

# The Demographics of Wealth

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## 2018 Series

How Education, Race and Birth Year  
Shape Financial Outcomes

**Essay No. 1: The Financial Returns from College across  
Generations: Large but Unequal | February 2018**



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An Introduction to the Series

# The Demographics of Wealth

## How Education, Race and Birth Year Shape Financial Outcomes

*By William R. Emmons, Ana H. Kent and Lowell R. Ricketts*

Income and wealth rebounded for many families between 2013 and 2016, the dates of the two most recent waves of the Federal Reserve’s Survey of Consumer Finances (SCF).<sup>1</sup> Groups that had struggled the most during and after the Great Recession, including less-educated, Hispanic and black, and young families, participated in the recovery. Nonetheless, long-standing income and wealth gaps across education levels, races and ethnicities, and age groups remain large.

This is the first in a series of new essays that the Center for Household Financial Stability will publish on how a family’s demographic characteristics—including educational attainment, race and ethnicity, and birth year—are related to the family’s financial outcomes. Like the previous essay series published in 2015, the 2018 series will focus on these three key demographic dimensions in turn. An important new feature of the 2018 series is the inclusion of two generations of educational data for each family. In addition to the educational attainment of the SCF respondent, the 2016 SCF for the first time contains detailed information on the respondents’ parents’ education. This new information reveals even more clearly that inherited demographic characteristics—your race or ethnicity, your age and birth

year, and even your parents’ level of education—profoundly shape the economic and financial opportunities you have and the outcomes you achieve.

As before, our primary data source is the triennial SCF, which provides the most comprehensive picture available of American families’ balance sheets and financial behavior over time. In some of our analyses, we use information from 47,776 families, each of which was surveyed in one of 10 survey waves between 1989 and 2016. When we focus on the education of SCF respondents’ parents, we draw upon data collected from 6,248 families in 2016. In every case, the SCF has been designed to be nationally representative, so we can safely generalize about the population as a whole.

As we documented three years ago, demographic characteristics remain remarkably powerful in predicting a family’s income and wealth. By expanding the scope of inherited demographic characteristics to include parents’ education, we believe the 2018 Demographics of Wealth series sheds additional light on the deeply rooted sources of economic and financial disparities. Fruitful approaches to policy should be based on the facts established here.

# Executive Summary of Essay No. 1

This essay explores the connections between a person's level of completed education and measures of his or her family's financial well-being, including income and wealth. For simplicity, we examine two discrete groups—families headed by someone who has completed a four-year college degree or higher (“college grads”) and those without a college graduate head (“nongrads”). This essay shows that inherited demographic characteristics significantly influence the expected income and wealth outcomes associated with one's own education. These characteristics include birth year (and hence age at the time of the survey), race or ethnicity and parents' education level.

Inherited demographic characteristics are key aspects of one's identity over which one exerts no control. The view we take is that any adult outcomes that are systematically related to these inherited characteristics likewise are inherited or granted, rather than earned in any meaningful sense.

We document three important ways in which inherited demographic characteristics influence family income and wealth:

- **The head-start effect.** Families headed by someone with certain “favorable” inherited demographic characteristics typically earn much higher incomes and accumulate much more wealth than families without these characteristics. Whatever a family head's education level, being non-Hispanic white, being over 40 and/or having college-educated parents typically boosts income and wealth compared to families without these demographic characteristics (singly or in combination). The median college graduate family with all of the most advantageous inherited demographics—white, aged 40-61, college grad parents—had three times as much income and six times as much wealth as the median family overall. We estimated

that over half of their advantage over the population medians ultimately can be attributed to those inherited characteristics, not their own effort or education.

- **The upward-mobility (or exceeding-expectations) effect.** For families headed by someone with less advantageous inherited demographic characteristics, completion of a four-year degree typically boosts income and wealth far above the levels they would have achieved without a degree. These families move up the income and wealth rankings (relative to levels predicted by their inherited demographic characteristics) more than do college grad families with more favorable inherited characteristics. For middle-aged families, completing college boosts the median family with non-grad parents by 23 rungs in the income percentile ranking and 20 rungs in the wealth ranking, while college boosts families with college grad parents by only 11 rungs for both income and wealth.
- **The downward-mobility (or falling-short) effect.** Finally, we show that family heads with college-educated parents who are downwardly mobile in educational terms suffer notable negative consequences; these are people who do not finish college even though their parents did. Relative to the income and wealth that would be predicted based on their inherited demographic characteristics alone, those who fall short of their parents' college education are likely to slip decisively downward in the overall rankings—by 16 percentiles in income and 18 percentiles in wealth rankings for middle-aged families. Nongrad family heads whose parents likewise did not obtain college degrees drop by less than 10 percentiles in both income and wealth rankings relative to levels predicted by inherited characteristics alone.

# The Financial Returns from College across Generations: Large but Unequal

*By William R. Emmons, Ana H. Kent and Lowell R. Ricketts*

Families headed by someone with a four-year college degree enjoy many advantages.<sup>2</sup> College graduates tend to be healthier and to live longer,<sup>3</sup> to smoke less,<sup>4</sup> to have fewer and more favorable contacts with the criminal justice system,<sup>5</sup> to marry more and to divorce less,<sup>6</sup> to work in higher status occupations,<sup>7</sup> to demonstrate greater financial knowledge,<sup>8</sup> to have healthier finances,<sup>9</sup> and to avoid financial distress<sup>10</sup> more easily than nongraduates. Countries with more educated populations grow faster<sup>11</sup> (after controlling for other important influences) and enjoy higher standards of living.<sup>12</sup>

What is less well-known is how strongly the race or ethnicity and education of one's parents influence the earning and wealth-building power of college for their adult children. For example, among family heads who were middle-aged (40-61 years old) in 2016, identified themselves as non-Hispanic white (hereafter referred to as simply "white") and had a four-year college degree or more, median family income was 37 percent higher if at least one of the family head's parents also had a four-year degree; median wealth was 54 percent higher.<sup>13</sup> The boost from college-educated parents was even larger among nonwhite college grad families in percentage terms, although income and wealth levels were uniformly lower.<sup>14</sup> Thus, the financial benefits of college are large and compound across generations, boosting the income-earning and wealth-accumulating power of college from one generation to the next. However, they are unequal across race and ethnicity and, as we show in this essay, increase at a diminishing rate in successive generations of college graduates.

Why does the education of an adult child's parents matter so much? Some of the inherited advantage plausibly flows through greater mone-

etary transfers and more intensive childhood investments, particularly in education, provided by college-educated parents.<sup>15</sup>

