

**HARDSHIP IN MARRIED AND
COHABITING PARENT
HOUSEHOLDS: DO COHABITING
PARENTS UNDERINVEST IN
HOUSEHOLD PUBLIC GOODS?**

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COHABITING PARENTS UNDERINVEST IN HOUSEHOLD PUBLIC GOODS?**

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I. Introduction

This paper examines the extent to which the relationship between parents in cohabiting as opposed to married households affects the material hardship experienced by members of those households. My approach is to consider the adequacy of certain household public goods, such as housing, heat, and electricity.¹ Drawing from non-cooperative bargaining models of intra-household resource allocation, I test a prediction that the lower expected relationship continuity in cohabiting households leads cohabiting parents to underinvest in household public goods compared to parents in married households, holding household income constant.

An increasing proportion of children live with cohabiting parents in the United States. Since 1985, the proportion of children in the general population living in cohabiting households has doubled from 1.5 percent to 3 percent, and, in households with incomes below 200 percent of the poverty level, the proportion has increased in the same period from 2.7 percent to 6 percent (Dupree and Primus, 2001; see also Bumpass and Raley, 1995; Bumpass and Lu, 2000). Bumpass, Raley and Sweet (1995) show that 17 percent of children's time (ages 0 to 17) spent in single-parent households (using the marital status definition) in the early 1980s was actually spent living in cohabiting households.

Many of the children living with cohabiting couples are living in cohabiting stepfamilies (generally with their biological mother and her cohabiting partner rather than

¹ Chen and Woolley (1999) define household public goods as those which are “non-rival in the generation of utility” as opposed to private goods, which “generate utility for only one person.”

with their biological father). Indeed, Graefe and Lichter (1999) found that 63 percent of children who lived in a cohabiting-couple household lived in a cohabiting stepfamily. However, a significant and growing number of children are also born to cohabiting couples. Between 1980-84 and 1990-94, the proportion of non-marital births that were to cohabiting parents increased from 29 percent to 39 percent (Bumpass and Sweet, 1989; Bumpass and Lu, 2000). Raley (2001) finds that most of the increase in the number of children born to cohabitators between the mid-1980s and mid-1990s can be attributed to increases in the numbers of women cohabiting over this period, but she notes that there have also been changes in couples' responses to non-marital pregnancies: fewer cohabiting couples are marrying in response to a pregnancy, and more non-coresident couples are choosing to cohabit rather than marry in response to a pregnancy.

The implications of these increases in parental cohabitation for child poverty and inequality are unclear, in part because very little is known about the household economic behavior of cohabiting parents. One way to judge the extent of resource sharing in cohabiting-parent families, and thus to assess the effect of increases in this family form on children's wellbeing, is to compare parents' contributions to household public goods in cohabiting-parent and married-parent families by comparing levels of material hardship across family forms, while controlling for household income and need. If cohabiting parents share less of their income with each other or with their children than married parents (perhaps due to uncertainty about the future of their relationship with each other), children in cohabiting-parent households may be worse off than children in married-parent households in which the parents have the same total income. Alternatively, it may be that individual characteristics of the parents who select into

cohabiting relationships, such as their relatively lower age and education, might lead to their households having greater material hardship even though they contribute to household public goods to the same extent that married parents do.

Preliminary evidence from recent studies suggests that cohabiting households experience higher levels of material hardship than married households (Bauman, 1999; Lerman, 2002). Bauman (1999) assesses resource sharing in different household types by examining the extent to which income received by different individuals affects the level of material hardship experienced by the household. Comparing the effect of income received by household heads, spouses of household heads, other family members, cohabitators, and non-family housemates, he finds that income from cohabitators and non-family housemates contributes less to reducing hardship than does income from household heads (whose income does most to reduce hardship), spouses, or other family members. Unfortunately, his study does not consider possible sources of heterogeneity among cohabiting-couple households, which may distinguish couples who share resources more extensively from those who do not, and which are of particular interest for considering the well-being of women and children in different family forms. For example, Bauman's study combined all cohabitators, rather than distinguishing among couples living without children, couples living in cohabiting stepfamilies, and couples living with biological children. Lerman (2002), using data from the SIPP to compare levels of material hardship in married-, cohabiting-, and single-parent families with children, obtained mixed results. For all women and for women in low-income households, living in a cohabiting household was associated with a higher level of material hardship (controlling for the welfare ratio, age, race, and education of the

reference person, as well as the number of young children) relative to living in married household. However, when he limited the sample to women high school dropouts, the increase in hardship associated with cohabitation (relative to marriage) was no longer significant.

In this paper, I compare the levels of material hardship in married- and cohabiting-parent households and explore the extent to which differences in hardship can be explained by differences in the expected continuity of parents' relationship as opposed to the socio-demographic characteristics of parents. I use data on 2,346 married and cohabiting couples from the first and second waves of the Fragile Families and Child Wellbeing Study ("FFCW"), an ongoing national birth cohort study of unmarried parents and their children that includes a comparison sample of married parents. The FFCW data unite detailed information on the socioeconomic characteristics, relationship status and quality, attitudes, and behaviors of new parents with a sufficient sample size of unmarried cohabiting parents to allow for multivariate statistical analysis of this group. I use questions on household-level hardships gathered in the 12-month follow-up survey of the FFCW to test whether cohabiting-parent households experience more hardship at a given level of income than do married-parent households.

II. Theory and Hypotheses

This paper tests a prediction drawn from non-cooperative bargaining theories of household allocation: that household public goods will tend to be underprovided in households in which the couple faces a shorter expected time horizon for their relationship. Unlike neoclassical or cooperative bargaining models of the household, which both conclude that household resource allocations will always be Pareto efficient

(that is, that the allocations are such that neither partner could be made better off without making the other worse off),² non-cooperative bargaining models allow for outcomes that are not necessarily Pareto optimal—that is, outcomes in which, under certain circumstances, household public goods are under-provided.

The most well-known example of a non-cooperative game, the “prisoner’s dilemma,” shows that when the game is played only once, the outcome is Pareto-inefficient. Both players could be made better off if they cooperated. However, if the same game is played as an infinitely repeated game, the players can reach efficient outcomes because they have an opportunity and incentive to cooperate. According to Lundberg and Pollak (1994),

“[In a repeated game,] the losses from non-cooperation provide both spouses with incentives to depart from the Cournot-Nash (confess-confess) solution. Crucial to achieving a Pareto optimal outcome in the repeated game is the ability of the players to punish one another for deviations from cooperation; a Pareto optimal equilibrium can be sustained by a credible punishment threat if, for each player, the one-period gain from deviating from a cooperative strategy is less than the loss associated with being punished” (at 135).

This model, put in slightly different terms, corresponds to notions of reciprocity discussed in sociological exchange theory. Both theories rely on the repeated nature of the interactions and the fact that not cooperating can be discouraged because the ongoing

² Neoclassical models of household resource allocation achieve Pareto efficiency by assuming that households contain a single decision-maker (a kind of benevolent dictator) who maximizes a single household utility function (see Becker, 1981). Cooperative bargaining models (e.g., Manser and Brown, 1980; McElroy and Horney, 1981) assume couples have perfect (or at least not asymmetric) information and can make costless and binding contracts regarding resource allocation, conditions which ensure that allocations will be Pareto efficient.

nature of exchange means that an individual whose efforts have not been “matched” by the other will reduce his or her effort the next time (see Blau, 1986).

Non-cooperative bargaining and social exchange theories emphasize the importance of the time horizon within which exchanges are taking place, suggesting that the expected duration of the couple’s relationship might play a significant role in whether or not they will choose cooperative strategies. If partners expect the relationship will not last long, it is more likely that their short-term gain from deviating from a cooperative strategy would be greater than their loss from future punishment. This leads to the hypothesis tested in this paper: We might expect to see public goods underprovided in cohabiting households relative to married households, or more generally, in households with lower expected relationship durations relative to those with higher expected durations.

III. Data and Methods

A. Sample: Married and Cohabiting Parents at 12 Months After Childbirth

This paper uses data from the first and second waves of the Fragile Families and Child Wellbeing Study. The purpose of the FFCW study is to provide previously unavailable information on unmarried parents by examining such parents’ relationships with each other, their involvement with their children, their economic circumstances and prospects, and their sources of support. The study, which at baseline included a sample of approximately 3700 unmarried and 1200 married couples and their children, was designed to be representative of non-marital births in cities with populations over 200,000. It is being conducted in 20 U.S. cities, which were stratified by labor market

conditions, welfare generosity, and child support policy.³ Mothers (and most fathers) were first interviewed in the hospital within 48 hours of their child's birth, and they are being re-interviewed when their babies are approximately 12, 30, and 60 months old.

The sample for the analyses below includes 2,346 mothers, all of whom responded to the 12-month follow-up survey, and for whom responses were complete on the questions used to create the variables in the analysis. Of these 2,346 mothers, 1,224 were married to, and the remaining 1,122 were cohabiting with, their baby's father at the time of the 12-month interview. In the analyses that separate this sample by race and ethnicity, the non-Hispanic white sample includes 777 mothers, the African American sample includes 832 mothers, and the Hispanic sample includes 737 mothers.

