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Intergenerational Mobility using Income, Consumption, and Wealth

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June 2023

https://equitablegrowth.org/working-papers/intergenerational-mobility-using-income-consumption-and-wealth/

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Intergenerational Mobility using Income, Consumption, and Wealth

By Jonathan Fisher and David S. Johnson

Abstract

We use fifty years of the Panel Study of Income Dynamics to study the intergenerational correlation in income, consumption, and wealth to answer the question: is intergenerational mobility similar across the three resource measures? Absolute mobility is highest for consumption, followed by income and wealth. Income exhibits the highest intergenerational correlation, or lowest relative mobility, followed closely by consumption. Wealth exhibits much lower relative mobility. We also look at differences in relative mobility by race, sex, and parental wealth.

Key words: intergenerational mobility; income; consumption; wealth
JEL codes: D12; D3; E21

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We thank Russell Sage Foundation for funding support and Nishaad Rao for research assistance. We also thank Bhash Mazumder, Jim Ziliak, Fabian Pfeffer, and Luigi Pistaferri for comments, along with seminar participants at the University of Kentucky, the World Inequality Conference 2021, the 2022 Washington Center for Equitable Growth Grantee Conference, and ASSA 2023 Conference.

1. Introduction

Parental status plays an important role in the status of their children. Parents with high (low) resources are more likely to have offspring with high (low) resources as adults. Income is used most often to study intergenerational mobility because of income's availability (Chetty, Hendren, Kline, and Saez, 2014). Other measures include wealth (Charles and Hurst 2003), consumption (Charles, Danziger, Li, and Schoeni 2014), welfare receipt (Hartley, Lamarche, and Ziliak 2022), education (Ward 2021), occupation (Long and Ferrie 2013), and health (Halliday, Mazumder, and Wong 2021).

We study the intergenerational correlation in income, consumption, and wealth for the same individuals, measuring parental resources and offspring resources when the offspring were 14-18-years old and 31-35-years old for all three resource measures. Becker and Tomes (1986) build the theoretical foundation and discuss the correlation in income and in consumption. Parents trade-off between their own consumption and the consumption of future generations. Parents maximize utility by choosing the optimal investment in their children. The investment, along with luck, determines the child's income as an adult. The correlation in income creates correlations in consumption and wealth. We test whether intergenerational mobility is similar across the three resource measures.

Using income, consumption, or wealth alone to measure the intergenerational correlation is imperfect. Each resource measure conveys partial information about cross-sectional inequality (Fisher, Johnson, Smeeding, and Thompson 2022), and each measure alone provides an incomplete picture of intergenerational mobility. Income exhibits the command over current resources. However, offspring from a high-income family may choose a lower-paying occupation with high non-monetary benefits (Boar and Lashkiri 2021). Consumption more closely measures well-being and is closer to permanent income, providing a more accurate snapshot of long-term well-being than income. However, credit constraints, hyperbolic discounting, and precautionary savings translate into a hump-shaped age-consumption profile (Attanasio et al. 1999; Fisher and Johnson 2021), degrading consumption's ability to proxy permanent income. Consumption and wealth capture inter vivos transfers and bequests from older to younger generations, potentially creating less mobility at the top of the distribution that may not be captured by income. The three resource measures are also linked through the budget constraint, with income turning into consumption and savings/wealth.

We use fifty years of the Panel Study of Income Dynamics (PSID) by imputing consumption every wave and by imputing wealth in the waves it is not reported. The PSID remains the standard for intergenerational mobility in the United States (Mazumder 2018). We improve upon existing research by using the same sample of parents and offspring for each resource measure and by measuring parental resources and offspring resources at the same ages for each measure.

We estimate two common measures of relative mobility – the rank-rank slope and the intergenerational elasticity. We expand the list of mobility measures by estimating the Gini mobility index. The Gini mobility index is a hybrid of the rank-rank slope and intergenerational elasticity in that the Gini mobility uses the rank in the distribution and the level of resources.

The research on intergenerational mobility also examines absolute mobility. Absolute mobility, when defined as whether children have higher resources than their parents, fell dramatically in the twentieth century (Chetty et al. 2017; Berman 2022). These findings lack linked parents and offspring and instead rely on changes in the cross-sectional distributions. We use linked parent-offspring pairs with birth cohorts from the 1950s to the early 1980s to confirm the existing income findings and expand the findings to consumption and wealth. Davis and Mazumder (2017) also use income with linked offspring and parents from older generations, and we expand their work to more recent cohorts and by adding consumption and wealth.

We begin by showing that absolute upward mobility is highest for consumption, with 64% of offspring consumption at ages 31-35 exceeding parental consumption when the offspring were 14-18-years old. Absolute mobility is lower for income (59%) and wealth (41%). We then look at trends in absolute mobility across birth cohorts and find a similar level and trend in absolute income mobility as Berman (2022) and Chetty et al. (2017). Consumption absolute mobility is higher than income absolute mobility for our oldest cohort, but consumption mobility falls faster than income mobility, resulting in lower consumption absolute mobility for our youngest cohort.

Income relative mobility is lowest, followed by consumption. Wealth displays the highest relative mobility, or the lowest correlation between parents and offspring. The higher wealth mobility occurs throughout the entire distribution, unlike income and consumption which exhibit much higher stickiness at the top and bottom of the distributions. The higher consumption and wealth mobility is not due to imputation.

Finally, we examine heterogeneity in relative mobility along several dimensions. We find a higher rank-rank slope for our three youngest cohorts, which would be indicative of declining intergenerational mobility, but the standard errors are too large to place much confidence in this finding. We do, however, see more convincing evidence that the youngest cohort has a lower rank-

rank intercept, indicating that there is less upward mobility from the bottom of the distribution and more downward mobility at the top for our youngest cohort.

We find more upward mobility from the bottom of the distribution and less downward mobility in the top of the distribution for White offspring compared to Black offspring for income, consumption, and wealth. The average Black offspring born into the top decile of consumption or wealth ends up below the median. The average White offspring born into the top decile of consumption or wealth ends up around the 70^{th} percentile. These differences are the product of institutions, policies, and practices in the United States that deny equal opportunity to Black offspring (Darity and Mullen 2020; Derenoncourt, Kim, Kuhn, and Schularick 2022).

We explore intergenerational mobility by sex. We find that females experience a lower intercept but identical slope for all three resource measures. The lower intercept for females is driven solely by non-married females. When combining race and sex, Black females face a double gap in intergenerational mobility, one gap for their race and one gap for their sex. The rank-rank slope for Black females is 0.1, indicating that the average Black female born into the top wealth decile only ends up 10 percentiles higher than the average Black female born into the bottom decile.

Finally, we study differences by parental wealth. Parental wealth may complement investments from current income (Becker, Kominers, Murphy, and Spenkuch 2018). High parental wealth is correlated with upward income mobility from the bottom of the income distribution and with lower downward income mobility from the top of the income distribution, suggesting that parental wealth supplements parental income.

2. Related Literature

Previous literature comparing income and consumption intergenerational mobility reach different conclusions. Mulligan (1997), Aughinbaugh (2000), and Gallipoli, Low, and Mitra (2022) use the intergenerational elasticity and find an income elasticity lower than the consumption elasticity. Attanasio and Pistaferri (2016) use reported consumption in the PSID and compare it to income using the rank-rank slope, and they find a higher slope for income than consumption. Eshaghnia, Heckman, Landers, and Qureshi (2022) find that consumption has a higher intergenerational elasticity but a lower rank-rank correlation than income. Waldkirch, et al. (2004) and Charles, et al. (2014) use a transition matrix to describe the relationship between the consumption of parents and children. Waldkirch et al. (2004) find more consumption stickiness at the top of the distribution and similar stickiness at the bottom, while Charles et al. (2014) find the opposite. Charles et al. (2014) also present an intergenerational elasticity for income (0.26) and an elasticity for three measures of consumption: food (0.15), imputed total consumption (0.12), and reported consumption (0.28). They also present a rank-rank slope that is slightly lower for income (0.27) than consumption (0.29).

Comparing intergenerational mobility between income and wealth provides no clearer conclusions. Mulligan (1997) and Brady, Finnigan, Kohler, and Legewie (2020) find a higher intergenerational elasticity of wealth than income. Charles and Hurst (2003) reach the opposite conclusion. Pfeffer and Killewald (2018) present the rank-rank slope for wealth using the PSID, and find it in the range of 0.33-0.44, with a higher rank-rank wealth slope at older ages for the children. They do not present a rank-rank slope for income.

We build on the intergenerational mobility literature in several important ways. We are the first to examine income, consumption, and wealth mobility for the same individuals in the United States using parental resources when the offspring were in the home. Mulligan (1997) uses the PSID to detail intergenerational mobility in income, consumption, and wealth. However, Mulligan (1997) does not measure parental resources when the offspring were children. Parental wealth is measured in the same years as offspring wealth. Parental income and consumption are measured when the offspring may have been living outside the parental home. We improve upon Mulligan (1997) by measuring parental income, consumption, and wealth when the offspring were 14-18-years old.

