

The Fragile Families and Child Wellbeing Study changed its name to The Future of Families and Child Wellbeing Study (FFCWS). Due to the issue date of this document, FFCWS will be referenced by its former name. Any further reference to FFCWS should kindly observe this name change.

**Child Support and Father-Child Contact:
Leveraging Panel Data to Establish a Causal Path***

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Abstract:

Three waves of panel data are used to examine the relationship between child support payments and fathers' contact with their nonmarital children. Cross-lagged effects models are incorporated to identify the direction of causality between these two behaviors. Controlling for the lagged term and a rich set of individual characteristics eliminates the relationship between paying formal support and whether fathers see their children, although a strong reciprocal relationship remains between paying any support (formal or informal) and contact. For the subgroup of fathers who consistently see their children, paying any support leads to more frequent contact, but the reciprocal relationship does not exist.

INTRODUCTION

It is now recognized that half of all children born in the last 30 years in the U.S. will spend some time growing up in a single-parent family (Bumpass and Sweet 1989). Two demographic trends in the past twenty years have contributed to this situation, the increase in divorce rates and the increase in nonmarital births. The rate of divorces to marriages in any given year in the U.S. has been approximately one to two since the mid-1970's (Sutton and Munson 2004; U.S. Census Bureau 1992), and over one-third of all births are to unmarried parents, with a much higher rate (nearly 70%) for African-Americans (Hamilton, Martin and Sutton 2004). Both parents' time and money are important to children's development and wellbeing (Amato and Gilbreth 1999; Baydar and Brooks-Gunn 1994; Furstenberg Jr., Morgan and Allison 1987; Graham, Beller and Hernandez 1994; King 1994; Knox and Bane 1994). Because there is only one parent in the household, children in single parent families receive less time and money from their parents compared with those in two-parent families (McLanahan and Sandefur 1994). Children born to never-married parents tend to experience more disadvantage since these families are more likely to be poor, more likely to receive public assistance and less likely to receive child support than children born to previously-married parents (Sorensen and Hill 2004; U.S. Department of Health and Human Services 2003; U.S. House of Representatives. Committee on Ways and Means 2000).

In its effort to transfer the financial burden of supporting children in single parent-families from society to parents, the federal government, through the Office of Child Support Enforcement (OCSE), has been enacting and strengthening legislation to improve states' capacity for identifying, locating and collecting child support from non-resident fathers. Because, as mentioned above, children of unmarried parents are much less likely to receive child

support and because these families now represent a substantial proportion of the child support enforcement caseload (U.S. Department of Health and Human Services. Office of the Assistant Secretary for Planning and Evaluation 2002), the most recent legislative efforts, as part of the 1996 welfare reform bill (PRWORA), focused specifically on unwed fathers. However, during these years much less government attention has been given to the loss of parental time that children of single, especially unmarried, parents face. Because nonresident fathers can contribute both time and money to their children, and policies have focused primarily on the financial dimension, it is important to understand how these two behaviors interact.

This paper examines the relationship between nonresident fathers' child support payments and contact with their children, contributing to the literature in several ways. First, using the Fragile Families and Child Wellbeing Survey, I focus on parents with nonmarital births, a group that has not been the focus of most prior research, but is now the predominant form of single-parent family (U.S. House of Representatives. Committee on Ways and Means 2000). Second, the timing of the Fragile Families study allows for the assessment of behavioral effects after the passage of the 1996 welfare reform bill, which specifically focused on increasing financial contributions to nonmarital children. Third, the analyses in this paper take advantage of the panel structure of these data by estimating change models which allow for a more causal interpretation of results than cross-sectional analyses. Fourth, the methodology applied in these analyses allows for the examination of reciprocal effects between fathers' contact and payments. Finally, the Fragile Families data contain a rich set of measures pertaining to fathers' ability to pay support, relationship with mothers, and commitment to their children and to parenting which have not been available in most other studies.

I find that, when controlling for the behavior at the first time period and a rich set of individual characteristics, there is no further relationship (at the second time period) between paying formal support and whether fathers see their children (in either direction). Examining the effect of any support received (formal or informal), I find a strong reciprocal relationship between payments and contact. Finally, for the subgroup of fathers who consistently see their children (holding time one behavior constant), paying support either formally or informally leads to more frequent contact, but the reciprocal relationship does not exist.

