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ABSTRACT

High US incarceration rates have motivated recent research on the negative effects of imprisonment on later employment, earnings, and family relationships. Given the high rates of fatherhood among men in jails and prisons, a large number of children are placed at considerable risk when a parent is incarcerated. This paper examines one dimension of the economic risk faced by children of incarcerated fathers: the reduction in the financial support that they receive. We use a population-based sample of urban children to examine the effects of incarceration on this support. Both cross-sectional and longitudinal regression models indicate that men with incarceration histories are significantly less likely to contribute to their families and those that do contribute provide significantly less. These negative effects of incarceration on fathers' financial support are due not only to diminished performance in the labor market by formerly incarcerated men, but also to their increased likelihood to live apart from their children. Men contribute far less through child support (formal or informal) than they do when they share their earnings within their household, suggesting that the destabilizing effects of incarceration on family relationships place children at significant economic disadvantage.

Recent research on the collateral consequences of incarceration has examined the economic and family life of those released from prison and jail. Economic research has estimated the negative effects of incarceration on earnings and employment (Western 2002; Pager 2003; Kling 2006). Family studies report that incarceration is an acute source of marital stress and social stigma, placing couples at high risk of divorce and separation (Braman 2001; Lopoo and Western 2005). Among the poor, parental imprisonment has become a common event affecting more than half of African American children with low-education parents (Wildeman, forthcoming). The effects of incarceration on children are potentially large because of the current size of the penal population, and the large share of fathers in prison and jail. In 2002, over 1.1 million parents (mostly fathers) with over 2.4 million minor children were incarcerated in State and Federal prisons or local jails (Mumola 2006).

The high level of incarceration may fuel inequality across American families because incarceration rates are highest among the most disadvantaged. The incarcerated population is overwhelmingly young, minority, and poorly-educated (Western 2006, Petersilia 2003). Moreover, incarcerated men tend to come from spatially concentrated areas of inner cities, leading urban and minority neighborhoods to suffer an increased risk of poverty, delinquency, and other hardships for children.

In this paper, we draw together the economic and family research to examine the impact of incarceration on economic inequality among children. This paper uses newly available population-based data to examine the effects of incarceration on the financial support that fathers provide to their partners and children. We find that the children of formerly-incarcerated fathers receive less economic support than similar children whose fathers have stayed out of prison and jail. Reduced financial support for children results partly from the very low earnings of formerly-

incarcerated men and partly from the absence of formerly-incarcerated men from their children's households. The findings suggest how the American prison boom is contributing to the transmission of economic disadvantage from one generation to the next.

BACKGROUND

Incarceration threatens the ability of men to contribute to their families in two key ways. First, an extensive literature suggests that incarceration places men at a severe disadvantage in the labor market. Returning offenders are often unable to find work, or relegated to low-paying jobs or the informal economy (See Western, Kling, and Weiman 2001 for a review). With few employment options, men's income is often insufficient to support their families. Second, incarceration has been shown to have devastating consequences for family structure. Men married upon entering prison are more likely than their never-incarcerated counterparts to separate, and particularly among blacks, those who are single have few marriage prospects upon their release (Western 2006). Fathers in prison, or returning from prison, therefore have limited access to their children, and at any level of income, their children are less likely to receive financial support. By reducing earnings and separating men from their families, we expect that incarceration significantly reduces the financial contribution of fathers to children.

Incarceration and the Labor Market

Incarceration can undermine a worker's success in the labor market in several ways. Workers may be made less productive by serving time in prison – supply-side effects – or employers may be more reluctant to hire job applicants with criminal records – demand side effects (Holzer, Raphael and Stoll 2003).

Mincer (1962) estimates that on-the-job training comprises as much as half of a worker's human capital. Data from the National Corrections Reporting Program (2003) suggest that men in state prison serve an average sentence of 30 months before their first release, with a median of approximately 17 months. Time incarcerated and away from the labor force prevents the acquisition of work experience and job skills. Incarceration may also exacerbate substance abuse and other health problems. Behavioral adaptations to the conditions of penal confinement may leave an inmate withdrawn, uncommunicative, and unable to accept authority. These health and behavioral effects would clearly reduce an ex-offender's productivity. Prison may also provide a "school for criminals", increasing an inmate's criminal human capital, raising their potential illegal wages, and enhancing their preference for crime (Myers 1980, 1983). The effects of incarceration are not unambiguously negative, however. Inmates may participate in education and work programs. There is also evidence that spending time behind bars can be a turning point, giving inmates time to reflect and resolve to improve their lives (Edin, Nelson, and Parnal 2004).

On the demand side of the labor market, incarceration carries a stigma that repels prospective employers. Job applicants are routinely asked about their criminal histories and ex-offenders risk termination if they disclose their records. A prison record may signal that a job applicant is dishonest, dangerous, or unreliable. Criminal stigma also carries a legal significance as individuals with criminal records are often prohibited from employment in certain skilled and licensed occupations. Employers, too, may bear legal liability where negligent hiring laws leave them liable for damage caused by their employees with criminal records (Pager 2003, Holzer et al. 2003, citing Bushway 1996).

