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ABSTRACT

This study hypothesizes that stringent welfare policies may promote school enrollment and reduce employment among adolescents from low-income, single parent, and welfare families. Using data from the National Longitudinal Survey of Youth, 1997 cohort, combined with state-level data sources, this analysis uses a dynamic model to study school and work transitions of adolescents and separates out the welfare policies from the non-welfare state policies, youth-specific local labor market conditions, and unobserved state characteristics and period effects. The study also explores the positive and negative effects that parents' (especially mothers') transition to work may have on adolescents' decisions concerning school enrollment and employment. Findings from this study indicate that in states with stringent welfare policies, low-income adolescent students are less likely to get or keep a job while in school than their counterparts in states with less stringent welfare policies. Though focusing entirely on schooling may be the best way for low-income youth to build human capital, the study points out that not having a formal job may prevent adolescents from acquiring the skills necessary to obtain and keep a job in the future. The analysis also suggests that, though the positive effects of parental employment in terms of influence and self-esteem may be significant, the family process whereby mothers enter the workforce may impose stress and lead to detrimental outcomes for adolescents, especially those who have dropped out of school. (Contains 40 references.) (SM)

Adolescents' School Enrollment and Employment: Effect of State Welfare Policies*

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ADOLESCENTS' SCHOOL ENROLLMENT AND EMPLOYMENT: EFFECT OF STATE WELFARE POLICIES

Abstract

This study hypothesizes that stringent state welfare policies may promote enrollment and reduce employment through four mechanisms taking place in the larger society, the local labor market and the family, particularly for adolescents from low-income families. We conduct a rigorous and robust analysis using a dynamic model and separating out the welfare policies from non-welfare state policies, youth-specific state labor market conditions, and unobserved state characteristics and period effects. Using longitudinal data from the NLSY97, we have tested the welfare policy effects over a period across welfare waivers and welfare reform (1994-1999) for adolescents aged 14-18. We find that welfare reform may change the behavior of teenage *students* by encouraging full engagement in schooling and reducing employment while in school. If focusing entirely on schooling is the best way for low-income youth to build human capital, these possible effects of welfare reform could be beneficial. However, if low-income youth obtain "soft skills" from a formal job and if "soft skills" turn out to be decisive for low-income youth's economic future, these welfare policy effects could be harmful. In addition, stringent state welfare policies appear to have a detrimental effect on teenage *dropouts* from low-income families.

ADOLESCENTS' SCHOOL ENROLLMENT AND EMPLOYMENT: EFFECT OF STATE WELFARE POLICIES

INTRODUCTION

The welfare reform legislation of 1996, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), has greatly changed the nature of public assistance in the United States. The former Aid to Families with Dependent Children (AFDC) program has been transformed into Temporary Assistance to Needy Families (TANF). PRWORA mandates that states implement time limits on the receipt of TANF benefits, work requirements for most TANF recipients, and sanctions on TANF recipients for non-compliance with the rules.

Under these federal guidelines, PRWORA gives states wide latitude in designing and implementing their specific welfare policies. Moreover, during the years immediately preceding PRWORA the federal government granted waivers to a number of states to design and implement many of the policies PRWORA later adopted. Thus, for most of the 1990s, residents of different states have confronted a set of incentives and disincentives to their behavior emanating from welfare policy that is differentially *stringent* (e.g., shorter or longer time limits, more or less requirements for work, partial or full sanctions). This situation facilitates research on the effects of state welfare policies since scholars may compare the behavior of similar people who live in different policy environments.

Scholarly attention is currently focused on the success of current recipients of public assistance in obtaining work and the effect of this transition on their children. In this paper, we take a different tack and examine the consequences of welfare reform for *adolescents* from both welfare and non-welfare families. It is important to focus on adolescents because, to a large extent, the success of welfare reform will be judged by its effects on the generation entering adulthood and facing the choice of work or welfare. School enrollment and employment during

adolescence set forth the pathway that may lead to self-sufficiency or welfare dependency. This paper will examine the effects of state welfare policies (among other factors) on school enrollment and formal employment of adolescents aged 14-18.

We postulate that welfare policies can have consequences for all adolescents but the effects are stronger for adolescents of low-income, single-mother, or welfare families. Variations in state welfare policies can affect adolescents' school and work through four mechanisms. First, the preamble to PRWORA clearly indicates an intent to transform the views on public assistance held by *young* people making the transition to adulthood. More stringent welfare-to-work policies in a state send a stronger signal to all adolescents living in the state that time-unlimited welfare is no longer an option. The signal has been amplified by the mass media and the school systems and has greater resonance for youth at risk of future welfare use. Rational adolescents will, it is hoped, make decisions that maximize their adult employability by increasing investment in human capital and thereby promoting school enrollment. We call this a "signaling" effect.

Second, the more stringent the welfare policies are in a state, the greater will be the number of recipients leaving welfare for work and working while on the rolls, and the number of potential recipients working instead of joining the rolls. Welfare recipients are most likely to obtain low-paid, low-skilled jobs, such as those in the retail and service sectors. But these are the typical jobs for adolescents. Thus the indirect effect of stringent welfare policies is to reduce formal employment of adolescents. We expect that such an effect is for all adolescents but stronger for youths of low-income families because the low-income labor markets are crowded by the welfare-to-work women in poorer neighborhoods. We call this a "competing labor market" effect.

The third and fourth mechanisms take place in the families where parents on or at risk of welfare are themselves facing the policies. The state variation in welfare policies can affect adolescents' school and work through two family processes of opposite directions. On the one hand, maternal employment resulting from welfare-to-work transitions can enhance mothers' self-esteem, improve parenting styles, and establish role models, hence addressing children's developmental needs. We call this a "family reinforcing" effect. On the other, mothers' transition to work can change the daily routine dramatically, impose stress on adolescent children who are most vulnerable, and reduce the time of parental supervision, particularly between the end of school and dinner time when adolescents may engage in high-risk behavior. We call this a "family change" effect.

Our primary objective is to assess the overall policy effects, using longitudinal data from the National Longitudinal Survey of Youth, 1997 cohort (NLSY97) combined with state-level data sources. Our analysis has two features: (1) we study school and work transitions in both static and dynamic frameworks; and (2) we separate out the specific effects of state welfare policies by controlling for relevant non-welfare state policies, characteristics of the youth-specific labor market, time-invariant (unmeasured) state characteristics, and period effects.

BACKGROUND

Welfare Reform and Its Effects on Recipients and their Children

Because PRWORA has roots in the pre-PRWORA waiver period of the early 1990s, our review of welfare reform and its effects on recipients includes both waiver effects and PRWORA effects. Scholars have generated valuable research regarding the effects of pre-PRWORA waivers on caseloads and employment of former and current welfare recipients. The report of

the Council of Economic Advisers (1997) found that waiver activities explained 14-30 percent of aggregate state-level caseload decline between 1993 and 1996 after controlling for unemployment rates. Schoeni and Blank (2000) found strong evidence that waivers reduced public assistance participation and increased family income. Moffitt's (1999) study found that under waiver activities, less-educated women reduced AFDC participation and increased labor force attachment but not earnings. These effects persisted after controlling for unemployment rates and unmeasured state characteristics and period effects. Moffitt's (1999) finding suggested that waivers had a major impact on the likelihood that lower-educated women would take low-skilled, low-paid jobs, which may lead to lower work opportunities for adolescents living in poor neighborhoods where less-educated women concentrate.

