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Positive outcomes from poor starts: Predictors of dropping back in

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Abstract

A vast body of research finds an association between missteps taken during the teen years (such as motherhood or dropping out of high school) and poor economic and educational outcomes. However, youth who take major missteps as teens often have subsequent success in school or the labor market. This paper attempts to draw lessons from youth who appear headed for a poor start in life, yet manage to have a positive economic or educational outcome by their early 20s. Using NELLS, we provide one of the first longitudinal analyses of well-being for teen mothers and high school dropouts that includes a nationally-representative population of Hispanic and Asian youth. In general, the predictors of positive outcomes are similar for those with high probabilities of poor starts as for the general population. A few high school-age behaviors and community measures have additional associations with positive outcomes for likely poor starters. However, these correlates do not appear for all groups of likely poor starters, and they are not always in the expected direction.

JEL Classification: I20, I28, J15

Keywords: educational economics, human capital, rate of return

1. Introduction

The period of life between ages 13 and 24 is a key period for understanding and affecting progress. It is the period where many life-changing decisions are made: often the decision to start a family, to finish high school, and to go to college. Several national, state, and local programs are designed to influence and improve the lives of youth as well as to steer them in the direction of positive future outcomes.

Much of the research covering this age range focuses on one outcome, often a negative one such as having a teen birth or dropping out of high school. Research suggests teenage mothers are at a great economic disadvantage relative to women who delay childbirth (or never have children). High school dropouts also have worse labor-market outcomes than graduates. For example, in 1999, high school dropouts have lower annual earnings of more than \$4,000 compared to high school graduates who never attended college.¹

Yet some individuals with poor starts (high school dropouts and teen mothers) achieve economic success and even attend post-secondary education. Our goal is to identify the role of families, schools, neighborhoods, and behavior in achieving positive outcomes (related to school and work) for those who appear destined for a poor start and highlight any differences in these predictors relative to those not likely to have a poor start. We also pay particular attention to the role of race, ethnicity, and immigrant generation because our longitudinal dataset is relatively unique in allowing us to analyze the role of nativity within race and ethnic groups. This focus is particularly important given the sizable population share of U.S. and foreign-born Asians and Hispanics.

Because predictors of poor starts (dropping out of high schools and teen parenthood) are also likely to be predictive of positive outcomes, we estimate correlates of positive outcomes in two stages. First, we estimate individual probabilities of poor starts. Second, we use the predicted probabilities of poor starts to create a sample of likely poor starters, and we predict positive outcomes separately for this group. We contrast these results to the predicted positive outcomes for the entire sample. In order to generate exogenous variation with poor starts, previous research relied on small subsets of the population or used instruments that are not valid. The use of the predicted poor start rather than the actual poor start as a way to stratify the population helps us avoid these problems in our effort to describe predictors of positive outcomes for those with *likely* poor starts. We thus are able to describe which family, school, and neighborhood characteristics have the greatest association with positive outcomes, and how those might differ for those individuals who are likely to have poor starts.

Our findings suggest that predictors of positive outcomes for likely poor starters are similar to those for the youth population generally. The ways in which likely poor starters appear to have different predictors of positive outcomes are few and are not consistent across outcomes. In many cases, these predictors are also important for avoiding a poor start in the first place. We conclude that emphasizing policies that appear to help teens avoid poor starts is the right strategy to take for all youth, even those who take missteps while in their teen years.

2. Previous literature

¹ This figure comes from an annual earnings regression using 2000 Census 1% PUMS individual-level data. The regression includes controls for sex, age, age squared, race, ethnicity, and marital status.

2.1 Determinants of poor starts

The majority of the literature on teenage childbearing and dropping out from high school can be divided into two areas: determinants of the poor start and the consequences of the poor start. Haveman and Wolfe (1995) summarize the literature on the determinants of both teenage nonmarital childbearing and dropping out of high school. Parental income and education provide the most common measures of socioeconomic status. Both measures are negatively associated with teenage motherhood and not finishing high school, although the effect of parental education (of the mother in particular) is stronger than that of income. Children from two-parent families generally have lower probabilities of dropping out of high school than do children in other family structures (see, for example, McLanahan and Sandefur, 1994; Wolfe, Wilson, and Haveman, 2001).

Even after controlling for differences in parental background, race and ethnicity are still relevant in predicting teenage motherhood (Haveman and Wolfe, 1995; Klepinger, Lundberg, and Plotnick, 1999). However, the racial/ethnic differences in the probability of dropping out from high school are insignificant when controlling for parental background. Nativity, or immigrant generation, plays a role in these race/ethnic differences. Educational enrollment is of particular concern for Hispanic immigrant youth because, unlike white and Asian youth, foreign-born Hispanics have lower scholastic achievement than do the native-born (Vernez and Mizell, 2001). Driscoll (1999) finds that foreign-born Hispanic youth are more likely to drop out of high school than are the native-born, but that first and second generation youth are actually less likely than third generation Hispanic youth to drop out of high school once variables like school

performance and parental background characteristics are held constant. Kao (2004) finds that some part of the stronger academic performance of immigrant youth (first and second generation) relative to same-race native-born youth can be attributed to characteristics of the parent-child relationship, which can include discussions about school in general and college in particular.

In addition to parental background, many studies of poor starts include controls for neighborhood and/or schools (see, for example, Duncan and Hoffman, 1990, Brewster 1994, Patterson, 2000, or Wolfe, Wilson, and Haveman, 2001). In general, these studies find a modest association of adverse neighborhood characteristics with residents' poor starts.

Previous research has demonstrated that individual behaviors, such as drug and alcohol use, employment, and criminal and gang activity are associated with poor starts (Ribar, 1994; National Research Council, 1998; Moore and Zaff, 2002; Roebuck, French, and Dennis, 2004). However, these behaviors are likely to be related to unobservables. For example, students who use drugs are probably more likely to drop out of high school. Using drugs may not cause a student to drop out, but may be associated with unobservable determinants of high school completion such as not valuing a high school degree or preferences for risk.

In this paper, we consider the impact of parental background with a particular focus on race, ethnicity, and immigration. Despite the concerns raised above, our research design also considers the association of neighborhood traits, school characteristics, and behavioral choices with each poor start. Although the estimated relationships in the final model will not imply strict causality, the results will illuminate

the relationships between key community characteristics (including those of schools) and behaviors and high school completion.

