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Abstract: This study investigates the possibility that teens in more economically-disadvantaged families may have entered the labor market in response to the 1996 welfare legislation that replaced AFDC with TANF. Data are from the outgoing rotation groups of the Current Population Survey (CPS) from September 1995-May 1996 (pre-TANF) and from September 2000-May 2001 (post-TANF). To identify the policy's effect, we compare changes in the employment of teens in economically-disadvantaged families over the study period with changes in the employment of their more advantaged counterparts (a "difference-in-difference" methodology). We find that teen employment significantly increased among those in economically-disadvantaged families relative to their more-advantaged counterparts, even after controlling for macroeconomic conditions, among other factors. Our results suggest that TANF's pro-employment effects go beyond the effects previously identified for single mothers.

Keywords: teen employment, TANF, poverty

INTRODUCTION

Researchers have investigated the effects of the 1996 welfare legislation that replaced the Aid to Families with Dependent Children (AFDC) program with the Temporary Assistance to Needy Families (TANF) program on a range of outcomes including effects on welfare caseloads, poverty, adult women's employment and earnings, family structure, and young children's developmental outcomes (for a review, see Blank, 2002). Far less attention has been paid to teens, perhaps because effects on this group were anticipated to be smaller (see Morris, Knox and Gennetian, 2002; Brooks, Hair and Zaslow, 2001; and Morris and Duncan, 2001). The impact on teens, including employment effects, is nonetheless potentially important given their future roles as workers, taxpayers, and parents.

Quite possibly, teens in more economically-disadvantaged families may have entered the labor market or increased their employment to replace lost welfare income. For instance, Brooks et al. (2001) suggest that as mothers have moved from welfare to work, this may have caused some teens to adopt more "adult-like" roles, the role of worker being one of them. Schoeni and Blank (2000) offer some indirect evidence in support of increased teen labor market activity. They found that TANF led to an increase in family earnings for less-skilled women not because it increased their own earnings, but because it increased the earnings of *"other* family members."[1] Other family members might include other adults, related or unrelated, as well as teens, though here we exclusively focus on teens. Teen earnings are a little recognized but potentially important source of family income, especially in single-parent families.[2] Median annual earnings for employed 17- and 18-year olds living at home, for instance, were $2,000-$3,000, respectively, in 2000. For single-parent families, these figures comprise 10 to 14 percent of family earnings.[3]

In this study, we specifically investigate the employment patterns of teens before and after the 1996 federal welfare legislation using data on teens from the outgoing rotation groups of the Current Population Survey (CPS) from September 1995-May 1996 (just prior to the passage of the legislation) and from September 2000-May 2001 (well after implementation). The federal legislation is most likely to affect teens in more economically-disadvantaged families. Hence, to identify the policy's effect, we compare changes in the employment of teens in economically-disadvantaged families (the "treatment" group) over the study period with changes in the employment of their more advantaged counterparts (the "comparison" group). Throughout the study, family economic disadvantage is defined based on the educational attainment of the teen's parent(s). This "difference-in-difference" approach has been used previously in related work on single mothers by Schoeni and Blank (2000) and Meyer and Rosenbaum (2000), among others.

[1] In a similar vein, Acs and Loprest (2001) found that an important source of unearned income for TANF "leavers" is the earned income of "other household members."

[2] For evidence that teens, particularly those in lower-income families, contribute to family expenses, see Entwisle, Alexander and Olson (2000) and Meeks (1998). Even in families in which teens spend a good portion of their earnings (net of work-related expenses) on personal items such as their own clothing, this still serves to reduce the demand on their parents' limited financial resources.

[3] Calculations were made by the authors using the March 2001 Current Population Survey. The amounts and share figures reported are median values. Lino and Johnson (1999) report a similar share figure: they found that teens' earnings comprise 9 percent of total family income for lower-income—largely single-parent—families.

Overall there is no difference in teen employment rates for 1995/96 and 2000/01. However, we find a significant difference in the employment pattern of teens in economically-disadvantaged and more advantaged families before and after 1996. Employment rates for teens in economically-disadvantaged families significantly *increased* after 1996 while employment rates for those in more-advantaged families did not. After looking at these unadjusted trends, we use regression analysis to see if this pattern is maintained after controlling for changes in macroeconomic conditions, among other factors that may have also affected teen employment. In the analysis, we compare patterns for teens in single-mother and married-couple families and analyze three dimensions of teen employment: the employment decision, the joint work-schooling decision, and hours worked given employment.

There are two strands of related research on welfare and teen employment. The first strand has looked at the effect of welfare demonstrations---which have moved mothers into paid employment--on their teenage children's schooling and behavior. To date, researchers have found negative effects on teens' school achievement as well as evidence of increased smoking, drinking, and behavior problems (Brooks et al., 2001 and Morris and Duncan, 2001). Another strand of research has looked at welfare reform and teen employment patterns (Lerman, 2000; Brown, 2001; and Hao, Astone and Cherlin, 2001). While closely related to the study at hand, these studies exclusively focus on employment patterns in the post-TANF period. To our knowledge, our paper is the first study to compare teen employment patterns pre and post TANF. The results obtained here add to this earlier work and provide a more complete picture of the overall effect of the 1996 welfare legislation on teen outcomes.

TEEN EMPLOYMENT AND THE 1996 FEDERAL WELFARE LEGISLATION

After just over 60 years of existence, the 1996 federal welfare legislation terminated the Aid to Families for Dependent Children (AFDC) program and replaced it with the Temporary Assistance for Needy Families (TANF) program. The new program, which began in August 1996, was fully implemented in all states by July 1997.[4] This legislative change was not sudden but emerged as a result of a growing consensus among the public and policymakers alike that changes in the welfare system were needed. Starting in the early 1990s, many states sought waivers from the federal government to modify their state plans and experiment with a range of policies. We refer to this period as the AFDC/waiver period (versus the "AFDC only" or TANF periods). These experimental policies included placing time limits on benefits and requiring that children in welfare families attend school.

The introduction of TANF in 1996 dramatically changed welfare in all states. The principal intent of TANF, as indicated by its name, was to promote economic self sufficiency and move adults out of welfare and into work as quickly as possible as well as discourage program entry. Among its key provisions, the legislation placed a five-year cumulative time limit on the receipt of federally-funded welfare benefits. While a handful of states sought policies to cut-off welfare benefits prior to TANF during the waiver period, the federal

[4] In fact, 11 states did not implement TANF until as late as July 1997 (Council of Economic Advisers, 1999).

legislation is stricter since it limits federally-funded benefits in *all* states.[5] In addition, the federal legislation requires that a large (and increasing) fraction of single mothers in all states seek employment within two years of receipt. Notably, as of 2000, 38 states required that recipients seek work in exchange for cash benefits *immediately*, well-exceeding the federal requirement (Gais and Weaver, 2002). [6] Prior to TANF, state welfare programs had some work requirements, but targets typically went unmet and states generally counted a much broader set of education activities as "work" (Lurie, 2001). Recent studies indicates that while welfare recipients may not be precisely certain of the prevailing rules in their area, they appear to be well aware of the two main features discussed here: the work-focused nature of the legislation and the fact that government cash support cannot be received indefinitely (Cherlin et al., 2000; Porterfield, Pandey and Gunderson, 2000).

