 2003).

These mixed results may stem from the challenge of adjusting for all relevant characteristics associated with both legal custody and child support payments. Parents may voluntarily choose joint legal custody, and the estimation of the effects may not be disentangled from influences of the parents' pre-existing characteristics (Ferreiro, 1990) or suffer from omitted-variable bias. Studies of payments that have tried to estimate the separate effects of legal custody have been able to incorporate some of the relevant variables, but not all (see, for example, Braver et al. 1993; Lin 2000; Meyer and Bartfeld 1996; Otttosen 2001; Seltzer 1998). To address this problem, some prior studies instrument joint legal custody with average percentages of joint legal custody in each state and year (Huang et al., 2003), exploit state variation in custody laws (Allen et al., 2011), or use county differences in the implementation of custody policy (Seltzer & Maralani, 2001).

3.2.4 Summary

Although some studies have examined the characteristics of parents with joint legal custody and the relationship between joint legal custody and child support payments, research on joint legal custody remains somewhat limited. My study makes distinct contributions by adding an under-researched and growing population, paternity cases, to the body of the literature on the effects of legal custody on payments. The estimates for legal-custody effects on payments are biased if factors affecting both payments and custody (confounding variables) are not adjusted for in the models. Therefore, my study uses unique paired data on mothers and fathers to reduce this omitted-variable bias. Moreover, I use advanced statistical approaches to correct for selection bias for cases with joint legal custody. No study that I am aware of has tried to compare joint legal custody cases with sole mother legal custody cases with propensity score matching, instrumental variables, or exclusively with paternity cases.

3.3 Methodology

3.3.1 Data and Sample

This study uses data from the Wisconsin Court Record Data (CRD), a random sample of court cases involving minor children filed in 21 Wisconsin counties. All nonmarital cases in Wisconsin come to court if paternity needs to be formally established or if a child support order is being considered. I use cases coming to court from July 2000 through June 2009, the period after joint legal custody became presumptive.[19] The CRD collects a range of child, parent, and case characteristics that the court could consider in determining legal and physical custody, or a

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[19] Data are collected in cohorts. Each cohort includes cases in which parents or the state requested a court action between July of one calendar year and June of the following calendar year. No data were collected for Cohort 22, July 2001 through June 2002. Cases prior to the legislative change to presumptive legal custody were collected; however, in these earlier periods, joint legal custody was awarded to very few paternity cases, making it difficult to draw comparisons. Conceptually, in periods either before or after policy change, there might be cases that deserved different legal-custody awards but were given the default custodial arrangement. In the analysis section, I explain how I use such cases to form comparison groups.

child support order. Data from the court record are merged with administrative data on child support (including orders, payments, and arrears) and the state's unemployment insurance (UI) wage records between 1995 and 2013. Weights are used to account for a sampling strategy in which smaller counties are overrepresented.

The administrative data offer several important advantages. First, they have accurate information on legal and physical custody arrangements, child support orders and payments, and earnings. In contrast, large-scale national surveys often have reporting bias. For example, nonresident parents in traditional surveys underreport their earnings (Hotz & Scholz, 2001) and may overstate their child support payments due to social desirability. Additionally, this study focuses on child support payments rather than child support received by the resident parent; this distinction is made in the administrative data on child support but is often not made in surveys of resident parents.[20] Second, the court records and administrative data possess unique data on both parents; nonresident parents are generally undercounted in survey data since they do not live with the children and thus are not identified as parents (Coley, 2001). Finally, attrition typical in longitudinal surveys is not present in the administrative data. On the other hand, the UI wage records do not include informal earnings, unearned income, or income of family members; they do not cover individuals who work in states other than Wisconsin and certain types of employment (Hotz & Scholz, 2001). Therefore, they are incomplete measures of economic resources.

To isolate the effect of legal custody on child support payments, this study focuses on paternity cases that have a child support order, and where the mother has physical custody more

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[20] For resident parents who have received public assistance, most states prioritize child support collected on behalf of resident families to reimburse welfare costs, resulting in a difference between the amounts paid and received. Many surveys do not collect data to this level of detail.

than half of the time.[21] Cases in which physical custody is equally shared between the parents are excluded because they nearly always have joint legal custody. This is an appropriate strategy if the physical custody decision is made first, and then a legal custody decision is made in light of the physical custody arrangement.

I begin with all cases coming to court from July 2000 through June 2009 in which the court record shows the parents are living apart, and there is one year of a known child support order for a child aged 17 or less ($N = 5,187$).[22] To sharpen the analysis, I then eliminate 501 cases in which information on legal custody is missing, 267 cases that were not awarded mother physical custody, 301 cases with difficulty determining the father's income,[23] and 578 cases in which parents have joint children who were not in their current case.[24] The final sample for this study is thus 3,540 paternity cases.

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[21] I use information on detailed visitation and custody arrangements to select my sample. I eliminate sole-father physical custody and equal-time physical custody (cases in which fathers spend 50 percent or more of the overnights with their children). I determine physical custody either from explicit statements in the court record or through counting the detailed overnight plan for the child. In the literature on Wisconsin Court Records, father having 25–49 percent of the time are considered as having shared physical custody, mother-primary (Cancian et al., 2014). These cases are included here, however, this is only about 3 percent of my sample; the vast majority of cases are mother-sole physical custody.

[22] Focusing on cases with an order of a known amount is necessary to calculate compliance. I excluded 1,126 cases in which parents do not have an order, or have a zero order; 391 cases in which both parents owe child support in the first year; 41 cases in which I am unable to determine the precise amount due (percentage-expressed orders); and 81 cases in which the order was in effect for less than 12 months.

[23] I assume that earnings are an acceptable approximation of income. I exclude 32 cases in which I am unable to determine earnings in the administrative record because the fathers' Social Security number is unknown, making matching impossible. I also exclude 269 fathers who have no UI earnings data at any point between 1995 and 2013 and there is no income data in the CRD. These fathers might be out of state, in prison, self-employed, working in uncovered employment, or not working.

[24] In most (89 percent) court cases in which the records show that the couple had multiple children together, the court case was filed for only the youngest child. These parents had already established paternity and/or child support orders in court for their first child. The determination of physical and legal custody, and payments for this group is likely to differ from how these are considered when there is only one child. In addition, these parents may have been sampled in previous cohorts. Therefore, I eliminate these 578 cases to improve the focus of this study.

Conditioning upon mother physical custody and having a child support order limits the generalizability of my results because parents without mother physical custody or without a child support obligation may be different from those with other custody and order arrangements. However, because many cases with equal-shared or father physical placement do not have child support orders (Meyer et al. 2005), it is empirically challenging to estimate the effects of legal custody for these parents, even if joint legal custody would theoretically increase payments if they had an order. By focusing on mother physical custody I am able to focus on the most typical case and reduce the degree of selection on having a child support order, although the results can be generalized only to cases with mother physical custody.

3.3.2 Child Support and Independent Variables

In my models, all variables are either measured as of a specific point in time or aggregated to cover a year. Characteristics of parents and children are drawn from data on the court action that sets the child support order, including physical and legal custody, gender, age, and number of children, whether either parent has children by a partner other than the mother or father in this case, the year and county in which the order was established, and the judge who saw this case. In contrast, variables on child support, income, program participation, and incarceration are constructed to reflect situations in the first year.

The outcomes of interest in this study are child support payments and the compliance ratio. I measure child support paid as all amounts paid in the first year in fulfillment of the current child support order. The compliance ratio is calculated as the total of these payments divided by the total amount due in the first year. A few parents pay substantially more than the amount due on an annual basis, therefore, I top-code child support compliance to be 2.0, which affects only three cases in my final sample and does not affect my conclusions.

I use annual amounts of earnings, arrears, and annual data on benefit receipts. I draw earnings information from the UI wage records and sum these wages across four quarters in the first year of the order for models predicting child support payments and compliance. Annual earnings in the year prior to establishment of the support order are used instead in the propensity score and two-stage least squares instrumental variable models (these methods will be discussed below). For cases with no earnings in the UI records, I use annual income from the CRD where present; this gives data on income for about 30 percent of the cases with missing earnings.[25] I obtain administrative records on fathers' Supplemental Nutrition Assistance Program (SNAP) participation and incarceration, and on mothers' Temporary Assistance for Needy Families (TANF) and SNAP receipts in any month during the first year. Never-married parents may also be required to pay birth-related costs if Medicaid paid for the child's birth. To account for these birth costs and a small number of retroactive orders, I include the arrears balance at the time of the child support order. All monetary values are adjusted to real 2014 dollars.

3.3.3 Analytic Methods

I first document the differences in average payments and the average compliance ratio for cases with joint legal custody and cases with sole mother legal custody. I also compare characteristics of cases with joint legal custody and the cases with sole mother custody. Large observed differences in these characteristics led us to estimate multivariate ordinary least squares (OLS), propensity score matching (PSM), and instrumental variables (IV) models, each of which adjusts for observed factors that differ between joint legal custody and sole mother legal custody as well as other variables that could affect payments. Throughout these analyses, I include

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[25] For cases still missing, I code these cases as having zero income and mark them with an indicator variable for missing. I prioritize annual earnings from the UI wage records over income information in the CRD because the CRD frequently has missing income information. I have tested using the maximum value of CRD monthly gross income and annual wages and found no difference in the key results.

county fixed effects and cluster standard errors by judges. The OLS regression essentially compares child support payments and compliance ratios between those with and without joint legal custody, holding other observed variables constant. As such, it is an improvement over the simple comparison of outcomes between groups. However, the regression approach neglects the possibility that certain parents would never be awarded joint legal custody. In the propensity score matching analysis, I estimate models using only cases matched on observed characteristics in order for them to be more comparable.

Propensity score matching requires two steps. The first step is to estimate the probability (propensity) of joint legal custody for all eligible cases. I use a logit analysis and include confounding variables that are thought to be associated with both the awarding of joint legal custody and payments, as well as variables associated with payments but not joint legal custody (Brookhart et al., 2006; Ho, Imai, King, & Stuart, 2007).[26] The results of this analysis can be used to calculate the probability that a case would be awarded joint legal custody. The first analysis using these scores uses the inverse of them as weights in an OLS regression on the amount paid and the compliance ratio (Rosenbaum, 1987). My second analysis begins with using these scores to select cases with joint legal custody that are similar to cases with sole mother custody in the propensity scores.[27] This procedure eliminates cases for which a match cannot be

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[26] The propensity score matching literature is not conclusive on whether to include variables associated with the outcome but not the treatment (Augurzky & Schmidt, 2001; Brookhart et al., 2006; Lunceford & Davidian, 2004). I choose to include variables thought to affect payments but not necessarily legal custody (e.g., the amount of the child support order) because this is coherent with the primary purpose of propensity to balance all covariates, rather than only to predict selection into joint legal custody (Ho, Imai, King, & Stuart, 2007).

[27] I show my base method, which is a nearest-neighbor algorithm without replacement and a caliper equal to one tenth of the standard deviation of the predicted log odds. I choose matching without replacement to avoid using the same case with mother legal custody too many times as the match for various cases with joint legal custody. My approach generates a balanced sample. I have also used other algorithms, including replacement, other calipers, and kernel-based matching. In all cases, both the preprocessing of data and the parametric analysis are performed with sampling weights (Bryson, Dorsett, & Purdon, 2002; Zanutto, 2006). The results of these other matching algorithms are quite similar to my base method and thus are not shown here; results are available upon request.

found, consistent with the idea of including only comparable cases in the analysis. I then use the

matched sample to conduct both simple comparisons of child support payments and the

compliance ratio, and multivariate analyses for the two outcomes (Bang & Robins, 2005; Robins

& Rotnitzky, 2001).

OLS regressions control for multiple factors associated with both joint legal custody and

child support payments; propensity score matching analysis further improves the sample such

that cases with joint legal custody and those with mother legal custody are comparable. However,

neither of the methods addresses unobserved characteristics that may be important, for example,

the father's relationship with the child. Instrumental variable approaches are one way to address

the potential influence of unobserved variables; the estimates can be interpreted as those for the

effect among cases that are affected by the instrument (Imbens & Angrist, 1994). I construct an

instrumental variable using the judicial differential in the likelihood of awarding joint legal

custody and estimate results with a two-stage least squares (2SLS) method. This analytic

approach is inspired by Joseph Doyle's use of case manager placement tendencies as the

instrumental variable in the investigation of the effects of foster care placement on child

outcomes (Doyle, 2007). For each judge, I calculate the fraction of cases awarded joint legal

custody, and for each county, the fraction of cases with joint legal custody among all judges that

have seen at least 10 cases. The instrumental variable for each case is the difference between the

probability of its judge awarding joint legal custody and the average rate of joint legal custody

for all judges with at least 10 cases in the county. This construction of the instrumental variable

is essentially the prediction of joint legal custody by a model with county-fixed effects because a

judge's likelihood of awarding joint legal custody is compared to those of other judges in the

same county. This approach eliminates county-specific conditions that affect the prevalence of joint legal custody in each county.[28]

Therefore, in this analysis, I use only cases that were seen by judges with 10 cases or more and located in counties where there were at least two judges with at least 10 cases.[29] I also eliminate a negligible number of cases seen by judges who worked in more than one county and therefore drop such judges from the analysis. This sample selection reduces the sample size from 3,540 to 2,896 cases. The 10-case requirement is an arbitrary cutoff point. I change this threshold to 20 or 30 cases, which changes the sample size, and find that the estimates for the joint-custody effects are very similar under the alternative constructions (see Table 3.3 for more information).

A valid instrumental variable meets two assumptions. First, the instrumental variable (here the differential likelihood for a judge to award joint legal custody) needs to be associated with the independent variable of interest (here whether a particular case receives joint legal custody). This assumption is testable and satisfied in my data: the judicial differential in awarding joint legal custody is positively associated with the case-level likelihood of joint legal custody in a linear model controlling for all observed baseline characteristics, including county-, cohort-fixed effects, and standard errors clustered by judges (Appendix 3.B). Second, the instrumental variable (a judge's differential likelihood) cannot affect the ultimate outcome (payments) except through affecting the independent variable (whether a case has joint legal

[28] Note that when constructing the variable for judicial differential in custody awards, I do not use weights because the weights adjust for counties and case types (divorce, voluntary paternity acknowledgement cases, and adjudicated paternity cases) and I have already controlled for county-level differences and to a lesser extent the case types (by conditioning on paternity cases). Throughout the rest of this analysis I use weights in order to compare the descriptive differences in child support outcomes in Table 3.1. I test robustness of my results with a weighted instrumental variable and find no differences.

[29] I relaxed this requirement that cases be in counties where there are at least two judges with 10 cases or more; in other words, I include cases in counties where there is only one judge with at least 10 cases, group such cases together, and calculate the judicial differentials as if they were in one "pseudo" county. My data suggest that this method is likely to violate the exogeneity assumption of an instrumental variable and therefore is not used in this study.

custody), sometimes called the "ignorability assumption." If parents could select the judge who would hear their case, then the instrumental variable (judicial differential likelihood) would be chosen (endogenous) and not able to be ignored in the outcome equation. Our conversations with court personnel suggest that in all these counties, once a paternity action is filed with the court, a court employee, rather than the parties involved, decides which judge will hear the case, strengthening the case for this instrument. Further, when I regress the differential of the rate of joint legal custody on case-level baseline characteristics, none of the observed variables are statistically associated with the instrumental variable, further suggesting the appropriateness of the instrument.

3.3.4 Sensitivity Tests

I show three sensitivity tests. The first sensitivity test changes the sample considered by excluding cases with two or more children. This is an appropriate model if the process of determining legal custody for one-child cases is different from that of multiple-child cases. Therefore, limiting the sample to focus on one-child cases may result in an improved ability to predict legal custody, which would then lead to better matching of the joint legal custody with sole mother legal custody cases. In these tests, I re-estimate the probabilities of joint legal custody and then apply the new propensity scores to obtain a new matched sample for analysis; I also re-construct the instrumental variable using only one-child cases. In my second sensitivity test, I drop fathers' characteristics from both the first-step model predicting joint legal custody and the models comparing payments between joint legal custody and sole mother custody cases. This test helps us to understand how my estimates compare with a variety of previous studies that do not include these variables (because they have data only on custodial mothers). In my

third test, I exclude the child support order variables to model a situation in which orders are set simultaneously with legal custody, rather than before.

