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Education and the Dynamics of Middle- Class Status

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“Higher education is essential for a thriving society: it is the strongest, sturdiest ladder to increased socio-economic mobility and the locus, through research universities, of most of the major discoveries of the last two centuries.”

-Drew Gilpin Faust

Introduction: Education as a Pathway to the American Dream

The economic security of America’s families is a central concern for policymakers. Benchmarks for economic security include employment, homeownership, savings and retirement security, and financial literacy. These indicators broadly characterize middle-class status and, for many, attaining and sustaining a life in the middle-class is among the most important measures of economic success. Indeed, a robust middle class is both a hallmark of aggregate economic health and the manifestation of the American dream.

Access to the American middle class has been made possible by expanding educational attainment over the 20th Century (Goldin and Katz, 2001). The role of higher education in economic mobility is well established. Presently, access to post-secondary educational opportunities—especially a 4-year college degree—is increasingly seen as requisite for success in an economy that requires advanced analytical ability, facility with computers, and stronger inter-cultural communication skills (e.g. Haskins et al. 2009; Mazumder 2012). More open to question is how equitable access to higher education is, particularly during a period of sharp increases in cost of attendance. Many policy interventions, including Pell grants and subsidized student loans, have sought to reduce socioeconomic gaps in college entrance and completion (Bailey and Dynarski 2012). Nonetheless, equity of access to college and the opportunities it provides is a central concern in policy discussions at the intersection of education and the economy (Haskins et al. 2009). At the moment, colleges and universities are also being roiled by the COVID-19 pandemic, with worrying prospects for equity of access and educational outcomes.

In this report, we provide some recent historical context relevant for considering the value of post-secondary education in providing access to the middle class. We look back over the

past 40 years to assess the role college education has played in shaping entry into and persistence in the middle class for American households. Using data from the Panel Study of Income Dynamics (PSID) between 1980 and 2017, we study entry into and out of the middle class, and the role of education as determinant of a middle-class stability. We also examine how demographic factors interact with education to predict entry into and exit out of the middle class.

To assess how the role of college education as a bridge to middle-class status may have changed over this period, we form five cohorts from the PSID. First, we identify all households headed by an adult between the ages of 25 and 64 in 1980. We then assess the role of education and other attributes of the household as predictors of middle-class status in 1980. Next, we follow these households for 7 years to determine whether households with college-educated heads are more likely to maintain their status in the middle class over time. We then repeat this process with cohorts of households beginning in 1989, 1999, 2005 and 2011.

We find that overall middle-class stability falls over time, and that college education does not *necessarily* cushion against instability within the middle class. Shown in Figure 2, the proportion of middle-class families who remain in the middle class falls from roughly 62 percent to 49 percent (1980 – 1986) through the first 7-year interval of our analysis, and more recently (2011 – 2017) falls from roughly 60 percent to 50 percent. This stylized fact generally holds throughout the 1980s, 1990s, and 2000s. Importantly, some families leave the middle class because their incomes fall, and are subsequently below middle-class status, whereas others experience income growth, climbing up and out of the middle class.

Households with college-educated heads are more likely to have income at or above the middle-class, while heads with less than a college degree are increasingly within the bottom quintile of the income distribution. And, to the degree that college education secures a middle-class lifestyle, it appears to be at the expense of position in the top quintile of the income distribution. For example, by the 2010s, the share of families with a

college-educated head who fall down and out of the middle-class rises from 18.6 percent to 24 percent. Concurrently, a similar share of middle-class, college educated families experience income growth, rising up and into the top quintile.

Finally, we document important differences in the role of college attainment for middle-class stability across race. Namely, we find that college education positively predicts middle class status among Black households and top quintile status among non-Black households. Also, whereas college attainment operated as a channel for Black households to move up and out of the middle class in the 1980s, this upward channel appears to have weakened throughout the 2010s.

Background on Education, Policy, and the Economy

Economic Change and the Role of Education

Tax and transfer policies at the federal, state, and local levels have been dedicated to supplementing the economic status of America's middle-class families (e.g. Gale 2019; Slemrod & Bakija 2017), and economic security ranks as a dominant concern among America's middle-class families. Data from the Survey of Household Economics and Decisionmaking (SHED) indicate that roughly 20 percent of U.S. families earning between \$40,000 and \$100,000 report anxiety about economic security (SHED 2019). Within the same survey, almost a quarter of Black college-graduates reported difficulty in meeting monthly bills. Concerns over economic stability persist in the midst of an economic expansion and low unemployment, calling into question the strength of the link between measures of macroeconomic growth and the ability to sustain a middle-class lifestyle. Concerns over the decline of the middle class have hinged on the decline of manufacturing and factory-based employment; employment within the manufacturing sector historically required no more than a high-school degree (Autor et al. 2008; Jaimovich and Siu 2020). College attainment has, accordingly, been promoted in the contemporary policy discourse as a means to counter structural economy-wide changes threatening middle-class stability and upward economic mobility. Our work suggests that college attainment is increasingly

necessary for middle-class stability and upward mobility, though by no means sufficient to guarantee economic stability.

