



Poverty, Intergenerational Mobility and Young Adult Educational Attainment

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Introduction

Equality of opportunity has long been a distinguishing characteristic of the American experiment. Historian James Truslow Adams characterized the American Dream as “a social order in which each man and each woman shall be able to attain to the fullest stature of which they are innately capable...regardless of the fortuitous circumstances of birth or position.”¹ Education has been the key to this conception of economic mobility. As early as 1779, as governor of Virginia, Thomas Jefferson proposed a “Bill for the More General Diffusion of Knowledge” that, had it passed, would have taught “reading, writing, and common arithmetic” to “all the free children, male and female.”²

Of course, as with other civil rights, access to public education expanded across the social spectrum only fitfully—compulsory school attendance laws became commonplace only by the end of the 19th century. And after decades of resistance, the Supreme Court only recently outlawed separate schools for white and black children, in 1954. Even today, the U.S. tradition of basing funding for public schools on local area property taxes means that children residing in affluent communities with relatively high local tax bases attend schools that have more resources than the schools attended by children living in poor communities with low tax bases.

Nevertheless, as a result of this commitment to the ideal of equality of educational opportunity, raising the educational attainment of poor children was a key goal of President Lyndon Johnson’s War on Poverty. In a 1965 special message to Congress, “Toward Full Educational Opportunity,” he proposed, “that we declare a national goal of Full Educational

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Opportunity. Every child must be encouraged to get as much education as he has the ability to take. We want this not only for his sake, but for the nation's sake.”³

In the decade that followed, the federal government enacted many programs that both provided income and services for poor families and sought to increase the human capital of poor children, thereby enhancing their opportunities to break the intergenerational cycle of poverty. Programs included Head Start, federal spending for primary and secondary education, programs to encourage disadvantaged youth to attend college, and subsidies for college tuition and the work-study program to make college more affordable. These initiatives and many others that were implemented or expanded between the mid-1960s and late-1970s continue to form the core of America's pursuit of equal educational opportunity.

Indeed, educational interventions focused on poor children and young adults garner more public support than programs that provide benefits to their parents, in part because Americans strongly believe that a child's opportunities should not be limited by her circumstances at birth. For example, a March 2011 poll by the Economic Mobility Project of the Pew Charitable Trusts asked a random sample of adults to list which was “one of the most important goals the government should work toward.”⁴ The highest ranked of 12 choices was “ensuring all children get a quality education,” endorsed by 46 percent of respondents. In contrast, only 23 percent endorsed “helping people out of poverty,” as one of the most important goals. Respondents were also asked to rate “steps that the government could take to help Americans improve their economic situation.” Almost 80 percent reported that making college more affordable and 84 percent reported that improving the quality of elementary and high school education would be one of the most effective policies or a very effective policy.

Despite these attitudes for promoting equal opportunity, the quality of public elementary and secondary schools remains much lower for the poor, and access to college is much more

restricted (especially for racial and ethnic minorities) than for the affluent. Indeed, since the mid-1970s, there has been little progress against poverty and inequalities between high and low socioeconomic (SES) families have widened along most dimensions, including their earnings, family income and wealth and, ominously, the educational attainment of their children.⁵ For example, in 2005, 53.5 percent of high school graduates whose parents were in the lowest family income quintile enrolled in secondary education in the fall immediately after graduation (two-year or four-year colleges), compared with 81.2 percent of high school graduates whose parents were in the highest income quintile.⁶ These rates of immediate college-going were 42 percent for whites, 32 percent for African Americans, and 25 percent for Latinos.

This paper investigates the relationship between family background and young adult outcomes and the extent to which inequalities in parental SES (as measured either by income or by educational attainment) may have differentially affected young adult educational attainment over the past 30 years. We analyze data from the Panel Study of Income Dynamics (PSID) and find no evidence that the gap in college completion (earning a four-year degree by age 25) between young adults from low- and high-income families and from low- and high-education families has narrowed among cohorts from the mid-1950s through the early 1980s.

We also examine educational attainment differences by SES in a three-generational context, focusing on the outcomes of young adults around age 19 raised by low-income parents who were themselves raised in low-income households. We find that educational attainment is lower both for those whose own childhood SES was low and for those whose parents' childhood SES was also low.

Taken together, our results suggest that despite several decades of spending on compensatory education programs from preschool through college, the educational attainment,

and, hence the economic status and prospects of young adults, remains strongly correlated with the status of their parents and even with the status of their grandparents.

Family Background and Young Adult Outcomes

Family background can influence the life-course trajectories of young adults in many ways. Parental income and other economic resources may provide access to better opportunities to build human capital.⁷ Other advantages of having high-income parents may be indirect, for example their ability to provide a cognitively stimulating home environment.⁸ Other experiences within the household that are related to socioeconomic status can also influence children's developmental trajectories. Low income contributes to increased parental stress and inconsistent parenting, which in turn are associated with behavioral problems and other impediments to successful development.⁹

Empirically, the substantial correlation between parental and offspring educational and economic outcomes has been extensively documented.¹⁰ Furthermore, while these studies show that the children of rich parents fare better than the children of poor parents, they have not addressed whether or not the increasing inequalities in parental economic status over the last three decades have also been associated with increasing gaps in young adult attainment.

The Changing Role of Family Background

In a 2007 paper, Guldi, Page, and Stevens¹¹ examine the effects of parental SES on young adult outcomes at age 30 for two birth cohorts, individuals born between 1950 and 1953 and then between 1970 and 1973. Regarding the different time periods over which these individuals transitioned to adulthood, they note several factors that may have increased the correlation between family SES and young adult outcomes. These include the increasing returns to higher education¹² and the subsequent widening of income and educational inequalities (both among the parental and young adult generations), the disparity in parental transfers to young adults between

high- and low-income families,¹³ and the rise in the percentage of children growing up in single-parent families.¹⁴ Potentially offsetting these widening inequalities were increased government expenditures on disadvantaged children and young adults, especially those born after the late 1960s, through programs such as Head Start, food stamps, Medicaid, expanded access to school-provided meals, and Pell grants and work-study grants for higher education. Guldi et al. document a strong positive relationship between family SES and young adult outcomes, especially educational attainment, but find little evidence that the relationship was greater for the cohort born in the 1970s than the group born in the 1950s.¹⁵

There are several reasons why SES differences may influence more recent cohorts differently from previous cohorts, including the two analyzed by Guldi et al. First, the trends described by Guldi et al. have continued, particularly rising income inequality and the prevalence of single parents, putting low- and high-income families on more divergent paths. Also, the declining number of well-paying manufacturing jobs for workers without any college education means that even children growing up in same regions would have experienced different economic circumstances in the late 1970s and later compared with the 1950s. This negative shift in economic opportunities for less-educated workers has increased the importance of obtaining a college education. With regards to government policies, the 1996 federal welfare reform (the Personal Responsibility and Work Opportunity Reconciliation Act) and related state welfare policy reforms may have reduced the resources available to some disadvantaged adolescents living with single parents.

These developments suggest that the experiences of recent cohorts vis-à-vis their family backgrounds may be different from those of the cohort born in the 1950s and even those born in the early 1970s. However, the net effect of these economic, demographic, and social policy changes is ambiguous. For example, changing economic conditions may have increased young

adults' incentives to go to college, but may also have hampered the ability of some parents to pay for the rising costs of a college education. This might be a particular problem for middle-income households who earn too much to qualify for Pell grants and other financial aid typically reserved for low-income families, but earn too little to finance the costs themselves. In addition, as discussed below, young adults from low-income families may have incomplete information about their eligibility for Pell grants and other scholarships because of the complexity of the financial aid application process.¹⁶

Bailey and Dynarski,¹⁷ using the 1979 and 1997 National Longitudinal Surveys of Youth and an analytical framework similar to Guldi et al. (cohort comparison), find significant changes in the association between family background and the educational attainment of young adults born between 1961-1964 and 1979-1982. Among those from top-income quartile homes, the rate of college entry (any college experience by age 19) increased by 80 percent, compared with about 50 percent for those from bottom-income quartile households. They also find growing disparities in the rates of college completion (a bachelor's degree by age 25).

Data, Methodology, and Descriptive Statistics

We analyze data from the Panel Study of Income Dynamics (PSID). Since 1968, the PSID has collected detailed economic and demographic information over the life course of its respondents and is the longest-running longitudinal study of household income in the United States. The original sample consisted of approximately 5,000 households. As younger members have reached adulthood and moved out of their parents' households, they have been interviewed and integrated into the study as independent PSID households. The survey was conducted annually from 1968 to 1996 and biennially from 1997 forward. The PSID was initially composed of two separate subsamples, a national sample and a low-income oversample.