3.4 Results

3.4.1 Case Characteristics by Custody

The first column of Table 3.1 summarizes characteristics for all cases in the base sample. During 2000 to 2009, joint legal custody was awarded in around 70 percent of paternity cases where children were physically placed with mothers. Child support payments are fairly low, averaging around $2,000 in the first year of the order, and fathers pay on average about 52 cents for each dollar owed. Fathers have low income, averaging around $15,500, but this is still more than average income of mothers, which is $10,900. Other characteristics also show remarkable levels of disadvantage, with one-quarter of fathers ever incarcerated in the past year and nearly two-thirds of mothers receiving Supplemental Nutrition Assistance Program or SNAP benefits. Children are fairly young, averaging between 1 and 2 years old. The next columns of Table 3.1 show characteristics of those with mother sole custody (column 2) and those with joint legal custody (column 3). I summarize whether the characteristics of those with different legal custody types are statistically different in column 4. The first rows of these columns show that, consistent with expectations, parents with joint legal custody pay significantly more child support, by about $800 in the first year, and have larger child support orders than parents with mother legal custody. Parents with joint legal custody on average pay 57 percent of their annual child support orders, compared to 40 percent of cases with sole mother legal custody. The remaining rows show that several variables are statistically different between sole mother legal custody cases and joint legal custody cases, highlighting the importance of controlling for these other factors. In the

Table 3.1 Descriptive Information on All Cases and by Custody Type and Model Predicting Joint Legal Custody

	All Cases	Sole Mother Legal Custody	Joint Legal Custody	Statistical Significance Level of Difference	Logit for Joint Legal Custody		
	Mean	Mean	Mean		Coeff.		Std. Err.
Joint legal custody	**0.71**	**0.00**	**1.00**	***			
Child support payment	**$2,005**	**$1,424**	**$2,241**	***			
Compliance ratio	**0.52**	**0.40**	**0.57**	***			
Child support order (in $10,000 in logit)	$3,037	$2,696	$3,175	***	0.88	*	(0.53)
Child support arrears (in $10,000 in logit)	$1,192	$1,255	$1,167		-0.96	***	(0.37)
Parents' income and benefits							
Father's income (in $10,000 in logit)	$15,452	$11,405	$17,094	***	0.08		(0.09)
Father's income squared (in $10,000 in logit)					0.00		(0.00)
Mother's income	$10,881	$10,773	$10,924				
Mother's income/total income	0.48	0.55	0.45	***			
Mother's income > 1.2 father's income	0.40	0.50	0.36	***	-0.37	**	(0.17)
Mother's income similar to father's income	0.11	0.10	0.12				
Mother's income < 0.8 father's income	0.49	0.40	0.52	***	-0.17		(0.19)
Missing father's income	0.22	0.33	0.18	***	-0.55	***	(0.14)
Missing mother's income	0.18	0.18	0.17		-0.08		(0.13)
Father's SNAP receipt	0.13	0.16	0.12	**	-0.23	*	(0.12)
Mother's SNAP receipt	0.65	0.64	0.66		0.23		(0.15)
Mother's TANF receipt	0.40	0.39	0.40		-0.07		(0.13)
Father incarceration	0.25	0.33	0.21	***	-0.40	***	(0.12)
Characteristics of children							
One boy	0.44	0.46	0.43		0.01		(0.13)
One girl	0.45	0.46	0.45				
One child, gender missing	0.08	0.07	0.08		0.11		(0.24)
2+ children	0.03	0.01	0.04	***	0.82	**	(0.40)
Age of eldest child	1.84	2.21	1.70	***			

Eldest child older than 2 years old	0.26	0.32	0.24	***	-0.46	***	(0.12)
Characteristics of parents							
Father has other children	0.24	0.27	0.22	**	-0.02		(0.13)
Mother has other children	0.11	0.08	0.12	**	0.52	**	(0.26)
Both have other children	0.13	0.10	0.14	**	0.75	**	(0.34)
Neither has other children	0.53	0.54	0.52				
Father's age	27.38	27.66	27.26		-0.04	***	(0.01)
Years father is older than mother	2.46	2.58	2.41		0.02	*	(0.01)
County							
Milwaukee	0.56	0.56	0.55		0.33		(0.28)
Other urban county	0.36	0.34	0.37				
Rural county	0.08	0.11	0.08	***	-0.15		(0.27)
Voluntarily acknowledged paternity	0.24	0.13	0.29	***	0.96	***	(0.11)
Number of actions required to set an order	1.18	1.14	1.20	***	0.40	***	(0.11)
Cohort							
Cohort 21	0.14	0.22	0.11	***			
Cohort 23	0.13	0.14	0.13		0.66	**	(0.29)
Cohort 24	0.12	0.12	0.13		0.91	***	(0.32)
Cohort 25	0.13	0.10	0.15	***	0.97	***	(0.30)
Cohort 26	0.13	0.13	0.13		0.71	***	(0.24)
Cohort 27	0.10	0.09	0.11	**	1.09	***	(0.27)
Cohort 28	0.12	0.11	0.12		0.90	***	(0.27)
Cohort 29	0.11	0.09	0.12	*	0.94	***	(0.25)
Intercept					0.59	*	(0.32)
Sample size	3,540	1,053	2,487			3,540	
Log-likelihood						-13,114	

Notes: 1. Income squared is calculated as $(income/10,000)^2$. The compliance ratio is top-coded at 2.0. Economic characteristics including annual income, program participation, and incarceration are retrieved from data 12 months prior to the establishment of the child support order. All statistics in this table, including the logit coefficients, use sampling weights. The logit model also includes county fixed effects and clusters its standard errors by judges.

2. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

final column of the table, I show whether these differences remain when I employ a multivariate regression model that holds all other characteristics constant. Fewer variables are statistically significantly related to legal custody in the multivariate model; I focus my discussion on these.

There is partial evidence that a father's ability to financially provide for his child correlates with joint legal custody. Fathers' income is not statistically related to joint custody, although it is positively correlated with joint custody through the amount of the child support order. Fathers who have received SNAP or spent time in jail or prison are less likely to have joint custody. Other results are to some extent consistent with prior research. For example, the policy context may matter: cases in Milwaukee are most likely to have joint legal custody, followed by other urban areas and then by rural areas. Parents' relative bargaining power is related to custody: mothers who have much more income than fathers are less likely to have joint custody (and thus more likely to have sole custody). There is some support for the hypothesis that mothers who have other family responsibilities are less likely to receive joint custody: when mothers or both parents have had children with other partners, joint custody is more likely than when neither parent has other children. These comparisons reveal that an important empirical challenge is to address the potential endogeneity in an award of joint custody; in other words, joint custody is correlated with covariates that may also be related to the father's child support contribution.

3.4.2 Standard Regressions for Child Support Outcomes

Table 3.2 summarizes results from OLS regressions for child support payments and the compliance ratio. In this model, parents with joint legal custody pay more child support than parents with mother custody by $168 a year, which is substantially lower than $817, the simple mean difference between groups in Table 3.1. On average, fathers with joint legal custody are more likely to pay child support by 6 percentage points, compared to 17 percentage points in

Table 3.2 Joint Legal Custody, Child Support Payments and Compliance

	Child Support Payments			Compliance Ratio		
	Coeff.		Std. err.	Coeff.		Std. err.
Joint legal custody	168	**	(73)	0.060	***	(0.017)
Child support order (in $10,000)	6841	***	(693)	0.013		(0.075)
Child support arrears (in $10,000)	330		(235)	0.114	**	(0.045)
Father's income (in $10,000)	497	***	(61)	0.104	***	(0.011)
Father's income squared (in $10,000)	-11	***	(1)	-0.002	***	(0.000)
Relative income (compared to similar incomes)						
Mother's income > 1.2 father's income	-132	***	(50)	-0.091	***	(0.016)
Mother's income < 0.8 father's income	49		(70)	0.032	*	(0.017)
Father's SNAP receipt	-109	*	(62)	-0.083	***	(0.019)
Mother's SNAP receipt	-137	***	(45)	-0.048	***	(0.011)
Mother's TANF receipt	-97		(72)	-0.054	**	(0.023)
Father incarceration	-250	***	(77)	-0.156	***	(0.019)
Characteristics of children						
One boy	15		(37)	-0.005		(0.011)
2+ children	-161		(190)	-0.059	*	(0.034)
Eldest child older than 2 years old	-60		(38)	0.000		(0.013)
Children with other partners (compared to neither parent having children with other partners)						
Father has other children	-203	**	(86)	-0.053	***	(0.020)
Mother has other children	-185	*	(100)	-0.017		(0.034)
Both have other children	-139		(118)	-0.051	**	(0.023)
Father's age	12	*	(7)	0.004	***	(0.001)
Years father's is older than mother	-8		(8)	-0.003	**	(0.002)
Region (compared to urban counties not Milwaukee)						
Milwaukee	-24		(82)	-0.035		(0.022)
Rural county	468	***	(167)	0.191	***	(0.053)
Voluntarily acknowledged paternity	-38		(72)	0.026		(0.017)
Number of actions required to set an order	-75		(46)	-0.029	*	(0.016)
Cohort (compared to cohort 29)						
Cohort 21	51		(77)	0.003		(0.017)
Cohort 23	223	**	(97)	0.040	*	(0.022)
Cohort 24	173		(105)	0.026		(0.026)
Cohort 25	9		(76)	-0.014		(0.013)
Cohort 26	143	**	(69)	0.022		(0.019)
Cohort 27	265	***	(86)	0.049		(0.033)
Cohort 28	384	***	(77)	0.107	***	(0.023)
Intercept	-919	***	(252)	0.427	***	(0.051)
R-squared	0.821			0.550		
Sample size	3,540			3,540		

Notes: 1. Income squared is calculated as $(\text{income}/10{,}000)^2$. Models also include county dummies and indicator variables for missing father's income, mother's income, and child gender. Economic characteristics include annual income, program participation, and incarceration are retrieved from data 12 months prior to the establishment of the child support order. Both of the models are weighted with standard errors clustered by judges.

2. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Table 3.1. The results do not change regardless of whether I control for categorical variables on mother's income relative to the father's (base shown here) or its continuous form (not shown but available upon request).

Table 3.2 also provides information on other factors related to child support payments and compliance. The father's ability to pay support, measured by his income and SNAP participation, strongly and consistently predicts both child support payments and the compliance ratio. The relationship between child support payments/compliance and father's income is nonlinear: the marginal effect of income is decreasing. Other variables related to the ability to pay support are also important: father's prior incarceration is negatively associated with both payments and the compliance ratio. Mother's receipts of public assistance are negatively correlated with both payments and the compliance ratio, suggesting that mothers on TANF may be paired with disadvantaged fathers and thus have lower payments. Child support payments and the compliance ratio are statistically lower among cases in which mothers have income substantially higher than fathers, which might suggest that some fathers lower their child support payments if they feel their children do not have as many needs.

Unexpectedly, fathers who have voluntarily acknowledged paternity, a proxy for his relationship with the mother and child, do not pay more child support than fathers in adjudicated paternity cases. Child support payments and the compliance ratio are lower among cases in which fathers have children with other partners than those in which neither parent has other

children. This is consistent with the hypothesis that other family obligations reduce the father's

ability to pay support, or one that the father's relationship with the focal child is not as strong as

if he did not have other children. Perhaps because most children in paternity cases are very

young, child's age is neither associated with payments nor the compliance ratio.

3.4.3 Propensity Score Matching and Two-Stage Least Squares Models

Table 3.3 summarizes results across a variety of models, including the propensity score

matching analyses and the two-stage least squares estimators (for the instrumental variable

analyses). The first two rows, A and B, show results from the standard approaches (the

descriptive difference of Table 3.1 and the OLS model of Table 3.2) for comparison. Starting

with row C of Table 3.3, propensity scores of joint legal custody are first estimated with the logit

regression with the specification and measures as shown in Table 3.1. This model of joint

custody later generates a matched sample in which cases with and without legal custody are

comparable on all control variables. Row C summarizes results from standard OLS regressions

with the propensity scores as weights, and therefore, it includes all cases in my sample ($N =$

3,540). It shows a statistically significant difference in both payments and compliance; parents in

cases with joint legal custody are predicted to have $174 per year higher payments and a 5

percentage-point higher compliance ratio.

I then use the propensities for joint legal custody calculated in the model shown in Table

3.1 to match sole mother custody cases with joint custody cases. The matching algorithm I

choose achieves ideal balance between cases with and without joint legal custody: Appendix 3.A

shows that no characteristics are statistically different between cases with and without joint legal

custody in the final sample. In row D1, I present the mean difference between cases with and

without joint legal custody in the sample matched by my base propensity score matching

Table 3.3 Adjusting for Confounding Variables with Propensity Score Matching and Instrumental Variable Methods

Method	Algorithm/IV Construction	Child Support Payments			Compliance Ratio			Sample Size
		Coeff.		Std. err.	Coeff.		Std. err.	
A. Descriptive difference (Table 3.1)		817	***	(117)	0.170	***	(0.025)	3,540
B. Regression, all controls (Table 3.2)		168	**	(73)	0.060	***	(0.017)	3,540
C. Propensity score (PS) regression, all controls	Inverse of PS as weights	174	***	(50)	0.053	***	(0.013)	3,540
D. Propensity score matching models								
D1. Simple comparison	NN, no replacement, 1/10σ	163		(115)	0.059	***	(0.021)	1,804
D2. Regression, all controls	NN, no replacement, 1/10σ	169	**	(70)	0.049	***	(0.018)	1,804
D3. Regression, all controls	NN, replacement, 1/10σ	151		(101)	0.033		(0.027)	3,110
D4. Regression, all controls	Epanechnikov kernel	186	*	(98)	0.057	**	(0.024)	3,440
E. Instrumental variable								
E1. Two-stage least squares	Seen by judges with 10+ cases	898	***	(300)	0.245	***	(0.091)	2,896
E2. Two-stage least squares	Seen by judges with 20+ cases	805	***	(309)	0.242	**	(0.096)	2,217

Notes: 1. In the nearest-neighbor matching algorithm (denoted as NN), I calculate the probability of joint legal custody for every case; then for every case with joint legal custody I select from among the cases that have mother legal custody the case with the closest probability (a matched case). "No replacement" means that each time I select a matched case, I eliminate that case from the pool of other possible matches. I also set a maximum for how similar the probabilities of joint legal custody must be to consider it a "good match"; for example, the denotation of "1/10σ" indicates that matches must be within one-tenth of a standard deviation of the predicted log odds of joint legal custody. Weights are used throughout all stages of the analyses except for construction of the instrumental variable and the matching process.
2. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

algorithm; cases with joint legal custody have higher compliance rates, but the difference in payments is not statistically significant. In row D2, I use an OLS regression with the full set of controls (see Table 3.2) on the matched sample. This propensity score matching method shows a difference between joint legal custody and sole mother custody of $169 and a five-percentage point difference in the compliance ratio. These results are quite similar to those in the models with the inverse of propensity scores as weights (row C) and to the OLS model on the full sample (row B). However, they are substantially lower than the simple difference in row A.

On the other hand, my two-stage least squares models yield estimates closer to the descriptive differences in child support outcomes between cases with and without joint legal custody. In row E1, I use cases seen by judges who heard at least 10 cases, worked in only one county, and had at least one judge colleague who also heard at least 10 cases during the study period (2000 to 2009). With this requirement I am able to construct a variable for each judge having a relative higher or lower rate of joint legal custody awards compared to his or her colleagues in the same county. This instrumental variable is not correlated with other observed characteristics of parents in a multivariate regression model (Appendix 3.B). The two-staged least squares model estimates higher child support payments by $898 a year or a compliance ratio higher than mother legal custody cases by 25 percentage points.

There is a concern that this instrumental variable is not exogenous to case characteristics because for some judges it is constructed based on only 10 cases, and thus each case accounts for one-tenth of the influence on the judge's calculated probability of joint legal custody. I then use the 20-case threshold instead, requiring that the instrumental variable is calculated based on at least 20 cases. Row E2 focuses on cases seen by judges who heard at least 20 cases and had at least one judge colleague who also heard at least 20 cases in the same county. The two-staged

least squares (2SLS) estimates for this instrumental variable are very similar to those under the 10-case requirement: about an $800 increase in payments or 24 percentage-point increase in the compliance ratio.[30]

3.4.4 Sensitivity Tests

Next, I conduct several sensitivity tests to examine whether a different sample and omission of key variables affect the results. The first three rows in Table 3.4 show the base OLS, PSM, and 2SLS models from Table 3.3 for ease of comparisons. I begin my sensitivity analysis by examining results for only one-child cases, because parents first entered the court after they had two children together can be different from those with one child. All my models generate similar but somewhat lower estimates for child support payments and the compliance ratio than those based on the full sample.

I also assess whether separately omitting father's characteristics and child support order influences the results, both in the first-stage estimation and the second-stage models for payments/the compliance ratio in either the PSM or 2SLS model. These two tests generally suggest that omitting variables that are positively correlated with joint legal custody and child support payment leads to upwardly biased estimates for the effects of joint legal custody. The 2SLS estimate is less sensitive to the omission of father's characteristics but is more sensitive to the exclusion of child support orders and arrears than the OLS or PSM estimates. I conclude from these sensitivity tests that my main result, showing an increase in payments and compliance for joint legal custody cases, is robust.

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[30] Note that the instrumental variable analyses use a smaller sample than my other analyses. To understand whether this finding is due to the sample selection, I conduct the other analyses in Table 3.3 on the base instrumental-variable sample ($N = 2,896$) and find the estimates are comparable but slightly higher, by about $20 a year, across the board (not shown but offered upon request).

Table 3.4 Sensitivity Tests, Regressions with the Matched Sample

	Payments Coeff.		Std. err.	Compliance Ratio Coeff.		Std. err.	Sample Size
1. The original sample							
1a. Regression, all controls	168	**	(73)	0.060	***	(0.017)	3,540
1b. PSM with regression and all controls	169	**	(70)	0.049	***	(0.018)	1,804
1c. 2SLS, all controls	898	***	(300)	0.245	***	(0.091)	2,896
2. One-child cases							
2a. Regression, all controls	161	**	(73)	0.057	***	(0.017)	3,425
2b. PSM with regression and all controls	130	*	(69)	0.038	**	(0.018)	1,768
2c. 2SLS, all controls	820	***	(290)	0.240	***	(0.090)	2,800
3. Omit father's characteristics							
3a. Regression, the original sample	393	***	(98)	0.143	***	(0.023)	3,540
3b. PSM with regression and the original sample	360	***	(107)	0.131	***	(0.025)	1,834
3c. 2SLS, the original sample	746	**	(319)	0.199	*	(0.105)	2,896
4. Omit child support order							
4a. Regression, the original sample	223	***	(78)	0.060	***	(0.017)	3,540
4b. PSM with regression and the original sample	153	*	(79)	0.054	***	(0.020)	1,796
4c. 2SLS, the original sample	1259	***	(412)	0.248	***	(0.091)	2,896

Notes: 1. In rows 3b and 4b, father's characteristics and child support order are excluded from both the models of payments/compliance and the model of joint legal custody used to generate the propensity scores.
2. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

3.5 Discussion

This study investigates the relationship between joint legal custody and a nonresident father's formal child support payments in nonmarital cases. In most of my models, I find evidence for a positive and statistically significant relationship between joint legal custody and child support payments, and between joint legal custody and the compliance ratio. Ordinary least squares and propensity score matching models yield similar, statistically positive estimates of the relationship, about $170 per year higher child support payments or a 5-percentage-point higher child support compliance ratio. The two-staged least squares model with judicial differentials in the likelihood of legal custody awards estimates effect sizes that are considerably larger, and similar to or slightly higher than the descriptive difference between groups, around $800 per year or a 20-percentage-point increase in the compliance ratio.

The 2SLS estimates, by design, capture primarily behavior of parents who are affected by the judicial differential in custody awards, less so for parents who almost definitely obtain either joint or mother legal custody (Imbens & Angrist, 1994). One advantage of the 2SLS estimation, relative to other models, is that it attempts to correct for unobserved variables. Nonetheless, there are a few limitations of the 2SLS models. The estimates may be biased upwards because the variation in joint legal custody rates across judges within a county could reflect factors other than judicial preference. Judges may influence child support payments through ways other than their awards of joint legal custody, such as visitation schedules or deviations from the child support guidelines. Finally, the instrumental variable estimate is guaranteed to be unbiased only in large samples; a larger sample would increase the confidence in these findings. Although the 2SLS models have some limitations, they show positive relationships, consistent with my other models.