As with most data, there are a number of limitations to the generalizability of results based on the FFCW study, some of which are related to the study design, and some of which arise from my use of the sample of married and cohabiting parents in the 12-month survey. First, the study was designed to be representative of non-marital births in U.S. cities with populations over 200,000. As a result, the sample of unmarried parents in the baseline survey can reasonably be considered to be representative of urban parents who are not married at the time of their child's birth. However, the study's "comparison" sample of married parents, composed of married parents giving birth in the hospitals whose births comprised a representative sample of *non-marital* births, may not

³ For further information on the sampling technique and study design, see Reichman, Teitler, Garfinkel & McLanahan (2000).

be representative of all married parents having births in those cities if married parents, who are often more affluent, tend to give birth in different hospitals.⁴

Second, because the analyses in this paper are based on results from the 12-month follow-up survey, when questions about the couple's household hardships were asked, it is important to determine the extent to which attrition of families from the study may affect the sample. Although not all of the parents interviewed at baseline could be located for re-interview at the time of the 12-month survey, the overall retention rate between the two surveys was high—about 89 percent of all mothers were re-interviewed. For mothers who were in a relationship with the father (married, cohabiting, or romantic but non-cohabiting) at the time of the baseline survey, retention was even higher. In an analysis (not shown) of the characteristics of mothers who were in romantic relationships with the father at baseline, I found no differences between responding and non-responding mothers at the 12-month survey in terms of race and ethnicity, marital status, education, or baseline poverty category. However, mothers who responded to the baseline but not the 12-month survey were slightly older than mothers who responded to both waves. Thus the attrition that occurred among parents who were in a relationship with each other at baseline was not, for the most part, selective, and it should not affect my results.

⁴ In some of the cities included in the FFCW, this is not an issue, because all of those cities' birthing hospitals were included in the study. However, in the largest cities, where hospitals had to be sampled, if married mothers disproportionately give birth in different hospitals than unmarried mothers, the results of analyses of the married parents included in the FFCW will not necessarily be generalizable to all married parents having babies in these cities.

B. Dependent Variable: Creation of the Hardship Scale

The FFCW 12-month survey asks mothers a series of twelve questions related to specific material hardships they or their household may have experienced in the preceding year. To focus on investments in household public goods, I chose from this list seven questions that measure household-level hardships likely to affect the well-being of children.⁵ This series of questions is similar to questions from the Survey of Income and Program Participation that Bauman (1999) used to create a hardship scale, as well as to the concepts included in Mayer and Jencks' (1989) hardship scale. The questions I use asked whether the household had done any of the following because there was not enough money: received free food or meals; not paid the full amount of rent or mortgage payments; been evicted; not paid the full amount of utility bills; had utility service cut off for non-payment; had telephone service cut off for non-payment; or had anyone in the household who needed to see a doctor or go to the hospital but could not because of the cost.

From the seven questions related to household hardship, I summed the mother's "yes" responses to get a hardship scale that ranges from zero to seven. This system—giving each of the individual hardship items equal weight in creating an additive scale—has been used by several previous researchers, including Mayer and Jencks (1989), Short

⁵ I rejected two questions relating to *individual*-level hardships ("Did you go hungry" and "Did your child go hungry") as well as two questions that seemed likely to be related to whether the household had a high level of availability of support from family and friends ("Did you move in with other people..." and "Did you borrow money from friends or family to help pay bills").

and Shea (1995), and Bauman (1999).⁶ As a check to see whether it was reasonable to consider the items I chose as being related to a single concept of “hardship,” I looked at the correlation of the seven items and found that all but one were above 0.10. Table 5.1 shows the results: all of the correlations are positive, and all but one are above 0.10.

C. Modeling Strategy: Choice of the Negative Binomial Regression Model and Running the Models on Both the Full Sample and on Samples Divided by Race and Ethnicity

Because the dependent variable in these analyses is a count of the number of hardships experienced over the past year, I considered regression models from the family of the Poisson distribution for modeling the effect of cohabitation and the other independent variables on the number of hardships experienced by the household. In the multivariate analyses that follow, I use the Negative Binomial Regression Model (“NBRM”), which has the same mean structure as the Poisson, but “addresses the failure of the [Poisson model to account for overdispersion in the outcome variable] by adding a

⁶ Mayer and Jencks (1989) compared their simple additive scale to one created by giving each individual hardship as a weight its coefficient from a regression of parents’ subjective assessment of their standard of living on the list of individual hardship items. They found a correlation of 0.98 between the weighted scale and the simple additive scale, and they chose to use the additive scale because it made interpretation more straightforward.

Unlike Bauman and Mayer and Jencks, in creating his hardship scale, Lerman (2002) makes “a priori judgments about the importance” of different individual hardship items and weights them accordingly, so that, for example, having phone service disconnected is given 1 point, while having the gas or electricity cut off is given 2 points and having been evicted is given 4 points.

parameter (alpha) that reflects *unobserved* heterogeneity among observations” (Long and Freese, 2001, at 243).⁷

I first apply models including different sets of explanatory variables (detailed below) to the full sample of couples who were married or cohabiting at the time of the 12-month FFCW survey and include controls for race and Hispanic origin. This is similar to the approach taken by Bauman (1999) in his analysis of the effect of household heads’ vs. other household members’ income on hardship, in which he found that income from cohabiting partners contributed less to reducing household hardship than did income from a married male household head. However, there is evidence in the literature that selection into cohabitation or marriage by parents may differ by race and Hispanic origin,⁸ and such differences in selection into relationship status may affect the apparent relationship between cohabitation and household hardship. Therefore, I then repeat the analyses separately for non-Hispanic whites, non-Hispanic African Americans, and Hispanics. Because the results of these separate analyses suggest that differential selection into cohabitation and marriage by race-ethnicity may indeed help to explain some of the differences in hardship between married and cohabiting couples, I then present the results of analyses of the income, age, and educational distributions of married and cohabiting parents by race and ethnicity.

⁷ A likelihood ratio test of the hypothesis that $[\alpha] = \text{zero}$ tests for the presence of overdispersion and helps to determine whether the Poisson or NBRM is more appropriate. Using this test on different specifications of my model, I was consistently able to reject the hypothesis that $\alpha = \text{zero}$, suggesting that there was indeed overdispersion in the hardship outcome.

⁸ See Teachman, Tedrow, and Crowder (2000); Bumpass, Sweet, and Cherlin (1991).

D. Independent Variables

1. Marital Status

The first variable in each of the multivariate analyses that follow is an indicator that is equal to one if the parents are cohabiting and equal to zero if they are married. Table 5.2 shows that the mean number of hardships reported by married mothers is 0.45, while the mean number reported by cohabiting mothers is 0.72. The multivariate analyses that follow will control first for factors related to the household's income and need, then for other sociodemographic characteristics of the mother that may be related to both hardship and marital status, and finally for variables that measure the couples' relationship security, in order to determine whether any of these sets of factors helps to explain the difference in hardship between married and cohabiting couples.⁹

2. Income and Need

The extent to which a household experiences material hardship should depend in large part on the supply of and demand for resources by its members. Income entering the household, either from earnings or from assistance from welfare or outside family members, should tend to reduce the number of hardships the household experiences (holding other factors constant), while the number of individuals relying upon that income, and their dependent status, should tend to increase the need for income (or the

⁹ In an alternative specification of the model presented here (not shown), I included the dummy variable for cohabiting status, the mother's income, and an interaction of cohabiting status with father's income. This model was more similar to the one used by Bauman (1999). The results did not differ from those presented here. For the combined sample by race and ethnicity, it appeared that cohabiting fathers' income reduced hardship significantly less than did married fathers' income. However, this difference turned out to be driven entirely by the differences between married and cohabiting whites.

level of hardship, if income is not sufficient to meet needs). In addition, if an individual in the household has greater-than-average needs or less-than-average ability to produce income—for example, if a parent is disabled or has significant health problems—more resources may be devoted to meeting that individual’s “private” needs, and fewer may be available to the household.

In the analyses that follow, I include a measure of income brought into the household by the mother and father in (approximately) the past year. This measure includes income from earnings¹⁰ as well as money received from social security, welfare, unemployment benefits, or gifts from family or friends. Because the FFCW does not survey other household members, similarly thorough information on any income brought into the household by other adults living with the FFCW couple was not available. I therefore expect that my measure of the number of adults in the household (which equals 2 if the parents are the only adults) will tend to capture the presence of household income not measured in my mother-father income variable. If such adults tend to contribute more to household resources than they themselves consume, the effect of their presence in the household on hardship should be negative. I also include a measure for the number of children in the household, expecting that households with more children will tend to have a higher level of need. I include separate measures for whether the mother or father

¹⁰ In order to determine the amount of earnings over the past year, I used variables that indicated the amount earned and the period in which it was earned (either hours, days, weeks, months, or year). In several cases, the parent indicated she (or he) was working, either full time or part time, but refused to give an amount earned. In these cases, I imputed earnings to the individual based on the value of earnings for similar employed individuals, using marital status, age, education, race, nativity, number of hours worked per week, and receipt of public assistance in the last year in the imputation equations.

has a disability or health problem that affects functioning. Finally, I also include dummy variables for each of the 20 cities included in the FFCW in order to control for differences in the local cost of living that may affect material hardship.

3. Socio-demographic Factors

A number of socio-demographic characteristics, including age, race and ethnicity, and education, may be related both to the level of hardship experienced by the household and to parents' selection into marriage or cohabitation. Younger individuals, those with lower levels of education, and African Americans and Hispanics are more likely to cohabit than are those who are older, more educated, or white. They may also tend to experience more household hardship. Assuming that selection into cohabitation operates in the same way for different groups, controlling for age, race-ethnicity, and education in a regression of hardship on marital-cohabiting status would allow us to see the effect of cohabitation net of these factors that influence both cohabitation and hardship. I include measures of mother's age (in categories of under 20, 20-30, 30-40, and over 40); mother's race-ethnicity (non-Hispanic white, African American, and Hispanic) and education (less than a high school degree, a high school degree, and college or more).