THEORY

The relationship between child support payments and father-child contact is complicated. Not only are these behaviors reciprocal, in that causality can go both ways, but the direction of effects is also ambiguous, they can be either positively or negatively related. Theories of family interactions describe several pathways through which child support payments and father/child contact may be related. First, fathers who pay child support may want to see their children more in order to oversee the allocation of their contributions. Weiss and Willis (1985) present a theory of children as collective goods, arguing that because a father cannot monitor how money is spent in the mother's household, he will contribute less than is optimal for the child. Graham and Beller (2002) present this concept as a classic 'prisoner's dilemma' outcome. In this game, although a cooperative equilibrium produces the highest utility for both parents and the highest level of spending for the child, a noncooperative (low-spending) equilibrium is actually achieved because of parents' mistrust. Thus, in the presence of child support enforcement, when the level of support mandated by the state exceeds what the father is willing to pay voluntarily, the father

will visit the child more in order to eliminate the principal-agent problem and ensure that his contributions are being appropriately spent.

Another way that payments could lead to more contact is through the mother's role of gatekeeper to the child. Edlund (2002) proposes that women, through marriage, trade custodial rights to children for financial support from the husband. Likewise, outside of marriage, mothers trade visitation rights for payments from the father (Del Boca and Ribero 2001). Further, regular support payments from fathers may reduce conflict between parents, motivating the mother to facilitate visitation (Furstenberg Jr. 1988a; Sen 1990).

The above mentioned pathways are complementary in nature, leading to a positive association between payments and contact. However, theories also point to a possible negative relationship between these behaviors, a situation where they are substitutes. If the child support obligation acts like a lump-sum tax, reducing the father's income, but not his marginal wage, then to make up for lost income, fathers would increase their time in the labor force. This in turn would reduce the amount of time available to spend with their non-resident children.¹ Del Boca and Ribero (2001) model another possible negative pathway between fathers' payments and contact with their nonresident children. Their theoretical model assumes that a father buys time with the children from the mother. They simulate a perfect child support enforcement environment, where 17% of all fathers' income is transferred to the mother. Based on this model, they calculate that due to the reduced income of the father and the increased income of the mother, the father "purchases" less time to spend with his children.

¹ In a few states, child support obligations are calculated as a percentage of income, thereby acting as a marginal tax and reducing the amount gained on each additional dollar of earnings. According to the substitution effect, this situation could cause the father to reduce his hours of labor. In reality, most states do not regularly adjust child support obligations when fathers' incomes increase, making this scenario unlikely.

There is also a possibility that the amount of contact a father has with his child can influence how much child support is paid. Fathers who see their children may be better informed of what their children need and therefore may pay more support. Similarly, if visiting fathers are pleased with how mothers are taking care of their children, they may be more willing to pay child support. However, increased father-child contact could also lead to less child support payments if fathers trade child care for support. For instance, fathers may agree to keep a child over school vacations or weekends as a substitute for paying child support during those periods.

Finally, it is possible that there is no real relationship between paying and contact. The association between payments and contact may be driven by variables that have not been measured in prior studies or are considered unobservable, such as the degree of conflict or cooperation between parents and the father's commitment to the child and to parenting in general. These characteristics may affect both fathers' willingness to pay support and their desire to have contact with their children.

LITERATURE

Most prior research has found a positive association between paying child support and father/child contact (Furstenberg Jr. 1988b; Furstenberg Jr. et al. 1983; Koball and Principe 2002; McLanahan et al. 1994; Nord and Zill 1996; Peters et al. 1993; Seltzer 1991; Seltzer, McLanahan and Hanson 1998; Seltzer, Schaeffer and Charng 1989; Sorensen and Pomper 2003; Veum 1992). However, most of these studies analyzed data dominated by divorced and separated parents. It is quite likely that these associations are very different for parents who were never married, since the conflict and stress associated with divorce may not apply (Lamb 2002). Additionally, almost all of these studies focused only on the effect of payments on

contact, not the other way around, and only a few attempted to address the problem of endogeneity between paying support and visitation.

Seltzer et al. (1989), analyzing a sample of divorced and separated parents from Wisconsin, use a bivariate tobit model to simultaneously estimate the relationship between payments and contact. They find that although adding demographic characteristics to the models reduces the association substantially, there is still a complementary association between the two behaviors. However, they are not able to establish causality between the two behaviors in either direction. McLanahan et al. (1994), using a sample of divorced and never-married parents from the National Survey of Families and Households (NSFH), instrument observed child support payments with predicted payments from the Current Population Survey (CPS). This predicted child support variable, based on a variety of mothers' characteristics and state fixed effects, may be considered a proxy measure of the strength of child support enforcement in the state. In the instrumented models, they find positive and marginally significant relationships between predicted payments and father/child contact.