Black, Devereux, Lundborg, and Majlesi (2020) study income, consumption, and wealth mobility in Sweden, primarily focusing on differences between biological and adopted children. They find the least mobility for wealth, followed by income and consumption. The ages at which each resource is measured differ. Parental income is measured when the offspring are children, while parental wealth and consumption are measured at different points when the offspring are adults. Offspring resources as adults are also measured at different ages depending on data availability. It is difficult to definitively state that there is less mobility in wealth than income for these children because the resources are measured at different ages.

The primary mechanism in the intergenerational mobility literature is the investments parents make in their children while their offspring are young. Parental resources shape adult outcomes (e.g., Bailey, Hoynes, Rossin-Slater and Walker 2020; Hardy and Marcotte 2022). We make a more direct connection to the theoretical models by using parental resources while the offspring are in the home. Parents may also transfer resources to children when their children are adults for various reasons from starting a business (Lindquist, Sol, and Van Praag 2015) or helping with a mortgage down payment (Charles and Hurst 2002). Parents acting as a safety net is interesting and studied (e.g., Boar 2021), but parents as safety net is not what we want to capture when measuring intergenerational mobility. Adult offspring may also transfer resources to their parents, creating a correlation in income, consumption, and wealth that is the opposite of what we want to measure.

We further improve on Mulligan (1997) and Black et al. (2020) by looking at differences in intergenerational mobility by demographic characteristics. While differences in income mobility have been estimated by race and by sex (e.g., Bloome 2014; Mazumder 2014; Chetty et al. 2020; Jacome, Kuziemko, and Naidu 2021; Ward 2021), less has been done on wealth by race and sex (Pfeffer and Killewald 2018) and nothing using consumption by race and sex.

Theoretical models of intergenerational mobility differ in using income, earnings, and consumption. Some model the transmission of earnings through parental investments in children (Becker and Tomes 1979; Solon 2004), while others more directly model parents maximizing their own consumption and their children's consumption (Becker and Tomes, 1986; Koeniger and Zanella 2022). Parents impact children's resources through three channels: (1) the endowment effect; (2) investments in children's human capital development; and (3) direct transfers to adult offspring. All three mechanisms operate through income. Income transmission feeds into consumption and wealth. Consumption and wealth mobility should be highly correlated with income mobility. The strength of the correlation in consumption and wealth will depend on the correlation in preferences and on the credit frictions in the two generations (Attanasio and Pistaferri 2016). Thus, there is no clear prediction for differences in intergenerational mobility in income, consumption, and wealth without additional structure in the theoretical models or without changes across generations such as changes in preferences, rates of return, assortative mating, or fertility.

3. Data

We use fifty years of data, 1968-2017, from the Panel Study of Income Dynamics (PSID). The PSID continues to be the workhorse for intergenerational mobility in the United States (Mazumder 2018). The PSID follows its original family members and their descendants. The PSID surveyed households annually until 1997 and every other year since 1997.

3.1 Resource measures

The PSID asks the same income components every wave. Total household income equals the sum of taxable income, cash transfer income, and social security income for the head, spouse/ partner, and other family units in the household. Before-tax income remains standard in the intergenerational mobility literature, even for those using tax records.

Spending on food at home and food away from home is available almost every wave of the PSID, as is food stamp/SNAP benefits. The PSID administers a more complete set of consumption questions since 1999. We use imputed total consumption, which imputes total consumption to every PSID wave using the Consumer Expenditure Survey (Fisher and Johnson 2021). Consumption includes the amount that the household spends for current consumption for food, housing, transportation, apparel, medical care, entertainment, and miscellaneous items. Housing and vehicles equal the estimated service flows.

Consumption is imputed five times following multiple imputation methods (Rubin 1987), creating five imputes. Reported coefficients represent the average of the five regressions. We adjust the standard errors for imputation, following Rubin (1987). Crossley, Levell, and Poupakis (2022) propose an alternative method to adjust standard errors for the imputation of consumption. Rubin (1987) and Crossley et al. (2022) adjust standard errors for the uncertainty inherent to imputation.

Wealth is not asked in every wave until 1999. Before 1999, wealth is available for 1984, 1989, and 1994. Using information on home value, along with interest and dividend income, we impute both home equity and non-home equity wealth in the remaining waves. Household wealth is the total of eight asset variables minus debt. Asset variables are farm and business, checking and savings, other real estate, stocks, vehicles, other assets (i.e., life insurance policy), annuity/IRA, and home equity.

Our resource measures adjust for lifecycle bias (Solon 1999). We observe parental resources when the offspring are 14-18-years old, which occurs at different ages in the parents' lifecycle. We address lifecycle bias by regressing the resource measure on a quartic in the age of the household head. The residual from that regression represents the parental resource measure. We use the natural log of consumption and the inverse hyperbolic sine of income and wealth. The inverse hyperbolic sine transformation permits the inclusion of zero and negative values rather than dropping them or reassigning them an arbitrary positive value.

We average resources over five calendar years to account for measurement error and transitory income shocks (Solon 1992). We measure all resources at the family level and adjust for family size using the square root of family size as the equivalence scale. We use the CPI-U-RS to create real resource measures. Person weights are used throughout, and we cluster standard errors on the PSID family line.

3.2 Sample selection

We use two primary samples of offspring, using resources at different ages. Our parental measure of resources occurs when the children are 14-18-years old. Parental resources at those ages are relevant for both our relative mobility measures and our absolute mobility measures. Hardy and Marcotte (2022) find that living in poverty in the teenage years affects educational attainment, indicating that these ages are important for adult outcomes. Carneiro, Garcia, Salvanes, and Tominey (2021) find that children's human capital is maximized with steady parental income across the entire childhood, conditional on permanent income, and they find that income in the teenage years is more important than income in the middle childhood years. Cheng and Song (2019) find that the intergenerational correlation is not constant across ages of the parents or offspring and that the correlation is strongest when measuring parental resources when the offspring live with the parents. Lastly, children are more likely to remember parental resources in the teenage years, making those years more relevant for our absolute mobility measure.

The term *parent* describes the adult(s) the child is living with when observed. We average resources across ages 14-18 regardless of whom the child is living at the time and whether living arrangements change. At age fourteen, 96 percent of the children in our primary sample are the biological son or daughter of the household head, and the median age of the household head is 42.

Offspring resources as adults focus on ages 31-35 and 41-45. The rank-rank slope stabilizes after age 32 (Chetty et al. 2014). Age 40 minimizes lifecycle bias in earnings for the intergenerational elasticity (Haider and Solon 2006). Our sample size is larger at ages 31-35, allowing us to look at heterogeneity by more groups. We compare results at ages 41-45 for the same, more limited, sample to show how our results depend on the offspring's age. Our oldest offspring were born in 1954, making them age 14 in the first PSID wave. Our youngest offspring were born in 1982, allowing us to observe them when they were 31-35-years old from 2013-2017.

Our results limit the sample to offspring with at least three observations in childhood and in adulthood. The restriction addresses attenuation bias due to volatility in the resource measure (Haider and Solon 2006). Previous research documents significant annual income volatility (Hardy and Ziliak 2014) and annual consumption volatility (Gorbachev 2011) that would attenuate our results if not averaged over several waves.

4. Relative Mobility Measures

We present several relative mobility measures: the intergenerational elasticity (IGE), the rank-rank slope, and the Gini index of mobility. Each measure provides information on the correlations between parent's and adult children's resources. Our primary interest lies in the relative strength of the correlation across our three resource measures – income, consumption, and wealth. These relative mobility measures may differ across resource measures because the mobility measures exhibit a different sensitivity to the variance, as described below in more detail.

4.1 Intergenerational Elasticity

The intergenerational elasticity captures the full variance in each resource measure by estimating the strength of the correlation in log levels. The intergenerational elasticity is estimated by regressing the log of offspring resources, lnY^C, on the log of parental resources, lnY^P.[1]

$$(1) \qquad lnY_i^C = \delta + \beta^{IGE} lnY_i^P + \mu_i$$

$$(2) \qquad \beta^{IGE} = \frac{cov(lnY^P, lnY^C)}{var(lnY^P)}$$

The intergenerational elasticity, β^{IGE}, describes the elasticity between offspring resources and parental resources. A higher value indicates less mobility. The regression results also include year fixed effects. As mentioned above, we adjust for lifecycle bias. Adjusting for lifecycle bias means we use the residualized values in equation (1) in place of lnY^C and lnY^P.

