Welfare Rules, Incentives, and Family Structure

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Abstract

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In this study we provide a new examination of the incentive effects of welfare rules on marriage and cohabitation among low-income women. Focusing on the AFDC and TANF programs and how they treat the presence of men in the household, we first emphasize that the eligibility and benefit rules are based more on the biological relationship between the children and any male in the household than on marriage or cohabitation per se. Second, we conduct a new empirical analysis of the effect of the well-known 1990s welfare reforms on family structure that matches these rules by estimating effects on family structure categories incorporating biological status. Using data from a year prior to the reform and from several years after it, we find that work-related welfare policies increased rates of single motherhood and decreased rates of marriage to men who were biological fathers of the children but not of marriage to men who were not biological fathers. We also find that work-related welfare reform policies had stronger effects on family structure than did policies that were directly intended to influence that structure.. Finally, we find as well that the effects have been growing with time and that the long-term effects of welfare reform on family structure are greater than the short-term effects. Our results demonstrate the importance of distinguishing family structure by biological status for understanding the effects of welfare reforms.

A question of long-standing research and policy interest is whether the U.S. welfare system discourages marriage and encourages single motherhood. The origin of this hypothesis lies in the structure of the main welfare program through the early 1990s, the Aid to Families with Dependent Children (AFDC) program, which was largely offered only to one-parent families. A large volume of research was conducted from the 1990s through the early 2000s on whether AFDC affected family structure (Blackburn, 2003; Blau et al., 2004; Duncan and Hoffman, 1990; Ellwood and Jencks, 2001; Hoffman and Foster, 2000; Lichter et al., 1991; McLaughlin and Lichter, 1997; Moffitt et al., 1998; Winkler, 1995). Summaries of that research (e.g., Moffitt, 1998) showed quite weak evidence for the hypothesis, albeit with a wide range of estimates across different studies consistent with the existence of a nonzero positive effect on single motherhood but one which is probably small in magnitude and hard to detect.

The more recent literature on this topic has concerned itself instead with the effect of a major federal reform of the AFDC program in 1996 that imposed work requirements, time limits, and other features on the program and renamed it the Temporary Assistance for Needy Families (TANF) program. While most of the major features of the reform did not directly affect incentives for different family structures, one clearly articulated goal of the legislation was to reduce single motherhood.[1] There have been several studies of whether this reform affected different dimensions of family structure, with an important new dimension in many studies being whether cohabitation, as well as marriage, was affected by the law. These studies include Acs and Nelson (2004), Bitler et al. (2004), Bitler et al. (2006), Blau and van der Klaauw (2013),

[1] These reforms were part of the Personal Responsibility and Work Opportunity Act (PRWORA) of 1996. The first section of the legislation is entirely devoted to documenting the rise in nonmarital births and it ends with the statement that "...it is the sense of Congress that prevention of out-of-wedlock pregnancy and reduction of out-of-wedlock births are very important government interests and [this legislation] is intended to address the crisis."

Dunifon et al. (2009), Ellwood (2000), and Fitzgerald and Ribar (2004). Surveys of this literature (Blank, 2002; Grogger and Karoly, 2005; Lopoo and Raissian, 2014; Moffitt, 2007) have generally summarized the results as showing mixed effects, with a few studies finding some significant effects but many finding no effects or even effects with counterintuitive signs.

Our study also focuses on the effects of welfare reform in the 1990s on family structure but advances the literature by recognizing the importance of the biological relationship of any male in the household to the children and explicitly introducing it into the empirical analysis. The AFDC and TANF programs base eligibility primarily not on marital status but on the aforementioned biological relationship. That is, the programs mostly treat families the same whether they are married or cohabiting, if the male in the household is the biological father of the children. If the male is not the biological father of the children, then the programs treat the mother and her children completely differently.[2] This distinction has been known for some time (e.g. Winkler, 1995; Moffitt et al., 1994, 1998; Carlson, McLanahan, England, 2004) but most past work in this area has instead considered the effects of welfare only on a threefold classification of married, cohabiting, or neither, regardless of the biological status of the male in the first two categories (two notable exceptions in the literature are discussed later). Our study adds biological relationship to the family structure classification to determine whether the effects of the 1990s reforms had differential effects depending on that relationship. The modified classification of family structure is important in terms of magnitude. For example, our data show that 30% of low-income cohabiting women with children were cohabiting with a male who was

[2] We discuss the case of blended families – where some children are the biological children of the male and some are not – below. We also discuss those studies in the literature that focus on children's living arrangements rather than adult relationships, which can sometimes result in a different set of outcomes.

the biological father of none of the mother's children and 70% of such women were cohabiting with a male who was the biological father of at least one of the mother's children; thus the welfare eligibility for cohabitors differed in a quantitatively important way.

For our analysis, we use data from the Survey of Income Program Participation (SIPP) for the years 1996 (the interview took place just before implementation of the law), 2001, 2004, and 2008. This allows us to look for effects over a longer period than most past studies cited above, which have typically not gone past 2000 (an exception is Blau and van der Klaauw (2013), which went through 2004). The SIPP is a particularly good data source for this analysis because it contains a household relationship matrix identifying the biological relationships between the children and all of the adults in the household.

Our main objective is to estimate the impact of 1990s welfare reforms on family structure when biological relationship is incorporated into that structure. We estimate the effect of pre-1996 waiver reforms as well as the effect of cross-state variations in reforms after 1996. We follow the literature by estimating both the effect of individual waiver and TANF reform elements alone, holding other elements fixed, as well as by estimating the effects of multiple elements simultaneously. However, we go beyond the past literature by developing new measures and new tests for estimating the effects of simultaneous adoption of multiple reforms.

We find that several work-related waiver reforms causedincreases in the rates of single motherhood and decreases in the rates of marriage to biological fathers but of marriage to unrelated fathers. We also find that work-related policies, which can only affect family structure indirectly, had stronger effects on that structure than did policies which were directly intended to affect family structure. An examination of whether these effects differ with calendar time shows that the effects have been growing with each successive year through 2008.

In the following section, we discuss AFDC welfare rules concerning family structure and how they were altered by 1990s welfare reform in more detail and discuss what their effects on family structure are be expected to be. We also review the prior studies which are closest to ours. We then present our data and methods, and then our results, followed by a discussion and our conclusions.

I. Welfare Rules, Welfare Reform, and Family Structure: Our Approach and Past Work

AFDC Family Structure Rules. The original 1935 Social Security Act which created the AFDC program provided for cash support to families with "dependent" children, who were defined as those who were deprived of the support or care of one natural (i.e., biological) parent by reason of death, disability, or absence from the home, and were under the care of the other parent or a relative. Death was the primary reason for eligibility in 1935 but divorce and nonmarital births rose as reasons for eligibility particularly after 1960. Thus, under the original rules, no household with two biological parents was eligible for benefits, while the presence of a non-biological adult in the household had no impact on the eligibility or benefits of an otherwise eligible single-parent household. However, state agencies did not always enforce the law as it was written and would often rule women as ineligible if there was any male in the household, even temporarily. This practice was outlawed by a Supreme Court case in 1968 which prohibited such "man-in-the-house" rules, reiterating that the presence of a male who was not related to the children could not be used to determine eligibility.

A major change occurred in 1961, when Congress created the "Unemployment Parent"

program, which allowed states to make households with two biological parents eligible for AFDC benefits if the principal earner had a significant work history but currently worked no more than 100 hours per month. While this program (known as AFDC-UP) was initially intended to provide supplementary benefits to families in cases of unemployment, it created a way for two-parent households to be eligible for AFDC benefits. Indeed, when AFDC-UP was expanded to include all states in 1988, one justification for its expansion was to promote marriage.[3] However, for neither the AFDC "Basic" program (i.e., the program for single parent families) nor the AFDC-UP program was marital status relevant for eligibility.

Congress also changed the way in which married non-biological adults (i.e. stepparents) were treated under AFDC. Traditionally, Congress has left the decision on whether to include or exclude stepparents from the assistance unit, and how to treat their income for purposes of eligibility and benefit calculation, to the states. However, with the rise of stepparents starting in the 1970s, Congress passed legislation in 1981 requiring that some portion of the income of stepparents be "deemed," meaning it must be counted in total income when assessing eligibility and benefits received by the mother and her children.[4] One consequence of these stepparent rules is that stepparent families are almost always treated more unfavorably than situations in which the mother is cohabiting with a male who is unrelated to the children (an "unrelated cohabitor") since stepparents' income is always required to be at least partially counted. However, states were still granted considerable flexibility in other rules governing the treatment

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[3] However, AFDC-UP did not very much increase the number of two-parent families on the program because of the stringent eligibility requirements we have just reviewed (Winkler, 1995).

