Women's Multipartnered Fertility and the Criminal Justice System

Eirik Evenhouse
Department of Economics
Mills College

Siobhán Reilly
Department of Economics
Mills College

Jan 31, 2011

ABSTRACT

This paper explores the relationship between two phenomena that have emerged in the United States: high rates of multipartnered fertility among women and high rates of male involvement with the criminal justice system. We draw our data on mothers from a large, nationally representative survey, the Survey of Income and Program Participation (SIPP), and use 12 separate SIPP panels spanning the 23-year period 1985-2008. Our proxy for male involvement with the criminal justice system is the metropolitan-level arrest rate, computed from FBI Uniform Crime Reports going back to 1980. Controlling for a variety of maternal, state, and metropolitan characteristics, we find a positive correlation between the lagged arrest rate in a mother's city and the probability that she has children by more than one man. Our estimates of women's MPF are the first and only ones to be based upon a large, nationally representative sample.

Acknowledgements: For comments and advice, we thank Sheldon Danziger, Steven Haider, Rukmalie Jayakody, David Johnson, Linda Mellgren, Daniel Meyer, Ronald Mincy, Steve Raphael, Tim Smeeding, and participants at the 2010 SIPP Analytic Research Conference and the 2010 meeting of the Population Association of America.

This research was supported by (1) the National Poverty Center (NPC) using funds received from the U.S. Census Bureau, Housing and Household Economics Statistics Division through contract number 50YABC266059/TO002 and (2) the National Center for Family and Marriage Research (NCFMR) using funds received from the U.S. Department of Health and Human Services, Administration for Children and Families through its African American Healthy Marriage Initiative. The opinions and conclusions expressed herein are solely those of the authors and should not be construed as representing the opinions or policy of the NPC, the NCFMR, or of any agency of the Federal government.

Women's Multipartnered Fertility and the Criminal Justice System

Eirik Evenhouse and Siobhán Reilly

This study explores the possible connection between two phenomena that have emerged in the United States: high rates of multipartnered fertility (having children by more than one partner) and high levels of male involvement with the criminal justice system. While multipartnered fertility (or MPF) is observed at all socioeconomic levels, it is especially common among the very groups whose menfolk are most at risk of entanglement with the justice system. This may occur simply because economic deprivation and social exclusion manifest themselves in gender-specific ways: involvement with the criminal justice system for men, and relationship instability, poverty, and unsupported motherhood for women. However, women's MPF may be, in part, a direct consequence of men's involvement with the criminal justice system.

Entanglement with the criminal justice system harms men's labor market prospects and family relationships. This is especially true of imprisonment, which forcibly withdraws men from their families. The relationships of incarcerated men are especially vulnerable to prison-induced breakup, because they are typically more tenuous to begin with: an estimated 48 percent of parents in state prison and 38 percent of parents in federal prison have never been married (DHHS 2006). Their partners may react by seeking support or companionship elsewhere. In fact, men's incarceration is known to raise the risk that their partners will begin new relationships (Nurse 2002, cited in Western 2006). When fathers go to prison, mothers may form couples with new men, and births to those couples create MPF.

Another channel through which men's involvement with the criminal justice system may foster MPF among women is via changes in the sex ratio. An overall incarceration rate of just over one percent (Pew Center on the States 2008) may have little impact on the overall sex ratio, but the

impact is much more pronounced for some subgroups. That one in nine black men between the ages of 20 and 34 is in prison (Sabol *et al*. 2007) is likely to hurt the ability of heterosexual black women (a group with a low propensity for interracial pairing) to find and keep monogamous partners during their childbearing years. Moreover, incarceration rates understate the problem. Many more men are involved with the criminal justice system (as arrestees, parolees, probationers, or former prisoners) than are imprisoned at any one time, and this involvement hampers their ability to maintain stable relationships with women.

Of course, men's involvement with the justice system is likely to contribute to MPF among men as well. Men in prison are as likely as other men to have children (Western 2006, p. 137). After prison-induced family breakups, some men will form new relationships and have children within them, with the result that their children are scattered among multiple households and their relationships with their children mediated by more than one mother. Carlson and Furstenberg (2006) estimate that men who have been incarcerated are twice as likely as other men to have children by multiple women.

Incarceration reflects only the most severe degree of involvement with the criminal justice system. At one percent of the population, the U.S. incarceration rate is high enough that a broad effect of the criminal justice system on family structure is plausible. However, as recently as a decade ago, there was little systematic evidence concerning the effects of incarceration on family and child wellbeing (Hagan and Dinovitzer 1999), even though the incarceration rate had been rising since the early 1970s and the prison population nearly tripled from1987 to 2007 (Pew Center on the States 2008).

Most of the empirical studies published since then are based on the longitudinal Fragile Families and Child Wellbeing study, which has followed a cohort of urban children born in 1998-2000, three-fourths of them to unmarried mothers. Examples include Wildeman (2010), Geller *et al.* (2008), Waller and Swisher (2006), Lopoo and Western (2005), Western, Lopoo and

McLanahan (2004), and Western and McLanahan (2000). Whether the outcome measure is father-child contact, payment of child support, the strength of parents' relationships, or children's physically aggressive behaviors, every study concludes that parental incarceration has adverse consequences for children.

Increased multipartnered fertility should perhaps be counted among the negative consequences of incarceration. MPF, too, is correlated with adversity for children. Adjusting for other demographic and socioeconomic factors, MPF is associated with reductions in father-child contact (Manning & Smock 1999, Cooksey & Craig 1998), in fathers' payment of child support (Huang, Mincy & Garfinkel 2005, Manning, Stewart & Smock 2003), in mothers' perceived levels of social support from family and friends (Harknett & Knab 2007), and in the likelihood that a child's mother and father live with or marry each other (Margolis & Mykyta 2008, Carlson & Furstenberg 2006, Mincy and Huang 2001).

Measuring the prevalence of MPF has long been difficult, because so few surveys contain the needed information. To the best of our knowledge, there are no nationally representative estimates of women's MPF but our own. Guzzo and Furstenberg (2007) and Manlove *et al.* (2008) offer nationally representative estimates for men, based on the National Survey of Family Growth (NSFG), which interviewed men for the first time in 2002 and asked them about multipartnered fertility. Guzzo and Furstenberg report that the overall MPF rate among men aged 15-44 was 8 percent, but prevalence varied greatly by ethnicity and income; for instance, it was twice as high among black men and four times as high among poor black men. They found that higher-order MPF (having children with more than two partners) was even more concentrated in particular subgroups: among white men, 0.8 percent had children with more than two women, while 2.2 percent of Hispanic men and 4.9 percent of black men did. Among poor men aged 35-44, 16 percent of black men did, compared to 2.4 percent of white men and 0.8 percent of Hispanic men.