As hoped for by Congress, the introduction of TANF, in tandem with favorable economic conditions and changes in the Earned Income Tax Credit (EITC), increased the labor supply of economically-disadvantaged single mothers (for a review of the empirical findings, see Moffitt, 2002 and Blank, 2002). As discussed at the outset, it is also possible that some teens may have also responded to the shift from AFDC to TANF by increasing their employment, alongside their mothers to help make ends meet and/or finance their own consumption needs to reduce their demands on their parents' resources (Brooks et al. 2001; Brown, 2001). If this indeed occurred, we would expect to observe a differential (and positive) impact on teens in more economically-disadvantaged, single-mother families relative to teens in other families, all else equal.

One might further expect a positive impact on teens in these families as a result of what might be called a "role model" effect. That is, mothers' employment--induced by welfare reform--may spur their children to do the same (for evidence of role model effects, see Lerman, 2000; Duncan and Chase-Lansdale, 2001, Pabilonia, 2001; Hao et al. 2001; and Haveman and Wolfe, 1994).

Working in the opposite direction, it is also possible that TANF may reduce teen employment. As mothers go to work, some teens may undertake more household responsibilities rather than employment (Brooks et al., 2001; Gager, Cooney and Call, 1999). Further, as TANF increases the labor supply of low-income single mothers, this may reduce teen employment due to a displacement effect (Hao et al., 2001). While such an effect is likely to affect all teens, the effect is expected to be more pronounced for more economically disadvantaged teens since they are more likely to compete in the same local labor market as

[5] Two exceptions are Vermont and Michigan, which use state TANF "Maintenance of Effort funds" (states must spend at least 75% of their 1994 AFDC expenditure on TANF) to cover recipients so that there is no effective time limit. Six other states, including California, have a cumulative time limit on benefits received by the adult member of the case only, using state funds to cover children (see Pavetti and Bloom, 2001). Nonetheless, a substantially higher fraction of U.S. welfare recipients are potentially subject to time limits in the TANF era as compared to the earlier period.

[6] These work requirements have "teeth" because states are willing and able to sanction non-cooperative program recipients (see Bloom and Winstead, 2002; and Pavetti and Bloom, 2001) by cutting or reducing their benefits. It is also in states' interest to get recipients to work because they must meet ever-increasing federal work participation targets or face penalties and sanctions of their own (U.S. House of Representatives, 2000).

poor single mothers (Hao et al., 2001). Whether or not TANF affects teen employment rates through this "channel" depends critically on the degree to which teens and single mothers are substitutes in employment. Recent research has largely focused on substitution among adults, and the findings have varied considerably. Bartik (2002) found evidence of a considerable negative effect of the increase in single mothers' labor supply on the employment of male high school dropouts, while Lerman and Ratcliffe (2001) found no evidence of displacement effects. With respect to substitution in employment among adult women and teens, evidence appears to be limited to Grant and Hamermesh (1981). They found that adults white women and youths are substitutes in employment but their results are limited to the manufacturing sector for a much earlier time period, 1970.

Finally, there is at least one welfare policy change from the AFDC/waiver to the TANF era that directly affects teens, and, in turn, may affect their employment along with their schooling decisions. Specifically, following TANF, over 30 states adopted a policy to make welfare benefits contingent upon school attendance of children in the 16-19 age range. Prior to TANF, many fewer states (9) had experimented with such a policy under the federal waiver program.[7] To the extent that schooling and employment are substitutes, this policy change is expected to reduce employment and increase school attendance, all else equal. Hao et al. (2001) also argue that the time-limited nature of TANF may encourage teens to attend school to ensure that they are employable in the future.

RELATED RESEARCH LITERATURE

To date, research on the effect of the 1996 welfare legislation on teen employment has been fairly limited. Lerman (2000) and Brown (2001) compared the work activity of high school youths age 16-17 who were in welfare families with those in welfare-leaver families using the 1997 National Survey of America's Families (NSAF). Both researchers found that teens in welfare-leaver families work more, but neither was able to isolate whether this was due to the change in welfare status or simply reflected the fact that teens in higher-income families (e.g. with employed and/or highly-educated parents) tend to work more.

Hao, Astone, and Cherlin (2001) completed the most closely-related and comprehensive study to date. They looked at the effect of state welfare policies, measured in terms of strictness, on teen employment and school enrollment in the post-TANF era using individual-level data from the 1997 National Longitudinal Survey of Youth Their welfare policy variable is a composite based on 10 state welfare provisions (such as time limits and sanctions). Their results are consistent with a displacement story. For instance, for lower-income teens enrolled in school, they found that employment rates are lower for those living in states with a stricter policy regime as compared to those in states with a more lenient regime, all else equal. Further, they found that lower-income teens are more likely to be idle (neither in school nor employed) in states with a stricter policy regime.

There is also a growing literature that teens' employment is affected by family economic status (Lerman, 1986, 2000; Hao et al., 2001; Pabilonia, 2001; U.S. Bureau of Labor

[7] Under AFDC, there was no such policy in place. Figures are from Urban Institute's Welfare Reform Database (2002).

Statistics, 2000). On the one hand, it is expected that teens in more economically disadvantaged households would work more to supplement their family's income, either to contribute to their families' coffer or meet their own direct consumption needs such as clothes or car maintenance, which would also aid the family by drawing upon fewer of their parents' resources. On the other hand, there are several reasons why teens in such families may work less. Among these, they may lack transportation (due to typically having fewer adults in the household to provide transportation), may lack networking opportunities (again due to fewer available adults in the household), or may have fewer job opportunities available where they live. In addition, teens in larger families and in single-parent families spend more time on household chores, reducing time available for paid employment (Gager et al., 1999).

METHODOLOGY

The analysis presented here was conducted using two independent cross-sections of the CPS: 1) data from the 1995-1996 period when AFDC and in some cases federal waivers prevailed and 2) data from 2000-2001, well after the implementation of TANF. This approach allows us to look at how the 1996 federal welfare legislation affected the labor supply decisions and related earnings of individuals in a fixed age cohort (teens ages 16-19). This approach is taken rather than following the same set of teens over time because the "window" for being a teen in both periods is very short; that is, few individuals would fall within the age interval of interest at both points in time.

In the analysis, we compare the employment of teens who are in more economically-disadvantaged families and hence likely to be affected by changes in welfare reform--the treatment group--and teens who are in more economically-successful families and hence unlikely to be affected by changes in welfare reform--a comparison group--for both the pre and post-TANF periods. In the literature, this has approach has been referred to as a "difference-in-difference" analysis. Moffitt and Ver Ploeg (2001) point to the particular usefulness of this approach in looking at broad effects of a national policy change. Previously this approach has been used to try to identify the effect of tax and transfer policies on adult women's labor supply, among other outcomes (see Ellwood, 1999; Schoeni and Blank, 2000; Meyer and Rosenbaum, 2000; and for reviews, see Moffitt, 2002 and Blank, 2002).[8]

While a difference-in-difference approach has been the dominant approach in looking at the effects of TANF (Moffitt, 2002), it has limitations. Researchers have pointed out that a variety of factors may have changed and influenced the key outcome, apart from the policy change of interest. For instance, macroeconomic conditions may have differed in the two periods (Moffitt and Ver Ploeg, 2001; Schoeni and Blank, 2000). Moreover, changes in macroeconomic conditions may differentially affect the comparison and treatment groups (Meyer and Rosenbaum, 2000). In the analysis conducted here, we specifically address these points by controlling for state unemployment rates in the two periods so that the effect of

[8] An alternative approach is to take account of the specific state variation in the multitude of state welfare policies. While this approach allows one to identify the effect of specific policies, it does not provide information about the impact of the legislative change as a whole (see Moffitt and Ver Ploeg, 2001). Further, there is serious concern about whether it is possible to categorize states on the basis of specific features of the plan such as time limits because state policies have many and differing caveats. In addition, how a policy is implemented may differ from stated rules. In our analysis, state differences are captured with a state dummy variable.