The variable measuring mother's education may also serve as an indicator of the couples' level of "permanent income." Given that the couples are being interviewed approximately 12 months following a birth, a higher proportion of mothers in the FFCW may not be working, or may have worked less in the past year, than would be the case in most years. As a result, the income they earned in the past year may be lower than what they have previously earned or could expect to earn in the near future. Couples in which the mother has higher past earnings may have savings they can draw on to avoid hardship

(the FFCW includes no direct measure of savings), or may have easier access to credit (or wealthier friends and family), so mothers with higher education may have fewer hardships, even controlling for the past year's income. Table 5.2 shows that households in which the mother has less than a high school education have a mean hardship level of 0.66, those in which the mother has a high school degree have a mean hardship level of 0.65, and those in which she has a college degree or more have a mean hardship level of only 0.19.

4. Relationship Stability

This paper tests the hypothesis that a difference in the expected continuity of married and cohabiting relationships leads to differences in couples' investments in household public goods, with the result that cohabiting-couple households experience higher levels of hardship. In order to examine the extent to which it is this difference in expected continuity that accounts for differences in hardship between married and cohabiting couples, I include a set of variables related to relationship security or stability. The first two of these, the duration of co-residence and the existence of a non-joint child (that is, whether either parent has had a child with a previous partner) represent the extent of the couple's past relationship-specific investments. I assume that the value of staying together, and thus the likelihood of staying together, depends in part on how much time, emotional energy, and social learning the couple have already invested in the relationship (see Brines and Joyner, 1999; Treas, 1993). Those who have lived together for a longer time are also the survivors of a selection process that has already "weeded out" the couples most likely to split up, while the group of couples who have lived together for a shorter period of time still includes some with a high likelihood of breakup along with

others who will stay together. To test the effect of duration of co-residence, I include a measure that indicates whether the couple have been together less than two years (or roughly from the time the pregnancy with the FFCW study child began), two to four years, or more than four years. Table 5.2 shows that the mean level of hardship is highest (0.73) for those in the lowest co-residential duration group and lowest for those in the highest co-residential duration group (0.48). This difference in mean hardship may be due to differences in age (older, more economically established couples are also likely to be those with longer-established coresidence) or marital status (cohabiting relationships are likely to be of shorter duration, on average, than marriages). I also include an indicator for whether either parent has had a child with a previous partner, which may indicate that their past investments have been in a different relationship rather than the current one. Couples with a “non-joint” child have a mean hardship level of 0.72, compared to a mean of 0.47 for those who have only children “in common.”

Couples may also have less secure or stable relationships, and thus lower expected continuity, if either partner has a drug or alcohol problem, or if their relationship is characterized by a high degree of conflict and an inability to compromise in disagreements.¹¹ I therefore include several variables intended to capture these aspects of relationship stability.¹² For both the mother and the father, I have created indicator

¹¹ McGonagle, Kessler and Gotlib (1993) found that the “negativity” of couples’ disagreements, and failure to compromise, were strong predictors of subsequent marital disruption, particularly among those at marital durations of under 9 years

¹² Alcohol and drug problems are likely to be *both* a predictor of future instability for the couple (Fu and Goldman, 1995) *and* a factor influencing the couples’ selection into cohabitation vs. marriage (Yamaguchi and Kandel, 1985).

variables equal to one if the parent had a drug or alcohol problem.¹³ Households in which the mother has a drinking or drug problem according to this measure have a mean hardship level of 1.05, while those in which the mother does not have a drinking or drug problem have a mean hardship level of 0.54.

I include three measures that gauge the level of conflict or cooperation in the couple. The first of these is an indicator variable that is equal to one if the mother says the father is seldom or never fair and willing to compromise when they have a disagreement and zero otherwise. Households in which the mother said the father was often fair had a mean hardship level of 0.50, while those in which she said he was never or only sometimes fair had a mean hardship level of 0.65. The second measure indicates whether the mother said the father often insulted or criticized her. In households in which the mother said the father often insulted or criticized her, the mean level of hardship was 1.08, while it was 0.55 in households in which the mother said the father only sometimes or never did this. Finally, I include an indicator for physical violence. This measure combines the mother's responses to two questions: how often he slapped or

¹³ Self-reporting on a question in the 12-month survey that asked the respondent whether he or she had a drug or alcohol problem that had interfered with work or relationships was very low. Only 3 married or cohabiting mothers and 19 married or cohabiting fathers admitted that they had a drug or alcohol problem in response to this question. I therefore included in this measure the parent's response to specific questions about how often they had engaged in "binge drinking" or had used illegal drugs in the previous month, since it seems likely that illegal drug use or frequent heavy drinking could have an effect on relationship stability even if the respondent did not acknowledge having a substance abuse problem. If the respondent had used illegal drugs at all, or had engaged in "binge drinking" more than two times in the previous month, he or she was given a value of 1 on this measure. (Wechsler, Dowdall, Davenport, and Rimm (1995) define binge drinking as more than 5 drinks in a day.) If the respondent had done neither, he or she was given a value of 0 on this measure.

kicked her, and how often he hit her with a fist or object that could hurt her. This measure is equal to one if the father often or sometimes did either of these things. Mean hardship in households in which the father was physically violent was 1.29, while it was 0.55 in households in which the mother said the father was never violent.¹⁴

I also include an indicator for whether the father is unemployed. Male unemployment has been found to be a significant predictor of marital disruption (Attewell, 1999; Jones, 1988). A direct relationship between the father's unemployment and the level of household hardship could be expected on the basis of the effect of unemployment on the income available to the household. In a model in which the couple's income is controlled for, however, a variable measuring male unemployment may capture an additional aspect of unemployment that affects relationship stability through an increase in couple conflict (Starkey, 1996).

IV. Results

A. Combined Sample NBRM Regression

Figure 5.1 shows the distribution of values on the hardship scale by marital status. Married mothers are significantly more likely to say they have experienced none of the items included in the hardship scale in the past year (73.2 percent reported no hardships) than are cohabiting mothers (60.4 percent reported no hardships). The proportion of married mothers reporting they had experienced one of the hardship items was 82 percent

¹⁴ In these analyses, I consider these conflict indicators as measures of relationship stability. However, it is important to note that in any association of these measures with hardship, the direction of causality may go "the other way." Studies of family violence have shown that the increased stress of experiencing material hardship can lead to higher levels of conflict.

as high as the proportion of cohabiting mothers reporting one hardship, while the proportions of married mothers reporting 2 (or more) hardships was under 65 percent of the proportion of cohabiting mothers reporting each of those higher numbers of hardships. In order to determine the extent to which factors relating to differences in income and need, socio-demographic characteristics, or relationship stability explain these differences in the distribution of hardships, I now turn to the results of my multivariate analyses.

Table 5.3 presents the results of NBRM regression of the hardship scale on four models that include different sets of explanatory variables. Although I do not report coefficients for the city dummies (none of them was significant for the combined sample), all of the models shown in this table include controls for city of residence. Model 1 includes the measure of marital status. Model 2 adds couple income as well as the other measures of the household's supply of and demand for resources. Model 3 adds the measures of the mother's socio-demographic characteristics. Model 4 includes all of the previous measures and adds the measures of factors related to relationship stability.

As expected, the mother and father's combined income has a negative and significant effect on hardship. An increase of \$10,000 in combined parental income results in a reduction of about 8 percent in the expected hardship count in Model 2, and reduces expected hardship by 4 percent even in Model 4, where all the other factors are controlled. Parents' disability appears to be one of the strongest predictors of hardship. Mothers who had a disability had an expected hardship count that was about twice as high as those who did not, controlling for all other factors in the model. Although the effect of the father's disability is not as strong, this may be the result of both a less

accurate measure (where the father's own response was not available, I used the mother's response about the father) and that the measure of whether or not the father was unemployed, which is included in the full model, was correlated with the father having a disability. Each additional child in the household increases the expected hardship count by about 11 percent, holding other factors constant. The effect of additional adults, although negative as expected, was not significant.

Among the mother's socio-demographic characteristics, the mother's education and the mother being in the 20-30 age group had significant effects in the full model. In addition, when these characteristics were added, the factor change in the effect of cohabiting on the expected hardship count declined from 1.37 to 1.22. Most of this change is the result of adding the education variables.¹⁵ Compared to mothers who had a college education or more, the mother having less than a high school degree or having a high school degree approximately doubled the expected hardship count in the full model. The mother being in the 20-30 age group increased expected hardship by 24 percent in the full model compared to the omitted category, mothers who were between 30 and 40 years old. An analysis of mother's age by the number of adults in her household (not shown) showed that mothers who were under 20 were more likely than older mothers to live with other adults (often their parents or their husband or partner's parents) which may explain why hardships among the youngest mothers do not differ significantly from

¹⁵ In analyses not shown, I added each of the variables separately to determine how adding them affected the coefficient on cohabitation.

those experienced by mothers in the 30-40 age range.¹⁶ Either these households containing the youngest mothers actually experienced fewer hardships because there were more employed adults contributing to household income (although the inclusion of the number of adults in the household should control for some of this), or the fact that the mother is less likely to be responsible for or aware of some of the items in the hardship scale when she lives with parents or in-laws may result in under-reporting of hardships by the youngest mothers.¹⁷

Finally, in the full model, several of the measures of relationship stability had a significant effect on hardship, and including these measures reduced the effect of cohabitation to non-significance. This suggests that differences in relationship stability, or the expected duration of the relationship, account for a substantial proportion of the differences in hardship experienced in married and cohabiting households. Looking at the effects of the measures of relationship stability separately, it appears that living together for a shorter period of time (less than 2 years) has only a small effect on hardship when age and other factors are controlled, although the effect of relationship duration is in the expected direction. However, for couples in which either parent has had a child with a previous partner, which is the other measure of past relationship investment, the expected hardship count is 21 percent higher than for those who have only children in common, and this difference is significant at the 0.05 level. The effect of

¹⁶ See also Sigle-Rushton and McLanahan (2002) on household composition of mothers of different ages.