Seltzer et al. (1998), also using the NSFH, instrument the prevalence and amount of observed child support payments with several strength of enforcement and state effectiveness measures. None of the predicted payment measures in the instrumented models was significant, although the coefficients for the predicted payment rate were mostly positive. In the reduced form models, examining the effect of policies directly on contact, they find no significant effects on the prevalence of contact, but mostly positive and marginally significant effects on the frequency of contact.

Sorensen and Pomper (2003) use an index of three recently enacted child support laws to estimate reduced form models of the effect of policies on father-child contact and bivariate probit

models to jointly estimate payments and contact. They find evidence that both stricter child support enforcement and whether a father pays are positively related to contact, but only for a sample of nonresident fathers that are self-identified in the National Survey of America's Families (NSAF). The same analyses based on a sample of resident mothers showed no significant effects of either child support enforcement or whether mothers actually received child support on father-child contact. These findings suggest that for a select group of nonresident fathers who self-identify as such (presumably those who are more committed to their children) paying more child support leads to more visitation, but this relationship does not hold when including all nonresident fathers.

One study finds evidence of a negative relationship between payments and frequency of contact. Bitler (2000) instruments the observed likelihood of receiving child support with several state-level measures of enforcement, including the paternity establishment rate and child support staff per capita. In the instrumented payment models, she finds a significant negative relationship between payments and visits. In other words, for this sample of child support eligible children from the National Longitudinal Survey of Youth (NLSY), she finds that fathers' time and money are substitutes. As mentioned earlier, this may be due to the fact that fathers must work more in order to pay child support and thus have less time to see their children. Freeman and Waldfogel (1998) find some evidence to support this possible effect. They find a slight increase in both the likelihood of working and hours worked per week for fathers who pay support and when payments are instrumented through strength of enforcement.

Two studies did examine the reciprocal effects of payments and contact, with differing results. Nord and Zill (1996), using SIPP panel data, examined the effect of payments on visitation and visitation on payments, controlling for the behavior at the previous wave, but only

for a group of mothers with child support orders. They found no effect of contact on an increase in payments, but paying did lead to an increase in contact. In another study, using longitudinal data from the NLSY, Veum (1993) estimated visitation and payments with simultaneous equations, eliminating unobserved heterogeneity between individuals. The NLSY does not ask about child support orders, therefore the measure of payments includes any support that the mother receives. He finds that any observed positive association between changes in visitation and changes in payments (in either direction) is due to parents' unmeasured characteristics and that these behaviors have no independent association. Although both of these studies examined samples that included unmarried parents, divorced parents were the overwhelming majority.

Finally, there are a number of qualitative studies focused on small samples of low-income, urban, minority fathers that reveal how this group views the child support enforcement system and how it affects their behavior. These studies demonstrate that some of these fathers are often very involved with their children, but due to low skills and lack of employment opportunities are unable to support them financially through the formal support system. Furthermore, these studies suggest that punitive child support enforcement policies may drive such fathers to abandon their families altogether (Edin et al. 2000; Hamer 1998; Johnson and Doolittle 1998; Roy 1999; Waller and Plotnick 2001).

DATA

This research uses the Fragile Families and Child Wellbeing Study which examines the conditions and capabilities of new unwed mothers and fathers and the wellbeing of their children. The baseline data, collected between 1998 and 2000, consist of approximately 4900

births (3700 nonmarital and 1200 marital) in 75 hospitals in 20 U.S. cities² with populations of 200,000 or more. The data, when weighted, are representative of all unwed births and are nearly representative of marital births in each of the twenty cities as well as in all such cities in the U.S. Both mothers and fathers were interviewed in the hospital shortly after their child's birth, with follow up phone interviews conducted when the child was one, three and five years old (for a detailed discussion of the survey design, see Reichman et al. 2001). The response rate for unmarried mothers was 87%, 90% and 87% at the baseline, one-year and three-year surveys, respectively. The five-year follow-up survey is currently in the field.