The possibility also exists, however, that low employment and wages rates among ex-offenders might result from selection into incarceration rather than a causal effect. Men who become incarcerated are generally poorly educated, and even prior to their incarceration, score lower on standardized tests than other men with low education (Western 2006). In fact, many men turn to crime, or “double up” between legal and illegal work precisely because they lack skills and opportunities in the formal labor market (Fagan and Freeman 1999, Freeman 1996, Reuter, McCoun, and Murphy 1990). Nonetheless, an extensive empirical literature, reviewed by Western (2006) and Western, Kling, and Weiman (2001), suggests that in addition to the role of selection, incarceration does indeed suppress employment and wages.

Incarceration and Families

Incarceration may also reduce the time men spend with their children, during imprisonment and after release. During imprisonment, fathers are, in effect, incapacitated not only from committing crimes and gaining labor market experience, but also from participating in their relationships as a partner, spouse, or parent (Western 2006). Visits are few, and both psychologically and physically demanding. Less than one-third of fathers in prison see at least one of their children on a regular basis (Hairston 1998). Phone and mail contact also presents challenges, as collect calls are often expensive for prisoners’ families, and mail communication from a correctional institution also carries a stigma and social cost. Incarcerated fathers are also generally incapacitated from contributing financially to their families, as prison pay is meager and correctional fees for doctors’ visits, health services, and other living expenses frequently force incarcerated men to rely on their families rather than providing for them (Hairston 1998). Furthermore, while fathers are incarcerated, mothers also frequently form new relationships, further separating the incarcerated fathers from their children (Braman 2004). Even after returning from prison, men are often unable to play their roles as partners. Given incarceration’s

negative effect on employment and wages, men frequently remain unable to provide for their families, which further strains family relationships and undermines opportunities for full post-prison reunification.

Romantic and family relationships are also undermined by the social stigma attached to incarceration. Ethnographic research by Edin (2000) and Anderson (1999) shows that poor women weigh heavily the respectability of prospective husbands. A man's incarceration history suggests a lack of honesty, threatens family reputation, and raises concerns that his drug involvement, violence, or other illegal activities might follow him into the home, destabilizing his family and placing them at risk (Edin 2000). The financial instability associated with incarceration also suggests to women that a formerly incarcerated man will be unable to lift his family out of the ghetto, or provide them with a "respectable" middle-class lifestyle (Anderson 1999).

As with theories of incarceration and the labor market, low marriage and partnership rates among incarcerated men may be due to selection, and that fathers who go to jail and prison are simply less-supportive fathers and partners. Only half of fathers sent to state and federal prisons were living with their children at the time of their incarceration (Parke and Clarke-Stewart, 2002), suggesting that children may not suffer significantly from the incarceration of an already-absent father. Furthermore, most fathers in prison have children by multiple partners, suggesting that their family circumstances were far from stable before incarceration (Johnston, 2006). Nonetheless, research by Lopoo and Western (2006) examines the NLSY and the Fragile Families and Child Wellbeing study, and finds that incarceration leads men in married or cohabiting relationships to separate, and among black men, reduces the likelihood that a single man will marry.

With evidence of the negative effects of incarceration on men's labor market performance and family stability, we expect children to experience significant hardship when their fathers are incarcerated. This study improves our understanding of children's economic risk by accounting for fathers' financial contributions to their children, and using a number of analytical strategies to assess how these contributions are affected by incarceration.

DATA AND METHODS

We study the relationship between incarceration and fathers' financial support using the Fragile Families and Child Wellbeing Study ("Fragile Families"). Fragile Families is a national study that follows a cohort of unmarried parents (along with a comparison group of married parents) and their young children, in twenty U.S. cities. Baseline data were collected between 1998 and 2000; 4,898 mothers were interviewed in the hospital within 24 hours of their child's birth (1,186 marital births and 3,712 nonmarital births). Fathers were also interviewed in the hospital when possible, and contacted in other locations if they were not present at the birth. Parents were re-interviewed one, three and five years after the child's birth, and our analysis sample consists of those 3,469 families where fathers' financial contributions can be computed at the fifth-year follow-up. Multiple Imputation analysis, available upon request, suggests that the families retained for five years of the survey are systematically different from those lost to attrition, and that those retained are far better off on measures of both relationship and financial stability. It is therefore quite likely that the children whose families are lost to attrition are at even greater risk than those we observe.

The Fragile Families survey has several features that make it particularly valuable for assessing the relationship between incarceration and support for mothers and children. Its huge

oversampling of unmarried parents who live in large cities provides a sample of highly socioeconomically disadvantaged families, and a substantial number of fathers who have experienced incarceration. Three percent of the fathers were in prison or jail at the time their child was born, and by the fifth year follow-up, almost 50% of fathers were reported to have been incarcerated at some point in their lives. The longitudinal structure of the data are particularly valuable; 364 of the fathers are incarcerated for the first time between the first and fifth year follow-up surveys, enabling a comparison of their experiences both before and after their time in prison or jail. In addition, the fact that both mothers and fathers are interviewed, and both parents are asked about the fathers' incarceration history, provides a more complete record of his criminal record. Criminal history is frequently underreported (Golub et al 2002), and supplementing fathers' self-reports with those of their partners helps to improve the accuracy of our analysis. Furthermore, the data contain a rich array of descriptors, many of which – such as indicators of men's cognitive ability and impulsivity – are unobserved in other surveys. Including these covariates helps our analysis to isolate the causal effect of incarceration from the effects of unobserved heterogeneity that selects men into criminal involvement.

