JOB OPPORTUNITIES, ECONOMIC RESOURCES, AND THE POSTSECONDARY DESTINATIONS OF AMERICAN YOUTH*

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Using a nationally representative sample of graduates from the high school class of 2003–2004, I test the warehouse hypothesis, which contends that youth are more likely to leave school and enter the labor force when there are available job opportunities (and vice versa). Using two measures of job opportunities—local unemployment rates and the percentage of local workers employed in jobs that require a bachelor's degree—I find support for the warehouse hypothesis. In areas where unemployment is low, with ample jobs that do not require a bachelor's degree, youth have higher odds of entering the labor force. In areas where unemployment is high, with few jobs that require only a high school diploma, youth have higher odds of entering college. The effect of unemployment on enrollment is more pronounced for low-income youth than for high-income youth, with both low- and high-income youth turning to four-year schools rather than two-year schools when job opportunities are limited.

The transition from high school to postsecondary life has been of increasing interest to social scientists because the pathways taken during this stage in the life course are more heterogeneous than ever before (Fussell and Furstenburg 2005). Coinciding with this trend, if not fueling it, is an economy that increasingly relies on technological and skilled labor. As a result, there has been a steady demand for a college-educated work force. It is no surprise then that enrolling in college has become the modal experience for high school graduates in the United States. Currently, about 15 million youths are enrolled, up from 12 million in 1990 (U.S. Department of Education 2007), with about 60% of youth immediately enrolling in college following high school (Bozick and Lauff 2007).

Despite this trend toward college enrollment, the number of jobs in the employment sectors that do *not* require a college degree is also growing (Cohen and Besharov 2004). For example, the Bureau of Labor Statistics (2006) predicted that between 2004 and 2014, jobs requiring only a high school diploma will increase by 10% and will account for almost half of all new jobs created during that period. With sufficient and viable employment options, youths living in areas of the country where these job opportunities are plentiful may not have the same incentive to pursue college, particularly if they lack the economic resources to do so. Conversely, with a growth in jobs that demand advanced skills and training, youths living in areas where a good portion of the available jobs require bachelor's degrees may enroll in four-year schools despite the availability of other options (e.g., more affordable two-year schools, jobs that do not require a bachelor's degree). How do high school graduates facing different job markets with varying resources navigate the transition out of high school? Are youth more responsive to current job opportunities, the educational requirements of the job market, or both? Are these choices contingent on their ability to finance their education?

The present study addresses these issues using new data on a recent cohort of high school students. While the bulk of research linking school enrollment with economic conditions has used local unemployment rates to measure job opportunities, the present study

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also includes a new measure based on the Bureau of Labor Statistics' Occupational Projections and Training Data that gauges the educational requirements of the local job market, allowing for a more direct examination of the occupational structure youth encounter in different parts of the country. Additionally, this analysis considers variation in the type of postsecondary institutions that graduates may choose from (e.g., two- and four-year schools) and the economic resources available to shoulder the costs of enrollment. These are important considerations because more low-income youth today are attending college, tuition and fees continue to rise, and the number of possible pathways to a four-year degree (including two-year schools and shorter-term programs that award specialized certifications) continues to grow.

First, I review previous research on the relationship between job opportunities and school enrollment and discuss institutional type and economic resources as contingencies. Along the way, I list hypotheses. Next, I describe the data and measures and present the results of the analysis. I conclude with a brief discussion of how the findings contribute to our understanding of life course transitions in the context of a changing economy and growing postsecondary options.

CONCEPTUAL FRAMEWORK

Job Opportunities and School Enrollment: The Warehouse Hypothesis

Most previous research on the effects of labor market conditions on school enrollment is either explicitly or implicitly grounded in the so-called *warehouse hypothesis* (e.g., Grubb and Lazerson 1982; Shanahan, Miech, and Elder 1998; Walters 1984). The core idea of the hypothesis is that when economic conditions are favorable, youth have less incentive to stay in school and as a result are more likely to be "pulled" into the labor market. Conversely, when economic conditions are unfavorable, youth will be encouraged to stay in school, such that schools act as a "warehouse" buffering youth from unstable labor market conditions. In its basic form, this hypothesis treats school and work as mutually exclusive, competing options for youth, with schooling viewed as an *alternative* to work.

To date, the bulk of the research testing these ideas has used local unemployment rates to measure labor market conditions. For example, Perna (2000) analyzed the National Education Longitudinal Study of 1988 (NELS:88) to assess the determinants of college entry and found that, controlling for a host of student background characteristics, a 1% increase in unemployment was associated with a 2.6% increase in enrollment. Similar findings emerged in Rivkin's (1995) analysis of the High School and Beyond Longitudinal Survey (HS&B): high school graduates, particularly males, were more likely to go to college if they lived in communities where unemployment was high. Specifically, a 1% increase in unemployment increased the odds of going to college (vs. working) by 8.2% for black males and 1.6% for white males. Similar relationships were found at earlier stages of schooling (Walters 1984), before the 1980s (Gustman and Steinmeier 1981; Walters 1984), as well as in other countries (Petrongolo and San Segundo 2002).[1] These findings suggest that warehousing is an institutional mechanism to shelter the youth population when labor market conditions are unstable.

In the first part of this analysis, I assess whether the general tenets of the warehouse hypothesis hold for a more recent cohort of youth. Specifically, I test the following hypothesis:

H1: High school graduates living in areas of the country with high rates of unemployment are more likely to enroll in college than are high school graduates living in areas of the country with low rates of unemployment.

1. Petrongolo and Segundo found that unemployment was associated with school enrollment in Spain. Other international studies have found weak relationships between unemployment rates and school enrollment. See Merrilees (1981) for an analysis of Australia, and Riphahn (2002) for an analysis of Germany.

As mentioned, the warehouse hypothesis (and the interpretation of the studies mentioned so far) views schools as an *alternative* to work for youth. However, schools do not merely function to warehouse youth when there is a slack demand for labor, but to prepare youth for the types of jobs that they will hold when done with school—that is, schooling is *preparation* for work. This function of schooling, arguably more relevant to positions in the occupational structure in later adulthood, implies that the future implications of school-work decisions may be more important than current ebbs and flows in the local economy. An area may have low unemployment, but if the majority of the available jobs require skills and training beyond a high school diploma, then youth may decide to pursue postsecondary education, regardless of immediate job opportunities.

These two functions of schooling are not incompatible. For example, consider the situation of youth living in an area with a shrinking manufacturing base and a growing computer software industry. High school graduates in this area may decide to enroll in college because the jobs currently available for high school graduates (i.e., manufacturing jobs) are limited, and those that are expanding (i.e., computer software jobs) require postsecondary training. The first part of the rationale reflects schools' function as an alternative to work, while the second part reflects schools' function as preparation for work. While it's empirically difficult to disentangle which is most relevant to young people as they navigate their way through school and the labor market, studies that rely solely on measures of current opportunity via unemployment rates shed light only on the former. To examine the latter requires "information about occupational requirements and prospects and the structure of job competition, as well as the foresight to plan one's schooling around expected occupational opportunities" (Walters 1984:660).