The current study analyzes data for a sample of approximately 1300 mothers who were unmarried at baseline, who were reinterviewed at both the one and three-year surveys and who were not cohabiting with the focal child's father at the one-year follow up. I rely solely on mothers' reports about fathers' characteristics and behaviors. This choice introduces a trade-off between two types of biases, non-response bias due to missing fathers and same-reporter bias. Although the Fragile Families study identified and interviewed a very large proportion of unwed fathers as compared with other national surveys, still about 25% of these fathers were not interviewed at the baseline survey. These missing fathers are more likely to be disadvantaged and in less committed relationships with the mothers at birth (Teitler, Reichman and Sprachman 2003). Therefore focusing only on fathers who were interviewed would introduce substantial non-response bias. On the other hand, mothers may underestimate the level of child support received and the level of father-child contact and the level of underreporting may be related to how mothers feel about the father at the time of the interview. Because of the high response

² The following 20 cities in 15 states are included in the survey: Oakland, San Jose (CA); Austin, Corpus Christi, San Antonio (TX); Richmond, Norfolk (VA); Philadelphia, Pittsburgh (PA); Newark (NJ); New York (NY); Nashville (TN); Toledo (OH); Milwaukee (WI); Chicago (IL); Indianapolis (IN); Jacksonville (FL); Baltimore (MD); and Detroit (MI).

rates for mothers, the lower likelihood of systematic differences between interviewed and non-interviewed mothers and because mothers are asked detailed questions about fathers, I choose to focus on mothers' reports in these analyses.

There are two outcomes of interest in this paper: fathers' child support payments and fathers' contact with their children. These behaviors are measured similarly at both the one and three-year surveys (one exception is discussed below). Child support payments may be of two kinds, formal and informal. Formal child support is defined as support that is paid on a court or state-established child support order, while informal support is any cash contribution that the father makes outside of this system. Mothers are first asked if they have a child support order and then how much of the agreed upon support the father has paid in the past year or since the order was put into place if it was less than the past year. From this question, a dichotomous variable for whether or not the mother received any formal support is created and a continuous variable for the amount of support, including those who have none. 12% of mothers (from Table 1) received a formal payment at the one-year survey and that proportion increased to 23% at the three-year survey, while the average annual amount of support amongst all mothers, including those who received nothing, went from \$153 to \$471. Both of these differences are statistically significant. Mothers are then asked whether they have an informal agreement with the father and whether he has paid any support on the informal agreement. For the total support measure, I construct a binary variable for whether the mother receives either formal or informal support in the prior year. Not surprisingly, a much higher proportion of mothers receive support when formal and informal are combined (57% at both time periods).

Combining formal and informal support using the Fragile Families dataset introduces some possibility of measurement error due to the way these questions were asked. In the one-

year questionnaire, mothers who said they had a child support order (23% of those who were not cohabiting with the father) were then not asked about informal support receipt. If all fathers who had an order paid support on that order, this would not be a problem in constructing the any support receipt measure, since these mothers would all be coded to “yes” for child support receipt. However, 40% of mothers with child support orders report no formal support from the father, which does create a problem, since many of these fathers may be paying informally instead. This problem was mostly resolved in the three-year data, which allows for an estimation of the size of this potential problem. At the three-year interview, 41% of mothers (who were not cohabiting at one-year) have orders; of these, 39% are not receiving any formal payment. Of this group, 26% do report receiving informal support from the fathers.

This estimate points to the fact that the number of fathers who pay informal support at the one-year survey is substantially underestimated. It is important to understand the effect and size of the bias that this measurement error introduces. As mentioned previously, I find that paying more total support (formal and informal) increases visitation among fathers who are already seeing their children. The fact that a non-trivial number of fathers are paying informally but are currently coded to “no” on the any support measure leads to the possibility that the current estimates are actually biased downwards. Given the possibility of this bias, it is important to remember that the findings reported in this paper may be a lower-bound estimate and that the “true” effect of paying child support on fathers’ contact with their nonresident children may be stronger.

Fathers’ contact with children is measured in three ways, as a dichotomous variable for whether the father saw the child in the 30 days prior to the interview and as two continuous variables for the number of days in the past 30 that the father saw the child, including and

excluding those who reported none. Referring again to Table 1, the proportion of fathers having contact in the past month with their children significantly decreased from 62% at one-year to 56% at the three-year survey. There was virtually no change in the number of days of contact in the past 30, either for the entire sample or for the smaller group who had any contact.

Table 2 presents mean values for the control variables that are included in the models. First is a set of standard demographics (father's age, race/ethnicity and education, and mother's nativity³). From prior research (Beller and Graham 1993; Seltzer et al. 1989), I expect that older, more educated, native-born, and white fathers will be more likely to both pay support and have contact with their children. Next, I include the gender of the child since there is some evidence, although the findings are mixed, that the child's gender may be related to fathers' willingness to contribute and be involved (Furstenberg Jr. et al. 1983; Lundberg and Rose 2004; Morgan and Pollard 2002). Finally, I add three measures of parent's homogamy (difference in parents' ages, difference in parents' education levels, and whether the parents are the same race). Parents who are relatively more homogamous, or similar on demographic attributes, are more likely to form long-term unions, and therefore more likely to have cooperative relationships, where the father pays support and is committed to the child (Becker 1981).