Fragile Families is also an ideal dataset for this study because it allows the construction of a complete measure of fathers' contributions to their children, which reflects both their earnings, and their propensity to share these earnings with their children. We establish the propensity of men to share their earnings based on their residence status, noting that married and other co-resident fathers are likely to share a larger portion of their earnings than are nonresident fathers, whose contributions are likely to come primarily through child support. Fragile Families' focus on family structure and father residence allows us to establish which fathers are most likely to share their income, and to combine men's self-reports of their past-year earnings

with their partners' reports of the amounts they receive in child support, to construct a detailed measure of financial support.

Variables of Interest

Financial Contributions. Our dependent variable, the amount of money fathers contribute to their children, counts a share of earnings for fathers living with their children, and child support contributions for nonresident fathers. Betson (2006) estimates that families with one child, on average, devote approximately 25% of their spending to the child. We therefore assume that fathers living with their partners and children contribute 25% of their earnings, from both the regular and informal labor markets, to childrearing. Later analyses test the sensitivity of our findings to this calculation. The financial contribution of nonresident fathers is measured by the amount of cash that the child's mother reports receiving in the past year, in both formal and informal child support. If the mother reports receiving the entire amount of obligated formal support, the amount of formal support equals the reported child support order amount. If the mother only reports receiving a fraction of the agreed-upon amount, the amount she receives is noted. Informal support is measured as the amount of money she receives in addition to that formally ordered. Our support measure does not include either in-kind support (such as buying food or clothing for the child), or time spent with the child (such as a generally non-resident father having the child live with him for periods of time).

Incarceration. Our key independent variable, the measure of incarceration, is based on a number of questions in each wave, beginning at the child's first birthday: fathers' self-reports of their criminal history, mothers' direct reports that their partner had been incarcerated, and

indirect reports from either parent that suggest that the father had been to jail or prison¹. If either parent reports that the father had been to prison or jail, or if any of the indirect reports indicate incarceration, then we consider the father to have been incarcerated.²

Socioeconomic Covariates. Fathers with incarceration histories also face other economic and social disadvantages that may lead them to contribute less to their children. To avoid overestimating the effects of incarceration due to omitted variables, we control for a number of covariates, which we classify into three broad groups.

Our first group of covariates are established early in fathers' lives, and are likely to affect the risk of incarceration and later contributions to their children. These covariates include demographic characteristics such as race and family history, as well as behavioral traits such as cognitive ability and impulsivity. We define family history as whether his own father was present and involved in his upbringing, or if another man served as his "social father". Cognitive ability is measured using a word association test, and though the measure is not recorded until the third year follow-up, it was designed as a general intelligence measure, and is therefore considered a stable construct, unlikely to be affected by early incarceration spells. Likewise, impulsivity was measured at the one-year follow-up survey, but measures what we expect to be a stable characteristic. If, however, impulsivity and cognitive ability are not stable over time, and

¹ Such "indirect reports" include either parent reporting that their relationship had ended as a result of the father's incarceration, that the father had been sent to jail for child support nonpayment, and several other indicators that he had spent time in jail or prison. While a jail sentence for child support nonpayment may be applied for reasons endogenous to later financial contributions, the proportion of men incarcerated for this reason is quite small (79 out of approximately 2,000 men with incarceration histories). Moreover, several of these men were also incarcerated at other times, for reasons unrelated to child support. We therefore retain all men in our sample who have been incarcerated, concluding that any estimated effects of incarceration are not driven by endogeneity associated with jail sentences for child support nonpayment.

² Some fathers are either not surveyed, or refuse to answer questions on criminal history. While mothers' reports of incarceration (or non-incarceration) will supersede her partner's lack of an answer, if neither parent provides a yes-or-no answer for a time period, the fathers' incarceration status will be analyzed as unknown.

are negatively affected by the incarceration experience, including them in the analysis will reduce the size of the incarceration coefficient and understate the incarceration effect.

Our second set of covariates includes fathers' age and educational attainment at baseline. Both age and education are included in typical labor market analyses, but in our sample may be endogenous to incarceration. Men enter our sample upon the birth of a child, but among those men who have been to jail or prison the median reported age of first incarceration is 20. The majority were therefore incarcerated long before they became fathers, and many were incarcerated before they might otherwise have completed their education. To whatever extent incarceration precludes men from later fatherhood or education, models including these covariates may underestimate the true effect of having been to jail or prison.

Our third set of covariates is a rich set of employment, behavioral, and family characteristics measured at the baseline and year 1 surveys. These variables are valuable given that few surveys of incarceration include such a wide array of descriptors. However, as with the second set of covariates, these are also potentially endogenous, and may reflect effects of incarceration, rather than risk factors. A complete list of the variables in each of our three covariate sets is provided in Table 1.

Modeling Strategy

Cross-sectional Analysis. A detailed description of those men with and without incarceration histories, and those with incarceration status unknown, is provided in Tables 2 and 3. Of the 3,469 observations in our sample, 46% of the fathers are formerly-incarcerated and the incarceration status of another 7% is unknown. The men in the sample who have been

incarcerated are predominantly minorities, and the majority of men with incarceration histories were first incarcerated before their child's first birthday. Nearly one in eight Fragile Families fathers were incarcerated at some point between their child's first and fifth birthdays (Table 2).