¹⁷ For example, teenage mothers living with their parents may not be aware of whether the full amount was paid for rent or utility bills if they are not the ones responsible for paying those bills.

either parent having a drinking or drug problem is large. Although mothers' substance use problems appear to have a larger effect than fathers'—increasing the expected hardship count by 45% compared to 33%—this may be due to differences in the accuracy of the measures (see above). Two of the measures of relationship quality or conflict are also significant. In households in which the mother reports that the father is seldom or never fair and willing to compromise when they have a disagreement, the expected hardship count is 16 percent higher than in households in which she says he is often fair. Where the mother reports that the father insults or criticizes her often, the household's expected hardship count is 55 percent higher than in households in which she says he sometimes or never does this.

B. Separate NBRM Regressions by Race and Ethnicity

Figure 5.2 shows the distribution of number of hardships by marital status when the sample is divided by race and ethnicity. The largest difference in hardship between married and cohabiting mothers is for non-Hispanic whites. Over 80 percent of white married mothers report that they have experienced none of the items on the hardship scale in the past year, compared to only about 54 percent of white cohabiting mothers. Among both African Americans and Hispanics, the difference in hardship between married and cohabiting couples is far smaller. Seventy percent of married Hispanics report no hardships, compared to just over 65 percent of cohabiting Hispanics, and 63 percent of African American married mothers report no hardships compared to about 59 percent of African American cohabiting mothers. In fact, although overall, African American and Hispanic mothers report more hardships than do non-Hispanic white mothers, a higher

percentage of white cohabiting mothers have experienced 2 or more hardships in the past year than either married or cohabiting African American or Hispanic mothers.

Consistent with this pattern, Tables 5.4, 5.5, and 5.6 show that the results obtained for the combined sample do not hold up when the NBRM regression models are run on samples divided by race and ethnicity.¹⁸ For non-Hispanic white mothers (Table 5.4), cohabitation has a large effect on the expected hardship count. Although controlling for income and need, socio-demographic characteristics, and relationship security appears to explain some of the difference in hardship between married and cohabiting white households, reducing the percent change in the expected hardship count due to cohabitation from 250 percent higher than for married couples to 67 percent higher, the effect of cohabitation is still large and significant in the full model for white mothers. The effect of most of the other variables in the model is consistent with the results from the combined sample, although some effects lose significance. The mother's having a disability or less than a college education both continue to have large effects on household hardship. If the mother reports that the father is seldom or never fair and willing to compromise, the expected hardship count is 59 percent higher than if she says he is often fair, and if the mother says the father often insults or criticizes her, the expected hardship count is 67 percent higher than if he does not. One result that stands out as different in the analysis of the whites-only sample compared to the combined sample is that in the white sample, households in which the *father* has a drug or alcohol

¹⁸ The sample sizes for the three racial-ethnic groups are roughly similar: there are 777 non-Hispanic white and Asian mothers; 832 African American mothers; and 737 Hispanic mothers.

problem have an expected hardship count that is 58 percent higher than households in which he does not, while the mother having a drug or alcohol problem has a very small (and non-significant) effect.

Table 5.5 shows that the results for African American mothers are quite different. Even without controlling for anything except the city of residence, the difference in hardship between married and cohabiting mothers is negligible. Cohabitation does not appear to be associated with a higher expected hardship count in African American households. A few other factors also appear to have different or stronger effects in this sample than in the white sample. Although the mother having less than high school or a high school degree rather than a college degree or more has a positive effect on the expected hardship count, the differences are considerably smaller than for white mothers, and the effects are not significant for African American mothers. The measures of past relationship investment also show different effects for this sample than for the combined sample. Co-residential relationship duration is significant, but having a child with a previous partner is not. Households in which the couples had been living together for less than two years had an expected hardship count that was 32 percent higher than couples who had been living together for over four years (the omitted category). There was no effect of either parent having had a child with a previous partner. There were also differences on the relationship quality measures. For African American mothers, whether or not the father was fair and willing to compromise did not have a significant relationship to hardship, but in households in which the mother reported that the father was physically violent, the expected hardship count was 113 percent higher than in households in which he was not. Finally, in the African Americans-only sample, two of

the city dummies had significant coefficients. Hardship was significantly lower for African Americans living in Nashville and Jacksonville than for those living in Oakland, the omitted city.

Table 5.6 shows that for Hispanic mothers, as for African Americans, cohabitation does not significantly affect the expected hardship count, even when only income and city of residence are included in the model. For Hispanic mothers, fewer of the other variables in the analysis are significant than for African American or white mothers. It appears that there was less variation in hardship among Hispanic mothers than among either African American or white mothers. The mother having a disability, and the presence of more children in the household, both increase the expected hardship count. None of the socio-demographic variables is significant, and among the relationship security variables, the only one that is significant is whether or not the father is employed. Households in which the father is unemployed have an expected hardship count that is 51 percent higher than those in which the father is employed. For Hispanics, as for African Americans, two of the city dummies had significant coefficients. Living in Baltimore increased the expected hardship count for Hispanics by 332 percent, and living in Milwaukee increased it by 152 percent, compared to living in Oakland.

C. Income, Age, and Education Distributions by Race-Ethnicity and Marital Status

The difference in the multivariate results for white mothers, compared to those for African American and Hispanic mothers, suggests that the process of selection into marriage or cohabitation by parents in the Fragile Families study differs for parents in different race-ethnic groups. In order to explore further whether such an explanation is

the likely reason for this difference, I now present the results of an analysis of the distribution of married versus cohabiting mothers by race-ethnicity according to income and a number of socio-demographic characteristics.

Figure 5.3, panels A, B, and C show the income distributions (couple income) of married and cohabiting non-Hispanic white and Asian mothers, African American mothers, and Hispanic mothers, respectively. These figures demonstrate that the income distributions of married and cohabiting non-Hispanic whites are more different from each other than are the income distributions of African Americans and Hispanics. Almost 83 percent of non-Hispanic white cohabiting mothers live in households in which the mother's and father's combined income is under \$50,000, compared to only 31 percent of white married mothers. The median mother-plus-father income of white married mothers (\$63,000) is more than twice that of white cohabiting mothers (\$31,200). Among African American mothers, the income distributions of those who are married and those who are cohabiting are somewhat more similar. About 75 percent of cohabiting African American mothers live in households in which the parents' income is below \$50,000, while about 54 percent of African American married mothers do. African American married mothers' median income of \$48,100 is considerably lower than that of white married mothers and is closer to that of African American cohabiting mothers (\$35,300). It is particularly striking that, although in general the household income of African Americans is lower than that of non-Hispanic whites, the median income of cohabiting African Americans in this sample is higher than that of cohabiting whites. Finally, among Hispanics, the income distributions of married and cohabiting mothers are quite similar. Just over 84 percent of Hispanic cohabiting mothers live in households in which

the mother's and father's combined income is under \$50,000, and 75 percent of Hispanic married mothers live in such households. The median income for Hispanic married households (\$31,100) is lower even than that of cohabiting non-Hispanic white households, and not far from the median income of Hispanic cohabiting households (\$24,900).

Differences in the educational distribution of married and cohabiting mothers in the different racial-ethnic groups tell a similar story. Figure 5.4, Panels A, B, and C show that the educational disparity between married and cohabiting mothers is greatest for whites. Thirty six percent of non-Hispanic white cohabiting mothers have less than a high school education compared to about 9 percent of non-Hispanic white married mothers, while over 50 percent of non-Hispanic white married mothers have a college education or more, compared to only 3 percent of non-Hispanic white cohabiting mothers. Panel B shows that African American married and cohabiting mothers have somewhat more similar educational backgrounds than white married and cohabiting mothers. The majority of both married and cohabiting African American mothers have a high school degree. African American cohabiting mothers are more likely than married mothers to have less than a high school education (39 percent vs. 16 percent, respectively), while married mothers are more likely than cohabitators to have a college degree (19 percent vs. 3 percent). Panel C shows that Hispanic married and cohabiting mothers are more similar to each other in their level of education than either non-Hispanic white or African American mothers. Although an analysis of the bivariate relationship between education and marital status (not shown) finds that there is a significant relationship between marriage and education for Hispanic mothers, Hispanic

married mothers are more likely to have less than a high school education, and less likely to have a college education or more, than either white or African American mothers, making them more similar to their cohabiting counterparts.

Figure 5.5 shows that cohabiting mothers in all three race-ethnic groups show a similar age distribution. Between 45 and 50 percent of all cohabiting mothers are in the 20 to 25 age group, while approximately another 24 percent are in the 25 to 30 age group. Very few cohabiting mothers are over age 30. Among married mothers, white mothers are the oldest—and thus the least similar to cohabiting mothers—while Hispanic mothers are the youngest.

Finally, Figure 5.6 shows that there is a difference by race-ethnicity in the gap between the percentage of married vs. cohabiting couples in which at least one parent has had a child with a previous partner. The difference is largest for white and Asian couples: in almost 53 percent of white cohabiting couples, a parent has a child with a previous partner, while this is true for only 15 percent of married couples. For African American couples, a higher proportion of both married and cohabiting couples have a non-joint child, and the difference by marital status is much smaller: 68 percent of cohabiting couples, and 54 percent of married couples, have a non-joint child. Hispanic couples fall between white and African American couples on this measure. Forty-nine percent of cohabiting couples, and 31 percent of married couples, have a non-joint child.

