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## ABSTRACT

### **Do Babysitters Have More Kids? The Effects of Teenage Work Experiences on Adult Outcomes<sup>\*</sup>**

We examine the work experiences during middle school and high school of U.S. females and males and find that most of the child-oriented work such as babysitting and camp counseling is done by females. If the type of work undertaken while young affects either development of specific human capital or preferences, then these early work experiences may have measurable effects on later life outcomes. This paper examines whether or not having a job as a teenager, and whether or not it is a child-oriented job, causes differences in labor market behavior among young adults. In addition to a set of standard controls, in order to account for the endogeneity of students' work decisions, we utilize a set of state-level instruments, including state-level child-labor laws and indicators of relative demand for, and supply of, child-oriented workers. While the effects we find are complex and sometimes hard to interpret, they suggest that work in 10th grade has a positive causal effect on later labor market outcomes and delays family formation, but to a lesser extent when jobs were child-oriented.

JEL Classification: J13, J24

Keywords: human capital, gender, jobs while in school, labor market, family formation

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## **I. Introduction**

There are a number of reasons why one would expect both job-holding in general and child-oriented job holding in particular to have effects on future career and life outcomes. The human capital accumulated in part-time work undertaken while still in secondary school may provide young people with certain skills which might be critical in determining future career choices and outcomes. As with schooling, there are many ways in which working during high school can be beneficial to one's future career. Familiarizing oneself with business life in general such as taking responsibility and learning to work together with colleagues could be an important advantage in starting one's full-time work career. The experience of looking for a job may in itself help workers in finding jobs after they leave school. Also, working while studying may provide students with a social network which may be useful in finding future jobs.

But not all teenager jobs may be the same in terms of acting as a bridge to well-paying professions. In addition, there are differences in the types of jobs that different groups of high school students undertake. The benefits of child-oriented jobs might not be the same as other teenager jobs since the experience acquired via child-oriented jobs in school might not help them in future job market and might lead them to housekeeping in the future. For instance, when the high school work experience of females and males is examined, as in Kooreman (2009), it appears that most of the babysitting is done by females. If work experience early in life teaches and reinforces traits such as being caring, patient and soft for females and being responsible, on time and tough for males; this might lead to differential job and career choices between sexes. That is, if babysitting triggers early parenthood and reduced career prospects because it does provide experience in handling children, but not how to handle office work, then human capital

acquired by doing babysitting might be the reason why females are less participating in labor force.

In addition, working while attending secondary school may either enhance or detract from one's subsequent academic attainment. On the one hand, working while in school might detract from time and effort dedicated to enhancing academic achievement. On the other hand, some jobs may have a positive effect on educational attainment since increased involvement in the job market in one way or another might increase awareness about the importance of education in school. Another avenue for effects on later behavior may be through modifying one's preferences for having children and for particular types of activities. For example, substantial exposure to child care while young might either make a person more likely to want to start a family of one's own, or less likely. Since child-oriented job holders are dealing with children as a job, their accumulation of child-raising-related human capital might play a positive role for their fertility decisions. At the same time, there might be a change in their preferences about having children, either positive or negative. Meanwhile, those who do other jobs might be expected to have fewer, later children because their accumulated human capital may increase their labor force participation in the future, which tends to delay and/or reduce childbearing, and they do not have as much exposure to children, and thus less changes in their preferences regarding having children (which again could be positive or negative). This could thus lead to very different decisions regarding educational attainment, timing of marriage and childbearing, and employment participation. Thus both preferences and constraints (i.e., investments in specific human capital) may be affected by early work experiences.

This paper looks at the effects of working as a teenager in child-oriented jobs such as babysitting and camp counseling, both as measured against holding a job in general and as

compared to not working during high school. The possible contribution of this pattern to the overall gender difference in economic outcomes makes these jobs of particular interest. We consider whether participation in these type of jobs causes differences in young adulthood in educational attainment, childbearing, participation in paid work, type of occupation, and earnings rate.

An obvious problem is that participation in work, let alone child-oriented work, during high school may be caused by the same underlying factors that lead one to make particular choices as a young adult. In order to account for the endogeneity of both choosing to work and child-oriented job choice (i.e., the unobserved heterogeneity in the sample), this study uses several sources of exogenous variation of demand for teenage labor in general and for child-oriented jobs by U.S. state. Implicitly we are assuming that teenagers and their parents are not making their location decisions based on variation in these factors, and thus they can be viewed as both exogenous to future outcomes and correlated with the likelihood of participating in teenage work. We show both instrumented and non-instrumented estimates for our various outcome variables.

In the literature, the relationship between high-school employment and future employment probabilities and wage rates has received some attention. In the early studies by Meyer and Wise (1983), D'Amico (1984), and Marsch (1991), high-school employment is associated with future job holding and increased earnings. The effect of employment in school on academic performance has also been studied. Greenberger and Steinberg (1980), Mortimer and Finch (1986), Barone (1993), and Steinberg et al (1993) find that high school employment is associated with lower grade point averages, the further implication being that lower grade point averages lead to less favorable employment outcomes later in life. Conversely, both Meyer and

Wise (1982) and Lillydahl (1990) detect either no effects or beneficial impacts at low or intermediate work hours.

One of the pitfalls plaguing the early research is the inability of the researchers to control for the nonrandomness of the student decision as to whether or not to work, which is potentially affected by factors which may also play a role in future educational attainment or economic achievement. This potential endogeneity is treated in the works of Ruhm (1997), Hotz et al (2002), and Tyler (2003). Although Ruhm (1997) finds a positive effect of employment in school on employment hours and earnings, Hotz et al (2002) find no evidence that employment in school brings higher future wages. Tyler (2003) reports negative effects of employment in school on grade point average, but Buscha et al (2008) find no effect of working during the 12th grade on reading and math scores.

This paper contributes to the literature in several ways. Firstly, to the authors' knowledge, none of the previous studies investigates whether doing a certain job while at school, such as babysitting, has a measurable effect relative to other jobs (and relative to not working). Secondly, we consider a wider, and different, range of outcome variables relative to the more recent studies, including both social and economic outcomes. While both Tyler (2003) and Buscha et al (2008) use the same data set as we do, they concentrate on educational achievement while we concentrate on longer-run outcome variables. While we use some of the same instruments as does Tyler (namely some of the same coding of variations in child labor laws across states), we expand the set of instruments to include measures of relative demand for child care (female labor force participation rates, the fraction of young children in the state's population) and potential supply of teenage workers (fraction of teenagers in the state's population). Babysitting is also of interest because of its relatively informal nature, implying that

it may be a popular work option both for teenagers too young to work in the formal sector, and for older teenagers in states where teenagers' access to the formal sector is more constrained. Thirdly, we consider how these differences in teenage work patterns by gender could contribute to different outcomes by gender among young adults.

The rest of this study is structured as follows. Section II presents the data and some descriptive statistics. Section III explores the selected variables for the regression equation on their theoretical relevance and discusses estimation methodology. Section IV compiles the findings. Section V discusses the implications of the findings.

## **II. Data and Some Descriptive Statistics**

The data used in this study are from the National Education Longitudinal Study of 1988 (NELS 88), from the initial data collection through the fourth follow-up survey. These data allow us to examine young workers as they enter the labor force since it has a detailed work history from the 8th grade onward. In addition to that, we know as of 2000 (when they are generally 25-26 years old) their post-secondary schooling, their number of children, their earnings for 2000, and detailed background characteristics like their family income, and parent's educational background. In this dataset, the subjects are first surveyed in the spring of 1988 when they are generally 13-14 years old. The survey continues through four follow-ups conducted in 1990, 1992, 1994, and 2000. During the first two follow-ups, the initial respondents were 10th and 12th graders respectively. Additional subjects are added to the survey in later waves to compensate



for nonrespondents. At the time of the 4<sup>th</sup> follow-up in 2000, the number of observations is 12,140.<sup>1</sup>

Table 1 shows the types of jobs held by students while attending school. The 12th grade job type variable is not fully comparable with those of the 8th grade and 10th grade because the 12th grade work variable records only 12th grade work experience, whereas the 8th and 10th grade work variables ask for the most recent work experience. The exact phrasings of these questions are shown in appendix table A.1. The majority of students, both male and female, report working at each survey point. Interestingly, young children actually report higher rates of working than older children. However, the types of jobs held change greatly over this period, indicating a replacement of informal work by more formal employment. Almost three-quarters of female children who work report doing babysitting as 8th grades; this proportion drops significantly already by 10th grade to about one in five working females, and down to about one in twelve by 12th grade. About one in twelve male children who work report babysitting in 8th grade, but fewer than one percent of the working males by 12th grade. Meanwhile other jobs become important, such as food service and retail clerking for both females and males. For the purposes of this paper, we define child-oriented jobs as babysitting plus camp counseling.

In Table 2, we consider whether there are differences in control variables besides gender between the samples. The first column displays averages for all respondents to NELS88 while the next three columns are for respondents who did child-oriented jobs in 8th, 10th and 12th grade respectively, and the last three columns are for respondents who did other types of jobs.

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<sup>1</sup> U.S. Department of Education regulations on use of restricted data require us to round all sample sizes to the nearest multiple of 10. This occurs in all tables in this paper that report number of observations.

These means indicate that there are observable differences between students who work in child-oriented jobs and other students in all grades. In particular, females and whites are more likely to be occupied with child-oriented jobs. Those holding child-oriented jobs are also more likely to be slightly older than the full sample, as shown by their greater likelihood of being over 26 in their adult sample.

### ***Amount of Job Holding and Child-Oriented Jobs at School***

The primary explanatory variables of interest for our analysis are child-oriented job holding and other types of job holding during the respondent's 8th, 10th and 12th grade. Table 3 gives summary statistics on school-year employment for the sample, overall and by gender. It provides descriptive information on three important dimensions of employment in various grades for child-oriented job holders and other type of job holders while at school: work status, intensity of work and wage earned (no wage information is available for the 8th grade). 34% and 45% of 8th graders did child-oriented jobs and other type of jobs for pay respectively in 1988. The percentage of students who did child-oriented jobs for pay among 10th graders dropped down to 7%. In 1992, about 4% of 12th graders report holding a child-oriented job. Thus the proportion of students who hold child-oriented jobs declines significantly as students move to higher grades.