[4] The deeming rule applies when the stepparent is excluded from the unit —some portion of income must be counted. If the stepparent is included, all income is counted as it would be for any member of the unit (although there are some special deductions for stepparents).

of stepparents (fo example, whether they are included in the assistance unit and hence get a larger benefit from a larger family size). Thus, this is one case where marital status does affect financial eligibility and benefit amounts when partners are unrelated to the children.[5]

The incentive effects for family structure from these policies are clear. Relative to a policy where all males in the household are included in the unit and all their income is counted as part of the unit's total income, these policies clearly encourage unrelated cohabitation compared to marriage or cohabitation with a biological father. Relative to that same benchmark, they also encourage stepparent family formation because stepparents (in many states) do not have to be included in the assistance unit and hence their full income does not have to be counted, although unrelated cohabitation is encouraged relative to stepparent family formation given the somewhat more favorable treatment of the former. As for relative incentives to marry rather than cohabit with a biological father, these situations are treated identically by existing welfare rules although, of course, men and women will have their own private calculus of benefits and costs of these alternatives.

Welfare Reform in the 1990s. As we noted in the Introduction, our goal is not to estimate the effect of AFDC or TANF on family structure relative to not having those programs at all but rather to estimate the effect of the 1996 welfare reform law (PRWORA) which replaced an existing program, AFDC, with TANF. There has been a tremendous amount of research on the effects of that law, and on the precursor policies ("waivers") that preceded it, on a wide variety

[5] Also, policies regarding the treatment of non-biological adults in AFDC households and cash and in-kind contributions made by these individuals evolved over time (Moffitt et al., 1994; Moffitt et al. 2009). As just one example, some states disregard cash contributions made for shared household expenses, while others do not. Preliminary analysis found no evidence that these policies affected family structure, perhaps because they are at the considerable discretion of caseworkers.

of outcomes (for reviews, see Blank, 2002; Moffitt, 2003; Grogger and Karoly, 2005; Ziliak, 2016). In addition to converting the AFDC funding mechanism to a block grant, the 1996 law imposed a five-year lifetime time limit on receipt of benefits, imposed work requirements with few exemptions and with sanctions for noncompliance, imposed a separate time limit on the minimum amount of time that could pass before work requirements were mandatory, offered the states the option of disregarding more of earnings in benefit calculations (to provide work incentives), and offered states the option of not increasing the family's benefit if an additional child was born while on welfare (the "family cap"). The legislation also abolished the AFDC-UP program and allowed states to relax some or all of the restrictions governing eligibility of two-parent families (the 100-hour work rule, the work history requirement, etc.). Prior to 1996, states were allowed to test similar reforms (time limits, work requirements, sanctions, earnings disregards, family caps, two-parent rule modifications) by receiving a waiver from the federal government to do so. Thus, some states had already moved partly toward the rules of TANF before 1996.

The expected effects of the various welfare reform policies on family structure have been discussed previously (Bitler et al., 2004; Fitzgerald and Ribar, 2004; Grogger and Karoly, 2005; Dunifon et al., 2009) although without a discussion of the biological distinctions we have made. However, a general feature of past discussions are conclusions that the effects of most welfare reform policies on family structure is ambiguous in sign, which is also the case after adding biological distinctions. Taking first the family cap and the relaxation of two-parent eligibility conditions—the only policies which directly affect incentives regarding family structure—the expected effects of these two policies are different.[6] Family cap policies, ignoring effects on

[6] Stepparent rules also changed in a few states from pre-1996 to post-1996. We will

fertility itself, could provide mothers on welfare with an incentive to leave the program because of benefit reductions, which in turn could lead to increased partnering.[7] For mothers who choose to remain on welfare, one would expect the family cap to increase cohabitation with a male unrelated to the child in order to obtain additional income. However, it is also possible that even cohabitation or marriage to a biological father might be encouraged among women on welfare if the additional income brought in is important enough to outweigh the penalties from having to include the father in the assistance unit. As for two-parent rules, the relaxation of two-parent eligibility rules should encourage the creation of two biological parent households among welfare recipients, whether married or cohabiting. Because of this, it may also attract more women to go onto welfare, thereby increasing the welfare participation rate.

Although the other TANF policies—sanctions, work requirements, earnings disregards, and time limits—are not directly related to family structure, they could have indirect effects if in no other way than through their effect on welfare participation. Indeed, the most striking effect of the 1996 legislation according to the past research just cited was to dramatically reduce the caseload of the program and to increase the average level of work and earnings among low-income single mothers.[8] Our data from the SIPP show that welfare participation among low-income mothers fell from 23.7% in 1996 to 9.0% in 2008, for example, consistent with evidence from other data. The indirect effects of welfare reform on family structure could be potentially large. A reduction in the attractiveness of welfare should encourage more women to leave

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therefore study the effects of three different family-structure rules in our empirical work below. However, the stepparent policies were not a part of 1990s welfare reforms per se.

[7] The reform could also have changed incentives for childbearing and hence fertility. We will ignore those effects because, like most of the previous literature cited here, we will examine only effects on women with children, not effects on the presence or number of children.

[8] The earnings disregard policy should be expected to increase work but, by itself alone, decrease the incentive to leave welfare.

welfare and to marry or cohabit, especially with biological fathers since there is no penalty for marrying or cohabiting when off welfare. Mothers off welfare would presumably be more likely to seek out male partners who have income to contribute as well, since leaving welfare results in a loss of income. On the other hand, one of the oldest hypotheses in the economic literature on marriage is that the incentive to marry is inversely related to the female wage rate and potential earnings, commonly called the "independence" effect. Hence any work-inducing welfare reform could decrease partnering (as emphasized as well by Bitler et al. (2004), who suggest that this may underly their finding of negative effects of welfare reform on marriage). In addition, it has often been noted that TANF work requirements and associated sanctions were strictly imposed on any men included in the assistance unit and that this was a disincentive for fathers to marry or cohabit with the mothers of their children while on welfare (Fraker et al., 2002, pp. 57-58, find negative effects of welfare reform on marriage and suggest this as a possible reason). Thus it is also possible that welfare reform may have led to an increase in single motherhood, not a decrease, for this additional reason.[9]

Our Approach and Past Work. A substantial contribution of our approach, as we have emphasized, is to examine the effects of welfare reform on a set of family structure outcomes that reflect the fact that welfare rules depend not only on marital and union status but also on the basis of the biological relationship of any male to the children. Past work on the effects of 1990s welfare reform has not done so—generally only examining effects on marriage and cohabitation in general--with two exceptions.[10] Acs and Nelson (2004) examined the effects of TANF welfare

[9] The general equilibrium effect of increased female earnings could also make her a more attractive partner. This also makes the effect ambiguous in sign.

[10] In the older literature on the effects of AFDC on family structure, Moffitt et al. (1998) also made this distinction.

rules on the living arrangements of children, defining those arrangements on the basis of the biological relationship of the adults to the children. They found that family caps reduced the probability of partnering but that most of the TANF rules had no significant effect on living arrangements. Our study differs from theirs because they only estimated the effect of TANF optional rules relative to the overall effect of TANF (they did not use waiver-period variation, as we do); and our study goes through 2008 and includes all states whereas their study included only 13 states and only covered the years 1997 and 1999. It is possible that family structure will respond slowly to changes in welfare rules, so our longer period could find larger effects, and we will examine this issue below.

Second, Blau and van der Klaauw (2013) followed a cohort of women from 1979 through 2004 and estimated dynamic movements into and out of marriage and cohabitation and childbearing, distinguishing between whether marriage and cohabitation occurred with the father of any children born. Relative to our analysis, their measures of welfare reform are somewhat limited. They included a single dummy for any pre-1996 waiver and a single dummy variable for TANF implementation rather than the policy-element specification often used in other analyses, including our work below. Additionally, by using only specific birth cohorts who were in their 30s by the time welfare reform passed in 1996, they could not estimate its effects on younger age women who constitute the majority of welfare recipients, nor could they separate age effects from period effects. Their study found that welfare reform increased the proportion of childhood living with the married biological father for some race groups, but the effect was statistically insignificant.

An additional feature of our approach is to follow the design of Dunifon et al. (2009) by estimating separate effects of pre-TANF waiver reform and post-TANF variation in reform. As

in Dunifon et al., the effects of pre-TANF waivers on family structure are identified using state-level variation in waiver adoption and examining whether the changes in family structure from pre-TANF to post-TANF differ according to whether states adopted waivers. The effects of post-TANF reforms are identified from cross-state variation in reform elements that were not mandated by the law.[11] An alternative approach to estimating the effects of TANF that has been used in the literature is to exploit variation in the timing of state implementation of TANF (Bitler et al., 2004; Bitler et al., 2006; Blau and Van der Klaauw, 2013; and Fitzgerald and Ribar, 2004). However, the variation in state implementation was over a small window, just a 16-month period from September 1996 to January 1998. Since family structure may respond with a longer lag than a year, and since family structure in our post-TANF data (2001, 2004, and 2008) is unlikely to vary with implementation date in that 1996-1998 window, we do not employ that strategy.