Most studies of the effects of PRWORA have focused on evaluating a specific policy's effect on state caseloads. For example, Rector and Youssef (2000) find that harsher sanctions were associated with smaller caseloads, controlling for unemployment rates. Most of these studies do not consider the effects of other welfare and non-welfare policies. However, in a study of caseload composition, Moffitt and Stevens (2001) considered the major components of state welfare policies—work requirement, sanctions (partial or full loss of benefits for noncompliance with program rules), earning disregards (amount of earnings not included in determining the level of benefits), and time limits. They expected that welfare policies would have no clear-cut effect on the composition of caseloads because one could not presume that only the most job-ready women would leave the rolls. They noted that the most disadvantaged women (low levels of education and work experience, health problems, or difficulties finding child care) are more likely to be sanctioned off the rolls or to remain on the rolls until reaching their time limits. In either case, disadvantaged women in poor neighborhoods face low-skilled,

low-paid, and often temporary jobs, leading to a shrinking labor market for adolescents living in these neighborhoods.

A number of studies use randomized experimental designs to examine the effects of supported work for children in low-income families (Morris et al 2001). These studies focus on specific policies rather the complete diversity of state welfare policies. In an article summarizing the experimental results, Duncan and Chase-Lansdale (2001) point out that while supported work has a generally positive effect for elementary-school children, it causes detrimental increases in adolescents' school problems and risky behaviors. They also find that supported work affects children more through extra-familial processes such as childcare and after-school programs than through family processes, such as mental health and parenting.

Thus, the existing welfare literature provides some evidence that our hypothesized competing labor market effect is possible. However, it has not yet provided evidence that welfare reform spurs recipients to invest more in human capital, as a signaling hypothesis would predict for welfare recipients. The lack of a signaling effect on recipients may be attributed to two reasons. First, most state welfare policies emphasize finding jobs rather than enhancing human capital. Second, recipients with low human capital may face greater barriers in finding ways to enhance their human capital. Still, a signaling effect may be more relevant for adolescents, the majority of whom have not yet faced the difficulty of juggling family and work obligations. The findings about the detrimental effects of demonstration programs on adolescents in low-income families seem to suggest that the family change effect outweighs the family reinforcing effect. The finding that familial processes are less important than extra-familial processes supports our intention to include both the signaling and competing labor markets effects, which are operating outside of home, and an examination of all adolescents.

Adolescents' School and Work

School enrollment and employment during middle adolescence (14-18) are key behaviors shaping a young person's pathway to economic self-sufficiency. Enrollment in school has become increasingly important in the past two decades. Since 1980, real wages for young people with less than a high school diploma have declined, and among African Americans the real wages of those with a high school diploma and no post-secondary schooling also declined (Mare 1995; Wetzel 1995). Simultaneously, the real wages of college graduates went up (Mare 1995; Wetzel 1995). The alternative certificate for a high school diploma (GED) yields little additional return for high school dropouts (Cameron and Heckman 1993). These changes in the returns to education during the last fifth of the twentieth century made a high school diploma an absolute minimum level of education to guarantee earnings that will keep a person and his or her dependents out of poverty. Moreover, in a series of studies, Harris (1993, 1996) emphasizes how a high school diploma is useful even for a person on public assistance. Harris shows that a high school diploma increases the rates of exit from spells of welfare use, and reduces rates of re-entry into public assistance, among those who receive welfare.

The post-industrial era has seen an increasing entry of high school students into the workforce (Greenberger and Steinberg 1986). The expansion of retail and service sectors has generated new jobs that are flexible and short-term and therefore attract adolescents. The committee on the Health and Safety Implications of Child Labor (1998) estimates that about 44% of 16- and 17-year-olds work at some time during the year, based on parents report data. The biggest employer of adolescents is the retail sector, e.g., restaurants, fast-food outlets, and grocery stores. The next biggest employer is the service sector, e.g., health-care settings.

Scholars have tested a number of hypotheses about the consequences of working during middle adolescence while in school. These reflect very different conceptualizations of the nature of such employment. Some scholars emphasize what Marsh (1991) refers to as the "zero-sum" aspects of adolescent time, and hypothesize that work during high school negatively affects school performance, and thus, indirectly, long-term socioeconomic outcomes for young people. A number of studies demonstrate these negative effects on test scores (Marsh 1991), dropping out (McNeal 1997), college enrollment (Tienda and Ahituv 1996), mental health (Mortimer et al. 1994), family relationships (Greenberger and Steinberg 1986) and substance use (Steinberg, Fegley and Dornbush 1993). However, empirical evidence is not all consistent. For example, Schoenhals et al. (1998) find no detrimental effect of working while in school on academic outcomes after controlling for preexisting differences among youth. Lerman (2000) find that among low-income teens, working while in school has a positive correlation with school performance. Nonetheless, researchers seem to agree that if there are harmful effects, they are more likely to result from working substantial numbers of hours per week while school is in session.

The empirical evidence on the returns to working while in school for subsequent wage growth is inconsistent. Carr, Right and Brody (1996) show that the positive effects of working during high school on employment status and wages, ten years after leaving high school, may substantially offset the possible negative effects on college attendance and test scores. Ruhm (1997) finds that job-holding in high school is associated with substantially elevated future economic attainment. This effect may be due to the work experience acquired but may also be the result of failure to fully account for individual differences in capacities. In their study of future returns to working while in school, Hotz et al. (1999) control for the dynamic forms of

selection by modeling the educational and work choices of young men and find that the returns become much smaller and statistically insignificant.

These findings direct our attention to the possibility of differential selection of young people into employment while in school. O'Regan and Quigley (1996) find that the spatial isolation of minority and poor households decrease employment opportunity for youth. Where the underground economy proliferates in inner cities, youth employment opportunities are an important alternative to earning money illegally (Wilson 1987, 1996). For non-college bound youth, especially high school dropouts, employment while in school may provide human capital in the form of work experience and "soft skills"[1] and social capital in the form of references from former employers (Entwisle, Alexander and Olsen 2000). The soft skills and social capital may be particularly key for low-income and minority youth who lack such resources in their families and schools (Tienda and Stier 1996).

In short, the literature suggests that adolescents' work while in school may have a positive effect on long-term economic attainment and short-term academic achievement for low-income youth. If the labor market for teenagers in poor neighborhoods shrinks due to welfare reform they may be deprived of their only opportunity to develop soft skills, work experience, and labor market attachment. This would exacerbate the "competing labor market" effect of welfare reform for low-income youth.