One possible explanation for this phenomenon is that more alternative job opportunities become available for the students as they move to upper grades. It is also plausible that the number of students doing child-oriented jobs is underreported because the students are asked to report only their job that pays the most per hour. Thus, if students do multiple jobs then they are less likely to report child-oriented jobs as they tend to pay less: this is supported by the relevant

wage comparison in Table 3, where the difference in pay between child-oriented jobs and other types of jobs is statistically significant.

While a continuous “hours of work” variable would have been preferred, due to data unavailability, hours of work is calculated from a categorical variable. Hours per week in this variable are shown as falling into one of five 10-hour interval categories for the 8<sup>th</sup> and 10<sup>th</sup> grades, and nine 5-hour interval categories for the 12<sup>th</sup> grade, where we take the midpoint of the category as the relevant value. Those employed in child-oriented jobs in the 8th, 10th, and 12th grades work on average 5, 16 and 13 hours per week respectively, while those holding other types of jobs work on average 6, 18, and 18 hours per week respectively. While the mean hours worked in the 10th grade is greater than the mean hours worked in the 12th grade, this comparison may be biased because of the difference in the categorization of the hours variable. Note, however, that this does not affect the within-year comparisons between of hours worked by students in child-oriented jobs and in other jobs, and comparisons between genders. These differences are statistically significant for the three grades.

Regarding differences in work experience by gender, females are more likely to work in child-oriented job types while males are more likely to work in other type of jobs. Males who are holding other types of jobs work longer hours on average than females who are holding other types of jobs. This difference in hours worked is statistically significant for all three grades. Moreover, in both 10th and 12th grade, the difference in the number of hours worked between male and females doing child-oriented jobs is statistically significant, with men working more hours. All gender differences in the table are statistically significant at the 5% level or greater, save for the weekly hours of work for 8th graders holding child-oriented jobs.

The average wages per hour illustrate that females earn less on average than their male counterparts for both the 10th and 12th grades regardless of job type. In addition, since they are more likely to hold child-oriented jobs, which pay less on average and involve fewer hours of work per week, they earn even less overall. These differences are statistically significant for both grades and all jobs.

### ***School-year Job Holding, Child-Oriented Jobs, and Future Outcomes***

In this paper, we measure the effect of school-year employment and specifically child-oriented job holding on career prospects by its impact on respondent's educational attainment, marital status, number of children, employment status, occupational category, and annual earnings, all measured as of 2000.<sup>2</sup> These variables all indicate important life steps and career-related activities where it would be interesting to see if they are affected by actions taken while in secondary school. While the dataset contains several post-secondary educational attainment variables such as associate's degree, certificates and licenses, we use attainment of the bachelor degree or higher as our indicator for educational attainment. Table 4 provides an overview of the relationship between the type of employment in school and future life outcomes by gender.

There tend to be substantial gender differences for the various outcomes, leading us to control for gender and for the interaction of gender with job-holding in our subsequent regressions. Overall, females are more likely to hold a bachelor degree than are males, are more likely to be married, have more children, are less likely to be employed, more likely to be managers or professionals, and have lower earnings than do males.

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<sup>2</sup> In other regressions not reported herein we also consider the impact of school-year employment on the number of hours worked, and the probability of having at least one child. These measures are not reported herein to simplify the exposition; the directionality is similar to that in our reported regressions regarding employment, earnings, and number of children.

In comparing child-oriented job holders to other job holders and nonworkers, those persons holding child-oriented jobs appear to be more likely to hold a Bachelors' degree, less likely to be married if female (but more likely if male and had such a job in 12th grade), have slightly fewer children, be somewhat more likely to be employed and more likely to hold a managerial or professional position. Earnings patterns are less obvious, but appear to show an intermediate outcome for those holding child-oriented jobs between those holding other jobs and those holding no job (in 10th and 12th grade). The question is whether these patterns will hold up and be of statistical significance once multiple controls are included and some attempt made to control for endogeneity bias. For that we turn to regression estimation in the next section.

### **III. Variable Selection and Model Estimation**

We have now established the empirical possibility of differential outcomes between nonworkers, child-oriented job holders and other job holders for the 8th, 10th and 12th grades. However, we have not controlled for other individually varying factors other than gender in the descriptive tables. A fuller analysis of the marginal effect of working during school requires us to control for additional individual covariates and to deal with unobserved heterogeneity that may be correlated with both outcomes and school-year work choices.

We estimate six sets of regression models, using bachelor degree attainment, marital status, number of children, employment, managerial/professional occupation, and log of hourly earnings respectively as dependent variables that capture different life and career outcomes. The regression equations which will be elaborated upon and estimated in the following sections can be summarized as the following:

- (1) Degree Attainment  $D_T = D(X_{DT}, X_{DS}, CO_s, E_s)$
- (2) Marriage  $M_T = M(X_{MT}, X_{MS}, CO_s, E_s)$
- (3) Number of Children  $N_T = N(X_{NT}, X_{NS}, CO_s, E_s)$
- (4) Employment  $E_T = E(X_{ET}, X_{ES}, CO_s, E_s)$
- (5) Wage/Earnings  $W_T = W(X_{WT}, X_{WS}, CO_s, E_s)$
- (6) Occupation  $O_T = O(X_{OT}, X_{OS}, CO_s, E_s)$

where the subscript T indicates the value as of 2000 and the subscript S indicates the value as of the earlier year of schooling (whether 8th, 10th, or 12th grade).

One critical issue in estimating the impact of child-oriented jobs in school on outcomes is the issue regarding self-selection of students into job type in school. In other words, if certain student characteristics such as coming from privileged families are directly related to job type at school and future career and life choices, then any difference observed between child-oriented job holders and other type of job holders may be due to these preexisting differences. The effects of child-oriented jobs and employment while in school on future choices could only be demonstrated by controlling for the characteristics potentially influencing both employment choice in school and future outcomes. In order to control for pre-existing differences between students, extensive sets of covariates are included in the regression models ( $X_s$ ). Others of these covariates relate to the person's current location, such as their current geographical location and current family status ( $X_T$ ). The supplementary covariates X that are found in all six models include standard demographic variables indicating female, race and ethnicity (white, black and hispanic vs. the omitted category of all other racial and ethnic groups), geographic region (northeast, south, and north central vs. the omitted category of west), residence in an urban or

suburban area (vs. the omitted category of rural area), whether the respondent has limited English capacity, income other than employment and partner's income (these categories are either time-invariant or relate to the adult time period).

Each model contains a dummy  $CO_s$  for child-oriented job and a dummy  $E_s$  for holding any type of job while in school at time  $S$  (where  $S$  precedes  $T$ ). This allows us to consider how working during school years affects outcomes and see if the particular category of job, namely child-oriented, modifies this effect at all. These dummy variables are also interacted with the dummy variable for female. This allows us to see if the effect of working varies by gender, as well as whether the effect of working in a child-oriented jobs varies by gender. We estimate three different variants of each model, where  $CO$  and  $E$  can be related to 8th grade, 10th grade, or 12th grade job holding. This allows us to see whether work at different points during one's schooling career affects outcomes differently. We choose not to include 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade job holding simultaneously. This would complicate the interpretation of the results since work in later grades might be affected by work in previous grades.

With regard to estimation of model (1), one issue is that students who have relatively less unobserved ability for educational achievement may be more inclined to participate in work while in school. Therefore, a measure of 8th grade educational achievement (as calculated by the NELS) is included as a control. Also, students whose parents have lower incomes are expected to work more while studying. If that is left uncontrolled, then the sample is no longer random. Therefore, the family background variables (as of the 8th grade) of family income, mother's education, and father's education are included in the model as controls. We also include type of school attended in the 10th grade (private nonreligious and public vs. the omitted category of private religious). In addition, we control for the number of siblings, and whether the

respondent's family in 8th grade had an encyclopedia, atlas, dictionary and computer in the home.

The number of children one has is expected to be related to human capital acquired which pertains to raising children or due to a change in preferences. The additional covariates of whether or not the person has a sibling and birthyear are also included in model (3), as slightly older persons in this age range are more likely to have children, and the presence or absence of a sibling may affect childbearing preferences.

In model (5), the control variable vector  $X_w$  includes a more detailed set of educational attainment indicators (high school degree, some post-secondary study, certificate, associate degree, bachelor's degree, master's degree, and professional degree relative to non-completion of the high school degree), and years of experience (and experience squared) in paid work, variables demonstrated to affect earnings in many other earnings studies.

In model (6), the control variable vector  $X_w$  includes the same more detailed set of educational attainment indicators as in model (5), as educational attainment appears relevant for occupation.

Because of the discrete nature of bachelor degree attainment, marital status, employment status, and managerial/professional occupation holding, a probit model is used for estimation of models (1), (2), (4), and (6). For number of children, because 62 percent of the sample does not have any children, model (3) is estimated using tobit. To estimate model (5), as is conventional in the literature, the natural logarithm of annual earnings rather than its level is used as the dependent variable. In addition, for model (6), because earnings are not observed for people who are not working, the two-step Heckman selection model (Heckit) is used for estimation. The earnings equation has experience and its squared value, which is not included in the selection



step, whereas the selection equation has income other than employment, partner's income, and the number of children, all of which are not included in the earnings equation.<sup>3</sup>

Although controls are included in all six models, it is important to note that one has to be careful with using direct methods for measuring the effect of school-year work, since unobserved heterogeneity left in the error term, even after additional controls are added in the models, could lead to biased estimates of the effect of holding child-oriented jobs and jobs in general. Thus instrumental variable estimation would be preferred so long as reasonable instruments can be obtained. Thus we consider whether we can identify plausible instruments that would affect students' free choice of work during the school year or would provide demand- or supply-shocks to the teenage labor market.