Because of this, we use the study-supplied sampling weights, which correct for unequal selection probabilities as well as differential attrition, in all analyses.

The PSID is ideally suited to studying intergenerational relationships. The most distinctive characteristic is the length of the panel; even with the switch to biennial interviews there are 35 waves of data spanning nearly 40 years. No other data source covers a time period of this length with a similar depth of available information. Because of its design, the sample is self-perpetuating and with the application of the probability weights, children born into PSID families themselves compose representative cohorts (of the nonimmigrant population) as they advanced through childhood and into adulthood, despite attrition.¹⁸ Moreover, the ability to link family members across multiple representative cohorts is unique to the PSID.

The PSID data have two prominent limitations, sample size and subject matter. Because the sample increases only when participant household members form their own families (e.g. via own births, marriages and step-families) the sample remains relatively small. This limits (to varying degrees) the ability to investigate specific subgroups (e.g. the extremely wealthy) and non-black minority populations (e.g., Hispanics). Although the content has expanded in recent years to include topics such as child care, health, and consumer expenditures, analyses using all survey years are restricted to (detailed measures of) education, family structure, employment, and income. Despite these limitations, the PSID is a unique and valuable source of information for the socioeconomic history of the United States.

Our sample is composed of 6,160 PSID participants for whom we have at least three years of information on parental income between the ages 11 and 15 and whom we then subsequently observe at or around age 25.¹⁹ These young adults were born between 1956 and 1982. We evaluate the effects of two measures of family background on young adult outcomes: family per capita income (adjusted for inflation) and parental education. For the former, we

divide annual total family income by family size for each year and then compute the average over ages 11 to 15 (requiring a minimum of three observations). We then divide per capita income for each cohort into quintiles (weighted) and use the respondent's position within this distribution as our indicator of childhood income—those who grew up in the lowest quintile, those in the middle three quintiles, and those in the top quintile.

For parental education, we use three categories of the highest level of education obtained by either (or the single) parent: (a) completed a high school degree or less, (b) at least one parent has some postsecondary education but less than a four-year degree, and (c) at least one parent has completed a four-year college degree or higher. We examine four-year college completion at age 25. Although not sufficient a guarantee of economic success, college graduates are much more likely to achieve stable employment at good wages than are those with less education.

Weighted summary statistics are presented in Table 1. Column 1 includes all 6,160 respondents. Around age 25, 22.3 percent have completed college (row 1, column 1). The modal young adult (36 percent) was raised in a household where at least one parent had finished high school but did not have a four-year college degree; 15.8 percent were in households in which no parent had graduated from high school; 24.8 percent were in households in which at least one parent was a college graduate. Blacks compose 14.7 percent of the sample. Only 14.6 percent of the sample were born to parents younger than age 24; 44.8 percent were born to parents who were between the ages of 25 and 35; and 20.3 percent to a parent older than 35.

Table 1: Summary Statistics for PSID Participants Born 1956-1982

	Income Quintiles				Parental Education		
	Sample	Bottom	Middle Three	Top	No College	Some College	College
College degree by 25	0.223	0.062	0.212	0.424	0.092	0.217	0.503
Parental Education							
Dropouts	0.158	0.439	0.108	0.017	0.305	.	.
High School	0.360	0.401	0.401	0.194	0.695	.	.
Some college	0.234	0.126	0.272	0.231	.	.	.
College	0.248	0.034	0.220	0.557	.	.	.
Black	0.147	0.394	0.103	0.025	0.213	0.112	0.042
Female	0.498	0.528	0.490	0.491	0.506	0.478	0.502
Head's age at respondents' birth							
Less than 24	0.146	0.222	0.148	0.061	0.171	0.174	0.067
Between 25 and 35	0.448	0.335	0.457	0.536	0.344	0.506	0.610
Over 35	0.203	0.246	0.184	0.215	0.224	0.173	0.186
Region of residence							
South	0.292	0.400	0.263	0.268	0.317	0.270	0.260
North east	0.222	0.195	0.225	0.242	0.220	0.188	0.259
North central	0.298	0.280	0.317	0.256	0.315	0.291	0.269
West	0.161	0.095	0.169	0.208	0.134	0.212	0.172
AK/HW/Foreign	0.003	0.003	0.002	0.005	0.001	0.005	0.004
Average Income*							
Bottom quintile	0.462	.	.	.	0.446	0.538	0.576
.	(0.172)	.	.	.	(0.169)	(0.166)	(0.142)
Middle quintiles	1.369	.	.	.	1.233	1.439	1.595
.	(0.429)	.	.	.	(0.380)	(0.421)	(0.427)
Top quintile	3.158	.	.	.	2.717	2.939	3.417
.	(1.492)	.	.	.	(0.959)	(0.974)	(1.759)
Sample size	6160	2126	3266	768	3843	1268	1039

* Between ages 11-15, in 10K, 2005 dollars

Table 1 also shows the mean income (divided by family size, in constant 2005 dollars and divided by 10,000) when these young adults were between the ages of 11 and 15. The bottom 20 percent grew up in households with a per capita income of \$4,620, about a third of the

average for the middle 60 percent (\$13,690), and about 15 percent of the average for the top quintile (\$31,580).

Our sample differs from that of Guldi et al. in several aspects.²⁰ First, it is much larger. Whereas they focus exclusively on two four-year cohorts, we include all individuals born between 1956 and 1982 who meet the stated criteria. Second, it is younger. Where they measured young adult outcomes at age 30, we examine outcomes at age 25 so as to include more recent cohorts. By focusing on 25-year-olds, our sample includes individuals born as late as 1982, who grew up in an era of rising economic inequalities. As a result, we do not evaluate stable employment and earnings, the measures they evaluated for 30-year-olds. However, educational attainment at age 25 is a strong predictor of employment stability and earnings at age 30.²¹ Importantly, our sample also includes young adults who reside with their parents. Guldi et al. focused on heads and wives, but given that they examined 30-year-olds, the exclusion of dependent adult children is likely to have had little effect on their findings. However, given both the lengthening of the transition to adulthood in recent years and the fact that we are examining 25-year-olds, including co-resident adult children in the sample is an important consideration. In this regard, the results presented below are more comparable to those estimated by Bailey and Dynarski.²²

Finally, in contrast to both Guldi et al. and Bailey and Dynarski, we analyze long-term trends in the effects of parental SES on young adult attainment rather than differences between two cohorts. We do this in two ways. First, we combine young adults into seven four-year birth cohorts (with the exception of the reference group, which only consists of three years) that cover the span of the PSID, 1956-1958 (the reference cohort), 1959-1962, 1963-1966, 1967-1970, 1971-1974, 1975-1978, 1979-1982. We then include an interaction between each cohort indicator and our SES indicators. This specification allows us to test for differences across

cohorts. The second specification instead models historical trends using a cubic parameterization of time, that is, it includes controls for birth year, birth year squared, and birth year cubed.²³ This allows us to test for trend differences across SES categories. Each specification acts as sensitivity check against the other. All regressions are estimated using ordinary least squares (OLS) and with PSID-provided sampling weights. All models also include controls for gender (1 if female), race-ethnicity (1 if black) and the age of the household head at the time of the individual's birth.

Figures 1, 2A, and 2B, plot the annual PSID data for our sample for college completion, average income by parental income quintiles and parental education, respectively. Because of the noisiness of the data, Figure 1 also presents the stylized rates of college completion that are derived from a locally weighted regression (lowess smoother).

As Figure 1 shows, the percentage of young adults with college degrees increased on average among those born between the mid-1950s and the late 1970s, at which point the overall trend flattens. Among those born in the early 1980s, 27 percent completed college by age 25 compared with only 16 percent of those born in the mid-1950s.

Figure 2A shows average annual household per capita income when the young adults were ages 11-15 for the bottom, middle three, and top quintiles (the y-axis units are 10,000, 2005 constant dollars). For a respondent born in the mid-1950s, average annual inflation-adjusted income in the bottom quintile is \$3,932. This compares with \$26,482 in the top quintile. In the early 1980s, those means are \$4,898 and \$39,002, respectively, representing rates of increase of 24.5 and 47.2 percent. Thus, income inequality increased, as income growth for families in the top quintile grew at an average rate almost double that for bottom quintile families.