THEORETICAL CONSIDERATIONS

[1] Murnane and Levy (1996) define "soft skills" as "the ability to work in groups and to make effective oral and written presentations". Because middle-class adolescents learn soft skills by attending good schools, from strong families, from participating in organized youth activities, employment while in school becomes the sole opportunity for adolescents from poor families to learn soft skills (Committee on the Health and Safety Implications of Child Labor 1998).

Our analysis requires models of both high school graduation and working while in school. Decision-making models of high school graduation conceptualize the decision to remain in school or to return to school as a function of parental investment in children's human capital (Becker 1991), the costs of being a student, the probability of success in school, and the value attached to having a high school diploma (Breen and Goldthorpe 1997), all of which are influenced by family, neighborhood, schools and peers (Brooks-Gunn et al. 1997). The established individual, familial and community predictors of high school graduation such as familial socioeconomic status (Mare 1995), family structure (Astone and McLanahan 1994), adolescent choices (Haveman and Wolfe 1994), and poor neighborhood (Brooks-Gunn et al. 1997) fit into this framework.

This framework can incorporate the potential role of social policy and other macro-social phenomena in adolescents' school enrollment. One mechanism is that social policy can directly affect the costs of being enrolled in school. For example, the provision of educational benefits to veterans of the armed services makes young African Americans who have served their country exhibit higher rates of school re-entry than others (Astone et al. 2000). A second mechanism by which social policy plays a role in school enrollment is that social policy can change adolescents' value placed on achieving a given level of education and thereby change adolescents' preference structure.

Models of the determinants of working while in school are at an early stage. A decision-making model considers adolescents' gain in their pocket money, parents and adolescents' anticipated gain in developing responsibility, punctuality, independence and work skills, and parents' and youth's worry about time allocation between school and work (e.g., Greenberger and steinberg 1986). Entwisle and colleagues (2000) show that, other things equal, youngsters,

especially boys, who are performing badly in school tend to work more and earlier than similar boys who are more engaged and successful. This finding suggests that work while in school is a form of partial disengagement with school. At the same time, the decision regarding employment is constrained by the local labor market conditions, especially the youth-specific labor market in the neighborhood. The more stringent welfare policies are in a state, the greater the youth labor market should shrink in poor neighborhoods, resulting in lower employment rates among low-income youth.

Modeling school and work separately treats the two decisions as if they are independent. A life course perspective strongly suggests that these two decisions are jointly made and the transitions among the joint enrollment-employment states are more realistic than a separate view of enrollment and employment. Elder (1998) posits that an individual's life course is best conceptualized as a series of events (such as entry into and exit from school) taking place within a number of domains of life (e.g. school and work) at different ages. This framework facilitates research on what Elder calls *life course trajectories* (events within a single domain over time) and what Elder calls *life course transitions* (the linkages among events in different domains). We take this approach to emphasize joint decisions about school enrollment and employment in a static view and the transitions within and between these two domains over time in a dynamic view. In what follows we derive our hypotheses regarding the signs and magnitudes of the signaling effect, the competing labor market effect, the family reinforcing effect, and the family change effect on the static probabilities and the transition probabilities.

When examining school and work jointly, we consider adolescents' preference structures as reflecting the importance of two modes of human capital investment, as well as the importance of increased current consumption, and of leisure. A full engagement in schooling

without working is the primary mode of human capital investment because school enrollment and engagement are the necessary conditions for high school graduation and post-secondary education. Work while in school reduces the time and energy a teenager devotes to schooling, leading to a partial disengagement in schooling; but it increases current consumption and probably increases "soft skills" and work experience useful in future work. Given the inconclusive findings about the consequence of teenage work for later economic attainment, human capital accumulation through working may not compensate completely for the partial disengagement in schooling. Among dropouts working may compensate for the loss of education and it also increases current consumption.

Table 1 lists our hypotheses for specific behavioral outcomes regarding adolescents' school and work. In the derivation of our hypotheses, the signaling effect is assumed to influence all youth because it includes a general message that human capital is important, but we expect the signaling effect to be substantially stronger among low-income youth because welfare option is more relevant to low-income youth. The competing labor market effect is assumed to influence also all youth with stronger effect on low-income youth because low-income youth live in the same neighborhoods where welfare-to-work women are working. The family reinforcing effect and family change effect are assumed to occur only in welfare or low-income families. In the following derivations, we focus on the theoretical predictions of welfare policy effects for low-income youth. The predictions are similar if we use welfare/non-welfare status or single vs. two-parent family status instead of the low-income/non low-income status.[2]

(Table 1 about here)

[2] In our empirical analysis, we estimated the differential effects of state welfare policies for youth from welfare vs. non-welfare families and for youth from single-mother vs. other families. The results (not shown in the paper but available upon request) are largely similar as the results for low-income vs. non low-income youth, which are presented in the paper.

From a static view, we consider four states by cross-classifying enrollment and employment—State1 (enrolled and not employed), State 2 (enrolled and employed), State 3 (not enrolled and not employed), and State 4 (not enrolled and employed). We predict the following relationships.

- State 2 versus State 1. Among low-income youths enrolled in school, those in states with more stringent welfare policies will be less likely to work because of the signal that focusing entirely on school is necessary to build human capital, competition in the low-wage labor market, and family reinforcing education values. These effects may be weakened by the family change effect. Thus, overall, stringent policies may be negatively related to the probability of being in State 2 (enrolled and employed) versus State 1 (enrolled and not employed).
- State 3 versus State 1. Among low-income youths who are not employed, those in states with more stringent welfare policies are more likely to be enrolled in school because of the signal of the importance of schooling in building human capital. The family reinforcing effect can strengthen the signaling effect but the family change effect can offset the signaling effect. Overall, stringent policies may be negatively related to the probability of being in State 3 (not enrolled and not employed) versus State 1 (enrolled and not employed). The competing labor market effect should not play a role in this comparison because youth in both states are not employed.
- State 4 versus State 1. Similarly, among low-income youth, stringent welfare policies may decrease the likelihood of being in State 4 (not enrolled and employed), compared to being in State (1) (enrolled and not employed). All the three effects may play a role.

The static view, however, takes persons with very different behaviors as a homogeneous group. For example, persons in State 2 at a current time point consist of those who have stayed in State 2 and those who have moved into State 2 from States 1, 3, and 4 from last time point to the current time point. An advantage of a dynamic view is to distinguish different behaviors by considering both staying in a state and transitions from one state to another between two points in time.[3] Under the dynamic framework, we use stayer of State 1 as the reference. For stayers of States 2-4, the predictions are the same as the predictions under the static view. Below we lay out the predictions for four important transitions.