The literature on income volatility in the U.S. since the 1980s provides additional evidence corroborating a broad increase in economic insecurity and exposure to risk. Although income volatility is highest among socioeconomically disadvantaged groups (Hardy 2017; Hardy and Ziliak 2014; Keys 2009), volatility among many American families has been on the rise (Dynan et al. 2012; Gottschalk and Moffitt 1994; Hardy 2017; Ziliak et al. 2011). This increase has been attributed, at least in part, to structural economic and policy changes. Policy changes include diminished earnings protections traditionally offered by long-term employment contracts (Dahl et al. 2011; Gottschalk and Moffitt 2009) and fewer insurance mechanisms through the social safety net (e.g. Hardy 2017). Low and middle-income families may therefore be relying upon resources that are, on average, also more unpredictable.

While commonplace today, the emphasis on education policy interventions to maintain and build economic security is rooted in human capital theory developed throughout the early 20th century. This theory characterizes individuals as engaging in a process of accumulating and building *human capital* (Pigou 1928; Schultz 1961), akin to the way a business would accumulate capital in the form of cash on hand, savings, or equipment to be used in the execution of firm-related tasks. Mincer (1958) developed the first predictive models of earnings distributions and returns to education—human capital—by accounting for schooling, along with age and labor supply, as potential determinants of observed earnings. Today, it is commonly understood that, given the demand for skills and the dynamic nature of this demand within market economies, education operates as a key factor enabling workers to achieve higher earnings.

On average, higher educated workers earn more, and in turn transmit positive socioeconomic outcomes to their children (Ermish and Pronzato 2011; Hertz 2007; Polachek 2008). In addition to higher intra-generational mobility and earnings for highly-

educated workers, parental education drives inter-generational transmission of economic status—better economic outcomes for children—driven by richer economic resources and social advantages, stronger employment and social networks, improved parenting skills, and associated spillovers (Checchi 2006).

Equity: Barriers to Attendance, Attainment, and Rewards

The increasingly important role of post-secondary education as a means to economic security has coincided with a period of declining public subsidy of higher education (Hemelt and Marcotte, 2011). The subsequent increases in the costs of higher education have helped contribute to increasing aggregate levels of student debt. This has called into question the efficacy of policy prescriptions relying solely or disproportionately on education. Concerns about the rising costs of higher education are ubiquitous in the United States. A number of studies have documented both the extent and origins of this run-up in costs (Bailey and Dynarski, 2012, and Ehrenberg, 2002). Other studies have assessed the extent to which these increases have played a role in the decline in college completion rates over the past several decades (Bound, Lovenheim & Turner, 2010). This is a special concern for low-income families, who have experienced a relative increase in the rate of college matriculation over the late 20th century compared to the rates of students from higher SES families, for whom college access has long been assured. Many low-income families are susceptible to being recruited by private, for-profit educational providers that have entered the marketplace, in many instances leaving students holding high levels of debt and with mixed earnings returns (Cottom 2017).

While overall college access has increased for students from lower-income families, matriculation into the nation's selective universities is still strongly predicted by higher parental income (Halikias and Reeves 2017; Turner 2017). Related to this, socioeconomically disadvantaged students may not receive the same returns to education. For example, Rothstein (2019) presents evidence that commuting zone-level differences in intergenerational economic outcomes are not explained by human capital accumulation, but instead are more strongly linked to local labor and marriage markets. Likewise, Bartik

and Hershbein (2018) find that lifetime earnings premia from college attainment differ depending upon family background and appear to be lower for children from low-income backgrounds.

Measuring the Link Between College and Middle-Class Mobility

The relationship between college attendance and economic success is well established (e.g. Autor 2014) and has only strengthened over time as the returns to college have increased (Mazumder 2012). Still, what we know is mostly about the link between post-secondary education and static measures of economic success, such as employment status and annual earnings. We know much less about the relationship between education and dynamic measures of economic outcomes and stability. To help fill this gap in the literature, our report assesses the link between educational attainment and the dynamics of middle-class status throughout the U.S.