Figure 1: College Completion by Age 25

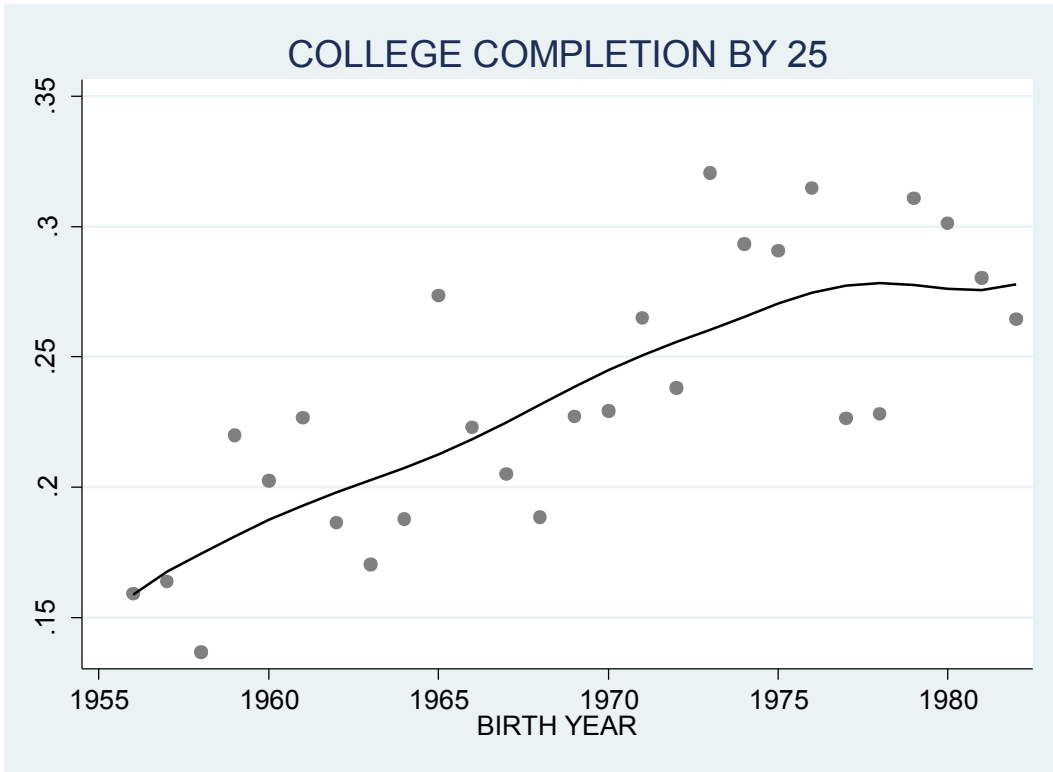


Figure 2A: Average Income by Income Quintiles (by \$10,000 increments, 2005 dollars)

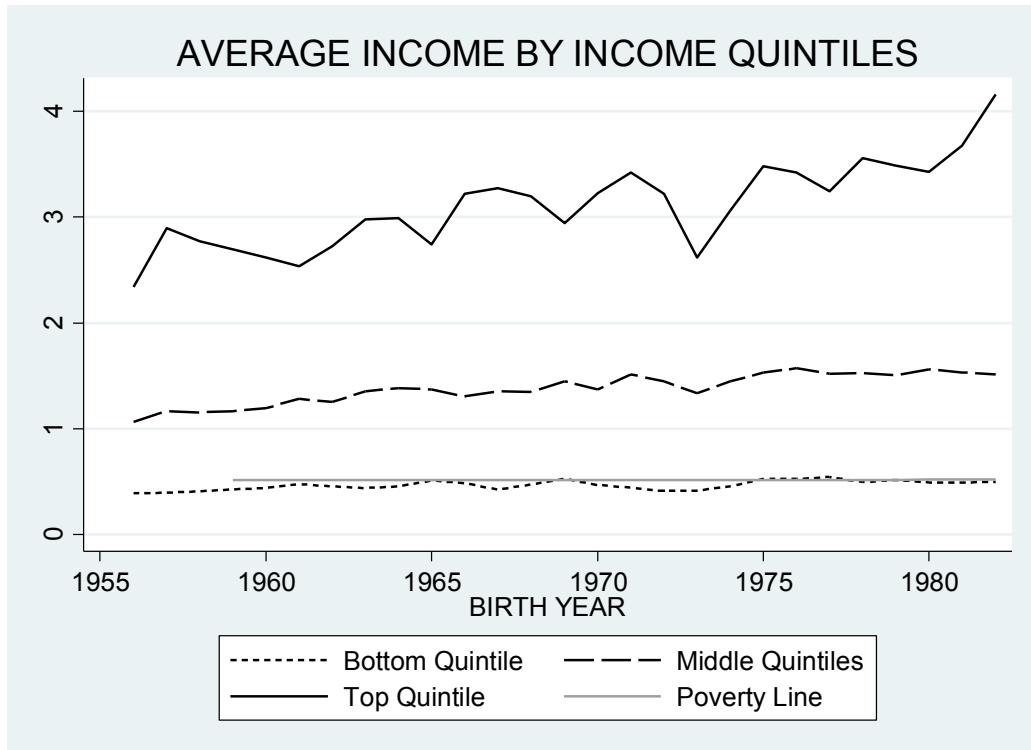
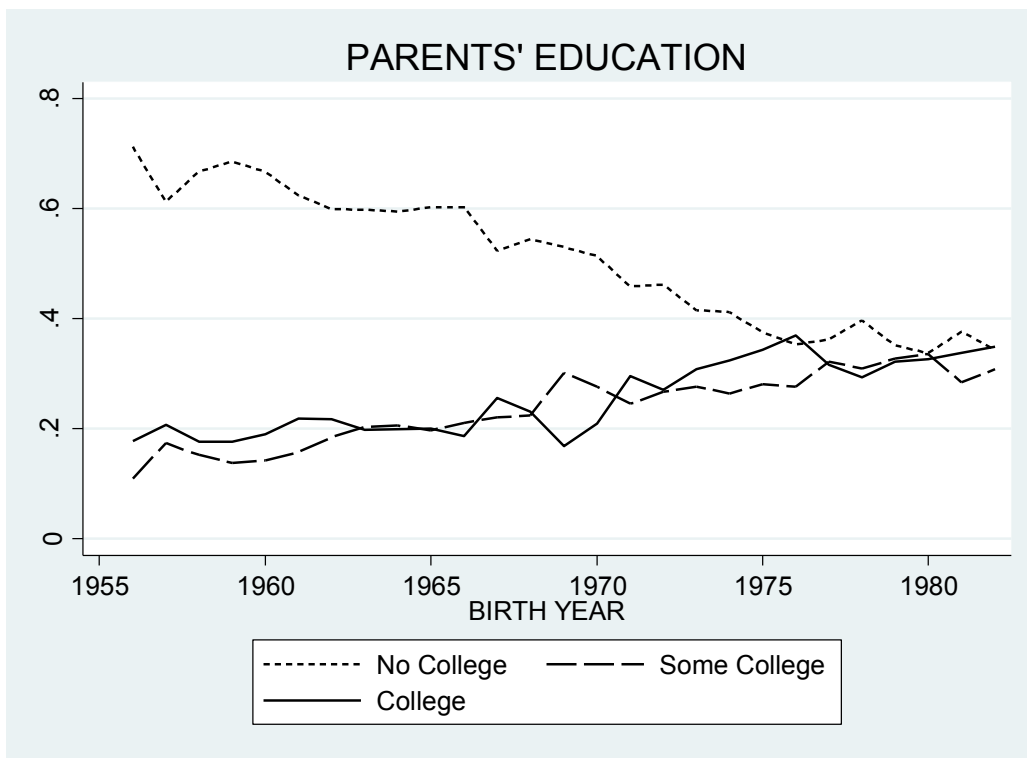


Figure 2B presents the distribution of parental educational attainment. The percentage of young adults who grew up in households in which no parent had any college experience has declined dramatically, from 66 percent for those born in mid-1950s to 33.6 percent for those born in the early 1980s. For these same cohorts, the number of young adults growing up with a college-graduate parent nearly doubled, from 19.3 to 34.3 percent.