The 2002 NSFG data also suggest that, among men, the MPF rate may have risen in recent years. Both Guzzo and Furstenberg (2007) and Manlove *et al.* (2008) find that the younger cohorts of fathers had higher MPF rates and transitioned to MPF earlier.

MPF has also been studied in certain subpopulations of men and women. The Fragile Families survey has been the basis of most studies of MPF. An estimated 23 percent of mothers in Fragile Families have children by more than one man (Carlson & Furstenberg 2006). Among unmarried couples, rates are markedly higher: in 17 percent of couples only the mother has children from a prior relationship, in 22 percent only the father does, and in 20 percent both mother and father do (Roberts 2008). Other studies focus on Wisconsin welfare mothers in 1999 (Meyer, Cancian & Cook 2005), or women aged 19-25 in 2001 (Guzzo & Furstenberg 2007b).

In this study, we use nationally representative samples going back to 1985 to examine the connection between women's MPF and men's involvement with the criminal justice system. The U.S. Census Bureau's Survey of Income and Program Participation (SIPP) is the only nationally representative survey in which MFF can be measured over time. Because SIPP is address-based, and because children are more likely to live with their mothers than their fathers, it is better suited to studying women's MPF than men's.

Data and methodology

Measuring women's multipartnered fertility

What makes SIPP uniquely suited to measuring women's multipartnered fertility (henceforth, multiple-father fertility, or MFF) is that, unlike other large household surveys, it includes a matrix of household relationships. Rather than merely reporting the relationship of each person to the household's so-called reference person, as most surveys do, SIPP identifies the relationship between every pair of individuals in the household. Our unit of analysis is a woman with any resident biological (minor) children in the household (hereafter, a "SIPP mother").

Looking at the relationships among all household members listed as her biological children (some of whom could be adults), we infer the number of men who fathered those children from the number of sibling or half-sibling relationships among them.

MFF estimates derived in this way should be seen as lower bounds, for three reasons. First, they are most likely biased downward by the omission of non-resident children from SIPP. A SIPP mother may have grown children who have moved out, or minor children living elsewhere, perhaps with other kin. Every absent child represents another possible case of MFF missing from our data. Second, many SIPP mothers have not yet finished having children; some will later experience MFF that we cannot observe. Third, we must exclude mothers whose children have grown and left home. Meanwhile, cohort effects aside, we expect more MFF among those mothers, because they are the most likely to have finished childbearing and thereby reached their maximum exposure to MFF. These three factors likely cause us to understate MFF.

There may also be attrition bias in our sample, as the household relationship detail is not collected until the second wave of each panel (except in 1985, when it was collected in the fourth wave). We expect such bias to be minimal, however, as the waves are only four months apart. SIPP, moreover, has relatively low attrition; in the 1996 panel, for instance, attrition after 36 months was 26 percent (CEPR 2009).

While we report MFF prevalence for 2008, the most recent SIPP data we can use in our regression analysis are from the 2001 panel. This is because some of our explanatory variables pertain to a mother's MSA (Metropolitan Statistical Area), and the 2001 panel was the last to include a respondent's MSA in the public-use files. Pooling nine SIPP panels (1985-1988, 1990-1993, 1996, and 2001) and keeping only SIPP mothers with known MSA yields a sample of 28,612 mothers. Weighted, this sample is representative of the U.S. metropolitan population rather than of the overall population. The particular weights we use are SIPP's monthly person weights, which permit the analyst to use all available data for a given month. The person weight corresponds to the

inverse probability of selection, with adjustments for subsampling within clusters, for non-response, and for movers.

Measuring men's involvement with the criminal justice system

Our proxy for men's involvement with the criminal justice system is annual MSA-level arrest rates, created by combining arrest data from the FBI's Uniform Crime Reporting (UCR) program with county population estimates. Extremely detailed, the UCR data list the number of arrests (and their breakdown by race and adult/juvenile status) for a standardized set of offense categories for every law enforcement agency in the country that year. We must omit data on the small fraction of arrests that cannot be tied to a particular MSA (arrests by agencies with state-wide jurisdiction, such as the state highway police, state fire marshal, or state natural resources police).

There is no ideal measure of involvement with the criminal justice system. We chose arrest rates because they can be calculated at a much finer geographic level than incarceration rates -- an advantage given that partner markets are highly localized. Unfortunately, prison census data published by the Bureau of Justice Statistics do not include a prisoner's home county, so the state level is the finest at which one can reliably compute incarceration rates. (Prisoners are typically incarcerated in their home state but not necessarily their home county.) The choice of a measure may matter. For example, the U.S. incarceration rate rose 44 percent between 1988 and 1993 (Arvanites & Asher 1998) while, by our calculations, the overall arrest rate during that same period rose only 26 percent.

The Census Bureau's intercensal county population estimates are similarly detailed, broken down by age, race, and sex. We define a county's population as the population aged 15 to 44, because roughly 90 percent of crimes are committed by individuals under age 45 (FBI 2003), and because nearly all childbearing occurs between the maternal ages of 15 and 44.

Aggregating agency arrest counts and county populations to the MSA level—most MSAs consist of several entire counties—we compute an MSA's annual arrest rate by dividing its total arrests by its population. Because we assume that partner markets are racially segmented, we use the race categories in both the arrest and population data to compute both black and nonblack arrest rates. (We are limited to black and nonblack because those are the only race categories in the UCR data.) Note that our arrest rates are not gender-specific. Unfortunately, the UCR arrests can be broken down by race or by gender, but not by both. The ratio of male/female arrests is much more stable across MSAs than is the ratio of black/nonblack arrests; black and nonblack arrest rates lie in extremely different ranges, and are only moderately correlated ($r = 0.54$). Obliged to choose, we chose to use race-specific arrest rates, judging them to be of greater analytical value.

The first year for which UCR arrest data are publicly available through the National Archive of Criminal Justice Data is 1980. Thus, our time series of black and nonblack arrest rates for each MSA go back to 1980.

From our county population data, we also compute, for each MSA, a time-series of the sex ratio between men and women aged 15-44. Again, assuming a racially segmented partner market, we compute separate sex ratios for the black and nonblack populations.

Methodology

Like most researchers studying couples' behaviors – cohabitation, marriage, divorce, fertility, and child support – we use a reduced-form approach instead of structural model. There is a large theoretical literature on the behavior of couples, but the models are not generally very amenable to testing because so few of the theorized constructs are observable. A mother's decision to have children with more than one man depends, for example, on the men's qualities as companions or (step)fathers and on the mother's own qualities as a companion, but such qualities can be hard to measure. To take another example, in bargaining models of couple behavior, each

partner has an implicit threat point. Identifying that threat point is difficult for the other partner, let alone the researcher. The fact that each partner's behavior is strategic, that is, determined partly by the other's actions, poses additional difficulty. Moreover, individuals are both adaptive and forward-looking, meaning conditions in the past and those expected in the future can influence current decisions.