2.2 Consequences of poor starts

Several papers attempt to determine the causal impact of teenage childbearing on subsequent economic and educational success. A few papers treat childbearing as an exogenous event (Hofferth, 1987; McElroy, 1996), but most researchers believe that teenage motherhood is an endogenous determinant of educational attainment or economic success. Some papers use instruments for teenage childbearing (Ribar, 1994; Klepinger, Lundberg, and Plotnick, 1995, 1999), whereas others attempt to compare teenage mothers to subsets of other women such as sisters (Geronimus and Korenman, 1992), teenage mothers with twin births (Bronars and Grogger, 1994), or women who had miscarriages as teenagers (Hotz, McElroy, and Sanders, 1999). From these studies, Hoffman (1999) concludes that some of the large differences between teenage mothers and other women can be attributed to differences in observable characteristics (such as parental background), but that it is still unclear whether teenage childbearing has a causal impact – positive or negative – on future outcomes. Klepinger, Lundberg, and Plotnick (1999) find that the income gaps for teen mothers and non-teen mothers are smallest for African-American young women than for any other racial or ethnic group. Our research will add to this literature by including immigrant generation as well.

Although there is a vast literature on the returns to education for all educational levels, here we focus on the literature that pertains just to dropouts. Rumberger and Lamb (2003) find that dropouts who later receive a high school degree or equivalency are much more likely to attend post-secondary education than those who do not. Their

results for employment and earnings are more mixed. Dropouts who complete high school degrees or equivalencies within two years of dropping out worked no more months than dropouts who did not return to school. In their study, which also uses the NELS, they find that earning a GED results in higher earnings than graduating from high school (among those not attending post-secondary schooling). However, their use of eighth-grade test scores as instruments is questionable given the direct relationship between student ability and educational attainment as well as earnings.

3.1 Data

The data for this paper come from the National Educational Longitudinal Survey (NELS), a nationally representative study of eighth-grade students in 1988. The NELS is a rich data set with information on youth experiences and aspirations, parental background, and school resources. Follow-up surveys are conducted in 1990, 1992, 1994, and 2000.

3.1 Dependent variables

This paper considers two poor starts: becoming a teenager mother and dropping out of high school. Both are defined from 1994 survey questions. Teenage childbearing is defined as having a child before age 20. High school dropout is defined as not having a high school diploma or GED “on time” in 1992 (i.e. by June 1992).

Positive outcomes are defined as of the 2000 follow-up, when respondents were approximately 26 years of age. By using more recent data, the population we study is more representative of today’s young adults, especially of nonwhites and children of immigrants. Data with longer longitudinal samples, such as the National Longitudinal

Survey of Youth (NLSY) and High School and Beyond (HSB) have respondents who would be at least 35 years old in 2000.

We define three positive outcomes as of 2000. The first two are labor market outcomes. We consider a young person to be an economic “success” if he or she has family income above 200 percent of the poverty line. Measuring poverty at the family level captures the maximum income to which the person has access. It is the conventional measure of poverty because families share resources. We are concerned about the financial well-being of the person, whether it is obtained through his/her own income or through that of other family members. We use a cutoff of 200 percent because the poverty line is so low that researchers use higher thresholds (such as 200 percent) as a measure of low-income (see Reed, 2004). Our next measure of economic success, working full time, is measured at the individual level, and is defined to be working for pay at a full time job (35 hours a week or more). Our third positive outcome is having attended at least some post-secondary schooling by the time of the 2000 survey. The labor-market benefits of a GED for dropouts are unclear,² but post-secondary attendance has a clear, positive relationship with long-term labor market success (Kane and Rouse, 1995).

3.2 Independent variables

One goal of the analysis is to contribute to the literature on differences in race and ethnicity by also including immigrant generation. The NELS sample only includes individuals in eighth grade in the United States. Our focus is on students who are educated in the United States, so we further restrict the sample to students who arrived in

the United States by age 5. The data also distinguish second-generation students from students whose parents were born in the United States (third generation or higher, referred to as children of natives or third generation). We combine first-generation (who arrived by age 5) and second-generation students into a single category called children of immigrants (to which we sometimes refer as second generation). All other students are defined as children of natives (or third generation). Immigration generation is combined with race/ethnicity to create mutually exclusive race, ethnicity, and immigration generation categories. Appendix Table 1 contains the descriptive statistics for the independent variables, first for young women, and then young men.

Our models also include parental background, school, neighborhood, and individual or behavioral characteristics. Parental characteristics include parental income and income squared, dummy variables for maternal education (having less than a high school education is the omitted category), an indicator variable for being raised in a two-parent family, the number of siblings living at home when the respondent was in the eighth grade, and the overall size of the family. School characteristics are measured as of tenth grade and include whether or not the school offers a school to work program, the percent free lunch, and the age of compulsory schooling in the state. Our measure of neighborhood characteristics is the percentage of the zip code that is below the poverty line. The behavioral or individual characteristics we include are a measure of whether the respondent worked at any time during high school, what his or her eighth-grade test scores were, whether or not the respondent used drugs in high school, had sexual intercourse by 1990, whether or not the respondent used birth control at first sexual

² For example, Cameron and Heckman (1993) and Heckman and Rubinstein (2001) find that the GED has no effect on long-term earnings, whereas Tyler, Murnane, and Willett (2000) find positive earnings effects,

intercourse, and finally whether or not the respondent was in a gang in 1992 (the only time the question was asked).

4. Methods

The analysis begins with an investigation of the determinants of each of the two poor starts defined above: becoming a teenage mother and dropping out of high school. Throughout the analysis, we use logit models to estimate dichotomous outcomes.

Equation (1) contains a logit model:

$$(1) \quad \Pr(Y_i = 1) = \frac{\exp(R_i'\lambda + X_i'\beta + Q_i'\alpha + W_i'\gamma)}{1 + \exp(R_i'\lambda + X_i'\beta + Q_i'\alpha + W_i'\gamma)}$$

For individual i , Y denotes a poor start. R is a vector of dummy variables for race, ethnicity, and immigration. X is a vector of parental background characteristics such as parental income, education, and family structure. Q is a vector of school and neighborhood characteristics such as poverty levels. W is a vector of individual characteristics and behaviors; examples are eighth-grade test scores and drug use.

Because each poor start is defined as of 1994, the sample is limited to individuals who are in the 1994 follow-up. The teenage motherhood equation is only estimated for women, whereas the high school dropout method is estimated separately for males and females. Substantial sample attrition occurs between 1988 and 1994 (as well as 2000), so all analyses are weighted³ in order to make the results as representative as possible of the U.S. population of that age. We adjust the sample using cluster weights because the initial NELs cohort was sampled at schools and was not a simple random sample.

at least for individuals with low cognitive skills.

³ The weights are the 1994/2000 sample weight.

Although many papers have considered the determinants of poor starts, few have looked at future success for individuals with poor starts. Instead, researchers attempt to establish a causal effect of the poor start on outcomes, such as the impact of teenage motherhood on educational attainment. These analyses provide little insight on what, if anything, helps those who have already had a poor start.