Central to the tasks at hand is defining the middle class, an unsettled question to be sure (Reeves, Guyot, Krause 2018). It is at once an economic *and* social construct, as much dependent upon access to income and wealth as it is a reflection of neighborhood location, social networks, and the positive spillovers that derive as a result. In this report, we define middle class using the middle 60 percent of the income distribution. By defining middle class families as those between the 20th and 80th percentiles of the income distribution, we employ a definition that is inherently stable over time. This is of value as we assess changes over time. An additional advantage of using a relative measure is that it can limit problems associated with measurement error, in the aggregate. That is, if some proportion of families over (under) report income near the 20th and 80th income percentiles, our middle-class categorization will still include the middle 60 percent of reported income, even if the density at the bottom (top) of the distribution is proportionally larger than anticipated. Meyer and Mittag (2019) provide evidence that survey data underreports transfer income, in comparison to what is measured using administrative data. Since we rely on the middle 60 percent of reported income, this would imply that the bottom-income cut-off for our measure of the middle class may be a bit too high. Better measures would not change the

absolute size of the middle class but could change the composition (i.e. some with under-reported incomes would move into the middle class, displacing others who did not under-report).

A limitation of our relative definition is that it ignores potential real changes in the shape of the income distribution. However, the period we examine coincided with relatively slow growth in real income, and notable changes in the income distribution were concentrated in the tails (Autor et al. 2008; Bollinger et al. 2019; Piketty, Saez, and Zuckman 2018).

In order to implement our study, we use the Panel Study of Income Dynamics (PSID) to investigate movements into and out of the middle class, and whether education serves to stabilize position in the middle class. We then examine how demographic attributes enhance or limit the role of education in stabilizing a family's position in the middle-class. Informed by the literatures on education policy, labor markets, and economic mobility, our approach accounts for the importance of a changing labor market in the United States since the 1980s, one which places an earnings premium on post-secondary educational attainment. We importantly also document that not all instability is bad; movements "up" and out of the middle-class are desirable. Finally, we account for separate education and labor market processes and experiences by separately assessing middle-class stability for Black and non-Black households. By tracing the link between middle-class status and education over a 40-year period, our report can serve as a useful complement to related studies that document the evolution of economic, education, and social policy changes in the U.S., as well as larger structural economic changes occurring over the same time period. In the next section of the report, we provide a more detailed description of PSID analysis data sample.

Description of Data

In order to estimate household movements into and out of the middle-class, our study draws upon data from the Panel Study for Income Dynamics (PSID), a nationally representative longitudinal survey that tracks individuals and households over time to

collect economic, health, family, and demographic information. The PSID began with a sample of 18,000 individuals and 5,000 families in 1968 and has recently reported information on over 24,000 individuals and 10,000 families as of 2017. The survey runs annually until 1997, and biennially thereafter.

The PSID allows us to account for a wide range of important sociodemographic factors throughout our report. We restrict our data to households where the head is between 25 and 65 years old and define middle class as those with family incomes situated within the middle 60th of the income distribution—dropping the bottom and top 20 percent. We further restrict our data to include information on employment, income, marital status, family structure, educational attainment, and a range of demographic variables including gender, race, age, and number of dependent children within the family. This information is organized with the family as the unit of observation, and subsequently linked with individual files using the 1968 family interview number and the individual sequence number, which indicates whether or not the individual lives in the family household.

For our study, we construct five cohorts spanning 1980-1986, 1990-1996, 1999-2005, 2005-2011, and 2011-2017. Within these year cohorts, we further stratify on age via 10-year intervals between 25 and 65. For example, for 25-34 year olds we calculate the 20th and 80th points of the income distribution, restricting to individuals who fall within the middle 60 of the distribution. This is important to limit the possibility that within-cohort changes in middle class status are driven by compositional aging. Due to the PSID's shift to biennial reporting in the late 1990s, we elect to include data from every other year. In order to track headship changes in each cohort, we select families where the individual respondent was either the head or spouse, conditional on residing in the family household, using the sequence number variable. We are able to discern family composition changes over time—specifically, whether or not households have the same head and spouse each year, and whether or not individuals move in or out of the household.

Main Findings: Dynamics of Middle-Class Status Across Educational Attainment

Our results capture middle-class stability and how it may have changed over a 40-year period. Since the early 1980s, American society has experienced shifts in the structure of the economy, as well as to the design of education, workforce, and social safety net policy. Students today have more access to post-secondary educational opportunities, though generally with less public subsidy than in previous years and with potentially more variance in quality—particularly given the expansion of for-profit institutions. It is within this context that our report considers the role of education as a pathway into the middle class, a buffer against falling out, and as a launching pad into even higher income groups.

