

The Effect of Black Male Imprisonment on Black Child Poverty¹

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Abstract

From the early 1980s through 2000, the number and the percentage of African American men in prison skyrocketed. This would be expected to have negative impacts on Black well-being, but Black child poverty generally decreased during this period. Using data from the U.S. Prison Census and the Current Population Survey for the period from 1983-1998, we examine the effects of Black male imprisonment on the household composition, income and poverty of Black children. Regressions of outcomes on imprisonment control for unobserved effects of time and place with fixed effect models including dummy variables for state and year. As the effects of imprisonment may be delayed, lags of one to six years are examined; the effects of imprisonment on child poverty are highest with 3-6 years lag. Tests for interactions reveal that high imprisonment rates are associated with improved outcomes for children whose mothers have at least some college, but worse outcomes for children whose mothers are less educated. For the children of the least educated, imprisonment raises poverty through two paths. First, after lags long enough to permit exits from short prison sentences, high imprisonment lowers the incomes of less-educated two-parent families. Second, after lags of 4-6 years, high imprisonment rates are associated with higher rates of children having mothers with less than high school education; this, in turn, is associated with higher rates of single-parent families and with lower incomes for both single- and two-parent families. Results demonstrate the indirect ways in which criminal justice policy has affected poor families and also highlight the ways in which the differential effects of imprisonment on different subgroups of African Americans has masked some of the consequences of these policies.

Incarceration has become a major factor in the social and economic structure of the United States, especially for African Americans. From the early 1980s through 2000, the number and the percentage of African Americans in prison skyrocketed. By 2000, 12% of Black men in their twenties were incarcerated, and over 20% of Black men ages 25-44 had been in prison at least once (Bonczar 2003). Previous sociological theory and research on the correlates of poverty, as well as common sense, suggest that removing substantial numbers of African American men from the labor force would be associated with increases in African American child poverty. Nevertheless, the simple time trends seem to contradict this intuition. The poverty rate for all Black children declined from 42 percent in 1980 to 30 percent in 2000, and the Black-White gap in poverty narrowed somewhat. Much of this decline occurred during the economic expansion of the later half

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of the 1990s. Of course, many other factors besides incarceration rates affect child poverty, and these factors can mask or distort the relationship between incarceration rates and child poverty. In this paper, we demonstrate that, with appropriate controls, sociological theory and common sense seem vindicated. There is a significant positive association of Black male imprisonment with Black child poverty. Having demonstrated this basic relationship, we investigate some of the mechanisms producing it. We find that some of our initial hypotheses are too simple. It appears that the main effects of imprisonment on child poverty occur not through removing men from communities, but from returning them to communities with diminished earning capacity. The effects of imprisonment vary with class. High imprisonment rates have less impact on children with college-educated mothers, and appear to be associated with higher rates of marriage for college-educated mothers. Finally, high imprisonment rates appear to have indirect effects on reducing the educational status of less-educated mothers, a finding which points to the need for a great deal of further research. High imprisonment rates increase the prevalence of single mothers with less than a high school education, but this effect arises not from increasing the probability that a mother with less than high school education is single, but rather from increasing the probability that a mother has less than a high school education.

It is often assumed that the main causal direction runs from poverty to imprisonment, that poverty leads people to commit crimes and that crime leads to improvement. However, the causal relationship is not that straightforward. Within a given time and place, there is generally a positive relation between committing crime and getting arrested and sentenced to prison for crime, as well as a positive relation between being poor and being arrested and sentenced for crime. Even these individual-level relationships are more complex than this. Depending on the crime and the time and place, one's race, ethnicity, gender, age, and class all affect the likelihood both of being caught and arrested given that a crime has been committed, and of being sentenced to prison given that an arrest has occurred.

When places and times are compared, the rate at which people are sentenced to prison is often not positively correlated with either the crime rate or the poverty rate. As figure 1 suggests, nationally, Black imprisonment rose markedly from 1983 to 1999 while Black poverty rates generally declined: across time, there is a negative relationship between the poverty rate and the imprisonment rate. Crime also generally declined in this time period.² Similarly, states differ markedly in the probability that a criminal act will result in a prison sentence. States with high Black imprisonment rates are not necessarily the states with high Black poverty rates. The within-year between-state bivariate correlation between a state's Black poverty rate and its Black imprisonment rate in the years 1983-1999 generally varied apparently randomly between $-.24$ and $+.19$ (i.e. essentially zero), with the exception of 1997 when the correlation was $-.51$. (See table 1.)