TANF identified is "net" of this factor and by allowing the effect of changes in the unemployment rate to differ by subgroup. In addition, some estimated models include state fixed effects to capture variations in state policies, including differences in TANF plans.

Second, it is important to consider if other federal policies that might affect teen employment changed during the two periods. Notably, the EITC was considerably expanded in 1993 legislation but the majority of the changes had been implemented prior to the periods analyzed here.[9] Also, since the EITC is not available to youths, any impact would be indirect, via effects on parents' employment.

Another federal policy that changed was the minimum wage. The nominal value of the minimum wage increased over the study period from $4.25 per hour in 1995 to its current level of $5.15 in 1997. While this is a large nominal increase, the increase from 1995-96 to 2000-01 in inflation-adjusted terms was just 7.4 percent. Moreover, it has been estimated that only around 20 percent of employed teens were directly affected by the policy change (Neumark, Schweigzer, and Wascher, 1999). To date, evidence on the employment effect of the minimum wage has been mixed with some recent studies finding a very small negative effect on teens (Neumark and Wascher, 1996) and other researchers finding a positive effect (Card and Krueger, 1995). Of key importance here, given the difference-in-difference methodology, is whether a *differential* effect is expected for economically-disadvantaged youth and their more advantaged counterparts. Neumark and Wascher (1996) find that the minimum wage has more deleterious effects for more disadvantaged youth. If so, this would work against finding that TANF increased employment among more disadvantaged youth relative to their counterparts.

Finally, Moffitt and Ver Ploeg (2001) point to the importance of finding an appropriate comparison group for such an analysis. Most of our results are based on a single treatment-comparison group approach (teens in less-educated versus those in more-educated families) but we also report results from another treatment-comparison group design.

In the empirical work, we principally focus on the (dichotomous) teen employment decision. In addition, we look at the joint school enrollment-teen employment decision because these are likely to be made at the same time, as done in earlier work by Lerman (1986), Wascher and Neumark (1996), and Hao et al. (2001). In this approach, four possible joint outcomes are considered: 1) in school and employed; 2) in school and not employed; 3) not in school and employed; and 4) not in school and not employed. We also look at hours worked conditional on employment to provide evidence on the extensive margin of employment. Finally, we briefly examine the distribution of teen employment in the household.

Data

Data for this study are from the Current Population Survey (CPS), a monthly survey administered to approximately 50,000 households by the U.S. Census Bureau, that collects earnings, employment and demographic information on individuals age 15 and over.

[9] For instance, for a family with two children, in 1993, the phase-in rate was as low as 19.5 percent and the maximum credit was $1,511. By 1995 (1996), the phase-in rate was 36 (40) percent and the maximum credit was $3,110 ($3,556). Between 1996 and 2000, the phase-in rate was unchanged (40 percent) and the maximum credit increased by precisely the inflation rate to $3,888 (see U.S. House of Representatives, 2000).

Households are included in the survey on a rotation schedule of four months in the survey, eight months out of the survey, and then four months in the survey again. At the end of this 16-month period, the household is dropped from the sample. The individuals interviewed in the 4th and 16th months are called the "outgoing" rotation groups. The sample used here includes individuals age 16-19 (teens as defined here)[10] in the "outgoing" rotation group of the CPS that corresponds to the study periods September 1995-May 1996 (during the AFDC/waiver period) and September 2000-May 2001 (during the TANF period). As in prior related research on teen employment (Ruhm, 1997; Hao et al. 2001), we focus on employment during the school year only.[11] For both periods, the sample frame excludes summer months because summer employment patterns are quite different from school-year patterns. Each individual is included in our 9-month sample frame only once, either for their 4th or 16th month outgoing interview. An advantage of using the survey information for the "outgoing" rotation groups is that these individuals are asked to provide information on their hours worked per week during the week preceding the interview, allowing us to look only at school year (September through May) employment. Also, by using outgoing rotation groups cumulated over nine month's time, we have a sample that is more than twice as large as the March CPS.

The dates of the analysis were chosen for specific reasons. First, in January 1994, the CPS questionnaire underwent a substantial revision. By having the first period fall after January 1994 (though prior to August 1996), we have strictly comparable labor force data for both periods of analysis (see U.S. Bureau of Labor Statistics, 1994). The date of the post-TANF period was chosen to be well after the 1996 federal welfare legislation was passed to capture the full effects of the programmatic changes, both in terms of implementation and awareness of potential recipients. The sample frame for 2000-2001 ends in May 2001, and so the data should not be much affected by the recession which began in March 2001.

In selecting teens, the following sample restrictions were imposed (identical for both periods): 1) the teen lives in a household with her mother or both parents (thereby excluding teens who live on their own, in group quarters, or with fathers only);[12] 2) the teen's parent(s) are the head of the household (thereby excluding families that live in the household of another adult); and 3) the teen has never been married. These selections are made in order to study "typical" teens, those who are unmarried and live with one or both parents in their parent's household. The 1995-96 sample includes 12,042 teens (9,372 in married-couple and 2,670 in single-mother families) and the 2000-01 sample includes 12,351 teens (9,587 in married-couple families and 2,764 in single-parent families). An individual is defined as employed if present or absent

[10] 15-year olds are excluded because they are very small in number due to state laws that limit child employment for those 15 and under.

[11] In summer months, a student on vacation from high school (college) is coded as “not enrolled” and so it is not possible to meaningfully identify dropouts.

[12] The results obtained here are applicable for all at-home teens but not necessarily all teens. Myers (1986) points out that more economically successful teens may be able to afford to move out. On the other hand, those teens with characteristics that make them less successful in the labor market, may also make them less successful in a family situation. Thus, the bias might go either way. Single-father families are omitted because they are a very small fraction of the sample, particularly when the sample is further divided by educational attainment. In addition, to be included in the sample at least one of the teen’s parents has to be over 30 and at least one must be under 65. This restriction was made because it appears that some individuals coded in the CPS as “parents” of teens might be older siblings taking care of younger ones or grandparent caretakers.

from work during the week prior to the survey interview. State-level unemployment rates were also collected for the two sample frames and appended to these data.[13] The descriptive statistics are presented using weights to make the data nationally representative. The regression analysis uses unweighted data.

Statistical Analysis

Throughout the empirical work, the individual teen is the unit of analysis. In households which have more than one teen, each teen is included as a separate observation and they are all assigned the same parental characteristics.[14] The basic model specification is similar to that estimated by Meyer and Rosenbaum (2000) that focused on single mothers' employment. The following model is estimated here using all teens for both study periods:

$$\text{Teen employment outcome} = B_o + CX + B_1\,\text{URATE} + B_2\,\text{TANF} + B_3\,\text{LOWEDPARENT} + B_4\,\text{TANF*LOWEDPARENT} + B_5\,\text{STATE} + \varepsilon.$$

The majority of the empirical work focuses on the employment status decision, where teen employment outcome = 1 if the teen is employed and 0 otherwise. This decisions is estimated using logistic regression. Hours worked, conditional upon employment, is estimated using OLS. The four-part school enrollment-teen employment decision described in the prior section is estimated using multinomial logit.

The vector X captures individual-level determinants such as age (continuous measure, ages 16-19), race (Black, Asian, other race, White--omitted), and indicator variables for ethnicity (Hispanic) and gender (female). In addition, it includes a measure of the number of other children in the family and the presence of a preschool-age child to reflect potential home responsibilities. (For weighted means pre and post-TANF, see Table 1; for unweighted means used in the regression analysis see Appendix A). URATE is a state-level measure of the unemployment rate which indicates prevailing macroeconomic conditions in the state for the given period.[15] Some specifications also include state dummies to capture state-specific policies that may affect all teens. Such policies would include the state minimum wage (if any) and state rules about compulsory education in addition to any differences in state waiver or TANF plan rules. These state policies are not separately included because we are not interested in their independent impacts, per se.