College confers a mix of benefits, including tangible skills, labor market networks and connections, as well as a signal of ability and competency as a future job-seeker. As the economy shifts towards increasingly rewarding cognitive and analytical skills generally associated with “white-collar” employment, a college degree would seem to be a required credential for economic security. Accordingly, college attendance across socioeconomic groups is on the rise, and while economic gaps in attendance and graduation remain, college is a more egalitarian institution than it was 40 years ago. Still, such growth may have unintended consequences. For some firms, sector-wide growth in higher education could weaken the value of a college degree; firms may respond by placing increased premium on institutions, degree concentrations, and credentials with greater perceived rigor. This may, in turn, potentially exacerbate inequality and lower the returns to education for some students. As a result, it is not altogether clear whether college on its own will confer the same benefits to all students, and whether those benefits will change over time.

Descriptive Statistics

	1980		1989		1999		2005		2011	
	Mean	St. Dev.								
Middle Class										
- Head married? (0/1)	0.68	0.46	0.62	0.48	0.59	0.49	0.56	0.495	0.49	0.5
- Num. of Children	1.32	1.36	1.09	1.2	1.09	1.24	0.99	1.19	0.95	1.23
- Head HS Grad? (0/1)	0.368	0.482	0.37	0.48	0.36	0.48	0.379	0.485	0.32	0.467
- Head has Some College? (0/1)	0.17	0.376	0.23	0.42	0.255	0.436	0.268	0.44	0.297	0.457
- Head College Grad? (0/1)	0.12	0.325	0.176	0.38	0.2	0.4	0.21	0.4	0.239	0.426
- Age of Head?	39.8	12.1	39.8	11.1	41.7	10.0	42.3	10.9	42.9	11.7
- Spouses Wages (\$2018)	9,003	13,420	12,223	16,982	14,978	19,005	14,975	20,221	12,664	19,201
- Hours worked (Head)	1,879	830	2,029	819	2,081	763	2,046	830	1,830	916
	n = 1,325		n = 1,533		n = 1,732		n = 1,978		n = 2,249	
Income Less than Middle Class										
- Head married? (0/1)	0.2	0.4	0.187	0.39	0.2	0.4	0.16	0.369	0.138	0.345
- Num. of Children	1.118	1.436	1.096	1.41	1.23	1.537	1.01	1.355	0.91	1.377
- Head HS Grad? (0/1)	0.3	0.458	0.348	0.476	0.318	0.466	0.36	0.48	0.356	0.479
- Head has Some College? (0/1)	0.09	0.288	0.149	.357	0.21	0.4	0.21	0.408	0.21	0.409
- Head College Grad? (0/1)	0.0458	0.209	.034	.18	0.06	0.239	0.067	0.25	0.084	0.277
- Age of Head?	39.8	12.7	39.8	11.4	41.4	10.4	42.3	11.3	42.7	11.9
- Spouses Wages (\$2018)	660	3,044	957	3,660	1,284	5,078	1,198	4,564	514	2,490
- Hours worked (Head)	924	892	923	978	1,323	1,070	1,018	987	683	864
	n = 438		n = 507		n = 575		n = 658		n = 746	

We begin our description of the report's main findings by first tabulating information on the sociodemographic characteristics of the PSID data sample. These sample descriptive statistics are revealing with respect to the demographic and educational characteristics of the middle-class in the United States. Interestingly, we observe what are already well-documented secular trends among the middle-class (e.g. Cancian et al. 2011; Haskins and Sawhill 2003; Reeves and Pulliam 2020). Marriage has declined among the middle-class, from 68 percent in 1980 to 49 percent by 2011, while heads with at least some college attainment has doubled over the same time period, from 15 to 30 percent. Heads with college degrees have likewise doubled, from roughly 10 to 20 percent. As a sign of societal bifurcation, marriage rates among those in the income bracket below the middle-class have fallen from 20 to 13 percent.