Thus far, research examining the occupational requirements of the labor market has relied on proxies for the educational requirements of the jobs available to youth, such as employment patterns within certain sectors. For example, Walters (1986) found that expansion in white-collar and professional/technical jobs, which typically require training beyond high school, was associated with an increase in college enrollment, while growth in blue-collar work was associated with a decrease in college enrollment. Similarly, Fuller (1983), using census data at the state and city level, examined historical changes in the job structure from 1890 to 1920 and primary and secondary school attendance. When there was an expansion in blue-collar jobs, youth had little incentive to stay in school and instead entered the work force.

This relationship was further elaborated in Walters and O'Connell's (1988) analysis of public primary and secondary enrollment from 1890 to 1940. They corroborated Fuller's finding, but the relationship held only for high school–aged youth. They explained this age contingency in terms of the current utility of schooling: the relationship between labor market conditions and enrollment is strongest when schooling is not necessary for core skill development and subsequent employment. When a certain level of school is required for work or is compulsory by law, enrollment is less affected by the local economy. Primary education during the time period studied by Fuller, Walters, and O'Connell was on its way to becoming a "mass institution," while secondary education was discretionary. Hence, younger students remained in school despite the availability of manufacturing jobs while high school–age youth were pulled out of school and into the labor market. Like contingencies were detected by Shanahan et al. (1998), who found that growth in the manufacturing sector was positively associated with dropping out of primary school before World War II (when primary school attendance was discretionary), but not after (when primary school attendance was increasingly required).

With today's economy more diverse than those studied in the previous research, and the increasing opportunities to receive some form of postsecondary training, the relationship between schooling and enrollment decisions might be driven by youths' response to the *educational requirements* of the jobs available to them or the jobs they eventually

want to hold. The present study explores these issues by using a taxonomy developed by the Bureau of Labor Statistics to classify occupations according to their educational requirements. From these classifications, geographic measures indicating the percentage employed in jobs that require college degrees are constructed. Applying this measure, which more clearly articulates the educational requirements of the labor market than those used in previous studies, to the potential college-going population, for whom attendance is discretionary, I test the hypothesis that youth make postsecondary decisions based on requisite skills needed for the job market:

> H2: High school graduates living in areas of the country with more plentiful job opportunities for those without a college degree are less likely to enroll in college than are high school graduates living in areas of the country with fewer job opportunities for those without a college degree.

In this way, colleges do not simply act as warehouses for the youth population because of a dearth of jobs, but also as incubators developing the skills and capabilities of youth to meet the requirements of the local job market.

Institution Type

One of the biggest changes in the postsecondary education system in the United States is the vast expansion of two-year colleges and universities—growing from a grand total of 1 in the year 1900 to 1,600 by 1998 (Phillipe and Patton 2001). Currently, about 27% of youth enroll in these institutions immediately following high school graduation (Bozick and Lauff 2007). Unlike traditional four-year schools, which provide a general liberal arts education in preparation for professional careers, most two-year colleges are geared toward the needs of the *local* labor market. With support and coordination from local industries and community leaders, the curricula of these schools are designed to impart basic skills and training to prepare youth for occupations prevalent in the area. In this sense, two-year schools can be considered "labor market intermediaries." Touted for making college more accessible, often these schools are targeted toward students who are not academically ready for the rigor of a four-year college and those with limited resources to handle the high cost of attending a four-year college. Consequently, these schools "contribute middle-level students to the middle-level labor market and affect the productivity of our work force" (Betts and McFarland 1995:742).

With the link between schooling opportunities and the regional labor market explicit, enrollment in two-year schools should be more strongly affected by economic conditions than enrollment in four-year schools. In other words, youth who are positioned to enter the work force after high school graduation may be more likely to enter a two-year school than a four-year school if job opportunities are limited because two-year schools are less expensive and more likely to enhance skills that will be of value when job opportunities expand. Four-year schools also prepare youth for the labor market, but these jobs typically require more knowledge and extensive training. When the economy contracts, the least educated, who most often hold low- and middle-level jobs (i.e., blue collar and service jobs), are more often affected than those with college degrees, who typically hold higher-level white-collar and professional jobs (Krolik 2004).

There is some evidence that enrollment in two-year schools responds to the local economy. For example, Betts and McFarland (1995) found that a 1% rise in unemployment is associated with an 8.8% rise in enrollment in community colleges. Rouse (1994), in turn, found that unemployment has a stronger effect on enrollment in two-year schools than in four-year schools, suggesting that two-year schools may be the first to absorb work-bound youth in times when employment opportunities are limited.

Though they are primarily designed to meet the needs of the local labor market, two-year schools serve the dual function of remediating students who are not academically

prepared for a four-year college. In this way, two-year colleges are part of the pipeline to a bachelor's degree, giving less prepared students the opportunity to acquire some course credit and additional instruction before transferring to a four-year school. As a pipeline, however, it is a leaky one: only about a quarter of students transfer from a two-year school to a four-year school (Bradburn, Hurst, and Peng 2001), and students who start off in a two-year school are much more likely to withdraw before obtaining a bachelor's degree than their peers who start off in a four-year school (Berkner and Choy 2008; Dougherty 1994). Therefore, if the economy is dominated by jobs requiring a bachelor's degree, then youth may opt to attend a four-year school instead of a two-year school, regardless of unemployment.

Given their different functions—that is, two-year schools geared toward the local economy and four-year schools focused on awarding bachelor's degrees—I test the hypothesis that the type of schools high school graduates attend is contingent on local economic conditions:

H3: Enrollment in two-year schools is more affected by local unemployment, while enrollment in four-year schools is more affected by the educational requirements of the local occupational structure.

That is to say, all else equal, youths living in areas with high rates of unemployment will be more likely to enroll in a two-year college than to enter either the work force or a four-year college, while youths living in areas with a high prevalence of jobs requiring a bachelor's degree will be more likely to enroll in a four-year college than to enter either the work force or a two-year college.

Economic Resources

Implicit in the warehousing hypothesis is the assumption that regardless of economic conditions, all youth have the means to enroll in school—a relatively safe assumption when examining primary and secondary enrollment in the United States, but a more tenuous one when examining postsecondary enrollment. Unlike primary and secondary education, postsecondary schooling, even in the public sector, is tuition driven. Between 1986 and 2006, tuition and fees (in constant dollars) at public two- and four-year schools more than doubled (College Board 2006). Over this same interval, median family income growth was modest, increasing by only about 12% (U.S. Census Bureau 2006), and state and local appropriations for higher education (despite a few mild fluctuations) held steady (College Board 2006). Consequently, the financial burden of a college education over the past two decades has increasingly fallen on students and their families.

Given the high costs associated with attending college, coupled with the availability of jobs that do not necessarily require a bachelor's degree, the effects of economic conditions may be more pronounced for youth with the fewest economic resources. When the local economy is healthy and well-paying jobs are available, low-income youth are more likely to pursue these opportunities. The immediate prospects of steady income afforded by the job may be greater than the delayed payoff to a longer-term investment in education, especially since disadvantaged youth see few of their friends and family members receiving postsecondary degrees and thriving in professional jobs. Even if they are highly motivated to attain a college degree, intermittent work may help finance the cost of tuition for enrollment later on. These contingencies are less likely to be experienced by youth with ample economic resources, for whom college is often financed by their parents (Steelman and Powell 1989, 1991). Additionally, in terms of geographic mobility, affluent youth are more likely to move long distances (Schachter 2004) and thus are better able to "escape" unfavorable labor market conditions than their disadvantaged peers.