- Transition from State 1 to State 2. Among low-income students who are not working, those in states with more stringent welfare policies will have a lower probability of making the transition to work because of the signaling effect and the competition in the low-wage labor market. The family reinforcing effect can strengthen these two effects while the family change effect can weaken them. Thus, overall, stringent policies may be negatively related to the transition probability from State 1 to State 2.
- Transition from State 1 to State 3. Among low-income students who are not working, those in states with more stringent welfare policies will be less likely to drop out of school because of the signaling effect. The family reinforcing effect can strengthen the signaling effect but the family change effect can offset the signaling effect. Overall, stringent policies may be negatively related to the transition probability from State 1 to State 3.
- Transition from State 2 to State 1. Among low-income students who are employed, those in states with more stringent welfare policies are more likely to return to full engagement

[3] In a dynamic view, there are 12 (4x3) transitions and 4 stayers (remaining in the same state) between two time periods. Some of the transition rates are very low (e.g., the transitions in and out of State 4) and we focus on a few important transitions.

in schooling because of the signaling, competing labor market and family reinforcing effects. However these effects can be weakened by the family change effect. Still, overall, stringent policies may be positively related to the transition probability from State 2 to State 1.

- Transition from State 3 to State 1. Similarly, the sign of the welfare policy effects on the transition from not enrolled to enrolled for non-workers should be opposite to that on the transition from State 1 to State 3. That is, stringent policies may be positively related to the transition probability from State 3 to State 1 due to the signaling and family reinforcing effects.

DATA AND METHODS

We collected information on state welfare policies during 1994-1999 from the Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services (DHHS)[4]. Using this information, we create ten variables to code each state for the presence or absence of ten characteristics of welfare policy in each month of the five-year period. We believe these ten variables capture the stringency of state welfare policies. Variable 1 is coded 1 if a state was operating under the authority of a federal waiver or had implemented TANF and 0 otherwise. Waivers, prior to 1996, and TANF afterwards are the two main ways that states implemented reforms. Variables 2-4 describe the differences among waivers, including whether a waiver state implemented a work requirement, a time limit for obtaining employment, and work incentives, all of which are 1 if present and 0 if absent or if the state did not have a waiver. Variable 5 reports the time limit on receiving benefits under TANF, ranging from 18-60 months, and takes the value of 120 months before TANF. Variables 6 and 7 denote sanctions for initial

[4] The website is http://aspe.hhs.gov/hsp/Waiver-Policies99.

and subsequent noncompliance with work requirements, respectively, coded 0 for none, 1 for partial benefit reduction, and 2 for full benefit reduction. Variable 8 is the age (in months) of the youngest child that qualifies a mother for exemption from work requirements under TANF, ranging from 0-72, and takes the value of 72 months before TANF. Variables 9 and 10 describe policies regarding minor recipients, including whether a state implemented a minor education mandate (i.e., if the recipient is under age 18, she must be enrolled in school) and a minor living arrangement mandate (i.e., if a recipient is under age 18, she must live with her parents or guardians).

To capture the stringency of welfare policies, we constructed a composite based on an exploratory factor analysis using the state-month data on the ten variables. The variables reasonably co-vary, with appropriate signs and high factor loadings (.88-.95) (see Appendix table 1 for detailed factor loading). In addition, we performed inter-item tests, which show that each item contributes to the composite and that the Cronbach's alpha (scale reliability coefficient) is .98. The squared root of the reliability coefficient (sqt(.98)=.99) is equivalently the estimated correlation between the latent construct and the scale if we apply an equal weight to each item. Furthermore, we tested and confirmed the construct validity of this composite by testing whether there is a positive relationship between this composite and caseload growth. Therefore we are confident that this composite parsimoniously represents the degree to which welfare policies are stringent across states and over time.

We also consider state non-welfare policies that may confound with welfare policies in influencing adolescents' employment. These include state minimum wage, which may lead to lower adolescent employment rates, state Earned Income Tax Credit (EITC) policy, which may encourage adolescent employment, and state youth employment policies, which constrain the

hours youth can work. We collected this information from the Bureau of Labor Statistics and the DHHS website.

To separate out the state policy effects, we control for the local labor market conditions. These include state unemployment rates, availability of jobs in retail and service section in each state (normalized by labor force size), and state average earnings of similar youth. Estimates from an analysis of the earnings of youth aged 16-25 as a function of race, sex, education, residence state and year using the CPS 1994-1999 data were used to construct the average earnings for the similar youth in the NLSY97.

The NLSY97 is a nationally representative sample of 8,984 individuals age 12-16 as of December 31, 1996, with an oversample of black and Hispanic youth. After the first interview in 1997, 8,286 respondents received the second interview during 1998-1999. In addition to the prospective information from the two interviews, retrospective information on school enrollment was collected from grade 7 and information on formal employment from age 14 in both student and parent questionnaires.

Using data from the NLSY97, we construct the person-month history of school enrollment and formal employment of respondents from the first month after a youth reached the 14th birthday to the month before s/he reached the 19th birthday, or the month s/he graduated from high school. School enrollment is defined as being enrolled in formal school. We consider 9 months of a school year and disregard the summer months. Formal employment is defined as have a job with an employer. Thus we address formal employment and disregard informal work such as delivering newspapers and babysitting. In addition, our distribution of working while in school does not include those who do not work during school year but work during summer. The NLSY97 also provides information on the current state residence and the history of residential

mobility, which allows us to identify the resident state in a particular month. We match the state-month data with the NLSY97 person-month data by state of residence and month. The resulting person-month observations with valid data on enrollment and employment status and state codes of residence are 187,342.

Following the literature on school-age children's school enrollment and formal employment, we included in our models individual characteristics (age, age-squared, and sex), family background (race, parental education, family income, family structure, parental AFDC/TANF status,[5] and sibsize), and local labor market conditions (state unemployment rate). Besides testing these conventional factors, this paper focuses on testing state welfare policy effects. In order to test the effect of the latter, we need to separate out not only other relevant state policies (minimum wage, EITC, and youth working policies) and youth-specific local labor market (availability of jobs in the retail and service sectors and average earnings of similar youth) but also the political and social climate of the state, which is difficult to observe. To this end, we control for unobserved, time-invariant state characteristics by including dummy variables for each state (minus 1) in the model. We also control for the unobserved business cycle and other period effects by including dummy variables for each year (minus 1). The names and descriptive statistics of variables used in analysis by low-income status can be found in Appendix Table 2.

To achieve our objective, we have two analytic steps. The first step focuses on estimating the effects of predictors on adolescents' static states of school enrollment and formal employment. For each month, a youth can occupy one the four states resulting from cross-classifying enrollment and employment. A four-state multinomial logit model is used. To

[5] We did not include the youth's AFDC/TANF status because only 20 youth ever received AFDC between ages 14 and 18 in NLSY97.

understand whether work intensity makes a difference, we extended our four-state multinomial logit model into a 6-state multinomial logit model by further dividing youth who were working while in school into three types: (1) those who work less than 20 hours per week and less than half school weeks, (2) those who work less than 20 hours per week and half or more school weeks, and (3) those who work 20 or more hours per week and half or more school weeks. This expansion can further test whether state welfare policies affect those heavily working youth more than less heavily working youth.