First, we use a set of state-level child labor law indicators as instruments. These laws restrict the range of formal job options a student has, both in terms of access to particular jobs, in limiting the number and timing of hours that one might work or the amount that one might earn in those jobs. For example, an exogenous tightening of child labor laws in a state might mean that a student could work fewer hours in formal jobs such as retail, and the time would be replaced by working in lower-paying adolescent jobs in the informal sector such as babysitting and lawn care.

The child labor law instrument set that affects teenager's job type in different states contains seven binary variables. The state level data about child labor law variation is taken from Tyler (2003). These are as follows:

1. The state collected civil monetary penalties;

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<sup>3</sup> [Note for editor/readers: Full results from the equations not highlighted in the paper may be made available by the authors in an online appendix. Similarly, the current appendix tables may be all or partly moved to an online appendix as the journal sees fit.]

2. The state had regulations that placed limits on adolescent work after 10:00 p.m. on a night before a school day;
3. The state labor department was required to publicize the names of employers who violate child labor laws;
4. The state imposed criminal penalties for child labor violations;
5. The state limited the maximum number of hours that adolescent minors could work during a school week;
6. The state required work permits for minors employed in agriculture-related jobs;
7. The state required work permits for minors employed in nonagriculture-related jobs.

Appendix table A.2 considers how many observations are potentially affected by each type of child labor law.

Additional instruments we use are the female labor force participation rate, the 0-11 year old fraction of the population and the 12-18 year old fraction of the population for each state . Female labor force participation and the relative size of the 0-11 year old population are hypothesized to be indicators of demand for child-oriented jobs like babysitting, while 12-18 year old population is hypothesized to be an indicator of relative supply of teenage labor. Thus we attempt to identify the effects of teenage job holding through the geographic variation in demand and supply for teenage labor, both of which are arguably exogenous to the individual's desire to work. One can argue that babysitting is done in general at night and camp counseling is done on holidays and therefore female labor force participation might not be that important factor for determining demand for child-oriented jobs. However, going out at night might also be correlated with female labor force participation since higher income couples might be more

likely to be working. Also, sending the child to a camp might also be correlated with family income and mother's free time to deal with the child.

One crucial assumption for identifying the effect of child-oriented jobs and other types of jobs on future career prospects is that child-labor laws, female labor force participation, 0-11 year old and 12-18 year old population only affect future outcomes via their effects on type of job in school. This is not testable. The other assumptions are that they are indeed correlated with the endogenous variables of interest (which is testable).

To test that these potential instruments are indeed correlated with the endogenous explanatory variables of interest, we estimate first-stage regressions where job holding is regressed on the child labor law instrument set, the female labor force participation rate, the fraction aged 0-11 in the population, the fraction aged 12-18 in the population and other exogenous variables. Appendix tables A.3 and A.4 contain the coefficients for these variables for the first stage regressions for non-child-oriented and child-oriented jobs<sup>4</sup> Although some of the first stage coefficients are counterintuitive<sup>5</sup>, the hypothesis that the coefficients on the instruments are jointly zero is rejected at the 1% significance level; therefore, we may conclude the instruments are related to 8th, 10th and 12th grade choice of job type. Thus the instruments pass this formal test of relevance. We also conduct Wald tests in the various specifications of models (1) through (6) which indicate that the two variables of interest,  $CO_s$  and  $E_s$ , are indeed best treated as endogenous—implying that in general the IV results are to be favored over the non-IV results. However, if results are not found in either the non-IV or the IV results, this

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<sup>4</sup> In the interest of saving space, the coefficients on the other controls are not displayed in the table, but available in our online appendix.

<sup>5</sup> For example, in table A4 we expected the coefficients on the fractions of the population aged 12-18 and aged 0-11 to be negative and positive, respectively. Note, however, that state averages might misrepresent local compositions of the population.

would be strongly consistent with the null hypothesis view that there is no effect of school-time employment on future outcomes.

#### **IV. Regression Results**

##### ***Education***

Table 5 presents probit estimates of the main items of interest from model (1), namely the marginal effect of working while in school, along with the additional effect of whether the person holds a child-oriented job, of being female, and the interaction of working and holding a child-oriented job with being female. Partial effects are calculated at the mean values for the sample. For each set of results, we run equations controlling for child-oriented jobs and job-holding overall in the 8th, 10th and 12th grades of school. Both non-IV and IV estimates are included for comparison for each case, leading to a total of six columns in each table. All the following results tables follow this same format. The full set of coefficients for model (1) is available in appendix table A.5.

Although in the descriptive information presented in the previous section, child-oriented job holders were found to be more likely to hold a bachelor degree, once we control for other covariates, this pattern dissipates for all but 10th grade job-holding in the instrumented results. In this case, persons who work, particularly in child-oriented jobs, are more likely to receive a bachelor's degree.

When one compares the noninstrumented and instrumented columns, the estimated effect of employment in the 12th grade which is negative in the noninstrumented estimates is no longer negative under IV estimation once endogeneity of working is treated. For instance, employment

in 12th grade has statistically a significant negative coefficient. Unobserved heterogeneity in this case could be that those who work in the 12th grade might be those do not want to go to college after school ; we might call them potential drop-outs. Once potential drop-outs are accounted for under IV estimation as shown in the last column, employment in 12<sup>th</sup> grade compared to non-job holders does not have a statistically significant effect on bachelor degree attainment. In other words, it does not seem like working in 12<sup>th</sup> grade detracts from efforts that should be properly dedicated to enhanced academic achievement.

The strongest IV effects, in terms of both size and significance of coefficients, are found for working in 10<sup>th</sup> grade. For boys working in 10<sup>th</sup> grade makes it more likely to attain a bachelor degree several years later (with Average Partial Effect, APE=0.49), in particular if the job was child-oriented (APE=0.49+0.72). Girls are more likely to attain a bachelor degree irrespective of school-year work (APE=0.393). Working in 10<sup>th</sup> grade makes this more likely, but to a lesser extent than for boys (additional APE of working is 0.49-0.34). The effect is slightly larger if the job was child-oriented (APE=0.49-0.34+0.72-0.50).

### ***Marital status***

Table 6 presents probit estimates of the marginal effects of interest from model (2). The full set of coefficients for model (2) is available in appendix table A.6. Working in the 8th grade has a positive effect on marital status. The 10th and 12th grade non-IV estimates have a similar sized effect of increasing the probability of being married by about three percent. The 12<sup>th</sup> grade IV estimates suggest that holding a child-oriented job reduces the probability of being married (-0.072), in particular for females (-0.072-0.070) On the other hand holding a child-oriented job in the eighth grade has a substantial positive effect on marital status for females.

### ***Fertility***

Table 7 presents tobit estimates of the marginal effects of interest from model (3). The full set of coefficients for model (3) is available in appendix table A.7. Being employed in the 8th grade has a positive effect on childbearing for boys, unless the job was child-oriented. For girls the effect is negligible. Most of the tenth grade coefficients are insignificant. The twelfth grade IV results suggest a negative effect of child-oriented jobs on the number of children, but not for females who worked in a child-oriented job. The size of this coefficient is very large, casting suspicion on the fit of the IV equation.

### ***Employment status***

Table 8 presents probit estimates of the main coefficients of interest from model (4); the full set of coefficients for model (4) is available in appendix table A.8. Working has a positive effect on young adult employment status in all six specifications, and it is much larger in the IV specifications. However, for women, the effect is reversed in some of the specifications. Having had a child-oriented job appears to somewhat reduce the employment probability, according to the IV specifications for 10th and 12th grade; less so for women than for men in this category.

### ***Earnings***

Table 9 presents heckit estimates of the main coefficients of interest from equation (6); the full model is available in appendix table A.9. The coefficient on female in this table captures the percentage difference in the average wage between women and men holding other factors constant; as expected, it is significantly negative. The interactions with type of work and gender

are complex. Working has a nonnegative effect for men and for women in most of the regressions, but early (8th grade) work has a negative effect for women in the non-IV regression, but less so if it is a child-oriented job. For men, working in a child-oriented job in the 8th grade or 10th grade has a negative effect.

### ***Occupational categories***

Given that the child-oriented school-year job holders are found to have an earnings disadvantage in the future under the noninstrumented estimates but not under IV, and that child-oriented job holding is not found to be a significant factor for employment status, whether this pattern is because child-oriented job holders choose to work in certain type of occupations becomes of additional interest. Thus we analyze the workers' 2000 occupational distribution in this section, classifying occupations according to the ILO's 2008 classification. Table 10 displays the six occupational type categories that we utilize in the following formal analysis and the associated occupations within each of those categories.

Armed force occupations are discarded due to the small number of observations and agricultural workers are put into the craft workers category. The craft workers category also includes plant and machine operators, assemblers and other relatively lower-educational-attainment requirement occupations. The information on the distribution of main occupational categories is given inside the parentheses below each category in the first column. For instance, the managers category accounts for 12.3% of all workers in the sample. In addition, for each broader occupational category, the percentage distribution of occupations within that category is given inside the parentheses next to the category title. For example, 29% of managers in our sample are mid-level managers.

We then estimated a probit model in order to predict the probability of an individual's being in one of the generally higher-paying, more prestigious occupational categories of either manager or professional (versus all other categories).<sup>6</sup> Table 11 provides the estimated marginal effects of the main variables of interest (the full coefficient set is in appendix table A.10). There is little evidence of an effect of any of the variables of interest on occupational category, save for some effect from working in the 10<sup>th</sup> grade that apparently makes one more likely to be in a managerial or professional occupation.