The relation to crime rates is more difficult to assess, because much of the crime data is not race-specific. Table 1 shows the gross within-year between-state bivariate correlations between the logged Black imprisonment rate and various crime and poverty measures; for comparison, the logged White imprisonment rate is shown too. The

² There are debates about the extent to which the escalating imprisonment rate caused the declining crime rate, a debate that cannot be engaged in this context. Here the point simply is that the gross correlation across time is negative.

within-year between-state bivariate correlation between the Black imprisonment rate and the Black and White homicide victimization rates was essentially zero, although the White imprisonment rate has a strong positive correlation with the White homicide rate. Rates of larceny/theft and burglary (which are not race-specific) were positively correlated with the imprisonment rates for both Blacks and Whites in the 1980s, but these correlations declined for Blacks but not Whites in the 1990s, so that by the end of the 1990s, the correlations were essentially zero for Blacks while still positive for Whites. In fact, a major share of the growth in Black imprisonment was for drug offenses, which are not captured in crime statistics. This is not to say that crime rates are irrelevant for the relation between poverty and imprisonment, but the patterns are not simple or obvious.

The community consequences of mass incarceration

The animating idea of this paper is that massive imprisonment itself has generated feedback effects that have harmed Black communities. Massive incarceration is an enormous intervention into the lives of Black communities that has to have massive effects, but this has only recently been recognized (see, for example, the 1996 conference papers by Clear, Hagan, Moore, and Nightingale & Watts). It is hard to imagine how these effects could be fundamentally positive, but they are complex and multifaceted.

There are a couple of ways in which imprisonment may reduce either poverty itself or measured levels of poverty. When imprisonment rates are relatively low, a case can be made that communities may be helped by the removal of disruptive and predatory persons from their midst. High crime rates weaken the social fabric that promotes education and legitimate economic activities. Those imprisoned are disproportionately young, ill-educated, and unemployed men, and it may be that the employability or incomes of those left behind are improved by the reduced competition for low-wage work. However, the plausibility of the case for actual positive effects declines as imprisonment rates rise, and it is difficult to imagine that any community is better off with 20% or more of its men having been in prison.

Imprisonment also reduces a community's apparent or measured rate of poverty, at least in the short run, by removing poor people from it. Western and his colleagues have shown that ignoring the incarcerated leads to underestimates of unemployment (Western and Beckett 1999) and racial differences in earnings (Western and Pettit 2000). The same problem adheres to poverty estimates, as incarceration tends to remove poorer people from urban communities and relocate them as an "institutionalized population" in some other (often rural) locale. This is a difficult factor to adjust for. It is for this reason that we are focusing on the poverty of children under 16, who are generally not likely to be imprisoned.

On the other hand, it is straightforward to identify the ways in which massive imprisonment is likely to promote poverty. At a minimum, it would seem that massive incarceration must reduce the pool of working-age men and the number of potential marriage partners for Black women, and necessarily increases the number of children who have a parent who has been imprisoned. The Bureau of Justice Statistics estimates that in 1999 7.0% of Black children had an incarcerated parent, compared to 0.8% of White children. Moreover, the majority of those incarcerated were employed at the time of arrest (including 71% of those who were parents), suggesting that they were probably economic assets rather than liabilities to their families and communities (Mumola 2000).

Although unemployed and unproductive young men are disproportionately imprisoned, many delinquent young people "age out" of delinquency and become productive contributors to society if they are permitted to do so (Laub and Sampson 2003). Large-scale imprisonment doubtless has other systemic effects, such as reducing communities' tax bases (Nightingale and Watts 1996). Some commentators argue that drug-dealing or thievery should be understood as attempts to re-capitalize Black communities devastated by industrial restructuring (e.g., Hagan 1997). It is not clear how imprisonment affects such processes of illicit capitalization.

As Hagan and Dinovitzer (1999) argue in their review, there is little direct research on the effects of imprisonment on families and family structure, although standard sociological theory would imply that these effects should be deleterious. Western and McLanahan (2000) show that male incarceration reduces family formation because women are unwilling to marry men with prison records. It is often argued that the psychological and economic fallout from incarceration indirectly contributes to criminal trajectories among the children of prisoners (Felson 1994; Ferraro, Johnson, Jorgensen, and Bolton 1983; Gabel 1992; see esp. Hagan 1996; Lowstein 1986; Sampson and Wilson 1995). Advocates for families of prisoners point to other costs, including expensive collect telephone calls from prisoners, transportation to remote prisons and lost work time for visits, and the emotional tolls inherent in prison visits.