The second step is a dynamic analysis. For each month, we define the initial state in terms of our four-state model; the destination state in the next month is one of the four states plus an absorbing state for high school graduation. Thus, there are 20 possible outcomes from an initial state to a destination states. We collapsed small transitions and ended up with nine outcomes, for which a nine-category multinomial logit model is use for estimation. For both Steps 1 and 2, we calculate the change in probabilities due to the change in one unit of the explanatory variables to aid interpretation. For both steps of model estimation, we use the Huber correction (1967) to estimate robust standard errors that correct for the correlation among repeated observations of the same individual.

RESULTS

We first examine the percentage distribution of youth enrollment and employment by age and determine whether the age distribution using the NLSY97 longitudinal data is consistent with the CPS, which is cross-sectional and nationally representative over the same time period (1994-1999). Because the NLSY97 focuses on adolescent employment whereas the CPS focuses on the employment of the general labor force, we expect that the NLSY97 provides more information on youth employment. In addition, the CPS covers labor force aged 16 and above

whereas the NLSY97 has employment data for ages 14-18, we can only compare the distribution for ages 16-18.

The NLSY97 data show a dramatic decline in the percentage of youth who are in State 1 (enrolled and not employed), from 88% at age 14 to 33% at age 18 (see Table 2). In contrast, the percentage in State 2 (enrolled and employed state) increases steadily, from 11% at age 14 to 42% at age 18. Percentages in both State 3 (not enrolled and not employed) and State 4 (not enrolled and employed state) are smaller, increasing with age. The trend exhibited in the CPS data is very similar. In particular, the percentage distribution for States 3 and 4 largely agree with each other. However, the NLSY97 exhibits substantially greater percentages in State 2 (about 10 percent points for each age group between 16 and 18), as we expected. This is an advantage of the NLSY97 for our analysis since a greater percentage in State 2 allows us to further examine the work intensity issue within this group, which leads us to Table 3.

(Table 2 about here)

Table 3 presents work intensity and occupation of employed students for the whole population and by race and low-income status.[6] There is a clear pattern of the distribution of youth who are working while in school and their work intensity and occupation by race and low-income status. The percentage working while in school is twice as high for black youth and almost twice as high for Hispanic youth as for white youth. Similarly, high-income youth work while in school much more than low-income youth. These results are consistent with previous research (e.g., Greenberger and Steinberg 1986). Among those enrolled and employed, the majority work moderately (less than 20 hours per week and more than half school weeks). While this is true for all the racial and economic groups, the percentage of heavy work (more than 20 hours per week and more than half school weeks) is substantially greater for minorities

[6] The cutoff point for low-income status is 130% of the official poverty line for the family.

than for whites and greater for low-income youth than for non low-income youth. Therefore, disadvantaged youth are less likely to work while in school; but when they work, they do so for more hours than their counterparts. The percentage distribution of those working while in school in different occupations shows that service and sales are two dominant occupations and this distribution does not vary much across racial and income groups.

(Table 3 about here)

We next examine the zero-order correlation among state-level variables, given our interest in state welfare policies and our control of many state-level variables. Focusing on the composite of state welfare policies, we see that the highest correlation is with state minimum wage—positive at .60—meaning that 36% of the variation in state welfare policies is overlapped with the state minimum wage. The correlation between state welfare policies and state unemployment rate is -.44. These correlation coefficients, as well as others (the highest being -.66), provide little evidence for serious potential multicollinearity for our analysis.

(Table 4 about here)

Turning to the multivariate results, we first examine results from the static analysis in Table 5.[7] Two coefficients for the state welfare policy composite are presented—one for non low-income youth and another for low-income youth.[8] The top panel presents the coefficients (log odds) for States 2, 3, 4, each of which in comparison with State 1 from the four-state model and the bottom panel presents the coefficients for the three work intensity groups (within those working while in school) vs. State 1 from the six-state model. We present results from three incremental models, the specification of which is indicated in the bottom of the table. These are

[7] For the full estimation of the 4-state model, see Appendix Table 3.
[8] Both the coefficients and the standard errors are specific for the two sub-populations, which is sometimes called the "marginal" effects for the sub-populations.

whether the model includes other state-level variables and unobserved, time-invariant state characteristics and period effects.

(Table 5 about here)

We first examine the four-state model results. Model 1 estimates the welfare policy effects for the two sub-populations, controlling for individual and family factors. The result shows little effect on non low-income youth's probability of being in State 2 vs. State 1. However, it finds a negative, significant effect for low-income youth's being in State 2 vs. State 1, which appears to support the welfare effects for low-income youth. Surprisingly, welfare policies have a positive effect on the likelihood of being in State 3 vs. State 1, opposite to our expectation. This anomaly may be a result of confounding welfare policies with other state-level variables, the latter of which is not controlled in Model 1. Once these state-level variables are controlled in Model 2, the anomaly disappears and the welfare effects remain for low-income youth in State 2 vs. State 1. However, low-income youth's responsiveness to welfare policies may still be influenced by unobserved, time-invariant state characteristics (e.g., political and social climate), which is possibly correlated with state welfare policies. In Model 3 we further control for these unobserved variables and find that the welfare policy effects are weaker and no longer statistically significant. Thus the full model (Model 3) does not find evidence for the welfare policies effects for low-income youth. The bottom of Table 5 lists the likelihood ratio tests for Model 2 against Model 1 and for Model 3 against Model 2, both of which are highly significant. These tests support the importance of adding other state-level variables in Model 2 and adding unobserved state characteristics and period effects in Model 3. The six-state models further examine the welfare policy effect on different work intensities. Estimates of the more restricted model shows that the welfare policy effects are only on higher work intensities among

low-income youth. Estimates from the full model again show no significant effects of welfare policies.

While there is little evidence for welfare policy effects on the static states of school and work, we are not certain whether welfare policy effects are different between persons who have stayed in a state and those who have moved into the state, whom the static view takes as a homogeneous group. This uncertainty can be reduced in a dynamic analysis. Because of the very small rates in some transitions, we focus on four transitions and three stayers in the dynamic analysis (see Table 6 for a detailed list[9]). The estimates are from the full model, including individual and family factors, state-level variables, and unobserved state and period fixed effects. Coefficients for the welfare policy composite are presented for low-income and non low-income youth, in the form of log odds of these transitions or stayers vs. the reference, i.e., those stay in State 1 (enrolled and not employed). Below we discuss these transitions and stayers one by one.

(Table 6 about here)

First, we expect that the welfare policy effect on the transition from State 1 to State 2 (vs. staying in State 1) should be negative. The coefficient is -.250 for non low-income youth and -.197 for low-income youth, both of which are highly significant. Although we predict that the negative effect is stronger for low-income youth, our estimates show no significant difference in the effect between low-income and non-low-income youth.[10] Thus, more stringent welfare policies appear to have similar effects for low-income and non low-income youth in this transition.

Second, the welfare policy effect on the transition from State 1 to State 3 (vs. staying in State 1) should be negative and stronger for low-income youth. The coefficient is -.199 and

[9] We combined transitions with small probabilities into one category so that our dynamic model has 9 categories in total (instead of the full set 4x5=20).
[10] We have tested the equivalence of the two coefficients and found no significant difference.

significant for non low-income youth. However, even though the coefficient remains negative for low-income youth, it becomes weaker and statistically insignificant. Thus, stringent welfare policies appear to fail to prevent low-income youth from dropping out of school.

