

**Effects of Welfare Participation on Marriage**

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## Effects Of Welfare Participation On Marriage

### *Abstract:*

Despite interest in the potential of the welfare system as a tool to affect marriage behaviors among low-income women, little is known about how welfare participation affects decisions to marry. We employ an event history approach to examine transitions to marriage over a five-year period among mothers who have had a non-marital birth. We find that welfare participation under the Temporary Assistance to Needy Families program (TANF) reduces the likelihood of transitioning to marriage (hazard ratio is .67,  $p < .01$ ), but only while the mother is receiving welfare. Once the mother leaves TANF, past receipt has little effect on marriage. We project that over an 18-year period, TANF participation results in *at most* a 4 to 5 percentage point reduction in marriage and a 16-month delay in marriage. We infer that the negative association between TANF participation and marriage reflects temporary economic disincentives or other short-term mechanisms rather than lasting effects on values and preferences.

## INTRODUCTION

The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 was designed to reduce reliance on welfare, make fathers more accountable, and increase marriage. The last goal has been prominently featured in debates over welfare reauthorization. The belief that there is a causal link from welfare to family structure is rooted in two distinct perspectives. The first is that the welfare system can affect marriage behaviors through economic incentives. The other is that reliance on public assistance and single parenthood are both part of a “tangle of pathologies” (to borrow from Moynihan 1965) afflicting poor women. Both perspectives are reflected in current policy debates.

Despite widespread speculation about the links between the welfare system and marriage behaviors of low-income women, most of the research in this area has focused on the effects of welfare *policies* on marriage. Little is known about how welfare *participation* affects decisions to marry, particularly after welfare spells have ended. Many prior investigations have shown that the two behaviors are negatively related, but few have focused specifically on the extent to which the experience of participating in the welfare system affects the likelihood or timing of marriage.

In this paper, we employ an event history approach to examine the effects of welfare participation on entry into marriage among mothers who have had a non-marital birth. We estimate the effects of both current and past participation and project effects over the life course. We also explore potential mechanisms including selection, financial disincentives, changes in values, and stigma.

## Background and significance

There has been much interest among researchers and politicians, dating back at least 25 years, in how the welfare system affects family structure. Most studies in this area have focused on the effects of welfare policies on female headship, marriage, and cohabitation. Others have investigated the effects of various policies on non-marital fertility, which affects eligibility for welfare. The evidence from studies conducted after 1990 suggests that, on balance, welfare discourages marriage and encourages fertility.<sup>1</sup> However, the effects tend to be small and often are significant only for whites (see Blank 2002; Moffitt 1998; Peters, Plotnick and Jeong 2001; Ratcliffe, McKernan and Rosenberg 2002). For example, Moffitt, Reville, and Winkler (1998) found that a \$100 increase in the monthly benefit level reduces the probability of marriage by at most 5 percentage points. A review of experimental studies, primarily from pre-PRWORA waivers, indicates that welfare policies have little effect on marriage (Gennetian and Knox 2003). Another recent review projects that, overall, changes in welfare rules under PRWORA that replaced Aid to Families with Dependent Children (AFDC) with time limited Temporary Assistance to Needy Families (TANF) will unlikely result in large changes in marriage behavior (Peters et al. 2001).

The fact that marriage does not appear to be highly sensitive to welfare rules does not preclude the possibility that there are sizable welfare *participation* effects. Being on welfare may delay marriage (perhaps because of actual or perceived eligibility criteria counting the earnings of spouses), but have little effect on the likelihood that welfare participants will marry after spells end.<sup>2</sup> Conversely, welfare participation could have small effects on individuals' marriage

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<sup>1</sup> The post-1990 studies tend to be more methodologically rigorous than earlier studies.

<sup>2</sup> There could actually be positive effects of having recently been on welfare on marriage if decisions to marry are postponed until the welfare spells end.

behaviors that translate into sizeable effects only over a long period of time.<sup>3</sup> In this paper, we explore a number of potential mechanisms by which welfare participation could result in short-term (occurring while participants receive welfare) and long-term (persisting after welfare participation ends) effects on marriage.

### *Evidence of participation effects*

Many previous studies present estimates of associations between welfare participation and marriage. However, most treat welfare participation (usually at any time during the year prior to an interview) as a control variable in analyses focusing on other determinants of marriage. Some studies have examined the effect of growing up in a welfare dependent household as a child, rather than as an adult, on marriage (e.g., Manning and Smock 1995). Most studies with a focus on welfare participation find weak or insignificant associations with marriage (e.g., Lichter et al. 1992, Brien 1997, Smock and Manning 1997). However, these studies did not distinguish between effects of current and past welfare participation.

As far as we know, only two studies have attempted to isolate current or past effects. Using data from the Panel Study of Income Dynamics, Vartanian and McNamara (2004) estimated effects of AFDC participation on being married 10, 15, and 20 years later. They found a negative association between participation in AFDC for more than 2 years and being married 15 years later, a positive association between AFDC participation for less than 2 years and being married 20 years later, and no other significant associations. The inconsistent results, small sample sizes, and possible selection issues make it difficult to draw inferences from that study about the effects of past welfare participation on marriage.

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<sup>3</sup> The long-term effects may not be captured by policy effect studies that tend to focus on short time frames.