Further information about the sampled men, by incarceration status, is provided in Table 3. Underlining the low economic status of the Fragile Families fathers, the non-incarcerated contributed only about \$8,000 to their children in the year prior the year 5 interview. Formerly-incarcerated fathers contributed significantly less – just over \$2,200. This lower contribution level reflects that fathers with incarceration histories are both less likely to financially contribute to their families at all (only 54% contribute, compared to 86% of fathers who have never been incarcerated), and that those who do contribute give less (Just under \$4,200 by men with incarceration histories, compared to more than \$9,200 by men who have never been incarcerated). Men whose incarceration histories are unknown fall somewhere between the two: they are nearly as unlikely to contribute to their families as the men with known incarceration histories, but among contributors, the amount given falls between that given by formerly incarcerated and never incarcerated fathers.

The small economic contribution of ex-inmates may be due to their relative social and economic disadvantage. Formerly-incarcerated men have very low employment and wage rates. They are significantly less likely to be married when their child is born, and more likely to be non-resident. In addition, the formerly-incarcerated are more likely, by the time the child is one year old, to have children with more than one partner, suggesting that their limited income is stretched thinner and across multiple families. On the other hand, while men with unknown incarceration histories have employment rates and wages almost as high as that of never-incarcerated men, their low rate of contribution suggests a lack of involvement in the lives of

their partners and children, further evidenced by the fact that their partners cannot assess whether or not they have been incarcerated.

To assess the extent to which fathers' contributions might be lower as a result of his nonresident status, and the extent to which his contributions might be lower due to low earnings, Table 4 examines the Fragile Families fathers by both their relationship status and incarceration history at year 5. The diminished financial contribution of fathers with incarceration histories is likely due to a combination of lower earnings and single-parenthood among mothers. For example, approximately three-quarters of the fathers in our ever-incarcerated sample are nonresident, compared to 34% of the never-incarcerated sample. Child support payments tend to be far lower than 25% of men's earnings, and more than half of nonresident fathers do not pay any child support in the year before their child's fifth birthday. High rates of nonresidence among incarcerated fathers suggest that their financial contributions to their children will be relatively small. In addition, however, for each residence status group, the financial contributions of men with incarceration histories are significantly lower. Notably, the contributions of married but formerly incarcerated men are only slightly over half those of married men with no incarceration histories, suggesting that the earnings of men with incarceration histories are also lower than those of other men.

To further assess the relationship between fathers' incarceration histories and the amount they contribute to their families, we estimate a series of cross-sectional regression models. These models are presented in four stages. We begin by modeling the unadjusted relationship between incarceration and contributions. If Y represents the amount that fathers contribute to their families, our bivariate model is given by:

$$Y_i = \beta_0 + \beta_1 \text{incarc}_i + \varepsilon_i \quad (1)$$

Our multivariate models (Models 1-3) add controls for demographic and socioeconomic characteristics that might be correlated both with men's likelihood of incarceration, and the amount they contribute to their families. Multivariate Model 1 includes the early-life covariates displayed in the first column of Table 1, and Models 2 and 3 add progressively more covariates, displayed in the second and third columns.

Model 3 in fact provides a conservative estimate of the effect of incarceration on fathers' contributions. If, for example, incarceration reduces the likelihood of employment at year 1, that reduction is likely to have implications for later contributions. However, if Multivariate Model 3 estimates a significant "effect" of incarceration, even controlling for year 1 employment, this suggests a strong relationship between incarceration and year 5 contributions, consisting of both the relationship mediated by year 1 employment, and the direct effect of incarceration.

Longitudinal Analysis. Although our cross-sectional regressions estimate the relationship between incarceration and fathers' contributions, with controls for a rich set of observed family characteristics, uncertainty about the timing of men's incarceration makes it difficult to determine whether our models are detecting a mediated effect of incarceration, or simply controlling for baseline characteristics that influence both the likelihood of incarceration and later contributions.

We therefore calculate panel estimates just for the 1,930 men who had not been incarcerated by the year 1 survey. For these men, all covariates observed at the baseline and year 1 surveys were observed prior to incarceration, and incarceration status is now a time-varying variable that scores 0 in waves prior to incarceration, 1 for waves after the respondent enters

prison or jail in the course of the panel survey. The panel estimates do not control for any post-incarceration variables, thereby reducing the downward bias that results from “over-controlling”.

The longitudinal analyses also includes a fourth multivariate model, which controls for the full set of baseline and year 1 covariates, as well as a measure of fathers’ contributions at year 1, when we know that they have not yet been to jail or prison. In this longitudinal model, the incarceration coefficient represents the change in contributions associated with having been incarcerated. The longitudinal model also helps us to assess the causal nature of the relationship between incarceration and fathers’ financial contributions. While the possibility of unobserved heterogeneity between the ever- and never-incarcerated groups presents an important challenge to causal inference, controlling for year 1 contribution levels helps to overcome this challenge. In order for our estimate in this model to be driven by such heterogeneity, the unobserved differences would need to be correlated with an individual’s likelihood of incarceration and his year 5 contributions, but uncorrelated with his year 1 contributions, which is unlikely to be the case.

Finally, to further isolate the effects of incarceration, we estimate a sixth model, examining the same 1,930 men at multiple points in time, and controlling for individual fixed effects to isolate the effects of incarceration from the effects of unobservable differences that might be correlated with both incarceration and contributions. This model is truly the most conservative, as it considers only within-person changes in both incarceration status and contribution levels, and thus avoids confounding the causal effect of incarceration with stable differences between individuals in their criminal tendencies or their tendency to contribute.