Equation (2) also contains a logit model, which we use to investigate the determinants of a positive outcome for the full sample and for individuals more likely to have poor starts.

$$(2) \quad \Pr(Z_i = 1) = \frac{\exp(R'_i\lambda + X'_i\beta + Q'_i\alpha + W'_i\gamma)}{1 + \exp(R'_i\lambda + X'_i\beta + Q'_i\alpha + W'_i\gamma)}$$

In this equation, Z is defined as a positive outcome, and R , X , Q , and W are defined as in equation (1). We consider likely poor starters to be those whose probabilities for a poor start, as measured by the logit in equation (1), fall at or above the 67th percentile.⁴

The goal is to see whether there are factors at the parental, school/neighborhood, and individual level that are associated with positive outcomes and whether these associations are different for those with higher probability of poor starts. Why, for example, do some teen mothers return to school? Is there something unique about their schools, communities, or families?

As the literature argues, having a poor start is an endogenous determinant of the positive outcomes. The common solution to this problem is a selection equation or instrumental variables analysis that controls for the non-random selection of people into

⁴ For young women, the 67th percentile cutoff corresponds to a 16 percent probability of being a teen mother and 11 percent probability of dropping out. For young men, the cutoff corresponds to a 17 percent probability of dropping out. Models using the seventy-five percentile as a cutoff are less precisely estimated, but they produce similar results.

poor starts. However, the literature on poor starts has been unable to find compelling instruments: variables that are highly correlated with a poor start but uncorrelated with a positive outcome except through their relationship to poor starts. Examples of invalid instruments are parental background and eighth-grade test scores, which affect outcomes directly rather than just through the poor start. Selection models can be identified on functional form assumptions alone, but such assumptions have no basis in economic theory.

We instead estimate predictors of positive outcomes for those most likely to have poor starts, and contrast those estimates to predictors of positive outcomes for the full sample. This method allows us to understand which covariates are of additional importance for those with a high predicted probability of dropping out of high school or becoming a teen mother. It also has the advantage of relying solely on differences in observable characteristics.

5. Results

5.1 Determinants of poor starts

Twenty-five percent of young women have a poor start. Eight percent of the females in the sample experience a teen birth (i.e. a birth before the age of 20), eight percent are high school dropouts, and an additional nine percent are both teen mothers and high school dropouts. The high school dropout percentage for males (18 percent) is slightly higher than the rate for females (17 percent).

Table 1 presents the results from the logit model outlined in equation (1). The dependent variables are teenage motherhood (columns 1 through 3) and high school dropouts (columns 4 through 9). The first specification for each outcome (columns 1, 4,

and 7) only includes controls for race, ethnicity, and immigrant generation. The second specification (columns 2, 5, and 8) adds controls for parental background, schools, and neighborhoods. The third specification (columns 3, 6, and 9) includes individual choice variables. This third specification is the one used to predict our likely poor starters.

[Table 1 here]

Race, ethnicity, and generation have significant impacts on poor starts in the specifications with no other control variables. Compared to the omitted group of white children of natives (third generation), being Asian (second or third generation) is associated with lower probabilities of teen motherhood, and being an Asian third-generation young woman is associated with lower chances of dropping out of high school. In contrast, being Mexican-American (both children of natives and children of immigrants) or black is associated with higher probabilities of poor starts. Native American males are more likely than the omitted whites to drop out of high school, whereas females are marginally more likely to have a child. Among whites, second-generation young women are less likely than third-generation young women to have poor starts, but there are no significant differences for young men.

The effects of race, ethnicity, and immigration decrease in magnitude when we include additional controls for parental background, schools, and neighborhoods. However, being a second-generation non-Mexican Hispanic immigrant is associated with lower chances of dropping out for young women, but marginally higher chances for young men. Being third-generation Hispanic (non-Mexican) is associated with lower chances of teen parenthood. When further controls for individual characteristics and

behaviors – such as drug use and eighth-grade test scores – are included, the association dissipates further.

Parental background characteristics are significant predictors of poor starts, although some of the characteristics are sensitive to the model specification. Parental education and income are negatively related to poor starts. Being raised in two-parent families is associated with decreased chances of becoming a teen mother as well as dropping out of high school for young men. More siblings are associated with more poor starts. The school percent free lunch is positively correlated with poor starts for young men, but not young women.

Individual choices have strong impacts on poor starts, although these results should be interpreted with caution due to their correlation with unobservables. Student ability, measured by eighth-grade test scores, has a negative and highly-significant association with poor starts. Students who engaged in risky behaviors such as drug use and sexual intercourse by 1990 are at greater risk for poor starts.

5.2 Descriptive statistics for positive outcomes

Table 2 illustrates that positive outcomes among teen mothers and high school dropouts are not rare. The left panel shows that 44 percent of teenage mothers have family incomes above 200 percent of the poverty line even though 60 percent of them are working full time. Fifty-seven percent have pursued some sort of post-secondary schooling (including adult education classes that do not require high school graduation or a GED).

[Table 2 here]

The right two panels of the table contain the descriptive statistics for high school dropouts, separated by sex. Males have more economic success. For example, 61 percent of men have family income above 200 percent of the poverty, compared with 48 percent for women. Females have slightly more education: 44 percent have attended some sort of post-secondary schooling versus 41 percent of men.

Most youth with poor starts have achieved more than one positive outcome at age 26. Approximately 5 percent of male high school dropouts have no positive outcomes, as do only 12 percent of teen mothers and 14 percent of female high school dropouts (Table 3). Slightly more than one-third of teen mothers and 39 percent of female high school dropouts have only one positive outcome, but nearly 50 percent of each have at least two positive outcomes by age 26. Among male high school dropouts, nearly 70 percent have at least 2 positive outcomes.⁵

[Table 3 here]

In order to determine the predictors of these positive outcomes for those who were likely to have made a “poor start” by age 20, we estimate the logit model described above in equation (2). The predicted probabilities are calculated from the full specification of equation (1) (i.e. columns 3, 6, and 9 in Table 1).⁶ These results are in Tables 4 through 6. Each table predicts a positive outcome for the full sample of young women (column 1), likely teen mothers (column 2), likely female high school dropouts (column 3), the full sample of young men (column 4), and likely male high school

⁵ There were no combinations of positive outcomes that were not found among the sample of poor starters (results not shown).

⁶ Note that all logits contain a constant term.

dropouts (column 5).⁷ Coefficients are missing when there are not enough members of that group to estimate a reliable coefficient, so the group is dropped from the analysis. For example, fewer than 10 Asian children of natives are likely to have a poor start. In our discussion of the results, we highlight which predictors of positive outcomes for likely poor starters differ from those for the whole sample, as well as describe those common to both groups.

5.3 Results for family income at or above twice the poverty level

Much as was the case in our predictions of poor starts, we find, in predicting our three measures of positive outcomes, that race, ethnicity, and generation matter little when other controls are included. Two groups with positive coefficients for likely poor starters but not for the overall sample are white children of immigrants in the likely teen mother sample and Asian children of immigrants in the likely female dropout sample. In all samples of women, Mexican children of natives have a positive coefficient. For men, Asian children of immigrants and blacks are associated with lower probabilities of incomes above 200 percent of the poverty line, for both the full sample and likely dropouts.