Using 1989 to 2000 data from the Survey of Income and Program Participation, Fitzgerald and Ribar (2005) found sizeable negative effects of *current* welfare participation (AFDC or TANF) on exits from female headship (the most common pathway being through marriage), after controlling for individual and policy measures. By estimating simultaneous models of welfare participation and headship, they found that unobserved heterogeneity inflated their single equation estimates by about 10 percent. Their estimated effect sizes are substantially larger than the associations found in other studies, perhaps reflecting their focus on female headship rather than marriage, or more likely, their focus on the effect of being on welfare rather than having been on welfare at some point in the recent past.

Taken together, the Vartanian and Fitzgerald studies suggest that effects of current welfare participation are larger than those of past welfare participation. However, a systematic exploration of the relative effects of current and past welfare participation requires that the two be modeled simultaneously, or at least consistently (using the same data, control variables, and model specifications). Additionally, these two studies report findings based primarily on AFDC, so their results may not be generalizable to TANF participation in the post-PRWORA environment (particularly the Vartanian and McNamara study, which analyzed welfare participation that took place decades ago).

In this study, we use recent data to estimate the effects of both past and current TANF participation on marriage among mothers who have had a non-marital birth and use these estimates to project total effects of welfare participation over the life course. We also test classes of possible explanations of the association between these two behaviors.

*Determinants of welfare participation and marriage*

Our analyses build on many prior studies of the determinants of welfare participation or marriage. As discussed earlier, welfare participation, poverty, and being an unmarried parent are highly related. Single women, those who have low levels of education, those who have more children to care for, and those who are members of minority groups all are more likely than women without these characteristics to be poor and use welfare (Pavetti 1997). Immigrant mothers are less likely to rely on welfare than native-born mothers due to eligibility restrictions and issues of legal status, but they are more likely to be poor and therefore financially eligible for welfare (Tumlin and Zimmerman 2003).

Zedlewski (2002), using data from the 1997 and 1999 National Survey of America's Families, imputed TANF eligibility status for families and compared characteristics of participants and non-participants. Among eligible families, participants had more children, were less likely to live with other adults (including partners), had higher rates of physical and mental health problems, were less likely to have worked in the past three years, were younger, and were more likely to be black and less likely to be Hispanic than non-participants. Reichman et al. (2004) conducted a similar analysis of TANF use among urban families with one-year-old children and found very similar results.

Past research has found that local labor markets affect welfare participation (Hoynes 2000; Fitzgerald 1995; Ribar 2005), as do state welfare (Mead 2000; 2003; Teitler, Reichman and Nepomnyaschy 2006), child support (Meyer 1993; Huang, Garfinkel and Waldfogel 2004), and Medicaid (Yelowitz 1995) policies.

Many of the factors that are positively associated with welfare participation are negatively associated with marriage. These include race/ethnicity (Lichter, LeClere and

McLaughlin 1991; Brien 1997), income and education (Lichter et al., 1992; Oppenheimer 1994; Carlson, McLanahan and England 2004) family structure as a child (Avery et al., 1992; Axinn and Thornton 1992; South 2001), and health status (Lillard and Panis 1996). Labor and marriage markets also appear to affect marriage decisions (Blau, Kahn and Waldfogel 2000; Brien 1997; Wood 1995), as do local and state policies (Yelowitz 1998).

### *Potential explanations for the welfare-marriage association*

We consider several potential explanations of the welfare participation and marriage association, each of which would predict either long-term associations (i.e., effects of having been on welfare in the past) or only short-term associations (i.e., effects of currently being on welfare). These potential explanations are elaborated below and classified in Table 1 by expected duration.

Values: Welfare participation may change individuals' tastes for or attitudes towards work and marriage. The notion that reliance on public assistance alters work and family values is one that has existed since at least the 1960s. This argument is prevalent in current debates over welfare reform (e.g., Horn, 2002). Despite widespread beliefs on the subject, very little research has investigated the extent to which welfare participation changes individuals' values. Studies investigating the effects of having lived in a welfare-dependent household as a child on non-marital fertility have the potential to provide indirect evidence about whether welfare participation is associated with negative marriage attitudes. However, the existing research on this topic is fraught with methodological problems (see 1995 review article by Corcoran). Thus,

whether welfare participation changes family values remains very much an open question, as does how long lasting the potential effects would be.

Mental health: Welfare participation may have psychological effects. The experience of relying on cash assistance may depress self-esteem or increase stress, leading to difficulties in finding partners and maintaining relationships. A number of studies have found associations between welfare participation and mental illness (Goodban 1985; Jarrett 1996; Nichols-Casebolt 1986; Jayakody and Stauffer 2000; Rainwater 1982), but the directionality has not been established. It is even less clear whether welfare participation leads to long-term psychological scarring (beyond the reciprocity period) or whether the association between welfare participation and mental illness is strictly short-term.<sup>4</sup>

There is recent evidence that mental health is strongly associated with marital status among mothers of young children who had non-marital births (DeKlyen et al. 2006), although, again, the directionality remains unclear. As far as we know, no studies have investigated the extent to which a mother's psychological state mediates the relation between welfare and marriage.

Stigma: Welfare participation may project a negative image that reduces participants' appeal as potential marriage partners. Prior research has documented negative perceptions of welfare participants, generally (e.g., Klugel and Smith 1986; Rainwater 1982). However, there is no evidence that stigma associated with welfare participation translates into reduced marriage prospects. Being on welfare may also alter participants' self-perceptions of marriage worthiness.