Figure 2B: Parents' Education



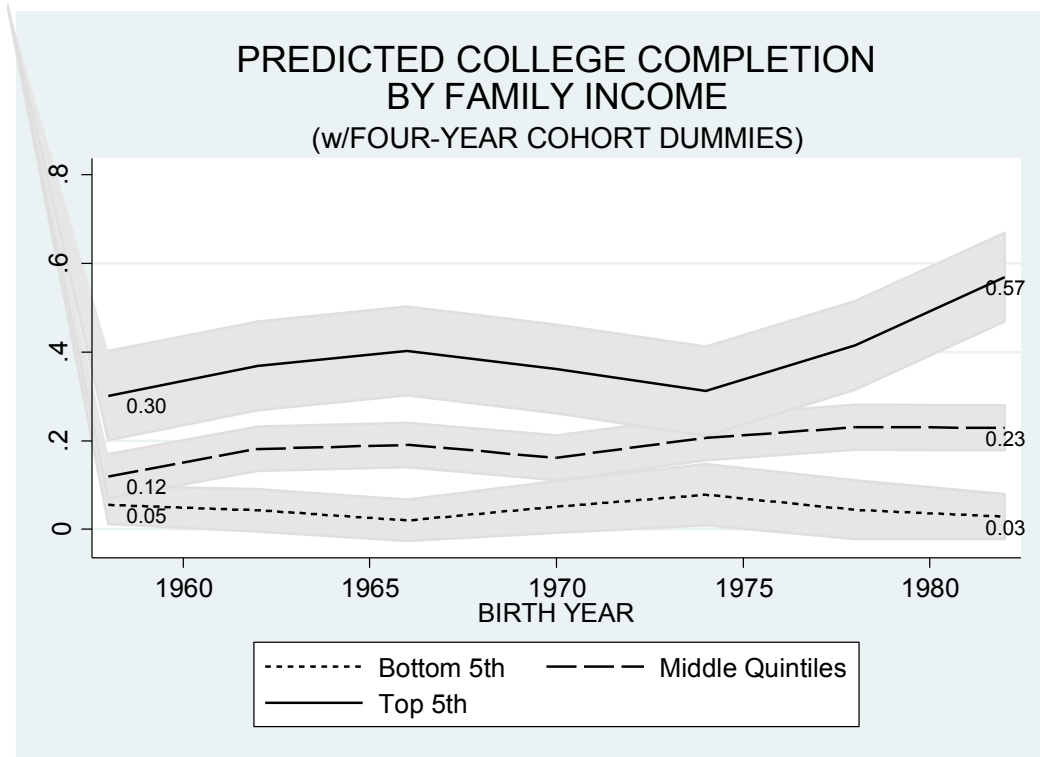
These data trends illustrate our rationale for using two different measures of family background. Because there are always bottom (and middle and top) quintiles in the per capita income distribution, our first measure captures a relative dimension of parental SES. In contrast, parental education is an absolute measure, in that the number of young adults growing up in households where no parent has any college experience is not categorically dependent on the number of those who have such experience. If absolute improvements in the family background

of disadvantaged young adults can promote intergenerational mobility, then public policies focused on “raising the bottom” can be effective. In contrast, if relative resources in childhood are what matter, then it will be much more difficult for policies focused on raising the absolute well-being of those at the bottom—which characterize the U.S. social safety net—to promote intergenerational mobility.

The Association between Parental SES and College Completion: Regression Results

Figure 3A shows the changing relationship between college completion at age 25 and childhood per capita income, based on the cohort specification (regression results are shown in the first three columns of Appendix Table A1).

Figure 3A: Predicted College Completion by Family Income



Among young adults raised in low-income homes, there is little difference between the predicted completion rate of those born between 1956 and 1958 and those born between 1979

and 1982 (5 percent and 3 percent, respectively). In contrast, among those growing up in high-income homes, the predicted rate increased from 30 to 57 percent, with most of the increase coming from the cohort born in the 1970s. As a result, the gap between low- and high-income respondents increased from 25 to 54 percentage points.

The results from the cubic time trend specification are similar (see Figure 3B and the first column of Appendix Table A2). In this specification the downward trend among low-income respondents is larger, from 8 to 1 percent, and is statistically significant. However, the most prominent feature is the increasing gap in the fitted completion rates between young adults from low- and high-income backgrounds (from 24 to 53 percentage points).

Figure 3B: College Completion by Family Income (cubic time trend)

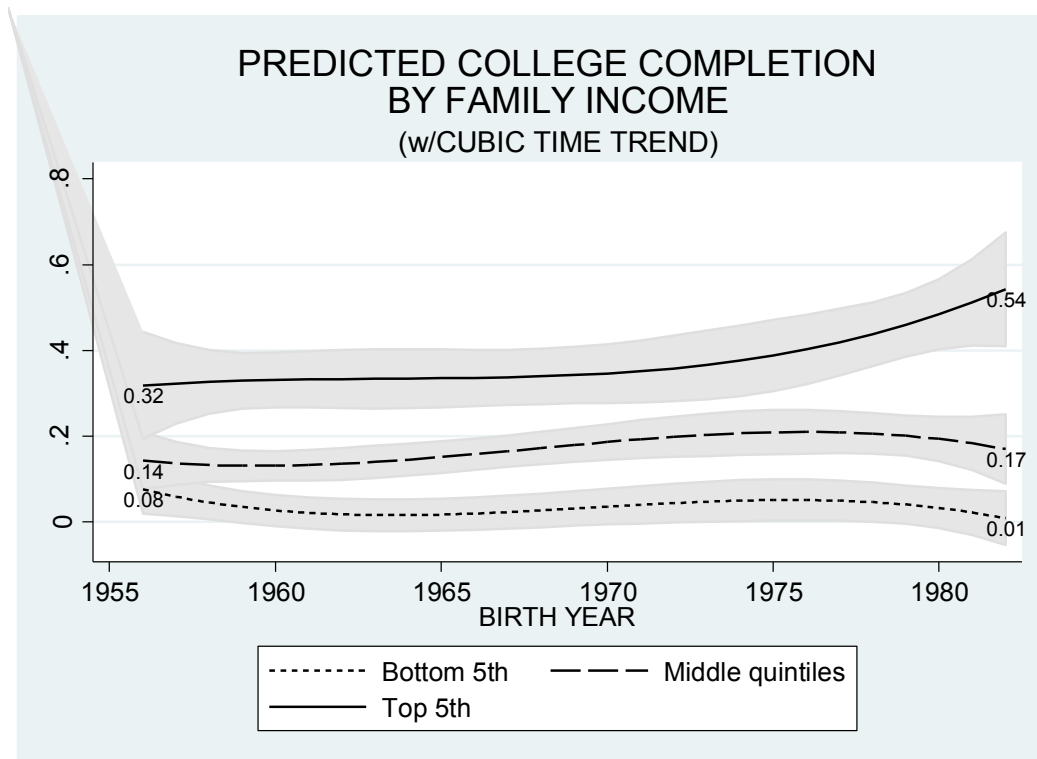
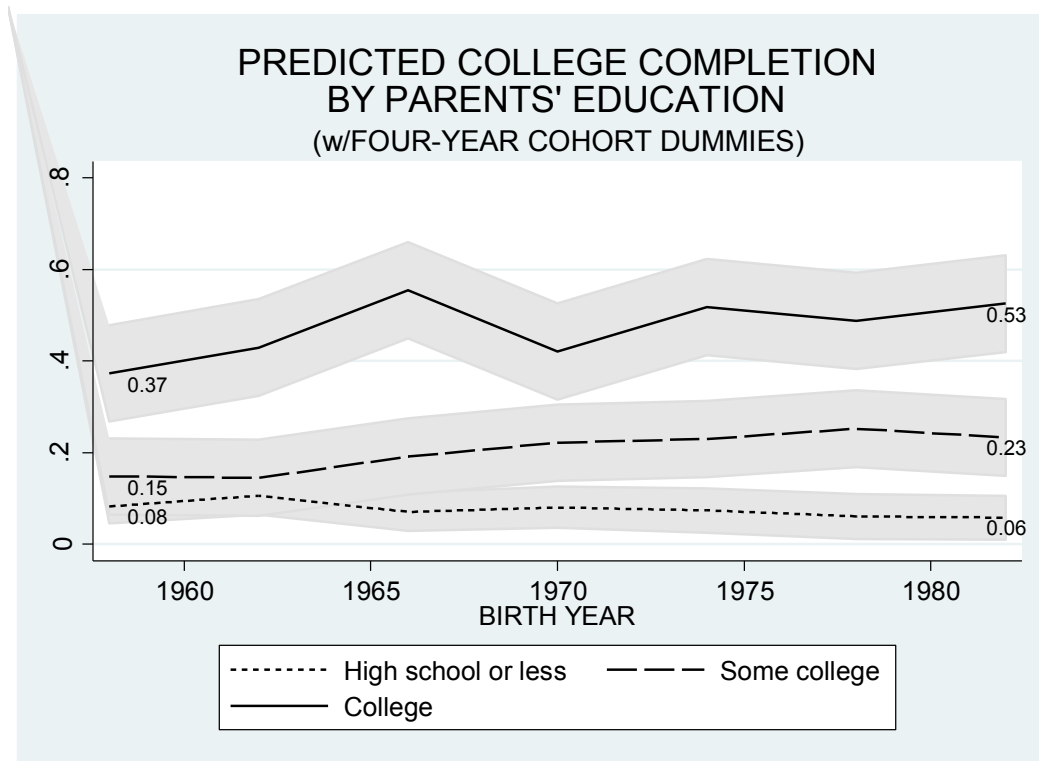