[Table 4 here]

In general, the predictors of family income are similar, whether we consider the full sample or just likely poor starters. The exception is that early sexual initiation has a negative effect for likely male dropouts but has no discernable effect for the full sample of males. Working during high school has a positive effect on the full sample of males and females, but the effects for poor starters are noisy and therefore not statistically

⁷ Because the decisions to have a child and to drop out of high school are often related, we also estimate logit models for females who have both poor starts. The full results are available from the authors upon

significant. There are some differences by gender. Family size, school percent free lunch, and early sexual initiation have negative effects for all samples of women, whereas eighth-grade test scores have positive effects. For men, being raised in a two-parent home has positive effects.

5.4 Results for full-time work

Table 5 shows that few variables have significant effects for likely poor starters but insignificant effects for the overall sample. Among females, likely poor starters who attended schools with school-to-work programs are more likely to work full time, but likely female dropouts in lower-income neighborhoods are less likely to work full time. Female likely poor starters whose own mothers are college graduates are less likely than those with high school dropout mothers to work full time, perhaps because they are more likely to attend post-secondary schools (Table 6). Likely female poor starters who were gang members in 1992 are more likely to be working full time than non-gang female poor starters. Perhaps, among those with higher chances of poor starts, gang membership signifies an entrepreneurial spirit or bestows skills that can translate to gainful employment later in life. For likely male dropouts, the number of siblings has a negative association with full-time work.

[Table 5 here]

There are a few predictors that affect the likelihood of work for the full sample as well as for the subset of likely poor starters. Working in high school is positively associated with full-time work for all samples. Higher eighth-grade test scores are associated with higher odds of work for young women, but lower odds for young men. Having had first intercourse by 1990 makes full-time work less likely for two of the three

samples of young women, but has no statistical relationship with work for young men. The use of birth control at first intercourse makes full-time work more likely for young men overall.

5.5 Results for post-secondary attendance

Race clearly is associated with differential rates of post-secondary attendance even after we have incorporated the full set of family, neighborhood/school, and behavioral controls. Specifically, most groups have higher likelihoods of post-secondary attendance than the omitted group of third-generation whites. An exception is that most coefficients are insignificant for the subset of likely female dropouts. In all samples, the effects are insignificant for Native Americans. For women, second-generation Asians have insignificant coefficients, whereas for men the insignificant coefficients are for third-generation Asians and third-generation non-Mexican Hispanics.

[Table 6 here]

The predictors of post-secondary attendance vary little between likely poor starters and the full sample of men/women. One exception is the large negative effect among likely male dropouts of attending a school with school-to-work programs. Perhaps such programs are located in schools with high dropout rates, and their emphasis on work is at the cost of encouraging further education, or maybe the coefficient captures something unobservable about the school environment that is not conducive to higher education. Another exception is the negative relationship between the percent free lunch at school and post-secondary school attendance among likely female dropouts.

Otherwise, the full sample and likely poor start sample have similar predictors of positive outcomes. For example, family income and maternal education are strong

positive predictors of post secondary schooling, whereas large numbers of siblings has negative effects (except for the insignificant effect for likely male dropouts). Our behavioral measures operate in the expected direction in predicting post-secondary attendance: eighth-grade test scores increases odds, drug use and early sexual experience decrease odds. Interestingly, in this model, working in high school increases chances of post-secondary attendance for young women, and this effect is largest for likely female dropouts. For young men, the state compulsory education age has a weak positive effect.

6. Conclusion

We have demonstrated in this paper that many young people who begin adult life inauspiciously transition into adulthood successfully. Some high school dropouts and teen mothers experience success in the labor market, with earnings well above the poverty line and full-time jobs. Many attend post-secondary schooling by 2000 (when in their mid-twenties). Most individuals with poor starts experience at least one of these positive outcomes, if not more.

By examining these multiple positive outcomes separately, we are able to show that the determinants of these positive outcomes are varied. The findings suggest that the schooling- and work-related positive outcomes have quite different determinants. Although parental background and resources, neighborhood and school characteristics, and behavioral choices all bear some relationship to each positive outcome, this relationship is not always the same. Maternal education is strongly related to post-secondary education, but is not to income and employment positive outcomes, for example.

Family background does not bear much relationship to positive outcomes for likely poor starters beyond the relationship for all youth. For the work and income positive outcomes, having relatively well-educated mothers reduces chances of positive outcomes among likely poor starters. This may be because having well-educated mothers increases chances of college attendance (as it does for the full sample). Perhaps estimating the positive outcomes simultaneously would elucidate this connection further. Coming from a traditional family decreases odds of working full time among likely teen mothers, and having larger numbers of siblings decreases chances of college attendance among likely male dropouts.

For the most part, high-school behaviors, which are related to positive outcomes for those likely to have poor starts, are similar to those for young people not likely to have poor starts. Gang participation and school-to-work programs are related to positive outcomes for likely poor starters in a few cases, but not always in ways we might expect. Among likely male dropouts, those who have had sex by 1990 are less likely to have attending any post-secondary schooling by their mid-twenties. Notably, intercourse by 1990 does not bear any relationship for young women likely to have poor starts. However, having done so was negatively associated with positive outcomes for the full sample.

Thus, we find that programs and policies which aim to help the general population of young attain positive outcomes by their mid-twenties should also assist young people who take missteps in their teens. Delaying sexual initiation, using birth control, working in high school, and increasing state compulsory education appear to all bear some positive relationship to positive outcomes for youth. These high school behaviors and

community and school conditions are associated with avoiding poor starts to begin with, and appear to also be predictive of positive outcomes for the full sample of young people, although they are rarely associated with additional positive outcomes among likely poor starts.