Our approach to estimating the effects of waiver reforms and of TANF also differs from the many studies which have only estimated the effect of a state having "any" waiver or "any" TANF reform (Bitler et al., 2004; Bitler et al., 2006; and Blau and van der Klaauw, 2013). Like several other studies, we instead specify individual reforms separately and attempt to estimate their individual effects, holding the others fixed.[12] Nonetheless, we recognize the motivation behind using the "any reform" specification; it is based on the idea that it was the combination of multiple reform policies—commonly called a "bundle" of reforms—that had the greatest

[11] Many of the studies in the literature have estimated the effect of pre-TANF waivers instead by using multiple pre-TANF years for different states and correlating the changes in outcomes over those years with whether state waiver reforms were adopted. We do not undertake a similar analysis here because biological relationships, which are the focus of our analysis, were not fully captured in the SIPP survey prior to 1996; see below.

[12] Some studies used "Any Major Reform" or "Share of the Year That Any Reform" took place.

potential to change behavior, rather than any individual reform by itself.[13] To address this issue, we also estimate "any reform" specifications and specifications for the number of reforms adopted, and test for the effects of adopting combinations of specific reforms. This will provide evidence on whether bundles of reforms had greater effects. Finally, like some of the literature but not all, we estimate the effects of reforms with a difference-in-difference-in-differences strategy (DDD) that compares differences in cross-state trends in family structure among mothers who are likely to be eligible for the program with trends in family structure among a group of mothers clearly not eligible for the program. This guards against picking up spurious cross-state correlations between welfare reform changes and family structure changes that are occurring among all mothers in the state and hence do not reflect a true effect of welfare reform.

II. Data and Methods

Data. The SIPP is a nationally representative household survey of the U.S. civilian noninstitutional population that has a series of panels starting in various years. Each panel follows households for approximately four years and conducts core interviews and topical modules in each survey wave, conducted approximately four months apart. We use data from SIPP panels that began in 1996, 2001, 2004, and 2008. The core questions in every wave of every panel contain information on relationships between the reference person and other members of the household, allowing us to identify spouses and cohabitors, where the latter is referred to as an "unmarried partner." The second wave of each of the panels further collects

[13] For discussions of this issue, see Blank (2002), Grogger and Karoly (2005), and Moffitt and Ver Ploeg (2001).

information from the reference person regarding relationships between each member of the household and all other members, including information on the biological relationships between each of the children and the adults. The core and the second-wave topical module questions are combined to form what the SIPP calls the Household Relationship Matrix (HHRM). We use these data to define our sample and to create variables that categorize family structure.[14]

The timing of the SIPP data is as follows. The second wave of the 1996 panel was administered from August to November 1996; the second wave of the 2001 panel was administered from June to September of 2001; the second wave of the 2004 panel was administered from June to September of 2004; and the second wave of the 2008 panel was administered from January to April of 2009. While the data from the 1996 panel were largely gathered after PRWORA was signed into law in August 1996, it is highly unlikely that family structure would change within three months in response to the law and, in fact, the states did not begin implementation until late 1996. Thus, we treat the 1996 data as our "pre-law" period.[15]

For our sample, we select women 18-55 with a biological child age 17 or under living in the household. Within this sample of mothers, we further distinguish between those mothers likely to be eligible for welfare ("eligibles") and those unlikely to be eligible for welfare ("ineligibles"). We define eligibles as those who have less than 16 years of education and who have low levels of assets (AFDC and TANF have asset tests). We define ineligibles as all other

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[14] The SIPP HHRM data are discussed in detail by Brandon (2007) and the Census Bureau issues periodic reports based on them (the first one, based on the 1996 panel, can be found in Fields (2001)). Another research study using the SIPP HHRM is Baughman et al. (2002).

[15] We cannot use earlier SIPP panels, such as the 1993 SIPP, because "unmarried partner" was not included as one of the categories in the core questions about relationships; that is an important indicator of cohabitation. 1996 is the first panel to offer that category and hence it is the earliest SIPP panel we can use. However, we conduct a test which includes the 1993 SIPP with a differently-defined outcome variable.

mothers (either those with college degrees or non-college educated mothers with high assets). For the asset restriction, we exclude any family with cash in the bank greater than $3,000, any family that owns any stocks or bonds or retirement account, and any family that owns two or more cars (these are all items available in the SIPP). These cutoffs are set considerably higher than the cutoffs for AFDC and TANF eligibility because setting them equal to those in the program would run the danger of possible endogeneity, for that would exclude those individuals who are able to modestly reduce their assets to become eligible for the program, and that is a participation choice. As we show in Table 1, welfare participation rates are much higher in the eligible sample than in the ineligible sample. Thus, this restriction appears to achieve its goal, which is to create a comparison group of ineligibles who almost never participate in welfare compared to an eligible group who are much more likely to participate. In the empirical work that follows, we conduct sensitivity tests altering the ineligible group and the asset cut-off.

For our main categorization of family structure, we identify male partners in the household in two ways. First, we determine whether any male was classified as either a "spouse" or an "unmarried partner" (as identified by the use of this term by the reference person in the interview).[16] For any male so identified, we use the HHRM to determine his relationship to each of the children in the household. Second, we use the HHRM directly to determine whether there is a male in the household with a common biological child with the mother, even if not classified as a spouse or unmarried partner.[17] Since our unit of observation is a mother, we then separate women into those with a partner biologically related to some or all of her children

[16] As a practical matter, we do not have to use the core questions on relationships because the answers to those questions are incorporated into the HHRM; so the HHRM is the only data element on the SIPP we need for this purpose.

[17] We excluded same-sex couples of which there were very few.

("biological"), those with a partner biologically unrelated to all of her children ("unrelated"), and those with no partner ("single parent").[18] Our main classification therefore has five categories: married to a biological father, cohabiting with a biological father, married to an 'unrelated" male (unrelated to the children, that is), cohabiting with an unrelated male, and neither (i.e., "single parent").

Table 1 shows the distribution of family structure in our sample and the welfare participation rate. For our sample of eligibles, as described above, 45.1 percent had partners who were biological fathers of the children, 6.3 percent had partners who were unrelated to the children, and 48.6 percent had no partner and hence were single parents. Among those partnering with a biological male, most were married but about 15 percent were cohabiting. Among those partnering with an unrelated male, slightly more than half were married (i.e., stepparent families) and the rest were cohabiting. On average over the four years of data analyzed, 14 percent participated in AFDC or TANF. For the ineligible sample, 78.5 percent were living with a biological partner, 6.4 percent were living with an unrelated partner, and 15.1 percent were single mothers. Also, the fraction of those married who were married to a biological partner was much higher among ineligibles and the fraction of those cohabiting who were cohabiting with a biological partner was much higher among eligibles, demonstrating the importance of biological relationship over and above marriage and cohabitation per se. For this

[18] In cases in which the male has adopted the children, we define those families as biological families because that is how the AFDC and TANF programs treat them. In the case of blended families – those where the male or female is biological to some but not all of the children in the household – we group them with families where all children are biologically related to the male. We conduct a sensitivity test below that instead groups them with families where the male is unrelated to the children. It makes little difference to the results how they are classified because they constitute a small minority of households, just 4.4% to 5% for each of the four sample years.

sample, almost all women who were partnering with a biological male were married rather than cohabiting, and a greater percent of the women partnering with an unrelated male were married as well, as compared to the eligible sample. The welfare participation rate for this sample is only 1.3 percent, which signifies that they pass the minimal condition for a comparison group of mostly ineligibles.

In our multivariate analysis, we control for individual and household characteristics including the age, education, race and ethnicity of the mother, household urban residence, and several state-level measures of labor market conditions and policies and other transfer program policies. The means of these variables for the eligible and ineligible samples are shown in Appendix Table A1.[19]

Our major independent variables of interest are those measuring state-specific welfare reform elements, which we code separately for the four years in our data. As we noted previously, some of the existing literature uses specific reform elements (the "unbundled" approach) while other papers use "bundled" variables for welfare reform as a whole, such as indicator variables for whether any reform was adopted by a state. We take both approaches and will report estimates for both.