This contingent relationship finds some weak and indirect support in literature. For example, Shanahan et al.'s (1998) study of pre– and post–World War II males found that

those in the second to the lowest socioeconomic quintile were more likely to be pulled out of high school due to expansions in the manufacturing sector than their peers in the highest socioeconomic quintile. Similarly, Rivkin (1995) and Gustman and Steinmeier (1981) both found that local unemployment has a stronger effect on the high school and college enrollment of blacks than of whites. Given income disparities between blacks and whites, this indirectly suggests that the enrollment behavior of less-affluent youth is more sensitive to labor market conditions than that of their more affluent peers. Though focused on the returns to education rather than local economic conditions, Beattie (2002) found that the college enrollment of low-SES youth is more responsive than for high-SES youth to the rate of return of a college degree. Together, these studies suggest that the school-work decisions of disadvantaged youth are more contingent on the local economic context than the decisions of more privileged youth.

In this analysis, I assess whether labor market opportunities differentially affect the postsecondary enrollment decisions of youth as a function of their economic resources:

H4: The postsecondary enrollment patterns of low-income high school graduates are more sensitive to local unemployment and the educational requirements of the local occupational structure than are those of high-income high school graduates.

Additionally, I examine whether this relationship holds in both two- and four-year schools.

METHODS

Data

I test these hypotheses using data from the Education Longitudinal Study of 2002 (ELS:2002), which was designed by the National Center for Education Statistics (NCES) and RTI International to monitor the academic and developmental experiences of a cohort of 10th graders as they proceed through high school and into young adulthood. The ELS used a two-stage sampling procedure. In the first stage, a sample of 752 high schools, both public and private, were selected with probabilities proportional to their size. In the second stage, approximately 26 students were randomly sampled from each school on the condition that they were in the 10th grade in the spring term of 2002. Of the 17,591 eligible students, 15,362 completed a survey about their school and home experiences. Sample members were administered cognitive assessments in mathematics and reading, and their parents, teachers, principals, and school librarians were surveyed as well. In the spring of 2004, when most were high school seniors, 14,713 of the originally selected sample members were reinterviewed. In 2006, when most were two years out of high school, 14,159 participated in the second follow-up, for a weighted completion rate of 88%.

This analysis is based on all sample members who were sophomores in the spring of 2002 and who graduated from high school in the 2003–2004 school year; 13,162 met these criteria. I do not examine the postsecondary destinations of dropouts, GED recipients, or those still enrolled because they are not "at-risk" to attend a four-year college. I excluded 85 graduates who went on to the military after high school and 1,174 sample members who did not participate in the 2006 interview or who have missing information on their postsecondary destination. The final analytic sample includes 11,903 members of the graduating class of 2004.

I appended population and labor market data from the U.S. Census Bureau, the Bureau of Labor Statistics, and the Integrated Postsecondary Education System using zip code information contained in the ELS data file. There are three zip codes available: the student's residential zip code in 2004, the student's residential zip code in 2002, and the zip code of the student's school in 2002. When appending the population and labor market data, I used the residential zip code in 2004 because it geographically locates students at the end

of their senior year of high school, when they are making postsecondary decisions. If this was missing, I then used either their residential or school zip code in 2002, with preference given to the former.[2]

Measures

Unemployment rates. Using the zip code linkage, I appended unemployment rates from the U.S. Bureau of Labor Statistics for the student's county averaged across all months in 2004.[3] The average student in the analytic sample lived in a county where 5.7% of the population was unemployed.

Educational requirements of the labor market. The Occupational Projections and Training Data (OPTD) provided by the U.S. Bureau of Labor Statistics classifies occupations according to their educational requirements as reflected in educational attainment data from the Current Population Survey. The distribution of occupations is provided at the national, state, and metropolitan area levels. Using the distribution of occupations at the metropolitan area level in May 2004, I calculated the percentage of workers employed in jobs that required a bachelor's degree—herein referred to as % NEED BA for ease of expression.[4] Approximately 21% of the analytic sample did not live in a metropolitan area. For those students, I calculated the % NEED BA at the state level. I included a control in all multivariate models indicating whether this information was taken from the metropolitan area level or the state level. Because of the differences in geographic level, I use the general term "area" when interpreting the results. The average student in the analytic sample lived in an area where 10.3% of the population was employed in jobs requiring a bachelor's degree.[5]

Family income. In the tenth-grade interview, a parent or guardian was interviewed and asked to provide their total family income from all sources in 2001. The response options for this question were a series of ordinal categories: none; $1,000 or less; $1,001–$5,000; $5,001–$10,000; $10,001–$15,000; $15,001–$20,000; $20,001–$25,000; $25,001– $35,000; $35,001–$50,000; $50,001–$75,000; $75,001–$100,000; $100,001–$200,000; and greater than $200,000. From the responses, I created a continuous variable by assigning the midpoint for each category. To estimate the value of the top category (greater than $200,000), I used the Pareto distribution to assign a value of $400,000. I then transformed this continuous measure to its natural logarithm. The average student in the analytic sample came from a family whose income was $46,629 (ln = 10.7) in 2001. Due to item nonresponse, 23.9% of

2. Note that 90.2% of zip codes were taken from students' residence in 2004, 8.7% of zip codes were taken from students' residence in 2002, and 1.1% of zip codes were taken from students' high schools in 2002.

3. Most graduating seniors who enroll in college do so in the fall of the year they received their diplomas. Consequently, measures of economic conditions from 2004 may be endogenous with postsecondary destinations since they are based on information both pretransition (i.e., January–May) and posttransition (i.e., October–December). In analyses not shown, I replaced the 2004 measures with their 2003 counterparts (i.e., a one-year lag) to assure that economic conditions temporally preceded the postsecondary transition and reestimated all of the models shown in this article. Additionally, I used the 2002, 2003, 2005, and 2006 measures to predict economic conditions in 2004 and reestimated all of the models shown in this article using this 2004 predicted value in place of the 2004 actual value. The direction, magnitude, and statistical significance of the coefficients for the lagged and predicted measures were comparable to those produced using the 2004 measures. This suggests that despite the temporal overlap, the estimates using the 2004 measures provide an accurate representation of the relationship between local economic conditions and postsecondary destinations.

4. Though at the individual level, those with lower levels of education are more likely to be unemployed than those with higher levels of education, there is a negligible relationship between the measure of county-level unemployment and area-level educational requirements of the labor force ($r = –.09$). Therefore, it is unlikely that collinearity between the two measures of job opportunities will bias the point estimates when simultaneously included in a multivariate analysis.

5. The OPTD classifies jobs as requiring some college, college/college degree, and college degree. This analysis is based only on those occupations that require a college degree. The average student in the analytic sample lived in an area where 21.8% of the population was employed in jobs requiring at least some college experience.

the analytic sample is missing information on family income. Income was imputed for these cases using a multiple imputation procedure (described later). A dummy variable indicating whether income was observed or imputed is included in all analyses.[6]

Postsecondary destinations. In this analysis, I use two measures of postsecondary destinations: (1) a binary variable indicating whether or not the sample member had attended a postsecondary institution by the time of the 2006 interview; and (2) a nominal categorical variable indicating the type of first postsecondary institution attended (two-year school, four-year school, or school type unknown) for those who attended college,[7] and labor force status (employed or unemployed/not in the labor force) for those who did not attend college. For ease of expression, those who are unemployed and those who are not in the labor force will be referred to herein simply as *unemployed.* Both are based on sample members' self-reported postsecondary activities in the 2006 interview. Sample members were classified as *employed* if they worked more than six months since leaving high school and *unemployed* if they worked six or fewer months since leaving high school. Within approximately two years of graduating high school, 80.1%[8] of the analytic sample had attended college: 48.0% had first attended a four-year school, 31.8% had first attended a two-year school, and the type of first school was unknown for 0.3%. Among the 19.9% who did not attend college, 17.4% were employed and 2.5% were unemployed.