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<sup>4</sup> Petterson and Friel (2001) suggest that the associations between welfare participation and mental illness reflect differences in material hardship rather than welfare participation per se.

There is evidence that low-income couples strive to achieve economic self-sufficiency before entering marital unions (Edin and Kafalas 2005; Gibson, Edin and McLanahan 2005). Thus, mothers on TANF may postpone marriage because welfare participation is an incontrovertible and highly visible marker (to themselves and to others) of not having achieved that goal. In other words, it is proof that they have not met an economic “marriage bar.”

Welfare participation in the past could also have stigmatizing or “scarlet letter” effects and devalue women’s attractiveness as potential marriage partners. There is some evidence that prior welfare experience negatively affects employment opportunities and wages (Noonan and Heflin 2005), but it is not known whether past welfare participation deters potential marriage partners or whether the employment effects of past welfare participation translate to marriage.

Economic disincentives: According to the economic theory of utility maximization, in particular Becker’s theory of marriage (Becker 1973; 1974), welfare eligibility rules counting the earnings of spouses provide a disincentive to marriage. Since participants may face an immediate loss of benefits if they marry, the disincentive is likely to be strongest during welfare spells and thus have only a short-term impact.

Selection: Associations between welfare participation and marriage may reflect selection; that is, differences in marriage rates of participants and non-participants may be due to unobserved characteristics of women associated with both behaviors. Three forms of selection could be operating: selection on the basis of socioeconomic characteristics, selection on the basis of cultural norms, and selection on the basis of transient disruptions.

In terms of socioeconomic selection, Schram (2000) argues that behaviors of welfare recipients often reflect responses to poverty rather than welfare participation per se. Unobserved differences in social norms or culture could also underlie associations between welfare participation and marriage. Some have argued that relying on welfare and placing a low value on marriage both originate in a “culture of poverty”<sup>5</sup> or are part of a self-reinforcing “tangle of pathologies” that lead to a breakdown of the family.<sup>6</sup> Such arguments suggest that the behaviors of others in the community shape normative environments that in turn affect individual decisions about reliance on government assistance and family formation.

The extent to which human capital and cultural forms of selection explain associations between welfare participation and marriage can be inferred by comparing the estimated current and past welfare participation effects. If the associations entirely reflect either or both of these types of selection, the estimates of current and past participation effects would be very similar in magnitude. Finding an effect of current participation and none of past participation, however, would indicate that the association between welfare participation and marriage is not due to either of these forms of selection.

A third form of selection could affect estimates of current welfare participation without affecting estimates of past participation. Transient disruptions in a woman’s social, economic, or emotional circumstances may lead her to go on welfare and also affect her immediate marriage prospects. For example, she may lose her job and use welfare until she finds other employment. Her unemployment status might be a detriment in the marriage market during her period of unemployment, which would coincide with her welfare participation. Under such a scenario, the circumstances that resulted in both welfare participation *and* not getting married could explain

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<sup>5</sup> See Lewis (1968).

<sup>6</sup> See Moynihan (1965).

the negative association between current welfare participation and marriage without causing associations between past welfare participation and marriage.

While we cannot test each of the seven mechanisms individually, we can test classes of mechanisms by investigating whether effects of welfare participation on marriage exist only in the short-term or whether they extend beyond the reciprocity period. For example, if we find evidence of short- but not long-term effects, we can rule out that welfare participation has lasting effects on family values or mental health in more than a transitory manner, as well as that socioeconomic or normative selection mechanisms are at play. Finding short- and long-term effects that are of similar magnitude would indicate that economic disincentives or short-term shocks are not driving the associations between welfare participation and marriage.

## DATA AND MEASURES

The Fragile Families and Child Wellbeing Study (hereafter, FF) follows a cohort of parents and their newborn children in 20 U.S. cities (located in 15 states). Mothers were interviewed in the hospital at the time of their child's birth (baseline) and over the telephone one and three years later. Baseline interviews were conducted with a probability sample of 3,712 unmarried mothers and a comparison group of 1,196 married mothers from 1998 to 2000 (see Reichman et al. 2001 for details of the research design). Response rates of unmarried mothers were 87 percent at baseline, 90 percent at the one year follow-up, 87 percent at three years, and 84 percent at five years.<sup>7</sup>

Of the 3,293 mothers who reported that they were unmarried at baseline and who completed follow-up interviews at one year, 39 were excluded due to inconsistent or missing

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<sup>7</sup> The one and three year follow-up response rates are of unmarried mothers who completed baseline interviews and were still eligible to participate in the study. The five year response rate is preliminary.

reports of marriage dates, 5 because of missing data on TANF spells, and 30 because of missing data on other covariates. The remaining 3,219 cases form the sample for the analyses that follow. Our outcome of interest is marriage, either to the baby's father or to someone else. We used information from all available survey waves to determine marital status of the mother at each month after her baseline interview.