Instead of using income to measure family economic status, we use level of parental education as done by Schoeni and Blank (2000) and Moffitt and Cherlin (2002). Level of parental education is a useful indicator of economic disadvantage in the CPS because it is highly correlated with income and yet it is not likely to be affected by changes in welfare policy, at least in the short term (Moffit and Cherlin, 2002). Income (or income as a percentage of the poverty line), on the other hand, is problematic because it may reflect short-term disruptions in

[13] These data are taken from "Local Area Unemployment Statistics" provided at the Bureau of Labor Statistics web site (U.S. Bureau of Labor Statistics, n.d.).

[14] The pattern of results reported is the same when the sample is restricted to "oldest teen" so that there is just one teen per household.

[15] In preliminary work, we also examined lagged unemployment rates and current and lagged measures of employment growth. The results were little changed.

family financial status or changes in labor supply caused by the change in welfare policy. In the empirical analysis, the variable for parental education is LOWEDPARENT. LOWEDPARENT is set equal to 1 if the parent with the higher level of educational attainment has a high school degree or below and 0 otherwise. (In the empirical work, we define LOWEDPARENT in an alternative way as a specification check).

As alluded to in the discussion above, family structure is also an important determinant of family economic status. We estimate teen employment separately for single-mother and married-couple families because we want to allow for TANF's effects (and the effects of all variables) to differ across family structure. A priori, we would expect TANF's effect to be stronger in magnitude for teens in economically-disadvantaged *single-mother* families given that such families have been historically more likely to rely on welfare than married-couple families.

To look at the effect of TANF, we include an indicator variable labeled TANF that is set equal to 1 if the observation is from the 2000-2001 period and 0 otherwise. In addition, we interact TANF with LOWEDPARENT. By doing so, we can identify the extent (and direction) to which the 1996 welfare legislation affected teen employment for those in economically disadvantaged families versus those in more advantaged families, holding other included variables (principally individual and family characteristics, and macroeconomic conditions) constant. The coefficient on TANF*LOWEDPARENT, B_4, provides what has been termed a "difference-in-difference" estimate of the policy effect. The meaning of B_4 can be most easily understood by directly comparing employment changes (holding other variables at their means) for the two groups of teens. In the case of simple linear regression, this can be accomplished by plugging in 0 or 1 for TANF and LOWEDPARENT in the model above as appropriate for each specified case as illustrated below:

<u>Teens in Economically-Disadvantaged ("low education") Families</u>
Teen employment pre-TANF = B_3
Teen employment post-TANF = $B_2 + B_3 + B_4$
Difference in teen employment in post-TANF versus pre-TANF period = $B_2 + B_4$

<u>Teens in Economically-Advantaged ("high education") Families</u>
Teen employment pre-TANF = 0 (Base Case)
Teen employment post-TANF = B_2
Difference in teen employment in post-TANF versus pre-TANF period: B_2
Difference-in-Difference estimate: B_4

In the case of logistic regression, which is used here to estimate employment status (0-1 dependent variable), the estimated coefficients must be transformed to obtain quantitative estimates of the employment effects.[16] Nonetheless, the logistic coefficients reported in the

[16] For small changes in a regressor, X_1, the marginal effect is computed as: $[B_1 * F(XB) * (1- F(XB))]$, where B_1 is the logit coefficient and F(XB) is the predicted probability evaluated at the sample means. When X_1 is a dummy variable, we follow the method recommended by Greene (2003) and instead calculate the marginal effect as $(F(XB)|X_i = 1) – ((F(XB)|X_i = 0)$, where XB is evaluated at the sample means for all other variables.

tables that follow provide useful information about the direction (positive or negative) and significance of the effects. In the text, we report quantitative effects based on these results.

RESULTS

Employment Status

Table 1 provides employment rates for teens in single-mother and married-couple families for September through May 1995-96 and 2000-01. As discussed in the prior section, employment is based on work activity during the week prior to the survey. The overall teen employment rate is around 39 percent, close to the rate found in prior studies.[17] The figures in Table 1 are also consistent with several teen employment patterns previously identified. Employment rates are much higher for older teens and for teens in married-couple families. Also, teens in lower-income families are significantly less likely to be employed than teens in higher-income families.

Table 1 further reports figures by parents' educational level (for teens in married-couple families, it refers to the educational level of the parent with the most education). The "dividing" line used to demarcate economic disadvantage is completed *high school or less.* The figures in Table 1 shows that teens in single-parent families with a mother with a high school education or less have significantly lower rates of employment than those with more highly educated mothers using this "dividing" line, but the pattern is much weaker (and reversed for 2000-01) for teens in married-couple families. The reason is that, holding educational attainment constant across family structure, married-couple families have the benefit of two potential earners and hence are at an economic advantage, all else equal, under this measure. Notably, we do find a significant difference in employment rates for teens in married-couple families by parental level of education if we re-define low-education for married-couple families as completed *less than high school*.[18]

The figures in Table 1 also indicate that the overall employment rate for teens in single-mother and married-couple families varied little from 1995-96 to 2000-01.[19] However, these figures mask an important subtrend in the data: teen employment significantly *increased* among those in families in which the parent(s) had low educational attainment – who were most likely to be affected by the 1996 welfare legislation – while they declined for families in which the parent(s) had high educational attainment – who were least likely to be affected by the 1996 policy change. For instance, the employment rate for teens in single-mother families with less-educated mothers increased 4.6 percentage points (from

[17] The percentage for all teens reported in Table 1 excludes father-only families but when they are included the figures are little changed. The figures obtained here are well within the ranges of teen employment rates reported from analyses using the Consumer Expenditure Survey (Johnson and Lino, 2000), the National Longitudinal Survey of Youth (Ruhm, 1997; Rothstein, 2001; Hao et al., 2001), and the Current Population Survey (Ruhm, 1997; Hao et al., 2001, and BLS, 2002)

[18] For 1995-96, the employment rate was only 28 percent if the parent with the most education had completed less than high school, but 43.1 percent if that parent had completed high school or more. For 2000-01, the figures were 35 percent and 41 percent respectively.

[19] As noted by Ruhm (1997) and can be seen in BLS employment-population ratios for teens, there has been no observable secular trend in aggregate teen employment rates over the past 30 years. There has been cyclical variation which is accounted for in the econometric work by controlling for aggregate unemployment rates.

27.6 to 32.2 percent) while the employment rate for teens in single-mother families with more highly-educated mothers decreased by 2.7 points (from 40.8 to 38.1 percent, though statistically insignificant). The difference in these figures, 7.3 percentage points (4.6 points minus -2.7 points) provides an "unadjusted" differences-in-differences estimate of the impact of the 1996 welfare legislation. This figure is "unadjusted" because other factors may have changed over the period, and in turn affected teen employment, including changes in prevailing area employment conditions (the economy slightly worsened over the period) and changes in individual teen and family characteristics. For married-couple families, the trends were in the same direction, though the magnitude of the difference-in-difference estimate is somewhat smaller, 5.9 percentage points.

Tables 2 and 3 provide results from several logistic regression models, which control for other factors that may have affected teen employment. Separate results are again provided for married-couple and single-mother families. Model 1 is the most parsimonious and includes only key variables of interest (TANF, LOWEDPARENT, and TANF x LOWEDPARENT) and the unemployment rate. Model 2 further includes controls for individual and family characteristics. Models 3-5 also include state fixed effects and have minor specification differences.