4.2. Rank-rank slope

The rank-rank slope compresses the distribution by using the offspring's rank in the offspring distribution and the parent's rank in the parent distribution. An ordinary least squares regression of offspring rank in the distribution of resource measure Y, $F(Y^C)$, on the parent's rank, $F(Y^P)$, yields the rank-rank slope.

$$(3) \qquad F\left(Y_i^C\right) = \alpha + \beta^{RR} F(Y_i^P) + \varepsilon_i$$

$$(4) \qquad \beta^{RR} = \frac{cov\left(F(Y^P), F(Y^C)\right)}{var\left(F(Y^P)\right)}$$

[1] Our estimates can be interpreted as elasticities with the inverse hyperbolic sine transformation, as the mean of income and wealth are large (Bellemare and Wichman 2019). The correction provided in Bellemare and Wichman (2019) results in the same coefficients and standard errors as the ones presented in the tables below.

The rank-rank slope, β^{RR}, measures the strength in the correlation between offspring's rank and parent's rank. A higher rank-rank slope indicates a stronger correlation, or less mobility. We include year fixed effects in equation (3) to capture macroeconomic factors across cohorts.

Our primary results use deciles to create ranks. Deciles are assigned within the parent distribution and within the offspring distribution. Previous research finds non-linearities in the tails of the rank-rank slope (Chetty et al. 2014). We test the sensitivity of the results in the tails using percentiles instead of deciles, with little change in the rank-rank slope for any resource measure.[2]

4.3 Gini mobility

Our last relative mobility measure comes from Yitzhaki and Wodon (2004). The Gini index of mobility is that it is rooted in a standard inequality measure with known properties. As part of the interest in intergenerational mobility derives from increasing inequality (Becker and Tomes 1979; Corak 2013), it is useful to use a mobility measure rooted in inequality measurement.

The Gini index of mobility resembles the rank-rank slope and the intergenerational elasticity when viewing those two through their covariance formulation. The Gini mobility is:

$$(5)\quad Gini\ mobility = \frac{G^P\left(\frac{cov\left(lnY^P, F\left(Y^C\right)\right)}{cov\left(lnY^P, F\left(Y^P\right)\right)}\right) + G^C\left(\frac{cov\left(lnY^C, F\left(Y^P\right)\right)}{cov\left(lnY^C, F\left(Y^C\right)\right)}\right)}{G^P + G^C}.$$

G^P and G^C represent the more familiar Gini inequality coefficient for the parent and offspring generations. A higher Gini mobility again indicates less mobility. We alter the original Gini index of mobility formula such that larger values represent less mobility, making it comparable to the rank-rank slope and intergenerational elasticity.

5. Absolute Mobility

Absolute mobility captures the essence of the American Dream more than measures of relative mobility. Offspring exhibit upward absolute mobility if their equivalized resource exceeds the equivalized resource of their parents. The equivalence scale results compare standards-of-living. We show results without an equivalence scale as well. The results without the equivalence scale compares the actual dollars received, consumed, or accumulated.

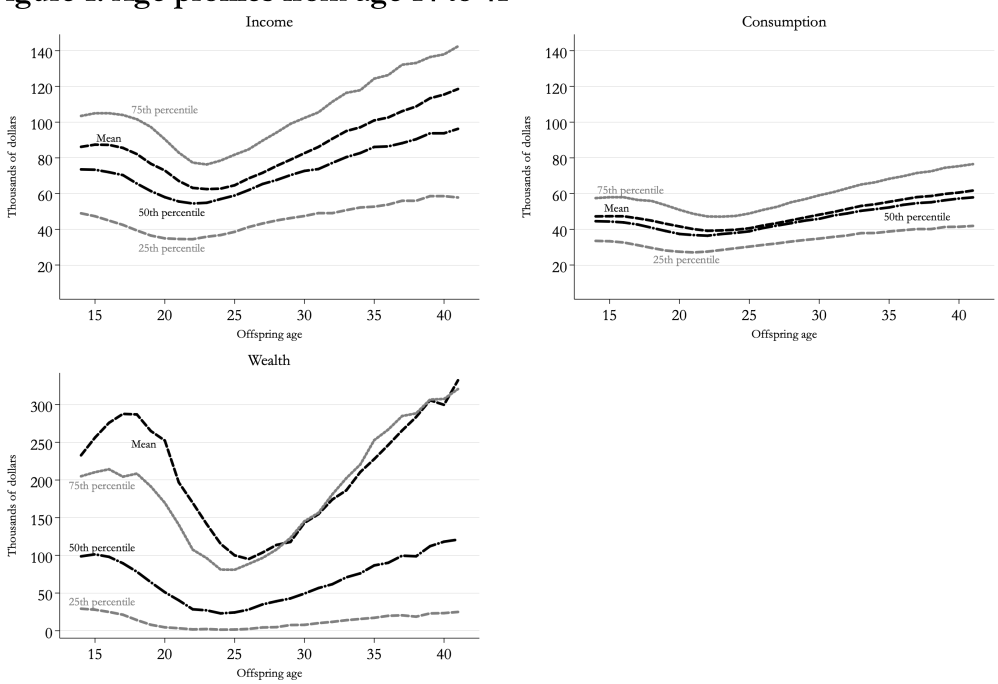
We begin by presenting simple age profiles for income, consumption, and wealth from age fourteen to forty-one for our sample of offspring we observe at both ages. These profiles preview

[2] Results using percentiles are available upon request.

the absolute mobility results. Because our age profiles end at age 41, we do not observe the lifecycle peak for income, consumption, or wealth. Income and consumption peak when individuals are in their early 50s, and wealth peaks in the 60s (Fisher and Johnson 2021).

All three resource measures first peak in the late teens and fall as offspring form their own households (Figure 1). Income and consumption rise again at age twenty-four, while wealth begins increasing at age twenty-seven. Mean and median income and consumption in adulthood exceed mean and median at age fourteen when the offspring reach their early 30s. Median offspring wealth does not exceed median parental wealth until forty-years old. Figure 1 shows signs of increasing inequality with age, as in Deaton and Paxson (1994). The interquartile range begins increasing for income at age 26, age 25 for consumption, and age 34 for wealth.

Figure 1: Age profiles from age 14 to 41



Notes: Sample size is 2,229. The square root of family size is used as the equivalence scale. Source: Author's calculations using the Panel Study of Income Dynamics.

Our absolute mobility results match the basic patterns from the lifecycle profiles. Consumption absolute mobility is the highest at 64%, followed by income (59%) and wealth (41%) (Table 1). The pattern is the same when not using an equivalence scale. Absolute mobility is higher using equivalence scales because of the decline in average family size.

We show absolute mobility results for ages 41-45 as well. Ages 41-45 represent a logical comparison age. The median age for parents is 42-years old when the offspring are 14-18-years old.

Absolute mobility is higher at ages 41-45 due to lifecycle patterns (Figure 1). It remains the case that consumption absolute mobility is highest, and wealth mobility is lowest.

Table 1: Absolute mobility by resource measure

	Income	Consumption	Wealth
Ages 14-18 & 31-35			
Using equivalence scale	59%	64%	41%
No equivalence scale	51%	52%	39%
Ages 14-18 & 41-45			
Using equivalence scale	71%	81%	58%
No equivalence scale	64%	71%	56%

Notes: The equivalence scale is the square root of family size. The sample size is 4,041 for ages 31-35 and 2,229 for ages 41-45. Source: Author's calculations using the Panel Study of Income Dynamics.

We calculate absolute mobility by race, sex, and parental education. The results follow a consistent pattern. When one group of offspring is more likely to be found in the bottom of the parent distribution, the group more likely to be found in the bottom of the parental distribution exhibit greater upward absolute mobility. It is easier to exceed parental resources when parental resources are low.

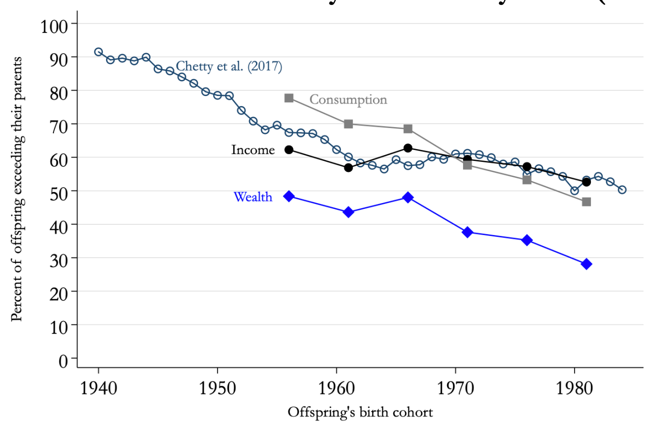
Lastly, we look for the incidence of upward absolute mobility across all three measures simultaneously. Almost 80 percent of children exceed parental resources on at least one measure, and 28 percent of offspring exceed their parents on all three. Another 30 percent exceed their parents on two measures, with two out of three of those exceeding their parents on income and consumption. The remaining 22 percent of children exceed their parents on only one resource measure, with almost half of them exceeding parental consumption.