## **V. Discussion and Conclusions**

The importance of evaluating how formative teenage work experiences are on adult outcomes is substantial. There is significant interest among both policymakers and academics on school-to-work transitions (witness the recent set of papers in Schoon and Silbereisen 2009). The general view as we continue into the 21st century is that young people no longer have a lock-step pattern to follow to becoming a successful adult, and the diversity of paths is leading to a diversity of outcomes. Thus on the one hand it would be interesting to know how determinate early work experiences are on later lives, and if they are determinate, to modify the choice set of teenagers accordingly in ways that lead to more positive outcomes later on, in terms of young people's achieving economic self-sufficiency and otherwise. In addition, it is interesting to consider how differences in early life experiences of girls and boys may contribute to differences by gender in economic and social outcomes later. On the other hand, it would also be nice to

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<sup>6</sup> We also estimated a multinomial logit model where individuals were predicted as falling into one of the 6 occupational groups; "manager", "professional", "technician", "clerks", "service", "crafts." Based on this model, the results of which are available upon request from the authors, we determined that little sorting power existed between this more detailed set of groups, but that there were similarities between the manager and professional categories; hence the decision to combine them into one group versus the other six, and use a probit specification instead.



know if early work experiences do not lock teenagers into particular future patterns, but that much is still indeterminate about how their lives will unfold.

Our results, while mixed, are provocative. We see interesting nonlinearities in the patterns depending on which year of school the student undertook work experiences in, and some evidence of effects of type of work (and work in and of itself) on measurable outcomes. The effects also appear to vary significantly by gender. It also appears that our instrumental variable effects give very different results in some cases from the non-IV estimates. One result that stands out is that work in 10<sup>th</sup> grade seems to have a positive causal effect on later labor market outcome and to delay family formation.

The results presented in the preceding section show a diverse picture of many significant effects of work while in school on later outcomes. Table 12 provides a different perspective by summarizing the IV results (which are more likely than the non\_IV results to represent causal effects) for the 10<sup>th</sup> grade (which generally show the largest number of significant coefficients.) Table 12 shows that working in 10th grade leads to more positive labor market related outcomes (bachelor degree, employment, occupation, and earnings) and lower outcomes in terms of family formation (marriage and number of children), both for males and females. For females the results suggest that child-oriented jobs lead to higher family formation outcomes.

Certainly exploration of better instrument sets is one avenue for consideration. We also would have liked to consider how extracurricular activities besides work experience might affect future outcomes; however this posed an even more difficult instrumenting problem in trying to ascertain what activities were available at each school, information not available in our data. Similarly, we do not have full information on household structure, and on chores and other nonschool activities that compete for students' time use. Time use diary information in a panel

setting, something not currently available, would be interesting to examine for a fuller picture of how time allocation when young affects future outcomes.

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Table 1: Types of Jobs held while attending school, overall and by gender									
	8th graders			10th graders			12th graders		
	All	Fem.	Male	All	Fem.	Male	All	Fem.	Male
Percent working	79.3	77.9	81.0	56.3	51.5	61.8	67.2	68.0	65.6
Type of job if working:									
<i>Child-oriented jobs</i>									
babysitting	42.9	74.1	8.4	11.0	20.9	1.6	4.8	8.4	0.6
camp counselor	--	--	--	2.1	2.1	2.2	0.8	0.7	1.0
<i>Other types of jobs</i>									
lawn work & odd jobs	23.9	7.6	41.9	6.4	1.3	11.4	2.2	0.2	4.5
newspaper route/ delivery person	6.8	2.6	11.5	2.2	0.6	3.7	1.4	0.3	2.7
farm work	5.6	1.8	9.8	5.0	1.9	8.0	2.1	0.2	4.3
manual labor/ warehouse work	4.7	1.1	8.6	5.3	1.2	9.2	1.7	0.3	3.4
store clerk	2.4	2.1	2.9	11.1	13.8	8.5	27.0	30.6	22.8
food service/ fast food worker	1.6	1.8	1.4	22.2	27.1	17.5	23.2	25.1	20.9
office/clerical	1.2	1.6	0.8	5.2	7.6	2.7	7.5	11.1	3.3
other	10.9	7.3	14.8	25.0	20.9	29.0	24.6	19.2	30.9
house cleaning	--	--	--	1.1	1.7	0.6	0.8	1.0	0.7
hospital/health work	--	--	--	0.8	1.0	0.5	2.0	2.8	1.0
construction work	--	--	--	2.6	0.0	5.2	1.8	0.1	3.9

Table 2: Summary statistics for the sample

Percent of sample that is/has:	Entire sample	Child-oriented jobs			Other types of jobs		
		8th grade	10th grade	12th grade	8th grade	10th grade	12th grade
female	52.4	90.7	85.5	86.5	23.8	43.5	47.8
white	68.6	76.6	79.9	85.0	73.2	74.4	76.2
black	9.7	7.7	8.4	4.4	8.6	7.6	6.7
Hispanic	13.4	9.8	7.0	5.9	11.6	10.4	10.4
residing in northeast	19.2	21.1	26.0	24.9	18.5	21.1	21.2
residing in south	33.7	29.1	27.6	31.2	33.4	27.2	25.6
residing in north central	27.2	31.2	28.5	22.0	28.6	32.2	33.9
residing in urban area	25.0	24.6	22.6	21.0	23.0	23.0	22.5
residing in suburban area	43.6	44.6	43.8	51.3	42.5	44.5	45.2
limited English	2.4	1.5	0.4	0.6	2.4	1.8	1.6
at most 1 sibling	38.7	37.5	41.8	42.0	39.2	38.4	40.3
> 26 years old in 2000	65.8	70.9	75.9	79.1	60.4	63.0	66.4
no income other than earnings in 2000	72.5	71.9	70.1	73.0	71.6	71.2	72.1
spouse/partner's income < \$10K in 2000	58.5	48.4	49.3	45.3	63.3	58.3	56.5
encyclopedia at home in 8th grade	80.6	81.1	84.0	81.7	81.8	81.7	82.2
atlas at home in 8th grade	70.2	71.2	75.0	74.9	72.9	73.4	73.1
dictionary at home in 8th grade	98.0	98.3	98.8	98.8	97.9	98.5	98.9
computer at home in 8th grade	42.9	41.3	44.1	44.4	45.5	45.0	45.0
mother a high school graduate	36.7	35.7	30.9	33.4	38.7	38.5	39.9
father a high school graduate	35.6	34.1	29.6	33.1	37.8	37.4	38.6
family income < \$20K in 1988	26.3	23.8	23.5	19.2	25.7	23.7	22.3
attended public school	82.3	79.4	73.9	76.6	7.5	7.4	6.2
attended private school	7.9	8.8	14.4	13.8	83.3	82.2	82.2
grade average > 3.0 in 1988	57.9	61.3	69.0	65.3	54.3	58.5	61.1
tenure in last job < 1 year	10.4	9.7	9.2	11.5	10.6	10.7	10.2
high school degree	16.0	12.4	12.0	8.5	18.6	16.3	15.1
done some post-secondary education	29.9	28.6	25.1	26.3	30.4	31.0	32.3
some certificate	8.0	8.5	7.3	8.9	7.5	8.1	8.3
Associate's degree	7.3	8.0	8.9	9.5	7.2	7.5	8.8
Bachelor's degree	29.9	33.7	38.8	42.9	28.1	30.4	30.8
Master's degree	3.3	4.6	6.2	3.6	2.4	2.9	3.2
Professional degree	0.6	0.6	0.5	0.3	0.6	0.8	0.6

Table 3: Employment during the school year, overall and by gender									
	8th graders			10th graders			12th graders		
	All	Female	Male	All	Female	Male	All	Female	Male
Percent having no job	20.7	22.7	19.0	43.7	48.5	38.2	32.8	31.9	34.4
Percent doing child-oriented jobs	34.0	57.7	6.8	7.4	11.8	2.3	3.9	6.2	1.1
Percent doing other types of jobs	45.3	20.2	74.2	48.9	39.7	59.5	63.3	61.9	64.5
Average weekly hours of work, child-oriented jobholders	4.9	4.9	4.5	15.9	15.0	21.4	13.3	12.9	16.2
Average weekly hours of work, other jobholders	6.2	5.9	6.3	17.9	16.7	18.8	17.9	17.3	18.6
Average hourly wage, child-oriented jobholders	-	-	-	\$3.01	\$2.90	\$3.68	\$4.40	\$4.32	\$5.58
Average hourly wage, other jobholders	-	-	-	\$4.40	\$4.10	\$4.62	\$5.33	\$5.13	\$5.54

Table 4: Average values of outcome variables by school-year employment type and gender													
	%		%		Number		%		%		Earnings		
	Bachelor		married		of children		employed		mgr/prof		(\$000)		
	M	F	M	F	M	F	M	F	M	F	M	F	
All Respondents	31.4	35.9	5.7	12.2	0.48	0.77	91.1	81.8	36.2	39.1	29.9	20.3	
No Job, 12 <sup>th</sup> grade	41.5	43.6	2.9	9.3	0.37	0.62	87.7	80.9	39.8	42.8	28.8	19.5	
Child-oriented job, 12 <sup>th</sup> grade	55.1	46.5	6.3	8.1	0.35	0.56	98.0	86.0	48.9	44.4	29.4	21.5	
Other job, 12 <sup>th</sup> grade	32.7	39.0	5.2	9.8	0.41	0.62	93.5	85.3	38.9	41.1	31.4	22.2	
No Job, 10 <sup>th</sup> grade	35.1	40.9	4.0	10.3	0.42	0.68	89.1	82.1	36.5	40.6	28.8	20.2	
Child-oriented job, 10 <sup>th</sup> grade	50.5	44.7	2.7	8.2	0.27	0.64	90.9	84.0	50.5	43.9	29.6	21.1	
Other job, 10 <sup>th</sup> grade	33.4	34.9	5.8	11.9	0.44	0.73	92.7	83.8	39.3	39.5	31.2	21.7	
No Job, 8 <sup>th</sup> grade	38.8	39.3	3.2	11.1	0.36	0.70	88.3	82.8	39.7	38.1	29.1	20.8	
Child-oriented job, 8 <sup>th</sup> grade	47.5	37.9	2.1	11.7	0.35	0.73	90.1	82.4	43.5	42.0	28.2	20.6	
Other job, 8 <sup>th</sup> grade	30.4	33.4	6.4	14.0	0.49	0.82	92.1	80.8	36.0	34.9	30.6	19.8	