How do these estimates compare to the previous literature? Before I make direct comparisons, I note that my sensitivity tests that intentionally omit father's characteristics and the amount of the child support order help place previous research that does not include these variables in context. Consider a scenario in which two couples, one with joint legal custody and one with sole mother custody, have exactly the same other characteristics except for father's income and child support payments. Consistent with the descriptive data in Wisconsin, the father in the couple with joint legal custody may have higher income and pay more child support. If in the data being analyzed father's income is unknown, then comparing these two cases could lead to the conclusion that joint legal custody is associated with substantially higher payments, when it is possible that instead father's income leads to both joint legal custody and higher payments. This problem can also be observed from my sensitivity tests omitting father's characteristics and child support order, which yield effect sizes larger than those in the base specification.

My estimates suggest a strong but smaller relationship between custody and payments than some of the prior research finds in examining divorce cases (Huang et al., 2003; Sonenstein & Calhoun, 1990). In Chien-Chung Huang and colleagues' study (2003), observed joint legal custody is associated with more child support payments by $595 (in 1997 dollars, or $878 in 2014). Their model addressing endogeneity of joint legal custody with average percentages of joint custody in each state as the instrumental variable generates a higher estimate $918 ($1,354 in 2014). They control for race and education, which are unobserved in my study. However, they do not include direct information on noncustodial parent's characteristics and child support orders; therefore, the omitted-variable problem in my sensitivity test may be present in their study. Freya Sonenstein and CharlesCalhoun (1990) study 121 divorce cases in the mid-1980s. They control for race, education, income, orders, and contact between the father and child; their

effect size for mothers who received child support is even larger than the ones reported in Huang and colleagues (2003) (with inflation considered). However, their analysis controls for only limited differences between joint legal custody and sole mother custody and is based on a small sample. Different controls, samples, time periods, and case types may explain the disparities amongst these findings. Although my findings are of lower effects than these other two studies, my findings of consistent but relatively small effects are in contrast to most prior studies that find no to very small effects (Cuadra, 2010; DiFonzo, 2014; Ver Steegh & Gould-Saltman, 2014).

Several limitations are present in my study. I am not able to observe a variety of variables that may be related to joint legal custody and payments. Some of these unobserved variables, for example, parental conflict, may be linked to lowered payments; others such as father's commitment to parenting, may be linked to higher payments. It is not possible to assess the direction of potential bias because, based on the prior literature, parental conflict can positively correlate with joint legal custody if the nonresident parent presses to be involved. This study does not examine other ways that a father can be involved in his child's life. Prior research finds that joint legal custody is associated with more frequent visitation in some studies (Arditti & Keith, 1993; Braver et al., 1993; Gunnoe & Braver, 2001; Seltzer, 1998) but not in another (Albiston et al., 1990). It is possible that joint legal custody increases contact, visitation, and perhaps even informal and in-kind support. In addition, this study examines only a short time period after an order is established (one year). Prior evidence indicates that informal child support is the predominant way that an unwed father contributes to his children in the first few months after parents begin to live apart (Nepomnyaschy & Garfinkel, 2010); formal child support gradually substitutes for informal child support as time passes. The effect of joint legal custody on child support may change over the life of a case: Effects for divorce cases are

estimated to be zero in the first year, become positive in the third year, but diminish in the sixth

year after divorce (Seltzer, 1991a; Seltzer & Maralani, 2001). These findings suggest that the

relationship between legal custody and payments may be different in the long run. More studies

are needed to investigate longer-term effects of legal custody on payments, compliance, and

other outcomes.

One limitation with propensity score matching is that the treatment effect cannot be

estimated for cases that fall outside the common support area. It is unknown whether joint legal

custody has an effect on a father with the lowest or the highest probability of joint legal custody,

because such a father is usually eliminated from a matching analysis. The propensity score

matching models have the advantage of comparing similar cases, but similarity is only based on

observed variables. Moreover, cases that are dropped from my current sample include cases with

father or shared physical custody and those without child support orders because father's

financial contribution is mostly unobservable for these cases. Therefore, the findings in this

study cannot be generalized to these groups.

3.6 Conclusion

This study provides a unique addition to the existing literature on legal custody in that it

uses more recent and more accurate data on payments, uses more sophisticated empirical

methods, controls for key covariates, and analyzes the effects for an under-researched population

(i.e., nonmarital cases). This study finds consistently positive and statistically significant

relationships between joint legal custody and child support payments and compliance. However,

the magnitude of the effects differs across models. In standard regression and PSM models, the

effect is around $14 per month or $170 a year; this translates to a statistical increase in the

compliance ratio by 5 percentage points. My 2SLS and descriptive analyses suggest a substantially larger relationship: an increase in payments by $70 per month, $850 per year, or an increase in the compliance ratio by 17–24 percentage points.

The PSM analysis focuses only on cases with and without joint legal custody that are comparable on the observables. Its estimates are very close to those in the OLS regressions; this increases my confidence that I have estimated the effects of joint legal custody using an appropriate counterfactual, examining what would happen if cases were not given joint legal custody. The 2SLS analysis provides estimates for parents whose legal-custody decisions are more likely to be influenced by judicial discretion. For this type of parents, the evidence suggests joint legal custody can have a larger impact on their child support payments or compliance. These different analyses offer a range of effects for average and a subset of parents of nonmarital children, each with own strengths and limitations.

More studies are required to understand whether joint legal custody encourages other forms of father involvement, such as his participation in decision-making, more understanding of his child's needs as a result of decision-making with the mother, an increasing frequency of contact and visits, and more in-kind or informal support due to more contact and knowledge. The actual practice to carry out the decision-making obligation for never-married parents with joint legal custody is largely unknown in the literature on legal custody. Existing studies have yet to conclude whether joint legal custody is only symbolic, or substantively affects frequency and quality of parental communication and cooperation in decision-making, and finally, the father's actual involvement in the child's upbringing. Definitions of the "major" decisions that parents with joint legal custody can make for their children are generally very vague in current law, and a joint-custody award may not detail the ways that parents co-parent or the precise decisions that

should be made jointly. Joint legal custody may have to be accompanied by visitation arrangements or parenting plans in order to work. These are the potential directions that future research and policy efforts may pursue.

If I had found no effects or there were other detrimental consequences of joint legal custody for children and parents, it would be questionable whether to spend administrative and legislative resources to enact and implement a presumption policy. If joint legal custody is at least not adverse to children and their mothers, policy implementation is at a low cost, and routine awards of joint legal custody reduce judicial workload and improve efficiency, from a policy standpoint, joint legal custody may be presumed or advised to parents with average characteristics. If joint legal custody is effective, intervention at an earlier stage could be meaningful. Courts can help never-married parents set up parenting plans, along with other arrangements regarding the child, to prevent unwed fathers from dropping out of their children's lives as time elapses. An alternative strategy might to be set up mechanisms for unmarried parents to make parenting arrangements outside the court process. In some countries family support centers are available to these parents to assist with a variety of family and parenting issues, and these could be explored here (e.g., Ottosen 2001).

However, as this study has shown, it is challenging to isolate the effects of joint legal custody. Furthermore, most studies do not jointly examine all outcomes possibly influenced by legal custody. Therefore, I would suggest that court practitioners, counselors, and social workers carefully assess a child's circumstances while helping parents reach an agreement on legal custody. My results apply only to average cases, and thus, for cases in which high parental conflict disrupts the child's life, or the father's access poses imminent harm to the child and mother, joint legal custody is not advisable.

Appendix 3.A Matched Sample

	Sole Mother Legal Custody Mean	Joint Legal Custody Mean
Child support order	2,740	2,693
Child support arrears	1,260	1,238
Parents' income and benefits		
Father's income	12,030	11,870
Father's income squared (in $10,000)	4.212	3.669
Mother's income	10,540	10,918
Mother's income/total income	0.533	0.557
Mother's income > 1.2 father's income	0.473	0.490
Mother's income similar to father's income	0.106	0.118
Mother's income < 0.8 father's income	0.421	0.392
Missing father's income	0.306	0.300
Missing mother's income	0.187	0.182
Father's SNAP receipt	0.163	0.156
Mother's SNAP receipt	0.640	0.653
Mother's TANF receipt	0.399	0.411
Father incarceration	0.315	0.316
Characteristics of children		
One boy	0.459	0.460
One girl	0.452	0.443
One child, gender missing	0.075	0.083
2+ children	0.013	0.015
Age of eldest child	2.122	1.970
Eldest child older than 2 years old	0.294	0.282
Characteristics of parents		
Father has other children	0.269	0.277
Mother has other children	0.091	0.091
Both have other children	0.109	0.119
Neither has other children	0.532	0.513
Father's age	27.555	27.368
Years father is older than mother	2.564	2.260
Father's is older than mother by 8 years	0.122	0.103
County		
Milwaukee	0.564	0.579
Other urban county	0.346	0.329
Rural county	0.090	0.092
Voluntarily acknowledged paternity	0.139	0.131
Number of actions required to set an order	1.144	1.136
Cohort 21	0.199	0.186

Cohort 23	0.141	0.142
Cohort 24	0.118	0.123
Cohort 25	0.110	0.123
Cohort 26	0.130	0.116
Cohort 27	0.090	0.095
Cohort 28	0.111	0.113
Cohort 29	0.100	0.102
Sample size	902	902

Notes: 1. Income squared is calculated as $(income/10,000)^2$.

2. The sample is matched with the propensity scores generated by the logit model in Table 3.1. None of the descriptive differences between groups is statistically different from zero.

3. I also examine balance using alternative operationalizations of relative income and age difference between parents (not shown here but offered upon request). I choose the specification presented in Table 3.1 because it achieves the best degree of balance.

Appendix 3.B Tests for Instrumental Variable Assumptions

	Nonzero Effect of IV on Treatment			Ignorable Assumption		
	Joint Legal Custody (JLC)			JLC Preference Differential		
	Coeff.	Sig.	Std. Err.	Coeff.	Sig.	Std. Err.
JLC preference differential (IV)	0.867	***	(0.058)			
Father's income	0.007		(0.007)	-0.001		(0.002)
Father's income squared	0.000		(0.000)	0.000		(0.000)
Missing father's income	-0.095	***	(0.022)	-0.004		(0.005)
Missing mother's income	-0.030		(0.023)	-0.003		(0.005)
Father's SNAP receipt	-0.081	***	(0.027)	0.004		(0.005)
Mother's SNAP receipt	0.026		(0.019)	-0.004		(0.003)
Mother's TANF receipt	-0.013		(0.020)	-0.001		(0.004)
Incarceration	-0.061	***	(0.021)	0.003		(0.005)
Only boy	0.002		(0.018)	-0.005		(0.004)
One child, missing gender	0.017		(0.033)	-0.001		(0.005)
Two children	0.084	**	(0.039)	0.003		(0.007)
Age of eldest child >2	-0.075	***	(0.020)	-0.002		(0.004)
Only father has other children	0.014		(0.024)	-0.003		(0.006)
Only mother has other children	0.106	***	(0.037)	-0.001		(0.006)
Both have other children	0.087	*	(0.049)	0.010		(0.010)
Father's age	-0.005	***	(0.002)	0.000		(0.000)
Milwaukee	0.059	***	(0.018)	0.003		(0.039)
Rural	-0.139	***	(0.019)	0.002		(0.055)
VPA	0.132	***	(0.017)	0.012		(0.008)
Number of court actions	0.061	***	(0.012)	0.008		(0.007)
Child support order	0.108	**	(0.044)	0.015		(0.012)
Child support arrears	-0.150	**	(0.061)	-0.012		(0.014)
Mother's income > 1.2 father's	-0.045	*	(0.025)	0.000		(0.005)
Mother's income < 0.8 father's	-0.002		(0.027)	0.000		(0.005)
Father older than mother by 8 years	0.031		(0.038)	0.002		(0.007)
Constant	0.662	***	(0.053)	-0.022		(0.024)
Number of observations	2,896			2,896		
Adjusted R-Squared	0.164			0.011		

Notes: 1. Both models are ordinary least squares models with county-, cohort-fixed effects, and standard errors clustered by judges.

2. * $p < 0.1$, ** $p < 0.05$, or *** $p < 0.01$.

CHAPTER 4. WHO ARE THE NONRESIDENT PARENTS THAT PAY CHILD SUPPORT?:

CHARACTERISTICS AND IMPLICATIONS FOR NONCUSTODIAL PARENT EITCS

4.1 Introduction

Since American public policy shifted its focus in the 1980s-1990s, reducing welfare

caseloads and encouraging support from noncustodial parents (NCPs), child support and the

Earned Income Tax Credit (the EITC) have gradually evolved as major policy responses to child

poverty in single-parent families (Garfinkel et al., 1998; Holt, 2006; Hotz & Scholz, 2003; Pirog

& Ziol-Guest, 2006). Recent research finds that a significant proportion of those NCPs have

barriers to paying support, such as unemployment, low income, high child support debt, complex

family obligations, or incarceration (Holzer, Offner, & Sorensen, 2005; D. R. Meyer et al., 2005;

Sinkewicz & Garfinkel, 2009; Sorensen, Sousa, & Schaner, 2009). Various policies have been

designed to improve their ability or willingness to pay, including employment and training

services, tax credits, and parenting programs. However, there has not always been a good match

between program interventions and NCPs' actual characteristics. Specifically, it is not clear that

the Noncustodial Parent EITCs, refundable tax credits for parents who fully comply with their

child support orders, that have been proposed and launched in some states have been based on

substantial analysis of how many NCPs, with what characteristics, would likely be eligible for

the program.

I first overview the current EITC, which primarily benefits families with resident children,

and then briefly describe the current and proposed NCP EITCs, focusing on eligibility

parameters and benefit levels. I then review prior studies on income, child support, and

demographic characteristics of NCPs because such information helps us understand the different NCPs who would be reached by different NCP EITC designs. Based on my review, I define three alternative designs, focusing on the requirements of child support payments in their eligibility rules. I include a design that requires full compliance with child support orders, a design that requires paying a certain proportion of income, and a design that requires paying a certain dollar amount. For each scenario, I conduct micro-simulations of the NCP EITC using national data, examining the characteristics of those eligible and the short-term effects of the NCP EITC on poverty and incomes. Finally, I consider different policy goals that policymakers may hope to achieve, making recommendations on which designs would meet these various goals.

4.2 Background and Prior Research

The treatment of noncustodial parents in the current safety net for parents with children deserves attention. There are substantially more public supports for custodial parents (CPs) than NCPs. For example, in the tax system, CPs can claim exemptions for their dependent children and receive the child tax credit, while NCPs cannot unless they are providing more financial support for the child than the custodial parent is providing.[31] In the EITC, the largest cash antipoverty program in the nation (Hahn, Isaacs, Edelstein, Steele, & Steuerle, 2014; Moffitt, 2013), some custodial parents can receive more than $6,000, compared to only about $500 for NCPs who do not have qualifying children. In the SNAP program, CPs can claim any children as part of their households and receive more benefits. In addition to limited support in several

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[31] A child could be treated as the qualifying child of the NCP for purposes of claiming an exemption and the child tax credit (but not for the EITC) if the CP has waived it and other necessary conditions are met. Before 1985, the CP could waive this right by signing the divorce decree or the separation agreement that includes this provision. In 1985 and later, the CP signs Form 8332. For more details, see the IRS website http://www.eitc.irs.gov/Tax-Preparer-Toolkit/faqs/divorced.

means-tested programs, many NCPs are young and inexperienced, part-time, and low-wage workers who are less likely to receive unemployment insurance than their experienced, full-time, or higher-income counterparts (Mincy, Klempin, & Schmidt, 2011). A gap in the safety net is thus identified: low-income NCPs who do not live with their children are under-served. A question has been raised as to whether tax policies should respond to the changing family structure by giving NCPs who pay child support a credit for their contributions.

4.2.1 The NCP EITC and EITC

NCP EITCs have been proposed to provide income support, incentivize formal labor supply, encourage child support payments, and alleviate some of the burden of paying child support among low-income NCPs. The federal EITC was originally designed to provide income support and work incentives for lower-income custodial mothers and two-parent families; an NCP EITC generally shares these two goals but targets NCPs (Nichols, Sorensen, & Lippold, 2012; Wheaton & Sorensen, 2010). Another purpose is to close the gap of the EITC in addressing economic realities of NCPs who financially support their nonresident children. One of the fundamental challenges to anti-poverty programs in the US is the difficulties created by diverse family structures (D. R. Meyer & Carlson, 2014). Many parents contribute to the upbringing of their children while living in separate households; however, many social programs fail to recognize their efforts, which one can argue dampens their motivation to financially support their children. Therefore, it is hoped that the NCP EITC also encourages child support payments and addresses the payment burden of NCPs.

I first describe the federal EITC and then NCP EITCs, although many states have also implemented EITCs, which are typically supplements to the federal EITC, with the same eligibility rules and an increment in benefit levels (Williams, Johnson, & Shure, 2011). The

federal EITC is a relatively large refundable tax credit that supplements the incomes of low-income working families: it reduces a working family's tax liability and distributes any remaining tax credit to workers when their credits are higher than their liabilities. To claim this credit, workers must be employed in the formal economy and file tax returns. There is a very small EITC for childless single taxpayers over age 25, and a substantial EITC for those of any age living with children. The amount of the credit increases as earnings increase within the phase-in range, remains the same as earnings reach the flat range, decreases as earnings increase within the phase-out range, and decreases to zero when earnings exceed a certain threshold.[32] The benefits depend on a tax filer's marital status (filing status) and number of qualifying children (in most cases, children living with the tax filer). The maximum credit and the income limit for a single taxpayer without children in 2015 were only $503 and $14,820, respectively, compared to $3,359 and $39,131 for a single taxpayer with one child, $5,548 and $44,454 for those with two children, and $6,242 and $47,747 for those with three children.

An NCP EITC is a refundable tax credit similar to the EITC, but its eligibility is linked to the NCP's child support payments. The benefit levels implemented thus far or proposed nationally typically range between the federal EITC for childless single tax filers and that for single tax filers with children. Versions of this program have been implemented in New York State (NYS) and Washington, D.C. since 2006. A national variant of it was proposed by Senator Evan Bayh and then-Senator Barack Obama in the Responsible Fatherhood and Healthy Families Act of 2007 (S. 1626) (U.S. Congress, 2007) and reintroduced by Senator Evan Bayh in 2009 (S.