High incarceration rates not only remove men from communities, it sends them back again with diminished earning capacity. The vast majority of people sentenced to prison return to their communities. Individual-level studies document the economic liabilities of those with prison records, for example Clear, Rose, and Ryder (2001) Clear, (1996), Travis, Solomon, and Waul, (2001), Sampson and Laub, (1995), Western, (2002) and Pager 2003). Men with prison records have more difficulty obtaining employment and lower wages when they have jobs. It is reasonable to expect that high incarceration rates will be associated with lower income for families with men in them.

Many scholars have noted the scarcity of studies of the economic effects of imprisonment on communities (e.g., Garland 2001; Moore 1996; Nightingale and Watts 1996; Western 2002). The largest that goes beyond simple demographic accounting and projections deals with the complex relationship between unemployment and crime. Chiricos and Delone (1992) report a significant relationship between labor surplus and the size of the prison population, though the relationship between labor surplus and new admissions to prison were only apparent with time-series and individual-level analyses. More recent aggregate studies continue to explore the broader relationships between economic and punitive institutions (Western and Beckett 1999; Western and Pettit 2000), and suggest that unemployment rates and Black-White earnings gaps are underestimated due to the effects of imprisonment on the composition of those sampled in making these estimates.

Issues of community culture

A number of recent scholars and journalists have commented on the harm done to the texture of community life when entering prison becomes a "normal" event in a young man's life. Apart from the impact on earning capacity, a spell in prison increases a young man's associations with other criminals and decreases his connections with family and legitimate social institutions. Many have argued that the high prevalence of people with

prison records in a community draws young people into criminal networks and out of school and legitimate employment.

It is very difficult to disentangle the effects of there being significant criminal networks in a community from those due to having people with prison records in the community. The escalation of Black imprisonment in the 1980s was fueled by the drug war, and many observers point to the illegal drug trade itself as the attractor that generates illegitimate lifestyles. It is very difficult to unpack these issues entirely. But the harms done by the life of crime itself ought to show up as more immediate consequences, while the longer term lags should better capture the consequences of imprisonment rates, rather than the crimes that contributed to them.

Household structure and education as predictors of child poverty

Child poverty is strongly associated with both household structure and adult education, which are, in turn, highly correlated with each other. Dividing our study period into three intervals, 46% of the children were in poverty in 1988-1990, 47% in 1991-1994, and 43% in 1995-1998. Table 2 shows the proportion of children in poverty by the education and marital status of the mother, for these three periods. At the end of the era, 83% of the children of single mothers with less than a high school degree were poor versus 19% of the children of single mothers with college degrees; among children with a married mother, 43% were poor if the mother had less than a high school degree versus only 2% of those whose mothers had college degrees.

Table 3 shows how Black children were distributed across these groups. The proportion of children living with single mothers rose slightly, from 59% to 62%. The proportion of children living with a mother who was not a high school graduate declined significantly, from 20% to 27%, while the proportion of children living with a mother who had at least some college rose sharply, from 28% to 42%. Table 4 shows the row proportions, that is, the conditional probability of living with a single mother given her educational level. Table 4 shows that there are substantial differences between the educational groups in the trend in marriage: the proportion of African American children living with a single mother actually declined slightly for college educated mothers, while it increased somewhat for mothers who were high school graduates, and increased more substantially for mothers who had either not finished high school or who had some college. These differential trends lead us to pay close attention to the interactions among mother's marital status and education as we examine the effects of imprisonment on child poverty.

Another family structure factor that affects poverty is the number of children and adults sharing a given income. Official poverty levels are adjusted for household size, creating a built-in positive relationship between poverty and household size. As figure 2 indicates, Black women's fertility in our CPS sample declined from 1.6 in 1983 to 1.35 in 1998 for all women 18-45, and from 2.14 to 1.98 for all women 18-25 who had at least one child. It seems reasonable to expect that a reduction in the number of children per adults in a community will tend to reduce child poverty, and that an increase in the number of adults in a household will tend to reduce poverty, but this is conditioned on their ability to contribute to household income. In examining trends within groups defined by the mother's educational level and marital status, we find no evidence of significant time trends within educational groups in the number of children or adults in

the household (results not shown); it appears that most of these changes are associated with the overall rise in the educational level of Black women.