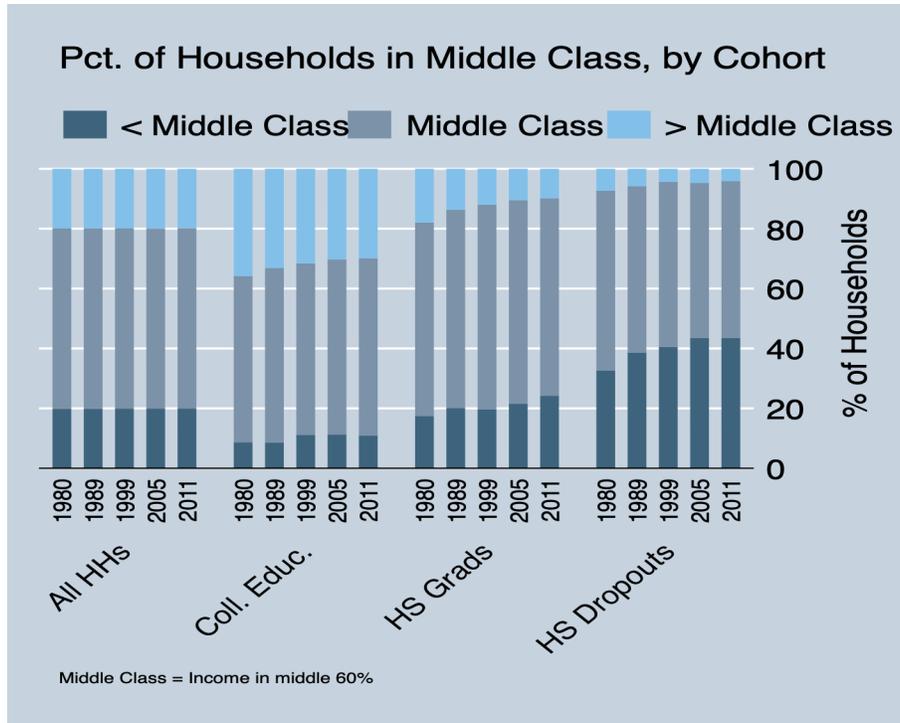
Main Results: Middle-Class Status and Stability

Given our background discussion on the link between education, labor market preparedness, and middle-class status, our main results begin with an examination of the share of households situated within the middle-class, by education, tabulating mean income over each 7-year series: 1980, 1989, 1999, 2005, and 2011 (Figure 1). Here, we distinguish between households where the head dropped out of high school, had no education beyond high school, or attended college (regardless of degree attainment or number of years).

Figure 1 confirms several important stylized facts. First, for all education groups, the likelihood of being in the top income quintile is falling. Since the top quintile is a fixed proportion (illustrated in the first set of bars), this decline for all groups is balanced by a compositional shift over the period toward more households with college educated heads. The decline in the likelihood of households with less than a college education to earn above-middle-class level incomes is consistent with a general decline in labor market opportunities for this group. The decline among college educated households is more consistent with an increase in supply of college educated workers, along with a selection story – a rise in the proportion of high school students attending college has changed the average profile of college educated workers. Related, there has been an increase in the likelihood of earning incomes below the middle class for workers with no college. This is

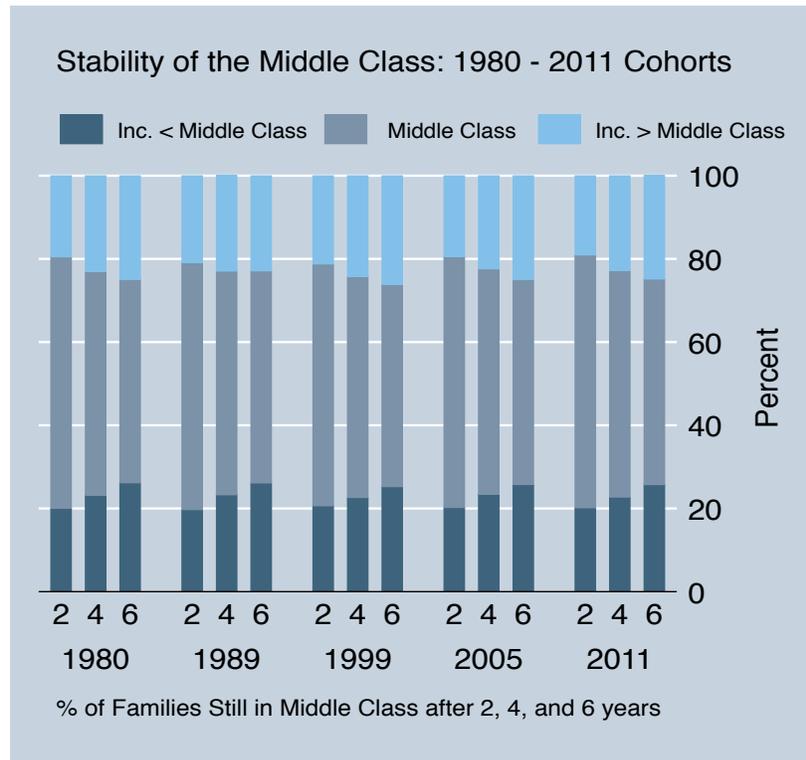
consistent with our background discussion on the changing nature of the U.S. economy and skill premium.