Table 5: Probit estimates of bachelor degree attainment; average partial effects of child-oriented job and working while in school, and interactions with female

	8 <sup>th</sup>	8 <sup>th</sup> -IV	10 <sup>th</sup>	10 <sup>th</sup> -IV	12 <sup>th</sup>	12 <sup>th</sup> -IV
Child-oriented job	0.06 (1.55)	-0.11 (-0.25)	0.03 (0.49)	0.72*** (9.81)	0.03 (0.28)	0.25 (0.17)
Working	-0.02 (-0.72)	-0.03 (-0.11)	0.02 (0.71)	0.49*** (3.26)	-0.06** (-2.56)	0.36 (0.89)
Female	0.09*** (2.86)	0.26 (1.22)	0.09*** (4.09)	0.39*** (3.58)	0.04 (1.52)	0.31 (1.41)
Female x Child-oriented job	-0.04 (-0.99)	-0.06 (-0.09)	-0.00 (-0.04)	-0.50*** (-6.39)	0.00 (0.02)	-0.09 (-0.05)
Female x Working	-0.04 (-1.14)	-0.15 (-0.30)	-0.06** (-2.10)	-0.34* (-1.83)	0.04 (1.11)	-0.36 (-1.24)
Observations	6580	6520	6120	5960	5880	5880

t-statistics in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 6: Probit estimates of being married; average partial effects of child-oriented job and working while in school, and interactions with female

	8 <sup>th</sup>	8 <sup>th</sup> -IV	10 <sup>th</sup>	10 <sup>th</sup> -IV	12 <sup>th</sup>	12 <sup>th</sup> -IV
Child-oriented job	-0.04** (-2.34)	-0.17 (-1.10)	-0.04** (-2.50)	-0.08 (-1.61)	0.03 (0.58)	-0.07** (-2.10)
Working	0.04*** (4.06)	0.11** (1.97)	0.03*** (3.70)	-0.22* (-1.71)	0.03*** (4.19)	-0.32 (-0.92)
Female	0.08*** (6.18)	0.24* (1.86)	0.06*** (7.40)	0.04 (0.86)	0.06*** (6.21)	0.09 (1.21)
Female x Child-oriented job	0.03 (1.32)	0.83** (2.04)	0.05 (0.81)	0.71 (0.48)	-0.02 (-0.91)	-0.07** (-2.11)
Female x Working	-0.02 (-1.59)	-0.43 (-1.54)	-0.01 (-1.33)	-0.03 (-0.39)	-0.02** (-2.05)	0.02 (0.18)
Observations	9580	9460	8800	8530	8460	8460

t-statistics in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 7: Tobit estimates of number of children; average partial effects of child-oriented job and working in school, and interactions with female

	8 <sup>th</sup>	8 <sup>th</sup> -IV	10 <sup>th</sup>	10 <sup>th</sup> -IV	12 <sup>th</sup>	12 <sup>th</sup> -IV
Child-oriented job	-0.10*	-1.29***	-0.15**	-0.27	0.02	-0.78***
	(-1.82)	(-2.76)	(-2.00)	(-0.15)	(0.15)	(-5.47)
Working	0.12***	1.10***	0.04	-0.60**	0.07***	-0.89
	(3.85)	(6.65)	(1.41)	(-2.05)	(2.65)	(-1.20)
Female	0.24***	1.60***	0.20***	-0.01	0.19***	-0.05
	(5.93)	(4.37)	(7.24)	(-0.01)	(6.30)	(-0.21)
Female x Child-oriented job	0.06	2.68	0.16	1.34	-0.02	16.59**
	(0.84)	(1.47)	(1.27)	(0.37)	(-0.17)	(2.09)
Female x Working	-0.01	-1.70**	-0.02	0.15	-0.04	0.43
	(-0.14)	(-2.44)	(-0.47)	(0.44)	(-1.12)	(1.01)
Observations	9090	8980	8360	8110	8040	8040
t-statistics in parentheses	*** p<0.01, ** p<0.05, * p<0.1					

Table 8: Probit estimates of employment; average partial effects of child-oriented job and working while in school, and interactions with female

	8 <sup>th</sup>	8 <sup>th</sup> -IV	10 <sup>th</sup>	10 <sup>th</sup> -IV	12 <sup>th</sup>	12 <sup>th</sup> -IV
Child-oriented job	-0.02	0.21	-0.03	-0.95***	0.07*	-0.93***
	(-1.04)	(1.14)	(-0.79)	(-33.92)	(1.85)	(-31.51)
Working	0.05***	0.60**	0.04***	0.26**	0.06***	0.66***
	(3.30)	(2.15)	(3.45)	(2.13)	(4.27)	(2.78)
Female	-0.03*	0.16	-0.05***	-0.03	-0.05***	0.07
	(-1.81)	(1.13)	(-5.12)	(-0.40)	(-4.40)	(0.65)
Female x Child-oriented job	0.03	-0.07	0.04	0.20***	-0.12	0.14***
	(1.41)	(-0.16)	(1.11)	(3.18)	(-0.90)	(3.22)
Female x Working	-0.09***	-0.49	-0.04***	-0.13	-0.03*	-0.25
	(-4.22)	(-1.36)	(-2.60)	(-0.86)	(-1.90)	(-1.25)
Observations	9230	9120	8490	8240	8180	8180
t-statistics in parentheses	*** p<0.01, ** p<0.05, * p<0.1					

Table 9: Heckit log earnings equations, coefficients on child-oriented jobs and working in school , and interactions

	8 <sup>th</sup>	8 <sup>th</sup> -IV	10 <sup>th</sup>	10 <sup>th</sup> -IV	12 <sup>th</sup>	12 <sup>th</sup> -IV
Child-oriented job	-0.14*** (-2.99)	0.08 (0.14)	-0.21*** (-2.75)	1.74 (1.25)	-0.17 (-1.52)	-0.36 (-0.10)
Working	0.09*** (3.00)	-0.13 (-0.35)	0.09*** (3.60)	0.38 (1.59)	0.11*** (4.16)	0.96 (1.38)
Female	-0.32*** (-8.78)	-0.48** (-1.98)	-0.37*** (-12.99)	-0.32** (-2.30)	-0.39*** (-11.93)	-0.95** (-2.31)
Female x Child-oriented job	0.16*** (2.95)	0.12 (0.15)	0.14* (1.67)	-2.10 (-1.36)	0.07 (0.55)	5.02 (1.28)
Female x Working	-0.14*** (-2.85)	-0.02 (-0.03)	-0.02 (-0.42)	0.06 (0.20)	0.02 (0.53)	-0.14 (-0.26)
Observations	8350	8260	7740	7510	7470	7470
t-statistics in parentheses	*** p<0.01, ** p<0.05, * p<0.1					

(1) Managers (12.3)	Managers-supervisory (64.6); Managers-midlevel (29.0); Managers-executive (6.4)
(2) Professionals (25.4)	Educators-K-12 teachers (16.0); Computer systems professionals (13.6); Financial services professionals (13.5); Educators-other than K-12 (13.4); Medical professionals (12.3); Engineers, architects & software engineers (8.0); Human services professionals (7.7); Performers/artists (5.3); Editors, writers, & reporters (4.3); Computer programmers (3.0); Legal professionals (1.4); Scientist & statistician professionals (1.4)
(3) Technicians and associate professionals (7.8)	Medical services (49.7); Research assistants/lab technicians (18.3); Legal support (8.9); Health/recreation services (7.7); Computer/computer equipment operators (2.9); Technical/professional workers, other (12.5)
(4) Clerical support workers (16.4)	Business/financial support services (33.7); Secretaries and receptionists (24.7); Cashiers, tellers, sales clerks (19.1); Clerks, data entry (5.2); Clerical other (17.3)
(5) Service and sales workers (25.1)	Laborers (other than farm) (30.8); Sales/purchasing (28.9); Personal services (19.4); Protective services, criminal justice (9.0); Customer service (8.3); Cooks, chefs, & bakers (3.7)
(6) Craft workers (13.0)	Craftsmen (32.6); Skilled operatives (27.7); Mechanics, repairers & service technicians (20.3); Transport operatives (not pilots) (13.3); Farmers, foresters, & farm laborers (6.0)

Table 11: Probit estimates of managerial/professional occupational category vs. other categories;  
average partial effects of child-oriented job and working while in school, and interactions with female

	8 <sup>th</sup>	8 <sup>th</sup> -IV	10 <sup>th</sup>	10 <sup>th</sup> -IV	12 <sup>th</sup>	12 <sup>th</sup> -IV
Child-oriented job	-0.00 (-0.03)	0.40 (1.05)	0.06 (1.11)	-0.27 (-0.34)	0.01 (0.06)	-0.45 (-0.82)
Working	0.01 (0.71)	0.09 (0.53)	0.03* (1.95)	0.25* (1.78)	0.01 (0.74)	0.25 (0.94)
Female	-0.01 (-0.43)	0.01 (0.27)	0.02 (0.96)	0.04 (0.43)	0.01 (0.63)	-0.06 (-0.31)
Female x Child-oriented job	0.05 (1.37)	-0.37 (-0.46)	-0.05 (-0.94)	0.52 (0.58)	0.00 (0.02)	0.67 (1.39)
Female x Working	-0.01 (-0.45)	0.05 (0.23)	-0.02 (-1.04)	-0.10 (-0.57)	-0.02 (-0.70)	-0.05 (-0.24)
Observations	9910	9790	9080	8810	8740	8740
t-statistics in parentheses	*** p<0.01, ** p<0.05, * p<0.1					

Table 12. Summary of IV results, 10<sup>th</sup> grade work

	Female		Male	
	Work <sup>1)</sup>	Child-oriented job <sup>2)</sup>	Work <sup>1)</sup>	Child-oriented job <sup>2)</sup>
Bachelor	0.15	0.22	0.49	0.72
Marriage	-0.19	0.62	-0.22	-0.08
Number of children	-0.45	1.07	-0.60	-0.87
Employment	0.12	-0.75	0.26	-0.69
Earnings	0.44	-0.36	0.38	2.12
Man/prof occupation	0.14	0.25	0.25	-0.03

1) Effect compared to no work. For males: coefficient of Working; for females: coefficients of Working + Female x Working

2) Effect compared to work. For males: coefficient of Child-oriented job; for females: coefficients of Child-oriented job + Female x Child-oriented job.