Control variables. In all multivariate analyses, I include controls for race/ethnicity, sex, family structure, parent's highest level of education, cognitive ability, orientation toward school, orientation toward work, the size of the local youth population, and the number of local colleges. I also include dummy variables for the respondent's state of residence. These state fixed effects remove the potentially confounding effects of state characteristics, such as their financial aid, welfare, and labor policies, that may influence postsecondary decision making. I use these particular control variables because a large body of research has documented their relationships with both employment and educational attainment (see, e.g., Alexander, Pallas, and Holupka 1987; Bound and Turner 2007; Perna 2000; Schoenals, Tienda, and Schneider 1998; Tinto 1993). However, because they are not central to the research questions posed in this analysis, and because there is a large volume of literature that examines their relationship with educational and occupational attainment, they are used in the present analysis simply as control variables. They are not reported in the tables or reviewed in the discussion. The coding of these variables and their univariate distributions are presented in Appendix Table A1.[9]

Missing data. Due to item nonresponse on different components of the survey, not all sample members have complete information on the control variables. To preserve the variance-covariance structure of the analytic sample, I use the *ice* (imputation by chained equations) multiple imputation scheme available in STATA. This procedure generates five

6. In preliminary analyses, I estimated all multivariate models using only those cases with observed family income information. The direction, magnitude, and statistical significance of the key relationships presented in this article were comparable. These estimates are available upon request from the author.

7. The analytic sample included 226 members who attended less than two-year colleges. Because of their similarity (in both purpose and in payoff) to two-year schools and because a null Wald test (not shown) indicated that two-year schools and less than two-year schools were indistinguishable from each other based on the set of predictor variables used in the multivariate models, I combined them into one category: "two-year schools." Their inclusion or exclusion does not change the substantive findings.

8. This estimate based on the analytic sample (80.1%) is higher than the sample-wide estimate (70.1%) published in the Bozick and Lauff (2007) report that accompanied the release of the ELS:2002 data because they are based on different samples. Bozick and Lauff used the full sample of students who were enrolled as 10th graders in the spring of 2002. By 2006, 12.2% of these students had not yet graduated from high school: some had received a GED, others were still enrolled in high school, and others had no diploma. These sample members are excluded in this analysis because those who have not yet graduated from college are technically not "at-risk" (in demographic parlance) for enrolling in college.

9. In accord with NCES policy of nondisclosure of potentially individual-indentifying information, the distributions of the state dummy variables are not shown in the appendix table.

data sets for which missing information is imputed by regressing each variable with missing data on all observed variables, adding random error to every imputed value to maintain natural variability. One of the key variables in this analysis, family income, is collected only from the parents of the sample members. Because not all parents were interviewed, there remains a sizeable proportion of missing data on this variable (23.9%). To improve the accuracy of the prediction, a set of 10 binary variables indicating household possessions and resources was also included in the imputation models.[10] These variables are based on questions specifically asked of sample members to gauge family economic resources in the event that their parent was not interviewed.

The estimates and their accompanying standard errors shown in this article are produced using the *micombine* command in STATA, which averages over the five data sets. Using dummy variable indicators, multivariate analyses control for whether the data point for a given case was observed or imputed. The proportion imputed for each variable in the analysis is shown in Appendix Table A1.

RESULTS

To test my hypotheses, I estimate a series of logistic and multinomial logistic regression models predicting postsecondary destinations as a function of job opportunities, economic resources, and control variables. In all analyses, I use appropriate sampling weights provided by NCES to account for potential bias due to sample attrition so that the results generalize to the population of all in-school spring sophomores in 2002 who graduated in the 2003–2004 school year. Additionally, I use survey (*svy*) commands in STATA, which use Taylor series linearization methods to produce correct standard errors for samples that were drawn using a stratified cluster design (StataCorp 2005).

In Table 1, I present odds ratios (e^{β}) from two logistic regression models predicting postsecondary enrollment.[11] The estimates from the first model indicate that local job opportunities are related to youths' enrollment decisions. As expected, in counties where unemployment is high, graduating seniors are more likely to seek postsecondary training than their peers living in counties with low unemployment. Specifically, a 1% increase in unemployment is associated with a 6% increase in the odds of postsecondary enrollment. This supports my first hypothesis: when overall job opportunities are limited, youth enroll in college as an alternative to work.

There is evidence, however, that youth are responding not only to current opportunities but also to the educational credentials required for those opportunities. High school graduates living in areas where the local economy includes many jobs requiring a bachelor's degree are more likely to enroll in college than their peers living in areas with ample jobs for those with only a high school diploma. Specifically, a 1% increase in the percentage of jobs requiring a bachelor's degree is associated with a 5% increase in the odds of postsecondary enrollment, lending support to my second hypothesis. Taken together, these results suggest that postsecondary decisions are influenced both by current job availability and the degree to which jobs in the area call for advanced skills and training.

10. Household possessions and resources include a newspaper subscription, a magazine subscription, a computer, internet access, a DVD player, a dishwasher, a clothes dryer, more than 50 books, a separate bedroom for the sample member, and a fax machine.

11. I conducted a series of Wald tests to assess whether the five destination categories were distinguishable from one another based on the set of predictor variables. All of the contrasts yielded test statistics that exceeded the $p < .05$ threshold, indicating that the influences on the destination categories are not homogeneous; thus, I kept the categories separate. Additionally, I conducted a Hausman test to assess whether the model met the independence of irrelevant alternatives assumption (Hausman and McFadden 1984) that including or removing categories does not affect the odds among the remaining categories. The test indicated the five-category outcome used in the models presented here meets this assumption.

Table 1. Odds Ratios From Logistic Regression Models Predicting Postsecondary Enrollment

	Model 1	Model 2
Job Opportunities		
Unemployment rates	1.06*	1.66**
% NEED BA	1.05*	0.96
Economic Resources		
Family income (ln)	1.14**	1.44*
Interaction Terms		
Unemployment rates × Family income (ln)	—	0.96**
% NEED BA × Family income (ln)	—	1.00
Log-Likelihood	–4,965.22	–4,888.02

Notes: N = 11,903. All models control for race/ethnicity, sex, family structure, parent's highest level of education, cognitive ability, orientation toward school, orientation toward work, size of the local youth population, the number of local colleges, state of residence, and missing data.