The papers in the literature following the unbundled approach typically draw upon a similar set of variables, usually including measures of work requirements, sanctions, time limits, earnings disregards, and family caps, to name the most common. We follow the literature

[19] It should be noted that the 1996 SIPP panel did not break out ME, VT, ND, SD, and WY as individual states because of concerns about being able to identify individuals in the data. To address this issue, we simply drop any observations from these states or grouped states. This reduces the sample size of mothers by 0.6%. Regarding sample sizes per state, they range from 22 to 1,554 observations in 1996 with a mean of 271 per state, from 16 to 1,239 observations in 2001 with a mean of 210 per state, from 18 to 1,187 observations in 2004 with a mean of 295 per state, and from 22 to 1,264 observations in 2004 with a means of 262 per state.

closely in the way we define policies, although there are some slight differences compared to past work. As shown in Table 2, we group our policy variables into those which are work-related and those which are family-related and, for the former group, separate them into waiver year (1996) variables and TANF year (2001, 2004, and 2008) variables. The work-related variables for the waiver period capture variation in states' adoption of sanctions, work requirements, and expanded earnings disregards. A sanction policy meant that families who did not comply with one or more requirement, usually work requirements, would have their benefits reduced in full or in part. A work requirement policy stipulated that mothers must begin work within a specified time period and generally had some type of minimum hours per week requirement. For both of these policies, we create dummy variables for a state's having adopted such a policy. In general, earnings disregards stipulate the amount of earnings that can be deducted before counting income against the benefit. Under the AFDC program, all states were required to have a 30-and-a-third rule ($30 flat disregard and one-third of additional earnings) for the first 4 months and no disregards thereafter, but many states adopted waivers that made the earnings disregards more generous. We code the earnings disregard variable as equal to one if the state did *not* enact such a waiver so that all three work-related variables are specified in a way that makes welfare less attractive. In addition, by coding the variable in this way, when we bundle the work-related policies together, each policy in the bundle is expected to have the same direction of effect on welfare participation (i.e. they discourage it). All the waiver variables are lagged relative to the 1996 interview date and coded as of December, 1995 to avoid having to assume an instantaneous response of family structure to changes in welfare rules.[20] We discuss

[20] We do not include a waiver time limit variable because only two states had implemented this policy by December 1995.

further specifics on how waiver policies are bundled (e.g. any work-related waiver policy, number of work-related waiver policies) in the results section.

Turning to the TANF variables, we begin by noting again that, as a consequence of the 1996 legislation, all states were required to adopt certain types of policies (e.g. sanctions, time limits, work requirements). However, states did have some leeway in the severity of the policies they implemented. Thus, for our three TANF years (2001, 2004, and 2008), we differentiate between states that adopted harsher versus less severe policies, using similar variables as those in several prior studies referenced above. This organization of the TANF policies (like the waiver policies) is based around the expected effects on welfare participation, where states that implemented harsher versions of the policies are likely to have induced a larger share of recipients to leave welfare.

Specifically, we construct indicators for whether the state adopted the strictest sanction policy, a time limit shorter than what was federally required, a more restrictive work exemption by age of the youngest child, or did not expand their earnings disregard. The strictest sanction policy is defined as one that leads to the potential loss of the full family benefit or the closure of the case. As for time limits, while the federal law mandated that no state could use federal funds to pay a woman for more than five years of benefits, a number of states enacted time limits shorter than that. All states also had to specify the minimum age for the youngest child by which the mother was required to work and the median age across all states was 12 months. We classify a state's policy as harsh if it required mothers to work when their child reached an age younger than 12 months. The TANF law did not require any specific earnings disregard, so we code it identically to that for the waiver period.

We also include three family-related policies in our analysis. These variables reflect the

presence of a family cap on benefits, the (lack of) easing of the two-parent rule, and the treatment of stepparents. A family cap policy is a policy which requires that the welfare benefit not be raised for any children born 9 months after the time the mother entered welfare. It was first implemented by some states during the waiver period, and some states continued to make changes to these policies after 1996, even though they were not part of the TANF mandate. The two-parent rule under AFDC had three parts: a work history requirement for the major earner, a 100-hour work rule for that individual, and a waiting period. A number of states first eased the two-parent rule during the waiver period, and some states continued to make changes to these policies after 1996, even though they were not part of the TANF mandate. States' treatment of stepparents, although not a part of 1990s reforms, has varied over time, with some states requiring that stepparents be included in the assistance unit, some requiring that they be excluded, and some making it optional (although federal law since 1981 has required all states to deem at least some part of stepparents' income in determining eligibility and benefits even if excluded from the assistance unit). Since some states changed their policies on inclusion or exclusion over the course of the waiver and TANF period, we include a variable reflecting this change. State policies that mandate inclusion of the stepparent in the assistance unit provide the greatest disincentive to form stepparent families because all income must be deemed in that case. We code all three of our family-related variables in a way that they lower the expected value of welfare benefits for families and as such, they are family "unfriendly": adopting a family cap, not easing any part of the two-parent rule, or adopting a stepparent rule that mandates inclusion in the assistance unit. Organizing the policies this way also means that they should have the same (negative) expected effect on welfare participation.

As we previously noted, there has been considerable discussion in the welfare reform

literature suggesting that the effects of each of the state policies are difficult to detect separately even if the overall effect of a group of policies is detectable. This is in part because some individual reforms were not adopted by many states, because different policies are often correlated with one another, and because the impact of multiple policies simultaneously may have been larger than the sum of its parts. We test for whether there is a greater overall effect of a group of reforms than individual ones by testing specifications for "Any reform" and for the "Number of reforms." We construct these "bundle" measures for work-related policies in the waiver period, work-related policies in the TANF period, and family-related policies. The specification using "Any reform" has been previously estimated in the literature and we use a variant of it here. New to the literature, to our knowledge, is our "Number of reforms" specification, which reflects the sum of the individual policies. This variable is likewise motivated by the hypothesis that multiple policies may have total effects that go beyond the effects of each individually. As we noted above, we have coded the individual policies in such a way that they are anticipated to have a similar effect on welfare participation, which gives the "Any" and "Number" variables a coherent interpretation, which would not be the case if some individual policies were anticipated to discourage welfare participation while others were anticipated to encourage it.

As shown in Table 2, which briefly describes each of the individual and bundled welfare policies used in our empirical analysis, these policies are well identified using state-year variation. The one exception is our "Any Work-related Waiver" policy. We cannot construct an "Any Work-related Waiver" policy using all three of our individual Waiver policies because the variable is not identified (i.e. it equals one for all states in 1996 and zero for all states in all other years). To address this, we construct the "Any Work-related Waiver" variable using only two of

the policies (sanctions and work requirement), and include the third policy separately (no expanded earnings disregard). This is discussed in more detail below.

Methods. We estimate models for alternative family structures with multinomial logit (MNL), with our five-way classification described previously as the outcome variable: households with mothers who are married to the biological father of their children, who cohabit with a biological father, who are married to an unrelated male (i.e., a stepfather), who cohabit with an unrelated male, or who are single parents (i.e., no partner).

In estimating the MNL models we use a DDD strategy, which compares differences in cross-state trends in family structure among mothers who are likely to be eligible for the program with differences in cross-state trends in family structure among our group of ineligible mothers (as defined earlier). This DDD approach guards against picking up spurious cross-state correlations between welfare reform changes and family structure changes that are occurring among all mothers in the state and hence do not reflect a true effect of welfare reform. As we discuss in more detail in our sensitivity test section below, this DDD strategy improves the precision of our estimates compared to a difference-in-differences strategy that does not use the ineligible sample for identification. However, in robustness tests, we show that the results are almost identical if we estimate equation (1) using a more-limited ineligible sample (non-college educated mothers with higher assets). However, the estimates do differ somewhat when we estimate the MNL models without the ineligible sample.

In all of our MNL models, the regression vector has the same covariates but the coefficients vary depending on the outcome variable. For notational purposes, let us denote $V_{ist}^{g}\alpha^{g}$ as the regression vector for individual i living in state s at time t (t=1996, 2001, 2004, or 2008) for outcome group g=1,..,5, where V is a vector of variables and α is its coefficient vector.

The elements in the regression vector appear in the following expression:

$$V_{ist}^{g}\alpha^{g} = P_{st}\beta^{g} + E_{ist}P_{st}\theta^{g} + \eta^{g}E_{ist} + X_{ist}\gamma^{g} + O_{st}\delta^{g} + f_{s}^{g} + f_{t}^{g} + \varepsilon_{ist}^{g}$$

where P_{st} are the policy variables appearing in Table 2, E_{ist} is a dummy for being in the eligible sample, X_{ist} is a set of individual demographic characteristics, O_{st} is a set of other state-level control variables, f_s^g is a state fixed effect, f_t^g is a period fixed effect (i.e., year dummies), and ε_{ist}^{g} is a traditional MNL error term. Our main object of interest is the coefficient vector θ^g on the interaction term between the welfare policies and the eligible sample.[21] We pool all observations from all years in estimating equation (1) for the two different family structure specifications. In interpreting results, we focus on marginal effects, which are interpreted as the effect of each of the covariates on the probability of the outcome variable, evaluated at the means. All specifications are estimated using sample weights and standard errors are clustered by state.

[21] The specific demographic variables (X_{ist}) that we include in each of the specifications are: a quadratic in age, two education indicator variables for having less than a high school degree or having some college, three race indicator variables for being black, Asian, or other/non-white, an indicator for urban residence, an indicator for Hispanic ethnicity, and an interaction between black and Hispanic. The specific state-level control variables (O_{st}) include the lagged welfare benefit, the lagged unemployment rate, the lagged real minimum wage, the lagged real manufacturing wage, the lagged Medicaid eligibility threshold defined in terms of percentages above the federal poverty level, and the lagged real maximum EITC benefit for a family of three. The Medicaid and EITC variables include state supplements in addition to federally mandated levels. Summary statistics of these demographic variables and state-level controls are presented in the Appendix Table A1.