V. Discussion

Non-cooperative bargaining models from household economics suggest that the existence of “efficient” allocations—meaning, among other things, those with Pareto-optimal levels of household public goods—depends on having an infinitely-repeated non-

cooperative game. As the expected time horizon of the game shortens, it becomes more likely that one partner or the other will deviate from making a full or optimal contribution to public goods because the short-term private gain from doing so would be greater than the loss the other partner could impose through future “punishments” (that is, by also withholding cooperation).

The purpose of this paper was to test the hypothesis that the lower expected relationship continuity in cohabiting households leads cohabiting parents to under-invest in household public goods, leading to a higher level of household hardship. The multivariate analysis of the combined sample reported above would appear to provide support for this hypothesis: controlling for income and need, cohabiting households have higher levels of hardship than married couples, suggesting that they do, in fact, underinvest in household public goods. This difference appeared to be accounted for by differences in factors related to couples’ relationship security—differences in their past relationship investments as well as differences in the degree of conflict and cooperation their current relationship, both of which could be expected to affect the expected continuity of the relationship. Once these relationship security factors were included in the multivariate analysis, the association between cohabitation and hardship became non-significant.

The implication of this finding is that, indeed, the difference in relationship security, or the expected continuity of the couple’s relationship, accounts for a substantial portion of the difference in parental investments in household public goods. This result is consistent with Bauman’s (1999) finding, also using a sample combining race and ethnic groups, that the income of cohabiting partners contributed less to reducing hardship than

did that of the household head. Bauman suggested that such a finding would imply that cohabitants were either “unable to contribute money to others in the household (for example, because of increased health insurance costs or difficulties in borrowing) or... they purchased items that served personal priorities rather than household needs” (at 322). Based on Bauman’s work, and the results from the combined sample reported above, it appears that the income of cohabitators is less available to other members of the household than is the income of married parents. These results suggest that children in cohabiting-parent households would be likely to suffer more material hardship than children in married-parent households even when their parents had the same income as married parents.

When I conduct the multivariate analyses separately for the three different race-ethnic groups, however, the results suggest a more complicated story. The hypothesis based on theory—that cohabitators, because of lower expected relationship continuity, would invest less in household public goods—offers no reason to expect that expected continuity would “work” differently in one group than in another. Yet for African American and Hispanic mothers, cohabiting-couple households did not have higher levels of hardship than married-couple households, even in the models that controlled only for income.

Two explanations could account for the different results by race-ethnicity. One explanation, consistent with the expected-continuity hypothesis, would be that for African-American and Hispanic couples, there is less of a difference in the expected continuity of the relationship between married and cohabiting mothers. It could be that among these groups, cohabitation is sufficiently institutionalized that there is not a real

difference in expected continuity between the two relationship statuses. In this case, marital status would not distinguish between couples who are likely to stay together and those who are not, and therefore would not predict investments in household public goods. There is some evidence to suggest that cohabitation is more of a substitute for marriage (more institutionalized) among Hispanics. For example, Hispanic mothers in the Fragile Families survey are more likely than mothers in other groups to agree with the statement, “living together is just like being married,”¹⁹ and between the baseline and 12-month follow-up surveys, Hispanic cohabiting relationships were the most stable of any group (about 62 percent of Hispanics cohabiting at baseline were still cohabiting at follow-up, compared to 55 percent of whites and 51 percent of African Americans).²⁰

This argument does not appear to work for African Americans, however—if anything, cohabitation appears to be *less* institutionalized for African Americans than for whites. Among all unmarried couples in the Fragile Families study, African Americans are the least likely to cohabit of any group, and African American mothers who were cohabiting at baseline were the most likely to have stopped living with their baby’s father by the time of follow-up. For African Americans, in order to argue that marriage and cohabitation are more similar, and therefore that there would be less of a difference in expected continuity between the two states, it would instead be necessary to argue that marriage is less stable than for the other groups. Again, there is some support for this argument. Marriages among African Americans have previously been found to be more

¹⁹ Based on conversation with Sara McLanahan, April, 2002.

²⁰ Another 22 percent of whites, 18 percent of Hispanics, and 10 percent of African Americans who were cohabiting at baseline had married each other by the time of the 12-month follow-up.

likely to end in divorce than those among whites (Cherlin, 1998), and the Fragile Families data also show that about 7 percent of African Americans who were married at baseline had divorced or separated by the time of the 12-month followup, compared to about 2 percent of whites. However, even with this difference, it is still the case for African Americans as for other groups that marriage strongly predicts staying together when compared to cohabitation. There should be a significant difference in the expected continuity of the relationship between marriage and cohabitation for African Americans, but there is no apparent difference in investments in household public goods, at least using hardship as a measure.

Based on the analysis of differences in income, age, and other distributions between married and cohabiting couples by race and ethnicity shown above, a second explanation for the different results by race-ethnicity on the multivariate hardship analyses seems more likely. This explanation suggests that the large difference in hardship between married and cohabiting white and Asian households, and the negligible differences in hardship between married and cohabiting African American and Hispanic households, can be accounted for by differences in selection into marriage and cohabitation by these groups. In addition to having the largest age difference between married and cohabiting parents of any race-ethnic group, cohabiting white parents clearly come from very different parts of the income and education distributions than married white parents. Among whites, cohabiting parents are a distinct group characterized by their low income, low education, and relative youth, as well as by the likelihood that they have a non-joint child. Along with these observed differences, there are likely to be

significant unobserved differences between married and cohabiting whites that also contribute to the difference in hardship by marital status.

Among African American parents to some extent, and among Hispanic parents to an even greater extent, it appears to be less the case than for whites that marriage and cohabitation are drawing from distinctly different segments of the population. There is a large overlap in the income distributions of married and cohabiting African Americans; the majority of both marital-status groups have a high school education; and similar proportions of married and cohabiting African American couples have a non-joint child. The main difference between cohabiting and married African American parents appears to be that married parents are older, although the age difference is less than for whites. Hispanic married parents come from essentially the same income distribution as Hispanic cohabiting parents, are only slightly more educated, and are only slightly older. The fact that white cohabiting parents experienced more hardships than African Americans or Hispanics, even though in general, poverty levels are higher for African Americans and Hispanics, also suggests that white cohabitators are a highly select group.

Although the evidence presented here does not appear to provide support for the expected-continuity hypothesis, it may be the case that the hardship measure I use is simply not capturing certain real differences in levels of household public goods. The majority of both married and cohabiting mothers in this study had experienced none of the items on the hardship scale in the past year. The questions that make up the hardship measure are not detailed enough, or nuanced enough, to pick up differences in things such as housing quality or neighborhood quality that may nonetheless have a real effect on the household's standard of living. Alternatively, it may be that at low income levels,

the distinction between public and private goods within the household is not particularly relevant. Such a high proportion of income is required for basic necessities, and these necessities, such as shelter and heat, are by their nature shared, that very little is left over to be reserved for “private” rather than public goods. Only in extreme cases, such as one parent having a drug or alcohol addiction or a disability, does it appear that resources are diverted from public goods to those that are only used by one individual.

Table 5.1. Correlation Matrix of Items Included in Hardship Scale

	Food	Rent	Evicted	Utility bills	Utilities off	Phone off	No doctor
Received free food	1.00						
Not able to pay full rent or mortgage	0.18	1.00					
Evicted	0.12	0.17	1.00				
Not able to pay full utility bills	0.14	0.32	0.11	1.00			
Utilities shut off	0.13	0.20	0.23	0.28	1.00		
Telephone service cut off	0.15	0.23	0.19	0.29	0.33	1.00	
Not able to see a doctor	0.13	0.14	0.06	0.18	0.12	0.17	1.00

Table 5.2: Mean Values of Hardship Scale for Different Values of the Independent Variables

<u>Variables</u>	<u>Mean</u>	<u>(S. D.)</u>
Full Sample	0.58	(1.02)
Married	0.45	(0.91)
Cohabiting	0.72	(1.12)
Mother has disability that limits work	1.22	(1.39)
Mother does not have disability	0.54	(0.98)
Father has disability that limits work	0.83	(1.25)
Father does not have disability	0.54	(0.98)
Mother is White or Asian	0.51	(1.01)
Mother is Black	0.65	(1.03)
Mother is Hispanic	0.57	(1.03)
Mother has less than a high school education	0.66	(1.10)
Mother has a high school degree	0.65	(1.06)
Mother has a college degree or more	0.19	(0.57)
Mother is under 20 years old	0.48	(0.79)
Mother is age 20-30	0.68	(1.10)
Mother is age 30-40	0.42	(0.86)
Mother is over age 40	0.46	(1.02)
Couple coresident less than 2 years	0.73	(1.11)
Couple coresident 2-4 years	0.63	(1.08)
Couple coresident > 4 years	0.48	(0.96)
Couple has "nonjoint" child	0.72	(1.14)
Couple has only joint child(ren)	0.47	(0.91)
Mother has an alcohol or drug problem	1.05	(1.35)
Mother does not have an alcohol or drug problem	0.54	(0.99)
Father has an alcohol or drug problem	0.86	(1.19)
Father does not have an alcohol or drug problem	0.53	(0.99)
Mother reports father seldom or never fair, willing to compromise	0.65	(1.08)
Mother reports father often fair	0.50	(0.96)
Mother reports father insults or criticizes her	1.08	(1.43)
Mother reports father seldom or never insults, criticizes her	0.55	(0.99)
Mother reports father is physically violent	1.29	(1.75)
Mother reports father not violent	0.57	(1.00)
Father is employed	0.54	(0.97)
Father is unemployed	0.89	(1.31)

Table 5.3: Coefficients (b) and Factor Change in the Expected Hardship Count (e^b) from Negative Binomial Regression of Hardship Scale on Independent Variables, Full Sample