Selection issues

Any attempt to address issues of poverty and incarceration has to at least consider the ways in which indicators are affected by endogeneity in the population base. Both incarceration rates and economic indicators such as poverty rates are affected by selection issues. As mentioned above, unemployment rates and earnings differentials are underestimated when incarceration rates are not taken into account (Western and Beckett 1999; Western and Pettit 2000). Poverty rates also can be distorted by the reclassification and relocation of poorer people from residential areas to prisons. Apart from this, there are other ways mobility can distort time trends in measured poverty rates. Poverty itself leads to residential mobility, which can affect the time trends for a given locale. Further, high rates of incarceration may have effects (which have not been studied) on differential rates of either in- or out-migration from poor areas by people of different economic situations. Other the other side of the equation, incarceration rates can be inflated if a significant fraction of prison sentences are given to people who are not residents of the state where they are sentenced, and this problem is especially acute for small minority populations. We are unable, in this initial study, to provide corrections for these selection factors, but we interpret results carefully in light of these issues.

Data and Methods

This study merges individual-level data from the Current Population Survey (CPS) with our calculations of aggregate Black male imprisonment rates from the Correctional Populations of the United States (CPUS) series (1983-1998). Measures of poverty, household composition, and socio-economic factors are taken from the Annual Demographic Survey (March) of the Current Population Survey (CPS). We focus on Black people because of the patterns of racial disparity. We limit the current study to Black children under the age of 15 who reside in racially homogeneous households with their mothers, with or without their fathers.³ Children who are not living with a parent have very heterogeneous living arrangements, making interpretation of household variables problematic. Children in father-only families may be differentially affected by male imprisonment than those children who live with women, and may also be more likely to have mothers who are currently in prison, the implications of which are beyond the scope of the current study.

Data analysis utilizes information on children from the 1988 to 1998 March CPS samples. Although the CPS is a national survey, analysis is limited to children from twenty states plus the District of Columbia. States with less than 1,500 total Black cases in the CPS in any given survey year were eliminated from the sample, as were states that

³ We focus on racially-homogeneous households for clarity of interpretation. Due to norms of racial homogamy and family homogeneity, most Black children live with adults of the same race. Black children who are identified as “Hispanic” or reside in the same household with “Hispanics” have been excluded from the analyses. Due to our need to match state-level prison data to racially similar children in the CPS data, both macro and micro-level data must be as racially/ethnically consistent as possible. Historical inconsistencies in identifying Latinos in United States prison surveys makes the inclusion of Latinos in this study especially problematic.

had fewer than 10 Black children in the sample in any one year, or that lacked imprisonment information.⁴ The states in the sample accounted for 89% of the total Black population of the United States in 1990. Due to the CPS sampling designs in which households, not individuals, are sampled, the analysis sample contains children who live in the same households and are often related. Our statistical models make adjustments for this clustering.

Data numbers of Black and White people who are "in prison" are compiled for these states for 1981-1998 from the Correctional Populations of the United States reports, which give the numbers of men and women of each racial group who are in prison in each state as of mid-year. These are merged with Census estimates of the adult population (over 17) by race and sex, so that rates can be calculated. In this paper, we focus on the percentage of Black men who are imprisoned, that is, on the ratio of the number of Black men in prison in a given state in a given year to the Census estimate of the number of Black men over 17 in that state in that year.⁵ We combine state-level CPUS imprisonment data for these 20 states (plus Washington D.C.) to link children from the CPS sample to Black male imprisonment rates in their corresponding states of residence and survey years. We assess the effects of imprisonment rates lagged by one to six years. CPS poverty estimates are based on family income information from the previous year, so we adjust imprisonment lags accordingly. We restrict analysis to the years 1988-1998 to have a consistent set of cases for all lag specifications.