5.1 Trends in absolute mobility

A key question in the literature is whether absolute mobility is falling. Guvenen, Kaplan, Song, and Weidner (2022) imply no change in absolute earnings mobility or potentially a fall in absolute earnings mobility since the 1970s birth cohort, depending on the inflation measure used. Chetty et al. (2017) and Berman (2022) estimate absolute income mobility but lack longitudinal linkages between parents and offspring. We use longitudinal data and compare our results to Chetty et al. (2017) for our five-year age cohorts from 1956-1981. We center our results graphically at the middle year of the five-year age band.

We find similar magnitudes for absolute income mobility to Chetty et al. (2017). The level and trend are almost identical in Berman (2022). For offspring born in the mid-1950s, we estimate that 62% exceed their parent's income (Figure 2), while Chetty et al. (2017) estimate it at 67%. We observe an increase like Chetty et al. in the mid-1960s' cohorts, followed by a steady decline to our youngest cohort, with our estimate and theirs around 53% in 1981. Davis and Mazumder (2017) estimate absolute mobility using two waves of the National Longitudinal Survey, finding that 62% of females from the 1949-1953 birth cohort exceed their parent's income, and 52% of females in the 1961-1964 birth cohort exceed their parent's income. They show a similar but smaller decline for males, from 44% to 35%. They measure income at younger ages for males, explaining the difference in the levels. We also show a decline around the same birth cohorts.

Figure 2: Absolute mobility by birth cohort and by resource measure, in comparison to income absolute mobility from Chetty et al. (2017)



Notes: The sample size is 4,041. Source: Author's calculations using the Panel Study of Income Dynamics, and Chetty et al. (2017).

We find striking differences for consumption and wealth (Figure 2). Consumption absolute mobility is higher than income for our oldest cohort at 68% in 1956, but consumption mobility is lower than income mobility for the 1981 cohort at 47%. The higher consumption mobility when pooling cohorts in Table 1 is driven by the older cohorts. Wealth mobility is always below income and consumption mobility. Wealth mobility falls over time, from 48% to 28%. The common pattern across the measures is decreasing absolute mobility over time.

6. Relative Mobility

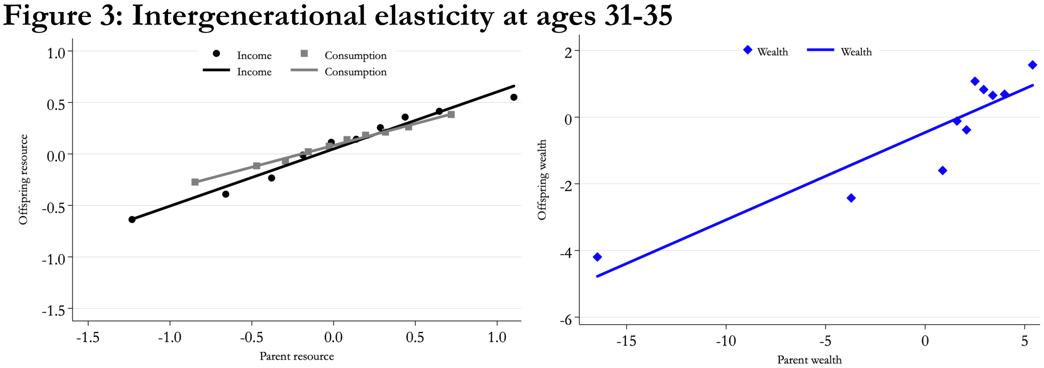
We begin by documenting the relative strength of intergenerational mobility for income, consumption, and wealth. Which resource measure displays the strongest correlation between parents and offspring?

6.1 Intergenerational elasticity

A simple bin-scatter plot displays the main finding (Figure 3). Income shows the highest correlation, or least mobility, using the intergenerational elasticity (0.53), followed by consumption (0.45) and wealth (0.26) at ages 31-35 (Table 2). The income intergenerational elasticity is in line with existing research, which finds an IGE around 0.60 (Mazumder 2005). The consumption intergenerational elasticity exceeds most previous findings. Charles et al. (2014) find an elasticity from 0.12-0.28, depending on the consumption measure. Charles et al. measure parent and offspring consumption in the same PSID waves (2005-2007), while we measure parental consumption when the offspring were 14-18-years old.

The wealth intergenerational elasticity (0.26) is below the wealth elasticity from Charles and Hurst (2003) of 0.37. Charles and Hurst (2003) drop those with zero and negative wealth, while we use the inverse hyperbolic sine transformation to retain them. Over thirteen percent of parents have negative wealth when their offspring is 14-18-years old, and over eighteen percent of offspring have negative wealth at ages 31-35. Negative wealth may be an indicator of poor financial shape, indicating that those with negative wealth are like those with zero or small positive wealth. Those with the largest negative wealth are more likely to have student debt (Armantier, Armona, De Giorgi, and van der Klauww 2016), suggesting that some with negative wealth may have higher expected income growth and therefore higher expected wealth growth. When dropping those with negative wealth, the intergenerational elasticity for wealth is higher but still lower than income and consumption (Appendix Table A1). Daysal, Lovenheim, and Wasser (2022) also find that negative wealth affects the strength of the intergenerational correlation.

Figure 3: Intergenerational elasticity at ages 31-35



Notes: Parental resources are measured when the child is 14-18 years old. Child resources are measured when the child is 31-35 years old. Lifecycle bias corrected values are shown, with consumption values using the log transformation and income and wealth using the inverse hyperbolic sine transformation. Ten bins are used. Source: Author's calculations using the PSID.

Table 2: Intergenerational elasticity

	Income	Consumption	Wealth
Ages 14-18 & 31-35 (n=4,041)			
Slope	0.53	0.45	0.26
	(0.025)	(0.026)	(0.034)
Ages 14-18 & 41-45 (n=2,229)			
Slope	0.46	0.39	0.25
	(0.036)	(0.035)	(0.034)

Notes: Each set of results adjusts for lifecycle bias, includes year fixed effects, and limits the sample to those with at least three values for parental resources and offspring resources. Standard errors shown below the coefficient. Standard errors are clustered on PSID family line. Source: Author's calculations using the PSID.

We check the sensitivity of our results to different ages when we measure offspring resources. The relative ordering holds using ages 41-45 for the offspring (Table 2). Previous PSID research finds that bias is minimized in the intergenerational elasticity using offspring income around age 40 (Haider and Solon 2006). Others find that the income rank-rank slope stabilizes after age 32 (Chetty, et al. 2014). Pfeffer and Killewald (2018), Boserup, Kopczuk, and Kreiner (2017), and Daysal, Lovenheim, and Wasser (2022) find the wealth rank-rank slope increases with age. Fisher and Johnson (2021) find that the intragenerational rank-rank slope for wealth increases with age, while it is flat for income and consumption.

6.2 Rank-rank slope

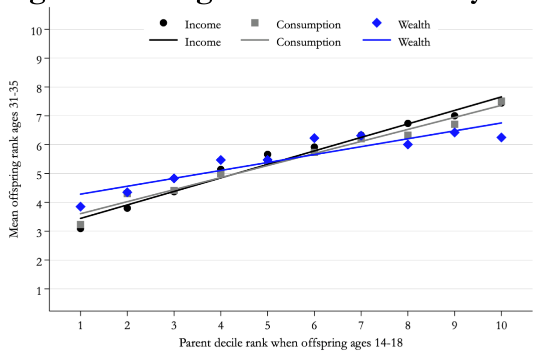
The rank-rank results match the intergenerational elasticity results. Income exhibits the highest correlation, or lowest mobility, followed closely by consumption, with a larger difference for wealth (Figure 4). The rank-rank slope is 0.47 for income, 0.45 for consumption, and 0.29 for wealth (Table 3).[3] The rank-rank slope converges across the three resource measures at ages 41-45. While the rank-rank slope ordering remains the same, the rank-rank slope falls for income and consumption and rises for wealth at ages 41-45 (Table 3). The 95% confidence intervals overlap for the three resource measures when using ages 41-45. Compressing the wealth distribution by using ranks leads to the convergence in the rank-rank slopes.

Our income rank-rank slope (0.40-0.47) is higher than is found using tax data (0.34 in Chetty et al. 2014). Our higher slope could arise from several differences. First, our conceptualization of

[3] The relative rank-rank slopes follow the same pattern with quantile regressions. Wealth mobility is highest at the 25th, 50th, and 75th percentiles, followed by consumption and income. Like Acciari, Polo, and Violante (2022) find for income, we find less mobility at the median than at the mean.

parent is different. We use residential parents, while Chetty et al. define parents using tax claiming status. We also include non-taxable sources of income. The rank-rank slope for labor market income in our sample is 0.37 at ages 31-35, closer to the estimate in Chetty et al. (2014). Mazumder (2015) uses three years of offspring income and five years of parental income from the PSID and finds a rank-rank slope of 0.38.

Figure 4: Intergenerational mobility using rank-rank slope at ages 31-35



Notes: Sample size is 4,041. Ranks use residualized values to account for lifecycle bias. Source: Author's calculations using the Panel Study of Income Dynamics.