## Appendix

Table A.1: Wording of questions regarding work in NELS survey

1988 (8th grade) questionnaire: BYS54: Which of the job categories below comes closest to the kind of work you do/did for pay on your current or most recent job? (Do not include work around the house. If more than one kind of work, choose the one that paid you the most per hour.) (MARK ONE)

1990 (10th grade) questionnaire: F1S87: What kind of work do/did you do for pay on your current job or most recent job? (Do not include work around your own house. If more than one kind of work, choose the one that paid you the most per hour.)

1992 (12th grade) questionnaire: F2S90: What kind of work do/did you do for pay on your current job or most recent job during this school year? (If you have two or more jobs, answer for the job that pays the most per hour. Do not include work around your own house.)

Law	Number of states affected	States affected	Number of observations potentially affected		
			8th grade	10th grade	12th grade
States with nonzero collections in civil money penalties	13	Arizona, California, Illinois, Indiana, Kentucky, Maine, North Carolina, New Jersey, New York, Oklahoma, Oregon, Virginia, Wisconsin	4490	4200	4650
Limits on student work after 10 p.m. on a school night	5	Alabama, California, District of Columbia, Massachusetts, Maine	1400	1330	1540
State department of labor publicizes employers who violate child labor laws	7	Iowa, Maine, New Jersey, New York, Oregon, Pennsylvania, South Carolina	2240	2100	2290
Imposition of criminal penalties for child labor law violations	37	All states except Arizona, Georgia, Hawaii, Indiana, Kentucky, Maine, North Carolina, New Mexico, Nevada, New York, Tennessee, Wisconsin, West Virginia, Wyoming	8620	8220	9040
40 hour limit on the number of work hours per week while school is in session	13	California, Connecticut, Delaware, Florida, Indiana, Kentucky, Maryland, Maine, Michigan, New Hampshire, New York, Washington, Wisconsin	4330	4110	4560
Required work permits for minors in agriculture-related jobs	17	Alaska, Arkansas, California, Connecticut, Hawaii, Iowa, Michigan, Missouri, North Dakota, New Jersey, New Mexico, Nevada, New York, Ohio, Oklahoma, Pennsylvania,	5390	5070	5620

		Washington			
Required work permits for minors in nonagriculture-related jobs	36	All states except Arizona, Colorado, District of Columbia, Florida, Idaho, Kentucky, Minnesota, Missouri, Montana, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont	8220	7810	8540



Table A.3: First-stage regressions of school-year employment, non-child-oriented jobs

<b>Instruments</b>	8th grade	10th grade	12th grade
Female labor force participation rate	-0.01 (-1.05)	0.02*** (3.65)	0.01** (2.17)
Population ages 12-18	-0.00 (-0.92)	-0.00 (-0.92)	-0.00 (-0.12)
Population ages 0-11	0.00 (0.79)	0.00 (0.43)	-0.00 (-0.01)
Work permit required for nonagriculture-related work	0.08** (2.21)	0.00 (0.12)	-0.03 (-0.53)
Work permit required for agriculture-related work	0.00 (0.01)	-0.02 (-0.66)	0.10** (2.07)
Laws limiting hours of work per week during the school year	-0.03 (-0.85)	0.08* (1.95)	0.04 (0.80)
Criminal penalties allowed for child labor violations	-0.00 (-0.02)	0.10** (2.23)	-0.06 (-0.92)
Laws requiring public notice of child labor violations	0.07** (2.08)	0.10** (2.34)	0.07 (1.24)
Laws restricting working after 10 pm	0.05 (0.95)	0.00 (0.02)	-0.08 (-1.44)
No civil money penalties collected	-0.05* (-1.71)	0.04 (1.13)	0.06* (1.74)
<b>Test of Ho: the coefficients of the instruments are jointly 0</b>	chi=36.5 p=0.00	chi=95.72 p0.00	chi=57.91 p=0.00

Table A.4: First-stage regressions of school-year employment, child-oriented jobs

<b>Instruments</b>	Child-oriented 8th grade	Child-oriented 10th grade	Child- oriented 12th grade
Female labor force participation rate	0.02*** (3.43)	0.00 (0.11)	-0.01 (-1.05)
12-18 aged population	0.00** (2.48)	0.00* (1.67)	0.00 (0.27)
0-11 aged population	-0.00*** (-2.62)	-0.00* (-1.82)	-0.00 (-0.10)
Work permit required for non-agriculture related work	-0.08 (-1.46)	-0.08 (-1.54)	0.02 (0.40)
Work permit required for agriculture- related work	-0.03 (-0.49)	0.09* (1.70)	-0.04 (-0.70)
Laws limiting maximum hours of work per week during school year	0.01 (0.22)	0.10** (2.17)	0.05 (1.00)
Criminal penalties allowed for child labor violations	-0.07 (-1.02)	0.03 (0.55)	0.04 (0.50)
Laws requiring public notice of child labor violations	-0.07 (-0.95)	-0.10** (-1.98)	-0.21** (-2.50)
Laws restricting working after 10 pm	-0.03 (-0.49)	0.08 (0.83)	0.01 (0.09)
No civil money penalties collected	0.01 (0.22)	0.03 (0.52)	0.03 (0.45)
<b>Test of Ho: the coefficients of the instruments are jointly 0</b>	chi = 72.86 p=0.00	chi = 22.93 p=0.01	chi = 19.83 p=0.03

Table A.5: Probit estimates of bachelor's degree attainment

	(1)	(IV)	(2)	(IV)	(3)	(IV)
Female	0.24*** (2.84)	0.72 (1.17)	0.24*** (4.06)	1.11*** (2.93)	0.12 (1.52)	0.87 (1.30)
White	-0.19** (-2.54)	-0.09 (-0.76)	-0.19** (-2.49)	-0.31** (-2.43)	-0.19** (-2.50)	-0.35 (-1.57)
Black	-0.05 (-0.45)	-0.03 (-0.27)	-0.03 (-0.27)	-0.02 (-0.11)	-0.07 (-0.66)	-0.08 (-0.69)
Hispanic	-0.29*** (-3.15)	-0.25** (-2.46)	-0.28*** (-2.89)	-0.34*** (-2.61)	-0.26*** (-2.73)	-0.33*** (-2.67)
# of Siblings	-0.05*** (-4.10)	-0.05*** (-2.88)	-0.05*** (-4.09)	-0.07*** (-3.70)	-0.05*** (-3.50)	-0.05*** (-3.05)
Birth Year	0.14*** (3.87)	0.13*** (2.97)	0.11*** (2.85)	0.22*** (3.49)	0.13*** (3.23)	0.12** (2.55)
Northeast	0.42*** (6.71)	0.44*** (6.01)	0.37*** (5.75)	0.40*** (4.89)	0.40*** (6.24)	0.42*** (5.73)
South	0.10* (1.80)	0.08 (1.17)	0.07 (1.16)	0.14* (1.68)	0.11* (1.86)	0.16 (1.45)
North Central	0.25*** (4.23)	0.29*** (4.00)	0.23*** (3.86)	0.24*** (3.49)	0.23*** (3.94)	0.22*** (2.85)
Urban	0.05 (0.90)	0.04 (0.57)	0.04 (0.73)	0.01 (0.13)	0.082 (1.44)	0.053 (0.74)
Suburban	-0.02 (-0.45)	-0.00 (-0.04)	-0.00 (-0.14)	0.01 (0.12)	-0.00 (-0.01)	-0.04 (-0.61)
Limited English	-0.03 (-0.19)	-0.03 (-0.14)	-0.14 (-0.78)	-0.05 (-0.22)	-0.12 (-0.66)	0.02 (0.11)
Other income	0.00*** (3.69)	0.00*** (3.08)	0.00*** (3.75)	0.00*** (2.74)	0.00*** (3.55)	0.00*** (3.17)
Household income	-0.00** (-2.49)	-0.00* (-1.68)	-0.00*** (-2.65)	-0.00*** (-3.27)	-0.00*** (-2.92)	-0.00** (-1.99)
Achievement 8	0.09*** (27.58)	0.09*** (24.41)	0.09*** (26.61)	0.09*** (21.98)	0.09*** (26.11)	0.09*** (23.72)
Encyclopedia	0.04 (0.82)	0.03 (0.62)	0.07 (1.37)	0.09 (1.47)	0.07 (1.30)	0.06 (1.10)
Atlas	-0.11** (-2.35)	-0.11* (-1.94)	-0.09** (-2.09)	-0.08 (-1.40)	-0.12** (-2.53)	-0.12** (-2.31)
Dictionary	-0.54** (-2.26)	-0.57** (-2.27)	-0.75*** (-2.68)	-0.98*** (-3.07)	-0.43* (-1.79)	-0.30 (-1.07)
Computer	-0.01 (-0.13)	0.00 (0.01)	0.01 (0.28)	-0.01 (-0.16)	0.01 (0.29)	-0.00 (-0.02)
Mother's Education	0.07*** (4.57)	0.07*** (4.30)	0.07*** (4.54)	0.07*** (4.20)	0.07*** (4.37)	0.07*** (3.68)