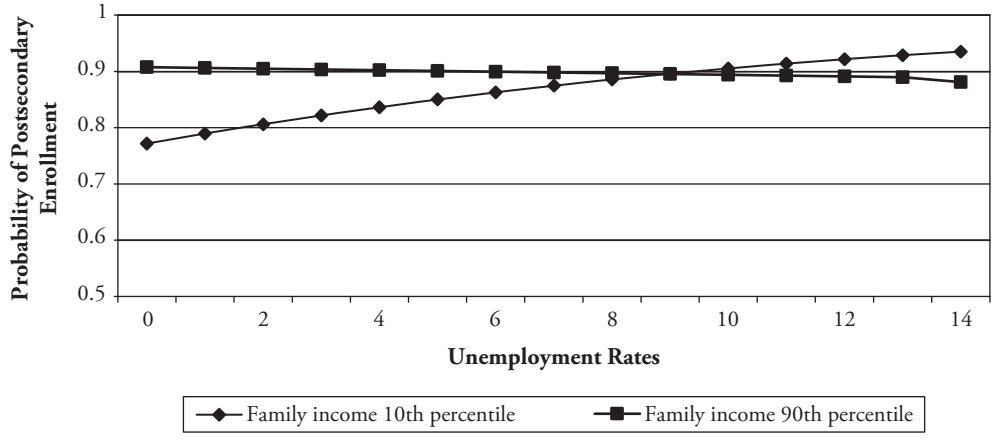
*$p < .05$; **$p < .01$

To test whether these relationships are contingent on economic resources, I created two multiplicative interaction terms—unemployment rates × family income (ln) and % NEED BA × family income (ln)—and added them in the second model. The first interaction term, unemployment rates × family income (ln), is significant at $p < .01$ and is less than 1.0, indicating that the positive relationship between unemployment rates and enrollment is attenuated when moving up through the income distribution. In other words, postsecondary decisions among more-affluent youth are less affected by local employment conditions than they are for those with limited income. The second interaction term, % NEED BA × family income (ln), does not reach the threshold for statistical significance, indicating that the positive relationship between the educational requirements of the labor force and enrollment holds for youth across the income distribution.

Since the patterning and size of interaction effects are hard to assess in the odds ratio metric, I used the coefficients from Model 2 in Table 1 to calculate a set of predicted probabilities across different levels of unemployment with all control variables set at their mean values. To highlight the contingent role of economic resources, I show predicted probabilities for two groups of students: those at the 10th percentile of the income distribution and those at the 90th percentile of the income distribution. I herein refer to these two groups as low- and high-income youth, respectively. These probabilities are shown in Figure 1. For context, unemployment rates for sample members in the ELS range from 2.4 to 17.1, with the middle 50% ranging from 4.6 to 6.4.

By and large, high-income youth have a high probability of enrolling in college, regardless of the local unemployment rate: the probability of enrolling in college hovers around .90 across the range of unemployment rates, with a slight decline as unemployment rises. Low-income youth, on the other hand, show an increasing probability to attend college in areas with greater unemployment. In areas with little or no unemployment, the probability of low-income youth enrollment is about .78–.80. In areas where unemployment is about 9%, the probability that low-income youth will enroll is .89, approximately the same probability as their high-income peers. These results lend support to the prediction that the effect of job opportunities is contingent on economic resources. Whether youth are sorted into different types of institutions as a function of their income and local job opportunities, as hypothesized, is tested next.

Figure 1. Probability of Postsecondary Enrollment, by County Unemployment Rates



In Table 2, I present relative risk ratios (e^{β}) from two sets of multinomial logistic regression models predicting postsecondary destinations. The dependent variable has five categories (two-year school, four-year school, school type unknown, employed, and unemployed), and thus the model produces four logits.[12] I first estimated the model with employed as the base category to obtain the estimates for the two logits "two-year school versus employment" and "four-year school versus employment." I then estimated the model with two-year school as the base category so that I could obtain the estimates for the logit "four-year school versus two-year school."[13] The top panel reports the estimates from these models when including job opportunities, economic resources, and control variables. The bottom panel includes those measures along with the job opportunity × economic resources interaction terms used in the second model in Table 1.

While job opportunities are related to postsecondary enrollment in the aggregate (as shown in Table 1), we see in the top panel that relative to entering the labor market after high school, less favorable job prospects are associated with *both* two- and four-year enrollment. The odds ratios for unemployment rates and % NEED BA are significant at $p < .05$ and greater than 1.0 in both the "two-year school versus employment" logit and the "four-year school versus employment" logit. The final column shows the comparison between two- and four-year school enrollment. Though economic conditions affect the overall decision to enroll in college, it appears that the type of school in which youth enroll does not depend on the particulars of their job market. Taken alongside the significant unemployment rate odds ratio in the "four-year versus employment" logit and the significant % NEED BA odds ratio in the "two-year versus employment" logit, my hypothesis that enrollment in two-year schools is more affected by local unemployment while enrollment in four-year schools is more affected by the educational requirements of the local occupational structure is not supported here.

12. The other logit contrasts (i.e., idle versus four-year school, school type unknown versus two-year school, etc.) are not reported since they are not of substantive import to the hypotheses being tested. The results from those models are available upon request from the author.

13. Unemployment in Washington, DC, was measured at the city level because it does not belong to a county.

Table 2. Relative Risk Ratios From Multinomial Logistic Regression Models Predicting Postsecondary Destinations

	Two-Year School Versus Employment	Four-Year School Versus Employment	Four-Year School Versus Two-Year School
Main Effects Model			
Job opportunities			
Unemployment rates	1.06*	1.11**	1.05
% NEED BA	1.03*	1.02*	1.03
Economic resources			
Family income (ln)	1.09*	1.26**	1.15**
Log-likelihood	–10,452.63		
Interaction Effects Model			
Job opportunities			
Unemployment rates	1.50**	1.75**	1.07
% NEED BA	0.96	1.14	1.10
Economic resources			
Family income (ln)	1.29	1.68**	1.30
Interaction Terms			
Unemployment rates × Family income (ln)	0.96*	0.96*	0.99
% NEED BA × Family income (ln)	1.00	0.99	0.98
Log-likelihood	–10,440.98		

Notes: N = 11,903. All models control for race/ethnicity, sex, family structure, parent's highest level of education, cognitive ability, orientation toward school, orientation toward work, size of the local youth population, the number of local colleges, state of residence, and missing data.

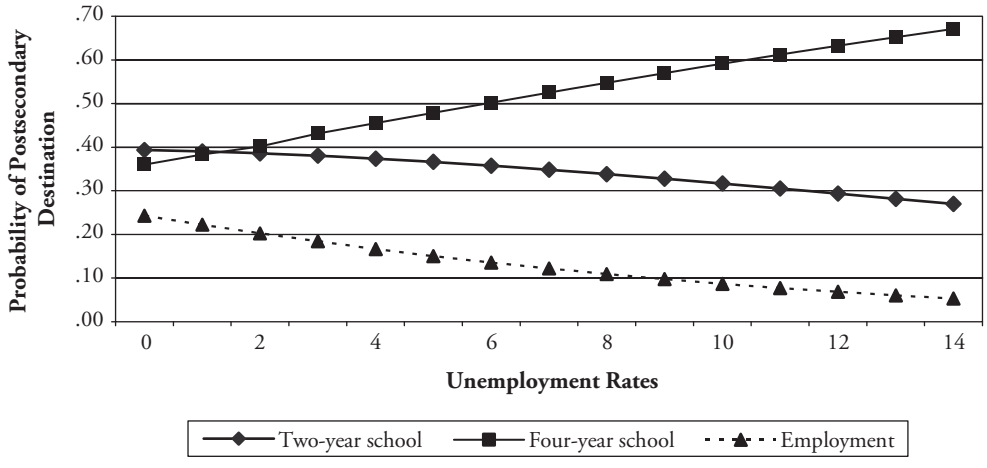
*$p < .05$; **$p < .01$

The bottom panel of Table 2 shows that the relationship between local unemployment and enrollment in both four-year and two-year schools is contingent on family income. High unemployment is associated with an increase in enrollment at both types of schools relative to employment after high school, with the effect stronger at the lower end of the income distribution than at the higher end. The positive relationship between % NEED BA and enrollment holds for low- as well as high-income youth.