Most notable is that the coefficients for the policy variables of interest (TANF and TANF x LOWEDPARENT) are fairly robust across the various models.[20] In all specifications the estimated coefficient on TANF is negative and, with one exception (Model 6, Table 2), it is statistically significant. This indicates that overall teen employment rates declined over the course of the policy change. Of key interest is the estimated coefficient on TANF x LOWEDPARENT, the difference-in-difference estimate. The positive sign indicates that teens with less-educated parents increased their rate of employment relative to those with more-highly educated parents after the implementation of TANF. This positive sign is consistent with the hypothesis that TANF caused more economically-disadvantaged teens to go to work to help with family finances, rather than with a displacement story.

Apart from sign is the question of magnitude. For single-mother families, the model predicts that, at the means, teens in less-educated families increased their employment rate by 8.7 percentage points relative to teens in more-educated families. As shown in Figure 1, the source of the 8.7 percentage point change was a 3.1 percentage point increase in the predicted employment rate for teens in less-educated families (from 29.8 to 32.9 percent) and a 5.6 percentage point decrease in the predicted employment rate for teens in more-educated families (from 36.9 to 31.3 percent). For teens in married-couple families, the difference-in-difference estimate was in the same direction but the magnitude was half as large: 4.6 percentage points.[21]

[20] For brevity, coefficient estimates on individual variables are not reported. The estimated coefficient on age is positive and significant, reflecting the greater personal responsibility children assume as they grow older. The coefficients on the race and ethnicity variables are as expected, with employment rates significantly lower among non-whites and Hispanics.

[21] Results for Model 3 from a linear probability model were very similar. The quantitative estimate for teens in single-parent families was 7.6 percentage points and for teens in married-couple families, the estimate was 4.1 percentage points.

Results on other key variables are reported in Tables 2 and 3. As expected, the estimated coefficient on URATE is negative and significant in the estimated models, though it is rendered statistically insignificant when state effects are included in Table 2. Child variables were included to examine whether home responsibilities affect teen employment. The presence of a small child, for instance, might be expected to discourage teen employment, particularly in single-mother families, but the estimated coefficient on this variable is insignificant for both family types. The estimated coefficient on the total number of other children in the family (apart from the teen) was also insignificant for teens in single-parent families,[22] although it was significant and surprisingly positive for teens in married-couple families. As expected, teen employment in both family types significantly increases with mother's employment.

Consistent with the raw means in Table 1, the estimated coefficient on LOWEDPARENT is negative and statistically significant for teens in single-mother families. For married-couple families, the pattern of results regarding the effect of LOWEDPARENT is more mixed (as again found in Table 1). To investigate the sensitivity of the findings to the to the definition of LOWEDPARENT, we redefined this variable so that it assumes the value 1 if the parent has completed *less than high school* and 0 otherwise. Results are provided in Model 6 of Tables 2 and 3. For teens in married-couple families, the key policy finding is robust to this change in definition (that is, the estimated coefficient on LOWEDPARENT x TANF remains statistically significant). And, of particular note, the sign on LOWEDPARENT is now *negative* and statistically significant, which is what would be expected if the educational variable meaningfully demarcates economic status. On the other hand, for teens in single-parent families, the key policy finding is not robust to this change in variable definition, though the estimated coefficient on LOWEDPARENT remains negative and statistically significant.

We also investigated the possibility that changes in the business cycle may differentially affect employment rates for the two groups of teens. Specifically, in Model 5, we included an interaction term between the unemployment rate and the level of parent's education (URATE x LOWEDPARENT). A significant negative sign on this interaction, as found in Table 3 for teens in married-couple families, indicates that a lower unemployment rate disproportionately increases employment of teens in economically-disadvantaged families. Notably, when this interaction is included, the estimated coefficient on TANF x LOWEDPARENT remains statistically significant for teens in both types of couples, though it is weakened in magnitude and significance for teens in married-couple families.[23]

We also briefly examined the effect of TANF on teen employment using another treatment-comparison group strategy. Specifically, we examined TANF's effect on the relative employment of teens in low-education single mother families (treatment group) with teens in low-education married-couple families (comparison group). We expect TANF to have a

[22] We also examined other specifications of the child variables. These included dummy variables indicating one, two, and three or more additional children; the number of young children, the number of other teens, as well as interactions between number of other teens and presence of a small child. Notably, we still did not find significant employment effects for teens in single-mother families.

[23] We also re-estimated Model 4 of Table 2 without state fixed effects. The estimated coefficient on TANF x LOWEDPARENT remains statistically significant, but it does fall in magnitude. Also, in this model, the estimated coefficient on URATE is significant, but not the coefficient on URATE x LOWEDPARENT.

greater effect on the former because single-parent families, all else equal, rely more on welfare. The result were in the expected direction – we found that teens in low-education single-parent families increased their employment rates relative to teens in low-education married-couple families after TANF implementation – but the finding was not statistically significant.

School Enrollment and Employment

Results from the multinomial logit analyses (Tables 4 and 5) both extend and confirm results from the previous models.[24] Over the period that TANF was implemented, there was a significant decline in teens who were employed (whether in or out of school) relative to teens who were in school but not employed (see TANF coefficient in Equations 1 and 2, Tables 4 and 5). This is consistent with the overall drop in teen employment discussed earlier. Consistent with the findings in Tables 2 and 3 and earlier research, the analyses further indicate that teens with less-educated parents are less likely to be employed if they are in school than are teens with more-educated parents. Teens with less-educated parents are also more likely to be out of school than teens of more educated parents.

Of particular interest again is the estimated coefficient on the key policy variable, TANF x LOWEDPARENT. It is positive and statistically significant in Equation 1 (Tables 4 and 5), indicating that economically-disadvantaged teens in both single-mother and married-couple families were more likely to combine school with employment as compared with their more advantaged counterparts after the implementation of TANF. Also note that for teens in married-couple families the estimated coefficient on TANF x LOWEDPARENT is negative and statistically significant (10% level) in Equation 3, Table 5: this indicates that TANF decreased idleness (not in school and not employed) of economically-disadvantaged teens in married-couple families relative to their more advantaged counterparts. The same sign is observed in the model for teens in single-mother families, but the coefficient is not significant.

The pro-employment results obtained here differ markedly from those of Hao et al. (2001). Using data for the post-TANF era, Hao et al. found that low-income youth enrolled in school were *less* likely to be employed in states with a stricter policy regime. It is difficult to reconcile the difference in results, principally because the two studies investigate somewhat different research questions.

Other Employment Dimensions

Another important dimension of employment is number of hours worked, conditional on employment. Table 6, Panel A indicates average hours of work by teens, pre- and post-TANF and by parent's level of educational attainment. We find that conditional on employment, teens in more disadvantaged families work greater hours than those in more advantaged families, as discussed by Entwisle et al. (1999). Also, consistent with the key policy findings in Tables 1 and 2, we find that hours worked for teens in less-educated single mother families significantly increased after TANF implementation, while there was no

[24] Limits on the number of variables allowed in estimation of the multinomial logit models in the statistical program LIMDEP precluded inclusion of state fixed effects in these models. We view their omission as regrettable, but do not expect the results to be very much affected given that the key results in Tables 2 and 3 were not found to be very sensitive to their exclusion.