The many theoretically plausible interactions among even observable factors make it hard to predict their net influence on MFF. Furthermore, factors such as the expected value of child support, the expected value of welfare benefits, the probability of finding a male companion in the future, the expected income of that future partner, a mother's own expected income, and the cost of housing do not necessarily have the same implications for women's behavior as for men's. In short, the requisite model would likely be highly complex and equally debatable.

Existing research on multipartnered fertility is more descriptive than theoretical. Researchers have documented some broad associations. As mentioned above, men who have been incarcerated are more likely to have children by multiple women. Welfare recipients have higher rates of multipartnered fertility (Meyer *et al.* 2005), as do men and women with less education, African-Americans, women who have their first births as teens, and women with nonmarital first births (Carlson & Furstenberg 2006).

The only theoretical treatment of multiple-father fertility we know of is Willis' (1999) model of marriage and fertility, which holds that if "females are in excess supply and have sufficiently high incomes, a marriage market equilibrium may exist in which children are born within marriage to high-income parents, whereas in low-income groups men father children by multiple partners outside of marriage" (p. S33). Our study could be seen as a crude test of Willis' model, as we control for the local sex ratio and the local level of impoverishment.

We estimate two variants of a reduced-form model of multiple-father fertility:

(1) $$MFF_{imt} = \beta_0 + \beta_1 A_{im} + \beta_2 Z_i + \beta_3 MSA_{mt} + u_{imt}$$

in which the subscripts *i*, *m* and *t* refer to mother *i* living in MSA *m* in year *t*, and *MFF* is an indicator of multiple-father fertility. One variant is a binary logit model of whether the mother has children by one man or by multiple men. The other is a multinomial logit model with six possible outcomes, each corresponding to a specific combination of marital history and fertility status. The parameter in which we are particularly interested is β_1, the coefficient on A_{im}, the race-specific arrest rate in a woman's MSA. Z_i and MSA_{mt} are vectors of maternal characteristics and other MSA characteristics, respectively.

The MSA arrest rate is not only race-specific, but lagged as a function of each woman's fertility history. Our intent is to capture conditions around the time that the second child was conceived, a likely time for MFF to emerge. As the average gap between first and second births is nearly three years, we use the arrest rate two years after the birth of her oldest resident child.

The maternal characteristics we include as controls are a mother's age, her age at the time her oldest resident child was born (a proxy for her age at first birth), ethnicity, education, marital history, and the number of resident children. The gap between the mother's current age and her age at the birth of her oldest resident child gives us a rough idea of how long she has been exposed to the possibility of MFF. Her current age, together with a set of year dummies, controls for country-wide trends in norms or expectations that could affect women's fertility behavior; the year dummies help control, too, for unmeasured differences among SIPP samples. The education variables indicate whether the parent has less or more than a high school education. Our two controls for marital history are dummy variables for "Never married" and "Ever divorced."

Our five MSA-level controls are the sex ratio (black or nonblack, depending on the respondent's race), the cost of housing, male employment, the severity of high school dropout among men, and economic hardship. The first two – the sex ratio and the cost of housing – are lagged in the same manner as the arrest rate. Our index of housing costs is the MSA's Fair Market Rent, published annually by the U.S. Department of Housing and Urban Development and defined

(usually) as the 40th percentile of local rents. The other three MSA controls are not race-specific and are derived from that year's SIPP sample, that is, are not lagged. The severity of the dropout problem is measured as the fraction of men who did not go beyond 10th grade, economic hardship is the fraction of families with incomes below 150 percent of the poverty threshold, and male employment is the fraction of men employed for the entire month preceding the survey.

We also include three state-level controls: per capita personal income, the intensity of child support enforcement, and the level of welfare benefits. Each is lagged in the same manner as the arrest rate. We control for a state's per capita income because arrest rates and fertility behaviors may both be determined, in part, by income levels. For example, richer states may either spend more on law enforcement (leading to more arrests) or may produce lower crime rates (leading to fewer arrests). Similarly, higher incomes may be associated – positively or negatively – with higher levels of multiple-partner fertility. In the Willis model, for instance, it is the conjunction of high enough incomes for women with a low sex ratio that results in multiple-partner fertility.

We control for the strictness of child support enforcement for two reasons. First, child-support rules treat multiple-father families more generously than one-father families (Meyer *et al.* 2005). Second, the intensity of enforcement may affect whether parents stay together. During the period being studied, nearly all states stepped up their enforcement efforts, due in large part to provisions in the 1988 Family Support Act (FSA) that enhanced states' ability and motivation to collect child support, particularly on behalf of children on AFDC. The level of enforcement effort has nevertheless varied considerably by state and year (see, for example, Huang *et al.* 2005; Plotnick, Ku, Garfinkel, and McLanahan 2004; Bitler 2001; Nixon 1997). As a proxy for the strictness of enforcement, we (like others) use the annual ratio of the number of paternities established by a state's child support enforcement agency to the number of non-marital births in that state. This choice reflects the 1988 Family Support Act's emphasis on paternity establishment, particularly for children on welfare. States were penalized if they failed to establish paternity for a

specified proportion of the children born to mothers on welfare, and the federal government bore 90 percent of the states' associated laboratory costs.

Our control for a state's level of welfare benefits is the maximum benefit for a four-person household. Welfare's eligibility rules create large financial incentives in favor of multipartnered fertility. Evenhouse & Reilly (forthcoming), examining the period 1985-1996, find a small, positive correlation between MFF rates and contemporary benefit levels. As mentioned above, the incidence of multipartnered fertility is especially high among welfare recipients. Analyzing Wisconsin welfare data, Meyer *et al.* (2005) find that, in 1999, at least 30 percent of recipient mothers had children by more than one man (due to incomplete paternity information, they could not rule it out for another 34 percent of mothers).

Empirical results

Multiple-father fertility in 2008

Tables 1 and 2 summarize some of the patterns in MFF among SIPP mothers in 2008. These estimates are noteworthy because they are both current and nationally representative. To the best of our knowledge, no other researchers have used a nationally representative sample to measure women's MPF.

While our MFF estimates should perhaps be seen as lower bounds, they nevertheless give some insights into women's MFF patterns. Overall, 7.52 percent of SIPP mothers have children by more than one man: 7.13 percent by two men, 0.34 percent by three men, and 0.06 percent by four or more (see Table 1). It is striking that only 0.40 percent of SIPP mothers have children by more than two men. In 2002, an estimated 3.2 percent of fathers aged 15-44 had children by more than two women (Guzzo and Furstenberg 2007a). If we consider, instead, SIPP mothers aged 15-44 in the 2001 panel (to make our sample more comparable to theirs), we find that only 0.5 percent of them have children by more than two men.

Table 2 presents MFF rates for select subgroups. We see, for instance, that the prevalence of MFF varies by ethnicity, but only modestly so. The groups with the highest rates are Native American mothers (9.9 percent) and Hispanic mothers (9.2 percent). The rate among African-Americans (8.6 percent) is somewhat higher than that among non-Hispanic whites (6.8 percent). Only Asian mothers stand out from the rest of the population, with an MFF rate of only 2.6 percent. In terms of higher-order MFF, African-American mothers stand out, with a rate twice that of white or Hispanic mothers.