Analytic Strategy. We use logistic regression for the dichotomous dependent variables (poverty status, mother's marital status), OLS regression for continuous dependent variables (family and household income), and multiple logit models for categorical dependent variables (adult female education and the interaction of adult female education and mother's marital status). All models control for the clustering of children within households in the CPS by using Stata's cluster option. We estimate the association between Black male imprisonment and Black child poverty with fixed-effect models that include dummy variables for year and state; coefficients for these dummies are not shown in the tables. The state dummies control for all unobserved factors that tend to make Black child poverty rates higher in some states than others. The year dummies control for the unobserved factors that affected national levels of child poverty over time. Thus the models can isolate the extent to which changes in child poverty over time within states is associated with changes in a state's Black male imprisonment rate adjusting for unmeasured state and year characteristics.

In addition, we control for family- and household-level variables that affect poverty. We identify the marital status of the child's mother. We calculate the educational level of the most highly educated woman in the family or household; this would usually be the mother's education, and we refer to this as the mother's education in most discussions. We also calculate the number of children in the family or household,

⁴ States included in the analysis are Alabama, Arkansas, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, Illinois, Michigan, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, Tennessee, Mississippi, Louisiana, Texas, California, and the District of Columbia.

⁵ It should be noted that people can be sentenced in a state where they do not reside and transients can inflate calculated imprisonment rates. No data exist to permit corrections for this issue, and all criminal justice statistics are subject to this source of error. In the present analysis, this factor should have a conservative effect on attributions of a relationship between Black male imprisonment and Black child poverty.

and the number of adults in the household, distinguishing women, employed men, and unemployed men. These individual-level factors account for most of the variation between children in their poverty rates and family or household income.

Because the imprisonment rates are measured at the state level and we include dummy variables for state and year which capture all of the effect of imprisonment rates which was either consistent across states or consistent over time, we have a very conservative test of the possible effect of imprisonment rates on children's economic well-being.

It is important to consider the flow of people in and out of prison in assessing the meaning of lagged effects. Most people are sentenced to prison for relatively short terms. Average sentences vary across time and locale, but around four years is a reasonable estimate of average sentence length. It is thus incorrect to imagine that imprisonment permanently removes men from the population. Rather, it temporarily removes them from the population and then returns them after a variable duration. Thus, while the immediate impact of Black male imprisonment should be to reduce the prevalence of Black men in Black households, the longer-term effect is to increase the prevalence of men with prison records in the Black population. To assess the longer-term effects of mass incarceration, we lagged the Black male imprisonment rate from one to six years. Our initial analysis indicated that there are significant differences in the lag patterns for different dependent variables, and that these interact in important ways with class. For this reason, we also run all models showing the interaction of the lagged Black male imprisonment rate with the educational level of the mother.⁶

Results

Imprisonment Trends

In 1983, the Black male imprisonment rate for the states in our sample ranged from 1.2% to 2.3%; by 1988 the range was 1.0% to 4.9%, and by 1998 it was 2.3% to 7.3%. Tennessee had the lowest average Black male imprisonment rate across this period (1.7%), while the high end was anchored by a wide margin by the District of Columbia (5.4%). Three states more than tripled their Black male imprisonment rates between 1983 and 1998: the District of Columbia, California, and Texas. Most states more than doubled their rates. The lowest increase was Maryland, which started the series with a relatively high Black male imprisonment rate, but increased by only 40% by the end.

Bivariate Relations

Table A1 in the appendix presents the bivariate regression of poverty, income, and single mothers on the independent variables, while table A2 presents the regressions controlling for the state and year dummies. Consistent with prior research, mother's education has a strong effect on child poverty, family income, and mother's marital status, and mother's marital status has a strong effect on child poverty and family income. Children of single mothers are over nine times more likely to be in poverty than children of married mothers. Children of mothers who have not graduated from high school are

⁶ The variable is actually the educational level of the most highly educated woman in the family. This would usually but not always be the mother of the child. However, we use the phrase "mother's education" in the text for brevity.

more than three times more likely to be poor than those whose mothers are high school graduates, while children of mothers who are college graduates are 1/10th as likely to be poor as the children of high school graduates. Children who live in metropolitan areas are 30% less likely to be poor than those who do not. The family income effects parallel the poverty effects. Education also strongly affects the likelihood that the child's mother is single.