The next two transitions are the opposite movements of the first two transitions and we expect opposite directions for the welfare policy effects. Here we find welfare policies have little effect on these two transitions.

Next, for those who remain in State 2, we expect a negative effect because of the competition in low-income job markets with welfare mothers and we expect it to be stronger for low-income youth. We find a significant effect only for low-income youth (significant at the .07 level). For those who remain in State 3, we find a positive effect of welfare policies (significant at the .08 level), which is opposite to our expectation.

Taken together, the dynamic analysis is able to identify signaling effects of state welfare policies (1) on the transitions from State 1 to State 2 for all youth, (2) on staying in State 2 among low-income youth, and (3) on the transition from State 1 to State 3 among non low-income youth. These findings suggest that the welfare policy effects differ according to the direction of transitions and the low-income status of the youth. Substantively, our analysis shows that more stringent welfare policies may have sent a stronger signal to all youth, low-income or not low-income, to keep a full engagement in schooling. At the same time, more stringent welfare policies are likely to have created an unintended consequence for low-income students. It is more difficult for employed, low-income students to keep their jobs in states with more stringent welfare policies. The failure to find stronger effects for low-income youth than for non low-income youth and the opposite-to-expectation effect on low-income dropouts suggest that the family reinforcing effect is canceled out or even outweighed by the family

change effect. This, however, is consistent with the findings from the experimental studies that welfare reform has detrimental effects on adolescents (Duncan and Chase-Lansdale 2001).

In order to understand the relative size of the welfare policy effect, we calculated the change in probabilities, compared with the effect sizes of selected individual and state-level variables (age, race, sex, state unemployment rate and availability of retail jobs). Monthly transitional rates are low and it is important to place the policy effect in the context of other variables of which the effects have been documented. Table 7 summarizes these effect sizes for estimates in Table 6. The shaded areas highlight the significant welfare policy effects revealed in the dynamic model. For non low-income youth, an increase of one standard deviation of the welfare policy composite brings about a decrease of .006 in the transition probability from State 1 to State 2, comparable to the effect of being black or Hispanic. The reduction in probability is .004 for low-income youth, weaker than the minority effect. For non low-income youth, the reduction in the probability of moving from State 1 to State 3 is .0008, twice the gender effect. For low-income youth the reduction in the probability of staying in State 2 is .011, about half of the gender effect or one eighth of the black effect. The increase in the probability of staying in State 3 among low-income youth is .005, almost the same size of the gender effect (in an opposite direction).

(Table 7 about here)

CONCLUSIONS

This paper takes a fresh look at welfare reform by examining its effects on adolescents' school enrollment and formal employment. Two features in this paper make our test of welfare policy effects more rigorous and robust. Our dynamic model of adolescents' school and work

allows us to estimate the welfare policy effects on both staying in a joint enrollment-employment state and transitioning to a different state. The separation of the effects of welfare policy from non-welfare policies, youth-specific local labor market conditions, and unobserved state characteristics and period effects allows us to approach the true welfare policy effects.

Nonetheless, as with all non-experimental research, it is difficult to draw firm conclusions about cause and effect. With that caveat, our analysis offers an important finding. We find evidence that state welfare policies may be affecting low-income youth's decisions concerning school enrollment and employment. Two estimates consistently support welfare effects for low-income youth: (1) All else equal, the more stringent the welfare policies in a state, the less likely are low-income students in that state to take a job while in school. The size of this association is almost comparable to the association between minority status and the probability of taking a job while in school. (2) All else equal, the more stringent the welfare policies in a state, the less likely are low-income students in that state to keep a job while in school. The size of this association is comparable to one eighth of the association between minority status and the probability of keeping a job while in school. Taken together, those estimates suggest that in a state with more stringent welfare policies, low-income students are less likely to get or keep a job while in school than their counterparts in a state with less stringent welfare policies. If, as some researchers believe, focusing entirely on schooling is the best way for low-income youth to build human capital, these possible effects of welfare reform could be beneficial. However, if low-income youth, particularly those in deep poverty, obtain "soft skills" only from a formal job and if "soft skills" turn out to be decisive for non-college bound, low-income youth's economic future, these welfare policy effects could be harmful for them.

Our analysis also suggests that the signaling effect may be outweighed by the family change effect, so that low-income dropouts in stringent states may be more likely to remain out of school rather than return to school. This finding suggests that further research is needed to investigate the family process whereby mothers' welfare-to-work transition may impose stress and lead to detrimental outcomes for adolescents. Welfare policy makers need to design policies to support the families in welfare-to-work transition, particularly those families with adolescent children. Examples of programs include school programs, after-school programs and community youth programs that help adolescents to handle family change and stress due to maternal employment, to organize productive and safe activities after school, and to encourage school dropouts to return to school.

More generally, our results suggest that government policies not directly targeting adolescents may nevertheless influence them in important ways. In this case, a law designed to influence the work activities of adults has been shown also to influence the work activity of adolescents through mechanisms taking place in the larger society, the local labor market and the family. The findings remind us that researchers interested in public policies should broaden their view from the targeted population to other related populations and from direct policy mechanisms to indirect mechanisms occurring in various domains of the society.

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Table 1. Theoretical Predictions of Welfare Policy Effects

Static States and Transitions	Low family income	Mechanisms: Signaling Effect	Competing Labor Market Effect	Family Reinforcing Effect	Family Change Effect	Overall Policy Effect
A. Static States[a]						
State 2 (enrolled & employed)	No	-	-	0	0	-
	Yes	-	-	-	+	-
State 3 (not enrolled & not employed)	No	-	0	0	0	-
	Yes	-	0	-	+	-
State 4 (not enrolled & employed)	No	-	-	0	0	-
	Yes	-	-	-		-
B. Selected Transitions[b]						
From: State 1 (enrolled & not employed)	No	-	-	0	0	-
To: State 2 (enrolled & employed)	Yes	-	-	-	+	-
From: State 1 (enrolled & not employed)	No	-	-	0	0	-
To: State 3 (not enrolled & not employed)	Yes	-	-	-	+	-
From: State 2 (enrolled & employed)	No	+	+	0	0	+
To: State 1 (enrolled & not employed)	Yes	+	+	+	-	+
From: State 3 (not enrolled & not employed)	No	+	0	0	0	+
To: State 1 (enrolled & not employed)	Yes	+	0	+	-	+

[a] State 1 (enrolled & not employed) is the reference.

[b] Stayer of State 1(enrolled & not employed) is the reference. Predictions for stayers of States 2-4 in a dynamic view are the same as those in Panel A.