Father's Education	0.14*** (10.23)	0.15*** (9.76)	0.14*** (10.19)	0.12*** (7.06)	0.13*** (9.52)	0.14*** (8.47)
FINCOME8	0.09*** (8.94)	0.09*** (8.54)	0.10*** (9.11)	0.10*** (8.17)	0.09*** (8.40)	0.09*** (7.61)
PRIVS	0.22** (2.45)	0.21** (2.23)	0.23** (2.44)	0.14 (1.04)	0.21** (2.24)	0.39* (1.65)
PUBS	-0.36*** (-5.49)	-0.38*** (-5.34)	-0.32*** (-4.89)	-0.35*** (-4.51)	-0.36*** (-5.46)	-0.37*** (-4.40)
CHILDEXP8/ 10/12	0.16 (1.56)	-0.28 (-0.23)	0.09 (0.49)	3.85 (1.26)	0.07 (0.29)	0.33 (0.08)
EHS8/10/12	-0.05 (-0.72)	-0.09 (-0.11)	0.04 (0.71)	1.48** (2.47)	-0.16** (-2.57)	1.31 (0.91)
FCHILD8/10/ 12	-0.12 (-0.98)	-0.22 (-0.12)	-0.01 (-0.04)	-5.14 (-1.44)	0.01 (0.02)	0.43 (0.09)
FEHS8/10/12	-0.12 (-1.13)	-0.37 (-0.26)	-0.17** (-2.07)	-1.07 (-1.42)	0.09 (1.12)	-1.08 (-1.11)
Constant	-14.15*** (-5.21)	-13.59*** (-3.82)	-11.77*** (-4.11)	-20.75*** (-4.27)	-13.00*** (-4.50)	-13.56*** (-3.73)
Observations	6580	6520	6120	5960	5880	5880

Table A.6: Probit estimates of marriage

	(1)	(IV)	(2)	(IV)	(3)	(IV)
Female	0.64*** (6.13)	1.91** (2.28)	0.53*** (7.25)	0.39 (0.92)	0.56*** (6.12)	0.92 (1.03)
White	0.17** (2.05)	0.12 (0.71)	0.19** (2.02)	0.39*** (2.83)	0.14 (1.49)	0.63** (2.08)
Black	-0.45*** (-3.64)	-0.48*** (-3.00)	-0.36*** (-2.76)	-0.27* (-1.76)	-0.26* (-1.92)	-0.28 (-1.61)
Hispanic	0.42*** (4.52)	0.36*** (3.15)	0.43*** (4.16)	0.41*** (3.51)	0.43*** (4.06)	0.56*** (2.96)
Northeast	-0.37*** (-5.03)	-0.41*** (-4.53)	-0.36*** (-4.49)	-0.30*** (-3.06)	-0.36*** (-4.27)	-0.36*** (-3.28)
South	0.29*** (5.26)	0.23** (2.45)	0.34*** (5.71)	0.11 (1.12)	0.29*** (4.59)	0.14 (1.09)
North Central	-0.01 (-0.09)	-0.06 (-0.80)	0.03 (0.48)	0.08 (1.03)	0.02 (0.35)	-0.04 (-0.33)
Urban	-0.47*** (-8.87)	-0.42*** (-5.11)	-0.48*** (-8.21)	-0.50*** (-6.48)	-0.52*** (-8.33)	-0.45*** (-4.82)
Suburban	-0.27*** (-6.15)	-0.26*** (-3.71)	-0.26*** (-5.47)	-0.30*** (-4.93)	-0.29*** (-5.84)	-0.14 (-1.47)
Limited English	0.34*** (2.82)	0.42*** (2.77)	0.28** (2.06)	0.29* (1.65)	0.41*** (3.03)	0.13 (0.47)
Other income	-0.00** (-2.13)	-0.00* (-1.69)	-0.00*** (-2.73)	-0.00** (-2.16)	-0.00** (-2.30)	-0.00** (-2.54)
CHILDEXP8/ 10/12	0.25 (1.42)	-1.55 (-0.92)	0.32 (0.98)	-1.93 (-0.40)	-0.24 (-0.74)	-5.48 (-0.66)
EHS8/10/12	-0.19 (-1.55)	1.65 (1.43)	-0.12 (-1.27)	-1.40* (-1.87)	-0.21** (-1.96)	-1.34 (-0.74)
FCHILD8/10/ 12	-0.35** (-2.16)	3.65 (1.45)	-0.52* (-1.65)	1.95 (0.36)	0.21 (0.67)	-2.92 (-0.31)
FEHS8/10/12	0.34*** (3.45)	-3.53* (-1.90)	0.28*** (3.61)	-0.35 (-0.42)	0.33*** (3.79)	-0.02 (-0.01)
Constant	-1.90*** (-15.07)	-2.80*** (-3.20)	-1.90*** (-16.17)	-0.90** (-1.98)	-1.95*** (-15.52)	-1.13 (-1.10)
Observations	9580	9460	8800	8530	8460	8460

Table A.7: Tobit estimates of number of children

	(1)	(IV)	(2)	(IV)	(3)	(IV)
Female	0.69*** (5.88)	4.53*** (3.86)	0.61*** (7.16)	0.00 (0.01)	0.62*** (6.24)	-0.09 (-0.08)
White	0.26** (2.51)	-0.30 (-1.35)	0.36*** (3.17)	0.49*** (3.19)	0.23** (2.08)	0.73** (2.00)
Black	1.17*** (9.13)	0.75*** (3.81)	1.26*** (8.99)	1.22*** (7.63)	1.15*** (8.21)	1.07*** (5.32)
Hispanic	1.00*** (8.68)	0.73*** (4.66)	1.08*** (8.53)	1.05*** (7.60)	0.95*** (7.52)	1.08*** (4.82)
Sib	0.19*** (12.22)	0.16*** (6.72)	0.19*** (10.88)	0.20*** (8.96)	0.19*** (10.46)	0.20*** (7.40)
Birthyear	-0.48*** (-11.43)	-0.31*** (-4.01)	-0.40*** (-8.35)	-0.58*** (-6.84)	-0.31*** (-6.22)	-0.20** (-2.20)
Northeast	-0.45*** (-5.35)	-0.46*** (-3.74)	-0.45*** (-4.88)	-0.43*** (-4.00)	-0.49*** (-5.30)	-0.44*** (-3.38)
South	0.01 (0.15)	0.04 (0.32)	0.07 (0.87)	-0.11 (-0.96)	0.05 (0.60)	-0.05 (-0.31)
North Central	-0.05 (-0.69)	-0.20* (-1.71)	-0.03 (-0.34)	-0.01 (-0.06)	-0.04 (-0.54)	-0.16 (-0.96)
Urban	-0.53*** (-8.01)	-0.26** (-2.35)	-0.54*** (-7.66)	-0.56*** (-6.37)	-0.62*** (-8.53)	-0.51*** (-4.49)
Suburban	-0.54*** (-9.08)	-0.33*** (-3.20)	-0.56*** (-8.85)	-0.61*** (-8.29)	-0.55*** (-8.54)	-0.37*** (-3.20)
Limited English	0.50*** (3.05)	0.60*** (2.67)	0.40** (2.10)	0.32 (1.43)	0.57*** (3.03)	0.17 (0.46)
Other income	-0.00*** (-4.38)	-0.00*** (-3.55)	-0.00*** (-4.15)	-0.00*** (-3.36)	-0.00*** (-4.53)	-0.00*** (-3.53)
Household income	0.00*** (11.13)	0.00*** (6.72)	0.00*** (11.15)	0.00*** (10.24)	0.00*** (11.18)	0.00*** (5.33)
CHILDEXP8/ 10/12	-0.28* (-1.78)	-4.89** (-2.10)	-0.51* (-1.75)	-0.74 (-0.15)	0.06 (0.15)	-25.00** (-2.40)
EHS8/10/12	0.37*** (3.61)	6.49*** (4.10)	0.12 (1.40)	-1.68** (-2.05)	0.23*** (2.58)	-2.14 (-0.98)
FCHILD8/10/ 12	0.15 (0.85)	5.13 (1.53)	0.44 (1.40)	2.07 (0.37)	-0.07 (-0.16)	18.00 (1.57)
FEHS8/10/12	-0.02 (-0.14)	-5.39** (-2.08)	-0.05 (-0.47)	0.42 (0.44)	-0.13 (-1.11)	1.15 (0.72)
Constant	33.47*** (10.81)	16.73*** (2.64)	27.66*** (7.82)	41.71*** (6.44)	21.26*** (5.73)	14.10** (2.08)
Observations	9090	8980	8360	8110	8040	8040

Table A.8: Probit estimates of employment

	(1)	(IV)	(2)	(IV)	(3)	(IV)
Female	-0.13*	0.75	-0.28***	-0.13	-0.27***	0.39
	(-1.81)	(1.08)	(-5.06)	(-0.38)	(-4.36)	(0.62)
White	0.24***	0.00	0.27***	0.22**	0.29***	0.08
	(4.02)	(0.00)	(4.29)	(2.40)	(4.60)	(0.49)
Black	0.07	-0.06	0.16*	0.17*	0.20**	0.16
	(0.82)	(-0.53)	(1.89)	(1.66)	(2.27)	(1.48)
Hispanic	0.10	0.05	0.16**	0.17**	0.20***	0.05
	(1.36)	(0.54)	(2.10)	(2.02)	(2.60)	(0.42)
Northeast	-0.03	-0.05	0.034	0.00	-0.03	-0.02
	(-0.63)	(-0.67)	(0.59)	(0.06)	(-0.49)	(-0.23)
South	-0.03	0.02	0.02	0.09	0.00	0.05
	(-0.68)	(0.29)	(0.46)	(1.36)	(0.06)	(0.74)
North Central	0.00	-0.07	0.05	-0.02	0.043	-0.11
	(0.01)	(-0.93)	(0.85)	(-0.34)	(0.77)	(-1.28)
Urban	-0.01	0.02	-0.03	0.03	-0.03	0.02
	(-0.29)	(0.23)	(-0.54)	(0.56)	(-0.58)	(0.37)
Suburban	0.02	0.03	0.02	0.05	0.00	-0.01
	(0.59)	(0.51)	(0.54)	(0.96)	(0.06)	(-0.16)
Limited English	-0.09	-0.06	-0.14	-0.16	-0.12	0.06
	(-0.79)	(-0.42)	(-1.13)	(-1.09)	(-0.94)	(0.33)
Other income	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***
	(-9.63)	(-7.60)	(-8.93)	(-7.49)	(-8.76)	(-3.54)
Household income	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***
	(-3.67)	(-3.70)	(-3.53)	(-3.08)	(-3.60)	(-2.71)
CHILDEXP8/10/12	-0.11	1.23	-0.16	-5.37	0.53	-5.879
	(-1.06)	(0.88)	(-0.84)	(-1.56)	(1.24)	(-0.97)
EHS8/10/12	0.23***	1.95**	0.21***	1.17**	0.27***	2.49**
	(3.54)	(2.07)	(3.49)	(2.17)	(4.49)	(2.39)
FCHILD8/10/12	0.16	-0.29	0.20	5.40	-0.48	4.33
	(1.35)	(-0.15)	(0.99)	(1.45)	(-1.10)	(0.64)
FEHS8/10/12	-0.41***	-2.01	-0.21***	-0.57	-0.15*	-1.14
	(-4.39)	(-1.32)	(-2.74)	(-0.90)	(-1.94)	(-1.30)
Constant	1.10***	-0.20	1.10***	0.65*	1.06***	-0.16
	(12.82)	(-0.29)	(13.48)	(1.94)	(12.84)	(-0.27)
Observations	9230	9120	8490	8240	8180	8180