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References

- Brewster, K. L. (1994). Race differences in sexual activity among adolescent women: The role of neighborhood characteristics. *American Sociological Review* 59 (3), 408-424.
- Bronars, S., & Grogger, J. (1994). The economic consequences of unwed motherhood: Using twin births as a natural experiment. *American Economic Review* 84 (4), 1141-1156.
- Cameron, S. V., & Heckman, J. J. (1993). The nonequivalence of high school equivalences. *Journal of Labor Economics* 11 (1), 1-47.
- Driscoll, A. K. (1999). Risk of high school dropout among immigrant and native Hispanic youth. *International Migration Review* 33 (4), 857-875.
- Duncan, G. J., & Hoffman, S. (1990). Welfare benefits, economic opportunities, and out-of-wedlock births among black teenage girls. *Demography* 27 (4), 519-535.
- Geronimus, A., & Korenman, S. (1992). The socioeconomic consequences of teen childbearing revisited. *Quarterly Journal of Economics* 107 (4), 1187-1214.
- Haveman, R., & Wolfe, B. (1995). The determinants of children's attainments: A review of methods and findings. *Journal of Economic Literature* 33 (4), 1829-1878.
- Heckman, J. J., & Rubinstein, Y. (2001). The importance of noncognitive skills: Lessons from the GED testing program. *American Economic Review* 91 (2), 145-149.
- Hofferth, S. (1987). The social and economic consequences of teenage childbearing. In Cheryl Hayes and Sandra Hofferth, eds., *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing*. Washington, D.C.: National Academy Press, 123-144.
- Hoffman, S. D. (1999). Teenage childbearing is not so bad after all ... or is it? A review of the new literature. *Family Planning Perspectives* 30 (5), 236-239, 243.
- Hotz, V. J., McElroy, S. W., & Sanders, S. (1999). *Teenage childbearing and its life cycle consequences: Exploiting a natural experiment*. National Bureau of Economics working paper number 7397.
- Kane, T. K., & Rouse, C. E. (1995). Labor market returns to two- and four-year college. *The American Economic Review* 85 (3), 600-614.
- Kao, G. (2004). Parental influences on the educational outcomes of immigrant youth. *International Migration Review* 38 (2), 427-449.
- Klepinger, D. H., Lundberg, S., & Plotnick, R. D. (1995). Adolescent fertility and the educational attainment of young women. *Family Planning Perspectives* 27 (1), 23-28.

- Klepinger, D. H., Lundberg, S., & Plotnick, R. D. (1999). How does adolescent fertility affect the human capital and wages of young women? *Journal of Human Resources* 34 (3), 421-448.
- McElroy, S. W. (1996). Early childbearing, high school completion, and college enrollment: Evidence from 1980 high school sophomores. *Economics of Education Review* 15 (3), 303-324.
- McLanahan, S., & Sandefur, G. (1994). *Growing Up with a Single Parent: What Hurts, What Helps*. Cambridge, MA: Harvard University Press.
- Moore, K. A., & Zaff, J. F. (2002). *Building a Better Teenager: A Summary of "What Works" in Adolescent Development*. Child Trends Research Brief, Publication #2002-57.
- National Research Council (1998). *Protecting Youth at Work: Health, Safety, and Development of Working Children and Adolescents in the United States*, Washington, D.C.: National Academy of Sciences.
- Patterson, R. (2000). *Neighborhood Effects on High-School Drop-Out Rates and Teenage Childbearing: Tests for Non-Linearities, Race-Specific Effects, Interactions with Family Characteristics, and Endogenous Causation using Geocoded California Census Microdata*. Unpublished dissertation.
- Reed, D. (2004). Recent trends in income and poverty. *California Counts*, 5 (3).
- Ribar, D. C. (1994). Teenage fertility and high school completion. *Review of Economics and Statistics* 76 (3), 413-424.
- Roebuck, M. C., French, M. T., & Dennis, M. L. (2004). Adolescent marijuana use and school attendance. *Economics of Education Review* 23 (2), 133-141.
- Rumberger, R. W., & Lamb, S. P. (2003). The early employment and further education experiences of high school dropouts: A comparative study of the United States and Australia. *Economics of Education Review* 22 (4), 353-366.
- Tyler, J. H., Murnane, R. J., & Willett, J. B. (2000). Estimating the labor market signaling value of the GED. *Quarterly Journal of Economics* 115 (2), 431-468.
- Vernez, G., & Mizell, L. (2001). *Goal: To double the rate of Hispanics earning a B.A.*, prepared for Hispanic Scholarship Fund. Santa Monica: RAND Education, Center for Research on Immigration Policy.
- Wolfe, B., Wilson, K., & Haveman, R. (2001). The role of economic incentives in teenage nonmarital childbearing choices. *Journal of Public Economics* 81 (3), 473-511.

Table 1 Logit marginal effects for probability of having a poor start

	Teen mothers			Female dropouts			Male dropouts		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Race/ethnicity/immigration</i>									
White child of immigrant	-0.101 ** (0.022)	-0.054 ** (0.021)	-0.041 ** (0.018)	-0.094 ** (0.021)	-0.038 ** (0.015)	-0.028 ** (0.013)	-0.050 (0.048)	-0.028 (0.038)	-0.027 (0.026)
Mexican child of immigrant	0.157 ** (0.047)	0.032 (0.032)	0.037 (0.029)	0.147 ** (0.045)	-0.007 (0.020)	-0.002 (0.018)	0.185 ** (0.072)	-0.032 (0.044)	-0.021 (0.035)
Other Hispanic child of immigrant	0.004 (0.047)	-0.017 (0.034)	0.015 (0.029)	-0.042 (0.032)	-0.049 ** (0.012)	-0.032 ** (0.011)	0.220 ** (0.076)	0.127 * (0.065)	0.075 (0.052)
Asian child of immigrant	-0.120 ** (0.020)	-0.078 ** (0.022)	-0.061 ** (0.021)	-0.050 (0.072)	-0.010 (0.041)	-0.002 (0.029)	-0.034 (0.050)	0.025 (0.064)	0.074 (0.109)
Mexican child of native	0.129 ** (0.040)	0.022 (0.032)	-0.003 (0.025)	0.169 ** (0.048)	0.036 (0.033)	0.007 (0.024)	0.124 ** (0.048)	-0.014 (0.029)	-0.019 (0.022)
Other Hispanic child of native	-0.001 (0.053)	-0.048 * (0.029)	-0.044 ** (0.021)	0.051 (0.056)	-0.026 (0.024)	-0.023 (0.017)	0.063 (0.061)	0.047 (0.050)	0.035 (0.036)
Asian child of native	-0.092 ** (0.029)	-0.060 ** (0.027)	-0.048 * (0.025)	-0.099 ** (0.029)	-0.042 (0.026)	-0.025 (0.025)	-0.068 (0.050)	-0.053 * (0.032)	-0.057 ** (0.021)
Black	0.159 ** (0.031)	0.040 * (0.022)	0.005 (0.015)	0.120 ** (0.031)	0.005 (0.017)	-0.012 (0.010)	0.219 ** (0.044)	0.066 ** (0.033)	0.013 (0.022)
Native American	0.135 * (0.080)	0.023 (0.065)	0.011 (0.048)	-0.019 (0.045)	-0.051 ** (0.014)	-0.043 ** (0.011)	0.244 ** (0.075)	0.086 (0.056)	0.041 (0.043)
<i>Parental background</i>									
Parental income		-0.002 ** (0.001)	-0.001 ** (0.0004)		-0.003 ** (0.0004)	-0.002 ** (0.0003)		-0.002 ** (0.001)	-0.002 ** (0.0004)
Parental income squared		0.0004 ** (0.0002)	0.0002 (0.0002)		0.001 ** (0.0001)	0.001 ** (0.0001)		0.0004 * (0.0002)	0.0004 ** (0.0002)
Mother HS graduate		-0.037 ** (0.013)	-0.006 (0.012)		-0.057 ** (0.009)	-0.034 ** (0.008)		-0.045 ** (0.019)	-0.027 (0.018)
Mother some college		-0.057 ** (0.014)	-0.015 (0.013)		-0.071 ** (0.011)	-0.037 ** (0.009)		-0.110 ** (0.019)	-0.073 ** (0.019)
Mother college graduate		-0.095 ** (0.013)	-0.035 ** (0.016)		-0.082 ** (0.010)	-0.044 ** (0.011)		-0.119 ** (0.017)	-0.062 ** (0.019)