We focus on whether TANF participation affects entry into marriage among mothers who had non-marital births—a group at high risk for welfare dependence. We used retrospective reports of TANF participation dates to construct monthly welfare histories from 1997 until the focal child was five years old (during 2003 to 2005). Observations for which there was no completed three or five year follow-up interview were right censored at the time of the mother's last interview. The TANF participation dates were used to construct two time-varying measures of TANF participation, allowing us to estimate short and long-term effects. The first is a measure of *current* TANF participation, which was coded 1 for months in which the respondent was on TANF and 0 for months in which she was not on TANF. The second is a measure of *past* TANF participation, which was coded 1 for any given month if the respondent had been on TANF at any time since 1997 but was not currently on TANF, and coded 0 otherwise.<sup>8</sup> When exact TANF participation dates were missing, we imputed them based on data from the mothers' other interviews and we assess sensitivity of our results to the imputations.

We incorporate the following baseline measures that past research, discussed earlier, indicates are associated with both with TANF participation and transitions to marriage: mother's race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, and other), mother's educational attainment (less than high school, high school or equivalent, or more than high

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<sup>8</sup> By considering only welfare participation since 1997, we are excluding previous AFDC participation from our measure of past participation. It is therefore possible that a mother who relied on AFDC but not on TANF would be coded as not having relied on TANF in the past.

school), whether the mother lived with both of her biological parents at age 15, and the mother's health (excellent, very good or good, compared to fair or poor). We also include the following measures, all from baseline, which are associated with welfare participation or marriage and possibly both: the mother's age (whether she was at least 20 years old), the mother's nativity (U.S.-born vs. foreign-born), whether the mother was cohabiting with the baby's father, parity (whether the child was the mother's first), whether the birth was covered by Medicaid, and whether the mother attended religious services at least several times per month. We also included city fixed effects to control for state policies and other characteristics of mothers' cities or states (such as labor markets and marriage markets) that are associated with both TANF participation and marriage.

## METHODS

We employ event history analysis to model the effect of TANF participation on the likelihood and timing of marriage. Specifically, we estimate Cox proportional hazard models in which duration is measured in months from the child's birth. All baseline unmarried mothers who completed one-year follow-up interviews are included, whether or not they completed subsequent interviews. Individuals who did not marry during the observation period are right-censored at the time of their last interview. Breslow's method is used for handling ties. The Schoenfeld residuals method confirms that we were not violating the proportionality assumption. We tested the sensitivity of our results to various model specifications and sample restrictions.

Using event history models has several advantages: First, we do not have to choose an arbitrary time point at which to assess marital status and can determine the extent to which

TANF participation is associated with delays in marriage; second, we can be confident that our results are not driven by the effect of marriage on TANF participation (reverse causality).

By including measures of current and past TANF in our analyses, we are able to disentangle associations between TANF participation and marriage that are short-term (during the reciprocity period only) and those that are long-term. Doing so also allows us to estimate the expected cumulative impact of TANF participation on marriage over the life course and to explore the underlying mechanisms.

Data limitations prevent us from modeling unobserved heterogeneity using simultaneous hazards procedures as Fitzgerald and Ribar did (we only observe one transition to marriage). However, we control for an extensive set of individual-level covariates and include city fixed effects that remove potential confounding effects of state policies and city-level characteristics that may affect both TANF participation and marriage. As indicated earlier, an analysis of selection effects in the Fitzgerald and Ribar study revealed that unobserved factors inflated their estimates of the effect of welfare participation on exits from headship by about 10 percent. Given that finding and our extensive set of controls, it seems reasonable to assume that our estimates of the effect of TANF participation on marriage are unlikely to be inflated by more than 10 percent. Furthermore, the magnitude of long-term TANF participation effects provides information about potential selection effects.

## DESCRIPTIVE ANALYSIS

Characteristics of mothers, by whether they ever participated in TANF between 1997 and their last interview, are presented in Table 2. Overall, a large proportion of the urban population of unmarried mothers is poor or near-poor (40 percent of mothers had less than a high school education, and 76 percent had births covered by Medicaid). However, there are notable differences between TANF participants and non-participants. Participants are less likely than non-participants to be non-Hispanic white, to have high educational attainment levels, to be immigrants, and to have been cohabiting with the baby's father at the time of the birth. They are more likely to have had more than one child, to have relied on Medicaid to pay for the birth, and to have spent some time growing up in a household without both parents.

TANF participation rates in this sample are high, but the average duration of spells on TANF is relatively short. Fifty nine percent of the sample (1,899 out of 3,219 mothers) relied on TANF at any time between 1997 and when they were last interviewed (between 2003 and 2005 for most mothers in the study). For this group, the average length of first TANF spell that occurred between the focal child's birth and the mother's last interview was 11 months.<sup>9</sup>

As shown in the survival curve in Figure 1 for all mothers in the sample (the middle curve), marriage rates were relatively low and declined slightly over the observed period. Approximately 9 percent married within 12 months of the birth of the child. The percentages marrying each subsequent year were 5, 4, 4, and 3, respectively (from life table estimates). After five years, 75 percent of the sample remained unmarried. Marriage rates during this period varied considerably by TANF participation. Of those in the sample who received TANF at some point between 1997 and when they were last interviewed (upper curve), only 19 percent married

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<sup>9</sup> Six percent of participants were still on their first TANF spell when they were last interviewed so the actual average duration is somewhat longer.

within 5 years, compared to almost twice as many (35%) among those who were never on TANF (lower curve). As explained earlier, these differences could reflect marriage delays associated with current TANF participation, delays due to having been on TANF in the past, or characteristics (observed and unobserved) of mothers that are associated both with TANF participation and marriage behavior.