Figure 4A shows the results for college completion when SES is measured by parental education (regression results are shown in the last three columns of Appendix Table A1). The

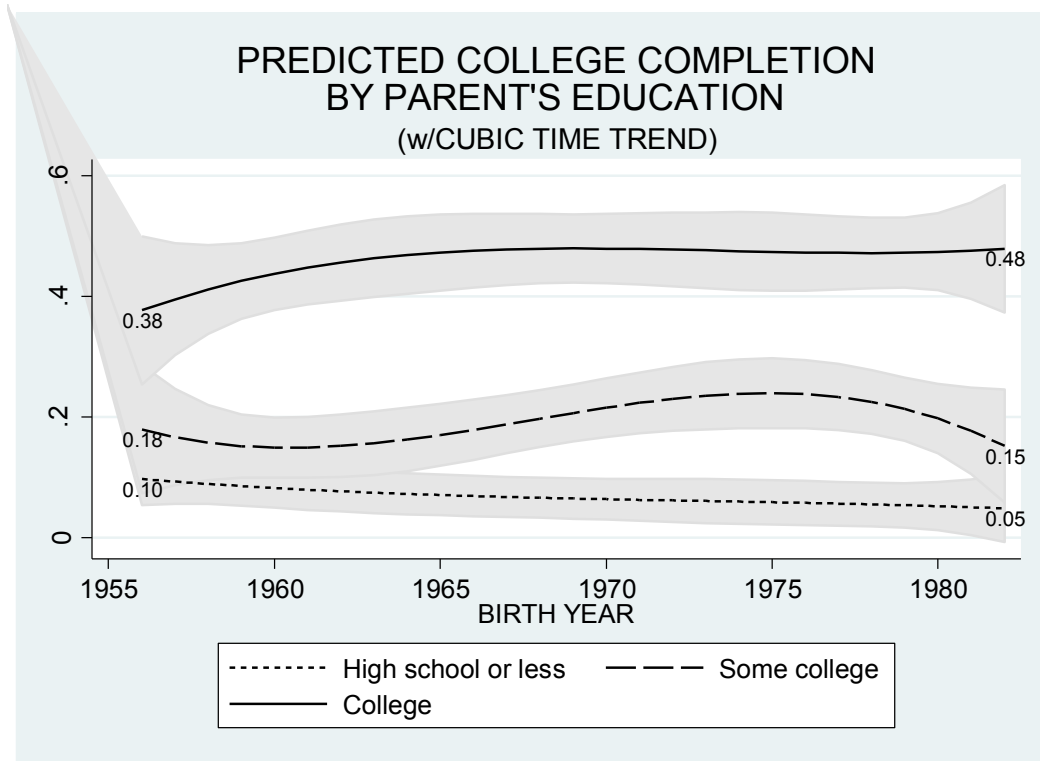
predicted completion rate falls from 8 to 6 percent for those whose parents did not have any college experience. Among 25 year olds with at least one college-graduate parent, college

Figure 4A: Predicted College Completion by Parents' Education



completion increased from 37 to 53 percent. As a result, the predicted gap increases from 29 to 47 percentage points. The results from the cubic time trend specification, presented in Figure 4B (and the last column of Appendix Table A2), are very similar. The decline (from 10 to 5 predicted percentage points) in the fitted completion rate among those with parents with no college is statistically not different from zero. However, the increase among those with college-educated parents, from 38 to 48 percentage points is significant. As a result, the predicted parental-education achievement gap widened significantly, from 28 to 43 percentage points.

Figure 4b: Predicted College Completion by Parents' Education (cubic time trend)



In the case of both SES measures, among 25-year-olds born since the mid-1970s, the predicted gap between those with high and middle-SES backgrounds is also increasing. For, example, in Figure 3A the gap increases from 18 to 34 percentage points; in Figure 4A, from 22 to 30 points.

Sensitivity Analyses and Limitations. Bailey and Dynarski²⁴ show that a large part of the increased disparity in educational attainment between high- and low-income families stems from increased college-going among high-income women. When we estimated the regressions described above separately by gender (results available upon request), we found similar results. Women from the highest-income families are completing college at a greater rate than similar men: a 20 percentage point increase compared with a 17 point increase. Among low-income 25-year-olds, the gap between men and women showed a reversal, from 2 percentage points in favor of the men to 7 points in favor of women, primarily owing to a falling completion rate among

men, from 8 to 2 percent. However, given the PSID sample size, these differences are not statistically significant.

Although using income quintiles to define high and low income is arbitrary, the patterns are robust to alternatives, including using income into tertiles, income relative to the poverty line, and household income not adjusted for household size to categorize SES. These trends are also robust to childhood income averaged over a longer time frame, from ages 4 to 14.

One limitation is that much of the increased income inequality that has occurred over the past 40 years is due in large part to gains concentrated among households in the top decile and even the top percentile of the income distribution. Unfortunately, PSID sample size limitations prevent us from analyzing trends only for those at the very top of the income distribution.

Upward mobility is particularly limited among low-income blacks.²⁵ When we control separately for trends among low-income black youth, we find no evidence that they are worse off than low-income whites. However, as can be seen in Table 1, blacks, who compose 14.7 percent of our sample, make up 39.4 percent of the bottom income quintile but only 2.5 percent of the top quintile. Consequently, to the degree that blacks are more likely to be poor (and are much less likely to be wealthy), they shoulder a disproportionate likelihood of not completing college.

Multigenerational Income Disadvantage and Educational Attainment

Recent changes in the PSID allow us to analyze SES patterns across three generations. The PSID initially gathered data primarily about the household head and wife; less information on other household members was available. In 1997, the PSID launched the Child Development Supplement (CDS) that gathers information regarding the behavior and development of the children (those aged birth to 12 in 1997) residing in each PSID household, as well as measures of

the household environment and family relationships. An additional wave of interviews was conducted in 2002 to gather data about these children.

In 2005, CDS-participant children who had finished their high school education (via dropping out or graduating) were recruited into the Transitional to Adulthood Supplement (TA). The TA sample consists largely of young adults who reside in their childhood homes (at least for a significant portion of every year) and as a result would not have been interviewed as part of the core PSID. The TA instrument itself is a hybrid of the CDS and core questionnaires, collecting detailed information on their continued development and expectations, together with detailed education and economic data. As of this printing, the results from TA interviews conducted in both 2005 and 2007 are available.

The TA supplement allows us to expand our analysis in two ways. First, even though the sample is younger than the core PSID sample analyzed above, the TA includes PSID respondents born as late as 1990, including their high school completion and participation in post-secondary education. Second, because most TA respondents were born to a parent who was raised in a PSID household, these young adults represent the third generation of PSID respondents. As a result, we have detailed information on the childhood economic resources of both the young adults and their parents. This allows us to investigate the extent to which a parent's childhood circumstances (that is, the SES of the TA respondents' grandparents) influence those of his/ her children. To our knowledge this is the first such use of these three-generation PSID data.

Our sample consists of 745 young adults for whom we have information on late childhood (ages 11-15) average inflation-adjusted per capita family income, as well as the same income measure when their parents were at this same age. Because of the smaller sample size, we divide both income measures into two groups instead of three—the bottom and the other four quintiles—and categorize young adults based on their childhood income status in combination

with their parents' childhood income status. The average age among first-time TA respondents is 18.7, which means that they are too young to have been included in the analyses discussed above or to have completed college.