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[32] The EITC has income limits. The limit for adjusted gross income (AGI, or the taxable income) and earned income is identical, and varies with the number of children and with filing status. In addition, there is a limit on investment income ($3,400 or less in 2015).

Figure 4.1 The Benefit Structures of the NCP EITCs and the Federal EITC for Single Childless Tax Filers in 2015

Figure 1. The Benefit Structures of the NCP EITCs and the Federal EITC for Single Childless Tax Fiers in 2015
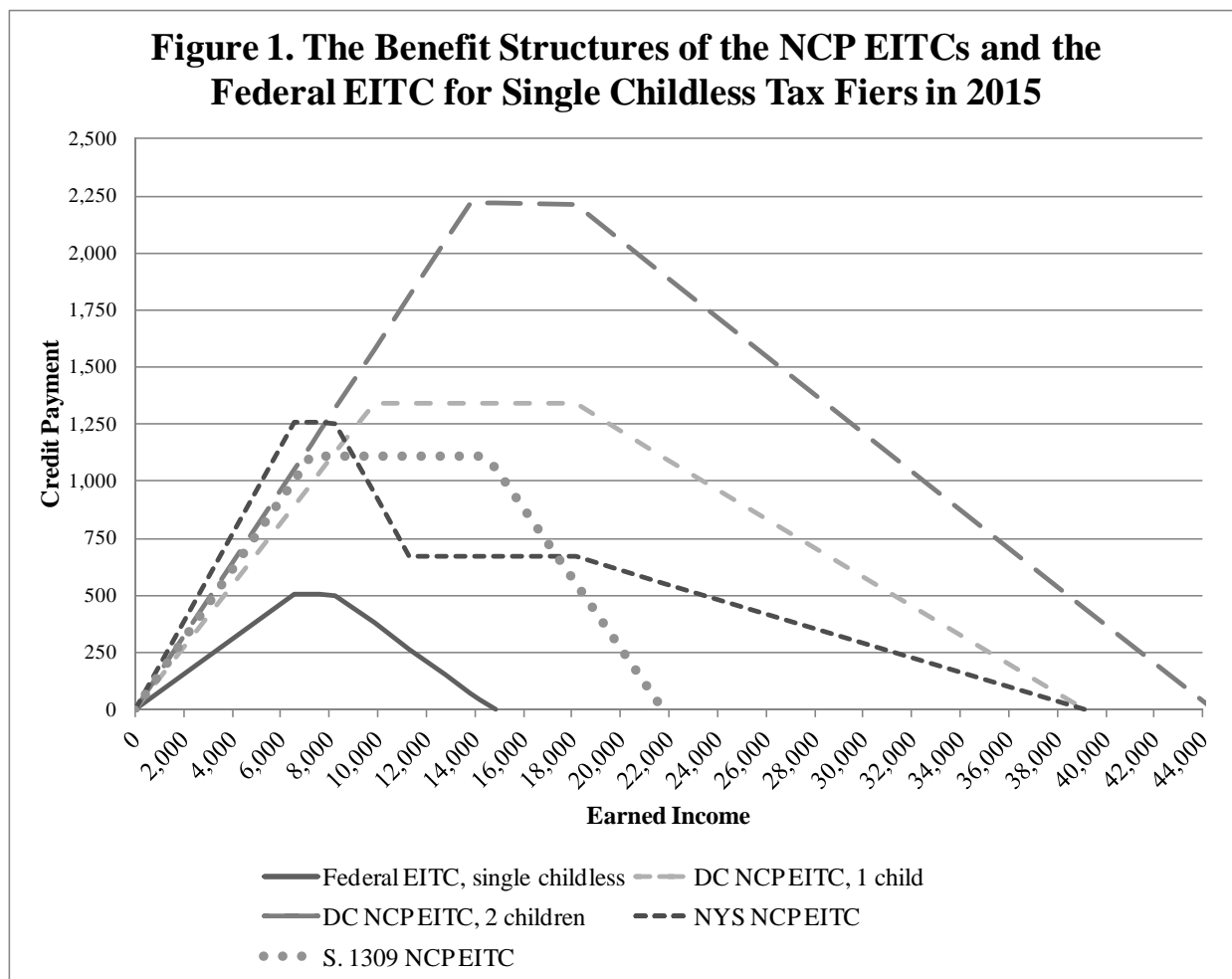
Notes: The figure shows that most NCP EITCs share the same structure, since their benefits levels are expressed in relation to the federal NCP EITC. Each of them provides no benefits to individuals who are not working, subsidizes the earnings of the lowest-income workers at a constant rate up to an income limit, after that limit allows only a fixed-amount credit, and then decreases at a constant rate as income reaches another threshold until the benefit completely phases out. The one exception is the New York NCP EITC, which is more complicated because the benefit level is whichever larger of (1) 2.5 times the federal EITC for childless single individuals and (2) 20% of the federal EITC for a single tax filer with one child. At an income level around $11,300, 20% of the federal is larger than 2.5 times of it for childless single individuals, resulting in a kink in the schedule.

1309) (U.S. Congress, 2009). In all of these NCP EITCs, the NCP must have had a formal child

support order for at least one-half year and have fully complied with his order to receive the

benefit.[33] An eligible NCP must also meet an age requirement: 18 to 30 in the D.C. NCP EITC, 18 and above in the NYS NCP EITC, and 25 to 64 in S. 1309. Although limiting eligibility to those who paid in full has not been particularly controversial, in this paper I examine the effects of this restriction and consider several alternative designs, discussed below.

In contrast to the lack of discussion on eligibility, much of the discussion of NCP EITCs has centered on the benefit schedule of such a credit as well as whether to implement an NCP EITC nationwide (see figure 4.1 for a graphic presentation of benefit levels) (Mincy, Klempin, Jethwani-Keyser, Seith, & Miller, 2012; Wheaton & Sorensen, 2010). The figure shows the current federal childless EITC and several NCP EITCs. The NCP EITC in Washington, D.C. is the most generous; it equals 40% of the federal EITC for tax filers with children, which is also the amount of the D.C. EITC supplement for tax filers with children. The NYS NCP EITC is computed as the larger of (1) 2.5 times the federal EITC for childless single individuals and (2) 20% of the federal EITC for a single tax filer with one child; as a result, the graphical presentation of the benefit level in New York is more complicated. S. 1309 includes an expansion of the federal EITC for childless single workers and sets its NCP EITC equal to twice this expanded schedule.

The relationships between the NCP EITC and the "regular" EITC are quite important for those who have both custodial and noncustodial children. In New York, NCPs can only claim the larger of the NCP EITC and the state EITC, and the state EITC is larger than the NCP EITC in most of the income ranges for NCPs who live with some of their children.[34] In both S.1309 and

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[33] For parsimony, later in this paper I use the male pronoun to refer to the NCP. This is also due to the fact that a substantial majority of NCPs are men (Grall, 2016). In places I discuss only one gender, I use "mother" or "father" for distinction.

[34] The New York State EITC is 30% of the federal EITC, which is larger than the NYS NCP EITC for many NCPs who are living with other children (but not with children covered by their child support orders). For

the Washington D.C. NCP EITC, the NCP EITC is only available for NCPs who do not claim the standard child-based EITCs (meaning that an NCP who has qualifying resident children does not claim these benefits).[35] In Washington D.C., the NCP EITC benefits depend on the number of nonresident children. Different from the D.C. NCP EITC, neither the S. 1309 nor the NYS NCP EITC distinguishes the number of children covered by an NCP's child support order.

From this overview of various designs, it emerges that policymakers are considering the age limits, benefit levels, and the interaction with the EITC. Other features could also be highlighted, for example, the definition of an NCP's contribution to his child. The first four rows of Table 4.1 summarize these policy parameters. In the next section I return to one of the fundamental aims of this policy – supporting NCPs to support their children – by examining their economic and child support characteristics before I consider these and other policy alternatives further.

4.2.2 Child Support and Earnings

An NCP EITC that requires full compliance with child support orders, if implemented nationwide, would distribute uniform benefits to complying NCPs with the same characteristics in marital (filing) status and income, but not in child support payments. This would occur because their child support orders may be quite different even if they have the same income, since states set orders according to different formula and even then may not follow the formula. For example, NCPs who have large orders and fail to fully comply with them would not be

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example, for an NCP who is single and lives with one child, the state EITC is larger than the NCP EITC once his income exceeds $9,223. This threshold is even lower for NCPs who live with two or more children.

[35] The tax forms and instructions do not prohibit a person from claiming both EITCs, but the intent of the law suggests that taxpayers claim one credit at a time. Moreover, in Washington, D.C., there is another tax credit for low-income taxpayers, the D.C. Low Income Credit, which is non-refundable. The D.C. law explicitly prohibits tax filers from claiming both the Low Income Credit and the D.C. EITC (including the "regular" EITC and the NCP EITC).

Table 4.1 NCP EITC Policy Parameters, 2014

	Eligibility earned income less than	Eligibility age limit	Eligibility child support payment	Benefit maximum credit	Distinguish # of nonresident children[1]	Interaction with the regular EITC[2]
Currently in effect						
Federal EITC for single individuals without dependents	$14,820	25–64	Not considered	$503	No	Not applicable
New York State NCP EITC	$39,131 for all NCPs	18 and above	Full compliance[3]	Larger of 2.5 fed EITC for single w/o children (max: $1,257) and 20% fed single w one child (max: $671)	No	Larger of the NCP EITC and the state EITC; for most parents, the state EITC is larger
Washington D.C. NCP ETIC	$39,131 for single NCPs and $44,651 for married NCPs	18–30	Full compliance	40% federal EITC with children (max: $1,343 for single NCPs and $2,219 for married NCPs)	Yes	NCPs who are eligible for the child-based EITC cannot claim this credit[4]
National Proposal						
S. 1309	$21,776 for NCPs whose filing status is childless single	25–64	Full compliance	2.0 times the expanded credit for childless single (max: $1,111)	No	NCPs who are eligible for the child-based EITC cannot claim this credit[4]
Proposals Tested in this Study						
A. Full compliance	$39,131 for single NCPs and $44,651 for married NCPs	25–64	Full compliance	40% federal EITC with children (max: $1,343 for single NCPs and $2,219 for married NCPs)	Yes	Both allowed
B. Full compliance, or >20% income	$39,131 for single NCPs and $44,651 for married NCPs	25–64	Full compliance or paying at least 20% of income	40% federal EITC with children (max: $1,343 for single NCPs and $2,219 for married NCPs)	Yes	Both allowed
C. Full compliance, or >30% expenditures	$39,131 for single NCPs and $44,651	25–64	Full compliance or paying at least 30% of average child	40% federal EITC with children (max: $1,343 for	Yes	Both allowed

	for married NCPs		expenditures	single NCPs and $2,219 for married NCPs)		
D. >30% expenditures	$39,131 for single NCPs and $44,651 for married NCPs	25–64	Paying at least 30% of average child expenditures	40% federal EITC with children (max: $1,343 for single NCPs and $2,219 for married NCPs)	Yes	Both allowed

Notes: 1. If yes, I summarize only the schedule for noncustodial parents with one qualifying nonresident child in this row. This affects cells for the income restrictions and the maximum credit.

2. For noncustodial parents with both resident and nonresident children

3. In this table "full compliance" refers to fully paying all orders.

4. In both Washington D.C. NCP EITC and S. 1309, there is not a separate credit for noncustodial parents who pay child support. The Washington D.C. NCP EITC is part of the Washington D.C. EITC and allows only taxpayers who do not claim qualifying children for federal taxes to receive the benefits. NCPs who have qualifying children claim only the standard D.C. EITC. In S.1309, NCPs who are childless single on their tax returns and who have fully complied with their orders are eligible for 2 times the expanded childless single EITC.

qualified for this type of NCP EITC even if some of them pay more child support than other

NCPs who have lower orders (and pay them in full). Moreover, two fully complying eligible

parents with the same income would receive the same NCP EITC benefit, even if their child

support payments were quite different, creating disparities in the extent to which child support

payments are subsidized. Therefore, to set the context for which NCPs are likely to benefit from

NCP EITCs that require full compliance with child support orders, I review prior studies on child

support orders, compliance, and payments of child support in this section.

Each state applies its own child support guidelines and criteria that justify deviations

from the guidelines in determining the amount of a child support order. The type of guideline

used in most states, the income shares model, estimates the spending on children for an intact

family with an income similar to the total income of the two parents and prorates this amount

between parents based on their respective incomes (Beld & Biernat, 2003; Venohr & Griffith,

2005). The percentage of obligor income model, used in fewer states, is also based on estimated

expenditures on children, but explicitly considers only the obligor parent's income. Both models

assume "continuity of expenditures" in childrearing post-separation: the order is set at the

amount that the two parents would have spent had the mother, father, and children all lived

together (Garrison, 1999; Venohr, 2013). Therefore, a child support order reflects the economic

capability of the NCP (and may also reflect the economic capability of the CP) and the number

of children, since higher expenditures have been found when there are more children (Lino,

2014). Child support orders may deviate from the guidelines due to low income, additional

dependents, shared parenting time, or other factors (Venohr & Williams, 1999).

Prior studies find that child support orders are less likely among noncustodial fathers with

low income and incarcerated fathers (Castillo, 2009; Freeman & Waldfogel, 2001; Huang &

Pouncy, 2005; D. R. Meyer & Warren, 2011; Roff, 2010). Descriptive analyses of parents'

perspectives suggest that ability to pay is a key determinant of having an order. For example,

"other parent provides what he or she can" and "other parent could not afford to pay" were the

most frequent reasons (36.9% and 36.4%) reported by custodial parents for not having a legal

agreement established (Grall, 2016). The likelihood of an order is also lower for custodial fathers

(D. R. Meyer, 2000; D. R. Meyer & Garasky, 1993) and parents who share physical custody

(Melli & Brown, 2008; D. R. Meyer, Cancian, & Chen, 2015). Some of these correlates are

explicitly considered in some state guidelines, such as low income, shared-time custody, and

incarceration (Noyes, 2006).

      Other correlates of having an order are not explicitly considered in the guidelines. For

example, never-married parents, younger parents, Black and Hispanic parents are less likely to

establish an order (Castillo, 2009; Freeman & Waldfogel, 2001; Huang & Pouncy, 2005; D. R.

Meyer & Warren, 2011; Roff, 2010), although it is unclear whether these are exogenous factors

or merely reflect parents' economic status. An order is more likely in welfare cases than non-

welfare cases with similar characteristics because welfare parents are required by law to

participate in the child support enforcement system and may have less authority over the child

support process (Garfinkel et al., 1998; D. R. Meyer, Cancian, & Chen, 2015; Pirog & Ziol-

Guest, 2006; Roberts, 2005). A third of CPs without orders report that they did not feel the need

to have a legal agreement; a quarter said they did not want other parents to pay (Grall, 2016). To

conclude, certain families would not be served by an NCP EITC because they do not have child

support orders, although an NCP EITC could change the incentives to have an order.

      Theory posits that a nonresident parent's ability and willingness increase his financial

support for his child. His commitment to childrearing, closeness to his child, and quality of his

relationship with the resident parent are all expected to positively reinforce his willingness to pay child support. Prior evidence has generally supported these relationships. For example, child support payments are positively associated with the noncustodial father's ability to pay (Bartfeld & Meyer, 2003; D. R. Meyer et al., 2005) and the father-child contact (Huang, 2009; Nepomnyaschy, 2007). The father's (or the mother's) age and education may be considered the human capital that is associated with father's ability and thus have found to positively correlate with payments (Case et al., 2003; D. R. Meyer et al., 2008). Child support payments are affected by family complexity: the more mothers a father is associated with, the more he pays, but having multiple orders is associated with a lower probability of compliance (Berger et al., 2012; D. R. Meyer et al., 2005). Child support is also lower when a nonresident father has a new resident child (Manning & Smock, 2000). Finally, carrots and sticks in the child support enforcement system affect payments and compliance; disparities in the strength of enforcement have been observed across states (Freeman & Waldfogel, 2001; Huang & Han, 2012; Sorensen & Hill, 2004).

Recent data from the Current Population Survey (CPS) for 2013 show that 49% of all CPs had either legal or informal child support agreements, 42% were due child support, 31% received some or full payments, and that 19% of all CPs received full payments (Grall, 2016). On average, custodial parents who were due support received $3,770 in payments (Grall, 2016).[36] Wheaton and Sorensen (2010) impute NCP status and child support payment characteristics using survey and administrative data from three sources and report estimates

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[36] The proportion of all CPs with legal or informal child support agreements have decreased from 59% in 2001 to 49% in 2011 (Meyer et al., 2015), which explains some of the decline in the proportion of CPs with some or full payments from 38% to 32%, as well as the reduction in the proportion of CPs with full payments from 23% to 19%; the compliance rates among parents who were due child support have not changed much over this decade (Grall, 2016).

similar to those of the same period in the Census report: 25% of all NCPs paid all current child support due, and another 17% paid some of the amount due.[37] The proportion of NCPs covered by any NCP EITC proposal are expected to be lower than the estimates summarized here because parents with all ranges of income, not just those with low income, are counted in these statistics. For example, only 7% of all NCPs and 6% of all noncustodial fathers are in full compliance and have an income lower than $30,000 (in 2004 dollars) and thus are potentially eligible for the NCP EITCs that have been examined in prior studies (Mincy et al., 2012; Wheaton & Sorensen, 2010).

Although the child support payment rate is lower among low-income and disadvantaged families than average parents (Cancian & Meyer, 2006; Nepomnyaschy, 2007; Wheaton & Sorensen, 2010), their obligation rate is higher as a percentage of their income (Stirling & Aldrich, 2008). The obligation rate is also referred to as the burden level and is typically measured by the amount owed divided by the NCP's income. On average, NCPs are ordered to pay 20% of their income in child support, but the obligation rate can be 40% or more among poor noncustodial parents (Cancian & Meyer, 2004; Huang et al., 2005; D. R. Meyer et al., 2008; Pirog, Klotz, & Byers, 1998; Rogers, 1999). For example, in Wisconsin, the median noncustodial father owes 29% of his earnings, compared to 17% for the father in the three highest earnings deciles (D. R. Meyer et al., 2008). The burden of orders is positively associated with payments but negatively correlated with compliance rates (D. R. Meyer et al., 2008; Takayesu, 2011),

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[37] Estimates of the amount of child support paid reported by noncustodial parents are substantially higher than the amount of child support CPs report receiving (Schaeffer, Seltzer, & Dykema, 1998; Schaeffer, Seltzer, & Klawitter, 1991). Moreover, the number of noncustodial parents is lower than the number of custodial mothers. For example, based on data from the Current Population Survey, in 2004, 14 million parents had custody of children under 21 years of age while the other parent lived elsewhere (Grall, 2016), compared to 11.9 million noncustodial parents in the same year (Wheaton and Sorensen, 2010). (Note that because of multiple-partner fertility, the number of nonresident fathers needs not equal the number of resident mothers.) Finally, note that because some child support payments are retained by the government rather than distributed to custodial parents, the amount paid does not always equal the amount received.

particularly for fathers with very high burden (D. R. Meyer & Bartfeld, 1996) and with very low incomes (Bartfeld & Meyer, 1994). An NCP EITC that certifies eligibility based on the share of income paid in child support rather than compliance could provide benefits to low-income NCPs with large orders if they were paying a high proportion of the order, even if they were not paying the full amount.