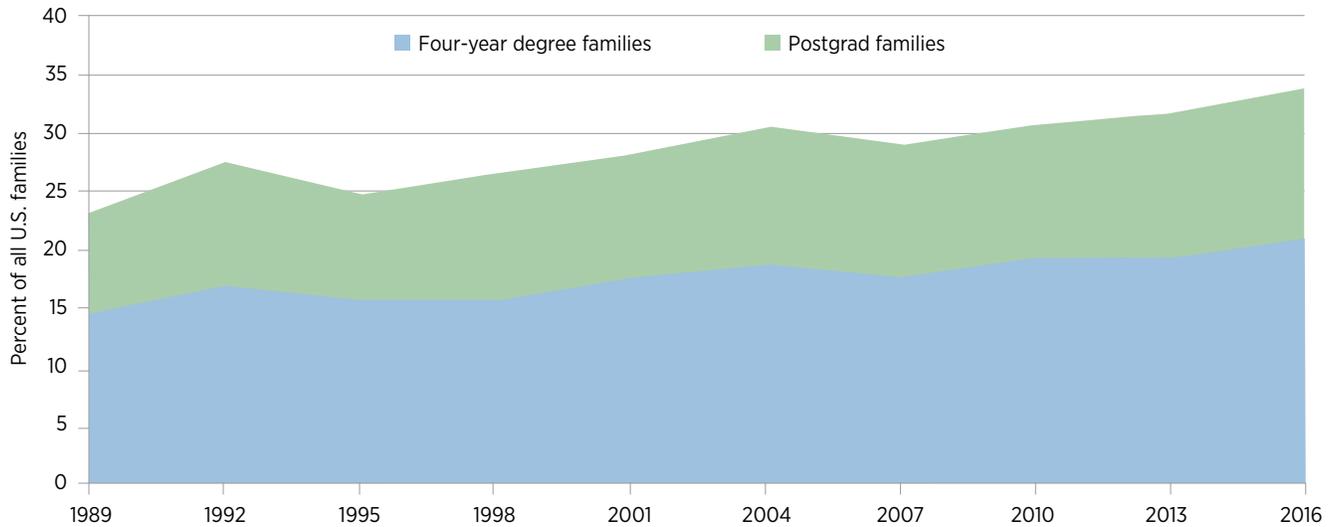
Other likely sources of inherited advantage are what we term the balance sheet and financial behavior channels.<sup>16</sup> In short, families headed by someone with a college-educated parent typically have stronger balance sheets—more liquid, better diversified, less leveraged—than otherwise similar families without a college grad parent. Families with a college grad parent also typically exhibit better financial knowledge and habits, including better understanding of basic financial concepts like compound interest; more willingness to take financial risk to earn a higher return; more intensive searches for good investment and borrowing options; and a higher likelihood of regular saving. In fact, simply having a college-educated parent increases the likelihood that the adult child's family saves regularly by 8 percentage points, from 44 to 52 percent.<sup>17</sup>

The first section of this essay documents strong associations over time between a family head's own education level and the family's income and wealth; this updates our 2015 essay and confirms the conventional wisdom.<sup>18</sup>

The second section uses four demographic characteristics to partition SCF families in 2016 into 24 distinct groups. The characteristics include three age ranges; two race and ethnicity groups; two levels of parental education; and two levels of "own" (SCF respondent's) education. We term the first three characteristics "inherited" and the fourth "acquired" to emphasize the distinction between factors over which one has no control and those over which one exerts at least some control.

The third section compares the demographically defined groups on family income and wealth mea-

**Figure 1: U.S. Families Headed by College Graduates and Postgraduates**



NOTES: Postgrad families are those headed by someone with both a four-year college degree and a postgraduate degree. The total number of U.S. families rose from 93 million in 1989 to 126 million in 2016.

The sources for all the tables and figures are the Federal Reserve's Survey of Consumer Finances and authors' calculations.

tures in order to separate the contributions of parents' education (and other inherited characteristics) from those of the respondent's own education (and other acquired characteristics) to income and wealth outcomes. We document three striking results:

- Inherited demographic characteristics greatly influence typical income and wealth outcomes for any given level of own education;<sup>19</sup>
- The degree of upward income and wealth mobility associated with a college degree is larger for someone whose parents did *not* complete college; and
- The degree of downward income and wealth mobility associated with not completing a college degree is greater if one's parents themselves had a college degree.

We term these the "head-start" effect; the "upward-mobility" or "exceeding-expectations" effect; and the "downward-mobility" or "falling-short" effect, respectively.

Section Four illuminates balance sheet and behavioral channels through which parental education appears to influence adult children's outcomes above and beyond the children's own education level. The final section concludes. Four sidebars provide additional definitional and methodological details.

## I. Links between Own Education and Own Income and Wealth

Before attributing income and wealth outcomes either to inherited or to acquired characteristics, this section documents the strong association between a family head's own level of education and standard economic and financial measures. In other words, we confirm the conventional wisdom that more education is associated with more income and wealth. This approach ignores all differences in inherited demographic characteristics, which we later show are, in fact, very important.

We present results for only two groups—families headed by someone with at least a four-year college degree ("college grads" in what follows) and families headed by someone whose highest education is less than a four-year college degree ("nongrads"). Our data source throughout is the Federal Reserve's Survey of Consumer Finances (SCF).<sup>20</sup>

**Share of families with college degrees.** We focused on the four-year college degree as the key line of demarcation along the spectrum of educational attainment. We used it because, for several decades, a sizable minority of the population has achieved a four-year college degree and it has been

### Sidebar 1: Family Income and Wealth

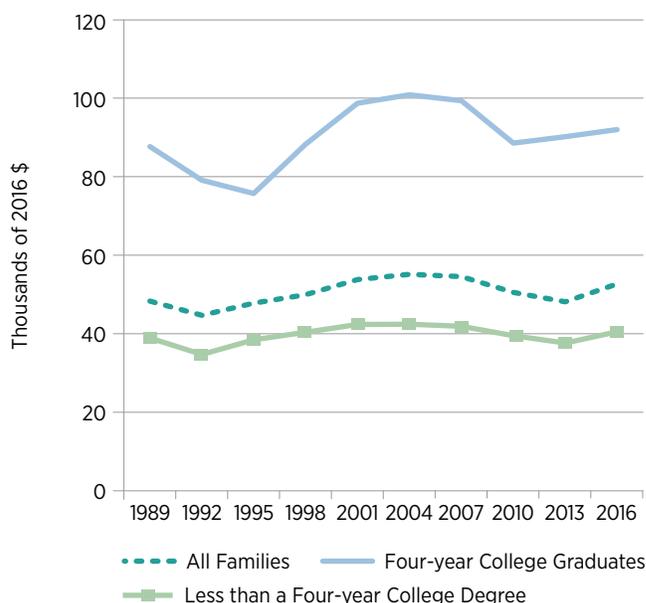
To measure income for the SCF, the interviewers requested information on the family's cash income, before taxes, for the full calendar year preceding the survey. The components of income in the SCF are wages, self-employment and business income, taxable and tax-exempt interest, dividends, realized capital gains, food stamps and other related support programs provided by government, pensions and withdrawals from retirement accounts, Social Security, alimony and other support payments, and miscellaneous sources of income for all members of the primary economic unit in the household. All income figures are adjusted for inflation to be comparable to values recorded in 2016.

Wealth is a family's net worth, consisting of the excess of its assets over its debts at a point in time. Total assets include both financial assets, such as bank accounts, mutual funds and securities, and tangible assets, including real estate, vehicles and durable goods. Total debt includes home-secured borrowing, or mortgages, other secured borrowing, such as vehicle loans, and unsecured debts, such as credit cards and student loans. Debt incurred in association with a privately owned business or to finance investment real estate is subtracted from the asset's value, rather than being included in the family's debt. All wealth figures are adjusted for inflation.

associated with significant economic and financial rewards. In 2016, for example, the median (i.e., middle-ranking) family headed by someone without a four-year college degree earned only 44 percent as much income and owned only 18 percent as much wealth as the median family headed by someone who had a four-year degree.<sup>21</sup>

The share of U.S. families headed by a college grad has increased significantly in recent years. (See Figure 1.) In 1989, about 23 percent of families were headed by someone with a four-year college degree