	Model 1		Model 2		Model 3		Model 4	
	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change
Cohabiting (married omitted)	0.467*** (0.075)	1.6	0.311*** (0.077)	1.37	0.201** (0.080)	1.22	0.084 (0.081)	1.09
Income M&F (10k)			-0.084*** (0.015)	0.92	-0.059*** (0.017)	0.94	-0.043** (0.017)	0.96
Mother has disability			0.731*** (0.137)	2.08	0.697*** (0.134)	2.01	0.698*** (0.131)	2.01
Father has disability			0.268** (0.108)	1.31	0.255** (0.106)	1.29	0.202* (0.106)	1.22
No. adults in household			-0.050 (0.038)	0.95	-0.036 (0.038)	0.96	-0.058 (0.038)	0.94
No. children in household			0.103** (0.047)	1.11	0.089* (0.047)	1.09	0.102** (0.049)	1.11
Mother is Black (White-Asian omitted)					-0.072 (0.104)	0.93	-0.146 (0.103)	0.86
Mother is Hispanic					-0.206* (0.113)	0.81	-0.174 (0.112)	0.84
Mother has less than h.s. (college or more omitted)					0.747*** (0.174)	2.11	0.667*** (0.174)	1.95
Mother has a h.s. degree					0.853*** (0.155)	2.35	0.801*** (0.155)	2.23
Mother is under 20 yrs old (Mother is 30-40 omitted)					-0.199 (0.196)	0.82	-0.175 (0.198)	0.84
Mother is 20-30 years old					0.200** (0.094)	1.22	0.211** (0.095)	1.24
Mother is over age 40					0.085 (0.211)	1.09	0.009 (0.208)	1.01
Couple coresident < 2 years (coresident >4 years omitted)							0.176* (0.101)	1.19
Couple coresident 2-4 years							0.090 (0.093)	1.09
Couple has "nonjoint" child							0.192** (0.082)	1.21
Mother drug/drink problem							0.371*** (0.129)	1.45
Father drug/drink problem							0.286*** (0.099)	1.33
Father seldom or never fair							0.150** (0.074)	1.16
M: father insults, criticizes							0.441*** (0.148)	1.55
M: father physically violent							0.331 (0.248)	1.39
Father unemployed							0.165 (0.110)	1.18

City of Residence (20 city dummies, results not shown)

N = 2346

*** p < 0.01 ** p < 0.05 * p < 0.10

Table 5.4: Coefficients (b) and Factor Change in the Expected Hardship Count (e^b) from Negative Binomial Regression of Hardship on Independent Variables, White and Asian Mothers

Independent Variables	Model 1		Model 2		Model 3		Model 4	
	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change
Cohabiting (married omitted)	1.253*** (0.156)	3.50	0.945*** (0.159)	2.57	0.668*** (0.169)	1.95	0.513*** (0.170)	1.67
Couple Income (10k)			-0.110*** (0.028)	0.90	-0.043 (0.028)	0.96	-0.037 (0.028)	0.96
Mother has disability			0.853*** (0.272)	2.35	0.797*** (0.265)	2.22	0.827*** (0.262)	2.29
Father has disability			0.426* (0.223)	1.53	0.394* (0.215)	1.48	0.302 (0.212)	1.35
No. adults in household			-0.060 (0.101)	0.94	-0.094 (0.099)	0.91	-0.078 (0.098)	0.93
No. children in household			0.153 (0.120)	1.17	0.189 (0.120)	1.21	0.136 (0.123)	1.15
Mother has less than h.s. (college or more omitted)					1.142*** (0.293)	3.13	1.082*** (0.292)	2.95
Mother has h.s. degree					0.998*** (0.240)	2.71	0.949*** (0.240)	2.58
Mother is under 20 (Mother is 30-40 omitted)					-0.063 (0.378)	0.94	-0.011 (0.386)	0.99
Mother is 20-30					0.415** (0.185)	1.52	0.453** (0.188)	1.57
Mother is over age 40					0.064 (0.367)	1.07	0.015 (0.367)	1.01
Couple coresident < 2 years (> 4 years omitted)							0.063 (0.210)	1.07
Couple coresident 2-4 years							-0.044 (0.190)	0.96
Couple has "nonjoint" child							0.267 (0.171)	1.31
Mother drug/drink problem							-0.078 (0.276)	0.93
Father drug/drink problem							0.456** (0.192)	1.58
Father seldom or never fair							0.461*** (0.146)	1.59
M: father insults, criticizes							0.515* (0.287)	1.67
M: father physically violent							-0.748 (0.905)	0.47
Father is unemployed							0.180 (0.257)	1.19

City of Residence (20 city dummies, results not shown)

N = 777

*** p < 0.01 ** p < 0.05 * p < 0.10

Table 5.5. Coefficients (b) and Factor Change in the Expected Hardship Count (e^b) from Negative Binomial Regression of Hardship Scale on Independent Variables, African American Mothers

Independent Variables	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3</u>		<u>Model 4</u>	
	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change
Cohabiting (married omitted)	0.038 (0.115)	1.04	-0.049 (0.118)	0.95	-0.061 (0.123)	0.94	-0.173 (0.123)	0.84
Income M&F (10k)			-0.064*** (0.024)	0.94	-0.064** (0.025)	0.94	-0.039 (0.026)	0.96
Mother has disability			0.549*** (0.189)	1.73	0.534*** (0.189)	1.71	0.526*** (0.182)	1.69
Father has disability			0.125 (0.154)	1.13	0.124 (0.153)	1.13	0.133 (0.153)	1.14
No. adults in household			0.011 (0.058)	1.01	0.029 (0.059)	1.03	-0.060 (0.062)	0.94
No. children in household			0.004 (0.069)	1.00	-0.010 (0.071)	0.99	0.068 (0.075)	1.07
Mother has less than h.s. (college or more omitted)					0.247 (0.279)	1.28	0.162 (0.274)	1.18
Mother has h.s. degree					0.403 (0.250)	1.50	0.384 (0.245)	1.47
Mother is under 20 (Mother is 30-40 omitted)					-0.324 (0.307)	0.72	-0.287 (0.307)	0.75
Mother is 20-30					0.074 (0.138)	1.08	0.115 (0.140)	1.12
Mother is over age 40					-0.074 (0.341)	0.93	-0.134 (0.333)	0.87
Couple coresident < 2 years (> 4 years omitted)							0.274* (0.147)	1.32
Couple coresident 2-4 years							0.119 (0.139)	1.13
Couple has "nonjoint" child							0.006 (0.122)	1.01
Mother drug/drink problem							0.652*** (0.169)	1.92
Father drug/drink problem							0.463*** (0.139)	1.59
Father seldom or never fair							0.059 (0.108)	1.06
M: father insults, criticizes							0.362 (0.221)	1.44
M: father physically violent							0.758** (0.365)	2.13
Father is unemployed (father unemp. omitted)							0.064 (0.150)	1.07

City of Residence (20 city dummies, results not shown)

N = 832

*** p < 0.01 ** p < 0.05 * p < 0.10

Table 5.6. Coefficients (b) and Factor Change in the Expected Hardship Count (e^b) from Negative Binomial Regression of Hardship Scale on Independent Variables, Hispanic Mothers

Independent Variables	Model 1		Model 2		Model 3		Model 4	
	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change	Coeff. (s.e.)	Factor Change
Cohabiting (married omitted)	0.087 (0.137)	1.09	0.039 (0.136)	1.04	0.048 (0.140)	1.05	-0.040 (0.143)	0.96
Income M&F (10k)			-0.029 (0.033)	0.97	-.026 (0.036)	0.97	-0.005 (0.036)	1.00
Mother has disability			0.914*** (0.252)	2.49	0.907 (0.252)	2.48	0.860*** (0.251)	2.36
Father has disability			0.223 (0.191)	1.25	0.191 (0.193)	1.21	0.092 (0.195)	1.10
No. adults in household			-0.059 (0.057)	0.94	-0.047 (0.058)	0.95	-0.047 (0.058)	0.95
No. children in household			0.176** (0.074)	1.19	0.169** (0.076)	1.18	0.183** (0.080)	1.20
Mother has less than h.s. (college or more omitted)					0.139 (0.387)	1.15	0.116 (0.384)	1.12
Mother has h.s. degree					0.208 (0.369)	1.23	0.171 (0.366)	1.19
Mother is under 20 (Mother is 30-40 omitted)					-0.168 (0.351)	0.85	-0.215 (0.353)	0.81
Mother is 20-30					0.118 (0.173)	1.13	0.105 (0.174)	1.11
Mother is over age 40					0.494 (0.413)	1.64	0.364 (0.421)	1.44
Couple coresident < 2 years (> 4 years omitted)							0.211 (0.180)	1.24
Couple coresident 2-4 years							0.131 (0.168)	1.14
Couple has "nonjoint" child							0.091 (0.145)	1.10
Mother drug/drink problem							0.238 (0.277)	1.27
Father drug/drink problem							0.161 (0.195)	1.17
Father seldom or never fair							0.016 (0.135)	1.02
M: father insults, criticizes							0.266 (0.275)	1.31
M: father physically violent							0.326 (0.366)	1.39
Father is unemployed (father unemp. omitted)							0.410* (0.214)	1.51

City of Residence (20 City dummies, results not shown)

N = 737 *** p < 0.01 ** p < 0.05 * p < 0.10

Figure 5.1: Percent Distribution of Material Hardship in Full Sample, Married vs. Cohabiting