Table 1 (continued) Logit marginal effects for probability of having a poor start

	Teen mothers			Female dropouts			Male dropouts		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Raised in two-parent home		-0.065 ** (0.017)	-0.042 ** (0.013)		-0.019 (0.012)	-0.010 (0.010)		-0.048 ** (0.018)	-0.033 ** (0.015)
Number of siblings		0.011 ** (0.004)	0.008 ** (0.004)		0.008 ** (0.004)	0.005 ** (0.003)		0.010 ** (0.005)	0.009 ** (0.004)
Family Size		-0.001 (0.005)	0.001 (0.004)		-0.003 (0.004)	-0.001 (0.003)		-0.001 (0.005)	0.0002 (0.005)
<i>School / neighborhood</i>									
State compulsory schooling age		0.002 (0.009)	0.003 (0.007)		0.007 (0.007)	0.007 (0.006)		-0.005 (0.010)	-0.007 (0.008)
School offers school-to-work		0.025 (0.032)	0.010 (0.024)		0.006 (0.026)	0.0001 (0.023)		0.019 (0.027)	0.005 (0.022)
Percent free lunch		0.052 (0.032)	0.034 (0.026)		0.031 (0.026)	0.022 (0.021)		0.092 ** (0.037)	0.059 * (0.032)
Percent low income		-0.006 (0.068)	0.018 (0.053)		-0.041 (0.049)	-0.022 (0.039)		-0.031 (0.077)	-0.032 (0.068)
<i>Behavior</i>									
Eighth-grade test score			-0.005 ** (0.0005)			-0.004 ** (0.0005)			-0.005 ** (0.001)
Worked in high school			-0.008 (0.011)			0.016 (0.011)			0.011 (0.013)
Used drugs in high school			0.007 (0.019)			0.041 * (0.021)			0.120 ** (0.029)
Sex by 1990			0.150 ** (0.015)			0.067 ** (0.012)			0.066 ** (0.014)
Used birth control			-0.012 (0.011)			-0.007 (0.008)			-0.013 (0.013)
In gang in 1992			0.018 (0.041)			0.006 (0.033)			0.073 ** (0.030)
Observations	6,280	6,280	6,280	6,280	6,280	6,280	5,967	5,967	5,967

Notes: All models also include region variables, as well as dummy variables for missing categories.

** significant at 10 percent.

* significant at 5 percent.

Table 2 Descriptive statistics for positive outcomes
for individuals with poor starts

Poor starters	Teen mothers		Female dropouts		Male dropouts	
	Mean	Std dev	Mean	Std dev	Mean	Std dev
Above 200 percent of poverty	0.439	0.497	0.479	0.500	0.613	0.488
Working full time	0.596	0.491	0.571	0.495	0.808	0.394
Post-secondary attendance	0.570	0.495	0.436	0.496	0.412	0.493
Observations	823		702		672	

Note: Sample includes individuals with at least one non-missing positive outcome.

Table 3 Number of positive outcomes, by poor start

Poor starters	Teen mothers percentage	Female dropouts percentage	Male dropouts percentage
0 positive outcomes	12.2	14.0	5.3
1 positive outcomes	34.6	39.2	25.8
2 positive outcomes	30.6	28.6	44.3
3 positive outcomes	22.6	18.3	24.6
Observations	684	575	548

Note: Sample includes individuals with no missing positive outcomes.

Table 4 Logit marginal effects for having family income above 200 percent of poverty line

	All females	Likely teen mother	Likely female dropout	All males	Likely males dropout
<i>Race/ethnicity/immigration</i>					
White child of immigrant	0.003 (0.049)	0.267 * (0.153)	0.213 (0.132)	0.062 (0.042)	0.115 (0.101)
Mexican child of immigrant	0.087 ** (0.034)	0.110 (0.080)	0.102 (0.076)	-0.079 (0.063)	-0.109 (0.104)
Other Hispanic child of immigrant	0.055 (0.054)	-0.136 (0.154)	-0.012 (0.146)	-0.053 (0.075)	-0.139 (0.128)
Asian child of immigrant	0.001 (0.092)		0.234 ** (0.117)	-0.122 * (0.063)	-0.296 * (0.167)
Mexican child of native	0.110 ** (0.042)	0.275 ** (0.074)	0.243 ** (0.068)	-0.032 (0.057)	0.082 (0.093)
Other Hispanic child of native	-0.027 (0.082)	0.081 (0.162)	-0.182 (0.191)	-0.011 (0.085)	0.011 (0.151)
Asian child of native	0.011 (0.082)			-0.007 (0.076)	
Black	-0.060 * (0.036)	-0.064 (0.063)	-0.101 (0.064)	-0.168 ** (0.059)	-0.224 ** (0.082)
Native American	0.001 (0.081)	0.114 (0.135)	0.200 (0.189)	-0.144 (0.109)	-0.002 (0.127)
<i>Parental background</i>					
Parental income	0.004 ** (0.001)	0.008 ** (0.003)	0.007 ** (0.002)	0.002 ** (0.001)	0.003 (0.002)
Parental income squared	-0.001 ** (0.0002)	-0.004 (0.003)	-0.002 ** (0.001)	-0.001 ** (0.0002)	-0.001 (0.001)
Mother HS graduate	-0.025 (0.030)	-0.043 (0.061)	-0.049 (0.060)	0.045 (0.036)	0.034 (0.060)
Mother some college	0.002 (0.029)	0.006 (0.059)	-0.019 (0.060)	0.039 (0.038)	0.052 (0.063)
Mother college graduate	-0.021 (0.039)	-0.136 (0.121)	-0.151 (0.114)	0.025 (0.041)	0.132 (0.086)
Raised in two-parent home	0.005 (0.022)	0.026 (0.050)	-0.022 (0.048)	0.064 ** (0.027)	0.162 ** (0.051)
Number of siblings	-0.003 (0.008)	-0.011 (0.014)	-0.003 (0.014)	-0.006 (0.007)	-0.019 (0.013)
Family size	-0.017 ** (0.008)	-0.030 * (0.016)	-0.016 (0.015)	0.004 (0.007)	0.005 (0.014)