MFF rates decline with educational attainment, but the gradient is perhaps less steep than one might have guessed. The MFF rate among mothers with a high school education (9.0 percent) is only slightly less than that of high school dropouts (9.6 percent). Among the dropouts, however, higher-order MFF is twice as common.

MFF rates also decline with household income. The rate for mothers in the bottom quintile of the income distribution (9.1 percent) is twice that of mothers in the top quintile (4.5 percent). Prevalence does not decline smoothly with income, however. The poorest two quintiles have nearly identical MFF rates, for example, but there is twice as much higher-order MFF in the bottom quintile. Similarly, the next two quintiles have similar MFF rates, but higher-order MFF is more common in the poorer of the two quintiles.

Having been divorced is a stronger predictor of MFF than never having married. The rate among mothers who have been divorced (15.4 percent) is twice that of never-married mothers (7.6 percent) and nearly four times that of mothers still in their first marriage (4.4 percent). The age at which a woman begins childbearing is an even stronger predictor of MFF. Mothers who had their first child before sixteen have an MFF rate of 25.7 percent, more than six times the rate for mothers who were over 24. Even women aged 20 to 24 when they had their first child have an MFF rate that is more than twice that of women who were over 24.

Regression results

To explore the relationship between multiple-father fertility and the local arrest rate, we turn to regression analysis to control for interrelated factors such as education, ethnicity, age at first birth, and marital history. We employ two models: a binary logit model of whether a mother has children by more than one man (Table 3), and a multinomial logit model in which the outcomes correspond to specific combinations of MFF and marital history (Tables 4 and 5). For ease of interpretation, we report not logit coefficients or odds ratios, but rather the estimated marginal effects on the probability that an observation is in a particular category, computed at the mean of that variable. (In using the term "marginal effects" we do not mean to imply causality.) For the means and standard deviations of the regressors, see Appendix Table 1.

The binary logit regressions show that the MSA arrest rate around the time of a mother's childbearing is significantly and positively correlated with her likelihood of MFF, but that the effect is small. Other things equal, an increase of one standard deviation in the lagged arrest rate is associated with a 0.3 percentage point increase in the MFF rate, modest both in absolute terms and relative to the baseline probability of MFF of about 8 percent. The multinomial logit results give a more nuanced picture, revealing differences between black and nonblack and between more and less educated.

Consider, first, the three binary logit models summarized in Table 3. The first model includes maternal, MSA, and state characteristics, and a set of year dummies. The second model adds state fixed effects, and the third adds MSA fixed effects instead of state effects. In all three models, the correlation between the lagged arrest rate and MFF is highly significant and of similar magnitude. The unadjusted differences in MFF rates among black mothers, Hispanic mothers, and non-Hispanic white mothers shown in Table 2 become insignificant once we control for other factors.

Stratifying the sample by ethnicity (results not shown), we find that the estimated marginal effect of higher arrest rates is roughly four times larger for black mothers (0.020) than for Hispanic mothers (0.005), and is insignificant for non-Hispanic white mothers. When we stratify instead by education (results not shown), the relationship between MFF and arrest rates turns out to be significant and small (marginal effect of 0.005) for mothers with a high school education, but insignificant for mothers with more education as well as for mothers with less.

The regression results also highlight the relative importance of different pathways to multiple-father fertility. In the binary logit models of Table 3, the three factors most predictive of MFF are, in descending order, having been divorced, having had a child before the age of 16, and never having married. Having been divorced raises the probability of MFF by about 13 percentage points, having had a first birth before age 16 raises it by 12 points, and never having married by 8 points.

Early childbearing and having been divorced are not mutually exclusive behaviors, to be sure, but they overlap little enough that they can usefully be viewed as distinct pathways. The same can be said of early childbearing and never marrying. Among mothers in our sample who have been divorced and have children by more than one man, only one in thirteen had a child before she was 18. Similarly, the majority of women who had a teen birth do eventually marry; looking at those over 30 at the time of the survey, only one in seven had never married. Even the youngest teen mothers (those with a birth before age 16) tend to marry eventually, with only one in five of those over 30 not yet having married.

We might, therefore, sharpen our analysis by differentiating among three varieties of multiple-father fertility: that occurring in the context of divorce and remarriage, that occurring in the context of nonmarital births followed by eventual marriage, and that occurring entirely outside marriage.

The six outcomes in the multinomial logit model of Table 4 correspond to six combinations of fertility and marital history. We categorize a mother (a) as having children either by just one man or by more, and (b) as having been divorced (once or more), being in her first marriage still, or never having married. (The base category for estimation purposes is mothers who are still in their first marriage and have children by only one man; three-fifths of mothers are in this category). Overall, 7.8 percent of mothers have children by multiple men. Three-fifths of those mothers have been divorced (4.8 percent of the sample) and the other two-fifths have either never married (1.2 percent) or are in their first marriage (1.8 percent).

The multinomial logit estimates in Table 4 suggest that higher MSA arrest rates are associated with higher MFF, principally among divorced mothers (column 5) but also among never-married mothers (column 3). An increase of one standard deviation in the lagged arrest rate corresponds to a 0.63 percentage point increase in the number of divorced mothers with children by multiple men (a substantial increase relative to the category's baseline of 4.8 percent). The associated increase in the number of never-married mothers with children by multiple men is far smaller, in both absolute and relative terms (a 0.04 percentage point increase in a category representing a mere 1.2 percent of all mothers).

Sensitivity analysis

When we stratify our sample and estimate the multinomial model separately for five subsamples defined by race or education, results vary somewhat across the subsamples. Table 5 summarizes, for each subsample, the results of estimating the multinomial model of Table 4 but without MSA fixed effects (so that we can estimate the identical model for each subsample). We note that, for the whole sample, dropping MSA fixed effects leaves our findings virtually unchanged: a 0.58 percentage point increase in divorced mothers with MFF and a .05 point

increase in never-married mothers with MFF (see the top row of table 5). For ease of comparison, in Table 5 we report only the marginal change associated with an increase in the arrest rate.

We see, in Table 5, that the pattern of correlations differs between black and nonblack mothers. Among nonblack mothers, just one outcome is correlated with arrests rates; among black mothers, three outcomes are. In both groups, the lagged arrest rate is positively correlated with being divorced with MFF (column 5), and the effect sizes, in proportional terms, are quite similar: 13 and 10 percent of baseline among black and nonblack mothers, respectively. Among black mothers, however, being never married with MFF (column 3) and being never married without MFF (column 1) are also correlated with the arrest rate, although the effect sizes are far smaller (7 and 4 percent of baseline, respectively).