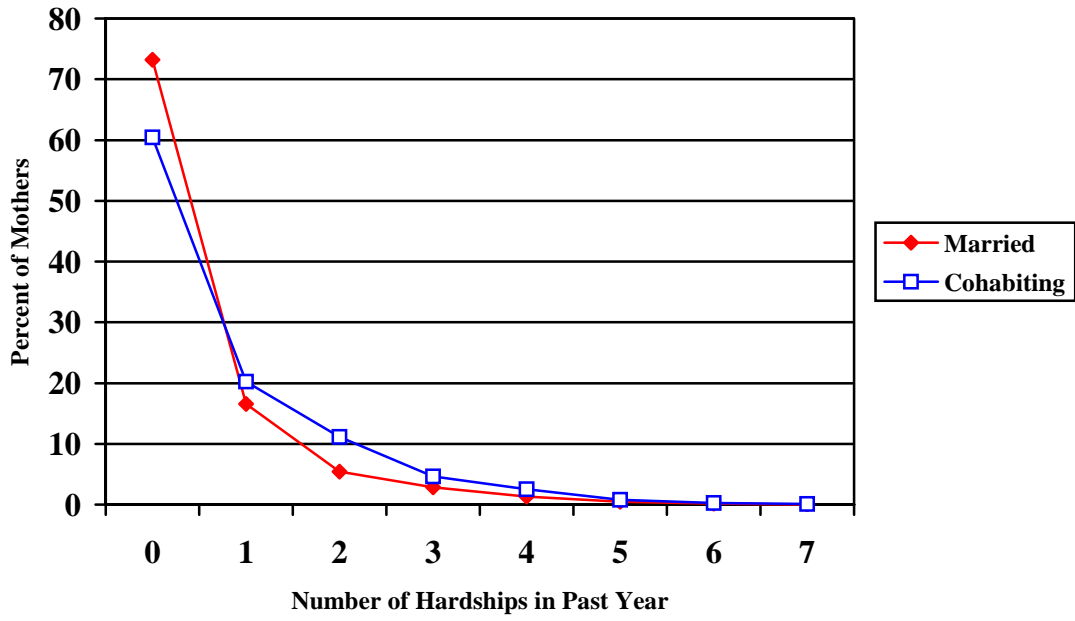
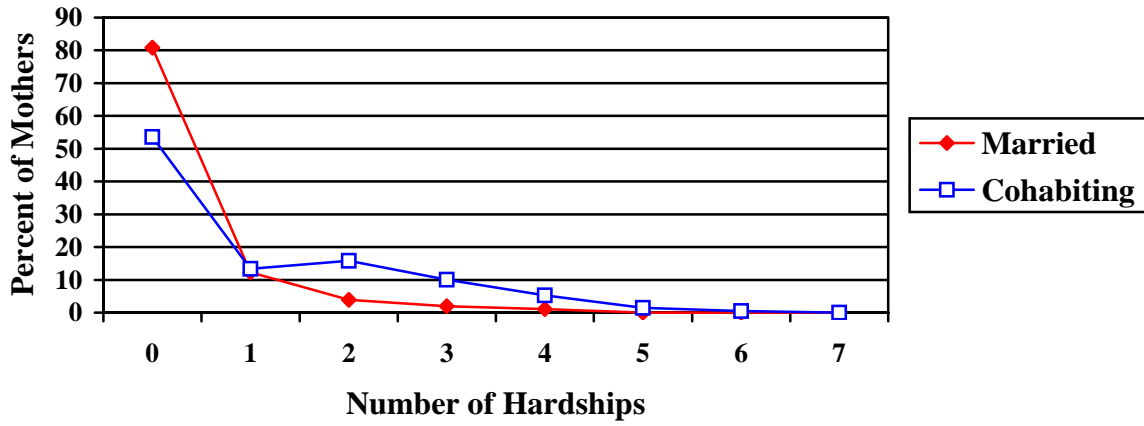
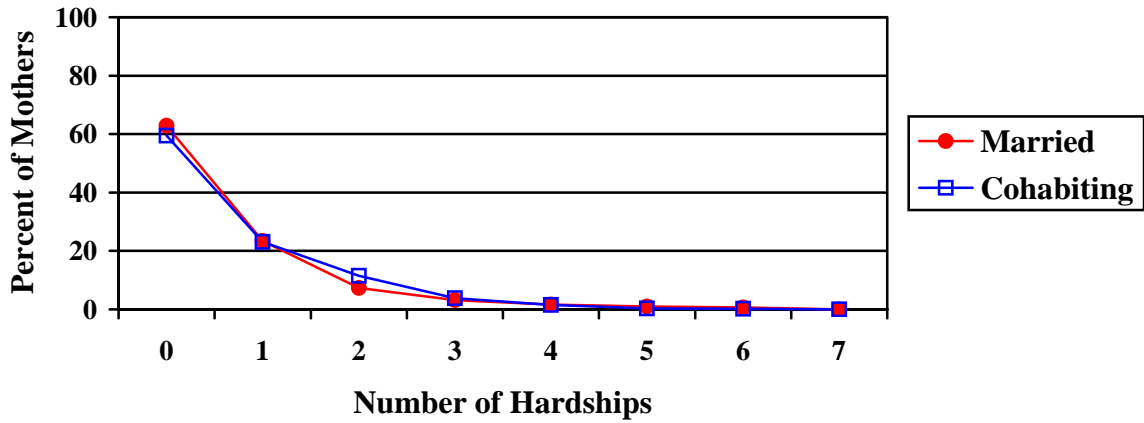


Figure 5.2. Percent Distribution of Material Hardship by Marital Status when Sample is Divided by Race and Ethnicity

Panel A. Non-Hispanic White and Asian Mothers



Panel B. African American Mothers



Panel C. Hispanic Mothers

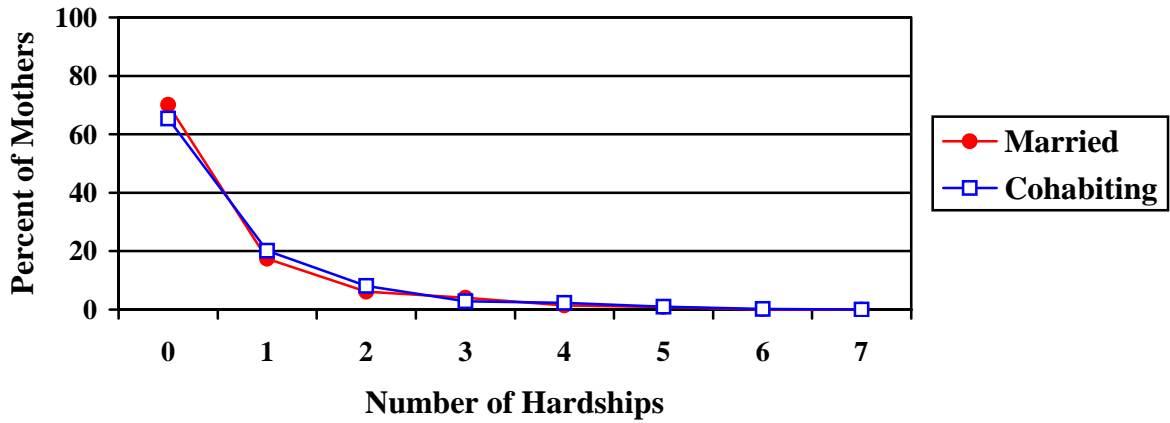
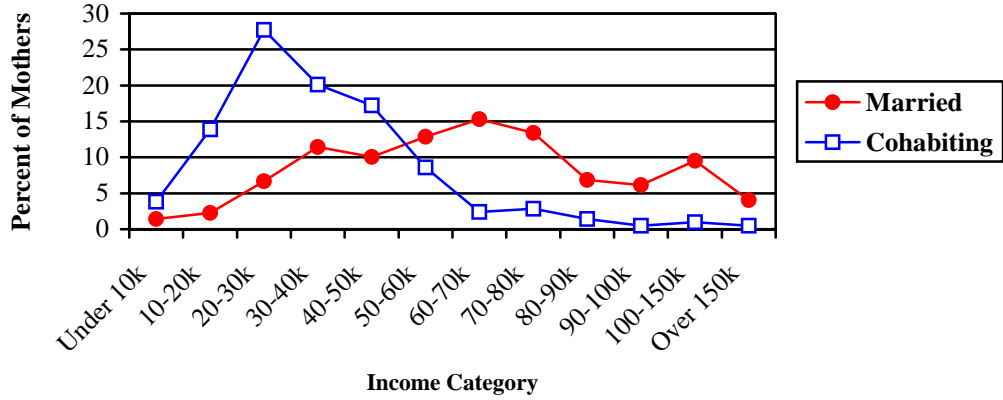
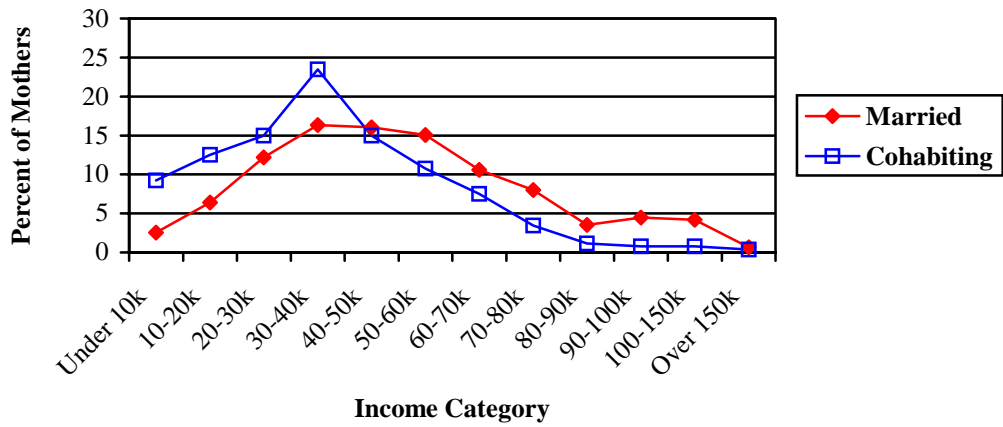