The bivariate effect of imprisonment on poverty is negative and not significant. When the state and year dummies are added, the effect of lagged imprisonment on child poverty becomes positive and significant, with the largest effect for the three-year lag, where each 1% increase in the imprisonment rate is associated with a 27% increase in child poverty. The pattern is reversed for family income: the bivariate effect is positive and significant and becomes stronger over time, due to the correlation of the trends in income and imprisonment. Adding the state and year dummies as controls makes the effect of imprisonment on income negative and significant with a peak at the third to fifth year lag. Yet another pattern appears for single mother: the bivariate relation is strong and positive, but controlling for the state and year dummies renders it weak and non-significant. These initial results suggest that imprisonment does seem to impact child poverty through family income, but the does not appear to be the expected effect on marital status. We explore these relations more carefully with multivariate models.

Child poverty

We begin by assessing the effect of Black male imprisonment on Black child poverty with a logistic regression shown in Table A3. Although the immediate effect of imprisonment is not significant, the effect is significant from the second year lag on. The strongest effect is for the three-year lag, when each percentage increase in Black male imprisonment raises the probability a Black child is in poverty by 37%. (Compare the 27% without the individual-level controls.) There is a significant interaction effect with education: children whose mothers have some college are less affected by the impact of imprisonment on poverty than other children. This interaction weakens the effect but does not reverse it: in all cases, the product of the main effect and the interaction effect is still greater than one, meaning that the effect of imprisonment on child poverty is always positive, although it is not necessarily large enough to be significant for all educational groups. We expected there to be two pathways through which imprisonment affects child poverty: household composition and male income. The household composition effect proved to be more complex than anticipated, so we will consider the income effects first.

Family income

We examined the effect of imprisonment on both family and household income, and on net family income excluding public assistance. The pattern of results is consistent across all measures of income, so we focus on family income. As Table A4 shows, imprisonment has a significant negative effect on the log of family income, increasing with the length of the lag through the fifth year, when the coefficient is -.099, which translates into about an 18% decrease in family income for each 1% increase in the Black male imprisonment rate at the lowest income levels, and about a 10% decrease at higher income levels (above \$50,000).

To specify this result, we separate children by the mother's marital status, in tables A5 and A6. We again find that the effect of imprisonment peaks with the five-year lag, and that the effect on family income is much stronger when the mother is married than when she is not, $-.14$ for married mothers versus $-.079$ for single mothers. The coefficient for married mothers translates into about a 26% decrease in family income for each 1% increase in the Black male imprisonment rate at the lowest income levels, and about a 16% decrease at higher income levels, while the coefficient for single mothers translates into about a 14% decrease in family income for each 1% increase in the Black male imprisonment rate at the lowest income levels, and about a 9% decrease at higher income levels.

The interaction models reveal that there are positive interaction effects for children whose mothers have college education which strengthen with the lag and are stronger for married mothers than single; these are significant for mothers with some college. The magnitudes of the positive interaction terms are in all cases weaker than the magnitudes of the main effects. The interaction terms for less than high school are negative but not significant. What this pattern of interactions means is that the net effect is still negative but significantly weaker if the mother has some college education, while children whose mothers have high school diplomas are affected almost as much as those whose mothers have less than a high school education.

If we examine net family income after public assistance is subtracted, the pattern is the same but the effects are stronger. At the peak of the 5-year lag, the coefficient for all families is $-.123$ (as compared with $-.099$ for gross income including public assistance), and the positive interactions for college-educated mothers are stronger and more significant, although still less in magnitude than the negative main effect (results not shown).

Patterns for household income are also very similar. Even when controls are introduced for the number of women and employed and unemployed men in the household, the coefficient on the lagged imprisonment rate is significant for all lags, peaking at $-.077$ for lags 4 and 5 (results not shown).

To sum up, then, high rates of Black male imprisonment at one time are strongly associated with lower income in Black children's families and households several years later, and these effects are stronger in families where men are in the household.

Marital status, household composition and education

It seems logical that the main way Black male imprisonment would affect Black child poverty is through increasing the prevalence of single-mother families. However, this expectation is not confirmed. When we examine the effect on whether the child's mother is married, we find that there is an initial non-significant positive effect that becomes negative as the lag increases. (See Table A7) The interactions are positive but non-significant for education levels 1 and 3 (less than high school and some college) and are significantly negative for mothers who are college graduates. This initially surprised us, and we did a great deal of digging and testing to determine just what is going on.