(significant) change for their more-educated counterparts. We next estimated OLS hours worked regressions with the same set of control variables as in Tables 2 and 3 (results not reported here) to obtain an "adjusted" difference-in-difference estimate. Notably, none of the key policy variables (TANF, TANF x LOWEDPARENT) were found to have a significant effect on hours worked for teens in either single-parent or married-couple families.[25] Taken together, our results suggest that the policy change affected teen employment at the extensive margin – whether to work or not—but not at the intensive margin.

Finally, we briefly investigated the effect of TANF on teen labor supply at the *household* level in Panel B of Table 6. Specifically, in households with more than one teen, did the number of employed teens as a percentage of all teens in the household differentially change for teens in less and more-economically advantaged families after TANF was implemented? To look at this we created a three category variable: no teens in household were employed, all teens in the household were employed, some teens in the household were employed. A priori the expected effect is ambiguous because while some teens may seek employment after TANF, others may instead increase their home responsibilities. The results stratified by level of parents' educational attainment are somewhat mixed, but there is again some indication of a differential effect, as seen in Panel B, Table 6.

SUMMARY AND DISCUSSION

Using data from the outgoing rotations of the CPS, we investigated the impacts of the 1996 welfare legislation on the employment status of economically-disadvantaged teens as compared with more advantaged teens in single-mother and married-couple families. Throughout the analysis, parental education was used to measure economic disadvantage because it is a potential indicator of reliance on welfare and is not likely to be affected by the policy change in the short term. Our key finding is that that after the implementation of TANF, teen employment significantly *increased* among those in economically-disadvantaged families relative to those in more advantaged families, even after controlling for macroeconomic conditions and other individual and family factors. Also, as expected, we found that the magnitude of the effect was substantially larger for teens in single-mother families as compared with teens in married-couple families. In addition, we found that teens in economically-disadvantaged families were significantly more likely to combine employment with school relative to their more advantaged counterparts after TANF was implemented. The results obtained here suggest that TANF's pro-employment effects go beyond the dramatic effects on single mothers identified by other researchers. Interestingly, we did not find that the policy significantly affected the intensive margin of teen employment – hours worked conditional on employment.

We regard our findings as a starting point – rather than as definitive – because there are important caveats. Specifically, while we have controlled for economic conditions, our methodology does not allow us to singularly isolate the impact of TANF from other national policies that changed over the same time period, though we believe these effects on teens were likely dwarfed by the impact of TANF. In addition, while the results obtained are fairly robust, we would feel more confident if we had obtained a significant pattern of findings using the

[25] These results are available upon request.

alternative comparison group (this was not the case). Finally, as discussed, our results stand at odds with those of Hao et al. (2001), suggesting the need for additional research and the use of alternative methodologies in order to develop a consensus view.

It is also useful to put the findings obtained here in the broader context of research on the effects of welfare reform. To date, much research has focused on the effects of mothers' employment—as a result of changes in welfare---on teen's academic and social outcomes. The results of this study indicate that researchers must further consider the effects of TANF on teen employment in assessing overall teen well-being. It is not yet well-established whether teen employment is, on net, positive or negative for teens; the theoretical effect of teen employment on outcomes is ambiguous and empirical evidence has been mixed (for further discussion and reviews of the evidence, see Ruhm, 1997; Mihalic and Elliott, 1997; Lerman, 2000; and Hao et al, 2001). On the one hand, youth employment may provide benefits, by helping teens develop good work habits and other skills that are important for success in school and future employment. In addition, as discussed here, such earnings can ease strained family finances, particularly in economically-disadvantaged single-parent families. As noted, teen earnings are as much as 10-14 percent of single-parent earnings. On the other hand, teen employment may negatively affect teens' outcomes, by reducing the amount and/or quality of human capital they accumulate. At present there seems to be some consensus in the research literature that the effects of teen employment partly depends on the number of hours worked, with long hours (generally measured as greater than 20 hours per week) being detrimental (Ruhm, 1997). Thus, the increase in teen employment observed here may benefit teens, provided their hours are not too long.

There are several important directions for future research. First, as discussed, it would be important to further investigate the robustness of the results obtained. Second, in looking at the effect of TANF on teens, it is important to explicitly examine its impact on household responsibilities as well as on changes in market work since teens are an important potential source of both household and market labor, especially in economically-disadvantaged families. To what extent has teens' allocation of time (broadly defined) changed as a result of TANF? In the CPS data, we did not find that "family variables" had much effect on teen employment. However, what is really needed is data that has information on family members' time use both in the market and at home. Third, this paper has focused on the increase in teen employment of those in economically-disadvantaged families relative to those in more-advantaged families, with the difference attributed to TANF. However, from the analysis it is not clear why more advantaged teens *reduced* their employment during this same time period. Again, time use data might help explain this change in teen employment. As of January 2003, the U.S. Bureau of Labor Statistics has begun a time use survey of Americans age 15 and over. While these data cannot address the specific questions raised here, they can be used in future to better understand how teens' economic behavior in the market and in the household responds to policy changes.

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Table 1. Percent of Teens Employed (last week) During School Years 1995/96 and 2000/01, by Family Type and Individual and Family Characteristics.

	% Teens Employed Single-Mother Families			% Teens Employed Married-Couple Families		
	95/96	*00/01*	*Change*	*95/96*	*00/01*	*Change*
All Teens	33.5	35.0	1.5	41.8	40.8	-1.0
Males	32.4	30.9	-1.5	41.9	40.0	-1.9*
Females	34.7	38.8	4.1**	41.8	41.5	-0.3
By Age						
Age 16	22.7	24.3	1.6	28.8	27.3	-1.5
Age 17	34.1	34.2	0.1	43.6	41.7	-1.9
Age 18	39.5	42.6	3.1	49.1	47.0	-2.1
Age 19	47.2	45.6	-1.6	55.2	55.9	0.7
By Race/Ethnicity						
White	41.4	42.2	0.8	44.2	43.3	-0.9
Black	21.4	21.5	0.1	27.2	26.1	-1.1
Asian	15.9	31.7	15.8**	26.8	24.4	-2.4
Other	31.4	23.1	-8.3	28.1	29.5	1.4
Hispanic	24.6	34.8	10.2***	29.8	35.7	5.9***
By Parent's Education Level[1]						
High School or Less	27.6	32.2	4.6***	40.6	43.4	2.8**
More than High School	40.8	38.1	-2.7	42.5	39.4	-3.1***
By School Enrollment						
Enrolled In School	30.4	31.0	0.6	38.5	36.8	-1.7**
Not Enrolled In School	43.9	49.9	6.0**	63.2	67.4	4.2**
By Family Income						
<150% of Poverty	28.1	26.2	-1.9	30.6	34.4	3.8**
>150% of Poverty	41.3	44.2	2.9	44.6	42.1	-2.5***
By Children in Family						
One Child	38.8	38.9	0.1	41.8	41.1	-0.7
2 Children	30.3	31.6	1.3	42.7	41.2	-1.5**
3 or more Children	30.7	33.4	2.7	40.8	41.2	0.4
Child < 6 years old present	23.2	28.4	5.2	36.3	41.6	5.3*
Child 6+ years old present	34.5	35.5	1.0	42.2	40.7	-1.5**
Sample size	2,670	2,764		9,372	9,587	

Notes: Weighted percentages are shown.

[1] Refers to educational level of parent with most education in married-couple families.

*significantly different from 1995/96 at 10% level; **significantly different from 1995/96 at 5% level;***significantly different from 1995/96 at 1% level.

Table 2. Teens in Single-Mother Families, Logistic Regression Results, Employed Last Week.