Table 3: Rank-rank slope

	Income	Consumption	Wealth
Ages 14-18 & 31-35 (n=4,041)			
Slope	0.47	0.45	0.29
	(0.020)	(0.023)	(0.021)
Ages 14-18 & 41-45 (n=2,229)			
Slope	0.40	0.38	0.36
	(0.027)	(0.028)	(0.026)

Notes: Standard errors shown below the coefficient. Standard errors are clustered on PSID family line. The resource measure is residualized before creating the rank. Each regression includes year fixed effects. Source: Author's calculations using the PSID.

Our higher income rank-rank slope highlights the importance of using the same sample to study differences in intergenerational mobility using different measures. Had we simply compared our consumption rank-rank slope (0.38-0.45) to Chetty et al. (2014), we would conclude that consumption exhibits a higher rank-rank slope than income. When using the same sample, we find a slightly higher income correlation than consumption correlation. This result reinforces the difficulty in comparing findings with different samples and different definitions of parents.

Imputation lowers the intergenerational correlation for consumption and wealth. A sufficiently noisy imputation could negate our findings that the intergenerational correlation is lower for consumption and for wealth compared to income. The PSID includes a more comprehensive consumption measure starting in 1999, and wealth is reported in every wave since 1999. We create a sample of parent-offspring pairs for those 14-16-years old in 1999. We measure adult resources when the offspring are 30-32-years old. The rank-rank correlation and intergenerational elasticity for reported consumption and reported wealth exceed the imputed measures, as expected (Appendix Table A2). Despite the higher intergenerational correlation for reported consumption and wealth, the relative rankings across income, consumption, and wealth do not change. The intergenerational correlation remains highest for income (0.48), followed by consumption (0.46) and wealth (0.30).

The results are further expanded to include all waves when wealth is reported (1984, 1989, 1994, and 1999-2017). The wealth rank-rank slope remains lower (0.21) than the income rank-rank slope (0.41), and the same holds for the intergenerational elasticity (Appendix Table A3). Imputation is not driving our main results.

Transition matrices confirm the basic rank-rank results. Income and consumption display twin peaks in the tails, like the twin peaks found in intragenerational mobility for income and consumption (Bowles and Gintis 2002; Fisher and Johnson 2006). Income and consumption are similar in the off-diagonal cells, with rarely more than a one or two percentage point difference in corresponding cells (Appendix Table A4). Wealth does not display the twin peaks. Higher wealth mobility occurs throughout the entire parental distribution.

6.3 Gini mobility

We are the first to use the Gini index of mobility (equation 5) for intergenerational mobility. Income continues to exhibit the least mobility, followed by consumption and wealth (Table 4). The patterns across ages within a resource measure match the rank-rank slope and intergenerational elasticity results. Income mobility is lowest (0.56), followed by consumption (0.50) and wealth (0.36).[4] The difference between wealth and the other two measures is large, like it is for the intergenerational elasticity, reinforcing the idea that the higher variance in wealth drives the lower intergenerational correlation.

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[4] Following Wodon and Yitzhaki (2005) and Fisher and Johnson (2006), we use the Gini mobility to decompose the change in social welfare to show the impact of growth between generations, the change in inequality between generations, and intergenerational mobility. For all three measures, the mobility and growth effects offset the increase in inequality, with wealth showing the largest social welfare gains because wealth mobility is highest. These results are available upon request.

Table 4: Gini index of mobility

	Income	Consumption	Wealth
Ages 14-18 & 31-35	0.56	0.50	0.36
Ages 14-18 & 41-45	0.49	0.44	0.42

Notes: Each set of results adjusts for lifecycle bias and limits the sample to those with at least three values for parental resources and offspring resources. Source: Author's calculations using the PSID.

7. Heterogeneity in Relative Mobility

Another key concern is whether there is heterogeneity in intergenerational mobility by characteristics of the parents or the offspring (Cholli & Durlauf 2022). We examine heterogeneity by several characteristics. The results are not causal or independent across characteristics.

All estimates use the rank-rank correlation. One advantage of the rank-rank slope is that it can measure heterogeneity in mobility with respect to the national resource distribution. Heterogeneity across groups in the intergenerational elasticity capture differences with respect to the group-specific mean (Mazumder 2015). Estimating the rank-rank correlation by groups leads to the importance of the slope and the intercept. One group may be more likely to end up lower in the distribution, leading to a lower intercept, with no difference in the slope. A lower intercept with the same slope indicates the group with the lower intercept is disadvantaged throughout the parental rank. Alternatively, two groups can have similar intercepts but different slopes, indicating differential transmission at higher parental deciles.

7.1 Heterogeneity by birth cohort

Is relative mobility falling like our findings for absolute mobility? Davis and Mazumder (2017) find an increase in the rank-rank slope and intergenerational elasticity between the cohort born from 1942-1953 (0.25) and the cohort born from 1957-1964 (0.36) using the National Longitudinal Survey 1966 and the National Longitudinal Survey of Youth 1979. Chetty, Hendren, Kline, Saez, and Turner (2014) find no trend in the rank-rank slope across cohorts born from 1971-1992. The Chetty et al. (2014) cohorts entered the labor market well after the large increase in inequality that occurred between the two Davis and Mazumder (2017) cohorts.

We use five-year birth cohorts from 1954-1958 to 1979-1983, using the mid-point to label the cohort. Our cohorts overlap with and bridge the gap between Davis and Mazumder (2017) and Chetty et al. (2014). The rank-rank slope terms are higher for our three youngest cohorts, suggesting a fall in mobility. The differences are not statistically significant (Table 5). Our results are supportive of the Mazumder and Davis (2022) in that we both find an increase in the rank-rank slope. The larger sample size in the NLSY could explain the smaller standard errors in their results.

The youngest three cohorts have lower intercepts for income, consumption, and wealth. The difference is statistically significant for the two youngest cohorts for consumption and wealth. The magnitude of the difference is economically significant as well, with the 1981 cohort starting 13.8 percentiles lower for consumption and 16.2 percentiles lower for wealth, compared to the 1956 cohort.

The wealth rank-rank slope remains lowest across all cohorts compared to income and consumption. Like absolute mobility (Figure 2), the relative strength of income and consumption mobility changes across cohorts. For relative mobility, the income rank-rank slope exceeds the consumption rank-rank, but the rank-rank slope point estimates by cohort are equally split between income exceeding consumption and vice versa. The standard errors are large enough to suggest that there is no statistically significant difference in the rank-rank slope within a cohort across income and consumption.

Table 5: Rank-rank regressions by five-year birth cohort

	Income (s.e.)		Consumption (s.e.)		Wealth (s.e.)	
Intercept - 1956	3.16	(0.204)	3.55	(0.213)	4.50	(0.204)
Cohort 1961	-0.59	(0.298)	-0.26	(0.310)	-0.38	(0.322)
Cohort 1966	0.37	(0.333)	-0.17	(0.453)	-0.10	(0.356)
Cohort 1971	-0.42	(0.394)	-0.81	(0.524)	-0.80	(0.395)
Cohort 1976	-0.10	(0.392)	-1.03	(0.569)	-1.22	(0.358)
Cohort 1981	-0.66	(0.356)	-1.38	(0.519)	-1.62	(0.384)
Slope - 1956	0.42	(0.046)	0.44	(0.046)	0.26	(0.037)
Cohort 1961	0.10	(0.062)	-0.06	(0.069)	0.02	(0.059)
Cohort 1966	-0.01	(0.063)	-0.01	(0.069)	-0.02	(0.060)
Cohort 1971	0.10	(0.068)	0.06	(0.073)	0.05	(0.065)
Cohort 1976	0.05	(0.066)	0.05	(0.073)	0.06	(0.060)
Cohort 1981	0.08	(0.064)	0.02	(0.071)	0.12	(0.066)