These models control for the educational level of the child's mother. As summarized above, education levels were generally rising during this period. It turns out that the shifting mix of women in the educational categories distorts this analysis and that this mix appears to be affected by imprisonment rates. A multiple logit analysis

regressing the education of the child's mother on the lagged Black male imprisonment rate (controlling for metropolitan residence and the state and year dummies) reveals that the Black male imprisonment rate has a significant effect on both the lowest and highest educational levels. Table 5 summarizes this analysis, showing the odds ratio for the effect of lagged imprisonment on the odds of a Black child living with a mother with a given educational level (relative to the reference category of high school graduate only). The main analysis uses the child as the unit of analysis. Because less educated mothers have more children, we also ran the analysis using the family as the unit of analysis; the odds ratios for this second analysis are in parentheses. The table indicates that high rates of lagged Black male imprisonment are associated with higher odds of a child living with a college graduate mother or with a mother who has not graduated from high school. That is, high Black male imprisonment rates are associated with greater variability and divergence in the class position of Black families.

The relation between imprisonment and college graduate is highest with the simultaneous relationship and declines slightly as the lag increases. This suggests that this relationship is produced by the tendency for states in which a relatively high proportion of Black mothers are college graduates to be the states that imprison Black men at higher rates. At the lowest educational level, the simultaneous effect is negative: states with higher Black male imprisonment rates tend to have lower odds of a child living with a mother who has not graduated from high school; this simultaneous effect is consistent with the college graduate effect, i.e. imprisonment rates are higher where Black mothers' educational levels are higher.

But the lagged effect of imprisonment on the mother not being a high school graduate is positive and rises through the four-year lag, after which it declines only modestly. The number of children in the family is negatively related to education – less educated mothers have more children – so to check how this affects the result, we re-ran the models using the family rather than the child as the unit of analysis. This reduces the coefficients somewhat but does not change the basic pattern of the results.

We can pin down these effects even more by creating a categorical variable that cross-classifies families by the mother's education and marital status simultaneously. The odds ratios for the effects of lagged Black male imprisonment on this cross-classification are shown in Table 6. Again, as attributions of causal mechanisms are being made to mothers, the analysis was run for both children and families as units of analysis. Looking at the simultaneous effects, note that imprisonment is associated with a smaller proportion of married mothers among the less educated; this relationship is strongest for high school graduates. As the lag increases through the fifth year, imprisonment is increasingly associated with the two extremes: married mothers with college degrees, and single mothers with no high school diploma. Notice, however, that as the lag increases, the coefficients on married mothers with no high school degree shift from negative to positive: this is a very small group, but it increases and becomes significant for the longest lags when the child is the unit of analysis.

Separate analyses (not shown) also show that the lagged Black male imprisonment rate is positively related to the number of children in the family and negatively related to the average age of the child. These effects are strongest with the four- through six-year lags, indirectly suggesting that there was a rise in child bearing where Black imprisonment had been high. However, inspection of interactions indicates

that this rise in the number of children associated with higher lagged imprisonment cut across all levels of education and marital status, so interpretation of this result should be cautious.

Separate analyses (not shown) indicate that the imprisonment rate is not associated with the number of employed or unemployed men in the child's household. The simultaneous and one- to two-year lagged effects of Black male imprisonment are, however, positively related to the number of adult women in the household, especially if the mother has some college education. Again, interpretation of this result should be cautious.

Discussion

The income results seem quite straightforward. High rates of Black male imprisonment are associated – after several years' lag – with reduced family income, especially in less educated families with men in them. Thus, one clear path of effect from imprisonment to child poverty is through the reduction in male incomes due to imprisonment. This path is supported by other individual-level research that shows that a prison record does reduce male earnings, and the timing of the lags is consistent with men exiting from prison for the effect to operate. The state and year dummies control for all unobserved factors that varied consistently between states or across years. The only remaining alternative to a direct effect of imprisonment rates on male earnings is some extraneous factor correlated with both changes in Black imprisonment and changes in Black male earnings that caused them to move together without a direct connection. This possibility cannot be completely ruled out, but the weight of the evidence is on the side of the effect being present. High Black male imprisonment rates reduce the income available to families with children several years later.

There is other research⁷ that demonstrates that men with prison records have lower earning capacity, so there is substantial justification for believing that prison, itself, has an effect on male income and, through that, on children's family income. The effect of imprisonment on family income is stronger in two-parent families than in single-mother families and is strongest with a five-year lag, allowing time for the men to exit prison and return to their families. Further, when we examine household income and explicitly control for the number of employed and unemployed men in the household, as well as the number of women, the effect of imprisonment on household income is stronger than if the adult count is not differentiated. That some external force is both lowering men's incomes and increasing imprisonment is possible, but that something does appear to be non-arbitrarily associated with imprisonment.