Table 2. Weighted Percentage Distribution of Enrollment and Employment by Age: NLSY97 and CPS

Age	State 1 Enrolled & Not Employed	State 2 Enrolled & Employed	State 3 Not Enrolled & Not Employed	State 4 Not Enrolled & Employed
NLSY97				
14	87.66	10.53	1.60	0.22
15	79.83	17.50	2.23	0.45
16	59.24	34.99	3.47	2.30
17	44.22	45.95	4.77	5.05
18	32.69	41.47	11.66	14.18
CPS				
16	71.84	23.69	3.38	1.09
17	57.38	34.81	5.07	2.74
18	44.16	31.54	13.46	10.84

Source: NLSY97 waves 1 and 2. CPS out-going rotation groups 1994-1999.
Note: Statistics are restricted to 9-month school year, excluding summer months.

Table 3. Work Intensity and Occupation of Employed Students: By Race and <=130% Status

	White	Black	Hispanic	High-Income	<=130%	Total
% Enrolled & Employed	26.26	13.17	15.63	24.02	14.65	22.40
Work Intensity among Those Enrolled and Employed						
Less than 20 hour per week, less than half school weeks	11.63	14.51	18.14	11.97	16.61	12.49
Less than 20 hour per week, more than half school weeks	59.15	50.60	47.09	58.17	49.66	57.20
More than 20 hour per week, more than half school weeks	29.22	34.90	34.78	29.87	33.73	30.30
Occupation among Those Enrolled and Employed						
Sale	22.63	26.20	23.71	23.55	21.06	23.07
Service	36.35	46.91	34.74	36.82	39.51	37.14
Labor	16.01	13.86	19.67	15.29	20.85	16.25
Other	25.00	13.03	21.88	24.34	18.59	23.54

Source: NLSY 97 waves 1 and 2.
Note: Weighted percentages are presented.

Table 4. Correlation of State-Level Variables

State-Level Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) State welfare policies	1.00							
(2) State youth employment policies	-.10							
(3) State minimum wage rate	.60	-.42						
(4) State ave. weekly earnings of similar youth	.40	.03	.29					
(5) State % of jobs that is of retail sector	.24	.39	-.10	.29				
(6) State % of jobs that is of service sector	.06	-.18	.22	.06	-.06			
(7) State unemployment rate	-.44	-.17	-.12	-.52	-.66	.11		
(8) State EITC (refundable)	.15	.10	.13	.11	-.02	.05	-.05	
(9) State EITC (nonrefundable)	.25	-.18	.16	.18	-.14	.17	-.16	-.05

Source: CPS Out-Going Rotation Groups 1992-1999; Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services; Hudson Institute; State Policy Documentation Project; Bureau of Labor Statistics.

Table 5. The Effects of State Welfare Policies on the Static State of School Enrollment and Formal Employment

Static States	Family Income-to-Needs Ratio	Incremental Models (1)		(2)		(3)	
4-State Model[a]							
Enrolled & Employed	>130%	.044		-.032		.042	
		(.029)		(.034)		(.032)	
	<=130%	-.102	**	-.158	***	-.068	
		(.043)		(.045)		(.047)	
Not Enrolled & Not Employed	>130%	.218	***	.083		.076	
		(.077)		(.092)		(.098)	
	<=130%	.259	***	.127		.098	
		(.082)		(.092)		(.086)	
Not Enrolled & Employed	>130%	.181		.027		-.032	
		(.112)		(.122)		(.143)	
	<=130%	.143		-.003		-.064	
		(.161)		(.151)		(.163)	
6-State Model[b]							
Less than 20 hour per week, less than half school weeks	>130%	.033		-.061		-.008	
		(.050)		(.062)		(.056)	
	<=130%	-.035		-.108		-.041	
		(.078)		(.082)		(.088)	
Less than 20 hour per week, half school weeks or more	>130%	.049		-.003		.032	
		(.035)		(.041)		(.041)	
	<=130%	-.097	*	-.133	**	-.078	
		(.055)		(.059)		(.061)	
20 hour per week or more, half school weeks or more	>130%	.050		-.081		.083	
		(.053)		(.059)		(.060)	
	<=130%	-.188	***	-.287	***	-.122	
		(.067)		(.070)		(.076)	
Model Specification							
Include other state-level variables		No		Yes		Yes	
Include state and year fixed effects		No		No		Yes	
Likelihood Ratio Chi-squared (df)		--		1,210 (24)	***	2,838 (134)	***

Source: NLSY97 waves 1 and 2.

Note: All models include age, age-squared, sex, black, Hispanic, other race, step-, single-mother, single-father, and other families, income-to-needs ratio, parental education, parental AFDC/TANF status, number of siblings, and urban residence.

[a] The reference state is "enrolled & not employed".

[b] The reference state is "enrolled & not employed". We did not report coefficients for "not enrolled & not employed" and "not enrolled & employed", which are very similar to those in the 4-state model in the top panel.

*** p<.01 ** p<.05 * p<.10

Table 6. The Effects of State Welfare Policies on the Transitions of School Enrollment and Formal Employment

9-Transitions and Stayers[a]	Family Income-to-Needs Ratio	Coeff.	
From: State 1 (enrolled & not employed)	>130%	-.250	***
To: State 2 (enrolled & employed)		(.035)	
	<=130%	-.197	***
		(.047)	
From: State 1 (enrolled & not employed)	>130%	-.199	**
To: State 3 (not enrolled & not employed)		(.099)	
	<=130%	-.069	
		(.107)	
From: State 2 (enrolled & employed)	>130%	-.044	
To: State 1 (enrolled & not employed)		(.051)	
	<=130%	-.062	
		(.062)	
From: State 3 (not enrolled & not employed)	>130%	-.035	
To: State 1 (enrolled & not employed)		(.154)	
	<=130%	-.158	
		(.162)	
Stayer of State 2 (enrolled & employed)	>130%	.035	
		(.034)	
	<=130%	-.085	*
		(.050)	
Stayer of State 3 (not enrolled & not employed)	>130%	.111	
		(.103)	
	<=130%	.151	*
		(.089)	
Stayer of State 4 (not enrolled & employed)	>130%	.033	
		(.157)	
	<=130%	.021	
		(.177)	

Source: NLSY97 waves 1 and 2.

Note: All models include age, age-squared, sex, black, Hispanic, other race, step-, single-mother, single-father, and other families, income-to-needs ratio, parental education, parental AFDC/TANF status, number of siblings, urban residence, state-level variables, and state and year fixed effects.

[a] The reference is "stayer of enrolled & not employed". We do not report coefficients for "all other small transitions" which has no substantive meaning.

*** p<.01 ** p<.05 * p<.10

Table 7. Size of Welfare Policy Effects in Comparison with Selected Individual and State Variables: Change in Probability

Variables	From: 1 (enrolled & not employed) To: 2 (enrolled & employed)	From: 1 (enrolled & not employed To: 3 (not enrolled & not employed)	Stayer of State 2 (enrolled & employed)	Stayer of State 3 (not enrolled & not employed)
Welfare policies				
Income-to-needs ratio >130%	**-.006**	**-.0008**	.007	.003
Income-to-needs ratio <=130%	**-.004**	-.0002	**-.011**	.005
Age	**.009**	**.0004**	**.018**	**-.008**
Black	**-.006**	.0002	**-.085**	.001
Hispanic	**-.006**	.0004	**-.072**	.008
Female	**-.002**	**-.0004**	**-.023**	**-.007**
State unemployment rate	**.003**	.0006	-.008	.006
State ratio of retail jobs to labor force	**.006**	-.0012	**.038**	.005

Source: NLSY97 waves 1 and 2.