## MULTIVARIATE ANALYSIS

We estimated several sets of nested models. For each set, we show results from an unadjusted model, a model that adds only city fixed effects, a model that adds an extensive set of sociodemographic characteristics, and finally, a model that adds measures of family structure as a child, maternal health, and religiosity.<sup>10</sup> The first set of models, shown in Table 3, is the most comparable to the analyses of exits from headship by Fitzgerald and Ribar (2004). Specifically, it provides estimates of the effect of currently being on TANF on the likelihood of transitioning into marriage. The hazard ratio in Model 1 (.51) indicates that the likelihood of getting married while on TANF is about half that while not on TANF. This estimate changes little with the addition of city fixed effects (Model 2), indicating that policies or other characteristics of cities or states do not explain the association between current TANF participation and marriage. When controlling for the individual level covariates (Models 3 and 4), the hazard ratio associated with currently being on TANF increases to .69 but remains highly significant. This compares to a ratio of .65 from Fitzgerald and Ribar. The effects of individual covariates on the likelihood of marriage are consistent in direction with those obtained in prior studies of marriage.

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<sup>10</sup> We do not include the last set of measures in Model 3 because they are more likely than the other individual-level characteristics to be endogenous.

Table 4 shows estimates from models that include both current and past TANF participation. A comparison of the two coefficients provides an indication of the relative magnitude of short versus longer-term associations between TANF participation and marriage and allows us to evaluate the plausibility of hypothesized mechanisms.

Across all models, the coefficients of current TANF participation are similar to those in Table 3, which did not include the measure of past TANF participation. Controlling for individual level characteristics, the likelihood of marrying while on TANF is two thirds that of marrying while not on TANF and the effect of past TANF participation is close to 0 (hazard ratio in Model 4 is .94,  $p > .5$ ).

We ran several sets of supplementary models to assess the robustness of our results to alternative specifications and relevant subpopulations. First, we were concerned that the effect of past TANF receipt might be biased due to high collinearity with the measure of current TANF so we also estimated a set of models excluding the measure of current TANF participation. The estimates of the effect of past TANF participation in those models (not shown) were very similar to those in Table 4 (1.04,  $p = .64$  in Model 4), confirming that past TANF plays no role in shaping marriage transitions.

Second, we estimated sets of models in which the exit from TANF was lagged 1 month and by 3 months to test whether the effect of current TANF participation was capturing an effect of marriage (or marriage intentions) on participation.<sup>11</sup> The estimates (not shown in tables) were almost identical to those in Table 4. With a 1-month lag, the Model 4 estimates were .97 ( $p =$

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<sup>11</sup> If a woman married during the last month she was on TANF, we cannot precisely time which came first. It is also possible that women who made decisions to marry while they were on TANF would leave welfare prior to marrying to avoid the appearance of having failed to reach the marriage bar described by Edin and Kefalas (2005) and Gibson, Edin, and McLanahan (2005). In both cases, the effects of current TANF participation would be overestimated and those of past participation would be underestimated.

.70) and .66 ( $p < .01$ ), respectively, for past and current TANF participation and with a 3-month lag, the corresponding estimates were .98 ( $p = .87$ ) and .68 ( $p < .01$ ), respectively.

Third, we estimated models restricting the sample to various subpopulations. To further control for socioeconomic status, we estimated models for the subsample of mothers who were eligible for TANF during the year after their child's birth,<sup>12</sup> mothers who had births paid for by Medicaid, and mothers who had at most a high school education. We also estimated models that restricted the sample to cases for which we had complete information on TANF participation dates to insure that the results were not sensitive to our imputations. The results of the subsample analyses are shown in Table 5. The hazard ratios for currently being on TANF (first and last columns) are slightly larger than those in Table 4, and for one subsample (eligible for TANF) it fails to reach statistical significance,<sup>13</sup> suggesting that a portion of the estimated effects of current TANF participation in the full sample might be due to selection of poor women into current TANF participation and out of marriage. However, the overall pattern is very similar to that in the full sample and the estimated effects of past TANF participation in all specifications are very close to 0 (likelihood ratios are close to 1 and not significant).

The results from Table 4 and the supplementary analyses strongly suggest that the association between TANF participation and marriage does not extend past the reciprocity period. It appears that once a mother is off of TANF, the likelihood of marriage reverts to that of mothers who have never been on TANF.

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<sup>12</sup> For details on the TANF eligibility imputation method, see the description of the inclusive imputation method in Reichman et al. (2004).

<sup>13</sup> The lack of significance is partly a function of the smaller sample size.

## PROJECTED CUMULATIVE EFFECTS

We used the results from Table 4 to project the effects of TANF participation on the probability of marriage and on the average delay in marriage over an 18-year period.<sup>14</sup> To do so, we applied the estimated participation effects to the expected number of years mothers would spend on TANF. This calculation required that we make some assumptions about the proportion of mothers who would eventually marry, the proportion who would ever participate in the TANF program, and the average length of TANF spells. The calculations also assume that the effects of TANF participation would be constant over an 18 year period and that there are no sleeper effects.<sup>15</sup> The assumptions and calculations are detailed in Appendix A. Based on our estimates of TANF participation effects and the ranges of assumptions we make, we project that TANF participation would decrease marriage rates by 3.7 to 4.9 percentage points over 18 years. That is, 61 to 62 percent of mothers who will have spent any time on TANF would marry within 18 years of the birth compared to 66 percent of those who will not have participated in TANF. We also project that TANF participation would result in an average delay in marriage of 12 to 16 months over the 18-year period.