Table 2 shows weighted sample means for all young adults (column 1) and then classified into four mutually exclusive categories (two own-childhood income groups x two parental childhood income groups). We label categories according to the respondent's own childhood income status relative to his or her parent's childhood income status. The low-income category (column 2, 12.3 percent of the weighted sample) is composed of young adults who, along with their parents, had low income during childhood. The downwardly mobile category (column 3, 7.3 percent of the weighted sample) consists of those raised in low-income homes by parents who were not raised in the lowest-quintile families. The upwardly mobile (column 4, 21.2 percent) are those raised in quintiles 2–5 by parents raised in low-income homes. Finally, the upper-income group (column 5, 59.1 percent) consists of young adults who, like their parents, were raised in quintiles 2–5.

Not surprisingly, low-income young adults have the highest dropout rate, 32.9 percent. This figure decreases as we move up the multiple-generation income distribution. The dropout rate is only 6.3 percent for those who were in quintiles 2–5 in both generations. Enrollment in college has the reverse pattern. Among two-generation bottom-quintile young adults, 25.0 percent had some college experience compared with 78.2 percent for the upper-income category. For the most part, the remaining rows show similar patterns, with two-generation bottom-quintile young adults doing the poorest, followed by the downwardly mobile, upwardly mobile, and then with upper-income respondents doing the best.

To evaluate the associative effects of low income in two generations, we include a dummy variable for each category associated with at least one generation of low-income status

Table 2: Summary Statistics for TA Respondents with Parents Raised in PSID Respondent Households

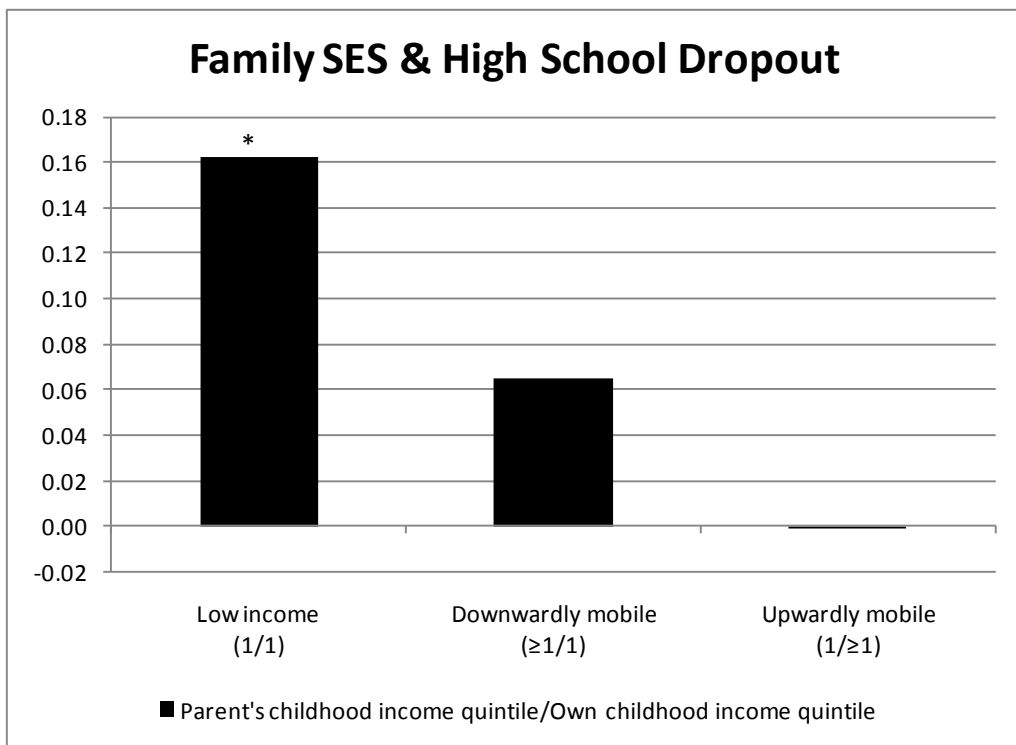
	Sample	Own Childhood Income & Parents' Childhood Income			
		Low Income (1 / 1)	Downward (1 / ≥ 1)	Upward (≥ 1 / 1)	Upper Income (≥ 1 / ≥ 1)
High school dropout	0.096	0.329	0.181	0.115	0.063
Any college, enrolled or completed	0.688	0.250	0.383	0.530	0.782
Average annual childhood income*	1.996 (2.094)	0.408 (0.192)	0.468 (0.151)	1.369 (0.511)	2.380 (2.283)
Parent's average childhood income	1.281 (0.811)	0.369 (0.111)	1.262 (0.617)	0.396 (0.125)	1.524 (0.760)
Parents' education					
No parents high school graduates	0.066	0.329	0.236	0.112	0.019
HS grad highest parent education	0.241	0.465	0.478	0.393	0.175
Highest parent education some college	0.378	0.101	0.246	0.318	0.426
At least college	0.315	0.104	0.041	0.177	0.381
Grandparents' education					
Neither GP high school graduate	0.253	0.805	0.501	0.614	0.118
At least one GP high school graduate	0.392	0.111	0.231	0.330	0.443
At least one GP some college	0.166	0.083	0.159	0.050	0.195
At least one GP college graduate	0.188	0.000	0.108	0.006	0.244
Age	18.707 (1.136)	18.997 (1.309)	19.008 (1.122)	18.668 (1.137)	18.661 (1.112)
Female	0.512	0.355	0.479	0.480	0.535
Nonwhite	0.244	0.892	0.448	0.498	0.120
Unweighted sample size	745	91	55	158	441
Weighted sample (%)	100.0	12.3	7.3	21.2	59.1

* Between ages 11-15, in 10K, 2005 dollars

(columns 2–4 in Table 2) in multivariate regressions for two young adult outcomes: high school dropout and any postsecondary education. In each case, those with incomes in quintiles 2–5 in both generations compose the reference group. Each model includes controls for the respondent's age (17-21), gender (female = 1), race (nonwhite = 1), the year of his or her first TA interview, and the identity of the PSID parent (that is, whether the respondent's father or mother was raised in a PSID household).

The estimated effects of these categories on the probability of dropping out of high school (relative to the upper-income group) are presented in Figure 5A (regressions are shown in Appendix Table A3). Only the two-generation low-income effect is statistically significant at the 10 percent level, but the size of the coefficient, 16.2 percentage points, is large relative to the sample mean, 9.6 percent.

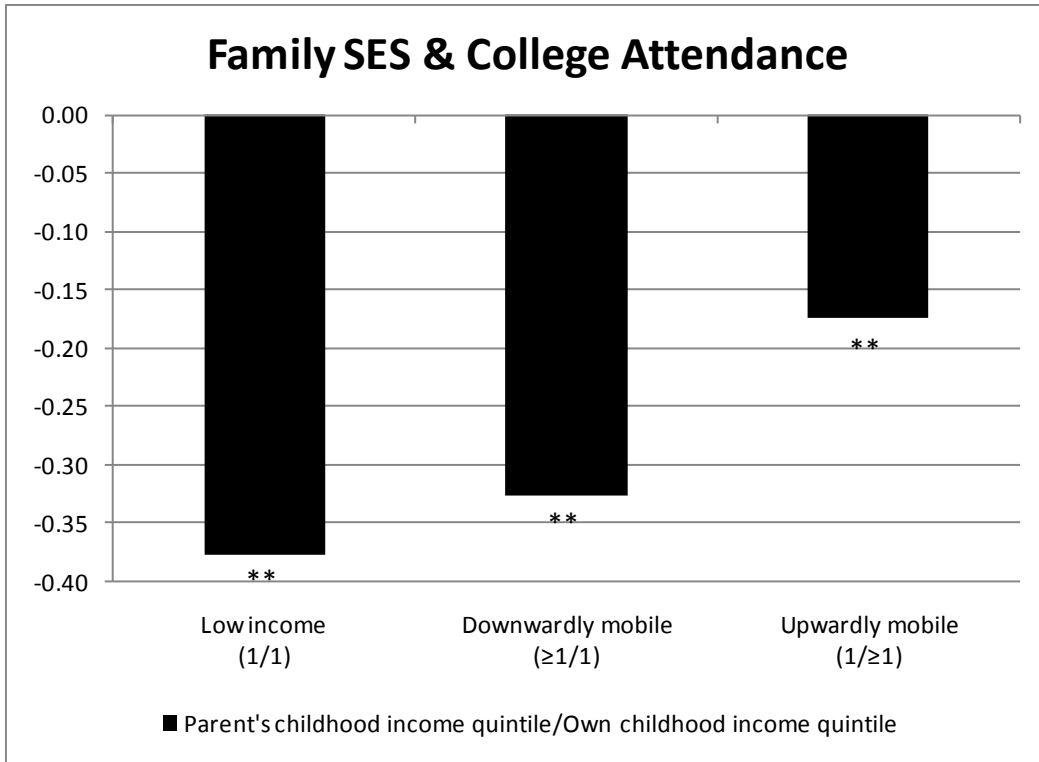
Figure 5A: Family SES and Probability of Dropping Out of High School