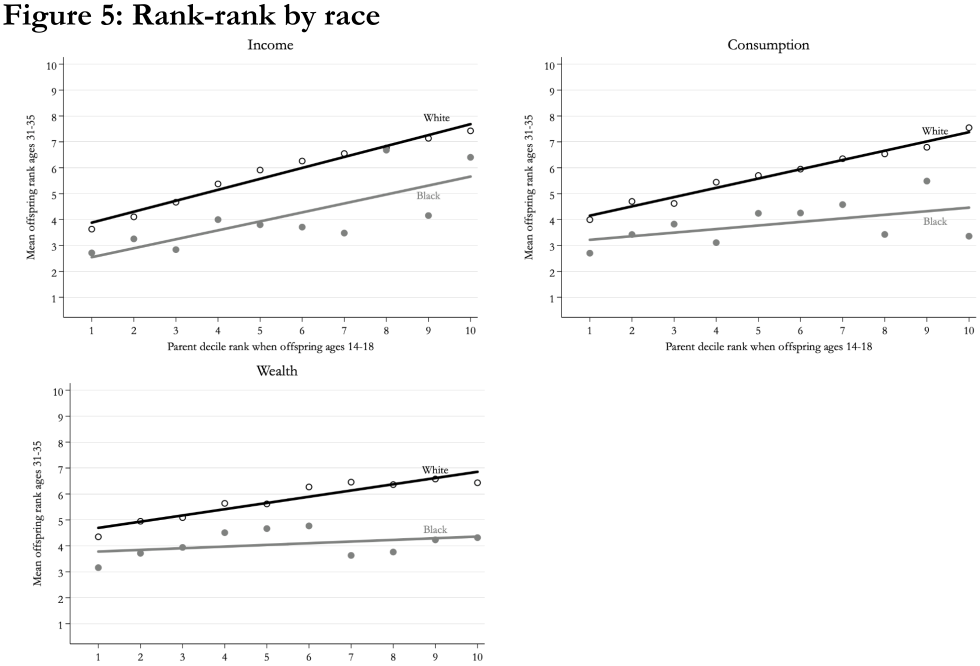
Notes: Parental resources are measured when the offspring are 14-18. Offspring resources are measured when they are 31-35. Standard errors in parentheses next to the coefficient. Standard errors are clustered on PSID family line. The resource measure is residualized before creating the rank. The cohorts range from 524 to 998 child-parent pairs. Total sample size is 4,041. Source: Author's calculations using the PSID.

7.2 Relative mobility by race

PSID sample sizes permit us to study differences in intergenerational mobility for Black individuals and White individuals but no other race or ethnic groups. Policies and social norms constrain economic progress for Black Americans (Francis, Hardy, and Jones 2022). Constrained economic progress continues to result in lower income and wealth for Black individuals (Wilson and Rodgers 2016; Derenoncourt, Kim, Kuhn, and Schularick 2022). Black families have significantly lower wealth than White families, and the racial wealth difference is large within income quintiles (Darity, Addo, and Smith 2021). These wealth differences translate to White parents providing more financial support for education, homeownership, and other reasons to their offspring than Black parents. However conditional on income, Black parents are more likely to transfer resources than White parents (Nam, Hamilton, Darity, and Price 2015).

We build on research examining racial differences in intergenerational mobility in income (Chetty, Hendren, Jones, and Porter 2020; Collins and Wanamaker 2022; Winship, Pulliam, Shiro, Reeves, and Deambrosi 2021) and wealth (Pfeffer and Killewald 2018). We are the first to study differences by race using consumption. Black offspring have a lower intercept than White offspring for income, consumption, and wealth (Figure 5; Appendix Table A5). Black offspring born in the bottom income, consumption, and wealth decile start 10-11 percentiles lower than White offspring born into the bottom decile.

Figure 5: Rank-rank by race



Notes: Sample size is 2,416 for White individuals and 1,481 for Black individuals. Resources are residualized to account for lifecycle bias.
Source: Author's calculations using the Panel Study of Income Dynamics.

We find a lower slope for Black offspring, but the difference is not statistically significant, matching the findings in Chetty et al. (2020). Our difference (0.41 vs 0.31) is larger than their difference (0.32 vs 0.28). Our larger difference may result from the smaller sample size and from missing the top of the distribution. Chetty et al. (2020) find a steeper increase in intergenerational mobility for Black offspring at the top of the distribution.

The rank-rank slope is lower for consumption and wealth for Black offspring (0.23 and 0.13) than for White offspring (0.38 and 0.24) (Appendix Table A5). The lower slope and lower intercept translate to lower upward mobility and higher downward mobility from the top. The average Black offspring born into the top decile of consumption or wealth ends up below the median for both measures. The average White offspring born into the top decile of consumption or wealth ends up around the 70th percentile.

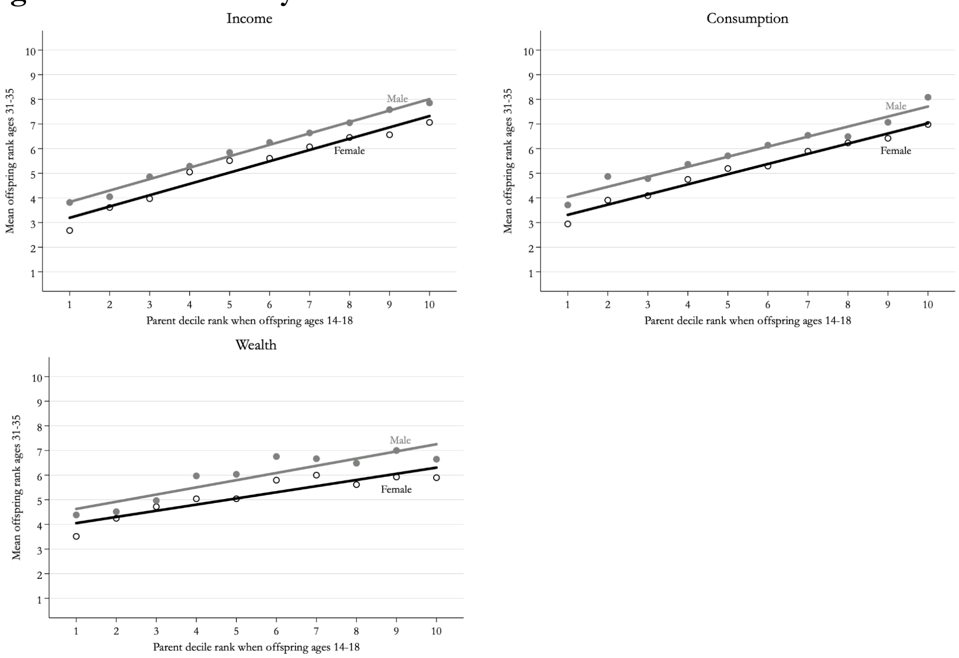
These differences in mobility are the result of institutions, policies, and practices in the United States, such as the lack of reparations at the end of the Civil War, Jim Crow, redlining, and the building of interstate highways through predominantly Black neighborhoods (Darity and Mullen 2020). The barriers to wealth accumulation greatly contribute to the mobility differences (Addo, Houle, and Simon 2016; Perry, Rothwell, and Harshbarger 2018; Derenoncourt et al. 2022).

7.3 Relative mobility by sex

We next turn to differences in intergenerational mobility by sex. The PSID asks the individual's sex at birth, not their gender. Differences in the rank-rank intercept and slope by sex would result from differences in resources and differences in family size between males and females for those not co-residing with someone of the opposite sex. Differences in resources relate to the female wage and earnings gap (Blau and Kahn 2017). Differences in family size occur if mothers are more likely to reside with their children than fathers. The relatively low percentage of same-sex couples (Taylor 2019) makes same-sex couples an unlikely source of differences in intergenerational mobility between males and females.

For each resource measure, females have a statistically significant lower rank-rank intercept than males, from 5.5 percentiles for wealth to 9.3 percentiles for consumption (Figure 6; Appendix Table A6). The slopes are not statistically different for any resource. These findings by sex match the findings by sex for income (Chetty et al. 2020) and for wealth (Pfeffer and Killewald 2018). In results not shown, the entire difference between males and females comes from females who are not married. Married females have the same slope and intercept as married males for all three resource measures.[5] Females who are not married have a significantly lower intercept than males who are not married for all three resource measures.

Figure 6: Rank-rank by sex



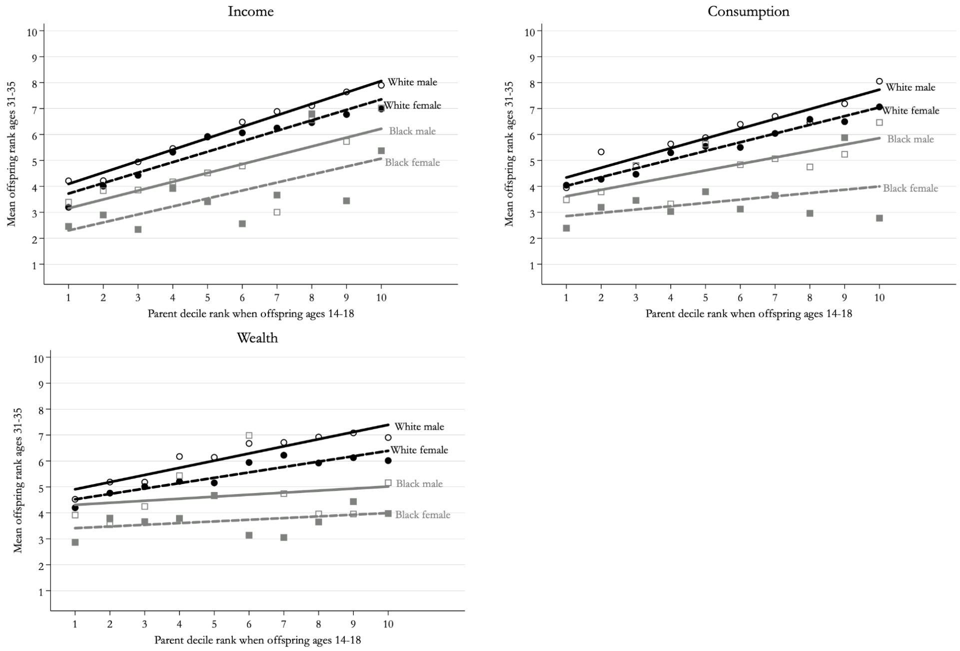
Notes: Sample size is 2,212 for females and 1,829 for males. Resources are residualized to account for lifecycle bias. Source: Author's calculations using the Panel Study of Income Dynamics.