Each of the three subsamples defined by a mother's level of education yields a different pattern. Among mothers who never finished high school, arrest rates are not correlated with any of the outcomes. Among those who did finish high school, arrest rates are positively correlated with being never married with MFF (column 3) and also with being divorced with MFF (column 5) (the same pattern observed for the entire sample). For mothers with more than a high school education, arrest rates are correlated only with being divorced with MFF (column 5) (the same pattern observed for the nonblack sample).

The different subgroup results, summarized in Table 5, may reflect the differences among subgroups in their principal pathways to MFF. Another possibility is that the total number of cases of MFF becomes quite small after one stratifies the sample and defines three distinct subcategories of MFF; this could cause the observed correlations to differ from one subsample to another in spurious ways. Finally, for some subgroups, the arrest rate may a less useful measure of conditions in the local market for partners. It may be, for instance, that neither the black arrest rate nor the nonblack arrest rate is very relevant for Hispanic mothers. More generally, there is no reason to suppose that all groups of women share a common response to the local arrest rate.

As another sensitivity check, we re-estimate our models after excluding foreign-born mothers. This modestly strengthens the association between MFF and arrest rates. Foreign-born mothers—17 percent of the 1985-2001 respondents with known MSA—have an MFF rate two-thirds that of native-born mothers, and their MFF is more strongly associated with being divorced than being a never-married mother. Excluding them increases the precision of estimates slightly in both the binary and multinomial models, despite the smaller sample size, and the point estimates are comparable or slightly bigger (results not shown). In the binary model with fixed MSA effects, for instance, higher arrest rates are associated with a 0.34 percentage point increase in MFF (compare to the 0.29 percentage point increase reported in Table 3, column 3).

Finally, as a check on the validity of using lagged arrest rates, we re-estimate the multinomial model of Table 4 (for the whole sample, with MSA fixed effects) using the contemporary arrest rate instead of the lagged rate. We find that the contemporary rate, in sharp contrast with the lagged rate, is not significantly correlated with any variety of MFF (results not shown).

Conclusion

In this study, we examine the connection between the arrest rate in a mother's metropolitan area and the likelihood that she has children by multiple men. Our analysis uses data from nine SIPP surveys spanning the 16-year period 1985-2001. Regression results suggest that local arrest rates during the period shortly after the birth of a mother's first child are predictive of a mother's marital and fertility outcomes. In a simple binary model, the lagged arrest rate is positively correlated with multiple-father fertility, with an increase of one standard deviation in the lagged arrest rate corresponding to an increase of 0.30 percentage points in the overall incidence of multiple-fertility, a modest (4 percent) increase relative to the 7.8 percent baseline rate of MFF. In

multinomial models that differentiate among different combinations of marital history and MFF status, we continue to find significant positive correlations between the arrest rate and MFF.

When we stratify the sample by education or race, the results vary from subsample to subsample, making it difficult to tell a uniform story about the connection between local arrest rates and women's fertility and marital outcomes. Perhaps, however, there is not a single, simple story to be told. Childbearing and marriage patterns differ quite radically by ethnicity, for example. For white women, marriage and motherhood usually go hand in hand, and divorce is the dominant path to multiple-father fertility. For black women, childbearing tends to be earlier and most of it is outside of marriage, with the result that black mothers with MFF are almost as likely to be never-married as to be divorced. Perhaps arrest rates, insofar as they reflect the local supply of partner-worthy men, primarily impact women's marital paths, and are only tangentially related to their multiple-father fertility status.

References

Bitler, Marianne. 2001. The effects of child support enforcement on non-custodial parents' labor supply. Unpublished .

Carlson, Marcia J., and Frank F. Furstenberg. 2006. The prevalence and correlates of multipartnered fertility among urban U.S. parents. *Journal of Marriage and Family* 68(3) (August): 718-732.

Center for Economic and Policy Research. 2009. SIPP Talking Points. Document last accessed at http://www.ceprdata.org/savesipp/talkingpoints.pdf on December 26, 2009.

Cooksey, Elizabeth C., and Patricia H. Craig. 1998. Parenting from a distance: The effects of paternal characteristics on contact between nonresidential fathers and their children. *Demography* 35(2):187-200.

Department of Health and Human Services, Administration for Children and Families, Office of Child Support Enforcement. 2006. *Incarceration, Reentry and Child Support Issues: National and State Research Overview* (March).

Evenhouse, Eirik and Siobhan Reilly. Multiple-father fertility and welfare. *Journal of Family Issues* (forthcoming).

Federal Bureau of Investigation, U.S. Department of Justice. Age-Specific Arrest Rates and Race-Specific Arrest Rates for Selected Offenses, 1993-2001 (at http://www.fbi.gov/ucr/adducr/age_race_specific.pdf, last accessed September 14, 2010)

Geller, Amanda, Irwin Garfinkel, Carey Cooper, and Ronald Mincy. 2008. Parental incarceration and child wellbeing: Implications for urban families. Commissioned by the Annie E. Casey Foundation (at http://www.f2f.ca.gov/Children.htm, last accessed April 2, 2009)

Guzzo, Karen Benjamin, and Frank F. Furstenberg. 2007a. Multipartnered fertility among American men. *Demography* 44(3) (August): 583-601.

Guzzo, Karen Benjamin, and Frank F. Furstenberg. 2007b. Multipartnered fertility among young women with a nonmarital first birth: Prevalence and risk factors. *Perspectives on Sexual and Reproductive Health* 39(1):29-38.

Hagan, John and Ronit Dinovitzer. 1999. Collateral consequences of imprisonment for children, communities, and prisoners. *Crime and Justice* 26: 121-162.

Harknett, Kristen and Jean Knab. 2007. More kin, less support: Multipartnered fertility and perceived support among mothers. *Journal of Marriage and Family* 69(1): 237-253.

Huang, Chien-Chung, Ronald B. Mincy, and Irwin Garfinkel. 2005. Child support obligations and low-income fathers. *Journal of Marriage and Family* 67(5):1213-1225.

Klerman, Lorraine V. 2007. Multipartnered fertility: Can it be reduced? *Perspectives on Sexual and*

Reproductive Health 39(1): 56–59

Logan, Cassandra, Jennifer Manlove, Erum Ikramullah, and Sarah Cottingham. 2006. Men who father children with more than one woman: A contemporary portrait of multiple-partner fertility. *Child Trends Research Brief 2006-10*. Washington, DC: Child Trends.

London, Rebecca A. 1998. Trends in single mothers' living arrangements from 1970 to 1995: Correcting the Current Population Survey. *Demography* 35(1) (February).

Lopoo, Leonard and Bruce Western. 2005. Incarceration and the Formation and Stability of Marital Unions. *Journal of Marriage and the Family* 67:721-734

Manlove, Jennifer, Cassandra Logan, Erum Ikramullah, and Emily Holcombe. 2008. Factors associated with multiple-partner fertility among fathers. *Journal of Marriage and Family* 70(2): 536-548

Manning, Wendy, and Pamela Smock. 1999. New families and nonresident father-child visitation. *Social Forces* 78(1):87-116.