To get a clearer sense of the role of unemployment in shaping the transition out of high school, I used the coefficients in the interaction effects model in Table 2 to calculate a set of predicted probabilities of different postsecondary destinations across the range of unemployment levels with all control variables set at their mean values. Figure 2 shows these probabilities for low-income youth (i.e., 10th percentile of the income distribution), and Figure 3 shows these probabilities for high-income youth (i.e., 90th percentile of the income distribution).

Figure 2 shows that the postsecondary destinations vary under different labor market scenarios. Whereas in the aggregate, low-income youth responded to high unemployment, the disaggregation of institutional type allows us to see more nuances in the relationship that were conflated when two- and four-year enrollment were combined into one category. In accord with the warehouse hypothesis, as unemployment increases, so does the probability that low-income youth will enroll in a four-year school. In counties with little or no unemployment, the probability that low-income youth will enroll in a two-year school is about .36–.38. When unemployment exceeds 10%, the probability that low-income youth will enroll in a two-year school is about .90—approximately .10 higher than the sample-wide average.

Figure 2. Probability of Postsecondary Destinations for Low-Income Youth, by County and Unemployment Rates

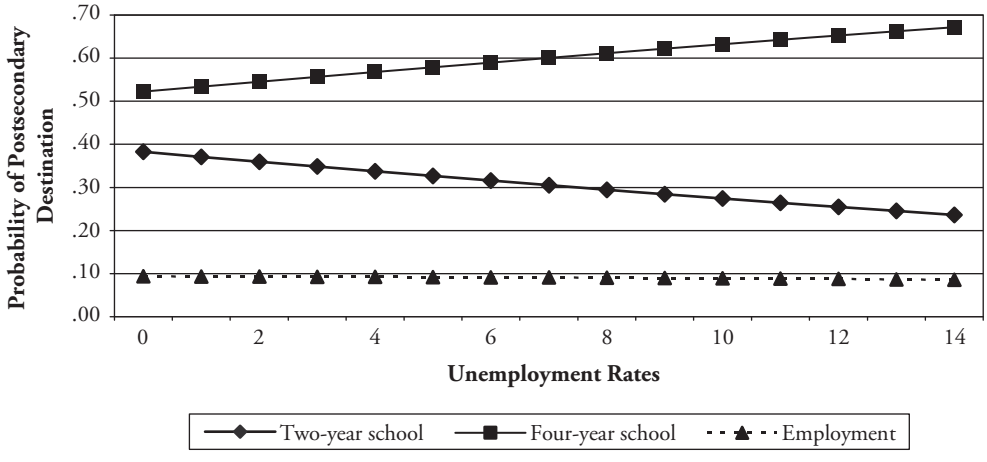


This warehousing effect, however, applies only to four-year schools. There is a *negative* relationship between unemployment and the probability of two-year school enrollment for low-income youth. In counties with little or no unemployment, the probability of two-year enrollment is approximately the same as the probability of four-year school enrollment. As unemployment increases, however, the probability of two-year enrollment decreases while the probability of four-year enrollment increases. This suggests that for low-income youth, four-year schools, not two-year schools, are most likely to absorb the youth population when job opportunities become limited. Additionally, low-income youths' chances of employment decline steadily when unemployment rises, highlighting how bleak economic conditions can be particularly detrimental to low-income youth who opt not to attend college.

Figure 3 depicts the pattern of postsecondary destinations for high-income youth. The relationship between unemployment and four-year enrollment for high-income youth is similar to that of low-income youth, but the relationships are somewhat attenuated. The probability of four-year enrollment increases when job opportunities are limited; the slope for low-income youth (Figure 2), however, is not as steep as it was for high-income youth (Figure 3). Like that of their low-income peers, the probability of two-year enrollment for high-income youth steadily declines when unemployment increases. When it comes to employment, however, high-income youth, unlike their low-income peers, are less affected by limited job opportunities: the probability of employment among high-income youth hovers around .09 throughout. Though the differences in the slopes of these trend lines between low- and high-income youth are not dramatic, recall that they show the net effect of unemployment rates, apart from a host of control variables that shape postsecondary pathways.

These two figures, along with the significant interaction terms in Table 2, lend support to my hypothesis that the postsecondary destinations of low-income high school graduates are more sensitive to local unemployment conditions than are those of high-income high school graduates. The decisions to work and to enter a two-year school appear to be most reactive to employment opportunities, with low-income youth forgoing work and entering

Figure 3. Probability of Postsecondary Destination for High-Income Youth, by County Unemployment Rates



four-year schools when the local economy contracts. My hypothesis that the postsecondary enrollment patterns of low-income high school graduates are more sensitive to the educational requirements of the occupational structure than they are for high-income high school graduates is not supported.

CONCLUSION

This article provides new evidence about the relationship between job opportunities and the postsecondary destinations of American youth. In accord with a host of research on local unemployment rates and school enrollment, graduating seniors in the 2003–2004 school year were more likely to enter college when unemployment was high—supporting the proposition that postsecondary institutions warehouse youth in tight labor markets. Additionally, this article provides new information about the role of the local occupational structure. The educational requirements of the local labor market, in addition to current job availability, shape the transition out of high school. Youth living in areas with economies driven by college-educated labor have higher odds of enrolling in college than their peers living in areas where there are ample jobs for those with only a high school diploma, suggesting that youth respond to the signals about whether job prospects require postsecondary training. Taken together, these findings indicate that geographic diversity in economic conditions and labor market requirements influence the directions youth take once they finish high school.

The sociology of the life course posits that key transitions are organized at the structural level, as to produce functional modalities, with individual differentiation contingent on the context within which the transition occurs (Graber and Brooks-Gunn 1996; Mayer 2004). As a key structural component of the stratification system in the United States, economic inequality shapes trajectories through schools and the economy, such that low-income high school graduates have historically forgone college and entered the labor force at higher rates than their high-income peers. The contours of this transition, as evidenced here, are shaped by the labor market context within which the transition out of high school

occurs. Students from families with ample economic resources to finance the increasing costs of college are not affected by current job opportunities; this is likely because these students have been motivated toward college from an early age (Bozick et al. forthcoming), have received the best academic preparation (Entwisle, Alexander, and Olson 1997), and have parents who are committed to financing their education (Steelman and Powell 1989, 1991). These affective, cognitive, and financial resources likely buffer affluent youth from short-term fluctuations in the local economy.

With fewer resources on which to rely, the postsecondary destinations of disadvantaged youth are more dependent on the health of the local economy. When job opportunities are scarce, low-income youth are more likely to forgo employment and to enter college, specifically four-year schools. This complements previous research, which found that enrollment patterns of disadvantaged populations are more reactive to the labor market (Beattie 2002; Gustman and Steinmeier 1981; Rivkin 1995; Shanahan et al. 1998). Because unemployment disproportionately affects low-income populations (Iceland 2003), and because low-income youth are more likely to work to finance their education (Bozick 2007), it is likely that the local labor market weighs more heavily on the enrollment-employment decisions of the disadvantaged and, as a context modulating life course transitions, is more salient for them.