Figure 2: Median Family Income by Education of Family Head



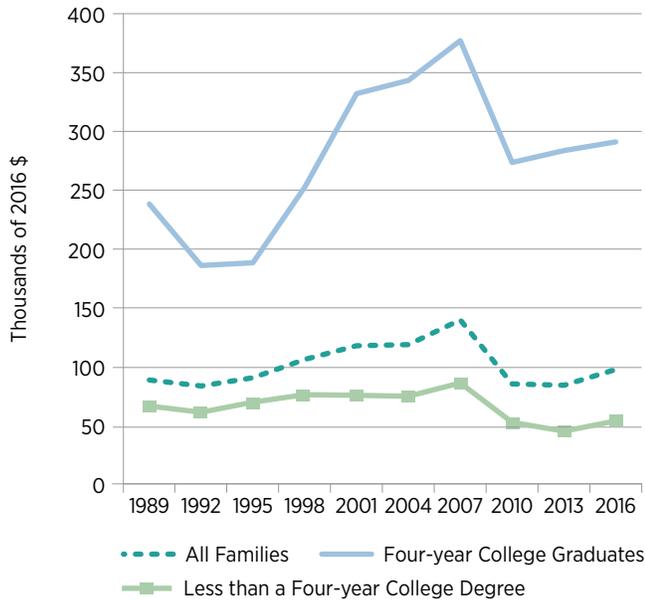
NOTE: Median family income is the value of cash income, before taxes, for the full calendar year preceding the survey for the family that ranks exactly in the middle of a ranking by income. See Sidebar 1 for more details.

or more; by 2016, the share had reached 34 percent. Families headed by someone with a postgraduate (as well as a four-year college) degree increased from almost 9 percent of all families in 1989 to about 13 percent in 2016. Among white families alone (not shown), the share of families with a four-year degree or more increased from 26 to 38 percent between 1989 and 2016, while among families of all other races and ethnicities, the share increased from 13 to 25 percent.

**Family income.** Income and especially wealth gaps between college grad and nongrad families have grown over the last few decades. (See Sidebar 1.) At the same time, the number of families headed by college grads has increased notably. Together, these trends have resulted in a large shift of aggregate income and wealth toward college-educated families.

The income received by the median college grad family increased from almost \$88,000 in 1989 to about \$92,000 in 2016, an average annualized increase of only 0.18 percent.<sup>22</sup> (See Figure 2.) Among nongrad families, the average percentage increase was about the same (0.15 percent)

**Figure 3: Median Family Net Worth by Education of Family Head**



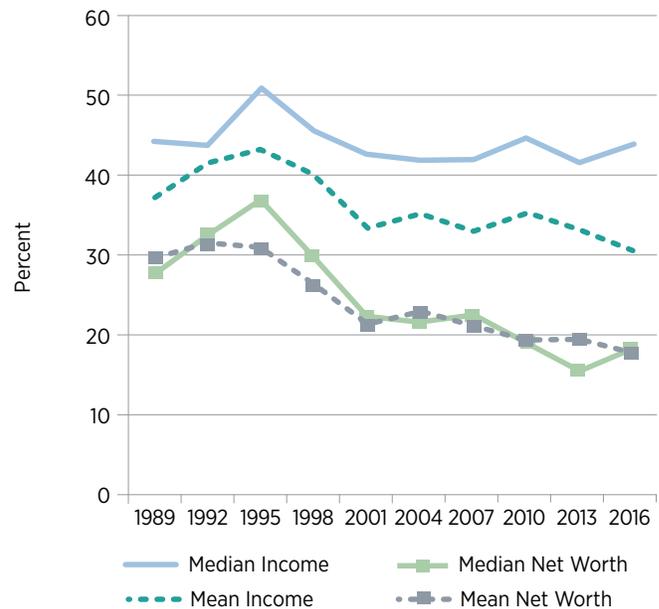
NOTE: Median family net worth is the value of total assets minus total debts for the family that ranks exactly in the middle of a ranking by net worth. See Sidebar 1 for more details.

but amounted to an increase of only \$1,557. The share of all income earned by college grad families increased from 45 to 63 percent between 1989 and 2016, as both the number of college grad families and their average income increased faster than those of nongrads.

**Family wealth (net worth).** Nongrad families' wealth fell further behind that of college grads than their income did. Figure 3 shows that median college grad family net worth rose from around \$238,000 to \$291,000 between 1989 and 2016, an annualized increase of 0.8 percent. Meanwhile, nongrad median family wealth declined from about \$66,000 to \$54,000, an annualized decrease of 0.7 percent. This large cumulative decline left median nongrad family wealth at just 18 percent of median college grad family wealth, down from a peak of 37 percent in 1995. The share of all wealth owned by college grad families increased even more than was the case for income—from 50 to 74 percent between 1989 and 2016.

**The declining fortunes of nongrad families.** The overall conclusion from these statistics is that

**Figure 4: Nongrad Families' Income and Net Worth Relative to College Grad Families'**



NOTE: Median family net worth is the value of total assets minus total debts for the family that ranks exactly in the middle of a ranking by net worth. Median family income is the value of cash income, before taxes, for the full calendar year preceding the survey for the family that ranks exactly in the middle of a ranking by income. See Sidebar 1 for more details.

nongrad families' economic and financial status is slipping—faster for wealth than for income but undeniably downward on most measures. (See Figure 4.) What is it about college that produces the dramatic divide evident in these data? The following sections show that only some of the observed differences in income and wealth are due to college education itself. Some of the association is spurious—that is, due to other factors that may help determine both who completes college and how much income or wealth they have as adults. These important “third factors” include inherited demographic characteristics, as we discuss below.

## II. Breaking Out Demographic Characteristics

To what extent do large and growing income and wealth differences between families with and without four-year college degrees reflect individual efforts undertaken to complete a degree and the benefits of college learning itself? On the other hand, how important are inherited demographic characteristics both in predisposing someone to

complete a degree and in boosting later financial achievement?

There is, of course, no way to know for sure in any individual case how much responsibility for a particular income or wealth outcome to assign to effort versus endowment. We proceed instead by examining differences across demographically defined groups. If there are economically and statistically significant differences between the median income and wealth of two groups that differ only on one inherited demographic characteristic, such as parents' education, then we attribute those group income or wealth differences to forces related to the inherited characteristic rather than to individuals' own efforts or education.<sup>23</sup>

***A demographic approach to income and wealth: Why age, race and (parents') education?***

The logic behind our demographic framework for analyzing income and wealth includes both practical and theoretical arguments. Demographically defined groups show significant differences on key outcome measures like income and wealth; demographic classifications make predictions more accurate. At the same time, demographic characteristics of an individual that are determined before birth are natural candidates to which one might attribute a causal interpretation.

***The practical case for demographics: They are strong predictors.*** It is important to take age into account because a powerful "life-cycle effect" characterizes many aspects of a person's life course, not least income and wealth trajectories.<sup>24</sup> Race and ethnicity matter in profound and complex ways, supporting this variable's inclusion in our set of explanatory factors, as well.<sup>25</sup> It is uncontroversial to assert that one's own education is related to one's income and wealth; what is less well-known (but which will be shown later in the essay) is that one's parents' education also seems to matter. Knowing any of these demographic details—a family head's age, race or ethnicity, own education or parents' education—helps predict the family's income and wealth. For this reason alone, demographic information is a valuable input to any model seeking to explain or predict economic or financial outcomes.

See Sidebar 2 for a discussion of why we believe a demographic approach to income and wealth determination is theoretically compelling; in short,

**Sidebar 2: The Theoretical Case for Inherited Demographics**

One of the most difficult tasks in empirical analysis is credibly separating correlation (that is, association) from true causation (inexorable consequences). Identifying the effects of education on adult outcomes is often confounded by a methodological challenge called the third variable problem: Two variables that are correlated may be jointly influenced by a third variable. Ignoring the existence of the third variable can obscure the true causal effect (if any) between the variables.