Manning, Wendy, Susan D. Stewart, and Pamela Smock. 2003. The complexity of fathers' parenting responsibilities and involvement with nonresident children. *Journal of Family Issues* 24(5):645-667.

Margolis, Rachel and Laryssa Mykyta. 2008. Multipartnered fertility and relationship stability. Unpublished research.

Meyer, Daniel R., Maria Cancian, and Steven T. Cook. 2005. Multiple-partner fertility: Incidence and implications for child support policy. *Social Service Review* 79:577-601.

Mincy, Ronald. 2002. Who should marry whom? Multiple partner fertility among new parents. Working Paper 02-03-FF. Center for Research on Child Wellbeing, Princeton University: Princeton, NJ.

Mincy, Ronald and Chien-Chung Huang. 2001. 'Just get me to the church': Assessing policies to promote marriage among fragile families. Working Paper 02-02-FF. Center for Research on Child Wellbeing, Princeton University, Princeton, NJ.

Moffitt, Robert A. 2003. The Temporary Assistance for Needy Families Program. In Moffitt, ed., *Means-tested transfer programs in the U.S.* University of Chicago Press/National Bureau of Economic Research.

Moffitt, Robert A., Robert T. Reville, and Anne E. Winkler. 1994. State AFDC rules regarding the treatment of cohabitors. *Social Security Bulletin* 57:4 (Winter): 26-33.

Moffitt, Robert A., Robert T. Reville, and Anne E. Winkler. 1998. Beyond single mothers: Cohabitation, marriage, and the U.S. welfare system. *Demography* (August).

Nixon, Lucia. 1997. The effect of child support enforcement on marital dissolution. *Journal of Human Resources* 32:1 (Winter): 159-181.

Nurse, Ann M. 2002. Fatherhood arrested: Parenting from within the juvenile justice system. Nashville: Vanderbilt University Press.

Plotnick, Robert D., Inhoe Ku, Irwin Garfinkel, and Sara S. McLanahan. 2004. Better child support enforcement: Can it reduce teenage nonmarital childbearing? *Journal of Family Issues* 25(5) (July):634-657.

Roberts, Paula. 2008. The implications of multiple-partner fertility for efforts to promote marriage in programs serving low-income mothers and fathers. Brief No. 11 (March) in Couples and Marriage Series, Center for Law and Social Policy, Washington, DC.

Sabol, Dr. William J., et al. 2008. *Prison and Jail Inmates at Midyear 2006*. U.S. Department of Justice, Bureau of Justice Statistics. June 2007. (Revised March 2008)

Waller, Maureen and Raymond Swisher. 2006. Father's risk factors in fragile families: Implications for "healthy" relationships and father involvement. *Social Problems* 53(2) (August): 392-420

Western, Bruce. 2006. Punishment and inequality in America. Russell Sage Foundation: New York, NY.

Western, Bruce and Sara McLanahan. 2000. Fathers behind bars: The impact of incarceration on family formation. In Greer Litton Fox and Michael L. Benson, eds., *Families, Crime, and Criminal Justice: Charting the Linkages.* Emerald Group Publishing.

Western, Bruce, Leonard Lopoo, and Sara McLanahan. 2004. Incarceration and the bonds among parents in fragile families. In Mary Patillo, David Weiman, and Bruce Western, eds., *The impact of incarceration on families and communities*. Russell Sage Foundation: New York, NY.

Wildeman, Christopher. 2010. Paternal incarceration and children's physically aggressive behaviors: Evidence from the Fragile Families and Child Wellbeing Study. *Social Forces* 89:285-310.

Willis, Robert J. 1999. A Theory of Out-of-Wedlock Childbearing. *Journal of Political Economy* 107:6 (Part 2, December): S33-64

Table 1
Number of men who fathered a mother's resident children, by number of children, in 2008 SIPP

Number of resident children	One father	Two Fathers	Three fathers	Four fathers	Totals	***MFF rate (%)***
1	3,605				*3,605*	
2	4,037	395			*4,432*	***8.6***
3	1,674	269	31		*1,974*	***15.2***
4	514	96	10	7	*627*	***18.3***
5	106	25	4	1	*136*	***21.6***
6 or more	70	24*			*94*	***25.4***
Percentage of all mothers	***92.48***	***7.13***	***0.34***	***0.06***	***100.0***	***Overall MFF***
Totals	*10,006*	*809*	*45*	*8*	*10,868*	***rate (%): 7.52***

*Notes: Data from 2008 SIPP. Unit of analysis is a mother with resident children. Percentages and MFF rates weighted to be nationally representative. *Two or more fathers.*

Table 2
Number of men who fathered a woman's children, by mother's characteristics: 2008

Subgroup	N	Number of fathers: One Father	Two Fathers	Three fathers	Four fathers	***MFF rate (percentage)***
By mother's ethnicity:						
Non-Hispanic white	6,445	5,974	446	21	4	***6.8***
Hispanic	1,878	1,694	173	11	0	***9.2***
African-American	1,394	1,268	113	10	3	***8.6***
Native American	685	616	65	3	1	***9.9***
Asian	466	454	12	0	0	***2.6***
By mother's education:						
Less than high school	1,373	1,239	119	12	3	***9.6***
High school	4,122	3,726	378	14	4	***9.0***
More than high school	5,373	5,041	312	19	1	***5.9***
By household income quintile:						
Bottom quintile	2,168	1,951	190	23	4	***9.1***
Second quintile	2,167	1,966	190	10	1	***8.9***
Middle quintile	2,170	1,994	167	6	3	***7.7***
Fourth quintile	2,411	2,233	174	4	0	***7.3***
Top quintile	1,927	1,838	87	0	0	***4.5***
By mother's marital history:						
Still in first marriage	6,527	6,226	297	2	2	***4.4***
Never married	1,720	1,575	117	23	5	***7.5***
Has been divorced	2,621	2,205	395	20	1	***15.4***
*By mother's age at first birth:**						
Age 15 or younger	74	57	15	0	2	***25.7***
Age 16 or 17	331	268	55	8	0	***19.2***
Age 18or 19	799	670	118	9	2	***15.1***
Age 20 to 24	2,411	2,146	249	14	2	***10.3***
Age 25 or over	5,166	4,956	205	4	1	***4.0***

*Notes: Data from 2008 SIPP. Unit of analysis is a mother with resident children. Sample sizes are not weighted. Multiple-father fertility (MFF) rates are weighted to be nationally representative. *Unit of analysis is a mother with all of her biological children residing in her household.*

Table 3. Binary logit models: "Mother has children by one father" versus "Mother has children by two or more fathers"