Though two-year colleges are better aligned with local labor needs and oftentimes more focused on less privileged populations, my analysis finds that four-year schools, not two-year schools, serve as "warehouses" during times when job opportunities are limited. It may be that youth in these areas, witnessing firsthand the consequences of economic deprivation and the instability associated with sub-baccalaureate degrees, turn to four-year schools as a means to acquire human capital that will later safeguard them against unemployment.

This is at odds with analyses based on data from the 1980s and early 1990s, which found that youth are more likely to enter two-year rather than four-year schools when unemployment is high (Betts and McFarland 1995; Rouse 1994). Because the economic payoff to a four-year degree was higher in 2004 than it was in the 1980s and early 1990s (U.S. Department of Education 2007), and the economy in 2004 was more reliant on technological and skilled labor, the effect of unemployment on four-year enrollment may have become amplified over time. Additionally, four-year schools have increasingly offered night classes and distance learning (Phipps 2004), making four-year schools more accessible to disadvantaged youth than in the past. Moreover, it should be noted that members of the ELS:2002 cohort were making postsecondary decisions during a time when interest rates on federally funded student loans were at historically low levels, reducing the overall financial burden associated with four-year college attendance. Future research will be needed to identify how youth perceive their labor market opportunities and the extent to which this affects the type of school they attend.

As a means to identify and depict the patterning of job opportunities and life course transitions, ELS:2002 is a rich data source that provides a nationally representative view of schooling and employment in young adulthood. As a means to probe at the information available to youth as they leave high school, how they perceive and prioritize this information, and the extent to which this information facilitates or impedes the enactment of postsecondary plans, large-scale survey data like ELS:2002 are less than optimal. For example, due to data restrictions, the educational requirements of the job market were measured at the metropolitan area and state level, while unemployment was measured at the county level. The exact geographic boundaries that individuals perceive as relevant and accessible to their daily lives has eluded social scientists interested in understanding the role of neighborhoods and labor markets on behavior (Burton, Price-Spratlen, and Spencer 1997); that same limitation applies here.

The geographic demarcations used here and in like studies have analytical implications. For example, the Washington, DC, metropolitan area includes large, impoverished

African American neighborhoods, racially integrated neighborhoods with large immigrant populations that are undergoing economic redevelopment, and wealthy suburbs that house white-collar government workers. It is doubtful that youth in these different neighborhoods are exposed to the same job opportunities and interpret their chances of attainment similarly. Thus, measures of county-level unemployment[14] and metropolitan area/state–level educational requirements such as the ones I use in this study serve as "noisy proxies" for job opportunities. Regardless of the artificial, yet analytically convenient, geographic boundaries imposed on the sample members, and the inability to fully gauge the cognitive processes that underlie this decision process, the effect of job opportunities on postsecondary destinations is significant. Its relevance as a predictor variable despite the "noise" in measurement and the application of control variables speaks to the strength of the relationship, which is likely understated in this analysis.

Additionally, readers should keep in mind that the Education Longitudinal Study is an observational study, not an experimental one. As such, students and their families were not randomly assigned to different labor markets, limiting the ability to establish a direct causal link between economic opportunities and postsecondary decision making. In other words, it is possible that families with the greatest educational prospects choose to live in areas with high-skill job prospects, confounding the observed relationships detected here. To guard against this potential selection bias, I controlled for a range of variables known to influence both families' residential choices (e.g., family income, parental education, and family structure) and educational attainment. Additionally, I controlled for sex, race/ethnicity, youths' ability to succeed in college (using standardized test scores), their early orientations toward school and work, the supply of youth labor (using local cohort size), and the availability of colleges and universities, as well as state-specific characteristics. While this should temper concerns regarding the nature of the relationships observed in this analysis, it does not entirely rule out the possibility of selection bias.

In closing, as young adulthood receives further scrutiny as a new phase in the life course with its own unique demographic and developmental properties, social scientists need to be mindful of the economic contexts within which adolescents transition to young adulthood. It has long been established that economic deprivation has a profound effect on childhood outcomes that in turn reverberate throughout the life course. Young adults, with life chances already strongly shaped by race, ethnicity, gender, and social class, also have opportunities for upward mobility through postsecondary education. The analysis here shows that differences in these opportunity structures have real consequences for educational and occupational attainment—differences that bear most heavily on those with the fewest resources.

14. Unemployment in Washington, DC, was measured at the city level because it does not belong to a county.

Appendix Table A1. Control Variables

Variable Description (Source)	Categorical Construction	Weighted Mean or Proportion	Proportion Imputed
Sex			
Categorical measure of student's sex (ELS:2002)	Female	.53	.00
	Male	.47	
Race/Ethnicity			
Categorical measure of student's race/ethnicity (ELS:2002)	White non-Hispanic	.60	.00
	Black non-Hispanic	.12	
	Hispanic	.13	
	Asian/Pacific Islander	.10	
	American Indian	.01	
	More than one race	.05	
Family Structure			
Categorical measure indicating family structure (ELS:2002)	Two biological parents	.64	.09
	Stepfamily	.14	
	Single-parent family	.20	
	Other	.02	
Parental Education			
Categorical measure indicating the highest level of education by either the mother or father (ELS:2002)	High school or less	.24	.09
	Some college	.32	
	Bachelor's degree	.24	
	Graduate/professional degree	.21	
Cognitive Ability			
Standardized continuous composite based on scores from a reading and mathematics assessment in the 10th grade (ELS:2002)	N/A	50	.00
Orientation Toward School			
Categorical measure indicating the student's educational expectations in the 10th grade (ELS:2002)	Does not expect a four-year degree	.80	.05
	Expects a four-year degree	.20	
Orientation Toward Work			
Categorical measure indicating employment in the 10th grade (ELS:2002)	Does not work	.45	.19
	Works 20 or fewer hours per week	.42	
	Works more than 20 hours per week	.13	
Size of the Local Youth Population			
Continuous measure indicating the size of the population aged 15–24 living within the county of the sample member (2000 census)	N/A	122,700	.00

(continued)

(Appendix Table A1, continued)

Variable Description (Source)	Categorical Construction	Weighted Mean or Proportion	Proportion Imputed
Number of Local Colleges			
Continuous measures of the number of postsecondary institutions located in a metropolitan area (Integrated Postsecondary Education Data System)	N/A	3.39	.00

REFERENCES

Alexander, K.L., A.M. Pallas, and S. Holupka. 1987. "Consistency and Change in Educational Stratification: Recent Trends Regarding Social Background and College Access." Pp. 161–85 in *Research in Social Stratification and Mobility,* edited by R.V. Robinson. Greenwich, CT: JAI.

Beattie, I.R. 2002. "Are All 'Adolescent Econometricians' Created Equal? Racial, Class, and Gender Differences in College Enrollment." *Sociology of Education* 75:19–43.

Berkner, L. and S. Choy. 2008. "Descriptive Summary of 2003–04 Beginning Postsecondary Students: Three Years Later." Report (NCES 2008-174). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC.