The household composition effects are more complex and interpretation is less certain. Other analyses we have done (not shown) indicate that imprisonment rates are higher where the prevalence of single-mother families is higher among those with high school or less education. As juvenile delinquency is associated with lack of supervision and one-parent families, and imprisonment of men would seem to have an almost mathematically necessary relationship to single-mother families, it is difficult to unpack causal order in this relationship. Many of the men sent to prison are young and may never have lived with the mothers of their children before entering prison. Our analysis showed that the gross effect of imprisonment on single-mother families was positive (but

⁷ add cites

not significant) for the lowest lags, and then declined over time, thus supporting the idea that many of the men sent to prison may not have been living with children before their incarceration.

The surprising result was to find the bifurcation in families. High imprisonment rates were associated with both a rise in two-parent families among the college educated and a rise in the prevalence of mothers who did not graduate from high school. States with higher Black male imprisonment exhibit a rise in the prevalence of Black mothers – especially single mothers – who have not completed high school, despite an overall trend toward rising education among Black women. How could the mass incarceration of lower-class Black men lead to a rise in the prevalence of Black mothers without high school diplomas?

We do not have the data at this time to provide definite answers to this question, but there are likely possibilities. The answer probably lies in the indirect social consequences of mass incarceration. First, the data clearly indicate that the "less than high school" group is rising at the expense of the "high school graduate" group: the proportion that go on to college is rising. So we are looking for a targeted explanation for a bifurcated response, not a broad trend in the overall education level. It seems likely that there are two mechanisms contributing to this result. One is the reduced legitimacy of mainstream institutions caused by perceptions of injustice and the rise in connections to criminal culture. The second is the rising competition for increasingly scarce men. On the first side, mass incarceration is associated with higher levels of community connections with prisoners and criminal lifestyles. Moreover, as the proportion of young men in a community incarcerated rises, the criminal justice system is seen increasingly as illegitimate by its targets, and this contributes to a general decline in the perceived legitimacy of the dominant culture. Young people of both sexes are pulled out of school by the disruptions in family life from having incarcerated relatives and by their own involvement in illegitimate or illegal activities. For a young woman, the paths to dropping out of high school and having a child are intertwined, as detachment from school and sexual involvement tend to reinforce each other. This leads to the second mechanism. While a steep reduction in the pool of available young men may lead some young women to defer sexual involvement and obtain more education, it can also lead others to be more willing to be sexually involved in the competition for increasingly scarce partners. These mechanisms seem plausible, but further research is needed to confirm them.

These results point to the subtle and complex ways in which mass incarceration has played into the stratification system. Black male imprisonment rates were higher where Black children were more likely to be living with a married college-educated mother. The fact that the effect of imprisonment on married college educated mothers attenuates slightly with the length of the lag supports the idea that college educated Black mothers are more cause than consequence of Black imprisonment. This is consistent with other analyses we have done that show that Black prison admissions were higher where White poverty was lower (Oliver and Yocom 2004). The forces supporting the escalation of Black imprisonment appeared tied to be the relative prosperity of some population segments, and less directly to the rates of Black poverty, unemployment, or crime. It appears that having a high proportion of the Black population in college-educated two-parent families is strongly associated with the social or political forces that support mass

incarceration. Other research⁸ has shown that relatively affluent Black people live closer to and more intertwined with lower class Black people than White people do. Further, Black middle class people are more likely to be victims of crime than White people of similar economic and educational status. Perhaps this stratification among Black people is one of the sources of the support for higher levels of mass incarceration of Black poor people in some areas than others. However, this "war" on crime and drugs set in motion forces that, over time, increased the social problems for the social groups who were targeted, and appears to have contributed to a downward spiral for the least educated Black people.

It is hard to imagine that the mass incarceration of poor Black men could possibly be beneficial for poor Black communities. But a question remains as to whether the patterns we have identified are due to the causal impact of high imprisonment itself on Black families, or to external factors which simultaneously raise Black imprisonment, lower Black family income and raise the prevalence of Black children living with a mother who has not graduated from high school. Now that the basic patterns have been documented, we can look for ways to get a clearer purchase on these issues.

⁸ Will have to add citations

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