7.4 Relative mobility by race and sex

We now turn to differences by race and sex. Black females face a double gap. They have lower mobility associated with their race and their sex (Holder 2020). Black females have the lowest intercept, 14 to 16 percentiles below that of White males (Figure 7; Appendix Table A7). Black females also have a statistically significant lower slope for income and wealth. This difference manifests in significantly more downward mobility at the top of the distribution, along with less upward mobility from the bottom. The wealth rank-rank slope for Black females is 0.1, indicating that a Black female born into the top wealth decile only ends up 10 percentiles higher than a Black female born into the bottom wealth decile. A White male born into the top wealth decile ends up around the 70th percentile, while a Black female born into the top wealth decile ends up around the 40th percentile.

[5] The result for married individuals is not guaranteed to occur. We only observe parental income for one person in the offspring couple.

Figure 7: Rank-rank by sex and race



Notes: Sample size is 1,232 for White females, 904 for Black females, 577 for Black males, and 1,184 for White males. Resources are residualized to account for lifecycle bias. Source: Author's calculations using the Panel Study of Income Dynamics.

Black males have a lower intercept for wealth compared to White males, by 9.6 percentiles (Figure 7; Appendix Table A7). The intercept differences for income and consumption are not statistically significant. Black males have the same slope as White males for income and wealth. The Black male slope is lower for consumption – 0.38 for White males and 0.17 for Black males.

There is no statistically significant difference between White females and White males (Figure 7), indicating that the difference between by sex in Figure 6 derives solely from differences for Black females. This finding matches the household income findings from Chetty et al. (2020) by sex and race. We extend the result to show that they apply to consumption and wealth.

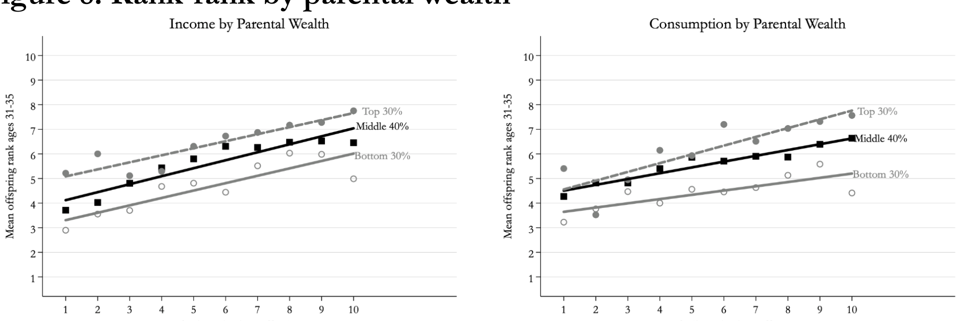
These results highlight the importance of examining race and sex together. In isolation, there are large differences between Black offspring and White offspring, and there are large differences by sex. Black females drive the sex differences and the race differences. There is no statistically significant difference between White males and White females. Black males only exhibit a statistically significant difference from White males for consumption.

7.5 By parental wealth

Parents use wealth in many ways to aid children (Spilerman 2000). Wealth, in addition to income, can be used to invest in children by buying a home in a better school district and financing higher education. Parental wealth and income may be complements at the top of the distribution and substitutes at the bottom of the distribution. We interact parental wealth with parental income decile or parental consumption decile. Because of the small sample size and high correlation between income, consumption, and wealth (Fisher, Johnson, Smeeding, and Thompson 2022), we create three parental wealth groups: those in the bottom 30%; those in the middle 40%, and those in the top 30%. This grouping is not ideal because we might want to focus on the very bottom and very top, but there are few parents in the opposite tails of the two resource distributions. These results capture whether the intergenerational correlation in income or consumption differs across the parental wealth distribution. The differences may not be caused by wealth itself but may be capturing other variables correlated with wealth such as neighborhood quality, educational resources available, or attitudes toward risk.[6]

We observe differences in the rank-rank intercept and slope by parental wealth for the top 30% and bottom 30% (Figure 8; Appendix Table A8). The income intercept for the bottom 30% of wealth is twenty percentiles lower, and the consumption intercept is twelve percentiles lower. The middle 40% of the wealth distribution lies between the top 30% and bottom 30%, as expected. The difference in the slopes and intercepts are not statistically significant, likely because of small sample sizes. We document similar patterns for consumption. Future research with larger sample sizes should use finer grain detail for wealth, particularly focusing on the top of the wealth distribution.

Figure 8: Rank-rank by parental wealth



Notes: Resources are residualized to account for lifecycle bias. Source: Author's calculations using the Panel Study of Income Dynamics.

Parental wealth appears correlated with an advantage in generating upward mobility and preventing downward mobility. A child born into the bottom income decile but the top 30% of

[6] Parents can also transfer resources to offspring as adults, allowing children to take additional risks as adults (Fox 2016) or to smooth income and consumption (Boar 2021). Transfers to adult offspring may contribute to the correlation in wealth between parents and offspring. Here we focus on parental wealth when the offspring are teenagers.

wealth ends up around the median income in their early 30s. High parental wealth is correlated with upward income mobility from the bottom of the income distribution.

A child born into the top income decile but bottom 30% of wealth also ends up around the median income in their early 30s. High parental income alone is insufficient to maintain the offspring's position in the income distribution. These high-income and low-wealth households are a particular type of hand-to-mouth households. The hand-to-mouth exhibit a higher marginal and higher average propensity to consume (Aguiar, Bils, and Boar 2020). These results indicate a negative outcome for the high-income who are hand-to-mouth. Their offspring are less likely to be high-income as adults. These results also help explain the race results detailed above. Black parents are more likely to be in a lower wealth decile conditional on income decile.

8. Conclusions

Income exhibits the highest intergenerational correlation, or lowest relative mobility, between parent and offspring, followed by consumption and wealth. This primary result holds across three measures of the intergenerational correlation, the rank-rank slope, the intergenerational elasticity, and the Gini index of mobility. Parents influence the adult outcomes of their children most directly through human capital investments. This direct influence creates the strongest correlation in income.

One potential explanation for higher consumption and wealth mobility is that preferences are not perfectly correlated across generations. Aguiar, Bils, and Boar (2020) estimate that 40 percent of households are hand-to-mouth, those considered to have a relatively large consumption response to changes in income. Offspring with the exact same income as their parents but different hand-to-mouth status will have zero income mobility and non-zero consumption mobility. The consumption mobility will magnify into wealth mobility through compounding, generating even higher wealth mobility than consumption mobility. Future research can examine the intergenerational correlation in hand-to-mouth status or other measure of preferences.

Another consideration is that parents may be more likely to provide inter vivos transfers to offspring due to low income or low consumption rather than low wealth. Boar (2021) finds that parents increase precautionary savings when offspring have higher permanent income uncertainty. McGarry (2016) also finds that inter vivos transfers are more likely when offspring experience negative income shocks like job loss. These transfers could create a stronger correlation in income and consumption while not affecting the wealth correlation.

An important advancement in our results is using the same individuals to estimate relative mobility across income, consumption, and wealth. Our consumption results reinforce the importance of using the same individuals across resource measures. Our consumption rank-rank slope is higher than the income rank-rank slope found in Chetty et al. (2014), but our consumption rank-rank slope is lower than our own income rank-rank slope.

When looking at differences between White offspring and Black offspring, we find a lower rank-rank intercept for Black offspring for income, consumption, and wealth. Black offspring born in the bottom income, consumption, and wealth decile are 9-11 percentiles lower than White offspring born into the bottom decile. The race results alone mask differences between Black males and Black females. Black females face a double gap in income, consumption, and wealth, experiencing lower upward mobility from the bottom and more downward mobility at the top for all three resource measures. Black males exhibit a statistically significant difference for White males for consumption. These results highlight the importance of examining race and sex together.

Combined, these results paint a more complete picture of intergenerational mobility. Relative mobility is lowest for income, followed by consumption and wealth. The high wealth mobility occurs despite wealth being the most unequally distributed. Further work that can more fully capture the top of the wealth distribution is needed to understand whether there may be less intergenerational mobility in the top 5% of the wealth distribution. These results should not be interpreted to imply that wealth is unimportant or does not convey advantage across generations. High parental wealth supplements low parental income, and high parental wealth complements high parental income.