Table 4 (cont'd) Logit marginal effects for having family income above 200 percent of poverty line

	All females	Likely teen mother	Likely female dropout	All males	Likely males dropout
<i>School / neighborhood</i>					
State compulsory schooling age	-0.00005 (0.015)	-0.041 (0.032)	-0.024 (0.032)	-0.013 (0.013)	-0.031 (0.031)
School offers school-to-work	0.064 * (0.036)	0.134 (0.127)	-0.109 (0.194)	0.011 (0.031)	-0.162 (0.153)
Percent free lunch	-0.146 ** (0.052)	-0.236 ** (0.118)	-0.243 ** (0.115)	0.001 (0.056)	0.018 (0.122)
Percent low income	-0.234 ** (0.103)	-0.338 (0.209)	-0.239 (0.202)	-0.115 (0.125)	-0.371 (0.248)
<i>Behavior</i>					
Eighth-grade test score	0.006 ** (0.001)	0.017 ** (0.003)	0.013 ** (0.003)	0.001 (0.001)	0.005 (0.003)
Worked in high school	0.037 * (0.019)	0.066 (0.049)	0.048 (0.049)	0.037 * (0.019)	0.044 (0.047)
Used drugs in high school	-0.047 (0.046)	-0.013 (0.075)	-0.033 (0.072)	0.028 (0.032)	0.057 (0.058)
Sex by 1990	-0.083 ** (0.020)	-0.172 ** (0.057)	-0.168 ** (0.046)	-0.002 (0.020)	-0.082 * (0.049)
Used birth control	0.022 (0.019)	0.023 (0.044)	0.027 (0.041)	0.059 ** (0.021)	0.045 (0.047)
In gang in 1992	-0.171 * (0.097)	-0.189 (0.148)	-0.167 (0.154)	-0.019 (0.040)	-0.147 (0.102)
Observations	4,636	1,309	1,327	4,185	1,141

Notes: All models also include region variables, as well as dummy variables for missing categories.

** significant at 10 percent.

* significant at 5 percent.

Table 5 Logit marginal effects for working full time

	All females	Likely teen mother	Likely female dropout	All males	Likely males dropout
<i>Race/ethnicity/immigration</i>					
White child of immigrant	-0.047 (0.050)	0.052 (0.133)	0.193 ** (0.083)	0.010 (0.031)	0.006 (0.057)
Mexican child of immigrant	0.061 (0.043)	0.036 (0.078)	0.051 (0.077)	0.060 ** (0.029)	0.087 ** (0.027)
Other Hispanic child of immigrant	0.020 (0.091)	0.053 (0.102)	-0.252 (0.159)	-0.033 (0.051)	-0.032 (0.081)
Asian child of immigrant	-0.109 * (0.057)		-0.143 (0.171)	-0.151 ** (0.063)	-0.476 ** (0.128)
Mexican child of native	0.025 (0.053)	-0.073 (0.087)	-0.023 (0.083)	-0.0002 (0.036)	0.001 (0.049)
Other Hispanic child of native	0.047 (0.061)	0.090 (0.109)	0.119 (0.095)	0.063 ** (0.026)	0.032 (0.054)
Asian child of native	-0.077 (0.097)			0.003 (0.046)	
Black	0.019 (0.033)	-0.012 (0.053)	-0.008 (0.056)	-0.132 ** (0.043)	-0.159 ** (0.051)
Native American	0.045 (0.078)	-0.037 (0.121)	0.044 (0.177)	-0.174 (0.112)	-0.133 (0.109)
<i>Parental background</i>					
Parental income	-0.0002 (0.001)	-0.002 (0.002)	-0.002 (0.002)	-0.001 (0.0005)	-0.001 (0.002)
Parental income squared	-0.00002 (0.0002)	0.001 * (0.001)	0.001 ** (0.001)	0.0001 (0.0002)	0.003 (0.003)
Mother HS graduate	-0.021 (0.031)	-0.080 (0.050)	-0.071 (0.051)	0.033 (0.025)	0.035 (0.029)
Mother some college	0.006 (0.029)	-0.002 (0.050)	0.025 (0.047)	0.015 (0.027)	-0.014 (0.039)
Mother college graduate	0.002 (0.035)	-0.260 ** (0.091)	-0.195 * (0.104)	0.0003 (0.029)	0.018 (0.048)
Raised in two-parent home	0.002 (0.024)	-0.033 (0.043)	-0.029 (0.043)	0.006 (0.019)	-0.018 (0.030)
Number of siblings	-0.018 ** (0.008)	-0.018 (0.012)	-0.012 (0.012)	-0.007 (0.005)	-0.016 ** (0.007)
Family size	-0.006 (0.009)	0.004 (0.015)	0.003 (0.015)	0.010 * (0.006)	0.003 (0.007)

Table 5 (cont'd) Logit marginal effects for working full time

	All females	Likely teen mother	Likely female dropout	All males	Likely males dropout
<i>School / neighborhood</i>					
State compulsory schooling age	-0.015 (0.015)	0.006 (0.025)	0.012 (0.026)	-0.011 (0.010)	-0.029 (0.019)
School offers school-to-work	0.029 (0.033)	0.136 * (0.072)	0.201 ** (0.085)	0.006 (0.021)	-0.176 (0.163)
Percent free lunch	-0.037 (0.058)	0.008 (0.104)	-0.021 (0.106)	-0.013 (0.044)	0.023 (0.072)
Percent low income	-0.143 (0.122)	-0.190 (0.180)	-0.317 * (0.191)	-0.051 (0.106)	0.037 (0.157)
<i>Behavior</i>					
Eighth-grade test score	0.002 * (0.001)	0.005 * (0.003)	0.004 * (0.002)	-0.002 ** (0.001)	0.001 (0.002)
Worked in high school	0.048 ** (0.020)	0.083 ** (0.041)	0.075 * (0.039)	0.032 ** (0.014)	0.077 ** (0.022)
Used drugs in high school	-0.033 (0.039)	0.0003 (0.058)	-0.011 (0.057)	-0.042 (0.033)	-0.075 (0.048)
Sex by 1990	-0.070 ** (0.021)	-0.039 (0.054)	-0.108 ** (0.037)	0.017 (0.015)	0.002 (0.031)
Used birth control	0.015 (0.019)	0.046 (0.037)	0.056 (0.037)	0.034 ** (0.016)	0.010 (0.029)
In gang in 1992	0.046 (0.066)	0.197 ** (0.070)	0.182 ** (0.069)	-0.011 (0.040)	-0.030 (0.061)
Observations	5,369	1,626	1,632	4,751	1,353

Notes: All models also include region variables, as well as dummy variables for missing categories.

** significant at 10 percent.

* significant at 5 percent.