III. Main Results

Tables 4 provides our first maian results for the five-category outcome described previously. These models are estimated using the triple difference strategy described in the last section. The figures shown are marginal effects (not logit coefficients) of the policy variable interactions $E_{ist}P_{st}$ in equation (1). Marginal effects for the other variables in equation (1) for the five-category specification are presented in Appendix Table A2 (to be included)

First, we focus on results associated with work-related waiver policies and strict work-related TANF policies. Overall, it is clear that most of the policies did not have significant effects on most forms of family structure, at least at the level of confidence we use here and with our sample sizes. This finding is consistent with many of the findings in the literature that have also not found consistent or strong effects of welfare reform policies on family structure, albeit measured in simpler ways that we do. However, there are some notable effects of work-related waiver and TANF policies for the policies of expanding disregards and of imposing strict TANF sanctions. All of these policies significantly increase the probability of being a single mother and reduce the probability of marriage to biological partner, by 2.3 to 4.3 percentage points for the former and by 3.1 to 5.2 percentage points for the latter. This finding has also appeared in the literature in some studies (Fraker et al., 2002; Bitler and Hoynes, 2004; Dunifon et al., 2009), where it has often been interpreted as result from the independence effect. That interpretation is bolstered by the large literature on the effects of welfare reform on employment and earnings of low income women. The difference in our findings is that our results show the significant negative effects on marriage only to occur with biological partners and not marriage to unrelated partners (i.e., stepfathers). We can only speculate on the possible reasons for the difference, but it may lie in the different economic attractiveness of the two types of partners, with stepfathers

more likely to bring significant income to the partnership than biological fathers. It could also be a simple result of the difference in welfare rules, for stepfather income is only partly deemed by the welfare agency in determining the mothers' benefit while biological fathers' income is fully deemed.

The results show very little effect of the work-related policies on cohabitation, either to biological or unrelated males aside from two positive effects for a waiver policy and a TANF policy. Even among the eligible sample, cohabitation rates are quite small (see Table 1) and it may therefore not be important enough for a major effect to occur. The two positive effects on unrelated cohabitation are, however, consistent with the hypothesis just noted for marriage that the unrelated males with whom low income women cohabit are likely to bring more income to the partnership than to biological males.

The table also shows that the family-related policies are almost always insignificant, including the effects on single motherhood and biological marriage that were found to be most responsive to work-related policies. Again, much of the past literature has found somewhat similar results. The two significant findings show that family caps encourage unrelated cohabitation and that retaining the restrictive two-parent polices discourage it. The family cap result could be again a result of more attractive unrelated partners than other types of partners, and a restrictive two-parent policy could lead women away from marriage or cohabitation to biological males and toward partnering with unrelated ones, However, the best conclusion from our results is that family-related policies do not, as a whole, have much effect on family structure.

As we discussed previously, the interpretation of the effects of individual policies is sometimes difficult and the effects of individual policies are sometimes tenuous in significance.

Table 4 shows, instead, results for the effects of bundles of policies, which may better capture the overall effect of adopting a set of reforms together. Section II and Table 2 above defined the "Any Reform" and "Number of Reform" policy variables The results are consistent with those in Table 4 and, in general, more uniformly indicate the strong positive effects of single motherhood and negative effects on biological marriage from work-related waiver and TANF policies than those in Table 3. The effects are also sometimes stronger in magnitude, as for the waiver earnings disregard variable. The "Number of Reforms" variable, which is new to our study, implies potentially larger effects than in Table 3 as well, in the sense that they imply that effects on family structure grow with the number of reforms and can be considerably larger than implied by Table 3 if, say, 3 waivers are adopted. On the other hand, bundling the family-related policies has no effect on the findings in Table 3, for bundling those policies either with an Any Reform variable or a Number of Reforms variable leaves the effects still mostly statistically insignificant.

Extensions. We conduct two important extensions to our main results. First, we extend our time period back to 1993 so as to include policy variation within the waiver period, as the majority of past work has done. Second, we will examine the issue of whether the effects have been growing over time. As we noted previously, virtually all of the past work has examined effects on family structure only after the first few years after 1996, and we go considerably beyond past work by including years up to and including 2008.

The difficulty with extending our results back to 1993 is, as we noted previously, that the "unmarried partner" question was not asked in the 1993 SIPP cohort interviews; the question only began to be asked with the 1996 cohort. This variable was important in the definition of our outcome variable. If we include 1993, we must instead use the well-known adjusted POSSLQ

variable to identify cohabitors, which is known to be inferior to more direct questions. Our first step in the analysis was to estimate our models from 1996 to 2008 but using POSSLQ to define cohabitation rather than the unmarried partner. The results (not shown) showed, quite surprisingly, that our results were robust to the use of that variable. With that preliminary aside, we estimated our models by adding the year 1993 to our 1996, 2001, 2004, and 2008 data points, using APOSSLQ to help define the outcome variable (the HHRM must still, of course, be used).[22] The results are shown in Table 5 and indicate that our prior results for the key effects remain mostly unchanged. The positive effects on single motherhood of work-related policies remains as do most of the negative effects on biological marriage, with only one of the latter becoming insignificant. The insignificance of family-related policies also remains. While the occasional coefficient either loses significant or gains significance compared to our main results, in most cases this is a result of a coefficient remaining in the same general magnitude but being moved across the border of significance one way or the other by a change in the standard error.

Our second extension is to examine whether the effects on family structure change with time after 1996. Family structure is likely to be a much slower behavior to respond than, say, work, where past research on the effects of welfare reform have shown pretty much immediate effects. Table 6 shows the results of estimating several specifications. The upper panel shows the effects from using only 1993 and 1996, while the next three panels show the effects of using 1996 paired with each of the later years of data—2001, 2004, and 2008. The waiver-period year of 1996 must always be included to provide the baseline against which TANF effects are measured.

[22] Waiver policy variables for 1993 were also added to the data set; these have been widely used in past work.

The results from the analysis are striking. In the 1993-1996 period alone, work-related polices retain their significant positive effects on single motherhood but their effects on biological marriage are no longer significant. . However, with each succeeding year, the positive effects on single motherhood and on biological marriage grow in magnitude and in signifance, reaching their maximum values in 2008. This suggests that the stronger effects we have found for some family structure outcomes and for some welfare reform policies may be the result of our including more and later years in the analysis.

One interpretation of the strengthening effects on family structure is a cohort-based explanation. Women who were older in 1996 had already made many decisions about marriage and cohabitation and they may have been slow to change or reverse those prior decisions after the arrival of welfare reform. With the passage of time, however, younger cohorts arrive at the key years (late teens, 20s) with welfare reform permanently and stably in place, and those cohorts have made decisions less encumbered by past history. If this is the mechanism at work, the long-term effects of some work-related policies on family structure could be quite different than their short-term effects.

IV. Robustness and Sensitivity Tests [to be completed]

We conduct several robustness tests to check the sensitivity of our results to alternative specifications. First, we test the sensitivity of the results to including an ineligible group in our estimation, which is intended to remove possible spurious correlation of the welfare reform variables with general changes in family structure. We also test the sensitivity of the results to using an alternative definition of the ineligible group. In both tests, the comparison is with the

estimations from Table 4. Appendix Table A4 shows a re-estimation of Table 5 on the eligible sample alone, excluding the ineligible group. We see that the main pattern of results associated with work-related waivers persists, though the coefficients on single parent and biological married are no longer statistically significant. The effects of strict work-related TANF policies continue to cause a decline in biological married households. A notable difference is that the work-related policies in this specification lead to an increase in biological cohabitation, as opposed to single parent households. Next, we re-estimate the model in Table 4 by retaining an ineligible group but changing its definition. Appendix Table A5 presents marginal effects when we define the ineligible sample using all non-college mothers with higher assets (thus, excluding college educated mothers from the ineligible sample). The key finding is that the results are essentially unchanged. Taken together, we conclude that the use of an ineligible sample aids identification, and, moreover, our specific ineligible sample does not appear to be driving most of the results.

Second, we test the sensitivity of the decision to include blended households (i.e. households where some of the mother's children are biological to the male in the household and some are not) with "biological" households as opposed to "unrelated" households. As shown in Appendix Table A6, the results are very similar to those presented in Table 5.

Other tests: relaxing the assets definition. Allowing state*trend fixed effects.

V. Discussion and Conclusions

The analyses we have conducted provide support for the main thesis of the paper, which is that, consistent with the rules of the AFDC and TANF programs, welfare reform and welfare variables have effects on marriage and cohabitation rates among disadvantaged women that

differ according to the male's biological relationships to the children in the household. The most consistent effects we find are for some work-related waiver and TANF policies, both which appear to increase the prevalence of single parenthood and to decrease the prevalence of mothers marrying men who are the biological parents of their children. We find these results occur when welfare reform policies are considered individually or when they are bundled and their joint effects with other reforms are considered. While some studies in the literature have found reform effects that imply reductions in marriage (Bitler and Hoynes, 2004; Dunifon et al., 2009; Fraker et al., 2002), our results show that the reductions are only for marriage to fathers of the children.