Several reasons may explain high order burdens. In many states, the order is calculated based on imputed income instead of actual income if the NCP is not present in court or is unemployed. Some NCPs are charged the cost of welfare, Medicaid, and/or Medicaid birthing costs that occurred prior to the establishment of their orders (Cancian, Heinrich, & Chung, 2009; Maldonado, 2005; U.S. Department of Health and Human Services, Office of Inspector General, 2000). The child support order is not likely to be modified when the NCP's earnings decline (Ha et al., 2010). Some NCPs are required to support children in multiple families (Cancian & Meyer, 2004; D. R. Meyer et al., 2005; Sinkewicz & Garfinkel, 2009), pay retroactive support back to the date of the child's birth (in paternity cases) (Sorensen et al., 2009), or owe extraordinary medical expense in support (Garfinkel, Melli, & Robertson, 1994).

One implicit goal of the child-based EITC is to support some of the costs of childrearing for low-income working families. In line with this rationale, the NCP EITC can lessen the financial burden for NCPs who support their children. How much should an NCP EITC help childrearing for families, relative to the child-based EITC? How do the NCP's child support payments compare to the CP's own financial contribution to their children? Does the NCP deserve the same amount of the child-based EITC, given his payments? Comparing child support with expenditures on children helps in answering these questions. Child support payments are on average quite inadequate to cover average child expenditures unless the custodial parent has

substantial income. The average amount of child expenditures for a single-parent household with a two-year-old is around $10,400 per year[38] (Lino, 2014), which is noticeably higher than the annual child support received by the CP who was due support, $3,900 (Grall, 2013). In addition, child support orders calculated using states' guidelines on average fall short of the average expenditures on children, to a greater extent in states where guidelines allow a self-support reserve for the NCP (Morgan & Lino, 1999; Venohr & Griffith, 2005).

Consider a case in which the income limits and the benefits of the NCP EITC are identical to those of the child-based EITC, the NCP and the CP have the same earnings under the limit, the NCP meets the child support requirement and pays the average amount of child support, and the expenditures on their children are about the average. For this family, an NCP EITC that is worth 100% of the child-based EITC creates unfairness in the tax treatments between the two parents because the NCP pays less than half of the expenditures yet receives an equal EITC. Consider another case in which the CP earns only 80% of the NCP's income[39] and all other factors remain the same. If the NCP's earnings qualify him for the maximum credit, but the CP's earnings fall within the phase-in range, the NCP would be able to claim a larger benefit than the CP even though he has higher earnings and lower expenditures on children. This would increase the inequality in post-tax income between parents. In practice, it is challenging to achieve fairness in the tax treatments between parents because there are numerous circumstances in terms of income and child support payments and because linking the information on the CP's earnings

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[38] Unless otherwise specified, all monetary values reported in this study are adjusted to 2013 dollars.

[39] A recent report by Bureau of Labor Statistics shows that over the past 5 years, on average, women employed full-time earn about 80% of the median weekly wages of men with full-time jobs (Bureau of Labor Statistics, 2014). However, this average may not be understood as the ratio of earnings between resident mothers and nonresident fathers. A study that examines paired data on mother's and father's annual income post-separation finds that mother's annual income is 75% of father's income (Bianchi, Subaiya, & Kahn, 1999). Using hourly wages instead of annual earnings yields a smaller estimate for the gender gap: 80% compared to 75% (O'Neill, 2003).

to the NCPs tax return could be administratively burdensome. Nonetheless, this discussion highlights the deliberation that should be exercised as to setting the benefits of an NCP EITC.

What is a reasonable range of income that an NCP EITC should target in order to reach poor NCPs? Wheaton and Sorensen (2010) find that close to half of all NCPs have incomes below $37,000, which is about the income limit for the EITC for single tax filers with one child; one-fifth of all NCPs have incomes less than $12,000, or roughly the income beyond which the NCP EITC in S. 1309 begins to phase out. Recent findings indicate that the average earnings of unmarried fathers at their child's birth were even lower, around $18,000, but they grew by 35% three years later. Nevertheless, they were still low compared to earnings of married fathers (Garfinkel, McLanahan, Meadows, & Mincy, 2009). Around five out of six nonresident fathers of children receiving welfare in Wisconsin had earnings below $19,000 (D. R. Meyer & Cancian, 2012), which is about the income limit for the NCP EITC in S. 1309. To conclude, the NCP EITC in S. 1309 would reach young and impoverished NCPs, rather than a more general lower-income NCP population. Limiting the credit to NCPs who are at least 25 years of age and requiring full child support payments further truncates the proportion of NCPs eligible for its benefits.

4.2.3 Findings for the NCP EITC

There is a small amount of research examining the effects of the New York NCP EITC or predicting outcomes for other NCP EITC proposals. One consistent finding is that very few NCPs receive or would receive the NCP EITC (Nichols et al., 2012; Sorensen, 2010; Wheaton & Sorensen, 2010). One reason is that the NCPs who can afford to fully comply with their orders have moderate or higher incomes and are not eligible due to their high income; few NCPs with lower incomes fully comply with their orders. Simulation research suggests that, although half of

all NCPs have incomes lower than the limit of the EITC for single persons with one child, fewer than 10% of NCPs would be eligible for an NCP EITC that imposes the same income restriction as the child-based EITC if they must have a child support order and fully comply with it (Wheaton & Sorensen, 2010). A study of the existing New York NCP EITC also shows that only 11% of all NCPs met the eligibility criteria, and that slightly over half of these eligible parents were able to claim the NCP EITC credit because their NCP EITC was larger than the State EITC (Sorensen, 2010). Different NCP EITC eligibility requirements affect how many NCPs, with what characteristics, are likely to be eligible for and participate in the program. For example, Wheaton and Sorensen (2010) show that an eligible NCP's income is $14,600 on average, if the NCP EITC is twice the expanded EITC for childless single taxpayers, compared to $24,600 if they set the NCP EITC equal to the full federal child-based EITC. Depending on how the amount of the child support order is determined relative to the NCP's income, different structures would target NCPs with varying burden levels.

Furthermore, some research suggests that the NCP EITC has an impact on NCPs' behaviors in child support payments and employment. Nichols and his colleagues (2012) use a regression discontinuity design to estimate the effects of the NYS NCP EITC on work and child support compliance during the first three years of implementation. They exploit the fact that nearly all NCPs in New York are obligated to pay child support until their children turn 21, but that the NCP EITC is only available for those who pay full child support to their children under age 18. Assuming that no other characteristics of parents and children change sharply around 18, they find that the NCP EITC increases full compliance by 2 percentage points and labor force participation by 1.6 percentage points. However, given that the median age of the youngest

nonresident child of NCPs who received the credit is only 9, the estimate cannot be generalized to most NCPs whose children are much younger than 18.

4.2.4 Behavioral effects of an NCP EITC

This study simulates distributional effects of several NCP EITC designs, focusing on the first-round effects of EITCs that have different eligibility criteria. Although one prior study did find some behavioral effects of the NCP EITC (Nichols et al., 2012), this study does not include behavioral effects. This section reviews likely behavioral effects for readers to understand the extent to which the focus on first-round effects is a significant limitation. Distributional analysis is performed with accounting methods (also referred to as arithmetic models, non-behavioral models, or an incidence analysis) to evaluate immediate outcomes of policy reforms including eligibility, benefits, costs, and their impacts on income and poverty (Araar & Verme, 2012; Peichl, Schneider, & Siegloch, 2010). This type of analysis is useful for us to examine effects of various designs of a policy, in this study, the NCP EITC.

In regard to behavioral effects, an NCP EITC requires earnings, low incomes, and child support payments. Considering earnings, an NCP EITC would theoretically incentivize an NCP's entry to the formal labor market because the first phase of the benefit increases the wage rate. In general, secondary earners are more responsive to wage rates than primary earners (Keane, 2011; McClelland, Mok, & Pierce, 2014). The wage elasticities for lower-income workers and married women are larger than those of men and unmarried women, although the elasticity for married women has declined over time (Doran, 2014; McClelland & Mok, 2012; Qin, van Huellen, & Wang, 2015). An older body of the literature finds evidence for positive impacts of the federal EITC on single mothers' entry into the labor force but not hours of work once in the labor force (Eissa & Liebman, 1996; Grogger, 2003; Hotz, Mullin, & Scholz, 2006; B. D. Meyer &

Rosenbaum, 2001) but a lack of effects among married men (Eissa & Hoynes, 2004). The response of childless single men to the EITC or NCP EITC is largely undocumented in this literature, except for one study of the NCP EITC (Nichols et al., 2012), primarily because the benefit levels and income limits are usually very low. The labor force participation rate of prime-age males has fallen from 96% in the 1960s to 90% in the 2000s, mostly due to a sharp decline in demand for less-skilled men (Juhn & Potter, 2006). If the primary reason for the decline in labor force participation is insufficient labor demand, then an NCP EITC would be anticipated to increase labor force participation of lower-income NCPs primarily in areas where the demand for their skills is adequate. If so, child support compliance is likely to increase through automatic garnishment of child support payments from formal earnings, further increasing the population eligible for the NCP EITC, especially for the one of which eligibility is based on full compliance.

An NCP EITC may also increase child support payments primarily because it is only available for those who are paying their order in full, but a full-compliance model does not encourage more payments for those who have already paid in full. Moreover, it directly increases an NCP's post-tax income, and an NCP's income is positively associated with the likelihood of any child support receipts, compliance rates, and the amount of support paid (Bartfeld & Meyer, 1994; Cancian, Heinrich, & Chung, 2009; D. R. Meyer & Bartfeld, 1996; Daniel R. Meyer, Cancian, & Cook, 2005). Specifically, Smock and Manning (1997) estimate that the child support payment raises by 13 cents with each dollar increase in the NCP's income for divorced parents; Cancian et al.'s (2009) estimate is around 10 cents for paternity cases. Considering these effects together (increasing payments in order to become eligible and increasing payments as a result of the EITC's additional income), one study estimates a positive effect of the NCP EITC on child support compliance (Nichols et al., 2012). Studies on other expenditure-based tax

credits also suggest that those credits can increase consumption of certain goods or services; for example, a child care tax credit is associated with an increase in utilization of paid child care (Ribar, 1995); consequently, a credit for those who pay child support may increase payments.

An NCP EITC could also increase the number of child support orders. When child support owed is lower than the amount of an NCP EITC, the NCP can not only offset his child support payments entirely but also receive extra rewards for his compliance. Moreover, even if the owed amount is not lower than the NCP EITC amount, an NCP who is providing informal support may seek a formal child support order for the same amount currently paid to become eligible for the NCP EITC. Therefore, more parents may be willing to establish a child support order in the first place because child support is less costly or because their post-tax income is higher, increasing the pool of NCPs that are potentially eligible for the benefits.

However, for those who have orders, there may also be incentives to decrease their amount owed. The existing NCP EITCs and proposals require full compliance with one's child support order, in addition to having a low income, to qualify for the benefit. This could provide incentives for an NCP to lower his child support order such that compliance is easier. Although child support orders are seldom modified in reality (Ha et al., 2010), future NCPs may be inclined to negotiate their child support orders downward in the face of this full-compliance requirement.

Some types of NCP EITCS will have different incentives on orders and payments than the full-compliance model discussed thus far. For example, if an NCP EITC allocates benefits based on the burden of child support payments, the likely behavioral effects are more complex. Parents may either maintain their child support orders even when their earnings decline, knowing that their increasing burden of payments would eventually be reimbursed by the NCP EITC, or

reduce their income such that the level of burden algebraically becomes high. Requiring paying more than a threshold encourages higher payments for parents that currently pay below this threshold, if the utility derived from the credit and more expenditures on children exceeds the loss in the utility of own consumption (the decline in income due to more child support paid).

Finally, another behavioral change that may follow the establishment of an NCP EITC is an increase in tax filing. Some NCPs may not file taxes currently because their taxable income is below the threshold and they are not eligible for many tax benefits. The NCP EITC could, on the margin, make it more worthwhile to file taxes.

Considering all these potential factors, to conclude, the effects on compliance, order establishment, and tax filing are theoretically positive. In contrast, while there are aspects of an NCP EITC that could be associated with an increase in total child support payments and labor supply, the previous research suggests these effects may be positive or nonexistent.

4.2.5 Summary

Based on this literature review, an NCP EITC could alter NCPs' income, earnings, and paying behavior and thus their own financial wellbeing and that of their children. However, all current versions require full payments, and this review suggests that that may not be the most appropriate strategy. Because parents have different orders, burden levels, and make different payments, in this study I consider alternative designs that allow parents who pay high child support but who do not make full payments to be eligible for this credit and show the variation in predicted effects. Before I introduce these designs, I summarize the data that I use to simulate NCP EITCs' impacts on noncustodial parents.

4.3 Methodology

4.3.1 Data and Samples

An investigation of the likely impacts of NCP EITCs requires information on the NCP's economic and demographic characteristics. This is important because the amount of the tax credit is a function of his taxable income. In addition, without the data on the number of dependents that an NCP supports, the policy may inadvertently assume that the NCP is only economically responsible for himself and therefore that supporting his children is not overly demanding. This study uses the NCP's reports of his circumstances in the Fragile Families and Child Wellbeing Study (FFCWS). The FFCWS sample is representative of live births occurring in large U.S. cities between 1998 and 2000.[40] It follows these children and their parents at age one, three, five, and in the most recent release, age nine, collecting detailed information on both parents' income, employment, family characteristics, and relationships. Data are drawn from the noncustodial father's reports in the Nine-Year Survey (wave 5, conducted in 2007-2010) in order to capture a sizeable number of parents who have separated or divorced since the child's birth.

To select my sample, I start with all 2,652 fathers in wave 5 and first focus on the relationship between the father and the mother of the focal child. I eliminate 981 fathers who are married to the mothers, 296 fathers who are cohabiting with the mothers, 15 cases in which the mother is deceased or the fathers' relationship with the mother is missing, 123 fathers who have primary custody of the children, 35 cases that are missing on either child support orders or payments, and 40 cases that have a zero weight, leaving a sample of 1,162 noncustodial fathers, all of whom are in the age range of 25-64. Among them, 523 have other nonresident children (with women other than the mother of the focal child in FFCWS), and 258 have child support

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[40] I use the city weight for a pragmatic reason, because using the national weights effectively reduces the sample with child support orders by close to 30 percent. Four out of the 20 cities are not included in the national sample because they were not cities with populations over 200,000 in 1994.

orders for their other nonresident children.[41] Some of them paid child support, but the amount of support due for their other children is not asked in the survey. Hence, I focus on the legal agreement that requires the father to pay child support to his children with the mother and only include relevant statistics for other orders in footnotes. Although the sampling structure means that these data do not include representative numbers of NCPs with children other than age 9 or NCPs of children born in rural areas, they provide some of the best data available on NCP's characteristics.[42]

4.3.2 Income and Poverty Measures

To construct variables on child support, I only count NCPs whose focal child support orders have been in effect for at least half year as those with orders. NCPs are asked about how much their child support payments are supposed to be in an indicated timeframe in the past 12 months, and I annualize the amount they provide assuming that the same amount was owed throughout the year. For NCPs who have had orders for 7 to 11 months, this annual amount is multiplied by the ratio of the year for which the order has existed. Then NCPs are asked to report whether they paid all of the amount, some of the amount, or none of the amount agreed upon. NCPs are asked to indicate a range of the payment amount if they paid partially; the midpoints of these ranges are the amounts I assume they paid in fulfillment of their orders.[43] For NCPs who

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[41] In addition, 418 of fathers who are married to/cohabiting with the mothers have nonresident children with women other than the mothers. The amounts of their child support orders are not identified in the survey, and therefore, I omit these fathers in my analysis.

[42] Note, however, that the FFCWS had some difficulty following up parents. Prior analysis suggests that the families attrited out of the nine-year survey are more economically disadvantaged (Currie, Duque, & Garfinkel, 2015; Pilkauskas, Garfinkel, & McLanahan, 2014). To some extent, weights can account for differential attrition.

[43] I run an iterative program on the data to refine total payments by the father, such that the amount paid is always less than the amount owed for *those that reported they paid only some of the amount owed*. For example, for fathers who paid some of the amount owed and indicated a range between $2,001 and $3,000, their total payments are coded $2,500 if their orders are larger than $2,500. If not, this variable is coded $2,250 (the midpoint of $2,000-$2,500) for those with orders that range between $2,251 and $2,500, and so forth. For fathers who made only partial

report full payments, the amount paid is exactly equal to the amount owed. Mothers' reports of

child support paid and owed are used to replace missing values in the variables on orders and

payments for fathers.

I include the father's earnings from employment,[44] own businesses, other sources, under-

the-table activities, Supplemental Security Income (SSI), and unemployment insurance in my

measure of personal income; I include TANF, SNAP, SSI received on behalf of children, and

earnings of the father's spouse in family income. For my simulations I need information on the

NCP's taxable income, his spouse's taxable income if present, and his filing status. Taxable

incomes in my simulations include earnings from employment, own businesses, other sources,

and unemployment insurance. Nontaxable incomes include informal earnings, SSI, TANF, and

SNAP. Throughout this paper, personal and family incomes refer to incomes including taxable

and nontaxable incomes unless otherwise indicated. Starting with Table 4.4 I begin to include the

simulated EITC and child tax credit in my measures of income and poverty. Counting taxes in

Tables 4.4 and 4.5 and SNAP benefits throughout all tables are the two differences from the

sources of income considered in the federal poverty lines.