Note: Probabilities in bold indicate a significance level p<.10. The change in probability for a continuous independent variable is $\frac{\partial p_j}{\partial x} = p_j(\beta_j - \sum_k \beta_k p_k)$; and for a dummy independent variable is $\frac{\exp(\beta_{j1}'X)}{\sum_k \exp(\beta_{k1}'X)} - \frac{\exp(\beta_{j0}'X)}{\sum_k \exp(\beta_{k0}'X)}$ where the second term is the predicted probability when the dummy takes the value of zero (evaluated at the mean of other variables) and the first term is the predicted probability when the dummy takes the value of one (evaluated at the mean of other variables).

Appendix Table 1. The Measurement Model of Stringent State Welfare Policies

Item	Factor Loading
Waiver	.921
Waiver work requirement	.879
Waiver work requirement time limits	.934
Waiver work incentives	.890
Consecutive benefit time limits	-.881
Initial sanctions	.893
Severe sanctions	.926
Child age under which work requirement is exempt	-.902
Minor education mandate	.905
Minor living arrangement mandate	.951

Appendix Table 2. Descriptive Statistics of Variables Used in Analysis

Variable	Income-to-needs ratio>130%	Income-to-needs ratio <=130%
Age (in months)	186.349	186.670
	(13.274)	(13.613)
Black	.228	.399
	(.419)	(.490)
Hispanic	.173	.334
	(.378)	(.472)
Other race	.046	.031
	(.210)	(.172)
Stepfamily	.144	.091
	(.351)	(.288)
Single-mother family	.218	.489
	(.413)	(.500)
Single-father family	.039	.031
	(.193)	(.174)
Other family structure	.057	.115
	(.233)	(.319)
Female	.486	.499
	(.500)	(.500)
Income-to-needs ratio	3.623	.630
	(2.778)	(.388)
Missing income-to-needs ratio	.311	0
	(.463)	0
Parental education (in years)	13.578	11.464
	(2.852)	(2.733)
Missing parental education	.076	.142
	(.265)	(.349)
Parents ever received AFDC	.180	.563
	(.385)	(.496)
Missing parental AFDC	.139	.047
	(.346)	(.212)
Number of siblings	1.380	1.869
	(1.184)	(1.515)
Urban	.702	.758
	(.458)	(.428)
State welfare policies Income-to-needs ratio >130%	.386	--
	(.839)	--
State welfare policies Income-to-needs ratio <=130%	--	.356
	--	(.843)
State unemployment rate	4.989	5.228
	(1.146)	(1.102)
State minimum wage rate	4.613	4.616
	(.255)	(.261)
State EITC (refundable)	.240	.183
	(.630)	(.551)
State EITC (nonrefundable)	6.229	6.197
	(.130)	(.132)
State ave. weekly earnings of similar youth	16.020	15.909
	(1.255)	(1.249)
State ratio of retail jobs to labor force	25.544	25.360
	(5.445)	(5.122)
State ratio of service jobs to labor force	-.768	-.785
	(1.610)	(1.709)
State youth employment policies (a composite of three items about rules on youth working hours)	1.299	1.309
	(.573)	(.679)
N	144,238	43,104

Source: NLSY97 waves 1 and 2.

Note: Standard deviations are in parentheses. State dummy variables are also included in analysis but the statistics are not shown.

Appendix Table 3. Estimates of the Full Model for the 4-State Static Model

Variable	State 2 (enrolled & employed)		State 3 (not enrolled & not employed)		State 4 (not enrolled & employed)	
Age (in months)	.138	***	-.237	***	.091	
	(.029)		(.058)		(.113)	
Age-squared	.000	**	.001	***	.000	
	(.000)		(.000)		(.000)	
Black	-.734	***	-.126		-1.505	***
	(.065)		(.135)		(.216)	
Hispanic	-.596	***	.121		-.699	***
	(.078)		(.168)		(.222)	
Other race	-.465	***	.442		-.548	
	(.127)		(.270)		(.359)	
Stepfamily	.006		.156		.310	
	(.067)		(.151)		(.200)	
Single-mother family	-.113	*	.275	**	-.111	
	(.060)		(.121)		(.172)	
Single-father family	-.085		.242		.551	**
	(.109)		(.251)		(.262)	
Other family structure	.016		.563	**	.719	*
	(.136)		(.222)		(.366)	
Female	-.192	***	-.338	***	-.798	***
	(.054)		(.116)		(.183)	
Income-to-needs ratio	.005		-.131	**	-.092	**
	(.010)		(.057)		(.040)	
Missing income-to-needs ratio	-.027		-.311	**	-.578	***
	(.062)		(.158)		(.187)	
Parental education (in years)	-.005		-.060	***	-.087	***
	(.009)		(.018)		(.023)	
Missing parental education	-.231	*	.413	**	.420	
	(.122)		(.200)		(.330)	
Parents ever received AFDC	-.152	**	.240	**	-.004	
	(.060)		(.115)		(.154)	
Missing parental AFDC	-.144	*	.258		.332	
	(.086)		(.184)		(.232)	
Number of siblings	-.007		.059		.001	
	(.020)		(.038)		(.055)	
Urban	.095	*	.178		.375	**
	(.053)		(.128)		(.171)	
State welfare policies Income-to-needs ratio >130%	.042		.076		-.032	
	(.032)		(.098)		(.143)	
State welfare policies Income-to-needs ratio <=130%	-.068		.098		-.064	
	(.047)		(.086)		(.163)	

(continued)

(appendix table 3 continued)

Variable	State 2 (enrolled & employed)	State 3 (not enrolled & not employed)	State 4 (not enrolled & employed)
State unemployment rate	-.042	.184	.116
	(.047)	(.117)	(.151)
State minimum wage rate	-.016	.340	.144
	(.154)	(.330)	(.624)
State EITC (refundable)	-.095	-.316	-.490
	(.142)	(.307)	(.577)
State EITC (nonrefundable)	-.028	.020	.388
	(.077)	(.189)	(.316)
State ave. weekly earnings of similar youth	-.195	-3.346 ***	-5.847 ***
	(.374)	(.951)	(1.772)
State ratio of retail jobs to labor force	.280 ***	.350	.542 *
	(.096)	(.218)	(.318)
State ratio of service jobs to labor force	.060 *	-.060	-.151
	(.033)	(.053)	(.119)
State youth employment policies	-.023	-.002	.341 *
	(.031)	(.080)	(.204)

Source: NLSY97 waves 1 and 2.
Note: Multinomial logit coefficients are presented. The omitted category is State 1 (enrolled and not employed). All models control for state fixed effects and year fixed effects, estimates of which are not presented in the table.
*** p<.01 ** p<.05 * p<.10

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