Table A.9: Heckit estimates of earnings

	(1)	(IV)	(2)	(IV)	(3)	(IV)
Female	-0.32*** (-8.79)	-0.48** (-1.98)	-0.37*** (-12.99)	-0.32** (-2.30)	-0.39*** (-11.93)	-0.94** (-2.30)
White	0.08** (2.40)	0.07 (1.07)	0.09*** (2.59)	0.07 (1.53)	0.08** (2.38)	0.21** (1.96)
Black	0.00 (0.01)	0.01 (0.14)	0.03 (0.71)	0.03 (0.60)	0.025 (0.55)	0.32* (1.88)
Hispanic	0.01 (0.25)	0.01 (0.21)	0.03 (0.79)	0.03 (0.55)	0.038 (0.93)	0.26** (2.05)
High school	0.20*** (3.97)	0.21*** (3.85)	0.18*** (2.80)	0.13* (1.74)	0.32*** (2.92)	0.13 (0.64)
SPSE	0.27*** (5.48)	0.27*** (4.78)	0.26*** (4.15)	0.19*** (2.69)	0.38*** (3.57)	0.12 (0.54)
CER	0.29*** (5.33)	0.30*** (5.17)	0.28*** (4.23)	0.22*** (2.74)	0.40*** (3.68)	0.11 (0.47)
Associate	0.35*** (6.24)	0.35*** (5.74)	0.33*** (4.86)	0.27*** (3.50)	0.45*** (4.08)	0.14 (0.61)
Bachelors	0.59*** (11.82)	0.57*** (10.00)	0.57*** (9.11)	0.51*** (6.74)	0.70*** (6.58)	0.41* (1.89)
MD	0.02 (0.47)	0.02 (0.47)	0.02 (0.58)	0.04 (0.76)	0.02 (0.46)	0.12 (1.41)
PhD	0.13 (1.25)	0.14 (1.28)	0.04 (0.43)	-0.01 (-0.12)	0.12 (1.16)	0.28 (1.53)
Northeast	0.04* (1.67)	0.04 (1.27)	0.06** (2.28)	0.07** (2.20)	0.04* (1.67)	0.00 (0.02)
South	-0.02 (-0.80)	-0.01 (-0.37)	-0.00 (-0.12)	0.03 (1.06)	-0.02 (-1.04)	0.00 (0.09)
North Central	0.03 (1.24)	0.03 (1.21)	0.04 (1.62)	0.06** (2.03)	0.01 (0.55)	0.06 (1.14)
Urban	0.04* (1.90)	0.03 (1.29)	0.03 (1.59)	0.03 (1.09)	0.03 (1.20)	-0.02 (-0.42)
Suburban	0.06*** (2.99)	0.05* (1.90)	0.05** (2.34)	0.06** (2.32)	0.04** (2.14)	-0.02 (-0.47)
Limited English	-0.07 (-1.14)	-0.05 (-0.92)	-0.07 (-1.08)	-0.05 (-0.64)	-0.02 (-0.36)	-0.04 (-0.37)
Experience	0.18*** (17.90)	0.18*** (14.88)	0.19*** (17.66)	0.19*** (15.01)	0.18*** (16.75)	0.17*** (8.65)
Experience-squared	-0.01*** (-11.86)	-0.01*** (-10.40)	-0.01*** (-11.94)	-0.01*** (-10.48)	-0.01*** (-10.99)	-0.01*** (-5.84)
CHILDEXP8/ 10/12	-0.13*** (-2.99)	0.07 (0.14)	-0.21*** (-2.75)	1.74 (1.24)	-0.17 (-1.52)	-0.36 (-0.10)
EHS8/10/12	0.09***	-0.13	0.09***	0.38	0.11***	1.00



	(2.99)	(-0.35)	(3.59)	(1.59)	(4.16)	(1.38)
FCHILD8/10/ 12	0.16***	0.12	0.14*	-2.10	0.07	5.01
	(2.95)	(0.15)	(1.67)	(-1.36)	(0.55)	(1.28)
FEHS8/10/12	-0.14***	-0.02	-0.01	0.06	0.02	-0.14
	(-2.85)	(-0.03)	(-0.42)	(0.20)	(0.53)	(-0.26)
Constant	9.00***	9.40***	9.00***	8.57***	8.90***	4.66*
	(48.24)	(10.11)	(45.44)	(13.66)	(40.75)	(1.89)
Observations	8350	8260	7740	7510	7470	7470

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Table A.10: Probit estimates of managerial/professional occupation

	(1)	(IV)	(2)	(IV)	(3)	(IV)
Female	-0.03 (-0.43)	0.14 (0.27)	0.04 (0.96)	0.10 (0.43)	0.03 (0.63)	-0.16 (-0.31)
White	-0.07 (-1.45)	-0.13 (-1.37)	-0.07 (-1.26)	-0.15** (-2.15)	-0.07 (-1.35)	-0.24* (-1.67)
Black	-0.11 (-1.58)	-0.12 (-1.47)	-0.12* (-1.72)	-0.16** (-2.02)	-0.16** (-2.15)	-0.12 (-1.28)
Hispanic	-0.14** (-2.28)	-0.14** (-2.05)	-0.15** (-2.35)	-0.16** (-2.29)	-0.16** (-2.39)	-0.19** (-2.31)
High school	0.35*** (3.54)	0.38*** (3.55)	0.35*** (2.73)	0.30** (2.29)	0.32 (1.41)	0.27 (0.94)
SPSE	0.61*** (6.43)	0.62*** (5.76)	0.62*** (5.05)	0.59*** (4.50)	0.63*** (2.75)	0.53* (1.83)
CER	0.49*** (4.69)	0.49*** (4.38)	0.51*** (3.88)	0.46*** (3.26)	0.52** (2.23)	0.40 (1.36)
Associate	0.84*** (8.16)	0.87*** (7.64)	0.86*** (6.57)	0.81*** (5.79)	0.86*** (3.71)	0.71** (2.30)
Bachelors	1.47*** (15.55)	1.47*** (12.88)	1.48*** (11.97)	1.44*** (10.56)	1.48*** (6.48)	1.41*** (5.15)
MD	0.54*** (6.93)	0.56*** (6.28)	0.54*** (6.84)	0.55*** (6.37)	0.53*** (6.72)	0.57*** (5.34)
PhD	0.24 (1.45)	0.24 (1.36)	0.28* (1.69)	0.27 (1.47)	0.29* (1.76)	0.44** (2.10)
Northeast	0.01 (0.15)	0.01 (0.20)	0.02 (0.54)	0.01 (0.16)	0.03 (0.76)	0.02 (0.45)
South	-0.02 (-0.50)	0.00 (0.07)	0.00 (0.00)	0.05 (0.93)	-0.01 (-0.24)	0.01 (0.16)
North Central	-0.05 (-1.17)	-0.05 (-1.06)	0.00 (0.04)	-0.03 (-0.52)	-0.01 (-0.33)	-0.05 (-0.70)
Urban	0.04 (1.24)	0.04 (0.78)	0.03 (0.81)	0.06 (1.31)	0.030 (0.79)	0.03 (0.64)
Suburban	0.06* (1.94)	0.06 (1.33)	0.06* (1.77)	0.07* (1.90)	0.06* (1.80)	0.02 (0.32)
Limited English	-0.24** (-2.38)	-0.21* (-1.82)	-0.20* (-1.77)	-0.21* (-1.73)	-0.33*** (-2.87)	-0.24 (-1.51)
CHILDEXP8/ 10/12	0.00 (0.03)	1.04 (1.05)	0.16 (1.13)	-0.83 (-0.34)	0.01 (0.06)	-3.67 (-0.82)
EHS8/10/12	0.04 (0.70)	0.37 (0.53)	0.08* (1.95)	0.65* (1.78)	0.03 (0.74)	0.78 (0.93)
FCHILD8/10/ 12	0.12 (1.38)	-0.71 (-0.45)	-0.14 (-0.92)	1.54 (0.58)	0.01 (0.02)	7.20 (1.39)
FEHS8/10/12	-0.03	-0.30	-0.06	-0.27	-0.04	-0.17

	(-0.45)	(-0.23)	(-1.03)	(-0.57)	(-0.70)	(-0.24)
Constant	-1.17***	-1.49***	-1.22***	-1.46***	-1.17***	-1.40***
	(-10.16)	(-2.72)	(-8.81)	(-5.67)	(-4.94)	(-3.09)
Observations	9910	9790	9080	8810	8740	8740

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