The second set of controls is related to the father's ability to pay support, the parents' relationship, and the father's commitment to the child and to parenting at the time of the birth, which have been rarely observed in prior studies. These variables include the parents' relationship status at baseline, father's employment status, father's disability status, father's incarceration history, both parents' multiple partner fertility, whether the parents have other children together, whether the father visited the mother in the hospital, contributed cash or other things during the pregnancy and whether he intends to contribute to the child in the future. It is

expected that fathers who were in more intimate relationships with the mother at the birth, who do not have children with other mothers, who have other children with this mother, who have not been incarcerated, who are employed, who are not disabled, and who exhibited signs of commitment to the child during the pregnancy will be more likely to have contact with the child and pay support (Beller and Graham 1993; Seltzer et al. 1998; Seltzer et al. 1989).

EMPIRICAL STRATEGY

I address the endogeneity of fathers' payments and contact with their nonresident children by taking advantage of the panel structure of this data and estimating cross-lagged effects models (Finkel 1995). Cross-lagged models are an extension of the lagged effects model, where a dependent variable (at time t) Y_t is predicted with a variable X , controlling for a lagged measure of the dependent variable Y_{t-1} . The cross-lagged model approach addresses reciprocal causality by the addition of a second dependent variable and the estimation of two separate lagged effects models. In this paper, fathers' payments and contact at the three-year survey (time t) are the dependent variables of interest and are represented by X and Y , respectively. They are both hypothesized to be determined by their own lagged values from the one-year survey (at time $t-1$), by each other's lagged values and by an error term. The structure of the cross-lagged effects models in this paper is represented in Figure 1,

and the equations may be written as:

$$Y_2 = B_1X_1 + B_2Y_1 + U_1 \quad (1)$$

$$X_2 = B_3Y_1 + B_4X_1 + U_2 \quad (2)$$

The estimation will proceed in several steps. First, I present just the outcome of interest regressed on the cross-lagged predictor of interest, i.e. contact on lagged payments and payments

³ Mother's nativity is used as a proxy for father's nativity, which is not available from mothers' reports.

on lagged contact. Next, I add the lag of the dependent variable (one-year payments to the payment model and vice versa). Then, the demographic variables are added, and finally the previously unobserved characteristics. The four models are structured as follows:

Model 1: 3-yr Payments = 1-yr Contact
3-yr Contact = 1-yr Payment

Model 2: 3-yr Payments = 1-yr Contact + 1-yr Payment
3-yr Contact = 1-yr Payment + 1-yr Contact

Model 3: 3-yr Payments = 1-yr Contact + 1-yr Payment + Demographics
3-yr Contact = 1-yr Payment + 1-yr Contact + Demographics

Model 4: 3-yr Payments = 1-yr Contact + 1-yr Payment + Demographics + Prev. Unobs. Vars.
3-yr Contact = 1-yr Payment + 1-yr Contact + Demographics + Prev. Unobs. Vars.

The four behaviors of interest, fathers' payments and contact at the one and three-year surveys, each measured in several different ways, are standardized to have a mean of zero and a standard deviation of one in order to compare effects across models and across different specifications of these behaviors. Because all variables are standardized, including those with binary outcomes, all models are estimated as Ordinary Least Squares regressions (OLS).⁴ The figures presented in regression tables are OLS coefficients and (t-statistics).

Because these models estimate changes in behavior from time one to time two, it is again important to remember that the findings produced here are the most conservative estimates. It is possible that all of the effect of the independent variable (for example, child support payments at one-year) on the dependent variable (father/child contact at three-years) may have happened by the one-year survey. Therefore, controlling for the one-year lagged term (in this example,

⁴ All models were also estimated with unstandardized variables, using probit regressions for the binary dependent variables. The relative sizes of the coefficients were identical and the levels of significance were either identical or very similar. Therefore, I present models with standardized variables in order to compare effects across models.

father/child contact at one-year), may account for all of the effect of payments, biasing the final results towards zero. This is an inherent weakness and strength of estimating change models. Any significant results that are detected are therefore the lowest-bound estimates and may be accepted with greater confidence.