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payments and reported a range that is definitely larger than their orders, the amount owed is considered to equal to the amount paid, and therefore, they are treated as full compliers. (For example, for fathers who owed $1,500, paid only some of this amount, and indicated they paid $2,000-$3,000, their payment variable is coded $1,500.) In this approach, no fathers paid more than what was owed. Among fathers who had low incomes and child support orders, 210 reported that they paid some of the order amounts and offered ranges of payments. Twenty-six fathers reported ranges of which the lower limits were higher than their orders and thus are considered full compliers. In addition, the iterative program changes initial midpoints of the payment ranges for 155 fathers whose initial midpoint amounts are larger than their orders.

[44] I conduct multiple imputation for 79 noncustodial fathers with missing earnings from employment (7% of the sample), all of whom reported working at least some time in the past 12 months. Predictors in the imputation model include demographic characteristics (father's age, race/ethnicity), family structure (married or cohabiting, the number of resident and nonresident children), education, incomes (earnings from employment, own businesses, and other activities, UI, TANF, SNAP, SSI, and household income), total child support payments, and health (have health insurance coverage and/or a health problem that limits the work he can do). All other income sources, described in the text below, are coded as nonexistent (zero) if missing.

Respondents are instructed to report the total household income before taxes and other deductions, including their own income and the income of everyone in the household. However, the survey does not separately ask the father about a married or cohabiting partner's and other household members' incomes. In some cases, the reported household income is larger than the sum of all incomes asked to the father. I treat this remaining income as the father's earnings if neither his married/cohabiting partner nor other household members works, the married/cohabiting partner's earnings if she works, and other household members' earnings if she does not work and they work. The "family" income measure only includes the father's income, the amount considered his spouse's income, his reports of TANF, SNAP and SSI, but not what is treated as other household members' income. I also assume that NCPs do not borrow to finance their child support payments by requiring their personal income to be at least equal to or larger than the total amount of child support paid (see Appendix 4.A for more detail on the construction of household and personal income). For NCPs who are married and living with their spouses, their filing status in my simulations is married filing jointly; all other NCPs are assumed to file as single taxpayers.

I use the father's taxable income (and his spouse's if married) to subset my sample into all NCPs, NCPs with low taxable income, NCPs with child support orders, NCPs with low taxable income and child support orders. I count any children living with NCP as his dependents, and for the purposes of the NCP-EITC, I count the number of children covered by the NCP's child support agreement as additional nonresident "dependents". I summarize personal and family taxable incomes only in Table 4.2, and afterwards I focus on personal and family incomes and use them to construct the NCP's poverty status and the poverty gap. Similar to the official poverty measure, I count only the NCP's resident children and consider his spouse if he is

married in my measures of poverty status and the poverty gap, and I omit a cohabiting partner's income. I subtract the NCP's family income from the poverty line to calculate the poverty gap and set negative values to zero. A positive gap means the amount of income needed to lift him out of poverty. This measure shows how much policy helps reduce the depth of poverty, not merely showing only people with post-transfer incomes enough to pass the poverty lines as the poverty status measure. I sum up the poverty gap across all NCPs in each sample with weights and present the total poverty gap in my results. All income measures are adjusted to 2013 dollars, the most recent year available in TAXSIM9.

4.3.3 Analytic Methods

The primary purpose of this study is to propose eligibility rules for an NCP EITC that could be considered by policymakers and to understand how these different eligibility rules would affect the types of NCPs served by an NCP EITC program. I only conduct simple distributional analyses, assuming no behavioral changes such as adjusting child support orders, changing child support payments or labor supply. I use TAXSIM9, a package of programs that implements a microsimulation model of the U.S. federal and state income taxes (Feenberg & Coutts, 1993), to calculate the NCP EITC described in each of the designs.[45]

The eligibility features of the designs I consider are summarized in the final rows of Table 4.1. I modify the Washington, D.C. NCP EITC and set this modified policy as policy A. In policy A (as well as the current New York and D.C. policy), an eligible NCP must fully comply with his child support orders. The NCP EITC is equal to 40% of the federal child-based EITC, depending on the number of nonresident children covered by his focal order, and income

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[45] Geographic identifiers such as state indicators are only available for investigators under a restricted use contract, and therefore, I omit state taxes and credits in my simulations.

eligibility is based on the Washington, D.C. policy[46] In the D.C. design, NCPs who claim the

federal and D.C. child-based EITCs are not allowed to claim the D.C. NCP EITC. Different from

the D.C. policy, in policy A as well as other policies, I eliminate the interactions of the NCP

EITC with the child-based EITC by allowing such parents to claim both credits. I also change the

age range from 18 to 30 to 25 to 64 in order to include more NCPs and follow the parameter of

the national proposal.

I then change the requirement of child support payments in alternative schemes but

maintain benefits at 40% of the federal EITC throughout all schemes. In policy B, eligibility

requires that NCPs either pay all child support due or pay a significant portion of their income.

Some have suggested that compliance is lower for orders that are over 19-22 % of income

(Takayesu, 2011). Therefore, NCPs who pay more than 20% of their income are also eligible for

policy B.

In policy C, eligibility is limited to NCPs who fully comply with their child support

orders or those who pay at least 30% of the average expenditures on children by lower-income

single-parent families. These expenditures average around $11,300 for a single parent with one

child,[47] so 30% would be about $3,400. According to a standard income shares model for

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[46] Specifically, in 2015 for example, an NCP in Washington, D.C. must have a federal adjusted gross income for 2015 less than $39,131 ($44,651 if married or registered domestic partners filing jointly) with one nonresident child, $44,454 ($49,974 if married or registered domestic partners filing jointly) with two nonresident children, and $47,747 ($53,267 if married or registered domestic partners filing jointly) with three or more nonresident children. These income limits are identical with those of the 2015 federal EITC.

[47] I calculate the expected expenditures on children assuming that the NCP's children live only with the CP and that all of those children require the average expenditures for an eight-year old in a single-parent family with household income in the lowest range (less than $61,530 in 2013), using the formula developed by the U.S. Department of Agriculture (USDA) (Lino, 2014). Specifically, for single parents with one eight-year-old child, the amount of the expenditures is $8,800 × 1.29; for those with two children, it is $8,800 + ($8,800 × .97); for parents with three children, it is ($8,800 + ($8,800 × .97) + ($8,800 × .97)) × .77. To derive this formula, Lino uses data from the Consumer Expenditure Survey, distinguishes expenses allocated directly to children versus those that are not, estimates child expenditures in single-parent households using household income, number of children, and age of the younger child, and obtains coefficients to predict expenditures on children for different household types.

determining child support, an average noncustodial father would be ordered to pay around 60%

(or 5/9) of the total expenditures on children (about $6,800) if the mother's income was about

80% of the father's (footnote 8). Thus if an NCP paid $6,800 for one child, this could be seen as

paying the average "fair share" of expenditures. However, a custodial parent can claim the full

federal EITC, and the NCP EITC is worth only a portion of this. Thus, I consider paying at least

30% of the average child expenditures to be "fair" in terms of lower benefits in the NCP EITC.[48]

In policy D, NCPs who pay at least 30% of the average expenditures meet the child support

requirement, regardless of whether they pay child support in full.

The general approach is to examine the characteristics of NCPs who would be eligible for

the NCP EITC in each of these four eligibility designs (requiring full compliance, full

compliance or paying a high burden, full compliance or paying a share of expenses, or just

paying a high share of expenses). In all of these scenarios, I assume that in the short run parents

do not have their child support orders modified and do not change their behavior in child support

payments or labor supply. Thus the models can be seen as estimates of short-run effects, before

behavioral changes have been made in response to the new incentives.

4.4 Results

4.4.1 Characteristics of Noncustodial Parents

Table 4.2 summarizes characteristics of all NCPs, income-eligible NCPs, NCPs with

child support orders, and income-eligible NCPs with child support orders. An "income-eligible"

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[48] One might argue that an NCP should only be required to pay 24 percent of average expenditures, since the benefit is 40% of the EITC, and on average he is expected to contribute 60 percent. Instead, I require 30 percent to reflect that custodial parents have higher implicit costs (foregone economic opportunities from caregiving, etc.). Note also that some might argue that the lower benefits in the NCP EITC should not result in NCPs being rewarded for contributing less than their share. I choose 30% not as a normative statement about who should be rewarded but for a pragmatic reason: fewer than 5% of lower-income NCPs with orders pay 60% of average expenditures.

Table 4.2 Characteristics and Pre-Tax Income of Noncustodial Parents with Child Support Orders

	All NCPs	Income-eligible NCPs[2]	NCPs with child support orders	Income-eligible NCPs with child support orders
Sample size	1,162	723	684	416
Weighted sample size	99,219	64,359	48,778	29,989
Share of all NCPs	1.000	0.649	0.492	0.302
Personal taxable income[1]	35,306	21,074	39,284	20,741
	(2,328)	(1,184)	(3,648)	(1,460)
Family taxable income	37,258	21,400	42,136	21,028
	(2,400)	(1,174)	(3,780)	(1,458)
Personal income[3]	35,650	21,243	39,534	20,863
	(2,325)	(1,176)	(3,645)	(1,453)
Family income[3]	38,160	22,116	42,774	21,605
	(2,373)	(1,179)	(3,771)	(1,454)
Family poverty status[4]	0.267	0.310	0.236	0.330
Total family poverty gap[4, 5]	218,855,568	160,454,752	88,748,552	71,657,648
	(26,549,969)	(19,327,453)	(11,209,612)	(96,663,057)
Income-eligible[2]	0.649	1.000	0.615	1.000
Family's earned income = 0	0.067	0.000	0.036	0.000
NCP is married	0.157	0.128	0.182	0.117
Living with other biological children	0.323	0.359	0.290	0.296
One child lives elsewhere	0.503	0.475	0.485	0.499
Two or more children live elsewhere	0.497	0.525	0.515	0.501
Required to pay child support	0.492	0.466	1.000	1.000
Any child support payments			0.905	0.910
% paying child support in full			0.672	0.594
Child support due			5,566	4,454
			(452)	(424)
Child support paid			4,502	3,244
			(422)	(262)
Child support paid, > 0			4,976	3,565
			(459)	(282)
Child support paid/family taxable income[2]			0.168	0.219
Paid <20% of family taxable income			0.792	0.692
Paid 20-30% of family taxable income			0.087	0.124
Paid 30-40% of family taxable income			0.028	0.044
Paid >40% of family taxable income			0.094	0.140

Child support paid/expenditures	0.287	0.210
<30% of the average expenditures	0.653	0.803
30-45% of the average expenditures	0.157	0.108
45-60% of the average expenditures	0.059	0.047
>60% of the average expenditures	0.131	0.042

Notes:

1. All incomes in this table are pre-tax dollars.

2. An income-eligible NCP is one with both his family earned income and family taxable income (or AGI, adjusted gross income) greater than zero and less than the limit of the federal EITC, based on his marital status and the number of his children living elsewhere. To claim the NCP EITC, an NCP must also meet the requirement of child support payments. Here, family taxable income (AGI) includes the father's earnings and UI benefits, and his spouse's if married.

3. Personal and family incomes include both taxable and nontaxable incomes. Personal income includes the NCP's taxable income, informal income, and SSI benefits. Family income consists of SNAP, TANF, and all incomes of the father and his spouse if he is married.

4. I consider family income, the number of the father's biological resident children, and his marital status in identifying the family's poverty status and poverty gap. For example, if the father is married and living with two children, I use the poverty threshold for households with two adults and two children. I omit income of the father's cohabiting partner because she is not counted in the federal measure of poverty.

5. I only summarize the family poverty gap for NCPs whose family poverty status equals one (i.e., the poverty gap is greater than zero).

6. Standard errors in parentheses.

NCP is one with both family earned income and taxable income (or adjusted gross income) greater than zero and less than the limit of the federal EITC, based on his marital status and the number of children living elsewhere. This is one of the requirements of a D.C.-based NCP EITC policy, the one I choose to focus in this study. Among all NCPs, the average taxable personal income is around $35,300 per year (column 1); counting his informal income and SSI only increases this number by $343 (see personal income row). Taxable family income is higher than the taxable personal income by $1,951, since some NCPs are married (to women other than the focal children's mothers) and this measure includes spousal income. Counting the family's untaxed income (SSI, SNAP, TANF, and informal income) increases the taxable family income by $903, to $38,160.

The poverty rate based on family income is 27%, is slightly lower than the most recent national estimate for custodial parents, 28.8% (Grall, 2016) (note that my measure includes more income sources than the official measure). However, NCPs in the FFCWS have lower income than those in other nationally representative surveys such as SIPP because parents in the FFCWS are younger and live in large cities, as a result of the sampling scheme. For example, the median family income of NCPs paying support in FFCWS is $32,100 (not shown in the table); in SIPP it is over $40,000 (U.S. Census Bureau, 2011). About 6.5 out of ten NCPs would be income-eligible for the NCP EITCs I examine in this study. Therefore, I separately summarize their characteristics in column 2. Among all NCPs (column 1), the total poverty gap is 219 million. Among NCPs income- and earnings-eligible for the NCP EITC (column 2), the total gap is lower because some NCPs who are poor by the official definition of poverty are not eligible for the NCP EITC (primarily because they do not have formal earnings). Around half of all NCPs (column 3) have formal child support orders, which is one important requirement in my NCP EITC scenarios. Finally, column 4 includes only income-eligible NCPs with child support orders, the population for which effects of various criteria for child support payments would be simulated in this study.

The population of interest for the NCP EITC (column 4) accounts for 30% of all NCPs. Among these NCPs, the average family income is only $21,605, and the poverty rate is very high, around one third. The total poverty gap appears to be lower for this group than for all NCPs with child support orders, again, because there are NCPs who are below poverty but not eligible due to a lack of earnings. About half of these parents have one nonresident child and about half have two or more nonresident children. Thirty percent of these parents who are potentially eligible for

the NCP EITC live with other biological children and thus might also be eligible for the standard EITC.

Child support information is limited to those with child support orders (the final two columns). On average, income-eligible NCPs with orders owe $4,454 in child support per year; their average annual amount of payments is $3,244, or $3,565 among those who pay (payments to other children are around $690 per year and excluded from these figures). Nine out of ten report that they made any child support payment during the previous year. Around 60% of these NCPs indicate that they fully complied with their child support orders and thus would be eligible for a typical national proposal that requires full compliance. The burden of child support payments is high among low-income NCPs; on average, they pay slightly more than a fifth of their taxable income in support. Finally, slightly more than one fifth of parents in the final column pay child support that totals at least 30% of the average expenditures on children.

Comparing statistics across columns, major differences are mostly found between higher and lower-income noncustodial parents. For example, among lower-income NCPs (i.e., income-eligible NCPs), all measures of income and poverty are statistically similar between parents with and without orders. Among all NCPs, parents with child support orders have statistically higher family and personal income than those without orders, although these differences are not as large as those between higher- and lower-income groups. On the other hand, NCPs' demographic characteristics do not differ statistically across subpopulations defined by order or income status.

4.4.2 Who are the Eligible NCPs Eligible Under Different Scenarios?

Table 4.3 presents income and child support characteristics of the eligible NCPs (those who were in the final column of Table 4.2) under different scenarios. Row 1 shows that 59% of these NCPs would be eligible under a typical program that requires full compliance with the

Table 4.3 Child Support and Pre-Tax Income of Eligible Noncustodial Parents under Alternative NCP EITC Scenarios

Child Support Requirement	A. Full compliance		B. Full compliance, or >20% income		C. Full compliance, or >30% expenditures		D. >30% expenditures	
Percent of income-eligible NCPs with orders	59%		66%		62%		20%	
Family income	22,648	(1,328)	21,170	(1,207)	22,564	(1,284)	24,643	(1,650)
Poverty status, family income	0.234	(0.048)	0.292	(0.050)	0.242	(0.047)	0.248	(0.058)
Total poverty gap, family income	31,064,455	(6,426,974)	47,284,945	(7,753,447)	32,838,885	(6,480,876)	7,818,523	(1,885,026)
Child support owed	4,226	(420)	4,299	(386)	4,370	(422)	7,481	(511)
Child support paid	4,226	(420)	4,074	(371)	4,243	(403)	7,081	(529)
Compliance level	1.000	(0.000)	0.957	(0.013)	0.987	(0.010)	0.958	(0.029)
Contribution level (paid/expenditures)	0.280	(0.027)	0.268	(0.024)	0.283	(0.026)	0.503	(0.035)
Burden level (paid/family taxable income)	0.280	(0.037)	0.300	(0.035)	0.284	(0.036)	0.396	(0.044)
Poverty status, family income - paid	0.333	(0.060)	0.390	(0.060)	0.339	(0.058)	0.403	(0.075)
Percentage-point increase of poverty rate	0.099	(0.027)	0.099	(0.025)	0.097	(0.026)	0.154	(0.051)
Total poverty gap, family income - paid	52,200,829	(8,374,220)	72,465,619	(9,565,347)	55,657,927	(8,487,603)	21,342,304	(3,897,426)
Increase in total poverty gap	21,136,373	(3,230,400)	25,180,673	(3,321,438)	22,819,042	(3,285,926)	13,523,782	(2,529,495)
2+ nonresident children	0.453	(0.076)	0.457	(0.070)	0.443	(0.073)	0.365	(0.072)
Have resident children	0.267	(0.056)	0.278	(0.053)	0.264	(0.054)	0.270	(0.084)
NCP is married	0.152	(0.048)	0.150	(0.044)	0.146	(0.046)	0.168	(0.087)

Notes: Family income consists of all incomes of the father and his spouse if he is married. All incomes in this table are pre-tax dollars. Standard errors are presented in parentheses. The poverty gap and change of the poverty gap after payments are summarized only for NCPs with values greater than zero.

child support order (policy A). The policy that results in the largest number of eligible NCPs is one that requires full compliance or payments of more than 20% of their income (B). This design increases the proportion of eligible NCPs from 59 to 66 percent. Making the NCP EITC available for NCPs who do not fully comply with their orders but pay more than 30% of the average expenditures on children adds fewer NCPs, increasing the proportion of eligible NCPs by only 3 percentage points, from 59% to 62% (C). In contrast, an NCP EITC based solely on the amount of payments relative to average expenditures (D) results in an even smaller proportion of NCPs that are eligible: around a fifth of NCPs.[49]

Across all scenarios in Table 4.3, policies that require child support payments higher than 30% of the average expenditures on children (D) reach financially better off NCPs, followed by policies that require full compliance (A) and either full compliance or 30% of the expenditures (C). Policies that require full compliance or payments of 20% of family income in support (B) include more impoverished NCPs. For example, the average family income is about $22,600 in the model that requires full compliance and the model that requires full compliance or 30% of the expenditures, compared to around $21,200 in the model that allows those paying a high burden to be eligible. The total poverty gap for policy B or C is mechanically larger than the total under policy A because more poor NCPs are eligible; the total poverty gap is the smallest in D. The average child support payments are lowest among eligible parents under the burden-of-payments model (B) and highest among eligible parents under policies that require 30% of the expenditures (D). Their burden of payments is highest among NCPs who pay 30% of the

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[49] I also tested other eligibility thresholds for these policies. For example, for policy B, increasing the 20% threshold to 30% of the NCP's income does not change the eligibility rate. For policy C, raising the 30% threshold to 40% of the average expenditures on children eliminates eligible parents by less than one percentage point. For policy D, only 11% of NCPs are eligible if policy requires paying more than 40% of the expenditures on children. For policy D again, counting both the focal and other orders increases total child support payments; however, this also increases the number of nonresident children and thus the total expenditure threshold, resulting in only 12% of NCP eligible for the tax credit in this scenario.

expenditures (D). Child support payments have the largest impact on poverty among NCPs who pay 30% of the expenditures (D); payments increase their poverty rates by 15 percentage points and the total poverty gap by 173%. The amount of the increase in the total poverty gap, however, is the largest under B because more eligible parents are poor both before and after payments and for these parents their entire payments contribute to the increase. These poverty measures ignore any NCP EITC payments and taxes, and the next subsection discusses the impacts of NCP EITC on post-tax income and poverty.