Take, for example, the positive correlation between education and wealth. Education may help someone accumulate wealth; i.e., education causes wealth. But having more wealth may facilitate more education; i.e., wealth causes education. How important, then, is education for wealth accumulation? It also is possible that something else (i.e., a third variable), like parents' education, supports both. These nuances are often overlooked.

We replace the context-free approach that simply identifies a correlation between education and wealth as evidence of causation with the assumption that a person's education and wealth do not exist in isolation. Education is the result, in part, of outside forces, such as parents and community, as well as social and political environments.

An economic argument for building an analytical framework on age or birth year, race, and parents' education—collectively, inherited demographic characteristics—is that these observable, unchosen, unchangeable aspects of every person's identity are valid instruments, or proxies, for powerful external forces. Their predetermined and unchanging nature allows us to more confidently identify cause and effect, pointing the arrow of causation from these factors to outcomes of interest like educational attainment, income and wealth. Understanding exactly why any of these factors exerts the influence it does is, of course, a difficult challenge in its own right. But possible reverse causation—for example, that your adult income somehow caused your parents to achieve a certain level of education—can be confidently ruled out.

it helps isolate the true causal effect of education.

**Separating endowment from effort.** To isolate the effects of inherited versus acquired characteristics on income and wealth outcomes, we divided SCF families into successively smaller groups in four steps. The resulting set of groups at each step is called a partition of the sample families. The simplest partition—before any demographic criteria are applied—contains all 6,248 families; the final and most detailed partition is composed of 24 groups with different numbers of families in each group.

The first partition resulted from dividing all families into three age groups. We subdivided each of these into two racial and ethnic groups, resulting in six groups; then we subdivided each according to the college-attainment status of the respondent's parents to create 12 groups. Finally, we subdivided each of those groups according to the college-degree status of the respondent, resulting in 24 groups. We used the following demographic criteria:

- Age groups: young (family head under 40); middle-aged (40-61); or old (62 or older);
- Racial and ethnic groups: non-Hispanic white or all other races and ethnicities;
- Parental educational attainment: at least one college graduate or none; and
- Respondent's own education: four-year college degree or none.

We termed the first three characteristics inherited; the last is acquired. Table 1 provides details on the distribution of these characteristics in the 2016 SCF.

**How inherited and acquired characteristics play out for one group.** Table 2 illustrates our decomposition method for a single group out of the 24 for both median income and median net worth. The median income and wealth among all families in 2016 are in Partition 0. By definition, the median family in the sample ranks at the 50th percentile, meaning 50 percent of families made more than \$52,657 a year, while 50 percent made less, and half of families had more than \$97,326 in wealth, while half had less.<sup>26</sup> These are the benchmarks to which subsequent income and wealth outcomes will be compared.

Note that Partitions 1 through 3 are defined by demographic characteristics that were established before the respondent's birth;<sup>27</sup> that is, they are inherited demographics. For the group of families shown in Partition 3, median income was at the

**Table 1. Families by Demographic Characteristics in the 2016 SCF**

Characteristics of family respondent	Percent of respondents
Young (under 40)	28.3
Middle-aged (40 to 61)	40.9
Old (62-plus)	30.8
Non-Hispanic white	68.0
Other races and ethnicities	32.0
Four-year college degree held by one or both parents	28.1
Four-year college degree holders	34.0

NOTES: Other races and ethnicities include all respondents who self-identify as anything other than non-Hispanic white, including Hispanics of any race, African-Americans or blacks, Asians, Native Americans, Pacific Islanders, Alaska Natives and people of more than one race or ethnicity.

To code the education of an SCF respondent's parents, the 2016 SCF contains an indicator variable for each parent on a four-point scale, with a four-year college degree or higher being the highest level. For simplicity, we classified parents' education either as four-year college degree holders if at least one parent achieved a college degree or higher, or as nongraduate if neither did. Missing values were imputed by SCF staff. Instances in which survey responses were imputed include: The survey respondent didn't know a parent's educational attainment, refused to provide an answer, or the response was determined to be inadequate. For more information on the SCF imputation process, see Kennickell (1998).

**Table 2. Median Family Income and Net Worth for One Group**

	Reflects the effects of inherited characteristics only			Reflects the effects of inherited and acquired characteristics
Partition 0	Partition 1	Partition 2	Partition 3	Partition 4
All families	Middle-aged (40-61)	Middle-aged; Other race or ethnicity	Middle-aged; Other race or ethnicity; College grad parents	Middle-aged; Other race or ethnicity; College grad parents; SCF respondent is a four-year college grad
Median income: \$52,657	\$67,239	\$47,594	\$71,695	\$102,681
Percentile rank: 50	59	45	62	76
Median net worth: \$97,326	\$131,262	\$37,970	\$96,944	\$347,586
Percentile rank: 50	55	36	49	74

NOTES: The groups represented are sample groups from the subdivision of respondents into partitions by age, race or ethnicity, and the education of the respondents and respondents' parents. Each numerical entry is the median family income or net worth in 2016 among included families in the element of the partition defined at the top of each

column. By definition, the median family in the sample ranks at the 50th percentile. All subsequent percentile ranks refer to the position within the entire population of the median family in the subgroup defined at the top of each column.

62nd percentile and median wealth was at the 49th percentile within the entire population.

The final step (Partition 4) differentiated between respondents who have completed a four-year degree and those who have not. The median family in this element of Partition 4 had an income larger than 76 percent of the population, while the median family's wealth was larger than that of 74 percent of the population.<sup>28</sup> This group of families represented 1.7 percent of all families in the appropriately weighted 2016 SCF sample. Sidebar 3 discusses issues related to the sample size of the 2016 SCF, which is relatively small for our purposes.

**Assessing the effects of achievements.** In the next section, we will assign responsibility for a family's achievement either to acquired or inherited characteristics. To do this, we first compare percentile ranks of group median income and wealth when only the education of the SCF respondents differs (the acquired characteristic); next, we compare percentile ranks when background or inherited factors differ.

Moving from right to left in Table 2, the difference between the median income (net worth levels) in Partitions 4 and 3 can be attributed to the education, efforts and achievements of respondents—an increase of about \$31,000 in median income and about \$251,000 in median net worth. As discussed below, these are very large changes;

hence, own education is of major significance for this group.

The differences between median income and wealth in Partitions 3 and 0 represent the contributions of inherited characteristics alone. For income, those characteristics boost the median 12 percentile ranks higher. For net worth, the contribution moves the median 1 percentile rank *lower*. That is, simply being middle-aged, of a race or ethnicity other than white and having a college graduate parent increases the income we predict for this family by \$19,000, but decreases predicted wealth by \$382 relative to all families.

This framework allows us to identify the sources of this group's income and wealth advantages over those of the median family in the sample—either inherited or acquired characteristics. After taking into account inherited characteristics, obtaining a college degree boosted the income rank of the median family in this group by 14 rungs above the percentile predicted from inherited demographics alone and lifted the median wealth rank 25 rungs. In other words, the typical family in this group can attribute more than half of its advantage over the population median income to its own educational accomplishments and *all* of its superior wealth position—and then some—to having a college degree.

### Sidebar 3: Sample-Size Issues in Using the 2016 SCF

Limited sample size is an important consideration in our analysis. For example, we examine a catch-all group defined as all races and ethnicities other than white because the number of respondents in the sample who identify as Hispanic, African-American, Asian or any other nonwhite group is too small to allow reliable inference using it alone. The immense heterogeneity of this “other” group obviously limits the generalizability of our results for this group.