Figure 1.



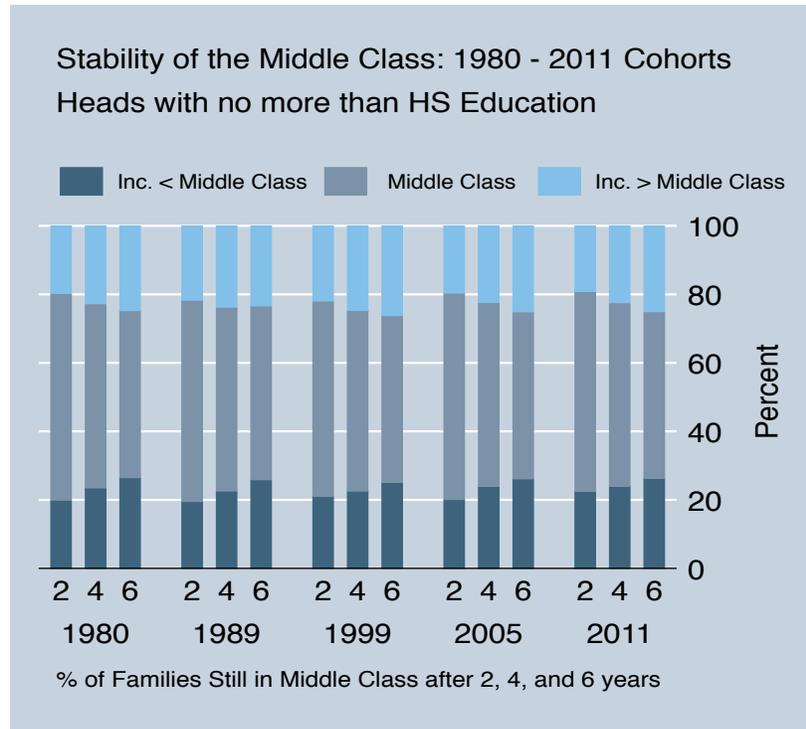
Having established an initial set of facts surrounding middle-class status by education, we examine the link between middle-class stability and education in Figure 2. Here, we again follow individuals over 7-year periods, starting in 1980, 1989, 1999, 2005, and 2011 – and ask the question: Do individuals identified as middle class at the start of the period maintain their position? We find that, in our data, individuals move out of the middle class over time—for better and for worse. We document what is a striking decline in middle class stability over each cohort, and across a roughly 40-year period. Still, this snapshot does not allow us to disentangle whether and to what degree the weight of the decline in middle class stability is driven by less-educated versus college-educated workers.

Figure 2.



In order to better understand the role of education, in Figure 3 we illustrate the stability of the middle class for households with high school educated heads. Here, we find that, for these households, membership in the middle class is shrinking over time. Over a 6-year period, it appears that individuals are rising “up” and out of the middle-class (into the top 20th of the income distribution) as well as falling “down” and out of the middle-class (into the bottom 20th of the income distribution). For example, middle-class status falls, over a 6-year period, from 60.3 to 48.7 percent (1980 - 1986), and 58.3 to 48.6 percent (2011 - 2017). This is true throughout the 1980s, 1990s, and 2000s. This is driven by exit in two separate directions: middle-class families rise up and out of the middle class. For example, in the 1980 - 1986 interval, the share of families above the middle-class rises from 19.7 to 24.7 percent. Over the same time period, families are falling down and out, below the middle class, where the share rises from 19.8 to 24.6 percent.