RESULTS

Sample Description

As described above, and in Tables 3 and 4, those men with incarceration histories appear far worse off than do their never-incarcerated counterparts, both on characteristics predating, and those likely to follow their first incarceration spell. As anticipated, they contribute far less to their children at the year five survey. Men whose incarceration status is reported as unknown tend to fall between the known-incarcerated and known-not-incarcerated groups, though on labor market characteristics they far more closely resemble the never-incarcerated group.

Cross-Sectional Regression Results

The cross-sectional linear regressions results, presented in Table 5 describe the financial contributions provided by fathers with and without histories of incarceration.

As expected, the more covariates are controlled for, the weaker the relationship between incarceration and fathers' contributions to their families. Nonetheless, even in Multivariate Model 3, which is most strictly controlled and even controls for characteristics that might mediate the effects of early incarceration (such as baseline marital status or year 1 employment), a statistically and substantively significant relationship remains. Comparing the magnitudes of the regression coefficients in Table 5 provides some perspective on the importance of incarceration in predicting men's contributions to their families. Examining Multivariate Model 3, even in our most conservative estimates, the difference in contribution level and contribution likelihood between the ever-incarcerated and never-incarcerated is large. Men with incarceration histories contribute nearly \$1,300 less to their children than never-incarcerated men. Given that average past-year contribution levels are approximately \$5,000, this difference represents approximately 25% of the contribution for families where the father has been incarcerated.

Limiting our sample to those men who were not incarcerated at the one-year survey, with results displayed in Table 6, we find that the replications of the four models displayed in Table 5 models 1-4 estimate slightly larger effects among the limited sample than they did among the full sample. As in the full sample analysis, however, the estimated incarceration effect is large in the bivariate model, and declines as more covariates are added.

Of particular interest in Table 6 are the two rightmost columns. Including controls for Year 1 contributions (both whether the father contributed anything, and the amount provided), newly incarcerated fathers contribute nearly \$1,700 less than their counterparts. Most important, including individual fixed effects, which control for all time-invariant heterogeneity between individuals, the decline in contributions is approximately \$1,300, or approximately 25% of the average contribution level. As discussed, for this change to be driven by a factor other than incarceration, this factor would need to be orthogonal to earlier contribution levels, but correlated with both the incarceration history and later contributions.

Mechanisms

Each of our analyses thus far suggests a suppressant effect of fathers' incarceration on the financial contributions that they make to their children. In this section, we test several mechanisms by which this reduction may take place, focusing on the two theoretical constructs that tie incarceration to family contributions: labor market performance and relationship instability.

Table 7 examines changes in the incarceration coefficient as a series of potential mediators are considered. The first column replicates the individual fixed effects model from Table 6, which examines within-person changes in contribution levels following an incarceration. The second and third columns examine two measures of fathers' available

income, his earnings in the regular and underground labor markets, respectively. The fourth column controls for the parents' relationship status. The fifth column controls for both earnings (in the regular labor market) and year 5 relationship status, and the sixth column includes a control for whether the mother is married to or living with somebody new.

As shown in Columns 2 and 4, both labor market performance and relationship status play a large role in accounting for the relationship between incarceration and fathers' family contributions, but relationship stability is the primary driver of the relationship. Looking more closely at both labor market performance and relationship stability, two facts are noteworthy. First, as shown in Column 2 of Table 7, labor market performance and the availability of income from earnings are an important component of men's contributions. However, Column 3 suggests that money that fathers earn in the informal labor market is far less likely to reach their children. The reasons for this are twofold: Fragile Families fathers report far less income from the informal labor market than the formal labor market. Their underground earnings are thus less substantial and less likely to go towards childrearing. In addition, money earned off the books is far less likely to be factored into child support decisions; fathers living apart are thus less likely to share that income with their nonresident children.

Also noteworthy are Columns 4, 5 and 6 of Table 7. As shown in Column 4, fathers who are nonresident contribute far less to their children, a fact that explains the vast majority of the incarceration effect noted in Column 1. However, despite concerns that mothers' repartnering while a father is incarcerated might threaten the relationship between father and child, this effect, at least in terms of financial contributions, appears to be minimal. Column 6 suggests that fathers do indeed contribute less to their children when their child's mothers are married or living with someone new. However, the bulk of incarceration's effects on family contributions

are related to the dissolution of the parents' relationship. Once parents are living apart, a mother's repartnering does little to further reduce his financial contributions.

SENSITIVITY ANALYSIS

Incapacitation

Our findings suggest that children whose fathers have been incarcerated receive less in financial support than their counterparts whose fathers have no history of incarceration. By examining within-individual changes over time, we increase our confidence that our estimates are causal, rather than the result of unobserved heterogeneity. Moreover, our results suggest that one of the primary mechanisms governing the reduction in contributions by ever-incarcerated men is their increased likelihood to be living away from their families, and the reliance of their partners and children on child support, rather than a sharing of earnings within the household.

However, these findings may be driven by fathers' incapacitation while in prison than by any destabilizing effects of incarceration on men's relationships or labor market performance. Incarcerated men are nonresident by definition, and computing contributions based on child support may underestimate their contributions over the previous year. We test the robustness of our findings by re-estimating the models in Table 6, but excluding from the sample men who were incarcerated at the time of their five-year survey. Results remain highly statistically significant, and substantively unchanged.