Table 6 Logit marginal effects for attending post-secondary institution

	All females	Likely teen mother	Likely female dropout	All males	Likely males dropout
<i>Race/ethnicity/immigration</i>					
White child of immigrant	0.062 ** (0.015)	0.171 * (0.102)	0.146 (0.098)	0.070 ** (0.025)	0.270 ** (0.083)
Mexican child of immigrant	0.047 ** (0.016)	0.245 ** (0.044)	0.115 (0.079)	0.080 ** (0.025)	0.265 ** (0.074)
Other Hispanic child of immigrant	0.079 ** (0.008)	0.295 ** (0.036)	0.311 ** (0.032)	0.085 ** (0.036)	0.245 ** (0.105)
Asian child of immigrant	0.025 (0.042)		-0.075 (0.213)	0.135 ** (0.013)	0.398 ** (0.039)
Mexican child of native	0.038 ** (0.018)	0.125 (0.077)	0.107 (0.076)	0.076 ** (0.020)	0.156 * (0.090)
Other Hispanic child of native	0.044 ** (0.022)	0.237 ** (0.078)	0.200 ** (0.074)	0.050 (0.037)	0.111 (0.127)
Asian child of native	0.060 ** (0.018)			-0.050 (0.092)	
Black	0.066 ** (0.009)	0.256 ** (0.038)	0.245 ** (0.038)	0.080 ** (0.021)	0.262 ** (0.056)
Native American	0.023 (0.031)	0.145 (0.093)	0.117 (0.143)	0.013 (0.061)	0.124 (0.126)
<i>Parental background</i>					
Parental income	0.003 ** (0.0004)	0.008 ** (0.002)	0.008 ** (0.002)	0.004 ** (0.001)	0.007 ** (0.002)
Parental income squared	-0.001 ** (0.0002)	-0.002 ** (0.001)	-0.002 ** (0.001)	-0.001 ** (0.0003)	-0.002 ** (0.001)
Mother HS graduate	0.035 ** (0.013)	0.152 ** (0.044)	0.130 ** (0.049)	0.042 ** (0.020)	0.127 ** (0.057)
Mother some college	0.079 ** (0.014)	0.241 ** (0.042)	0.221 ** (0.044)	0.116 ** (0.021)	0.242 ** (0.058)
Mother college graduate	0.099 ** (0.010)	0.273 ** (0.044)	0.271 ** (0.045)	0.176 ** (0.016)	0.363 ** (0.045)
Raised in two-parent home	0.004 (0.012)	0.008 (0.042)	0.023 (0.042)	-0.019 (0.020)	-0.083 (0.054)
Number of siblings	-0.010 ** (0.004)	-0.025 ** (0.012)	-0.028 ** (0.013)	-0.013 ** (0.006)	0.004 (0.014)
Family size	-0.007 (0.004)	-0.025 * (0.014)	-0.016 (0.014)	-0.001 (0.006)	-0.010 (0.015)

Table 6 (cont'd) Logit marginal effects for attending post-secondary institution

	All females	Likely teen mother	Likely female dropout	All males	Likely males dropout
<i>School / neighborhood</i>					
State compulsory schooling age	0.009 (0.007)	-0.009 (0.026)	0.015 (0.029)	0.021 * (0.011)	0.057 * (0.032)
School offers school-to-work	-0.022 (0.022)	0.077 (0.114)	-0.015 (0.143)	-0.020 (0.038)	-0.453 ** (0.130)
Percent free lunch	-0.032 (0.027)	-0.157 (0.096)	-0.189 * (0.097)	-0.070 (0.049)	-0.201 (0.131)
Percent low income	0.125 ** (0.053)	0.439 ** (0.172)	0.573 ** (0.181)	0.006 (0.108)	-0.007 (0.252)
<i>Behavior</i>					
Eighth-grade test score	0.007 ** (0.001)	0.021 ** (0.003)	0.021 ** (0.003)	0.006 ** (0.001)	0.009 ** (0.003)
Worked in high school	0.018 * (0.010)	0.050 (0.040)	0.088 ** (0.039)	-0.00004 (0.017)	-0.007 (0.054)
Used drugs in high school	-0.064 ** (0.029)	-0.110 (0.069)	-0.124 * (0.067)	-0.088 ** (0.032)	-0.111 * (0.062)
Sex by 1990	-0.039 ** (0.012)	-0.083 (0.053)	-0.102 ** (0.045)	-0.066 ** (0.017)	-0.149 ** (0.051)
Used birth control	-0.001 (0.009)	-0.008 (0.037)	0.016 (0.037)	-0.005 (0.017)	-0.004 (0.047)
In gang in 1992	-0.012 (0.043)	-0.021 (0.132)	-0.043 (0.131)	-0.023 (0.037)	-0.041 (0.099)
Observations	5,313	1,606	1,612	4,710	1,343

Notes: All models also include region variables, as well as dummy variables for missing categories.

** significant at 10 percent.

* significant at 5 percent.

Appendix Table 1 Descriptive statistics

	Females		Males	
	full sample		full sample	
	Mean	Std dev	Mean	Std dev
White child of immigrant	0.039	0.194	0.031	0.174
Mexican child of immigrant	0.034	0.182	0.026	0.158
Other Hispanic child of immigr.	0.018	0.132	0.017	0.129
Asian child of immigrant	0.017	0.127	0.016	0.126
Mexican child of native	0.027	0.163	0.025	0.155
Other Hispanic child of native	0.013	0.113	0.011	0.105
Asian child of native	0.009	0.096	0.009	0.093
Black	0.104	0.306	0.114	0.318
Native American	0.008	0.091	0.007	0.084
Parental income	38.744	39.322	40.555	38.812
Parental income squared *0.01	30.470	98.344	31.508	92.994
Mother HS graduate	0.256	0.436	0.254	0.436
Mother some college	0.389	0.488	0.375	0.484
Mother college graduate	0.147	0.355	0.181	0.385
Raised in two-parent home	0.653	0.476	0.670	0.470
Number of siblings	2.294	1.591	2.170	1.480
Family size	4.540	1.424	4.471	1.462
State compulsory schooling age	16.243	2.288	16.175	2.439
School offers school-to-work	0.540	0.498	0.559	0.497
Percent free lunch	0.169	0.205	0.165	0.207
Percent low income	0.134	0.107	0.127	0.101
Eighth-grade test score	34.787	13.361	35.429	13.683
Worked in high school	0.237	0.425	0.260	0.439
Used drugs in high school	0.057	0.232	0.071	0.258
Sex by 1990	0.344	0.475	0.465	0.499
Used birth control	0.580	0.494	0.593	0.491
In gang in 1992	0.014	0.117	0.035	0.184
Teen mother	0.168	0.374		
High school dropout	0.163	0.369	0.181	0.385
Observations	5,369		4,751	

Note: Sample contains individuals with at least one non-missing outcome.