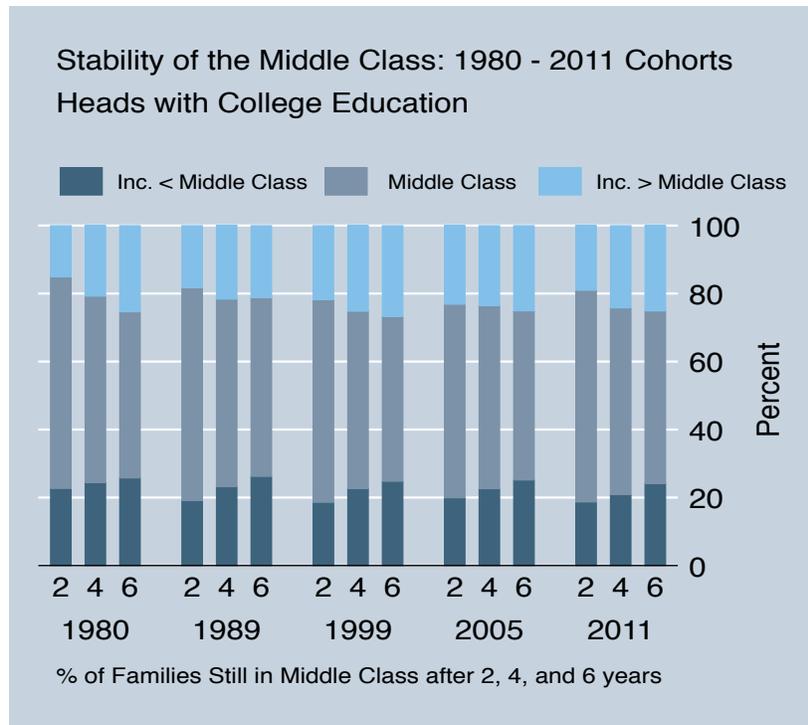
Figure 3.



Given well documented changes to the demand for skills in the economy (e.g. Autor 2014; Jaimovich and Siu 2018), the documented decline in middle-class stability among high school educated adults is to be expected. An increasingly bi-furcated economy, the decline of union bargaining power and manufacturing employment, alongside a rising skill-premium predictably yields such results. More surprising is the fact that, in Figure 4, we observe a similar pattern among families headed by college educated adults. In fact, while the decline in middle class stability is not identical, the percentage point changes across education groups are comparable to one another. At the beginning of the 1980 – 1986 period more college educated families (22.6 percent) live below the middle-class with low incomes than at the beginning of the 2011 – 2017 period (18.6 percent), but in both instances the share rises to 25.7 (1986) and 24.1 percent (2017), respectively. In the 2011 – 2017 period, there is evidence of income growth lifting families out and above the middle class, as the share above middle-class rises from 19.1 to 25 percent over the 6-year period. Thus, the narrative of middle-class instability is a mixed one. Most recently, the decline in the proportion of families with middle-class status over a 6-year period is on the order of

10 percentage points (2011-2017), from 58 down to 48 percent; this pattern generally holds for the previous 6-year intervals.

Figure 4.



Falling Down or Rising Up? How College Predicts Upward and Downward

Transitions out of the Middle-Class

To provide additional insights into the role of college education as a key to a place in the American middle class, we next consider whether middle class families headed by a college graduate are less likely to fall down and out of the middle class than families with heads whose education ended with high school. That is, among families who start a period earning middle class incomes, we estimate whether a college education *reduces* the likelihood their income will fall below the lower limit of middle class after seven years. We also estimate whether a college education *increases* the likelihood their income will rise above upper limit of the middle class after seven years. Here we define college graduate based on number of years of college completed – Those reporting four or more years of post-secondary education are assumed to be college graduates. Further, we conduct both of these exercises for families with a Black household head, and families with a non-black

household head. Ideally, we would prefer to examine patterns for other race/ethnic groups. However, this is simply not possible, since the PSID has small samples of ethnic and racial groups other than Blacks and whites. Nonetheless, focusing on Black vs. non-Black households is instructive because structural racism is likely most substantial for African Americans. To carry out these analyses, we estimate linear probability regression models of the likelihood of falling (rising) out of the middle class, conditional on either remaining in the middle class after 7 years or falling (rising) out, and controlling for householder age and marital status, cohort fixed effects and time.

Race and the Likelihood of Falling Down or Rising Up

In Table 2 we summarize the results of these analyses. In the top panel, we orient the reader by illustrating that Black and white households have similar chances of being in the middle class at any point in time. We estimate that between 1980 and 2011, among households with prime aged heads, 56.9 percent of Black families earned incomes within the middle three income quintiles, compared to 61.8 percent of white families.

The second panel illustrates an important difference in the role of education in shaping membership in the middle class. Among Black families, we estimate that, in 1980, households with college educated heads were more likely than their high school educated counterparts to be in the middle class – increasing the likelihood by 0.118. This is a sizeable effect, given a mean of 0.569 over the period. By 2011, the impact of college on middle class membership for families with Black household heads declined a bit (0.086), but the change over the period is not statistically significant. Among non-Blacks (most of whom are white in our sample), in both 1980 and 2011, families with a college educated head are less likely than those high school educated heads to be in the middle class. This is so because for whites, college educated families are especially likely to earn incomes in the *top* quintile. For example, in 2011, we estimate 38 percent of households with white college educated heads earned incomes in the top quintile, compared to only 14 percent of households with Black college educated heads.