Even after combining many disparate racial and ethnic groups into a single category, we still must pay attention to the statistical significance of differences we observe between groups. The 2016 SCF contains 6,248 families, but due to oversampling of high-income families (to obtain sharper estimates at the top end of the income and wealth scales), some low-income and

low-wealth groups are very thinly represented. Moreover, some configurations of the demographic criteria are more common in the population than others, leading to large differences in cell sizes.

The largest group (13.6 percent of families after weighting to ensure representativeness in the overall population) contains families headed by someone who is white, at least 62 years old and has neither a college degree of his or her own nor a parent with a college degree. The smallest group (0.3 percent of families after weighting) contains families headed by someone of another race or ethnicity who is 62 years or older, has a four-year college degree and is the son or daughter of a college graduate. Obviously, we have less confidence drawing conclusions about groups with very few members than about those that have better representation.

### III. The Role of Inherited Characteristics

Figure 5 portrays a slice of the median income data for middle-aged families; Figure 6 shows the same for median net worth. Tables 3 and 4 display the remainder of the data for old and young families’ median incomes and median net worth, respectively. The last column in the figures and tables shows the change in income and wealth ranks associated with own education (over and above inherited characteristics). In other words, it shows how the contribution of one’s own education increases (or decreases) the middle-ranking family’s income and wealth position in the overall population.

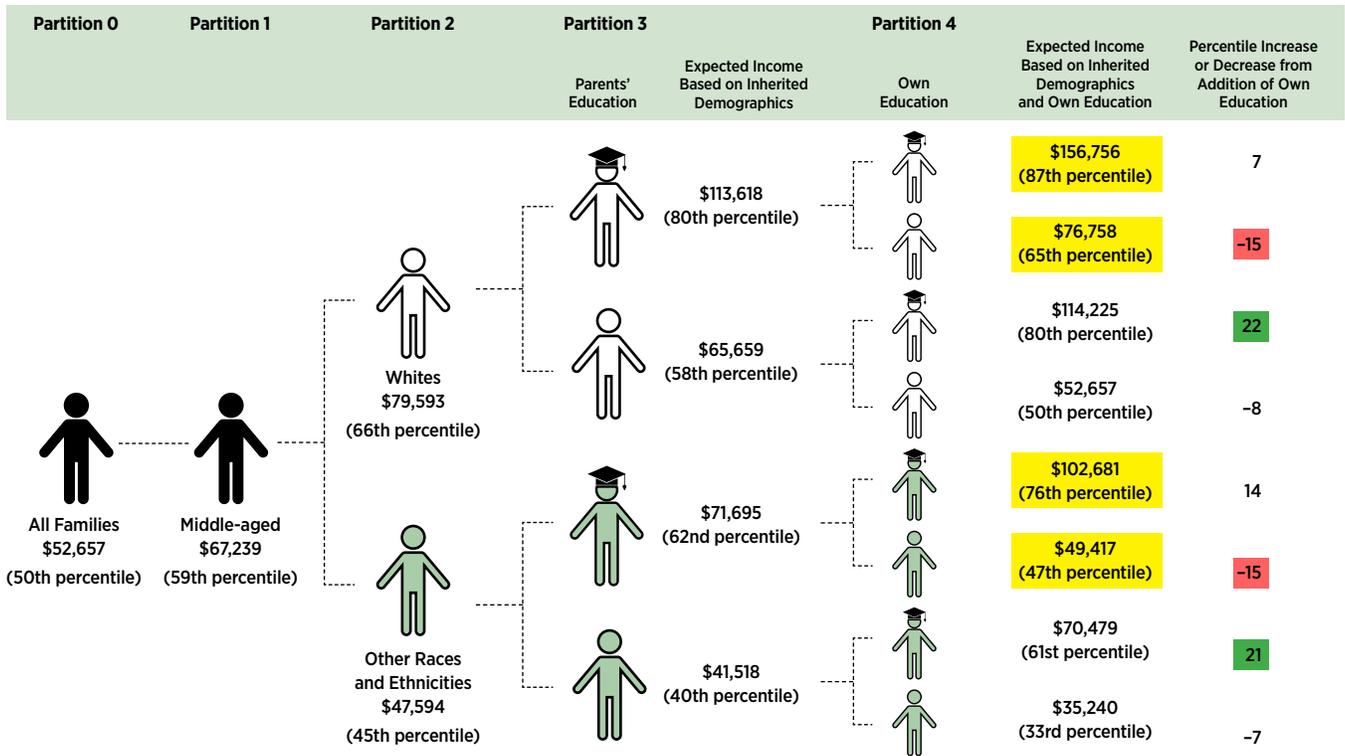
Perhaps the most striking aspect of the data is the wide range of median income and wealth levels and rankings on display in Partition 3. Figure 6 shows that, based simply on different inherited demographic characteristics, the median net worth of middle-aged families ranges from \$26,718 (33rd percentile) among families in the other races group without a college grad parent to \$374,640 (75th percentile) among white families with a college grad parent. In principle, these differences could have been predicted at birth. Of course, the latter group contains many more college graduates than the former; this illustrates our earlier point that one’s own

education is affected by external forces such as one’s parents’ education as well as one’s race or ethnicity and even birth year. See Sidebar 4 on links between parents’ and children’s education levels.

A fact laid bare by our demographic framework is that inherited demographic characteristics are very important determinants of adult outcomes like education, income and wealth. The typical member of the most favored group in Figure 6 had 14 times as much wealth as the typical member of the least favored group, even before one’s own educational attainment is taken into account.<sup>29</sup> This wealth disparity is completely arbitrary in the sense that no one in either group chose his or her own parents. Similarly, Figure 5 shows that the typical member of the demographically favored group received an income of \$113,618 (the 80th percentile), compared to \$41,518 (the 40th percentile) among the least favored group. This income multiple of 2.7 times for the typical member of the favored group could be described as a payout from “winning the birth lottery.”

College clearly is important, but contrary to conventional wisdom, your own college education does not completely level the playing field. The birth advantage (or disadvantage) remains. For example, compare rows 2 and 7 in the second-to-

Figure 5. Median Middle-Aged Family Income by Inherited Characteristics and Own Education



NOTES: Percentile rank is determined by the position of the median family in a particular partition element relative to the overall distribution of all families. Numbers highlighted in yellow in the next to last column represent the “head-start” effect. The last column shows the difference in

overall percentile ranks between the relevant elements in Partitions 3 and 4. Numbers highlighted in green represent the “upward-mobility” effect. Numbers highlighted in red represent the “downward-mobility” effect.

last column in Figures 5 and 6. The income and wealth of a nongrad with the most advantaged inherited demographics are 9 percent and 58 percent higher, respectively, than the income and wealth of a college grad with the least advantaged inherited demographics.<sup>30</sup> In this comparison, inherited demographics—including the college education of the parents’ generation—outweighed the benefits of obtaining a college education.