Income sharing

Given the importance of residence status in determining fathers' financial contributions to his children, we also examine the sensitivity of our findings to our definition of fathers' contributions. Thus far, we have followed the Betson (2006) estimates that 25% of family

spending is allocated to children, and assumed that the contributions of resident fathers are equal to 25% of their total earnings (in the formal and informal labor markets). In this section, we vary the proportion of resident fathers' earnings that we allocate to family contributions, with results displayed in Table 8. The baseline results, which replicate the fixed effects model from Tables 6 and 7, is noted in the center column of results, with the rates of shared income increasing to the left, and decreasing to the right.

Moving across the columns of Table 8, it is clear that the magnitude of the incarceration effect is quite dependent on the portion of earnings that we assume resident fathers share with their children. Given that fathers with incarceration histories are far less likely to live with their children, their contributions are most frequently limited to child support payments. The sharing of earnings, on the other hand, is most frequently the mechanism by which fathers without incarceration histories contribute to their families. As a result, as resident fathers share a smaller portion of their earnings, the effect of incarceration on fathers' contributions is diminished. This again suggests that the diminished family contributions from men with incarceration histories stems largely from their increased likelihood to live away from their children. Nonetheless, the likelihood that incarcerated fathers contribute to their children remains significantly lower in all of the scenarios we test.

CONCLUSIONS AND DIRECTIONS FOR POLICY AND RESEARCH

Summary of Findings

As shown throughout this paper, the incarceration of a father has substantial economic consequences for child well-being. Men with incarceration histories contribute approximately \$1,300 less to their families than do men who have never been incarcerated. This disparity is

both highly statistically significant, and substantial, representing approximately one quarter of the average amount that families in our sample receive over the course of a year.

Cross sectional analyses which control a rich set of observable personal characteristics, some of which are undoubtedly endogenous to incarceration, longitudinal analyses, and individual fixed effects models all suggest that the decreased contributions by incarcerated men are not simply due to their being “bad” fathers. Rather, incarceration’s destabilizing effects on their labor market performance and relationship quality lead fathers to earn less and to live away from their children, each of which diminishes the financial support their children receive.

Policy Implications

The limited capacity of formerly incarcerated fathers to contribute to their children has been linked to both their diminished performance in the labor market, and instability in their family and romantic relationships. Incarceration policies should address each of these challenges. Incarceration policies can address issues of family instability and enable responsible fatherhood among prisoners. Family-friendly visitation opportunities, and an elimination of the high costs to mail and phone contact, can help couples separated by incarceration to remain in touch, and ease family reintegration upon a father’s return. Furthermore, fathers returning from jail or prison face many challenges to family reunification. Public housing policies frequently exclude individuals with criminal records, preventing former prisoners from returning to their families. Removing such barriers can ease the re-entry process, and provide children with more ready access to their fathers’ support.

On the other hand, it is important to note that our outcome of interest in this analysis has strictly been a financial measure, and economic stability is only one aspect of child well-being. A significant portion of the incarceration effect measured in this analysis is based on the

increased tendency of fathers with incarceration histories to live away from their children. Although this substantially reduces the financial support that children receive, our analysis does not examine whether the removal of, and ultimate separation from, a criminally-involved father stabilizes the household in other ways. Nonetheless, our call for increased visitation opportunities remains relevant, so that a mother who does want to maintain contact between her children and their father is able to do so.

Policymakers can also address the diminished labor force participation among formerly incarcerated men by restoring a rehabilitative component to correctional facilities and providing better education and employment training. Returning prisoners also face significant statutory barriers to securing employment, as they are legally forbidden from entering several fields of work, or obtaining many types of professional licenses. Removing such restrictions will help these men to re-establish themselves in the regular labor market, and enable them to better support their children.

Finally, when setting policy about the use of incarceration, it is crucial that concerns about public safety and deterrence are weighed against the challenges facing the families and communities of criminally-involved men, and the difficulties inherent in prisoner re-entry. The disproportionate presence of poor men and minorities in our nation's prisons, and the economic and social challenges that incarceration brings to prisoners and their families, threatens to transmit profound disadvantage from one generation to the next.

Directions for Future Research

While this analysis strongly suggests a negative effect of incarceration on the economic well-being of prisoners' families, it also presents several opportunities for future research. Although we are confident that the financial contributions of fathers with incarceration histories

are substantially reduced from those of their counterparts, we have not yet determined the effects of this incarceration on the child's total household income or the level of hardship the children experience. We plan to examine these outcomes in future work.

We are also interested in analyzing the effects of incarceration on other dimensions of fathers' involvement with their children, and on other, non-economic measures of child well-being. Given that approximately half of fathers in prison were not living with their children at the time of their incarceration, our analysis of father involvement must examine whether their incarceration spells came before or after the birth of their child, and where possible, whether the incarcerated fathers were living with their children before going to jail or prison, and how any effects of incarceration are moderated by their pre-prison parenting experiences. Turning to child well-being, we also plan to examine a number of behavioral measures when the children are five years old. Preliminary analyses suggest that children whose parents have been incarcerated display more aggressive behavior than their counterparts. We plan to examine the extent to which this aggression is tied to the fathers' incarceration itself, or to the fathers' parenting behavior before going to jail or prison.