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<sup>14</sup> We focused on an 18-year period, which corresponds to the period of time before which the focal child would reach majority age. It also would, on average, correspond to the period of TANF eligibility for that mother.

<sup>15</sup> We find it unlikely that there would be sleeper effects—that is, that the effects of TANF participation on marriage would not manifest themselves until several years after the TANF spell.

## DISCUSSION

We examined the extent to which TANF participation is associated with the likelihood and timing of marriage among mothers with young children who were born out of wedlock – a population of substantial policy interest. We did not address the much-studied question of whether welfare *policies* affect marriage (and if so, by how much); rather, we focused on the less explored question of how *participation* in TANF affects marriage probability and delay. This is the first and only study to assess both short and long-term effects of welfare participation on marriage—an important area of inquiry, as longer-term associations may be indicative of deep-rooted changes in behavior.

We found evidence that TANF participation has a negative effect on the likelihood of marriage, but that the effect is for the most part confined to the period of participation. We projected that the total effects would translate into modest differences in marriage rates over an 18-year period and that TANF participation would result in marriage delays of up to 16 months over the child’s first 18 years. The projections are based on the assumption that there is little change since PRWORA in the average length of time spent on welfare. If substantially less time is spent on welfare under the restrictive new regime, then our projections are overestimates.

Whether or not delays in marriage are harmful, on balance, to mothers and their children is not clear. On one hand, marriage is an important route out of poverty for many unwed mothers (Lichter, Graefe, and Brown 2003). Thus, delays in marriage may have detrimental effects on mothers’ and children’s economic well-being. On the other hand, marriage delays could have favorable effects on family stability by leading to more selective searches for mates, which could result in higher quality or longer-term relationships.

We described several potential mechanisms by which TANF participation could affect marriage. Our findings help to adjudicate between some of these. The significant negative effects of current welfare participation may reflect the expected loss of benefits from marrying or short-term changes in values, psychological hardships, or stigma associated with welfare participation. They may also reflect a process whereby TANF participation, as a symbol of financial insecurity, limits a woman's marriage prospects or places her below a self-imposed marriage bar, as suggested by Edin and Kafalas (2005) and Gibson, Edin and McLanahan (2005). Our results do not speak to the relative importance of specific short-term mechanisms, but they do provide evidence for such short-term explanations as a broad class.

The minimal effects of TANF participation on marriage beyond the reciprocity period do not support theories that presume long-term associations between the two behaviors. That is, they rule out scarring, values, culture of poverty, and other long-term explanations, including unobserved heterogeneity based on human capital or demographic characteristics.

Our findings do not imply that *poverty* has little long-term effect on marriage. Any of the long-term mechanisms we have discussed could be important pathways by which poverty is associated with family structure. For example, values and culture may affect non-marital child bearing. Given that a non-marital birth occurs, however, the experience of relying on welfare may exert no incremental "culture of poverty" effect on marriage.

We did not directly model selection into TANF. It is therefore possible that our estimates of the effects of TANF participation on marriage are biased upward, since most characteristics that are positively associated with welfare participation are negatively associated with marriage. Our estimates of *past* TANF participation are close to zero and not significant, however, suggesting that two of the three forms of selection that we discussed – socioeconomic and

normative – are not of concern. It is possible that selection on the basis of transient changes in circumstances does result in some bias. This scenario is consistent with our estimates restricting the sample to those eligible for TANF and the finding of Fitzgerald and Ribar (2004) that unobserved heterogeneity leads to upward biases in the estimated effects of current welfare participation on marriage. However, we expect this potential source of bias to inflate our estimates by no more than 10 percent (the estimate of the bias by Fitzgerald and Ribar), given the set of control variables we were able to include in our models.

This study is subject to certain limitations. It is based on an exclusively urban sample. It is possible that TANF participation effects are different in rural, small town, or suburban communities. For example, if stigma associated with TANF participation is greater in non-urban settings, where TANF participation is less prevalent (Leonard and Kennedy 2001), the effects of TANF participation on marriage may be larger than those we estimated using the FF sample. Second, we extrapolated 18-year cumulative effects using only five years of data. The effects may not actually be uniform over the child's first 18 years. Finally, our estimates of welfare participation effects are based solely on the post-1996 period. It is possible that long-term effects of participation existed under the former AFDC program.