4.4.3 What are the Impacts on Income under Different Scenarios?

My subsequent analysis simulates the NCP EITC for each of the eligibility scenarios (policies A-D) and shows their estimated impacts on NCP income and poverty outcomes, shown in Table 4.4. The average NCP EITC benefit is $1,045 in policy A, which requires full compliance with child support orders. The average benefits in C are almost identical to those under A, primarily because there are very few NCPs who fail to comply with their orders but pay more than 30% of the average expenditures. Benefits in B are slightly lower than those of A. However, NCPs who are eligible under B and partially complying with their orders have much lower post-tax family income than full compliers ($8,600 and $22,300, respectively; also see statistics in Table 4.5), resulting in a lower average of NCP EITC payments. Although child support orders are not statistically different between these two groups, partial compliers in B pay less child support than full compliers by $1,500. The average benefits under D are also lower than A primarily because NCPs in this scenario have fewer nonresident children (and therefore are assigned with lower amounts of expected expenditures on children).

How do NCP EITC transfers affect poverty in each of the four eligibility scenarios? I subtract child support payments from the NCP's income and compare the change in poverty

Table 4.4 Benefit Levels and Impacts of the NCP EITCs on Post-Tax Family Income and Poverty

Policy	A	B	C	D
Child Support Requirement	Full compliance	Full compliance, or >20% income	Full compliance, or >30% expenditures	>30% expenditures
1. NCP EITC	1,045	1,029	1,037	944
2. Poverty rate (INC)	0.215	0.272	0.221	0.208
3. Poverty rate (INC-CS)	0.322	0.381	0.329	0.386
4. Poverty rate (INC+NCP EITC-CS)	0.302	0.362	0.308	0.367
5. Percentage-point reduction in poverty rate (rows 3, 4)	0.020	0.019	0.020	0.019
6. Total poverty gap (INC)	24,823,666	39,653,610	26,257,178	5,670,560
7. Total poverty gap (INC-CS)	45,533,715	64,340,986	48,551,349	18,973,385
8. Total poverty gap (INC+NCP EITC-CS)	39,392,540	56,751,810	41,959,517	16,215,793
9. Reduction in total poverty gap (rows 7, 8)	6,141,176	7,589,177	6,591,832	2,757,592
10. NCP EITC/CS Paid	0.436	0.430	0.426	0.148
11. NCP EITC/CS Paid > 1	0.046	0.041	0.044	0.000
12. NCP EITC/INC	0.062	0.067	0.062	0.054

Notes: In all policy scenarios, benefits equal to 40% of the EITC for full compliance, at least 20% of income or 30% of expenditures. INC: Annual post-tax family income; CS: Child support payments.

before and after the NCP EITC transfer (rows 3 and 4). Row 5 shows the percentage points by which a policy scenario reduces the poverty rate. The effects on poverty reduction are similar across the four policy scenarios, by 2.0 percentage points. The scale of reduction is the highest among eligible parents in policies A and C because their post-child-support-income poverty rates are lower than those of parents in policies B and D. The reduction in the total poverty gap is the largest in policy B, by around 7.6 million dollars. However, because the total poverty gap before the NCP EITC is the smallest in D, its total poverty gap decreases by the largest degree. The average benefit is the largest ($1,241) in policy D among NCPs who are poor before the NCP EITC and the smallest ($1,051) in policy B because more parents in D have higher earnings,

leading to higher NCP-EITC benefits. However, among NCPs who are not poor the benefit under D is lower ($757) than among those in B ($1,016) for the same reason.

To conclude, policy D reaches economically better-off parents whose child support payments substantially impoverish them. Policy B transfers benefits to NCPs who are destitute in the first place and even more so after child support payments, although their average payments are lower than those of other lower-income NCPs. All policies increase eligible NCPs' income by a similar amount and decrease the poverty rate by a similar degree, although policy D reduces the total poverty gap by a larger scale due to the smaller total gap before the NCP-EITC transfer.

Focusing on the NCP EITC relative to child support payments, I find that policy D, which requires paying more than 30% of the average expenditures, emerges to be fundamentally different from A, B, and C. This is primarily due to the fact that it is solely based on the amount of payments rather than compliance (paid divided by owed). For example, row 10 shows that in A, B, and C, the NCP EITC subsidizes around 43 cents for each dollar paid in child support, whereas in policy D this rate is 15 cents per dollar paid. For about 4 percent of noncustodial parents in policies A-C, the NCP EITC benefit is greater than the amount of child support paid. In policy D, the NCP EITC benefit is always smaller than child support payments. The NCP EITC is equal to 6% of the NCP's post-tax family income in policies A and C, 7% in policy B, and 5% in policy D.

4.4.4 Who is not Eligible in Policies that Require Full Compliance?

In my final analysis, shown in Table 4.5, I examine NCPs who are making some payments but would not be eligible by the policy that requires full compliance. That is, I focus on those NCPs who are paying enough to be eligible under different rules, even though they are not fully complying with their orders. The first column shows those eligible under a full

Table 4.5 Characteristics and Post-Tax Income of Noncustodial Parents Who Are Fully Complying, and Those Not Fully Complying but Meet Other Eligibility Criteria

	Fully complying NCPs	Not fully complying, but paying >20% income	Not fully complying but paying >30% expenditures	Paying >30% expenditures
Percent of low-income NCPs with orders	0.594	0.067	0.026	0.197
NCP EITC	1,045	891	860	944
Family income (INC)	22,286	8,602	20,053	24,064
Child support order	4,226	4,946	7,621	7,481
Child support payments	4,226	2,717	4,614	7,081
Compliance ratio	1.000	0.574	0.687	0.958
Contribution level (paid/expenditures)	0.280	0.167	0.358	0.503
Burden level (paid/INC)	0.280	0.474	0.366	0.396
Poverty rate (INC)	0.215	0.781	0.355	0.208
Poverty rate (INC-CS)	0.322	0.903	0.475	0.386
Poverty rate (INC+NCP EITC-CS)	0.302	0.890	0.442	0.367
Percentage-point reduction in poverty rate by NCP EITC	0.020	0.013	0.033	0.019
Total poverty gap (INC)	24,823,666	14,829,944	1,433,511	5,670,560
Total poverty gap (INC-CS)	45,533,715	18,807,271	3,017,634	18,973,385
Total poverty gap (INC+NCP EITC-CS)	39,392,540	17,359,270	2,566,977	16,215,793
Reduction in total poverty gap by NCP EITC	6,141,175	1,448,001	450,657	2,757,592
NCP EITC/CS paid	0.436	0.372	0.178	0.148
NCP EITC/CS paid > 1	0.046	0.000	0.000	0.000
NCP EITC/INC	0.062	0.113	0.064	0.054
2+ nonresident children	0.453	0.488	0.195	0.365
Have resident children	0.267	0.378	0.192	0.270
NCP is married	0.152	0.126	0.007	0.168

Notes: Family income (INC) refers to post-tax family income; CS represents child support paid.

compliance rule, for comparative purposes. The next column summarizes characteristics of

NCPs who do not fully comply with orders but who pay more than 20% of their income in

support. They account for 7% of lower-income working NCPs with child support orders. Their

orders are statistically similar to those of fully complying lower-income parents, but their

payments are lower. They pay around 60 cents of each dollar owed. These fathers have very low incomes (averaging around $8,600), and close to 80% of these NCPs live in poverty. It is their very low income that makes them bear a high burden of payments (paid divided by income) and thus eligible for the policy scenarios that require either full compliance or high burden. The NCP EITC is $890, reducing the total poverty gap by 8%. The NCP EITC benefits are low in themselves but quite substantial relative to parents' income and child support payments.

The average income is $20,100 among low-income NCPs who do not fully comply with their child support orders but who pay more than 30% of the expenditures on children, compared to $24,100 among all low-income NCPs who pay more than 30% of the expenditures. They are ordered to pay $7,600 in child support, statistically similar to the amount among NCPs who both comply with their orders and pay more than 30% of the expenditures. Although their total payments are high relative to average child expenditures, their compliance ratios are low. Lower income and still high support orders may be the reason for their partial compliance. They are not eligible for typical NCP EITCs in debate, although their child support payments are statistically similar to the amount paid among fully complying NCPs. If the NCP EITC is made available to these parents and equal to 40% of the child-based EITC, the average benefits are about $860. The degree of poverty reduction is relatively high, especially among those who are poor after child support payments and before the NCP-EITC benefits. Nonetheless, it is worthwhile to note that they account for only a small share of all low-income working NCPs with child support orders (3%); this means that the costs of including them may be relatively small.

4.5 Discussion

4.5.1 Summary of Findings

This study provides important estimates for a policy approach that aims to address poverty and child support issues among noncustodial parents. The majority of NCPs are not married, do not live with their children, and many have low personal and family income. The amount of public support available to NCPs who do not live with children is generally low even if they are income eligible for some programs for families who have children; a widely debated example is the federal EITC for single childless tax filers. Are some of the NCPs financially in need, supporting their children who live outside of their households, and yet not eligible for many income support programs? Based on my estimates, half of NCPs are required to pay child support to their children who live elsewhere. Close to two thirds of all NCPs have family income below the limits of the federal child-based EITC, and around a third of all NCPs have low income as well as child support orders. Meanwhile, nationwide, a third of lower-income working NCPs with child support orders also support their other children who live with them.

NCP EITCs for lower-income NCPs who pay child support have been implemented in New York and Washington, D.C. and proposed to Congress for national implementation. This study examines how this policy can be designed based on characteristics of NCPs, with a focus on its child support requirement. Policies that require full compliance with child support orders could cover a significant proportion of NCPs who are ordered to pay child support. However, some lower-income NCPs make high payments relative to their income but do not fully comply with their orders. Still others pay high support relative to the average expenditures on children but do not meet this requirement. Therefore, I examine the different NCPs that can be reached by NCP EITCs available for parents with full payments or high contribution in terms of the average expenditures on children, parents with full payments or high burden of payments, and only parents with high contribution.

Of the scenarios I examine, the policy that is available for parents with high burden, in addition to fully complying NCPs, will reach some of very low-income working NCPs with orders. This type of policy would benefit impoverished NCPs who try to pay child support. Policies that require high contribution in terms of the average expenditures on children reach slightly better-off NCPs, followed by the base model that requires full compliance. Only 18% of all NCPs would be eligible for the base full-compliance model. Adding NCPs with a high burden of payments only increases this proportion by 2 percentage points; adding instead NCPs with high payments relative to child expenditures increases this by less than one percentage point. Only 6% of all NCPs who pay more than a chosen share of average child expenditures will be eligible in a model that requires payments at least that amount. However, the NCP EITC benefits are of significant sizes to those lower-income NCPs who support their children, especially for those with high orders and low earnings.

In terms of post-child-support income, most of the eligibility models I examine have similar and small effects on poverty rates, primarily due to a small number of parents added to the program by each eligibility rule. On the other hand, their effects on income and the total poverty gap are more pronounced. The subsidy rate (the NCP EITC divided by child support paid) is higher among fully complying NCPs and high-burden, partially complying NCPs, than NCPs who pay high support relative to a threshold. Child support payments impoverish many NCPs who make large payments, and the NCP EITC helps ameliorate this to some extent. The average benefits are lower for high-burden, partial compliers because their income is low (in the lower section of the NCP-EITC phase-in range) than full compliers. The benefits are lower for partial compliers that pay more than a threshold than full compliers because most of them support only one nonresident child.

4.5.2 Comparison of Different Findings

The results of this study are slightly different from estimates in studies that use data from the Current Population Survey. Wheaton and Sorensen (2010) estimate that there are 11.9 million noncustodial parents in 2004. They find that close to half of all NCPs have incomes below $37,000, which is about the income limit for the EITC for single tax filers with one child in 2013.[50] This study, which includes only fathers in large cities with children born around 2000, finds lower incomes: half the NCPs have family income below $29,800 (in 2013 dollars as well). In contrast, I find that 7% of all NCPs do not have earned income and would not be eligible for any of the NCP EITC scenarios, compared to 14% in their study. Another major difference between this and their study is that 33% of all NCPs pay all child support due and 16% of them make partial payments in my analysis, compared to 25% and 17%, respectively in Wheaton and Sorensen (2010). There are around 60% of all NCPs that have child support orders in their study and half of all NCPs in my study. Due to lower income estimates in my study, 20% of all NCPs are eligible for the existing child-based EITC, compared to only 14% in their study.

One possible explanation for these discrepancies is that they impute noncustodial parent status and child support characteristics based on data from the SIPP, the CPS-CSS, and child support enforcement administrative data. This study uses direct reports of fathers about their income and child support payments. Furthermore, NCPs in the FFCWS are more economically disadvantaged than those in other national surveys (e.g., Reichman, Teitler, Garfinkel, & McLanahan, 2001); for example, families in the FFCWS reported lower household incomes, lower individual earnings, fewer years of education, and were more likely to be racial and ethnic minorities than families in the Early Childhood Longitudinal Study (Wagmiller, Jr., 2010). The

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[50] Table 4.4 of their paper shows that 49% of all noncustodial parents had incomes below $30,000 in 2004 dollars, which is roughly equivalent to $37,000 in 2013.

FFCWS is representative of births in large U.S. cities between 1998 and 2000; I examine those who turned age 9 when their NCPs were interviewed in 2007–2009, whereas Wheaton and Sorensen have a broader sample of parents in earlier periods.

If the FFCWS survey misses moderate- and higher-income NCPs, income and child support payments for all noncustodial parents in this study are likely to be biased downward. However, if higher-income parents are mostly eligible for the phase-out range of the NCP-EITC benefits or ineligible for the NCP EITC, the current estimates for the average benefit and the reduction in the poverty gap by the NCP EITC might still be accurate. If by using the 9-year FFCWS I fail to include lower-income NCPs (for example, very young fathers whose first nonmarital child is not yet 9), then the extent to which my estimates are biased would depend on the extent to which these fathers pay child support. If they do not pay support, they would not be eligible for any of the NCP EITCs I consider in my analyses. On the other hand, if the sample used in Wheaton and Sorensen's study (2010) misses some low-income NCPs that pay child support, then their estimate for the eligible population could be biased downward. Their estimate for NCPs who do not have formal earnings is higher than mine; if some of these parents actually have formal earnings below the NCP-EITC thresholds, this leads to a downward bias as well.

Results can be biased for reasons other than income. If the FFCWS sample is not representative of divorced parents, some of the omitted parents have earnings as low as those of parents in the sample, and they are more likely to pay child support in full or pay support to more than one child and thus have higher burdens or payments, then the actual share of eligible parents would be higher than the current estimates under all scenarios examined in this study. In contrast, if NCPs in my sample over-report their child support payments and compliance, the proportion of eligible parents would then be over-estimated. Although results in this and other studies are

not drastically different, further research with other data sets may be warranted to improve the accuracy of the estimates.

4.6 Conclusion

4.6.1 Research Limitations

There are several limitations to this study that deserve attention. This study uses data from a nationally representative sample of non-marital births in large U.S. cities. The sampling strategy for the FFCWS (which sampled births in urban hospitals) includes more economically disadvantaged married parents that may not be comparable to married parents in general; therefore, estimates in this study may be generalized only to parents in urban areas (Carlson & Furstenberg, 2006; Wagmiller, Jr., 2010). Second, reporting error is likely to affect the results of this study as parents may under-report their incomes, fathers over-report their support payments, and mothers under-report their receipts. One useful analysis in the future would be to use administrative data to analyze characteristics of noncustodial parents.

Finally, this study examines only the first-round effects, or the distributional impacts of policy on income and poverty, instead of constructing a structural model to investigate parents' behavioral responses to policy. These behavioral outcomes include noncustodial parents' changes of payments, compliance, and labor supply in the long run. In theory, the full-compliance model would encourage more child support payments only for current partial or non-compliers, instead of for parents who have already paid child support in full. The burden-of-payment model would incentivize child support payments for those whose burden levels are below the burden threshold. The expenditure model would help increase payments for anyone who currently pays an amount lower than the absolute-amount threshold. In areas where the

demand for labor is sufficient, more NCPs would consider entering the formal labor market in order to have formal earnings to claim the NCP-EITC benefits. Child support payments may further increase as a result because more child support can then be withheld from formal earnings. On the other hand, under the full-compliance requirement, there is a concern for parents lowering the amount of the order such that compliance is more likely; in the burden-of-payment model, the undesired behavioral change would be underreporting income such that the burden level appears high. With improved data on parental income and demographics, behavioral analytic efforts would be highly valuable from a policy perspective.