**The returns on one’s own college education.**

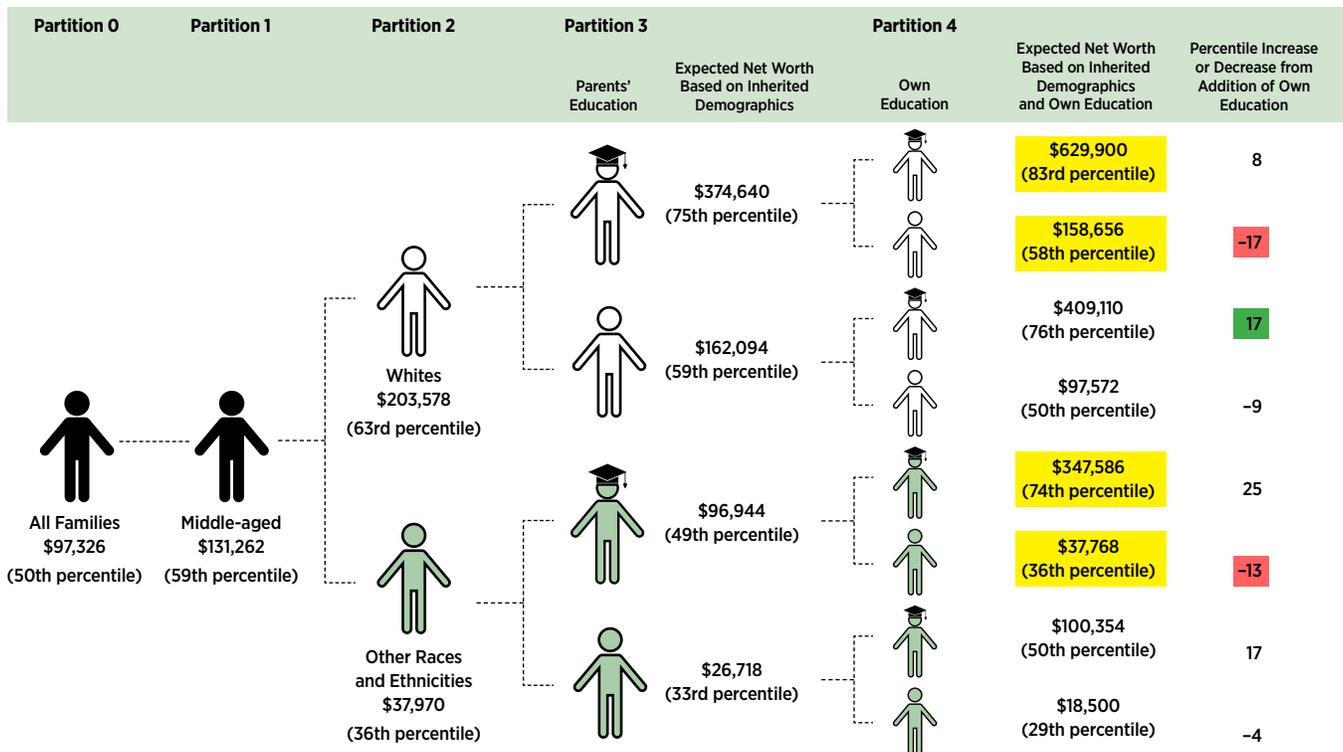
We highlight three key results related to the income and wealth implications of completing or not completing college in light of one’s inherited demographic characteristics. Each of the results is visible to some extent in all age groups and in both median income and median net worth measures. For ease of exposition, we highlight results only for middle-aged families.

**The head-start effect.** Certain inherited demographic characteristics are associated with consistently higher median income and median wealth.

As closer examination of Figures 5 and 6 and Tables 3 and 4 reveals, simply having at least one college-educated parent greatly boosts median income and wealth. (To see this, compare income or wealth differences in Partition 4 between row 1 and row 3; between rows 2 and 4; etc. Where it is present, this effect is highlighted in yellow.) In Figure 6, for example, among middle-aged white families headed by someone with a four-year degree, simply having a college-educated parent boosts median wealth to \$629,900 (the 83rd percentile), from \$409,110 (the 76th percentile) among otherwise similar families without a college-educated parent. Among middle-aged families of other races and ethnicities, the boost to median net worth associated with having a college-educated parent is from \$100,354 (the 50th percentile) to \$347,586 (the 74th percentile).

**The upward-mobility (or exceeding-expectations<sup>31</sup>) effect.** The second important result is that completion of a four-year college degree pays off proportionately more among groups with less-

Figure 6. Median Middle-Aged Family Net Worth by Inherited Characteristics and Own Education



See notes to Figure 5.

advantageous inherited demographic characteristics. (To see this, look in the last column of Figures 5 or 6 or Tables 3 or 4, contrasting rows 1 and 3 and rows 5 and 7. Where it is present, this effect is highlighted in green.) For example, middle-aged, white family heads whose parents were highly educated get an 8 percentile rank boost in median net worth above the level predicted purely by inherited characteristics when those family heads earn a college degree. That increase is large but much less than the 17 percentile rank boost for the group that was similar in all respects except that its parents were not well-educated. With a few exceptions, this pattern recurs throughout the figures and tables.

**The downward-mobility (or falling-short) effect.** The third clear result is that failure to complete a four-year college degree is more costly in terms of falling short of the demographically predicted level of income and wealth when one's parents included a college graduate. (To see this, look in the last column of Figures 5 or 6 or Tables 3 or 4, contrasting rows 2 and 4 and rows 6 and 8. This effect, which occurs in every comparison shown in the figures and tables, is highlighted in red.) The wealth and income shortfall

was 15 to 17 percentile ranks for a nongrad family head who was white and was the child of well-educated parents. This exceeded the 8 to 9 percentile rank decline of the otherwise similar families whose parents were not well-educated. (See rows 2 and 4 in the last column in Figures 5 and 6.) Nonetheless, the presence of college-educated parents provides a buffer of sorts, preventing the median member of the downwardly mobile groups from falling to the level of their nongrad counterparts without college-educated parents.

**The importance of inherited demographics for the income and wealth payoffs of college.** As we showed in the case illustrated in Table 2, it is possible to estimate how much of each demographically defined group's median income and median wealth deviations from overall median income or median wealth should be assigned to inherited demographics and how much to acquired characteristics—namely, a college degree. Table 6 summarizes our estimates for college graduates.

The college grad groups with the most-favorable inherited demographics—families headed by someone over 40 who identifies as white and has at least

**Table 3. Median Family Income by Inherited Characteristics and Own Education**

Partition 3: Percentile rank of median income based on inherited characteristics alone		Partition 4: Percentile rank of median income based on inherited characteristics and own education		Percentile rank difference associated with own education
<b>Family income: old families</b>				
<b>White, college parents</b>	64	College grad	77	13
		Nongrad	40	-24
<b>White, noncollege parents</b>	45	College grad	71	26
		Nongrad	36	-9
<b>Other race, college parents</b>	53	College grad	70	17
		Nongrad	34	-19
<b>Other race, noncollege parents</b>	27	College grad	61	34
		Nongrad	20	-7
<b>Family income: young families</b>				
<b>White, college parents</b>	54	College grad	66	12
		Nongrad	42	-12
<b>White, noncollege parents</b>	46	College grad	59	13
		Nongrad	41	-5
<b>Other race, college parents</b>	40	College grad	56	16
		Nongrad	34	-6
<b>Other race, noncollege parents</b>	34	College grad	57	23
		Nongrad	31	-3

See notes to Figure 5.

one college-educated parent—benefit from strong “tailwinds.” The first and fifth rows in the second-to-last column of Panels A and B in Table 6 indicate that the median members of the two groups that fit this description climb between 14 and 31 percentile ranks in income and wealth distributions simply by virtue of their inherited demographics. No other group of college graduates comes close to receiving a boost of this magnitude to their starting positions on both measures.