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Table 1. Potential Explanations of Association Between Welfare Participation and Marriage

Explanations:	Predicted Duration of Effect	
	Long-Term (there is an association between past welfare participation and marriage)	Short-Term (there is no association between past welfare participation and marriage)
Values	X	
Mental health	X	X
Stigma	X	X
Economic incentives		X
Selection (human capital)	X	
Selection (culture)	X	
Selection (disruption)		X

Table 2: Sample Characteristics By TANF Participation Status (Since 1997)

	Ever on TANF	Never on TANF	All Mothers
Married to father or partner	18	32	24
Non-Hispanic white	11	20	15
Non-Hispanic black	66	41	55
Hispanic	21	37	27
Other race/ethnicity	2	3	3
Less than high school	46	31	40
High school graduate	34	33	34
More than high school	20	36	26
Born in U.S.	94	79	88
Cohabited with father at baseline	40	59	48
First birth	32	51	40
Age >=20	75	79	77
Medicaid birth	84	65	76
Lived with both biological parents at age 15	29	46	36
Good, very good, or excellent health at baseline	90	93	91
Attends religious services several times/month	31	37	34
Length of first TANF spell (months)	11	n.a.	n.a.
N	1899	1320	3219

Table 3: Effect of Current TANF Participation on Hazard of Marriage

	Model 1	Model 2	Model 3	Model 4
Currently on TANF	0.51 (.00)	0.54 (.00)	0.69 (.00)	0.69 (.00)
Non-Hispanic black			0.52 (.00)	0.50 (.00)
Hispanic			0.75 (.02)	0.72 (.01)
Other race/ethnicity			0.76 (.23)	0.75 (.21)
High school graduate			1.19 (.06)	1.16 (.12)
More than high school			1.60 (.00)	1.56 (.00)
Born in U.S.			0.67 (.00)	0.73 (.01)
Cohabited with father at baseline			2.02 (.00)	2.07 (.00)
First birth			0.96 (.59)	0.96 (.63)
Age >=20			0.93 (.48)	0.94 (.52)
Medicaid birth			0.92 (.35)	0.94 (.46)
Lived with both biological parents at age 15				1.02 (.85)
Good, very good, or excellent health at baseline				1.12 (.44)
Attends religious services several times/month				1.29 (.00)
City fixed effects	No	Yes	Yes	Yes
N (3219)	154,067	154,067	154,067	154,067

Figures are proportional hazard ratios and *p*-values

Table 4: Effects of Past and Current TANF Receipt on Hazard of Marriage

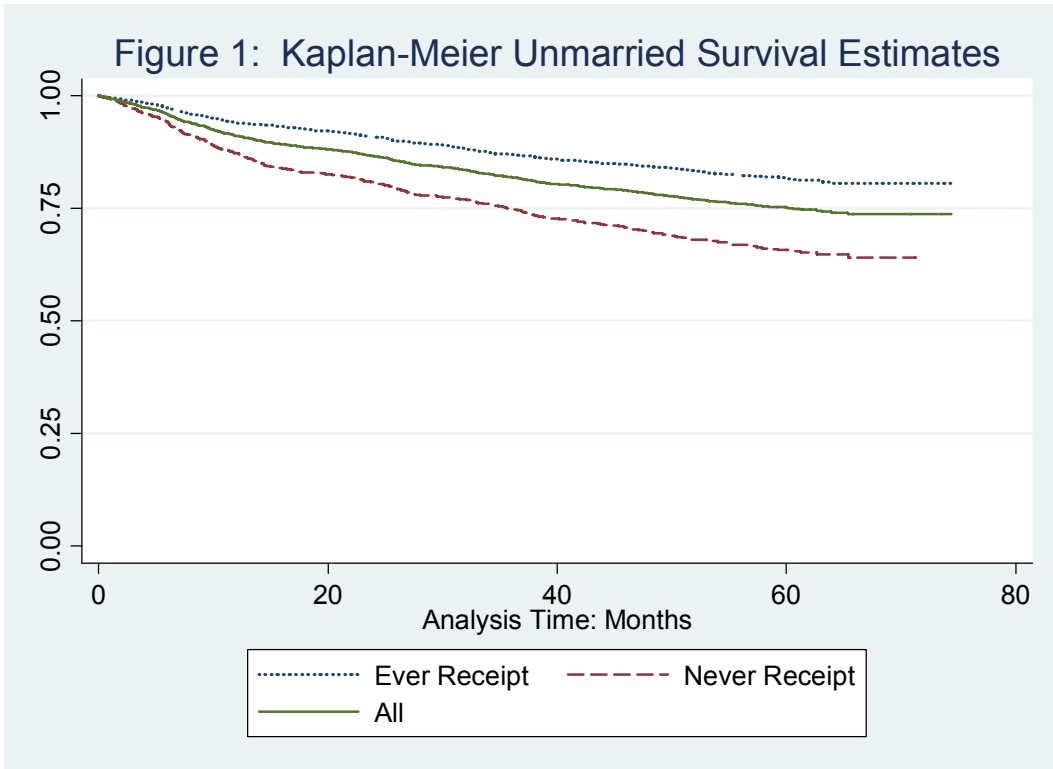
	Model 1	Model 2	Model 3	Model 4
Received TANF in past	0.68 (0.00)	0.74 (0.00)	0.93 (0.42)	0.94 (0.52)
Currently on TANF	0.45 (0.00)	0.48 (0.00)	0.67 (0.00)	0.67 (0.00)
Non-Hispanic black			0.52 (0.00)	0.50 (0.00)
Hispanic			0.75 (0.02)	0.73 (0.01)
Other race/ethnicity			0.77 (0.24)	0.76 (0.22)
High school graduate			1.19 (0.07)	1.16 (0.12)
More than high school			1.59 (0.00)	1.55 (0.00)
Born in U.S.			0.68 (0.00)	0.73 (0.01)
Cohabited with father at baseline			2.01 (0.00)	2.06 (0.00)
First birth			0.95 (0.51)	0.95 (0.57)
Age $\geq 20$			0.93 (0.50)	0.94 (0.53)
Medicaid birth			0.93 (0.42)	0.95 (0.52)
Lived with both biological parents at age 15				1.01 (0.87)
Good, very good, or excellent health at baseline				1.12 (0.44)
Attends religious services several times/month				1.28 (0.00)
City fixed effects	No	Yes	Yes	Yes
N (3219)	154,067	154,067	154,067	154,067