While we have no direct evidence on the mechanism by which these effects occur, we, as well as other studies in the literature, have hypothesized that the independence effect or, more generally, increases in work and average earnings among women, has led to women to be more able to support themselves as single mothers without the supplemental income that comes from a male partner who brings resources to the household. The strong evidence that welfare reforms had a major positive impact on work and average earnings among single mothers is consistent with this interpretation. Why this effect would occur more strongly for marriage to the fathers of their children than for marriage to stepfathers or for cohabitation is an additional question.. It could simply be that marriage to biological fathers is vastly more common than cohabitation with such fathers – over 85 percent of women partnering with biological partners are married to them rather than cohabiting with them – so that this is where the impact is felt. It could also be that some other factor related to biological fathers (e.g., low earnings) might make them less attractive partners as compared to non-biological fathers, a hypothesis we have not attempted to investigate but which might be a subject for future work.

Our findings also show that welfare policies directly affecting family structure incentives, such as family caps, two-parent rules, and stepparent rules, rarely have statistically significant effects on family structure. Most of the existing literature also finds little consistent effect of these policies. Our results, which show stronger effects of work-related policies, imply that the indirect effects of welfare reform on family structure may be greater than the so-called direct effects.

As for future work, it may be that programs other than TANF deserve priority for research on the effects of welfare on family structure. For example, the Food Stamp program, renamed the Supplemental Nutrition Assistance Program, is now the second largest means-tested transfer program in the U.S., second only to Medicaid. Unlike AFDC and TANF, it provides benefits to families of all household types and should not be expected to have large effects on family structure. Nevertheless, it has not been studied in this regard. There have been studies of the Earned Income Tax Credit, the third-largest program, on marriage and divorce (e.g., Dickert-Conlin and Houser, 2002; Herbst, 2011), generally finding few effects. While the tax code bases eligibility on marital status, it would be interesting to determine if biological relationship to the children has any effect on EITC takeup. Perhaps the most understudied but important program is the Medicaid program, the largest means-tested program in the country. Medicaid eligibility with regard to family structure has evolved over time, starting first in the 1970s and early 1980s being tied closely to AFDC and hence to single mothers, then expanding in the late 1980s to children and some mothers off AFDC, then expanding again in the 1990s and 2000s to cover more adults in families with children, and now expanding in many states under the Affordable Care Act to childless adults. While there are a few studies of the effects of Medicaid on marriage and divorce in its early periods (Decker, 2000; Yelowitz, 1998), there have been no

recent ones.[23] Studies of Medicaid and other programs should be part of the future research agenda in this area.

[23] This paragraph refers to studies that examine the effects of transfer programs on marriage and cohabitation, not on fertility. There have been a few studies that examine the effects of Medicaid and the EITC on fertility.

VI. **References**

Acs, G. and S. Nelson. 2004. "Changes in Living Arrangements during the Late 1990s: Do Welfare Policies Matter?" Journal of Policy Analysis and Management 23(2): 273-90.

Baughman, R. S. Dickert-Conlin and S. Houser. 2002. "How Well Can We Track Cohabitation Using the SIPP? A Consideration of Direct and Inferred Measures." Demography 39 (2): 455-465.

Bitler, M.; J. Gelbach; and H. Hoynes. 2006. "Welfare Reform and Children's Living Arrangements." Journal of Human Resources 41(1):1-27.

Bitler, M.; J. Gelbach; H. Hoynes; and M. Zavodny. 2004. "The Impact of Welfare Reform on Marriage and Divorce." Demography 41 (2): 213-236.

Blackburn, M. 2003. "The Effects of the Welfare System on Marital Dissolution." Journal of Population Economics 16 (August): 477-500.

Blank, R. 2002. "Evaluating Welfare Reform in the United States." Journal of Economic Literature 40 (December): 1105-66.

Blau, D. and W. van der Klaauw. 2013. "What Determines Family Structure?" Economic Inquiry 51(1):579-604.

Blau, F.; L. Kahn; and J. Waldfogel. 2004. "The Impact of Welfare Benefits on Single Motherhood and Headship of Young Women." Journal of Human Resources 39 (Spring): 382-404.

Brandon, Peter. 2007. "Mapping Children's Living Arrangements with a Relationship Matrix," in Sandra L. Hofferth and Lynne M. Casper, eds., Handbook of Measurement Issues in Family Research. Lawrence Erlbaum, Chapter 10.

Carlson,M., S. McLanahan, and P. England. 2004. "Union Formation in Fragile Families," *Demography* 41 (2): 237-261.

Crouse, G. 1999. "State Implementation of Major Changes to Welfare Policies, 1992 – 1998." Washington, DC: ASPE, Department of Health and Human Services.

Decker, S. 2000. "Medicaid, AFDC, and Family Formation." Applied Economics 32 (December): 1947-56.

Dickert-Conlin, S. and S. Houser. 2002. "EITC and Marriage." National Tax Journal 40: 25-39.

Duncan, G. and S. Hoffman. 1990. "Welfare, Economic Opportunities and Out-of-Wedlock Births Among Black Teenager Girls." Demography 27 (November): 519-535.

Dunifon, R.; K. Hynes; and H. E. Peters. 2009. "State Welfare Policies and Children's Living Arrangements." Social Service Review 83 (3): 351-388.

Ellwood, D. 2000. "The Impact of the Earned Income Tax Credit and Social Policy Reforms on Work, Marriage, and Living Arrangements." National Tax Journal, 53(4, Pt 2): 1063-1105.

Ellwood, D. and C. Jencks. 2001. "The Uneven Spread of Single Parent Families: What Do We Know? Where Do We Look for Answers?" In Social Inequality, ed. K.M. Neckerman, pp.3-77. New York: Russell Sage Foundation.

Fields, J. 2001. Living Arrangements of Children: Fall 1996. Current Population Reports, P70-74. Washington: U.S. Census Bureau.

Fitzgerald, J. and D. Ribar. 2004. "Welfare Reform and Female Headship." Demography 41(2): 189-212.

Fraker, T.M., et al. 2002. "The Evaluation of Welfare Reform in Iowa." Mathematica Policy Research: DEA-0699.

Grogger, J. and L. Karoly. 2005. Welfare Reform: Effects of a Decade of Change. Cambridge, MA: Harvard University Press.

Herbst, C. 2011. "The Impact of the Earned Income Tax Credit on Marriage and Divorce: Evidence from Flow Data." Population Research and Policy Review 30 (February): 101-28.

Hoffman, S. and E. M. Foster. 2000. "AFDC Benefits and Nonmarital Births to Young Women." Journal of Human Resources 35 (Spring 2000): 376-391.

Kennedy, S. and L. Bumpass. 2008. "Cohabitation and Children's Living Arrangements: New Estimates from the United States." Demographic Research 19(47): 1663-1692.

Lichter, D.; LeClere, F.; and D. McLaughlin. 1991. "Local Marriage Markets and the Marital Behavior of Black and White Women." American Journal of Sociology. 96 (January): 843-867.

Lopoo, L. M. and K. M. Raissian. 2014. "U.S. Social Policy and Family Complexity," The Annals of the American Academy of Political and Social Science 654 (1): 213-230.

McLaughlin, D. and D. Lichter. 1997. "Poverty and the Marital Behavior of Young Women." Journal of Marriage and the Family 59 (August): 582-594.

Moffitt, R. 1998. "The Effect of Welfare on Marriage and Fertility: What Do We Know and What Do We Need to Know?" In Welfare, the Family, and Reproductive Behavior, ed. R. Moffitt. Washington: National Research Council.

Moffitt, R. 2007. "Welfare Reform: The U.S. Experience." Swedish Economic Policy Review

14 (2): 11-47.

Moffitt, R.; R. Reville; and A. Winkler. 1994. "State AFDC Rules Regarding the Treatment of Cohabitors: 1993." Social Security Bulletin 57 (Winter): 26-33.

Moffitt, R. R. Reville; and A.Winkler. 1998. "Beyond Single Mothers: Cohabitation and Marriage in the AFDC Program." Demography 35 (3): 259-278.

Moffitt, R. A., R. T. Reville, A. E. Winkler, and J. M. Burstain. 2009. "Cohabitation and Marriage Rules in State TANF Programs" RAND Working Paper, WR-585-1.

Moffitt, R, M. Ver Ploeg, eds. "Evaluating Welfare Reform in an Era of Transition." National Academies Press, 2001.

Smock, P. 2000. "Cohabitation in the United States: An Appraisal of Research Themes, Findings, and Implications." Annual Review of Sociology 26: 1-20.

Urban Institute, *Welfare Rules Database*.

Winkler, A. 1995. "Does AFDC-UP Encourage Two-Parent Families?" Journal of Policy Analysis and Management 14 (1): 4-24.