Figure 5.3. Percent Distributions of Income by Marital Status when Sample is Divided by Race-Ethnicity

Panel A. Non-Hispanic White and Asian Mothers



Panel B. African American Mothers



Panel C. Hispanic Mothers

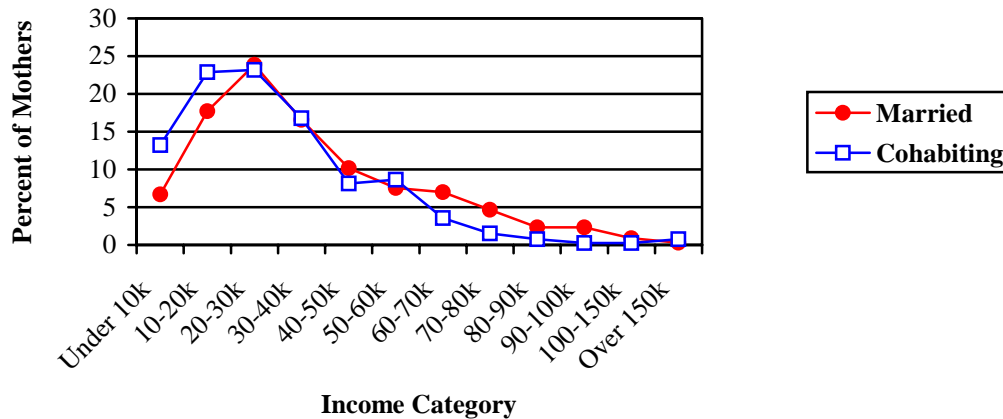


Figure 5.4. Percent Distributions of Educational Attainment by Marital Status when Sample is Divided by Race-Ethnicity

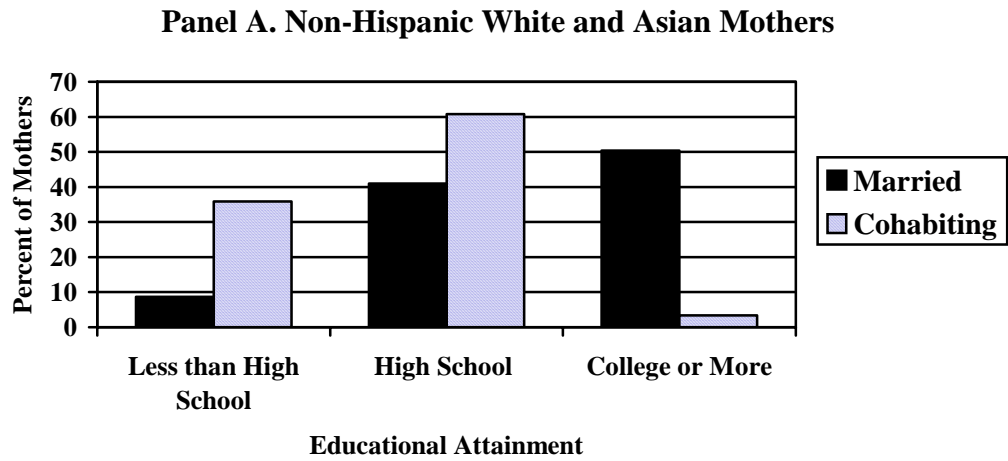


Figure 5.5. Percent Distributions in Age Groups by Marital Status and Race-Ethnicity

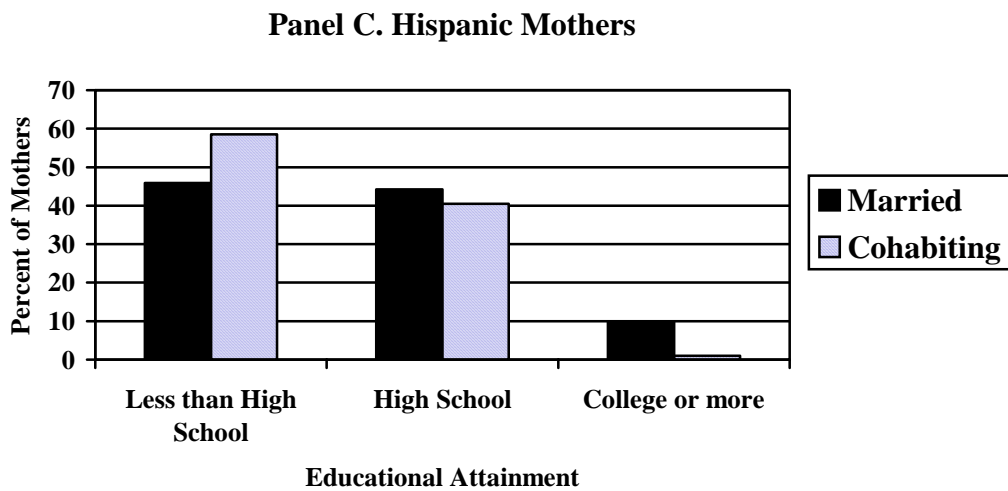
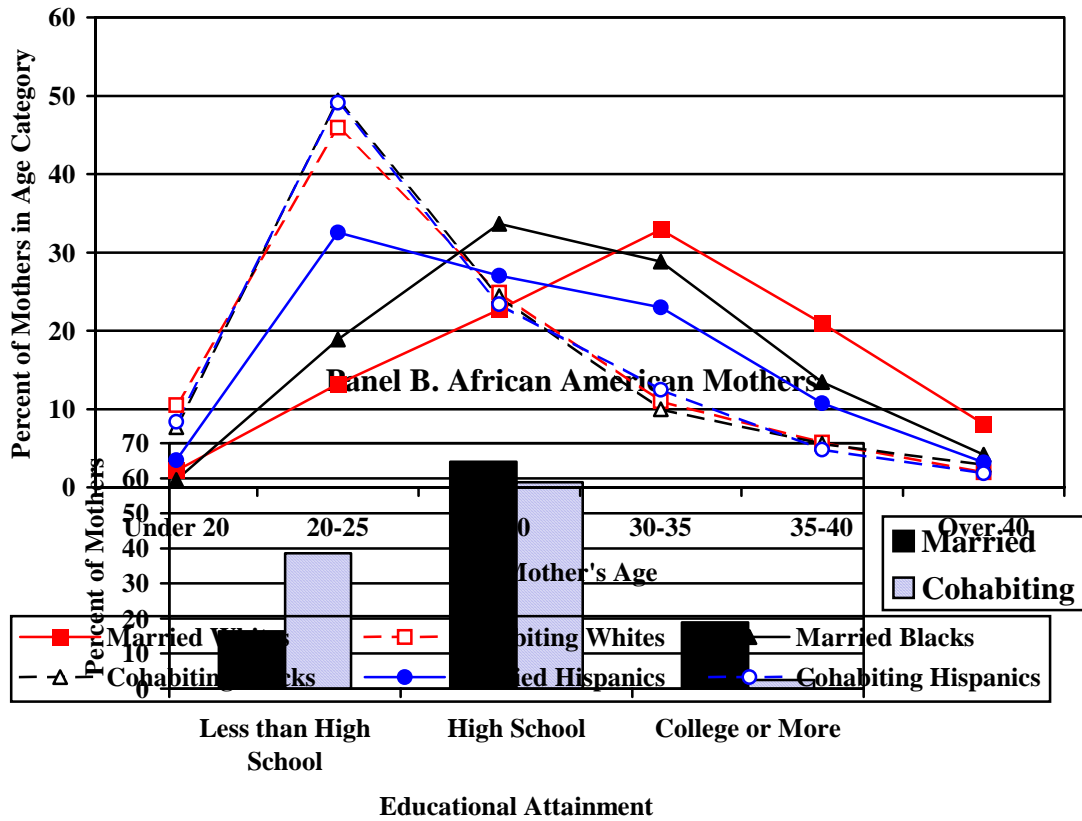
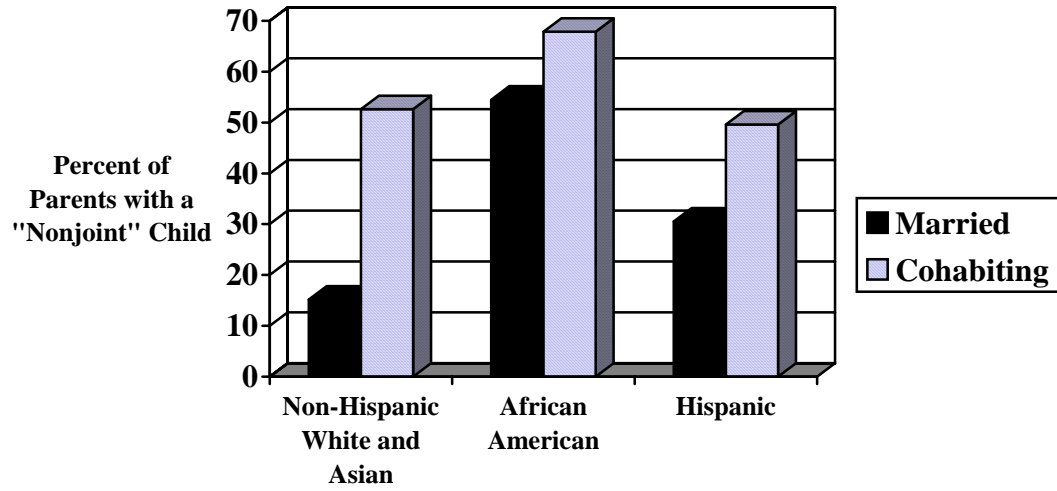


Figure 5.6. Percent of Couples in which Either Partner Has a Child with a Previous Partner



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