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Table 1. Covariates used in analyses of incarceration and fathers' contributions

Model 1	Model 2	Model 3
Early-life (or time-invariant) characteristics	Additional regressors for wage equation	Other (potentially endogenous) regressors
Race/ethnicity <ul style="list-style-type: none"> • Black • White • Hispanic • Other 	Baseline age Baseline age (squared) Baseline education <ul style="list-style-type: none"> • Less than HS • HS graduate • Some college • College graduate 	Baseline relationship status <ul style="list-style-type: none"> • Married • Cohabiting • Nonresident Year 1 marijuana use Year 1 hard drug use Year 1 alcohol (>5 drinks) Year 1 Mental health <ul style="list-style-type: none"> • Major Depression diagnosis Year 1 employment Year 1 wage Year 1 off-books work Multiple partner fertility by year 1
Impulsivity		
Cognitive Ability		
Father involvement <ul style="list-style-type: none"> • Biological father • Social father 		

Table 2. Breakdowns of Incarceration Histories, and Timing, by Fathers' Race

Incarceration Timing	White	Black	Hispanic	Other	Unknown	Total
Never Incarcerated	73%	42%	53%	60%	27%	47%
First Incarcerated before Y1	18%	40%	30%	23%	41%	34%
First Incarcerated Y1-Y5	6%	14%	11%	11%	14%	12%
Incarceration Unknown	3%	4%	7%	6%	18%	7%
Total N (by race)	580	1387	761	109	632	3,469
Number Incarcerated	138	754	307	37	347	1,583

Total N=3,469 of analysis sample. "First Incarcerated Y1-Y5" includes those with unknown incarceration status at Year 1, as well as those reported to have not been incarcerated

Table 3: Baseline and Year 1 Differences Between Fathers, by Incarceration History

Characteristic	Ever-Incarc.	Never-Incarc.	Incarc.Unknown
Past-year financial contributions (Y5)*** (outcome variable)	\$2600 (5462)	\$8,006 (9293)	\$3,138 (6271)
Percent of men contributing (Y5)***	60% (0.490)	86% (0.343)	55% (0.498)
Average nonzero contribution level (Y5)***	\$4,336 (6500)	\$9,269 (9396)	\$5705 (7548)
% married	5% (0.22)	38% (0.49)	16% (0.37)
% cohabiting	42% (0.49)	35% (0.48)	27% (0.45)
% nonresident	53% (0.50)	27% (0.44)	56% (0.50)
% white***	10% (0.29)	26% (0.44)	7% (0.26)
% black***	47% (0.50)	35% (0.48)	23% (0.42)
% Hispanic	20% (0.40)	24% (0.43)	21% (0.41)
% other race	2% (0.15)	4% (0.20)	3% (0.17)
% unknown race	21% (0.40)	10% (0.30)	46% (0.50)
Impulsivity (0=low, 6=high)***	2.0 (1.93)	1.2 (1.57)	1.0 (1.43)
Cognitive score (1=low, 15=high)***	6.4 (2.6)	6.8 (2.8)	5.9 (2.7)
% who grew up with biological father	32% (0.47)	46% (0.50)	48% (0.507)
% who grew up with social father***	38% (0.48)	26% (0.44)	30% (0.46)
Age at baseline***	26.2 (6.53)	29.1 (7.41)	28.2 (7.0)
% HS dropout***	42% (0.49)	23% (0.45)	38% (0.49)
% HS graduates***	37% (0.48)	29% (0.45)	38% (0.469)
% some college***	19% (0.39)	28% (0.45)	16% (0.37)
% college graduates***	1% (0.11)	20% (0.30)	16% (0.37)

% employed (Y1)***	68%	90%	79%
	(0.47)	(0.30)	(0.41)
Wage (Y1, 2000\$)***	\$8.71	\$14.70	\$11.17
	(6.62)	(12.03)	(9.7)
% working off-books (Y1)***	42%	29%	28%
	(0.49)	(0.45)	(0.45)
% with multiple partner fertility (Y1)***	49%	26%	48%
	(0.50)	(0.44)	(0.50)
% using hard drugs (Y1, past-month)	1%	0%	0%
	(0.10)	(0.06)	(0)
% using marijuana (Y1, past-month)***	12%	5%	4%
	(0.32)	(0.22)	(0.20)
% having 5+ drinks (Y1, past-month)	28%	24%	24%
	(0.45)	(0.43)	(0.43)
% with Major Depression (Y1)***	13%	8%	9%
	(0.34)	(0.27)	(0.282)
Observations	1,334	1,637	249

Note: Numbers in parentheses are standard deviations, statistical significance refers to differences between ever- and never-incarcerated groups

Table excludes 308 men incarcerated at the time of their five-year follow-up survey.

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

Table 4: Average contribution of fathers to children and percent distribution of relationship status at year 5 for ever-incarcerated and never-incarcerated fathers.

Relationship Status	Ever-Incarcerated		Never-Incarcerated	
	Contribution (\$)	Relationship Status (%)	Contribution (\$)	Relationship Status (%)
Married at year 5	6542	15	12280	52
Cohabiting at year 5	4912	14	5805	14
Nonresident at year 5	1210	71	2440	34
Sample size (N)		1,334		1,637

N=2,971 fathers for whom relationship, incarceration, and contribution status are known at Y5, and are not incarcerated at the time of their survey.

Note: Fathers with incarceration status, residence status, or contribution level unknown are omitted, as are fathers incarcerated at the time of their survey.