**Table 2. The Impact of College on Attaining and Maintaining Middle Class Status
By Race of Household Head**

	Household Head Race			
	Black		Non-Black	
Likelihood of Being Middle Class	0.569		0.618	
Impact of College on Likelihood of Being Middle Class				
In 1980	0.118	*	-0.138	*
In 2011	0.086	*	-0.105	*
Impact of College on Likelihood of Leaving Middle Class				
By Falling Out				
In 1980	-0.033		-0.033	
In 2011	0.023		-0.018	
By Rising Out				
In 1980	0.096	*	-0.01	
In 2011	-0.009	a	0.03	

* Statistically significant at the 5% level

a. Statistically different from 1980, at 5% level

In the bottom panel of Table 2, we illustrate that, in 1980, college appears to have raised the chances that families with Black heads of household would see their incomes grow over time – and join the group with incomes in the top quintile. We estimate that in the 1980s, among middle class families with Black college-educated heads of household the likelihood of rising out of the middle class was 0.096 points higher than among families with high school-educated heads. During the 2010s, college appears to have provided no similar opportunities for Black households.

Conclusion and Policy Implications

For American families, it is hard to overstate the primacy of middle-class status as a marker of economic success. Yet, for many families, the middle-class status is not stable. For some, this instability results in a sharp income decline, while for others it belies upward mobility above and beyond the middle-class. Our report suggests that college remains as a strong predictor of family incomes at or above the middle-class—thus education may operate as some insurance against low-income. Still, our analysis also suggests that a substantial share of families headed by a college-educated adult fall down and out of the middle-class and into low-income status. For these families, many which hold debt from higher education investments, the value proposition of higher education may be called into question. As for perceptions of well-being, college educated adults are likely aware of the increasingly precarity of the middle class, as evidenced by increasing income volatility as well as the chances of falling up and above or down and out of the middle class. Our data suggest that this phenomenon has long existed. However, as more adults seek out higher education, the cumulative downside risks of low-income in the aftermath of a large human capital investment—as post-secondary educational access has increased since the 1980s—may bring unanticipated consequences for families where the investment has not yielded qualitatively large, positive returns.

Still, the returns to college education are positive. Yet, these positive, aggregate returns mask important sub-group heterogeneity; the impact of college on the chances of being middle class varies across race and over time. Whereas college appears to help Blacks achieve middle-class status, the same credential helps non-Blacks—most of whom are white in our sample—achieve placement in the top quintile of the income distribution. Coincident with large economy-wide and education policy shifts, the link between college attainment and the chances of income growth up and out of the middle-class diminishes for Black households over time. While college is associated with a move into the top quintile in the 1980s, by the 2010s, it no longer—on average—operates as a transmission mechanism for upward mobility beyond the middle-class. Still, given poverty rates of roughly 1 in 4 among Black Americans, the importance of attaining middle-class well-being has serious

implications for a range of positive, long-term socioeconomic outcomes (Duncan et al. 2010). Nonetheless, this suggests that educational investments may at once facilitate middle-class entry and increased debt loads (Hamilton et al. 2015).

Given that education and human capital accumulation offer a range of positive societal externalities, the report's findings reinforce the importance of federal and state-level investments that can lower the costs associated with higher educational attainment, especially for children from low and moderate-income families. Our results show that college education is increasingly linked to higher chances of middle or upper-income status. As need-based financial aid has become increasingly important for access to post-secondary education for low-income families, policymakers might also consider that many middle-class families face an unstable economic situation as well.

Financial and psychic costs are imposed upon students in the event of short and longer-term economic shocks that families may face, including many in the middle-class. On the decision to attend, helpful interventions may include aggressive financial counseling to help students connect with loanable funds markets (e.g. Bettinger et al. 2012). More substantial, costlier interventions could include generous supplemental school-level financial aid loans and grants distributed to students across a broader range of the income distribution, inclusive of middle-class families (Hardy and Marcotte 2019). To improve completion rates, colleges can also explore the efficacy of increasing expenditures on academic and student support services, which may disproportionately help students who do not come from affluent family backgrounds (Deming and Walters 2017). College education may not guarantee entry into the middle-class and beyond, but anything less than a college degree increasingly shuts out the possibility. As a result, college continues to serve as a gateway to economic well-being, though not without substantial obstacles along the way.

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