Variable	Model 1 Coefficients	Model 2 Coefficients	Model 3 Coefficients	Model 4 Coefficients	Model 5 Coefficients	Model 6 Coefficients
TANF	-0.3219***	-0.3714***	-0.2499***	-0.2313**	-0.2453**	-0.1004
	(0.0836)	(0.0879)	(0.0965)	(0.0960)	(0.0991)	(0.0808)
LOWEDPARENT[a]	-0.5667***	-0.3425***	-0.3194***	-0.4257***	-0.2521	-0.2663**
	(0.0830)	(0.0889)	(0.0904)	(0.0890)	(0.3394)	(0.1216)
TANF x LOWEDPARENT[a]	0.3709***	0.3902***	0.3929***	0.4282***	0.3831***	0.2358
	(0.1152)	(0.1212)	(0.1233)	(0.1224)	(0.1320)	(0.1651)
URATE	-0.2013***	-0.1490***	0.0163	0.0183	0.0224	0.0118
	(0.0281)	(0.0292)	(0.0619)	(0.0614)	(0.0686)	(0.0618)
URATE x LOWEDPARENT[a]					-0.0123	
					(0.0596)	
NUMBER OF OTHER KIDS		0.0111	0.0113	-0.0010	0.0113	0.0128
		(0.0291)	(0.0298)	(0.0294)	(0.0298)	(0.0299)
CHILD < 6 IN HOUSEHOLD		0.0660	0.0712	-0.0318	0.0708	0.0664
		(0.1327)	(0.1348)	(0.1329)	(0.1348)	(0.1346)
EMPLOYED MOM		0.7154***	0.6809***		0.6806***	0.6757***
		(0.0794)	(0.0805)		(0.0805)	(0.0815)
INTERCEPT	0.7661***	-6.5047**	-8.1456**	-7.5481***	-8.1783***	-8.2012***
	(0.1625)	(0.5244)	(0.6823)	(0.6717)	(0.7007)	(0.6810)
MODEL CONTROLS FOR:						
Individual Characteristics	no	yes	yes	yes	yes	yes
State Fixed Effects	no	no	yes	yes	yes	yes
Log-Likelihood	-3514.55	-3514.55	-3514.55	-3514.55	-3514.55	-3514.55

Note: n = 5,434. Standard errors in parentheses. The individual characteristics included in Models 2-5 are controls for age, gender, race, and ethnicity.
*significant at the 10% level; ** significant at the 5% level; ***significant at the 1% level.
[a] High School completion or less for Models 1-5; Less than High School completion for Model 6.

Table 3. Teens in Married-Couple Families, Logistic Regression Results, Employed Last Week.

Variable	Model 1 Coefficients	Model 2 Coefficients	Model 3 Coefficients	Model 4 Coefficients	Model 5 Coefficients	Model 6 Coefficients
TANF	-0.2762***	-0.2436***	-0.1849***	-0.1846***	-0.1676***	-0.1541***
	(0.0371)	(0.0384)	(0.0422)	(0.0421)	(0.0428)	(0.0376)
LOWEDPARENT[a]	-0.0332	0.0806*	0.0987**	0.0535	0.4956***	-0.2610***
	(0.0446)	(0.0468)	(0.0474)	(0.0470)	(0.1691)	(0.0931)
TANF x LOWEDPARENT[a]	0.1901***	0.1897***	0.1870***	0.2004***	0.1332*	0.3327**
	(0.0635)	(0.0659)	(0.0664)	(0.0661)	(0.0700)	(0.1299)
URATE	-0.2175***	-0.1826***	-0.0827***	-0.0827***	-0.0564*	-0.0813***
	(0.0138)	(0.0142)	(0.0304)	(0.0303)	(0.0322)	(0.0304)
URATE x LOWEDPARENT[a]					-0.0737*	
					(0.0301)	
NUMBER OF OTHER KIDS		0.0651***	0.0557***	0.0382***	0.0560***	0.0573***
		(0.0142)	(0.0144)	(0.0143)	(0.0144)	(0.0145)
CHILD < 6 IN HOUSEHOLD		0.0783	0.0845	0.0386	0.0847	0.0895
		(0.0690)	(0.0695)	(0.0691)	(0.0696)	(0.0694)
EMPLOYED MOM		0.4728***	0.4598***		0.4559***	0.4350***
		(0.0378)	(0.0382)		(0.0382)	(0.0382)
INTERCEPT	0.8852***	-6.7001***	-7.5264***	-7.0871***	-7.6765***	-7.4913***
	(0.0767)	(0.2648)	(0.3343)	(0.3305)	(0.3399)	(0.3341)
MODEL CONTROLS FOR:						
Individual Characteristics	no	yes	yes	yes	yes	yes
State Fixed Effects	no	no	yes	yes	yes	yes
Log-Likelihood	-12896.11	-12896.11	-12896.11	-12896.11	-12896.11	-12896.11

Note: n = 18,959. Standard errors in parentheses. The individual characteristics included in Models 2-5 are controls for age, gender, race, and ethnicity.
* significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level.
[a] High School completion or less for Models 1-5; Less than High School completion for Model 6.

Table 4. Multinomial Logit Results, Teens in Single Mother Families

	Equation 1: In school and employed v. In school, not employed	Equation 2: Not in school, employed v. In school, not employed	Equation 3: Not in school, not employed v. In school, not employed
TANF	-0.3607***	-0.4672***	-0.0753
	(0.0963)	(0.1577)	(0.1674)
LOWEDPARENT	-0.3985***	0.3231**	0.7263***
	(0.1022)	(0.1489)	(0.1467)
TANF*LOWEDPARENT	0.3997***	0.3047	-0.1268
	(0.1381)	(0.2067)	(0.2027)
STATE UNEMP RATE	-0.1398***	-0.1624***	0.0170
	(0.0333)	(0.0494)	(0.0430)
AGE	0.2949***	1.2894***	0.9547***
	(0.0336)	(0.0565)	(0.0484)
FEMALE	0.3225***	-0.0531	-0.0826
	(0.0687)	(0.1026)	(0.0959)
BLACK	-1.0650***	-1.0895***	-0.1647
	(0.0879)	(0.1313)	(0.1103)
ASIAN	-0.5337**	-0.8716**	-0.3014
	(0.2120)	(0.3620)	(0.3035)
OTHER RACE	-0.7021***	-0.2325	0.2439
	(0.2197)	(0.2831)	(0.2387)
HISPANIC	-0.4050***	-0.5528***	-0.0884
	(0.1098)	(0.1629)	(0.1410)
NUMBER OTHER KIDS	0.0004	0.0820*	0.0632
	(0.0337)	(0.0481)	(0.0417)
CHILD < 6 IN FAMILY	0.1560	-0.2068	0.0006
	(0.1488)	(0.2459)	(0.1885)
EMPLOYED MOM	0.7421***	0.4198***	-0.3193***
	(0.0941)	(0.1317)	(0.1054)
INTERCEPT	-5.2550***	-23.6414***	-18.5310***
	(0.6153)	(1.0652)	(0.9074)

N = 5,434. Table shows coefficients, with standard errors in parentheses. State effects were not included in this model (see footnote 24).

* significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level.