	State and MSA characteristics	With state fixed effects added	With MSA fixed effects added instead
Lagged MSA arrest rate *(per 1000 residents aged 15-44)* z-score	**.0028** *(.036)*	**.0025** *(.039)*	**.0029** *(.013)*
Never married	**.0858** *(.000)*	**.0830** *(.000)*	**.0820** *(.000)*
Has been divorced	**.1317** *(.000)*	**.1288** *(.000)*	**.1272** *(.000)*
Number of resident biological children	**.0241** *(.000)*	**.0239** *(.000)*	**.0238** *(.000)*
Aged 15 or less at birth of oldest resident child	**.1128** *(.000)*	**.1190** *(.000)*	**.1219** *(.000)*
Aged 16-17 at birth of oldest resident child	**.0748** *(.000)*	**.0796** *(.000)*	**.0840** *(.000)*
Aged 18-19 at birth of oldest resident child	**.0692** *(.000)*	**.0725** *(.000)*	**.0740** *(.000)*
Aged 20-24 at birth of oldest resident child	**.0259** *(.000)*	**.0271** *(.000)*	**.0280** *(.000)*
Black	.0040 *(.225)*	.0050 *(.131)*	.0041 *(.272)*
Hispanic	- .0018 *(.438)*	- .0003 *(.907)*	.0010 *(.656)*
Asian	**- .0114** *(.032)*	**- .0123** *(.049)*	-.0117 *(.065)*
Less than high school education	- .0024 *(.327)*	- .0025 *(.311)*	-.0021 *(.386)*
More than high school education	**- .0105** *(.000)*	**-.0103** *(.000)*	**-.0103** *(.000)*
Age *(years)*	**.0057** *(.000)*	**.0059** *(.000)*	**.0062** *(.000)*
Age squared	**-.0001** *(.000)*	**-.0001** *(.000)*	**-.0001** *(.000)*
---------- *MSA characteristics* ----------			
Men per 100 women (*ages 15-44)*	.0002 *(.124)*	.0002 *(.128)*	.0002 *(.420)*
Hardship rate (z-score) *(threshold=150% of poverty line)*	- .0018 *(.183)*	- .0025 *(.064)*	-.0024 *(.196)*
Male 10^{th}-grade dropout rate (z-score)	- .0017 *(.212)*	- .0007 *(.614)*	-.0007 *(.670)*
Employment rate of men aged 15-44 (z-score)	- .0009 *(.319)*	- .0010 *(.202)*	-.0013 *(.176)*
Lagged rent level *(40^{th} percentile, in $100s of 2009 $)*	- .0003 *(.790)*	- .0007 *(.581)*	.0002 *(.829)*
---------- *State characteristics* ----------			
Lagged child support enforcement intensity *(0 - 1.2)*	- .0007 *(.906)*	**- .0108** *(.021)*	**- .0107** *(.021)*
Lagged per capita income *(in $1000s of 2009 $)*	- .0000 *(.976)*	.0000 *(.979)*	.0008 *(.112)*
Lagged AFDC benefit *(in $100s of 2009 $)*	- .0003 *(.536)*	**- .0032** *(.003)*	**- .0025** *(.005)*
Year fixed effects	Yes	Yes	Yes
State fixed effects	-	Yes	-
MSA fixed effects	-	-	Yes
Proportion (weighted) of obs in the "2+ fathers" category	*0.078*	*0.078*	*0.078*
Sample size	28,612	28,570	28,594
Pseudo-R^2	0.223	0.229	0.234

Omitted outcome is one father. Arrest rate and MSA sex ratio are race-specific rate for second year after birth of mother's oldest resident child. State characteristics are also for second year after birth of oldest resident child. Table reports marginal change in P(multiple fathers) for 1-unit change in variable (p-value of underlying logit coefficient in parentheses). Bold font denotes significance at 5-percent level or better. Omitted racial/ethnic category is non-Hispanic white. Omitted marital status is "still in first marriage." Omitted education category is "high school only." Family structure data from 1985-88, 1990-93, 1996, and 2001 SIPP surveys. Arrest data from FBI's 1980-2001 Uniform Crime Reports. Error clustering at state level.

Table 4. Six-outcome multinomial logit model: Whole sample, with MSA fixed effects

	Children by one father and…		Children by multiple fathers and…		
	…never married	…divorced (once or more)	…never married	…still in first marriage	…divorced (once or more)
Lagged MSA arrest rate *(*z-score)	.0019 *(.088)*	.0075 *(.153)*	**.0004** *(.016)*	- .0007 *(.557)*	**.0063** *(.000)*
Number of resident biological children	**- .0267** *(.000)*	**- .1018** *(.000)*	**.0013** *(.000)*	**.0054** *(.000)*	**.0171** *(.000)*
Aged 15 or less at birth of oldest child	**.0308** *(.000)*	**.1585** *(.000)*	**.0107** *(.000)*	**.0468** *(.000)*	**.1409** *(.000)*
Aged 16-17 at birth of oldest child	**.0176** *(.000)*	**.2210** *(.000)*	**.0059** *(.000)*	**.0336** *(.000)*	**.1025** *(.000)*
Aged 18-19 at birth of oldest child	**.0193** *(.000)*	**.1421** *(.000)*	**.0064** *(.000)*	**.0237** *(.000)*	**.1043** *(.000)*
Aged 20-24 at birth of oldest child	**.0092** *(.000)*	**.0746** *(.000)*	**.0027** *(.000)*	**.0110** *(.000)*	**.0325** *(.000)*
Black	**.1828** *(.000)*	**.0318** *(.000)*	**.0095** *(.000)*	**.0148** *(.000)*	- .0093 *(.623)*
Hispanic	.0174 *(.032)*	- .0227 *(.425)*	**.0025** *(.007)*	.0009 *(.539)*	- .0069 *(.114)*
Asian	.0011 *(.141)*	**- .1275** *(.000)*	.0012 *(.676)*	- .0007 *(.359)*	**- .0259** *(.000)*
Less than high school education	**.0369** *(.000)*	.0149 *(.099)*	**.0031** *(.000)*	.0002 *(.529)*	- .0077 *(.236)*
More than high school education	**- .0258** *(.000)*	**- .0589** *(.000)*	**- .0032** *(.000)*	**- .0064** *(.000)*	**- .0123** *(.000)*
Age *(years)*	**- .0099** *(.000)*	**.0481** *(.000)*	- .0003 *(.697)*	- .0008 *(.877)*	**.0140** *(.000)*
Age squared	**.0001** *(.000)*	**- .0005** *(.000)*	.0000 *(.868)*	.0000 *(.916)*	**- .0002** *(.000)*
-------- *MSA characteristics* ----------					
Men per 100 women (*ages 15-44)*	**- .0008** *(.023)*	- .0005 *(.209)*	**- .0001** *(.000)*	.0001 *(.720)*	- .0001 *(.523)*
Hardship rate (z-score)	.0033 *(.066)*	.0015 *(.801)*	- .0001 *(.851)*	- .0011 *(.283)*	- .0010 *(.575)*
Male 10^{th}-grade dropout rate (z-score)	.0010 *(.481)*	- .0025 *(.536)*	**.0004** *(.034)*	- .0008 *(.496)*	.0007 *(.576)*
Employment rate of men 15-44 (z-score)	- .0015 *(.415)*	.0038 *(.391)*	- .0002 *(.556)*	.0007 *(.261)*	.0001 *(.956)*
Lagged rent level *(40^{th} pctl, $100s of 2009 $)*	- .0011 *(.189)*	- .0044 *(.320)*	- .0000 *(.640)*	.0001 *(.953)*	.0000 *(.824)*
-------- *State characteristics* ----------					
Lagged child support enforcement intensity	- .0065 *(.062)*	**- .0578** *(.000)*	**- .0015** *(.039)*	**- .0060** *(.001)*	**- .0111** *(.019)*
Lagged p.c. income *(in $1,000s of 2009 $)*	.0006 *(.599)*	**- .0048** *(.002)*	**.0002** *(.020)*	.0001 *(.964)*	.0004 *(.695)*
Lagged welfare benefit *(in $100s of 2009 $)*	.0016 *(.092)*	.0001 *(.822)*	- .0001 *(.177)*	- .0003 *(.358)*	**- .0028** *(.002)*
Year fixed effects			Yes		
MSA fixed effects			Yes		
Number of observations in category	*3,139*	*7,510*	*395*	*579*	*1,516*
Proportion (weighted) of obs in category	*0.099*	*0.237*	*0.012*	*0.018*	*0.048*
Sample size		28,612			
Pseudo-R^2		0.178			