In contrast, the negative effects of any history of low-income status are significant in the postsecondary educational attainment model, presented in Figure 5B. This is not surprising, as post-secondary education requires tuition payments, whereas high school attendance is paid for by public funds. Two-generation lowest-quintile young adults and the downwardly mobile respondents are much less likely to have enrolled in higher education--37.7 and 32.5 percentage

Figure 5B: Family SES and Probability of Attending College

(Notes: OLS Coefficient estimates; reference group is upper income ($\geq 1/\geq 1$). ** $p < .05$, * $p < .10$)



points, respectively, than two-generation young adults from families in quintiles 2–5. Those whose grandparents were in the lowest quintile but whose parents had moved up at least one quintile were also significantly less likely to have enrolled—17.4 percentage points. Thus, any experience of being in the lowest quintile, even if the experience is a generation removed, is associated with reduce postsecondary enrollment.

Sensitivity Analyses and Limitations. We estimated these three-generation models using parents’ education in place of income, specifically whether or not the respondent’s parents and grandparents have less than a high school education (results available from authors on request). These specifications generated similar results: only the respondent’s own background had any relationship with high school completion, but in the case of postsecondary education, there was a

negative association with either the parents or the grandparents or both generations not having a high school degree. In terms of magnitude, the estimates generated by the education indicators are much larger than those generated by the income indicators.

Given the very large percentage of nonwhites in the low- and two-generation low-income and low-education families, we also estimated models that included interactions of race with each of the SES indicators. These interactions were not significant, suggesting that even though blacks are disproportionately represented in these categories, race itself does not have a multiplicative effect on these outcomes. However, sample sizes are rather small.

Discussion and Policy Implications

These new results from the PSID panel data suggest that educational attainment gaps between children growing up in disadvantaged families and other children remain very large despite substantial growth over the last 50 years in government spending on early childhood education, and other investments in poor children, including college tuition subsidies. On average, the educational attainment gaps are increasing in many of our specifications.

Several factors may be contributing to the persistence of these attainment gaps. Since the early 1970s, the inflation-adjusted annual earnings of less-educated parents, especially male blue-collar workers, have fallen, whereas the earnings of highly educated parents have increased. Given the rising costs (real and perceived) of college over these decades, this means that the ratio of college costs to parental income has increased much more for young adults from low-SES than from high-SES families. Many poor young adults may perceive (rightly or wrongly) that college is not a financially feasible option. In addition, government spending on college subsidies for children from low-SES families has not risen as fast as college costs.

Another potential factor is the increasing gap in academic achievement between children raised in high- and low-SES families. Among school-aged children born in the early 1980s, the

disparity in cognitive test scores between those raised in high- and low-income households is approximately 30 percent larger than among those born in the mid-1950s.²⁶ Thus, in addition to accessibility, college-readiness is an important obstacle for low-income youth. While it is beyond the scope of this paper to attribute educational attainment gaps to specific factors, three areas of interventions that might narrow the attainment gap for future cohorts deserve consideration: college-readiness, accessibility, and retention.

College-Readiness. Perhaps the most effective way to raise the economic prospects of the next generation of young adults is to start early by improving the primary and secondary school experience and raising high school graduation rates. The current education system falls well short of providing low-income students with the skills they need to prepare for the 21st century labor market. Jacob and Ludwig²⁷ and Magnuson and Votruba-Drzal²⁸ document the importance of expanding the scope of early childhood education for low-income children (see also Carneiro and Heckman²⁹). The American Recovery and Reinvestment Act of 2009 (ARRA, the stimulus) expanded funding for Early Head Start and Head Start, which serve poor children, yet almost 50 years after Head Start was launched, many poor children do not participate because of a lack of program capacity.³⁰ In contrast, Prime Minister Blair proposed an early childhood education program in the United Kingdom in the late 1990s, Sure Start, and within a decade most low-income children were participating.³¹

The results of these inadequacies manifest themselves early. Reardon,³² assembling data from a variety of sources, finds that the achievement gap, that is, the disparity in school-aged test scores between children from low- and high-income households, is approximately 50 percent larger among children born in 2001 than among those born in the mid 1970s. While government programs for low-income children have grown relatively slowly, middle- and high-income families have invested more in early childhood skill formation. Reardon identifies increased

parental investments in children among middle- and high-income families relative to those in low-income families as a likely explanation for the widening academic-achievement gap.

If effective public policies targeted on early childhood and K-12 education were expanded, the next generation would contain fewer high school dropouts and more college graduates. However, even though educational reforms are more popular with policymakers and the public than other antipoverty policies, most state governments have recently reduced educational spending in response to massive budget deficits caused by the Great Recession. The ARRA included substantial federal government funds to keep school districts from laying off teachers and to induce educational innovations by states and local school districts. However, most of the act's provisions will expire by the end of 2011 and the prospects for increased federal spending on education in the near term are dismal.

College Accessibility. Although the United States had the highest percentage of young adults who were college graduates for most of the 20th century, it has fallen behind a number of other countries in recent decades.³³ President Obama's proposals in the ARRA for making college more affordable included a new tax credit for college students and an increase in the maximum Pell grant, the program that subsidizes college costs for youth from low-income families. The administration also proposed indexing the maximum value of Pell grants to inflation and making them an entitlement, but that proposal is in conflict with congressional demands for deficit reduction.

Reducing the complexity of the college aid application process could increase the enrollment of low-income youth. To apply for assistance, students must file a Free Application for Federal Student Aid (FAFSA). With about 140 questions, the FAFSA is longer and more complex than the tax forms filed by the typical family.³⁴ In addition, the timing of the application process makes it difficult for applicants to anticipate the costs they are expected to pay, making

long-term planning challenging and stressful. Bettinger et al.³⁵ conducted an experiment in which a random sample of families was offered the opportunity to have their tax preparer help them complete the FAFSA. Compared with those who were not offered this assistance, high school seniors whose families were selected to participate were 40 percent more likely to submit an aid application, 29 percent more likely to enroll in college the following fall, and 33 percent more likely to receive financial aid. More fundamentally, Dynarski and Scott-Clayton³⁶ estimate that streamlining and simplifying the application process itself would impose little additional administrative costs and result in considerable gains in terms of college enrollment—7 to 9 percentage points among students from families with income less than \$50,000.³⁷

College Retention. Even after enrolling in college, students from low-income backgrounds face additional obstacles to degree completion. They are more likely to be enrolled in less selective or nonselective institutions such as community colleges that provide fewer resources to students. As a result, student attachments to these institutions are much more tenuous and educational trajectories are more uncertain than they are for students enrolling at more selective (and expensive), four-year colleges. In 2008, the graduation rate for associate degree students at community colleges was 27.5 percent (within three years); among bachelor degree students the rate for four-year degrees was 55.9 (within six years).³⁸

Several recent randomized experiments at two-year community colleges suggest that a combination of increased financial incentives and “enhanced” student support can promote persistence toward degree completion. The Opening Doors project includes learning communities that group incoming students together into blocks of classes and offer extra tutoring, programs that provide counseling and monitoring, and programs that offer additional financial incentives for successfully completing courses. These programs, implemented in different combinations by MDRC at six nonselective community colleges, have been successful,

to different degrees. The combination of financial aid and learning communities increased both the number of credits attempted and earned, improved the pass rate in the first semester of enrollment, and increased the likelihood of continued enrollment. To date, these programs, as well as the similar Student Achievement and Retention Project (STAR) in Canada, remain relatively small in scale.³⁹

Summary

Despite a historical commitment to providing equality of opportunity to children from low-income families, the experience in recent decades is rather disappointing. It is possible that the large SES gaps in educational attainment that we documented reflect the offsetting effects of increased inequalities in parental SES (gap expansion) and increased government spending (gap reduction). Our analysis does not attempt to sort out these separate effects. Yet, it is clear that these SES gaps are likely to remain large for the foreseeable future, as there is little likelihood that the large income gaps between the top and the bottom of the distribution will narrow, or that the large parental education gap between the children of the disadvantaged and other children will disappear, or that the government will launch major new programs or expand existing ones focused on raising the attainment of children born into low-income families.