Nonetheless, some other college grad groups receive benefits from inherited characteristics. For example, families headed by someone who is middle-aged, identifies as another race or ethnicity and is part of a two-generation college-educated family (row 7 in the second-to-last column of Panels A and B in Table 6; also highlighted in Table 2 and the accompanying discussion) received a 12 percentile boost in income distribution. There was no boost to the group’s wealth ranking, however. Other groups

receiving modest boosts from inherited characteristics typically were 40 and older, or white, or both.

Inherited demographic characteristics also can reduce typical income and wealth, of course. Young families, those of other races or ethnicities and those without a college grad parent generally receive *negative* contributions from their inherited demographic characteristics. This means that, rather than enjoying a head start when they approach college and adult life, they actually are behind most other families.

Some of the income-earning and wealth-accumulating power of college therefore must be used to dig out from the disadvantage they face. For example, families headed by someone who is middle-aged, of a race or ethnicity other than white and whose parents were not college grads begin with a predicted income rank 10 rungs below the population median and a wealth rank 17 rungs below the median before their own education is

**Table 4. Median Family Net Worth by Inherited Characteristics and Own Education**

Partition 3: Percentile rank of median net worth based on inherited characteristics alone		Partition 4: Percentile rank of median net worth based on inherited characteristics and own education		Percentile rank difference associated with own education
<b>Family net worth: old families</b>				
<b>White, college parents</b>	81	College grad	87	6
		Nongrad	62	-19
<b>White, noncollege parents</b>	69	College grad	85	16
		Nongrad	62	-7
<b>Other race, college parents</b>	58	College grad	72	14
		Nongrad	44	-14
<b>Other race, noncollege parents</b>	42	College grad	72	30
		Nongrad	38	-4
<b>Family net worth: young families</b>				
<b>White, college parents</b>	35	College grad	42	7
		Nongrad	28	-7
<b>White, noncollege parents</b>	30	College grad	39	9
		Nongrad	28	-2
<b>Other race, college parents</b>	22	College grad	29	7
		Nongrad	18	-4
<b>Other race, noncollege parents</b>	24	College grad	31	7
		Nongrad	22	-2

See notes to Figure 5.

#### Sidebar 4: Links between Parents’ and Adult Children’s Education Levels

Table 5 displays the share of 2016 SCF two-generational families in each of four possible categories—both generations are college graduates; neither generation has a college graduate; only the parent generation has a college degree; and only the child generation has a college degree. The first panel shows all families, while the second and third panels show data for white families and families of other races and ethnicities, respectively.

The most important fact shown in all panels of Table 5 is that adults’ and children’s education levels tend to be the same, even when we use only a crude two-point scale. Fully 54 percent of all families have no college graduate in either generation; an additional 16 percent of families have college graduates in both generations. The remaining 30 percent of families

have different college-degree statuses across generations, with 12 percent having a college grad only in the older generation and 18 percent only in the younger generation. We termed the younger generation in the former group downwardly mobile and, in the latter group, upwardly mobile.

The remaining panels of Table 5 show that, while the basic patterns are similar among whites and other races separately, important differences also exist. Two-generational white families are somewhat less likely to have no college graduates in either generation and somewhat more likely to have at least two generations of college graduates. Families of other races with college degrees in both generations are uncommon—only about one in eight, compared to about one in five among whites.

**Table 5. Parents' and Own Education: Percentage of All Families**

All families			
Parents' education	Own education		All
	Nongraduate	Four-year college degree	
Nongraduate	54	18	72
Four-year college degree	12	16	28
All	66	34	100
Non-Hispanic white families			
Parents' education	Own education		All
	Nongraduate	Four-year college degree	
Nongraduate	34	13	47
Four-year college degree	8	13	21
All	42	26	68
Other races and ethnicities			
Parents' education	Own education		All
	Nongraduate	Four-year college degree	
Nongraduate	20	5	25
Four-year college degree	4	4	7
All	24	8	32

See notes to Table 1 for definitions of race and ethnicity, and college attainment. Numbers are rounded.

taken into account. (See row 8 in the fourth column in both panels of Table 6.)

Comparing the last two columns in Table 6, only two groups out of 12 college grad groups—namely, middle-aged and old whites with college grad parents—receive more than half of their total advantage over population median income and wealth levels by dint of their inherited demographic characteristics alone.<sup>32</sup> The tailwinds these families enjoy are particularly strong for wealth accumulation, with the vast majority of their advantage due to winning the birth lottery rather than to their own education.

#### **IV. The Effect of Parents' Education on How Their Adult Children Handle Money**

Why does the education of an adult child's parents matter so much to their income and wealth? Some of the inherited advantage plausibly flows through greater monetary transfers (in gifts and bequests) and more-intensive childhood investments, particularly in education, provided by college-educated parents who also are, in general, wealthier than nongrad parents.

Another likely source of inherited advantage for

accumulating wealth is what we term balance sheet and financial behavior channels. Panel A in Table 7 shows that families headed by someone who is middle-aged and has at least one college graduate parent typically have a greater amount of safe and liquid assets at their disposal than families without a college grad parent. Strong balance sheet liquidity predicts higher wealth and greater resilience.<sup>33</sup> While families with a college grad parent typically hold a somewhat higher share of assets in residential real estate than other families, balance sheet leverage is no higher. This suggests that their real-estate holdings are less exposed to default risk.

Panel B of Table 7 shows that families with a college grad parent are more willing to take some risks to earn a higher return on investments. Respondents with a college grad parent score higher on a test of financial literacy. These families search more intensively when borrowing and investing. Families headed by someone with a college grad parent have a 10-percentage-point greater likelihood of saving regularly than other families. Finally, as explained in Sidebar 4, children tend to mirror their parents' educational attainment—respondents with a

**Table 6. College Graduates: Effects on Overall Median Levels Due to Inherited and Acquired Characteristics**

Inherited characteristics			Differences between Partitions 3 and 4	
Age of family head	Race or ethnicity of family head	College education of respondent's parents	Change from 50th percentile rank due to inherited characteristics	Change in rank due to own education (acquired characteristic)
<b>Panel A: Income</b>				
Old	White	College	14	13
		None	-5	26
	Other	College	3	17
		None	-23	34
Middle	White	College	30	7
		None	8	22
	Other	College	12	14
		None	-10	21
Young	White	College	4	12
		None	-4	13
	Other	College	-10	16
		None	-16	23
<b>Panel B: Net worth</b>				
Old	White	College	31	6
		None	19	16
	Other	College	8	14
		None	-8	30
Middle	White	College	25	8
		None	9	17
	Other	College	-1	25
		None	-17	17
Young	White	College	-15	7
		None	-20	9
	Other	College	-28	7
		None	-26	7

See notes to Table 1 for definitions of age group, race and ethnicity, and college attainment.

college grad parent are more likely to become college grads themselves. All of these facts point to tangible ways in which families with a college grad parent may accumulate more wealth than other families.

## V. Conclusions

We documented a strong relationship between SCF respondents' own education and their adult outcomes such as income and wealth. We also showed that inherited demographic characteristics modify the relationship in important ways. We concluded that inherited demographic characteristics are important predictors of income and wealth.

Our main focus was on the education level of a respondent's parents. This matters both because children tend to achieve educational outcomes similar to their parents' and because the effects of higher education appear to compound across generations. That is, having a college-educated parent enhances the income-earning and wealth-accumulating power of an adult child's college education.