Yelowitz, A. 1998. "Will Extending Medicaid to Two-Parent Families Encourage Marriage?" Journal of Human Resources 33: 833-65.

Ziliak, J. P. 2016. "The Temporary Assistance for Needy Families Program" In The Economics of Means-Tested Programs, volume 1. ed. R.A. Moffitt. Chicago: University of Chicago Press.

Table 1: Family Structure of Mothers in the SIPP
Percent Distribution in each Sample

	Welfare Eligible Sample	Ineligible Sample
Biological Partner	**45.1**	**78.5**
Biological Married	38.7	76.1
Biological Cohabiting	6.4	2.4
Unrelated Partner	**6.3**	**6.4**
Unrelated Married	3.5	4.8
Unrelated Cohabiting	2.8	1.6
Single Parent	**48.6**	**15.1**
Welfare Participation Rate	14.0	1.3
N	13,828	33,900

Notes: The entire sample (eligible and ineligible) consists of women 18-55 with at least one biological child (age 17 or younger) living in the household. The eligible sample includes those mothers with less than 16 years of education that have limited assets, where limited assets are defined as: do not own any financial assets (stocks, bonds, etc.), do not own a retirement account, have cash in the bank less than $3000, and reside in a household that owns less than two cars. The ineligible sample include all college educated mothers and all non-college educated mothers that exceed the asset restriction. Welfare is defined as having received positive AFDC (1996) or TANF (2001, 2004, 2008) income in the month prior to interview. "Biological" and "Unrelated" refer to the male's biological relationship to the child/children in the household. All means are weighted using the SIPP sample weights, pooled over all four years.

Table 2: State Welfare Policy Variables Used in the Analysis

Variable Name	Definition/Measurement	1996	2001	2004	2008
Work-Related Waiver Policies[1]					
Sanctions	Statewide policy of sanctions (full or partial) on unit's benefits	0.23	0.00	0.00	0.00
Work Requirement	Statewide time limit that triggers a work requirement	0.19	0.00	0.00	0.00
No Earnings Disregard	No statewide policy to expand the earned income disregard	0.75	0.00	0.00	0.00
Any Work-Related Waiver Policy[2]	Is either a sanction or work requirement waiver in place?	0.40	0.00	0.00	0.00
Number of Work-Related Waiver Policies	Sum (feasible range is 0 to 3, actual range is 1 to 2)	1.17	0.00	0.00	0.00
Strict Work-Related TANF Policies[3]					
Strict Sanction	Most severe sanction; case closed or units benefit cancelled or case closed)	0.00	0.59	0.61	0.76
Strict Time Limit	Time limit < median across all states (60 months)	0.00	0.14	0.12	0.14
Strict Work Exemption	Strict work exemption associated with age of child; child's age less than median across all states (12 months)	0.00	0.40	0.41	0.45
No Expanded Earnings Disregard	Earnings disregard not increased over period	0.00	0.25	0.22	0.20
Any Harsh Work-Related TANF Policy	Are any (of the above) harsh TANF policies in place?	0.00	0.73	0.75	0.86
Number of Work-Related Harsh TANF Policies	Sum (feasible range is 0 to 4, actual range is 0 to 4)	0.00	1.39	1.37	1.55
Family-Related Policies[4]					
Family Cap	State has "family cap" policy on benefits	0.21	0.55	0.52	0.50
No Two Parent Rule	State didn't ease any two-parent rule in any way (work history requirement, waiting period, or 100 hour rule)	0.87	0.08	0.07	0.08
Stepparent Included[5]	State requires the inclusion of the stepparent in the assistance unit	0.17	0.21	0.23	0.21
Any Family-Related Policy	Are any (of the above) family-related policies in place?	0.96	0.71	0.68	0.65
Number of Family-Related Policies	Sum (feasible range is 0 to 3, actual range is 0 to 2)	1.26	0.84	0.81	0.79

Notes: All values are mean values weighted using samples weights for the eligible sample

[1] If implemented by December 1995 for 1996 values. All values equal to zero (by definition) in 2001, 2004, and 2008. Data from Crouse (1999).

[2] Any Work-Related Waiver Policy excludes the No Earnings Disregard Waiver because otherwise the Any Work-Related Waiver Policy variable is not identified (equal to one in all states in 1996 and zero in all states in all other years).

[3] By definition, the 1996 values are equal to zero. If enacted by 2000 for 2001 values, 2003 for 2004 values, and 2007 for 2008 values. Data from Urban Institute's Welfare Rules Database (WRD).

[4] If implemented by 1996 for 1996 values, 2000 for 2001 values, 2003 for 2004 values, and 2007 for 2008 values. Data from Urban Institute's WRD.

[5] The omitted category is the exclusion of the stepparent from the assistance unit or the inclusion of the stepparent in the assistance unit is optional.

Table 3: Welfare Policies and Five Category Family Structure

Multinomial Logit Marginal Effects

	Single Parent	Biological Married	Biological Cohabiting	Unrelated Married	Unrelated Cohabiting
Work-Related Waiver Policies					
Sanction Waiver	0.029	-0.023	0.008	-0.005	-0.009
	(0.021)	(0.017)	(0.011)	(0.008)	(0.007)
Work Requirement Waiver	-0.039	0.010	0.000	0.009	0.020***
	(0.038)	(0.028)	(0.015)	(0.007)	(0.005)
No Expanded Disregard Waiver	0.043**	-0.052***	0.002	0.005	0.001
	(0.019)	(0.019)	(0.008)	(0.006)	(0.005)
Strict Work-Related TANF Policies					
Strict TANF Sanction	0.029**	-0.031 *	0.004	0.001	-0.004
	(0.013)	(0.017)	(0.004)	(0.008)	(0.003)
Strict TANF Time Limit	-0.005	0.008	0.004	-0.008	0.001
	(0.016)	(0.018)	(0.005)	(0.006)	(0.003)
Strict TANF Work Exemption	0.016	-0.019	-0.006	0.010*	-0.001
	(0.010)	(0.013)	(0.004)	(0.006)	(0.002)
No Expanded Disregard TANF	0.023**	-0.034**	0.010***	-0.005	0.007***
	(0.011)	(0.014)	(0.004)	(0.006)	(0.002)
Family-Related Policies					
Family Cap	-0.009	0.005	-0.004	0.002	0.006***
	(0.009)	(0.012)	(0.004)	(0.006)	(0.002)
No Easing Two Parent Rule	0.013	-0.003	-0.001	0.001	-0.011***
	(0.018)	(0.020)	(0.006)	(0.006)	(0.004)
Stepparent Included	0.009	-0.021	0.003	0.007	0.003
	(0.015)	(0.017)	(0.004)	(0.006)	(0.003)

Notes: A list of the other marginal effects are shown in Appendix Table A2 for this specification. Standard errors are clustered at the state-level and presented in parentheses under the coefficients. $N = 47,728$. * p<0.1; ** p<0.05; and *** p<0.01.

Table 4: Welfare Policies and Five Category Family Structure: Bundled Policies
Multinomial Logit Marginal Effects

	Single Parent	Biological Married	Biological Cohabiting	Unrelated Married	Unrelated Cohabiting
"Any" Policy Specification					
Work-Related Waiver Policies					
Any Work-Related Waiver Policy	-0.003	-0.014	0.009	0.006	0.002
	(0.019)	(0.012)	(0.006)	(0.008)	(0.005)
No Expanded Disregard Waiver	0.061***	-0.058***	0.002	0.007	-0.013***
	(0.013)	(0.013)	(0.007)	(0.007)	(0.004)
Any Strict Work-Related TANF Policy	0.043***	-0.058***	0.004	0.012*	-0.001
	(0.010)	(0.009)	(0.004)	(0.006)	(0.002)
Any Family-Related Policy	0.003	-0.014	-0.001	0.004	0.007***
	(0.010)	(0.013)	(0.006)	(0.007)	(0.002)
"Number of" Policy Specification					
Number of Work-Related Waiver Policies	0.030***	-0.030***	0.004	0.000	-0.004
	(0.010)	(0.010)	(0.005)	(0.005)	(0.003)
Number of Strict Work-Related TANF Policies	0.016***	-0.020***	0.002	0.001	0.001
	(0.006)	(0.007)	(0.002)	(0.002)	(0.001)
Number of Family-Related Policies	-0.003	-0.003	-0.002	0.005	0.003
	(0.011)	(0.011)	(0.004)	(0.004)	(0.002)

Notes: In the "Any" policy analysis, we break out No Expanded Disregard Waiver from the Any Work-Related Waiver policy because this is necessary for identification. A list of the other marginal effects are shown in Appendix Table A2 for the unbundled five-category specification. Standard errors errors are clustered at the state-level and presented in parentheses under the coefficients. $N = 47,728$. * p<0.1; ** p<0.05; and *** p<0.01.