In his 1965 special message to Congress, President Johnson concluded: “We are now embarked on another venture to put the American dream to work in meeting the new demands of a new day. Once again we must start where men who would improve their society have always known they must begin—with an educational system restudied, reinforced, and revitalized.”⁴⁰ Unfortunately, more than 45 years later, the American Dream of equal educational opportunity remains unfulfilled.

Appendix

Table A1: College Completion/Birth-Year Cohort Regression Results

	Average Childhood Income			Parents' Education		
	Main Effect	Interaction Effects		Main Effect	Interaction Effects	
		Middle Quintiles	Top Quintile		Some College	College Degree
Constant/main effect	0.055**	0.065**	0.247**	0.083**	0.065*	0.291**
.	0.022)	0.026)	0.051)	0.019)	0.043)	0.054)
Born 1969-1962	-0.012	0.062**	0.067	0.024	-0.003	0.056
.	(0.024)	0.036)	0.070)	(0.021)	0.057)	0.070)
Born 1963-1966	-0.035	0.071**	0.101*	-0.012	0.044	0.182**
.	(0.024)	0.037)	0.071)	(0.021)	0.057)	0.073)
Born 1967-1970	-0.004	0.042	0.060	-0.002	0.074	0.048
.	(0.030)	0.042)	0.076)	(0.023)	0.060)	0.074)
Born 1971-1974	0.023	0.087**	0.010	-0.009	0.082*	0.145**
.	(0.035)	0.048)	0.082)	(0.025)	0.062)	0.073)
Born 1975-1978	-0.011	0.111**	0.114*	-0.022	0.104**	0.114*
.	(0.034)	0.046)	0.079)	(0.025)	0.060)	0.071)
Born 1979-1982	-0.026	0.110**	0.268**	-0.025	0.085*	0.152**
.	(0.026)	0.039)	0.070)	(0.025)	0.056)	0.067)
Black	-0.050**	.	.	-0.057**	.	.
.	(0.016)	.	.	(0.014)	.	.
Female	0.037**	.	.	0.032**	.	.
.	(0.013)	.	.	(0.012)	.	.
Between 25-35	0.069**	.	.	0.040**	.	.
.	(0.015)	.	.	(0.014)	.	.
Northeast	0.046**	.	.	0.037**	.	.
.	(0.019)	.	.	(0.019)	.	.
North central	-0.010	.	.	-0.003	.	.
.	(0.017)	.	.	(0.016)	.	.
West	-0.105**	.	.	-0.094**	.	.
.	(0.019)	.	.	(0.019)	.	.
AK/HW/Foreign	-0.143*	.	.	-0.137	.	.
.	(0.079)	.	.	(0.088)	.	.
Sample size	6160	.	.	6160	.	.
R-squared	0.115	.	.	0.186	.	.

Standard errors in parentheses. ** p<.05, * p<.10.

Table A2: College Completion/Cubic Time Trend Regression Results

	Family Income	Parents' Education
Non-white	-0.051**	-0.057**
.	(0.016)	(0.014)
Female	0.038**	0.034**
.	(0.013)	(0.012)
HD between 25-35 at R's birth	0.078**	0.049**
.	(0.016)	(0.015)
HD over 35 at R's birth	0.026	0.021
.	(0.017)	(0.016)
North east	0.047**	0.036*
.	(0.019)	(0.019)
North central	-0.009	-0.004
.	(0.017)	(0.016)
West	-0.104**	-0.095**
.	(0.019)	(0.019)
AK/HW/Foreign	-0.127	-0.122
.	(0.085)	(0.088)
Birth year	-0.022**	-0.005
.	(0.010)	(0.008)
Birth year ²	0.002**	0.000
.	(0.001)	(0.001)
Birth year ³	-0.000*	-0.000
.	(0.000)	(0.000)
Childhood SES middle	0.056	0.095
.	(0.046)	(0.072)
Childhood SES middle* Birth year	0.012	-0.015
.	(0.015)	(0.022)
Childhood SES middle* Birth year ²	-0.000	0.002
.	(0.001)	(0.002)
Childhood SES middle* Birth year ³	0.000	-0.000
.	(0.000)	(0.000)
Childhood SES high	0.217**	0.254**
.	(0.085)	(0.083)
Childhood SES high* Birth year	0.029	0.027
.	(0.027)	(0.025)
Childhood SES high* Birth year ²	-0.003	-0.001
.	(0.002)	(0.002)
Childhood SES high* Birth year ³	0.000	0.000
.	(0.000)	(0.000)
R-squared	0.113	0.185

Standard errors reported in parentheses. ** p<.05, * p<.10

Table A3: Multi-Generational Low SES & Educational Attainment

	High School Dropout	College Attendance
Own childhood income quintile/ parent's childhood income quintile		
Low income (1/1)	0.162*	-0.377**
.	(0.090)	(0.086)
Downwardly mobile ($\geq 1/1$)	0.065	-0.326**
.	(0.080)	(0.093)
Upwardly mobile ($1 \geq 1$)	-0.001	-0.174**
.	(0.046)	(0.077)
Age	-0.017	0.026
.	(0.011)	(0.018)
Female	-0.011	0.042
.	(0.027)	(0.040)
Nonwhite	0.112**	-0.176**
.	(0.050)	(0.066)
Year=2005	0.023	-0.044
.	(0.026)	(0.041)
Head PSID parent	0.065**	-0.063
.	(0.027)	(0.042)
Constant	0.323	0.351
.	(0.210)	(0.343)
R-squared	0.098	0.169
Mean of dependent variable	0.096	0.688
Joint significance of SES indicators	0.229	0.000

Standard errors reported in parentheses. ** p<.05, * p<.10

Endnotes

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² Merrill D. Peterson (ed.), *Thomas Jefferson: Writings* (Washington: Library of America, 1984).

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- ¹⁷ Bailey and Dynarski, "Inequality in Postsecondary Education," in *Whither Opportunity: Rising Inequality, Schools, and Children's Life Chances*, ed. Greg Duncan and Richard Murnane (New York: Russell Sage Foundation, 2011).
- ¹⁸ Greg Duncan and Daniel H. Hill, "An Investigation of the Extent and Consequences of Measurement Error in Labor-Economics Survey Data," *Journal of Labor Economics*, vol. 3 (October 1985), pp. 508-532; John Fitzgerald, Peter Gottschalk, and Robert Moffitt, "An Analysis of Sample Attrition in Panel Data: The Michigan Panel of Income Dynamics," *Journal of Human Resources* 33 (Spring 1998), pp. 251-299.
- ¹⁹ Our target age is 25, but because interviews were conducted every other year after 1997, we include respondents as young as 24 and as old as 26; this includes respondents who turned 25 in the years that PSID interviews are not conducted. Focusing on outcomes at younger ages maximizes sample size, but prevents us from measuring outcomes that are not achieved until later ages, for example, measures of stable employment and earnings.
- ²⁰ Guldi et al., "Family Background and Children's Transitions to Adulthood over Time."
- ²¹ For example, among those observed in our sample at age 29, only 12 percent of those who have not completed college by age 25 report obtaining a degree by age 29.
- ²² Bailey and Dynarski, "Inequality in Postsecondary Education."
- ²³ We arrived at this functional form first by modeling the relationship between family background and college completion as the interaction between our SES measures and the set of single birth-year indicators (27 total, including the reference group). We then we applied a lowess smoother (locally-weighted regression) to each group of interaction coefficients, the results of which suggested that the cubic parameterization provided the best fit for the data.
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- ²⁵ Bash Mazumder, *Upward Intergenerational Economic Mobility in the United States*. Economic Mobility Project, The Pew Charitable Trusts, 2008.
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- ³⁶ Dynarski and Scott-Clayton "Complexity and Targeting in Federal Student Aid."
- ³⁷ The authors base this prediction on the effects of state-level programs with minimal application requirements.

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⁴⁰ Lyndon Johnson "Toward Full Educational Opportunity," Special Message to the Congress, January 1965.