FINDINGS

Descriptives

Table 2 presents the mean values of all the covariates included in the models for the sample of 1314 mothers who were interviewed at all three waves, were not cohabiting with the father at the one-year survey and had no missing values on any of the dependent variables or their lagged terms.⁵ The mothers in our sample are associated with fathers who are mostly minority (88%) and have relatively low educational attainment (34% have not completed high school). One quarter of the parents were cohabiting at the child's birth, one quarter have other children together, and over 60% of the fathers were employed prior to the child's birth. An overwhelming majority of the fathers exhibited signs of commitment to the child during the pregnancy by visiting in the hospital (61%), contributing cash or other things during the pregnancy (69 and 64%), and stating their intent to contribute to the child in the future (84%). However, both parents have high rates of multiple partner fertility (43% for mothers and 48% for fathers) and fathers have high rates of prior incarceration (43%).

⁵ For the remainder of the covariates, those with a few missing values were regression imputed. For those variables that had a substantial number of missing values (>5%), missing indicator variables were constructed and included in the regression models.

Cross-Lagged Effects Models Results

Table 3 presents results for cross-lagged effects models for one measure of fathers' payments and fathers' contact with their nonresident children. The top panel of Table 3 examines whether fathers paid any formal child support with whether the father had any contact with the child as the main predictor, while the bottom panel examines the reciprocal effects (whether the father had any contact with the child with whether the father paid any formal support as the main predictor). The bivariate results in Model 1 (1st column) reveal a positive and significant relationship in both directions (from contact to payments and vice versa), with the contact to payments coefficient being slightly larger (0.11 of a standard deviation increase vs. 0.08).

Adding the lagged term in Model 2 eliminates most of the effect of fathers' payments on the likelihood of contact, while the effect of contact on the likelihood of payments is reduced by about half, but is still quite significant. In other words, fathers who have contact with their children at the one-year survey and do not pay formal support are more likely to be paying formal child support by the time of the three-year survey than fathers who were not seeing their children at one-year, controlling for nothing else. But, fathers who pay formally at one-year and did not have contact with their children, are no more likely to be seeing their child at the three-year survey than fathers who were not paying formally at one-year.

In Models 3 and 4, demographics and other parent and child characteristics are added to the models. The coefficients from both panels are dramatically reduced and neither remains statistically significant, indicating that once time one behavior and individual characteristics are

taken into account there is no effect of paying formal child support on increasing the likelihood of contact and no effect of contact on increasing the likelihood of paying formally.

Because the coefficients of interest were so dramatically altered by inclusion of the previously unobserved parent characteristics in Model 4, it appears likely that results from prior studies which did not have access to such a rich set of measures are biased upwards. In the next set of analyses, I focus only on results from the final model (Model 4, which includes all the covariates) and examine several alternate measures of payments and contact.

The top panel of Table 4 presents results for two different measures of formal child support payments (whether there was a payment and amount of the payment), while the bottom panel presents results for three different measures of father/child contact (whether there was contact, days of contact, and days of contact for those with any). Each cell represents a separate model, controlling for all covariates (Model 4 from previous table). All of the models are based on a sample size of 1314 mothers, except for models incorporating the days of contact variable that is conditional on any contact. The sample for these models is based on 607 mothers who reported any contact at both the one and three year surveys. The columns are different specifications of the dependent variables and the rows are different specifications of the predictors. The cell in the first row, first column of both panels contains figures repeated from Table 3 (Model 4).

The coefficient in the second column in row 1 of the top panel (0.04) indicates that fathers who saw their children at the one-year survey, controlling for how much they paid at the one-year survey, pay more formal support by the three-year survey than fathers who were not seeing their children at one-year, but this difference is not statistically significant at conventional levels. The second row of the top panel presents the relationship between the amount of father

contact and formal payments and indicates that this relationship operates in a negative direction, although again the results are not significant at the five percent level. The models in row 3 of the top panel examine this negative effect further, by limiting the sample only to those fathers who had any contact with the child (in the past 30 days) at one-year. These results are highly significant and confirm that fathers who are seeing their children are less likely to be paying formally and pay a smaller amount by the three-year survey (than they did at the one-year survey) than fathers who were seeing their children less frequently at the one-year survey. This is an interesting finding and needs further clarification.

Based on qualitative evidence (Edin and Lein 1997; Furstenberg Jr., Sherwood and Sullivan 1992; Waller and Plotnick 2001), it is very likely that fathers who see their children, but are not paying support through the formal system are contributing to these children and to their mothers informally. The relationship between formal and informal child support is complicated and there has been scant empirical research on it, probably because few studies specifically measure fathers' informal contributions. But, it is possible to hypothesize that a mother, whose child is getting informal contributions from the father, will be less likely to pursue that father through the formal child support system. This process may be contributing to the observed negative relationship between days of contact and formal payments for fathers who see their children. In the next section, I begin to explore this relationship further by incorporating a measure for any support received, including formal and informal.