Table 5: Welfare Policies and Five Category Family Structure: Include 1993 Data
Multinomial Logit Marginal Effects

	Single Parent	Biological Married	Biological Cohabiting	Unrelated Married	Unrelated Cohabiting
Unbundled Policy Specification					
Work-Related Waiver Policies					
Sanction Waiver	0.026	-0.024	0.007	-0.005	-0.003
	(0.024)	(0.016)	(0.009)	(0.007)	(0.005)
Work Requirement Waiver	-0.039	0.018	0.001	0.011*	0.008
	(0.038)	(0.026)	(0.014)	(0.006)	(0.006)
No Expanded Disregard Waiver	0.042***	-0.050***	0.007	0.002	-0.002
	(0.014)	(0.015)	(0.006)	(0.006)	(0.005)
Strict Work-Related TANF Policies					
Strict TANF Sanction	0.031**	-0.027	0.003	-0.001	-0.007**
	(0.012)	(0.018)	(0.004)	(0.008)	(0.003)
Strict TANF Time Limit	-0.005	0.008	0.003	-0.009	0.003
	(0.015)	(0.016)	(0.004)	(0.005)	(0.004)
Strict TANF Work Exemption	0.014	-0.019	-0.006	0.011*	-0.001
	(0.009)	(0.013)	(0.003)	(0.007)	(0.003)
No Expanded Disregard TANF	0.024**	-0.033**	0.009***	-0.005	0.005
	(0.011)	(0.014)	(0.003)	(0.006)	(0.003)
Family-Related Policies					
Family Cap	-0.010	0.006	-0.003	0.003	0.004
	(0.009)	(0.011)	(0.004)	(0.005)	(0.003)
No Easing Two Parent Rule	0.011	-0.003	-0.002	-0.001	-0.004
	(0.012)	(0.014)	(0.005)	(0.005)	(0.004)
Stepparent Included	0.010	-0.025	0.003	0.008	0.004
	(0.015)	(0.016)	(0.004)	(0.007)	(0.004)
"Number of" Policy Specification					
Number of Work-Related Waiver Policies	0.031***	-0.032***	0.006	-0.003	-0.002
	(0.010)	(0.010)	(0.004)	(0.004)	(0.003)
Number of Strict Work-Related TANF Policies	0.015***	-0.018***	0.002	0.001	0.000
	(0.006)	(0.006)	(0.002)	(0.002)	(0.001)
Number of Family-Related Policies	-0.003	-0.004	-0.001	0.005	0.003
	(0.011)	(0.012)	(0.003)	(0.004)	(0.002)

Notes: A list of the other marginal effects for the 1996-2008 sample are shown in Appendix Table A2.
Standard errors are clustered at the state-level and presented in parentheses under the coefficients.
$N = 54,045$. * p<0.1; ** p<0.05; and *** p<0.01.

Table 6: Welfare Policies and Five Category Family Structure: Year-by-year Estimates
Multinomial Logit Marginal Effects

	Single Parent	Biological Married	Biological Cohabiting	Unrelated Married	Unrelated Cohabiting
Analysis using 1993 and 1996 Data					
Number of Work-Related Waiver Policies	0.029*	-0.015	-0.002	-0.016**	0.004
	(0.018)	(0.017)	(0.006)	(0.007)	(0.003)
Number of Strict Work-Related TANF Policies	na	na	na	na	na
Number of Family-Related Policies	-0.039*	0.011	0.002	0.024***	0.002
	(0.023)	(0.020)	(0.005)	(0.008)	(0.004)
Analysis using 1996 and 2001 Data					
Number of Work-Related Waiver Policies	0.023*	-0.010	0.000	-0.009	-0.004
	(0.012)	(0.011)	(0.005)	(0.009)	(0.004)
Number of Strict Work-Related TANF Policies	0.016**	-0.010	0.001	-0.007	0.001
	(0.006)	(0.009)	(0.003)	(0.005)	(0.002)
Number of Family-Related Policies	-0.005	-0.013	-0.002	0.016**	0.004
	(0.016)	(0.015)	(0.005)	(0.007)	(0.003)
Analysis using 1996 and 2004 Data					
Number of Work-Related Waiver Policies	0.027*	-0.035***	0.006	0.003	0.000
	(0.015)	(0.013)	(0.004)	(0.006)	(0.003)
Number of Strict Work-Related TANF Policies	0.016*	-0.020**	0.003	0.000	0.001
	(0.010)	(0.009)	(0.002)	(0.004)	(0.002)
Number of Family-Related Policies	-0.016	0.004	-0.001	0.013***	0.001
	(0.016)	(0.013)	(0.004)	(0.005)	(0.003)
Analysis using 1996 and 2008 Data					
Number of Work-Related Waiver Policies	0.049***	-0.041**	0.001	-0.006	-0.003
	(0.017)	(0.018)	(0.007)	(0.006)	(0.004)
Number of Strict Work-Related TANF Policies	0.018*	-0.024**	0.001	0.003	0.003
	(0.010)	(0.012)	(0.004)	(0.003)	(0.002)
Number of Family-Related Policies	-0.020	0.011	0.000	0.003	0.005 **
	(0.014)	(0.014)	(0.005)	(0.005)	(0.002)

Notes: A list of the other marginal effects for the 1996-2008 sample are shown in Appendix Table A2.
Standard errors are clustered at the state-level and presented in parentheses under the coefficients.
$N = 18,769$ for 1993/1996 sample. $N = 22,123$ for 1996/2001 sample. $N = 26,006$ for 1996/2004 sample.
$N = 24,503$ for 1996/2001 sample.* p<0.1; ** p<0.05; and *** p<0.01.

Appendix

Table A1: Other Variables in the Empirical Analysis
Demographic Variables, Marriage Market Conditions, and other Policy Variables

Variable Name	Eligible Sample	Ineligible Sample
Individuals-Level Variables		
Age	33.0	37.3
Less Than High School	0.28	0.07
High School Only	0.38	0.24
Some College	0.34	0.35
College Degree	0.00	0.34
African American	0.27	0.09
Asian	0.03	0.05
Other Race/Non-white	0.03	0.02
Rural Residence	0.20	0.20
Hispanic	0.21	0.10
Hispanic and African American	0.01	0.00
State-Level Variables		
Unemployment Rate	0.05	0.05
Real Minimum Wage	$6.25	$6.28
Average Weekly Real Manufacturing Wage	$985	$987
Percent of Poverty Level: Medicaid Coverage	192%	192%
Maximum Real Annual EITC Benefit (for Family of 3)	$4,786	$4,813
N	13,829	33,900

Notes: The eligible and ineligible samples are defined in the notes to Table 1. All demographic variables are for the mother. All labor market and policy variables are state-specific and lagged one year. Medicaid and EITC values include state supplements in addition to federally mandated levels. Real values are in $2007. All means are weighted using the SIPP sample weights pooled across years. All models also include state and year dummy variables.

Table A3: Welfare Policies and Welfare Participation
Probit Marginal Effects

	1996-2008 SIPP Data			1993-2008 SIPP Data		
	Spec. 1	**Spec. 2**	**Spec. 3**	**Spec. 1**	**Spec. 2**	**Spec. 3**
Work-Related Waiver Policies						
Sanction Waiver	-0.047			-0.057**		
	(0.032)			(0.023)		
Work Requirement Waiver	-0.059			-0.021		
	(0.036)			(0.031)		
No Expanded Disregard Waiver	-0.087**	-0.077*		-0.049*	-0.043	
	(0.034)	(0.045)		(0.029)	(0.036)	
Any Work-Related Waiver Policy		-0.040			-0.029	
		(0.029)			(0.019)	
Number of Work-Related Waiver Policies			-0.047**			-0.039**
			(0.024)			(0.018)
Strict Work-Related TANF Policies						
Strict TANF Sanction	-0.026			-0.041*		
	(0.022)			(0.022)		
Strict TANF Time Limit	-0.045			-0.047		
	(0.041)			(0.039)		
Strict TANF Work Exemption	0.015			0.012		
	(0.019)			(0.021)		
No Expanded Disregard TANF	-0.008			-0.033		
	(0.021)			(0.021)		
Any Work-Related Strict TANF Policy		-0.053***			-0.060***	
		(0.015)			(0.021)	
Number of Work-Related Strict TANF Policies			-0.018*			-0.025**
			(0.010)			(0.011)
Family-Related TANF Policies						
Family Cap	0.028			0.016		
	(0.024)			(0.021)		
No Easing Two Parent Rule	0.000			-0.002		
	(0.027)			(0.025)		
Stepparent Included	-0.016			-0.003		
	(0.030)			(0.025)		
Any Family-Related Policy		0.007			-0.001	
		(0.024)			(0.028)	
Number of Family-Related Policies			0.005			0.006
			(0.018)			(0.021)

Notes: Probits estimated on eligible sample only (i.e. without ineligibles as a control group). Standard errors are clustered at the state-level and presented in parentheses under the coefficients. $N = 13,828$ for 1996-2008 sample. $N = 15,775$ for 1993-2008 sample. * p<0.1; ** p<0.05; and *** p<0.01.