Omitted outcome is "One father, still in first marriage" (58.6 percent of observations). Table reports change in outcome's probability for a 1-unit change in each variable (p-value of underlying logit coefficient in parentheses). Arrest rate, MSA sex ratio, and state characteristics are lagged to second year after birth of oldest resident child. Bold font indicates significance at the 5-percent level or better. Omitted education category is "High school education." Family structure data are from the 1985-88, 1990-93, 1996, and 2001 SIPP surveys. Error clustering at state level.

Table 5. Six-outcome multinomial logit model, for different subsamples

	Children by one father and…		Children by multiple fathers and…		
	…never married	…divorced (once or more)	…never married	…still in first marriage	…divorced (once or more
Whole sample *(n=28,612)**:***					
Lagged MSA arrest rate z-score	.0015 *(.104)*	.0090 *(.082)*	**.0005** *(.003)*	- .0004 *(.905)*	**.0058** *(.000)*
Proportion of observations in category	*0.099*	*0.237*	*0.012*	*0.018*	*0.048*
Nonblack subsample *(n=23,798)**:***					
Lagged MSA arrest rate z-score	**-** .0006 *(.966)*	.0121 *(.132)*	.0003 *(.160)*	.0000 *(.712)*	**.0043** *(.018)*
Proportion of observations in category	*0.055*	*0.233*	*0.006*	*0.015*	*0.046*
Black subsample *(n=4,634):*					
Lagged MSA arrest rate z-score	**.0117** *(.020)*	- .0007 *(.140)*	**.0028** *(.003)*	.0001 *(.257)*	**.0066** *(.000)*
Proportion of observations in category	*0.323*	*0.243*	*0.043*	*0.033*	*0.050*
High school only subsample *(n=15,354)**:***					
Lagged MSA arrest rate z-score	.0010 *(.292)*	.0094 *(.052)*	**.0005** *(.004)*	- .0001 *(.666)*	**.0066** *(.000)*
Proportion of observations in category	*0.105*	*0.255*	*0.012*	*0.020*	*0.055*
High school dropout subsample *(n=4,941)**:***					
Lagged MSA arrest rate z-score	.0076 *(.214)*	.0041 *(.513)*	.0024 *(.065)*	- .0048 *(.155)*	.0059 *(.092)*
Proportion of observations in category	*0.200*	*0.213*	*0.034*	*0.029*	*0.052*
College-educated subsample *(n=8,317)**:***					
Lagged MSA arrest rate z-score	.0009 *(.147)*	.0133 *(.066)*	.0000 *(.578)*	.0008 *(.297)*	**.0045** *(.001)*
Proportion of observations in category	*0.038*	*0.209*	*0.002*	*0.008*	*0.030*

Omitted outcome is "One father, still in first marriage." Table reports change in each outcome's probability for an increase of 1 standard deviation in lagged MSA arrest rate (p-value of underlying logit coefficient in parentheses). Bold font indicates significance at 5-percent level or better. Model estimated is without fixed effects, given small size of some of the subsamples. Other regressors (except controls for education or race) as in preceding table.

Appendix Table 1. Means and standard deviations of regressors

Variable	Mean	Std dev
Characteristics of SIPP mothers		
Black	0.162	
Hispanic	0.140	
Asian	0.049	
Never married	0.108	
Has been divorced	0.281	
Aged 15 or less at birth of oldest resident child	0.008	
Aged 16-17 at birth of oldest resident child	0.041	
Aged 18-19 at birth of oldest resident child	0.087	
Aged 20-24 at birth of oldest resident child	0.302	
Aged 25 or older at birth of oldest resident child	0.562	
Less than a high school education	0.169	
More than a high school education	0.296	
Age *(years)*	35.4	7.8
Number of resident children	2.04	1.04
Year=1985	0.053	
Year=1986	0.060	
Year=1987	0.063	
Year=1988	0.065	
Year=1990	0.113	
Year=1991	0.066	
Year=1992	0.101	
Year=1993	0.098	
Year=1996	0.214	
Year=2001	0.168	
State characteristics		
Lagged intensity of child support enforcement *(Number of paternities established per nonmarital birth)*	0.29	0.31
Lagged state per capita income *(in $1,000s)*	30.0	5.1
Lagged AFDC/TANF benefit *(in $100s)*	9.07	3.7
MSA characteristics		
Lagged arrest rate, nonblack *(arrests per 1,000 people 15-44)*	69.2	43.1
Lagged arrest rate, black *(arrests per 1,000 people 15-44)*	158.3	100.4
Lagged MSA sex ratio, nonblack *(men per 100 women, population aged 15-44)*	101.5	4.5
Lagged MSA sex ratio, black *(men per 100 women, population aged 15-44)*	89.1	11.4
Lagged MSA rent level *(40^{th} percentile, in $100s of 2009 $)*	8.15	1.12
MSA male dropout rate (10^{th} grade or less) *(per 100 men)*	10.6	5.3
MSA hardship rate *(families per 100 below 150% of poverty line)*	24.7	6.9
MSA male employment rate *(per 100 men)*	74.6	6.0

Note: Data from1985-1988, 1990-1993, 1996 and 2001 SIPP surveys, weighted to be nationally representative. Lagged variables are lagged to two years after birth of mother's oldest resident child.