Figures are proportional hazard ratios and  $p$ -values

Table 5: Effects of TANF Participation on Hazard of Marriage (Sub-Samples)

Sample:	Currently on TANF	Past TANF	Current TANF
	Corresponds to Table 3, Model 4	Correspond to Table 4, Model 4	
Eligible for TANF <i>N</i> = 1299	0.80 (.18)	1.05 (.80)	0.81 (.27)
Medicaid births <i>N</i> = 2438	0.72 (.01)	0.93 (.49)	0.70 (.01)
High school education or less <i>N</i> = 2370	0.74 (.02)	0.92 (.47)	0.71 (.02)
Non-imputed TANF dates <i>N</i> = 2890	.76 (.03)	1.09 (.42)	.78 (.06)

Figures are proportional hazard ratios and *p*-values



## APPENDIX A. Projections of TANF participation effects on marriage over 18 years

### **A. Assumptions about marriage rates**

We computed an expected marriage rate for our sample over an 18-year period by applying race/ethnic-specific marriage rates of women with non-marital births (from Graefe and Lichter 2002, which used the National Survey of Family Growth) to the composition of our sample. Graefe and Lichter estimated that 82% of whites, 62% of Hispanics, and 59% of black women with out-of-wedlock births will marry. Our sample is 15% white, 28% Hispanic, and 54% black. We therefore obtain an estimated marriage rate of 62% over an 18-year period or an average marriage rate of 3.5% per year.

### **B. Assumptions about amount of time spent on TANF**

Using data from the National Longitudinal Survey of Youth from 1979 to 1996, Moffitt (2002) found that welfare recipients received AFDC for an average of 39 months over a 10-year period. The average amount of time on TANF is likely to be somewhat lower than what it was on AFDC because of the time limits and other restrictions under PRWORA and a stronger labor market. However, because Moffitt's figures cover a shorter time period, we assumed 3 years (36 months) as a lower bound and 4 years (48 months) as an upper bound figure for average amount of time on TANF over an 18-year period.

Using the proportion of baseline unmarried mothers in our sample who were ever on TANF by the five year follow-up interview (.59) as a guide, we assumed 60% as a lower bound estimate of the percentage that will ever be on TANF over an 18 year period and 75% as an

upper bound estimate. This translates into an average of 10 to 17% of baseline unmarried mothers being on TANF in any given year.

### C. Annual marriage rates of participants and non-participants

From our assumptions above (on average, 3.5% would marry each year over the 18 year period; 10-17% would be on TANF in a given year) and from the estimated effect of current TANF participation on marriage from Model 4 in Table 4 (.67), we estimate the proportion of TANF non-participants and TANF participants who will marry each year; we call these  $M_{nt}$  and  $M_t$ , respectively. Our estimate of the annual proportion of TANF non-participants who marry ( $M_{nt}$ ) based on the assumption of 10% of mothers on TANF each year is calculated as follows:

$$(1) \quad .035 = .67 M_{nt} * .10 + M_{nt} * .90$$

$$M_{nt} = .0362$$

Our estimate of the annual marriage rate of TANF non-participants ( $M_{nt}$ ) based on the assumption of 17% of mothers on TANF each year is calculated as follows:

$$(2) \quad .035 = .67 M_{nt} * .17 + M_{nt} * .83$$

$$M_{nt} = .0371$$

Since the .0362 and .0371 figures are so close, we use the mid-point, .0366, to derive the annual proportion of women on TANF who marry, as follows:

$$(3) \quad M_t = .0366 * .67 = .0245$$

We assume that the effect of past TANF participation is 0 because in our main and supplementary models the estimates of past TANF are highly insignificant and the odds ratios are very close to 0.

#### **D. Cumulative effect of TANF participation over 18 years**

We calculate the expected marriage rate (within 18 years) of mothers who will never be on TANF ( $C_{nt}$ ) as follows:

$$(4) \quad C_{nt} = M_{nt} * 18 = .659$$

and the expected marriage rate of mothers who will have been on TANF at some point ( $C_t$ ) as follows:

$$(5)(a) \quad C_t = (M_t * 3) + (M_{nt} * 15) = .622 \text{ (assuming that women who participate in TANF will do so for an average of 3 years in total), or}$$

$$(5)(b) \quad C_t = (M_t * 4) + (M_{nt} * 14) = .610 \text{ (assuming that women who participate in TANF will do so for an average of 4 years in total )}$$

#### **V. Cumulative effect of TANF participation on marriage delay**

To estimate the average delay in marriage, we divide  $(C_{nt} - C_t)$  by the percent of non-TANF recipients who marry each year ( $M_{nt}$ ). We obtain an estimate of marriage delay ranging from 1.01 to 1.34 years, or 12 to 16 months.