The models in the bottom panel of Table 4, where contact with children is the outcome, show no statistically significant results, although the patterns are very similar to the top panel. Paying any formal support and the amount paid are positively related to a change in the

likelihood of any contact and are negatively related to a change in number of days of contact for all and just for those who are seeing their children.

Combining Formal and Informal Support

Table 5 presents results from cross-lagged effects models examining the relationship between all support received from fathers, including formal and informal support, and contact with children. The first two rows in the top panel of Table 5 reveal that fathers who have seen their children or who see their children more frequently, controlling for the probability of paying any support at one-year, are much more likely to be paying any support by the three-year survey than fathers who were not seeing their children or were seeing them less frequently. The first two columns of the bottom panel reveal that this relationship is reciprocal, with those fathers who are paying any support (formal or informal), controlling for either the likelihood of contact or the amount of contact at one-year, are more likely to see their children and see them more frequently by the three-year survey than fathers who are not contributing at all at the one-year survey. Because the sizes of the coefficients are larger and they are more highly significant in the top panel as compared with those in the bottom panel, there might be some possibility that while this effect is reciprocal, there is a stronger relationship going from contact to payments than vice versa.

The final results, shown in the third row of the top panel and the third column of the bottom panel, reveal a very different story for the subsample of fathers who are regularly seeing their children. The coefficient of 0.02 in the third row of the top panel indicates that among fathers who see their children, increasing the frequency of contact is not related to increased payments from the one to the three-year survey. However, the coefficient of 0.10 in the third column of the bottom panel indicates that among fathers who are seeing their children, those fathers who contributed any support at one-year increased their frequency of visitation (from the

one to the three-year survey) as compared with fathers who were not contributing at the one-year survey. This final result provides some evidence, and confirms the findings of Nord and Zill (1996), that the direction of effects between fathers' payments to their children and contact is operating from payments to contact and not the other way around, at least for the subgroup of fathers who have some contact with their children.

CONCLUSIONS

The analyses in this paper take advantage of panel data to investigate the direction of causality between child support payments and fathers' contact with their nonresident children. Using the Fragile Families and Child Wellbeing study allows for a focus on a sample of unmarried urban parents with births in the post-welfare reform era and allows for the inclusion of a rich set of family characteristics which have not been available in most prior studies. Using cross-lagged models presents the opportunity for a more causal interpretation of results, but also allows for an examination of reciprocal effects.

I find that the relationship between fathers' formal support payments and the likelihood of contact with children is fully explained by the inclusion of the lagged term in the model. In other words, controlling for whether fathers saw their children at time one, there is no effect of paying formal support or the level of support paid on increasing the likelihood of seeing children at time two. On the other hand, I find that controlling for formal payments at time one, fathers who see their children more frequently are actually less likely to pay and pay less formal support than fathers who see their children less frequently. I hypothesize that this is related to the fact that many fathers who see their children are making informal contributions to them in place of paying through the formal support system. In the final analysis, combining formal and informal

support, I find a strong positive reciprocal relationship between paying any kind of support and contact with children for all fathers. However, for the subgroup of fathers who have consistent contact with their children, paying support (formal or informal) leads to higher frequency of contact, but higher frequency of contact does not lead to a greater likelihood of paying support.

These findings point to the importance of informal contributions from the father in the lives of children with unmarried parents. Because so few fathers in these families pay formally (only 23% three-years after the birth), it is clear that informal support makes up the larger proportion of support received from fathers. The fact that child support enforcement focuses exclusively on increasing support received through the formal system, rather than taking into consideration fathers' informal contributions, may be shortsighted, especially when we consider the positive relationship between fathers' time spent with their children and their informal contributions. Informal contributions become even more important, given the substantial barriers that unmarried, urban, minority fathers face in paying regular child support through the formal system, such as high rates of incarceration and multiple partner fertility, and relatively low levels of education and employment.

In light of the finding that increases in fathers' total contributions (the combination of formal and informal support) as opposed to contributions through the formal system are related to more contact with their children, it is important to understand the relationship between formal and informal support. Research has confirmed that strong child support enforcement increases the amount of formal support that children receive from their fathers, but very little research has been done on the relationship between enforcement and informal contributions. Future work in this area needs to examine the effects of the child support enforcement system on the total package of contributions that fathers make to their nonresident children.