Table 5: Coefficients from regression models predicting fathers' contributions as a function of incarceration and other characteristics (continued on following page)

Model	Bivariate	Multivariate 1	Multivariate 2	Multivariate 3
Ever-Incarcerated?	-5,769.27 (262.89)***	-3,752 (259.73)***	-2,497.16 (252.27)***	-1,293.83 (255.89)***
Incarceration Unknown?	-4,867.63 (507.28)***	-2,420.05 (498.37)***	-1,759.10 (471.66)***	-941.57 (478.26)
Race/Ethnicity (White = reference group)				
Black		-6781.59 (359.04)***	-4476.73 (354.18)***	-2,784.87 (356.71)***
Hispanic		-6135.35 (399.09)***	-3555.94 (395.59)***	-2,743.09 (384.53)***
Other race		-2,556.30 (717.76)***	-2489.18 (674.14)***	-2,029.51 (649.10)**
Impulsivity		-400.12 (81.66)***	-176.67 (77.73)*	-87.81 (76.43)
Cognitive Score		257.01 (51.33)***	66.24 (49.51)	48.00 (47.69)
Grew up with biological father?		639.58 (297.83)*	170.84 (280.81)	23.94 (269.51)
Grew up with social father?		-677.24 (271.04)*	-354.44 (255.27)	-234.79 (245.18)
Age at baseline			487.36 (94.70)***	271.50 (93.79)**
Baseline age squared			-6.54 (1.48)***	-3.68 (1.45)*
Education (HS Graduate = reference group)				
Less than HS			-374.12 (308.38)	-165.87 (297.18)
Some college			1,672.59 (335.79)***	1,111.70 (323.70)***
College Graduate			8,722.31 (483.34)***	6,629.17 (484.32)***
Baseline Relationship (Nonresident = reference group)				
Married at baseline				4997.76 (375.96)***
Cohabiting				1,596.12 (259.57)***
Employed at Y1				-115.22 (350.52)
Log wage at Y1				1,330.22 (185.17)***

Worked offbooks at Y1?	-79.25 (258.38)
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Note: Continued on following page

Table 5: Coefficients from regression models, predicting fathers' contributions as a function of incarceration and other characteristics (Continued from previous page)

Model	Bivariate model	Multivariate 1	Multivariate 2	Multivariate 3
Multiple partner fertility (Y1)?				-967.96 (255.73)***
Past-month hard drug use?				497.85 (1617.73)
Past-month marijuana use?				1,199.56 (457.34)**
5+ drinks in the past-month?				-705.48 (284.55)*
MD at year 1?				-747.47 (405.65)
Constant	8,006.47 (184.32)***	11,232.53 (606.70)***	570.60 (1584.36)	-1,385.64 (1585.54)
Observations	3,469	3,469	3,469	3,469

Note: Numbers in parentheses are standard errors

Dummy variables are included in these models to account for missing data, though their coefficients are not included in the table.

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

Table 6: Estimated incarceration coefficients predicting fathers' contributions, Limited Sample

Coefficient	Bivariate model	Multivariate Model 1	Multivariate Model 2	Multivariate Model 3	Including Y1 Contrib	Individual FE
Incarceration	-6,254.53 (493.73)* **	-4122.39 (454.12)***	-2713.58 (433.19)	-1,692.26 (414.33)* **	-1,699.44 (387.29)** *	-1,300.1 (401.14)** *
Contributions (L1)					0.37 (0.02)***	
Total Observations	1,930	1,930	1,930	1,930	1,930	3,860

Note: N=1,930, not incarcerated by Year 1

Numbers in parentheses are standard errors

Dummy variables are included in these models to account for missing data, though their coefficients are not included in the table.

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

Table 7: Testing mediators of the relationship between incarceration and contributions

Model	(1) Table 5, Individual FE Model	(2) Mediated by Y5 Earnings	(3) Mediated by Y5 Earnings and Off- books Earnings	(4) Mediated by Y5 Relationshi p	(5) Mediated by Earnings and Relationshi p	(6) Mediated by Earnings, Relationshi p, and Mother's Repartnerin g
Incarceratio n Coefficient	-1300.1 (401.14)* **	-1075.9 (308.3)** *	-919.5 (330.8)**	-283.7 (403.7)	-301.9 (309.8)	-215.1 (320.0)
Marriage				4562.9 (555.4)***	3481.2 (435.4)***	3412.9 (439.9)***
Cohabitatin g				3913.0 (406.3)***	3202.8 (324.8)***	3131.0 (330.1)***
Earnings (thousands)		217.9 (6.0)***	196.5 (5.3)***		214.9 (5.9)***	215.2 (5.9)***
Mother repartnered ?						-395.6 (392.6)
Off-books Earnings (thousands)			0.20 (0.01)***			
Total Observatio ns	3,860	3,860	3,273	3,860	3,860	3,860

Note: FE models, including 1,930 men not incarcerated by year 1, observed at year 1 and year 5

Numbers in parentheses are standard errors

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

Table 8: Sensitivity of estimated incarceration effect to the definition of resident fathers' contributions

Pct. of earnings contributed by resident fathers	35%	30%	Baseline 25%	20%	15%
Incarceration regression coefficient	-1857.7 (533.4)** *	-1578.9 (466.1)** *	-1300.1 (401.1)** *	-1021.3 (339.7)* *	-742.5 (284.1)* *

Note: All models control for individual fixed effects.

All models assume that nonresident fathers' contribution is based on formal and informal child support.

N=3,860; * $p < .05$; ** $p < .01$, *** $p < .001$