4.6.2 Comments on Current Policies

Based on this study, the existing NCP EITCs and other proposals may not reach some of the NCPs who have a large order, multiple orders, or child support debt (arrears) and who are unable to pay in full given their financial constraints. Theoretically, if an NCP has child support arrears but pays the full amount of his current order, he is still eligible for the NCP EITC. For example, the New York State and the Washington, D.C. NCP EITCs certify payments to an NCP's current child support orders that have been in effect in the tax year. Nonetheless, parents with arrears or retroactive orders are less likely to fully comply with their current child support orders (Bartfeld, 2005; Cancian et al., 2013). Programs that neither distinguish the amount of the order nor the number of children that a fully complying NCP supports can be seen as creating disparities in treatments of NCPs because the benefits are identical for parents with the same income but different numbers of children or the same income but different orders. For some parents, the amount of their orders could be low, or even lower than the amount of the NCP EITC benefits they can claim if they pay child support in full. All of these different situations

illustrate the rationale for an NCP EITC that bases its eligibility on payments only, or either payments or compliance, rather than only on compliance.

Although some variants of the NCP EITC are more generous than others, the ones tested thus far cover only a small fraction of low-income paying NCPs. For example, the Washington D.C. NCP EITC uses the NCP's filing status and number of qualifying nonresident dependents to calculate his or her NCP EITC benefits, equal to 40% of the federal child-based EITC. However, few low-income NCPs who pay child support are able to claim this credit because the policy requires that the NCP must be 18 to 30 years old. NCPs who claim qualifying children for their federal EITC are not eligible for receipts of the D.C. NCP EITC. As a result, the D.C. NCP EITC is a fairly small program.

4.6.3 Child Support Payments or Income Support?

There are several goals that the public could hope to achieve through an NCP EITC policy: to provide income support, to incentivize formal labor supply, to encourage child support payments, and alleviate some of the burden of paying child support among lower-income NCPs. More indirect effects may be expected, including increasing paternity and order establishment, redistributing NCPs' income (or reducing income inequality), and improving the child's economic wellbeing. An NCP EITC available for not only NCPs who make full payments but also those whose burden of payments is high can be considered more of an income support program because parents with high burden are more likely to be poor. This type of policy encourages destitute NCPs to make any payments because even if they pay low amounts, their burden of payments is likely to be high enough to qualify them for the NCP EITC. An NCP EITC that requires payments beyond a national standard of expenditures is a program for highly contributing parents and thus is one that aims to encourage more payments. An NCP EITC that

requires full compliance with orders encourages parents to make full payments, but NCPs who are able to contribute more than the amount owed are more likely to just fulfill their agreements than NCPs in a policy that encourages higher payments in their absolute terms. Although whether a policy induces behavioral changes is an empirical question, this study highlights the different possibilities that tailoring the child support requirement in an NCP EITC policy may achieve.

A more direct approach to high burdens is to modify current orders downward to recognize NCPs' financial constraints, instead of reimbursing parents through the tax system as demonstrated in the present study. A variety of policies have been proposed that would result in lower orders for low-income NCPs (Cancian et al., 2011). One challenge is that child support orders in practice may not be readily modified in response to changes in the NCP's income (Ha et al., 2010). There are several solutions to the irresponsiveness of orders to an income decline. First, establish a percentage-expressed order in which a fixed percentage of income, rather than a fixed amount, is withheld to pay child support. This type of policy was tried in Wisconsin and was shown to be associated with increased payments (Bartfeld & Garfinkel, 1996). However, this type of order creates difficulties in enforcing a child support order because income is not always known to enforcement agencies. Second, automatically updating child support orders using the income information on tax returns is another mechanism to keep orders more current. Third, policy could encourage forgiveness of child support arrears accumulated during periods when a father was laid off or unemployed. Fourth, policy could streamline the process for modifying orders and make it more accessible to NCPs, for example, sending information on how to request a modification of an order routinely with every application for unemployment benefits.

From the children's standpoint, if only formal child support is considered and if orders are fully paid, downward modifications of orders undermine their wellbeing, especially for those whose custodial parents are poor. Policymakers could re-assess the benefits of a previous proposal: guaranteed child maintenance in the event of under-payment or non-compliance (Garfinkel, 1992; Meyer et al., 1992), or expansions of the child tax credit or the child-based EITC for single-parent families, especially for those not receiving a certain amount of child support. Finally, to address disparities in setting the order and therefore differences in treatments of children in similar cases, policymakers could consider national child support guidelines that allow for a self-support reserve for noncustodial parents, adjust for costs of living in different areas, and/or regulate the criteria for deviations from the guidelines. An NCP EITC that requires payments beyond a set amount for cases with similar characteristics (including at least income and the number of nonresident children) may incent uniform payments for similar parents with different amounts of child support due. Alternatively, a federal NCP EITC can require payments at least of the amounts suggested by the national child support guidelines to ensure fairness in tax treatments.

Could an NCP EITC benefit not only the NCP and his resident family but also his children who do not live with him? I already highlighted the possibility that the NCP EITC could increase payments to his noncustodial children because it increases his income and income is positively related to payments. Moreover, it could increase his payments because payments are now incentivized and rewarded. One mechanism to increase this transfer of some or all of the NCP EITC to his noncustodial children could be established through the tax system, for example, by allowing an option on the tax form for the government to send, on behalf of NCPs, some or all of the NCP EITC benefits to the children who live apart from them. This administrative

procedure may help prevent non-compliance or low payments in the following tax year. There is

another mechanism already in place through which the NCP EITC could directly benefit the

NCP's nonresident children. NCPs with child support arrears[51] may have their tax refund

intercepted by revenue agencies and transferred to custodial-parent families to offset the NCP's

child support debt. This NCP EITC variant, with the child support intercept program, would

improve economic wellbeing of children, most of whom are children of poor custodial parents

due to assortative mating. However, this variant would generally only affect NCP EITCs that are

available to some category of non-compliers, since if the NCP EITC requires full compliance, a

build-up of arrears within the year is not possible. Otherwise, policymakers will need to consider

alternatives to the full-compliance requirement to encourage partial-compliers to pay child

support.

       To define benefits for an NCP EITC policy, what are the other outcomes that

policymakers may choose to consider, in addition to economic wellbeing of NCPs and their

children who live elsewhere? The benefits in the two existing policies are set as a percentage of

the federal child-based NCP EITC. Are these percentages or the percentages set for the policy

scenarios "fair" to custodial parents who are eligible for the child-based EITC? The federal

child-based EITC is conceptually an income support for children, in addition to a wage subsidy,

for lower-income working custodial parents who live with children for most of the time. If the

NCP EITC is designed to achieve equality in the bearing of costs of childrearing, the

expenditures on children in single-parent families, particularly, those with low income, should be

used as reference amounts for setting the NCP EITC benefits.

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[51] Arrears can be owed either to the custodial parent or, if the custodial parent received TANF or some other welfare benefits, to the government. For ease of exposition, here I consider only those with arrears owed to the custodial parent.

There are more administrative issues to consider for designs of the NCP EITC. For example, alternative policy designs that focus on contribution rather than compliance do not ask for information on the amount of the order. A nationwide minimum of child support payments or burden of payments addresses disparities in the amounts of child support orders that are determined at the state level. As can be seen from my estimates, the proportion of NCPs who have lower income and child support orders is already low, and among them, only parents who meet the child support requirement are eligible for the NCP EITC. If a policy further imposes an age limit or excludes lower-income working NCPs who live with their other children and are eligible for the child-based EITC, even fewer NCPs would be eligible for the program. As a result, the NCP EITC is relatively a small program, compared to the federal child-based EITC. Nonetheless, the average benefits in all policy scenarios of this study are significant for NCPs who are affected. It is hoped that there would be subsequent changes in the way that a child support order is set. For example, the NCP EITC increases the income that is potentially available for NCPs; the child support policy is deemed less punitive to NCPs.

This study examines characteristics of NCP-EITC-eligible parents and simulates distributional, short-run effects of alternative eligibility rules on NCPs' outcomes. Disparities in child support orders and possible "unfairness" in contributions to children lead to NCP-EITC designs with different eligibility criteria for child support payments. The results suggest that many NCPs pay child support in spite of their difficult economic circumstances, and therefore, that the NCP EITC benefits can be substantial to them. Many parents' child support payments are low in absolute terms but high in relative terms (e.g., relative to their income). This study also shows that changing policy parameters would help reach a different set of lower-income NCPs in terms of their economic and demographic characteristics. Therefore, the NCP EITC is worth of

consideration, and the details of its design would have immediate effects on economic wellbeing

of NCPs.

Appendix 4.A Construction of Household and Personal Income in the Simulations

The following steps 1-4 explain how household and personal income are constructed using data from the Fragile Family and Child Wellbeing Study.

1. Determine if the reported household income is greater than the sum of all income sources. Call this positive difference "remaining income."

2. Determine if the father has a spouse and/or other household members and treat the remaining income as

    1) the father's earnings if he does not live with a partner and none of his household members works,

    2) the household members' earnings if the father does not live with a partner and at least one of the household members works

    3) the father's earnings if he lives with a partner, she does not work, and none of the household members works,

    4) the partner's earnings if the father lives with her and she works, regardless of whether other household members work,

    5) the household members' earnings if the father lives with a partner, she does not work, and at least one of the household members works.

    This step results in for cases, that is, 1) and 3), the father's earned income being the sum of his reported amount of earnings and the "remaining income"

3. Add up the father's earnings from step 2, informal earnings, UI, and SSI benefits, and call this sum his personal income. If the amount of his child support payments is greater than this personal income, assume that he has mis-reported personal income, and assign the difference between child support paid and his personal income to his earnings. This means that for some cases I increase the father's earnings again after step 2. Note that some NCPs also have legal agreements that require them to pay child support to children they have with women other than the mothers. The total amount of child support payments, for the purpose of income construction, is the sum of payments to both the focal child and other children.

4. To calculate the final measure of household income, sum up the father's earnings from step 3 and all other incomes.

This procedure assumes that parents do not borrow to finance their child support payments, they do not consider their debt and expenses when they report the total household income, and that the NCPs pay child support out of their own income. Note that in actual tax simulations I exclude a cohabiting, unmarried partner's earnings and household members' earnings.

CHAPTER 5. CONCLUSION

My dissertation includes three empirical studies exploring effects of two emerging policies on custodial arrangements and economic wellbeing of nonresident parents and children. In this chapter, I briefly describe the learning from these studies and their contributions. Then I review the key results of the two studies on legal custody, discuss their strengths and limitations, suggest future research questions, and make recommendations for custody policy and practices. I then turn to the study on the NCP EITC, summarize its major findings, discuss its limitations, contributions, and then present implications for future research and the NCP-EITC policy.

My studies find presumptive joint legal custody is associated with an increase in awards of joint legal custody among parents of nonmarital children, and that joint legal custody is linked to increases in child support payments and compliance levels in this population. The simulation results show that the NCP EITC has a small but statistically negative short-run effect on poverty rates and a positive effect on income among lower-income noncustodial fathers. This dissertation analyzes both state and national data with appropriate methods including decomposition analysis for understanding a social trend, simulation analysis for examining a policy proposal, the propensity scores matching and instrumental variables methods for addressing limitations of non-experimental data. These studies help policymakers consider different approaches to supporting nonresident parents, especially those of nonmarital children and low income.

5.1 Findings for Joint Legal Custody

The second chapter examines custodial arrangements in nonmarital family court cases before and after joint legal custody was made presumptive by law. Between 1989 and 2008, mother physical custody had been awarded in nearly all nonmarital cases in Wisconsin. The prevalence of joint legal custody had grown slowly from almost none in the early 1990s to one fifth in the late 90s, increased to half of cases within two years after joint legal custody became presumptive, and had remained slightly above 70% since the mid 2000s. Although parental characteristics had changed over time, these changes only explain a negligible share of the increase in joint legal custody; parental characteristics had not been evaluated in court differently. Instead, analysis suggests that most of the increase came from a gradual upward trend in joint legal custody, propelled further by a law enacted in 1999 presuming joint legal custody for all cases.

The third chapter investigates the associations between joint legal custody and child support payments and compliance among parents of nonmarital children in Wisconsin. It draws data from the same court records used in the second chapter but later periods (2000-08) to increase the sample size of cases with joint legal custody for comparison purposes. The study, recognizing parents with and without joint legal custody are different on a variety of characteristics, employs several empirical strategies, including multivariate regressions, propensity score matching analysis, and the instrumental variable method to estimate the strengths of the relationships. Results show that nonresident fathers with joint legal custody pay more child support and that their compliance ratios are higher than those with mother legal custody; the instrumental variable method yields even higher estimates than those in ordinary least-squares and propensity scores models.

5.2 Contributions, Limitations, and Future Research

This series of analyses first documents custodial arrangements for an under-researched population, parents of non-marital children, in the literature of child custody. It then explores the mechanism guiding the upward trend in joint legal custody, finding that changing policy and increasing preference for joint legal custody primarily explain the trend. It uses data on both father and mother characteristics to adjust for factors that are associated with joint legal custody and supplement existing information with administrative data to sharpen the degree of control. The third chapter finds joint legal custody is linked to higher child support payments and compliance for nonresident fathers of non-marital children, adding to our understanding of factors explaining formal child support for a vulnerable population.

The key limitation of these two empirical chapters is that the data do not include a few control variables. There is no information on prior involvement of the nonresident father and the quality and length of the couple's relationship prior to entering the court for child-related issues. If there is a trend toward fathers being more involved with their children prior to coming to court, and as a result fathers are more likely to be awarded joint legal custody, I could be mis-attributing the increase in joint legal custody to the policy change. However, it is unlikely that father involvement increased sharply shortly around the time of policy change (and therefore leading to a spike in the rate of joint legal custody). If I had more controls for involvement or other factors that had changed over time, the effect of the presumptive rule might have been more moderate. In the same logic, my estimates for the association between joint legal custody and payments are less accurate if relationship factors play an important role in a custodial arrangement and in child support payments. Studies that include a richer set of controls would be useful in advancing our understanding of the relationships. Other directions of research include

exploring how parents exercise their rights to joint decision-making, whether and how parents with joint legal custody are encouraged to pay support, and how joint legal custody can be used to increase parental involvement in combination of other arrangements, such as visitation.

5.3 Implications for Policy on Legal Custody

Based on the evidence found in my analysis, the presumption of joint legal custody can be continued for average nonmarital cases because it is at least not linked to negative outcomes. However, in practice, presumptive joint legal custody should be implemented as the law intends—in a way that does not prevent courts and parents from examining evidence for arrangements to serve the best interest of the child. If there is more positive evidence for joint legal custody enhancing children's welfare, policymakers may consider letting parents choose joint legal custody in settings outside of the court, such as in hospitals. The court rulings can also be more specific about the content of joint decision-making, helping parents determine the set of decisions that require inputs from both. Outreach initiatives can be performed to help schools and health care providers to provide care for children whose parents have joint legal custody.

5.4 Findings for the NCP EITC

The fourth chapter examines likely effects of the NCP EITC on economic wellbeing of lower-income noncustodial parents. Existing policies require noncustodial parents to fully comply with their child support orders. However, because noncustodial parents with similar incomes may have different child support orders, which affect their payments, I compare other requirement alternatives with the full-compliance model, including those of (1) either full compliance or a high burden of payments, (2) either full compliance or payments above a

threshold, and (3) payments above a threshold. I find that, regardless of the designs, the NCP EITC is a small program by requiring lower income and child support orders. Lower-income noncustodial parents on average pay low support relative to average expenditures on children. Therefore, the second alternative adds a small share of parents to the full-compliance model, and the third alternative reaches less than one tenth of all noncustodial parents. In contrast, the full compliance and high burden hybrid model reaches the largest share of noncustodial parents. All scenarios reduce the poverty rate by around 2 percentage points, although the reduction in the poverty gap is quite substantial to poor noncustodial parents.

5.5 Contributions, Limitations, and Future Research

This study contributes to our understanding of lower-income noncustodial parents who pay child support. Many lower-income noncustodial parents pay a high share of their income, and the burden of payments is especially high among those with very low income. Some lower-income noncustodial parents only partially comply with their child support orders but pay higher support than some of fully complying parents with similar economic and demographic characteristics.

Several limitations of this study are worth noting. The results are based a sample of children who were born in the late 1990s in major cities of the US and no longer lived with their fathers at age 9. As a result, the analysis may not be generalized to those with children of different ages or born outside major cities. I use this sample because it provides important data on the father's income and child support, generally more accurately than in other public surveys. This is a partial sample also because noncustodial parents have lower income than averages in other national samples and because some noncustodial parents are mothers. Moreover, I do not

include child support orders owed to other children; counting all child support orders is likely to reduce the number of noncustodial parents eligible for the NCP EITC. Future studies can exploit more detailed data, such as those from administrative sources, to accurately capture income, child support, and demographic information key to policy simulations.

5.6 Implications for the NCP-EITC Policy

Based on the findings of this study, an NCP EITC that is available only to NCPs who fully comply with their child support orders is likely to provide benefits to relatively few NCPs. Moreover, this approach ignores the inequity created when one NCP is eligible and another is not even although they pay exactly the same amount of child support, merely because one's order is higher than the other's. Including NCPs who do not have full compliance should be considered, but the eligibility rules should flow from the policy's intent. If policy aims to provide income support for noncustodial parents who try to make child support payments even in extreme poverty, a model that certifies eligibility based on high burdens of payments helps achieve this goal. If policy aims to support lower-income noncustodial parents that pay high amounts of support, restricting eligibility to parents who pay beyond a threshold would serve this goal.

Another approach to addressing high burdens is to directly adjust child support orders based on noncustodial parents' income. Modifying child support orders using the income information on tax returns can be a promising avenue. Although this information does not include informal income and does not reflect the noncustodial parent's latest paying ability, it may still be a better estimate than the information used at establishment of the order. To address inadequate child support payments, policymakers can consider guaranteed child maintenance for cases in which full child support payments still fall short of a minimum of expenditures on

children. Implementing these sets of policy together is expected to increase economic support available to children, through increases in child support payments as noncustodial parents' income increases and through supplements for cases with child support orders deemed low by a standard based on patterns of expenditures on children.

5.7 Conclusion

To conclude, this dissertation analyzes outcomes associated with joint legal custody and a tax credit for nonresident parents who pay child support. It finds evidence that helps guide policymaking in the areas of child custody and income support for two overlapping vulnerable populations: lower-income nonresident parents and nonresident parents of nonmarital children. This dissertation discusses a few research limitations and future directions of inquiry, as well as important policy implications based on its findings. It joins the growing scholarly work in understanding new policies that address emerging issues in modern forms of families, specifically families with nonmarital children and children for whom one parent lives elsewhere.

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