Table 5. Multinomial Logit Results, Teens in Married Couple Families

	Equation 1: In school and employed v. In school, not employed	Equation 2: Not in school, employed v. In school, not employed	Equation 3: Not in school, not employed v. In school, not employed
TANF	-0.2619***	-0.0859	0.1079
	(0.0417)	(0.0837)	(0.1100)
LOWEDPARENT	-0.0146	1.1136***	1.1527***
	(0.0516)	(0.0868)	(0.1076)
TANF*LOWEDPARENT	0.1881***	0.0384	-0.2873*
	(0.0726)	(0.1209)	(0.1517)
STATE UNEMP RATE	-0.2001***	-0.0815***	0.0553*
	(0.0154)	(0.0266)	(0.0307)
AGE	0.3181***	1.3523***	0.9456***
	(0.0158)	(0.0346)	(0.0383)
FEMALE	0.1326***	-0.3518***	-0.0902
	(0.0328)	(0.0609)	(0.0750)
BLACK	-0.7608***	-0.7342***	0.2541**
	(0.0713)	(0.1282)	(0.1176)
ASIAN	-0.6901***	-1.3021***	-0.8466***
	(0.0895)	(0.2058)	(0.2315)
OTHER RACE	-0.6310***	-0.3386	0.3385*
	(0.1308)	(0.2096)	(0.1949)
HISPANIC	-0.5424***	-0.3343***	-0.1033
	(0.0665)	(0.1013)	(0.1150)
NUMBER OTHER KIDS	0.0719***	0.0468*	0.0276
	(0.0153)	(0.0274)	(0.0326)
CHILD < 6 IN FAMILY	0.0804	0.3404**	0.4093***
	(0.0746)	(0.1334)	(0.1475)
EMPLOYED MOM	0.5013***	0.1756**	-0.3448***
	(0.0415)	(0.0705)	(0.0802)
INTERCEPT	-5.2443***	-25.8342***	-19.6645***
	(0.2902)	(0.6537)	(0.7198)

N = 18,959. Table shows coefficients with standard errors in parentheses. State effects were not included in this model (see footnote 24).

* significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level.

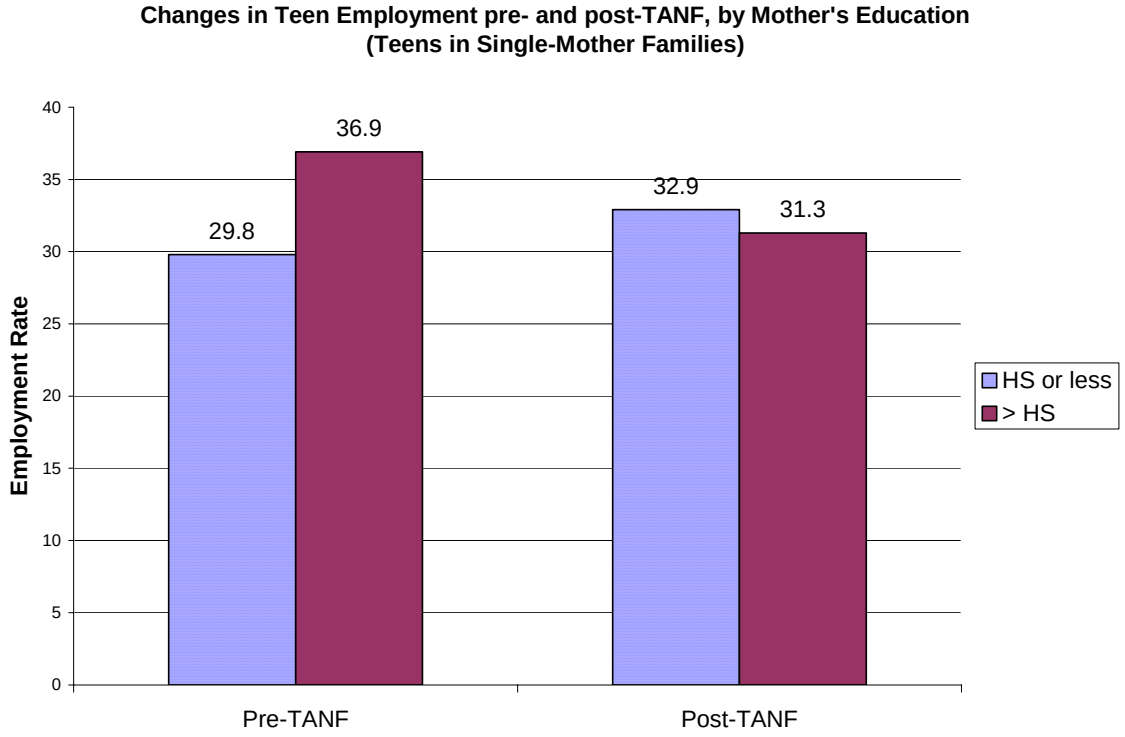
Table 6. Other Teen Employment Indicators: Average Hours Worked by Teens and Distribution of Teen Employment in Household (as of last week) During School Years 1995/96 and 2000/01, by Family Type and Selected Characteristics

	Single-Mother Families			Married-Couple Families		
	95/96	*00/01*	*Change*	*95/96*	*00/01*	*Change*
Panel A: Average Hours Worked						
All Teens	23.1	23.7	0.6	21.8	21.3	-0.5*
By Parents' Education Level[1]						
High School or Less	24.5	26.0	1.5*	24.9	24.3	-0.6
More than High School	22.0	21.5	-0.5	20.3	19.9	-0.4
By Parents' Education Level[1] and School Enrollment						
Enrolled in School						
High School or Less	19.8	21.6	1.8**	19.9	19.7	-0.2
More than High School	18.2	18.4	0.2	17.9	17.5	-0.4
Not Enrolled in School						
High School or Less	32.4	33.6	1.2	36.5	35.6	-0.9
More than High School	34.7	31.2	-3.5**	35.8	34.5	-1.3
Sample size (all workers)	886	956		3,816	3,841	
Panel B: Distribution of Teen Employment in Households with Two or More Teens[2]						
All Households						
No Teens Work	35.3	34.8	-0.5	32.2	37.1	4.9***
Some Teens Work	34.5	38.5	4.0	37.3	35.8	-1.5
All Teens Work	30.3	26.7	-3.5	30.5	27.1	-3.6**
By Parents' Education Level[1]						
High School or Less						
No Teens Work	41.5	38.3	-3.2	34.6	31.4	-3.2
Some Teens Work	39.2	36.4	-2.8	33.8	41.1	7.4**
All Teens Work	19.3	25.3	6.0	31.6	27.5	-4.1
More than High School						
No Teens Work	27.1	30.1	3.0	30.9	39.7	8.9***
Some Teens Work	28.4	41.3	12.9***	39.3	33.3	-6.0***
All Teens Work	44.5	28.6	-15.9**	29.9	27.0	-2.9
Sample size (all households)	356	382		1,417	1,515	

[1]Parent's educational level refers to educational level of parent with most education. In married couple families, this might be the father or mother.

[2]The three categories (no work, some work, all work) should sum to 100% (except for rounding error). Families with only one teen are not included in any of the analysis presented. *change from 1995/96 to 2000/01 significant at 10% level; ** change significant at 5% level; *** change significant at 1% level.

Figure 1


Changes in Teen Employment pre- and post-TANF, by Mother's Education
(Teens in Single-Mother Families)
Employment Rate
40
35
30
25
20
15
10
5
0
29.8
36.9
32.9
31.3
Pre-TANF
Post-TANF
HS or less
> HS

Appendix 1. Mean values for independent variables used in regressions

	Single-Mother Families	Married-Couple Families
TANF	.509	.506
LOWEDPARENT	.524	.321
TANF*LOWEDPARENT	.258	.152
STATE UNEMP RATE	5.168	5.026
AGE	17.308	17.313
FEMALE	.509	.477
BLACK	.293	.071
ASIAN	.028	.041
OTHER RACE	.033	.022
HISPANIC	.135	.090
NUMBER OTHER KIDS	1.047	1.183
CHILD <6 IN FAMILY	.076	.067
EMPLOYED MOM	.750	.760
sample size	5434	18959

Note: The mean values are unweighted.