Betts, J.R. and L.L. McFarland. 1995. "Safe Port in a Storm: The Impact of Labor Market Conditions on Community College Enrollments." *Journal of Human Resources* 30:741–65.

Bound, J. and S. Turner. 2007. "Cohort Crowding: How Resources Affect Collegiate Attainment." *Journal of Public Economics* 91:877–99.

Bozick, R. 2007. "Making It Through the First Year of College: The Role of Students' Economic Resources, Employment, and Living Arrangements." *Sociology of Education* 80:261–85.

Bozick, R., K.L. Alexander, D.R. Entwisle, S.L. Dauber, and K.A. Kerr. Forthcoming. "Framing the Future: Revisiting the Place of Educational Expectations in Status Attainment." *Social Forces*.

Bozick, R. and E. Lauff. 2007. Education Longitudinal Study of 2002 (ELS:2002): A First Look at the Initial Postsecondary Experiences of the Sophomore Class of 2002. Report (NCES 2008-308). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC.

Bradburn, E.M., D.G. Hurst, and S. Peng. 2001. "Community College Transfer Rates to 4-Year Institutions Using Alternative Definitions of Transfer." Report (NCES 2001-197). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC.

Bureau of Labor Statistics. 2006. *Occupational Projections and Training Data*. Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC.

Burton, L.M., T. Price-Spratlen, and M.B. Spencer. 1997. "On Ways of Thinking About Measuring Neighborhoods: Implications for the Study of Context and Developmental Outcomes for Children." Pp. 132–44 in *Neighborhood Poverty: Context and Consequences for Children,* edited by J. Brooks-Gunn, G.J. Duncan, and J.L. Aber. New York: Russell Sage Foundation.

Cohen, M. and D.J. Besharov. 2004. "The Important Role of Career and Technical Education: Implications for Federal Policy." Report. Welfare Reform Academy, University of Maryland, College Park, MD.

College Board. 2006. "Trends in College Pricing." Report. College Board, Washington, DC.

Dougherty, K. 1994. *The Contradictory College*. Albany, NY: State University of New York Press.

Entwisle, D., K.L. Alexander, and L.S. Olson. 1997. *Children, Schools, and Inequality*. Boulder, CO: Westview Press.

Fuller, B. 1983. "Youth Job Structure and School Enrollment, 1890–1920." *Sociology of Education* 56:145–56.

Fussell, E. and F.F. Furstenberg, Jr. 2005. "The Transition to Adulthood During the Twentieth Century: Race, Nativity, and Gender." Pp. 29–75 in *On the Frontier of Adulthood: Theory, Research, and Public Policy,* edited by R.A. Settersten, Jr., F.F. Furstenberg, Jr., and R.G. Rumbaut. Chicago: University of Chicago Press.

Graber, J.A. and J. Brooks-Gunn. 1996. "Transitions and Turning Points: Navigating the Passage From Childhood Through Adolescence." *Developmental Psychology* 32:768–76.

Grubb, W.N. and M. Lazerson. 1982. "Education and the Labor Market: Recycling the Youth Problem." Pp. 110–41 in *Work, Youth, and Schooling: Historical Perspectives on Vocational Education,* edited H. Kantor and D. Tyack. Stanford, CA: Stanford University Press.

Gustman, A.L. and T.L. Steinmeier. 1981. "The Impact of Wages and Unemployment on Youth Enrollment and Labor Supply." *Review of Economics and Statistics* 63:553–60.

Hausman, J. and D. McFadden. 1984. "Specification Tests for the Multinomial Logit Model." *Econometrica* 52:1219–40.

Iceland, J. 2003. *Poverty in America*. Berkeley, CA: University of California Press.

Krolik, T.J. 2004. "Educational Attainment of the Labor Force and Jobless Rates, 2003." *Monthly Labor Review* 127:57–59

Mayer, K.U. 2004. "Whose Lives? How History, Societies and Institutions Define and Shape Life Courses." *Research in Human Development* 1:161–87.

Merrilees, W.J. 1981. "The Effect of Labour Market Conditions on School Enrollment Rates." *Australian Economic Review* 55:56–60.

Perna, L.W. 2000. "Differences in the Decision to Enroll in College Among African Americans, Hispanics, and Whites." *Journal of Higher Education* 71:117–41.

Petrongolo, B. and M.J. San Segundo. 2002. "Staying-on at School at 16: The Impact of Labor Market Conditions in Spain." *Economics of Education Review* 21:353–65.

Phillipe, K. and M. Patton. 2001. *National Profile of Community Colleges: Trends and Statistics,* 3rd ed. Washington, DC: Community College Press, American Association of Community Colleges.

Phipps, R.A. 2004. "How Does Technology Affect Access in Postsecondary Education? What Do We Really Know?" Report (NPEC 2004-831). National Postsecondary Education Cooperative Working Group on Access-Technology, Washington, DC.

Riphahn, R.T. 2002. "Residential Location and Youth Unemployment: The Economic Geography of School-to-Work Transitions." *Journal of Population Economics* 15:115–35.

Rivkin, S.G. 1995. "Black/White Differences in Schooling and Employment." *Journal of Human Resources* 30:826–52.

Rouse, C.E. 1994. "What to Do After High School: The Two-Year Versus Four-Year College Enrollment Decision." Pp. 59–85 in *Choices and Consequences: Contemporary Policy Issues in Higher Education,* edited by R.G. Ehrenberg. Ithaca, NY: ILR Press.

Schachter, J.P. 2004. "Geographic Mobility: 2002 to 2003." Current Population Reports P20-549. U.S. Census Bureau, U.S. Department of Commerce, Washington, DC.

Schoenhals, M., M. Tienda, and B. Schneider. 1998. "The Educational and Personal Consequences of Adolescent Employment." *Social Forces* 77:723–62.

Shanahan, M.J., R.A. Miech, and G.H. Elder, Jr. 1998. "Changing Pathways to Attainment in Men's Lives: Historical Patterns of School, Work, and Social Class." *Social Forces* 77:231–56.

StataCorp. 2005. *Stata Statistical Software: Release 9.0 User's Guide*. College Station, TX: Stata Corporation.

Steelman, L.C. and B. Powell. 1989. "Acquiring Capital for College: The Constraints of Family Configuration." *American Sociological Review* 54:844–55.

———. 1991. "Sponsoring the Next Generation: Parental Willingness to Pay for Higher Education." *American Journal of Sociology* 96:1505–29.

Tinto, V. 1993. *Leaving College: Rethinking the Causes and Cures of Student Attrition*. Chicago: The University of Chicago Press.

U.S. Census Bureau. 2006. Current Population Survey, Annual Social and Economic Supplements.
U.S. Department of Education, National Center for Education Statistics. 2007. "The Condition of Education 2007." Report (NCES 2007-064). U.S. Government Printing Office, Washington, DC.
Walters, P.B. 1984. "Occupational and Labor Market Effects on Secondary and Post-Secondary Educational Expansion in the United States: 1922 to 1979." *American Sociological Review* 49:659–71.
———. 1986. "Sex and Institutional Differences in Labor Market Effects on the Expansion of Higher Education, 1952–1980." *Sociology of Education* 59:199–211.
Walters, P.B. and P.J. O'Connell. 1988. "The Family Economy, Work, and Educational Participation in the United States, 1890–1940." *American Journal of Sociology* 93:1116–52.