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Table 1: Changes in Fathers' Child Support Payments and Child Contact from the One to the Three Year Survey, N = 1314

Payment and Contact Measures	One-Year	3-Year
Any Formal Support Received in past Year***	12%	23%
Amount of Formal Support Received in Past Year***	\$153	\$471
Any Support Received (formal or informal) in Past Year	57%	57%
Any Contact in Past 30 Days ***	62%	56%
# of Days of Contact in Past 30	8.8 days	8.6 days
# of Days of Contact in Past 30 for those w/ Any Contact (N = 607)	15.7 days	16.0 days

Note: Tests of statistical significance indicate significant differences between the 1 and 3-year measures.

*** $p < .001$

Table 2: Sample Description for Mothers Interviewed at Baseline, One-Year and Three-Year Who Were Not Residing with Father at 1-year Survey, N = 1314

Characteristics	% or Mean
<u>Demographics</u>	
Father is less than 21	19
Father is 21-30	57
Father is more than 30	23
Father is non-Hispanic White	10
Father is non-Hispanic Black	66
Father is Hispanic	22
Father is non-Hispanic of other race	2
Father has less than high school	34
Father has high school education	39
Father has more than high school	21
Mother is native born	92
Male child	53
Father's age minus mother's age (years)	2.5
Father's education level minus mother's education level (scale)	-0.04
Parents are the same race	84
<u>Additional Parent and Child Characteristics</u>	
Parents were cohabiting at birth	25
Father has children with other mothers	48
Father has been in jail	43
Father worked prior to birth	64
Father has disability	7
Father visited in the hospital	61
Father contributed cash during pregnancy	69
Father contributed other things during pregnancy	64
Father intended to contribute in the future	84
Mother has children with other fathers	43
Mother has other children with this father	25

Note: There is missing data on several of the father variables because the mothers did not know or refused to answer. These missings are coded as dummies and included in the regressions. Father's: education - 7%, multiple partner fertility - 9%, incarceration history - 10%, work status - 11%, disability status - 6%.

Table 3: Cross-Lagged Effects Models of Formal Child Support Payments and Father/Child Contact, N = 1314

Main Predictor	Bivariate	Add 1-Year Control	Add Demographics	Add Previously Unobserved Characteristics
OUTCOME: Probability of Receiving Formal Payment in the Past 12 months at the 3-Year Survey				
Any Contact at 1-Year	0.11*** (3.89)	0.06** (2.60)	0.05 (1.91)	0.01 (0.47)
OUTCOME: Probability of Father Contact in Past 12 months at the 3-Year Survey				
Any Formal Payment at 1-Year	0.08*** (2.73)	0.03 (1.22)	0.03 (1.25)	0.02 (1.03)

Note: Figures are OLS coefficients and (t-statistics).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 4: Cross-Lagged Effects Models for Alternate Measures of Payments and Contact, N =1314

OUTCOME = FORMAL PAYMENTS	Probability of Receiving Formal Payment	Amount of Formal Payment Received	
<u>Predictors</u>			
Any Contact at 1-year	0.01 (0.47)	0.04 (1.52)	
Days of Contact at 1-year	-0.05 (-1.81)	-0.04 (-1.41)	
Days of Contact at 1-year (for those w/any contact), N = 607	-0.13** (-3.18)	-0.11* (-2.38)	
OUTCOME = CONTACT	Probability of Any Contact	Days of Contact	Days of Contact for those w/ Any Contact, N = 607
<u>Predictors</u>			
Any Formal Payment at 1-yr	0.02 (1.03)	-0.02 (-0.86)	-0.04 (-1.10)
Amount of Formal Payment at 1-yr	0.03 (1.12)	-0.02 (-0.61)	-0.04 (-1.20)

Note: Figures are OLS coefficients and (t-statistics) for the fully controlled model (Model 4 in Table 3).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 5: Cross-Lagged Effects Models for Total Support Received and Father Contact, N =1314

OUTCOME = PAYMENT		Probability of Receiving any Payment (Formal or Informal)		
<u>Predictors</u>				
Any Contact at 1-year		0.16*** (5.40)		
Days of Contact at 1-year		0.13*** (4.33)		
Days of Contact at 1-year (for those w/any contact), N = 607		0.02 (0.54)		
OUTCOME = CONTACT		Probability of Any Contact	Days of Contact	Days of Contact for those w/ Any Contact, N = 607
<u>Predictors</u>				
Any Payment at 1-yr (Formal or Informal)		0.11*** (4.14)	0.08** (2.94)	0.10* (2.03)

Note: Figures are OLS coefficients and (t-statistics) for the fully controlled model (Model 4 in Table 3).

* $p < .05$; ** $p < .01$; *** $p < .001$

Figure 1: Structure of Cross-Lagged Effects Model in Current Paper