We document three key results connecting education and wealth in a two-generation context. First, families headed by someone with favorable inherited demographic characteristics—being white, being over 40 and having parents who were

**Table 7. Balance Sheet and Financial Behavior Channels of Wealth Accumulation**

A. Balance Sheets by Parents' Education Level: Middle-aged Families		
Balance sheet measures	College grad parents	Nongrad parents
Median liquid assets	\$11,750	\$3,032
Median primary RRE/total assets	37.8%	33.5%
Median debt/assets	25.7%	25.9%

**Definitions**

**Liquid assets:** Safe and liquid assets include holdings of checking, savings, money market, and call accounts, certificates of deposit, savings bonds, and prepaid debit cards.

**Primary RRE/total assets:** Ratio of market value of primary residential real estate to total assets.

**Debt/assets:** Ratio of total liabilities to total assets.

B. Financial Behavior by Parents' Education Level: Middle-Aged Families		
Financial behavior measures	College grad parents	Nongrad parents
Financial Risk-Taking (Scale of 0 to 10)	5.0	4.3
Mean Test Score (Maximum score is 3)	2.4	2.1
Credit Search Intensity (Scale of 0 to 10)	7.2	6.7
Investment Search Intensity (Scale of 0 to 10)	6.5	6.0
Saving Rate (Percentage of households)	53.3	43.3

**Definitions**

**Financial Risk-Taking:** Self-assessed willingness to take financial risks when saving or making investments.

**Mean Test Score:** Sum of correct questions in assessment of financial literacy. For more information regarding specific questions asked, see variables X7558, X7559 and X7560 in the 2016 SCF codebook.

**Credit Search Intensity:** Self-assessed search intensity for best terms when borrowing money or obtaining credit.

**Investment Search Intensity:** Self-assessed search intensity for best terms when making saving and investment decisions.

**Saving Rate:** Share of households whose spending was less than income.

well-educated—on average earn significantly higher incomes and accumulate much more wealth than families without these characteristics.

Second, among college graduate families with the least-advantageous demographic characteristics, such as no college-educated parents, completion of a four-year degree typically boosts income and wealth far above the levels predicted solely from inherited characteristics.

Finally, we show that families with the most-advantageous inherited characteristics whose heads do *not* complete a four-year college degree suffer greater proportionate shortfalls of income and wealth than their predicted levels, compared to families whose heads also do not complete four-year degrees but who have less favorable inherited demographic characteristics.

To be fruitful, policy should build on the fact base established here. The return on college is large, on average, but it is unequal across the population and,

while positive, diminishes across successive generations of college graduates. Income and wealth disparities are deeply rooted because inherited demographic characteristics exert significant effects. In addition to race and ethnicity, as well as birth year and age, we have shown that parental education is another key background factor influencing the earning and wealth-accumulating power of a college education. ■

## Endnotes

- 1 The previous edition of *The Demographics of Wealth* appeared in 2015 and was based on data through 2013 (<https://www.stlouisfed.org/household-financial-stability/the-demographics-of-wealth>).
- 2 For expositional convenience, we use the term “head of household” interchangeably with “survey respondent.” In a small number of Survey of Consumer Finances (SCF) families, the identities of these individuals differ. The definitions and figures reported here always reflect the survey respondent.
- 3 Mirowsky and Ross (2017).
- 4 Zhu et al. (1996).
- 5 Reiman and Leighton (2017).
- 6 Isen and Stevenson (2010).
- 7 Cheng and Furnham (2012).
- 8 Emmons and Noeth (May 2015).
- 9 Friedline, Nam and Loke (2014).
- 10 McCarthy (2011).
- 11 Hanushek and Kimko (2000).
- 12 Bérenger and Verdier-Chouchane (2007).
- 13 The median income in 2016 among college-grad-headed, middle-aged white families with at least one college grad parent was \$156,756, compared with \$114,225 for otherwise comparable families without a college grad parent. Median wealth was \$629,900 among college grad families with at least one parent who also had a college degree, versus \$409,110 among similar college grad families without a college grad parent. All data are from the Federal Reserve’s (SCF).
- 14 Median income and wealth boosts from college-educated parents among nonwhite college families were 46 and 246 percent, respectively. Median income and wealth for nonwhite college grad children of college grad parents were \$102,681 and \$347,586, respectively. These levels were only 66 and 55 percent, respectively, of the levels enjoyed by their similarly educated white counterparts.
- 15 Pfeffer and Killewald (2017) and Pfeffer (Forthcoming) document strong intergenerational wealth and education links. They find that parental investments in children’s education may be even more consequential than monetary transfers.
- 16 Emmons and Ricketts (2017) found that balance sheet and financial behavior variables were strong predictors of family wealth in a multiple-regression framework.
- 17 This comparison includes families of all education levels, races and ages. The effect of a college grad parent on saving behavior is even more pronounced among families headed by someone of a race or ethnicity other than white or who is young or middle-aged. Among all nonwhite middle-aged (40- to 61-year-old) families, those headed by someone with at least one college grad parent were 17 percentage points more likely to save than otherwise similar families without a college-grad parent.
- 18 See Emmons and Noeth (May 2015).
- 19 This essay highlights just one inherited characteristic: parents’ education. The other two inherited demographic characteristics—race or ethnicity, and age and birth year—are the main focus of the forthcoming Essays No. 2 and 3 in the series, respectively.
- 20 See Bricker et al. (2017) for a description of the methodology and some results from recent waves of the SCF. See Emmons and Noeth (May 2015) for income and wealth trends through 2013 using four levels of educational attainment: less than high school; high school or GED; a two- or four-year college degree; and a postgraduate degree.
- 21 Comparing means (i.e., averages) rather than medians, the ratios were 31 and 18 percent, respectively.
- 22 All dollar amounts in this essay are expressed in 2016 dollars, deflated by the Consumer Price Index for All Urban Consumers, Research Series (CPI-U-RS).
- 23 A key implicit assumption in our approach is that the distribution of effort—that is, the range of how hard people work, from very little to very hard—is basically the same across groups. In particular, we assume that the typical or median amount of effort exerted is about the same across groups. Indeed, if we believed there were a systematic difference in the amount of effort the members of a particular demographically defined group exerted, we would attribute the effort difference itself to the demographic factor that defines the comparison groups. This assumption is important in ruling out

a potential explanation of differences in outcomes along the lines of “People with/without Characteristic X earn less income because they simply don’t work as hard.”

- 24 Figure 4 in Emmons and Noeth (July 2015) shows that income typically increases from a low level at the beginning of one’s working life to a peak near the end of the working life before declining in retirement. Figure 7 shows that wealth usually also rises into middle age but typically does not decline as much as income in old age.
- 25 See Emmons and Noeth (February 2015).
- 26 We divided the overall income and wealth distributions into 100 equal parts, or percentiles. Each median income and net worth statistic discussed here that falls between percentiles was assigned to the lower of the two.
- 27 We assumed that parental education, which is outside of the respondent’s control, was completed prior to birth or very early during development in the vast majority of cases.
- 28 Income and wealth rankings were determined separately, so the median families mentioned here are not necessarily the same ones.
- 29 Compare the values shown in the highest and the lowest elements of Partition 3.
- 30 The median income and wealth of a white, middle-aged nongrad with at least one college-educated parent were \$76,758 and \$158,656, respectively, while the median income and wealth of a middle-aged college grad of another race or ethnicity without college-educated parents were \$70,479 and \$100,354, respectively.
- 31 We term this the “exceeding-expectations” effect because only a quarter of children without college-educated parents complete college themselves. (See Sidebar 4 and Table 5.)
- 32 See rows 1 and 5 in both panels of Table 6. Old white college grads without college grad parents (row 2) receive more than half of their total wealth, but not income, advantage from inherited characteristics.
- 33 Emmons and Ricketts (2017).

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