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APPENDIX TABLES

Table A1: Comparing intergenerational mobility dropping those with negative wealth

	Income	Consumption	Wealth
Rank-rank slope	0.42	0.40	0.36
	(0.024)	(0.026)	(0.025)
Intergenerational elasticity	0.45	0.40	0.35
	(0.030)	(0.033)	(0.044)

Notes: Sample size is 3,147. The standard errors are in parentheses. The sample drops any parent or offspring with negative wealth. Otherwise, the sample is the same as Table 3, measuring offspring resources at ages 31-35 and parental resources at ages 14-18.

Table A2: Comparing intergenerational mobility using reported consumption, imputed consumption, and reported wealth

	Consumption Reported	Consumption Imputed	Income	Wealth
Rank-rank slope	0.46	0.41	0.48	0.30
	(0.052)	(0.056)	(0.051)	(0.062)
Intergenerational elasticity	0.45	0.41	0.49	0.43
	(0.045)	(0.086)	(0.057)	(0.061)

Notes: Sample size is 395. The standard errors are in parentheses. The sample is limited to those 14-16-years old in 1999 when consumption was first reported in the PSID. We average the resource measures in 1999 and 2001 to represent parental resources. Offspring resources are averaged over 2015 and 2017.

Table A3: Intergenerational Mobility using Reported Wealth

	Income	Wealth
Rank-rank slope	0.41	0.21
	(0.019)	(0.018)
Intergenerational elasticity	0.24	0.22
	(0.055)	(0.026)

Notes: Sample size is 2,853. The standard errors are in parentheses. The results include all years when wealth is reported (1984, 1989, 1994, and 1999-2017). We use one-year values for income and wealth, which may result in more attenuation bias especially for the intergenerational elasticity and for income. Parental resources are measured when the offspring are 14-18-years old and offspring resources at ages 31-35.

Table A4: Transition matrices between parental resources and offspring resources

Income		Offspring's decile ages 31-35									
		1	2	3	4	5	6	7	8	9	10
Parent's decile ages 14-18	1	32%	19%	14%	8%	11%	7%	4%	2%	2%	1%
	2	20%	19%	14%	12%	10%	9%	6%	6%	3%	1%
	3	15%	14%	15%	15%	9%	11%	8%	4%	7%	3%
	4	5%	10%	15%	13%	15%	12%	11%	9%	5%	5%
	5	3%	10%	12%	12%	12%	10%	12%	10%	11%	7%
	6	9%	7%	7%	8%	11%	12%	12%	16%	12%	8%
	7	4%	6%	7%	11%	12%	7%	13%	13%	13%	14%
	8	4%	4%	4%	7%	9%	14%	14%	14%	16%	14%
	9	2%	5%	7%	8%	5%	10%	12%	14%	17%	20%
	10	0%	4%	5%	6%	8%	9%	10%	14%	15%	29%

Consumption		Offspring's decile ages 31-35									
		1	2	3	4	5	6	7	8	9	10
Parent's decile ages 14-18	1	30%	18%	14%	10%	8%	7%	5%	4%	3%	1%
	2	18%	17%	12%	13%	11%	9%	8%	6%	3%	3%
	3	13%	14%	13%	13%	11%	10%	10%	6%	6%	3%
	4	9%	11%	13%	12%	11%	12%	11%	9%	8%	4%
	5	7%	11%	11%	11%	11%	12%	11%	11%	9%	7%
	6	7%	8%	9%	9%	12%	12%	11%	12%	11%	9%
	7	6%	8%	9%	8%	10%	9%	12%	11%	12%	13%
	8	5%	6%	10%	8%	10%	10%	11%	13%	14%	14%
	9	4%	5%	5%	10%	9%	10%	11%	13%	15%	18%
	10	3%	3%	4%	6%	8%	9%	11%	14%	19%	26%

Wealth		Offspring's decile ages 31-35									
		1	2	3	4	5	6	7	8	9	10
Parent's decile ages 14-18	1	14%	24%	18%	12%	8%	8%	4%	4%	3%	4%
	2	13%	17%	15%	13%	13%	7%	9%	6%	3%	5%
	3	11%	9%	14%	15%	12%	11%	11%	7%	4%	6%
	4	8%	9%	10%	11%	13%	12%	12%	12%	8%	7%
	5	12%	9%	6%	13%	11%	8%	10%	11%	9%	10%
	6	8%	6%	6%	6%	10%	13%	10%	13%	16%	11%
	7	7%	5%	7%	8%	8%	11%	14%	13%	17%	10%
	8	10%	8%	11%	6%	8%	8%	11%	12%	12%	15%
	9	11%	4%	3%	8%	9%	10%	10%	11%	17%	17%
	10	7%	6%	8%	9%	7%	13%	10%	13%	12%	15%

Notes: Sample size is 4,041. The results adjust for lifecycle bias and limits the sample to those with at least three values for parental resources and offspring resources. Source: Author's calculations using the PSID.

Table A5: Intergenerational mobility by race

	Income		Consumption		Wealth	
	White	Black	White	Black	White	Black
Rank-rank slope	0.41	-0.10	0.38	-0.15	0.24	-0.11
	(0.024)	(0.064)	(0.027)	(0.064)	(0.024)	(0.054)
Rank-rank intercept	3.50	-1.12	4.30	-0.97	4.70	-1.12
	(0.253)	(0.258)	(0.260)	(0.301)	(0.259)	(0.267)
Intergenerational elasticity	0.46	-0.16	0.39	-0.18	0.19	0.06
	(0.034)	(0.079)	(0.030)	(0.071)	(0.039)	(0.068)

Notes: Sample size is 3,897. The standard errors are in parentheses. The sample excludes those who do not identify as White or Black. In the regression, White is the omitted category. The Black values above are the change in the slope or intercept relative to the White value. Parental resources are measured when the offspring are 14-18. Offspring resources are measured when the child is 31-35. Standard errors in parentheses below the coefficient. Standard errors are clustered on PSID family line. The resource measure is residualized.

Table A6: Intergenerational mobility by sex

	Income		Consumption		Wealth	
	Male	Female	Male	Female	Male	Female
Rank-rank slope	0.46	-0.001	0.42	0.03	0.30	-0.04
	(0.026)	(0.034)	(0.031)	(0.038)	(0.029)	(0.037)
Rank-rank intercept	3.29	-0.67	4.23	-0.93	4.61	-0.55
	(0.251)	(0.205)	(0.274)	(0.269)	(0.273)	(0.225)
Intergenerational elasticity	0.48	0.08	0.41	0.06	0.27	-0.02
	(0.029)	(0.040)	(0.035)	(0.041)	(0.050)	(0.060)

Notes: Sample size is 4,041. The female values above are the change in the slope or intercept relative to the male value. Parental resources are measured when the offspring are 14-18. Offspring resources are measured when the child is 31-35. Standard errors in parentheses below the coefficient. Standard errors are clustered on PSID family line. The resource measure is residualized.

Table A7: Intergenerational correlation by race and sex

	White Male	White Female	Black Male	Black Female
	Income			
Rank-rank slope	0.44	-0.06	-0.11	-0.17
	(0.031)	(0.041)	(0.071)	(0.086)
Intercept	3.57	-0.21	-0.67	-1.46
	(0.285)	(0.274)	(0.345)	(0.313)
	Consumption			
Rank-rank slope	0.38	-0.01	-0.21	-0.16
	(0.035)	(0.042)	(0.095)	(0.084)
Intercept	4.51	-0.50	-0.25	-1.65
	(0.308)	(0.317)	(0.507)	(0.410)
	Wealth			
Rank-rank slope	0.28	-0.08	-0.09	-0.18
	(0.034)	(0.046)	(0.085)	(0.064)
Intercept	4.81	-0.26	-0.96	-1.42
	(0.303)	(0.297)	(0.379)	(0.331)

Notes: Sample size is 3,897. The sample excludes those who do not identify as White or Black. In the regression, White Male is the omitted category. Parental resources are measured when the offspring are 14-18. Offspring resources are measured when the child is 31-35. Standard errors in parentheses below the coefficient. Standard errors are clustered on PSID family line. The resource measure is residualized before creating the rank.

Table A8: Intergenerational correlation income and consumption by parental wealth

	Parental wealth at ages 14-18		
	Top 30% parental wealth	Middle 40% parental wealth	Bottom 30% parental wealth
		Income	
Rank-rank slope	0.30	0.08	0.03
	(0.047)	(0.064)	(0.060)
Intercept	4.67	-0.78	-2.02
	(0.443)	(0.449)	(0.413)
		Consumption	
Rank-rank slope	0.29	-0.04	-0.07
	(0.072)	(0.071)	(0.065)
Intercept	5.33	-0.40	-1.55
	(1.391)	(0.713)	(0.760)

Notes: Sample size is 4,041. Top 30% parental wealth is the omitted category. Parental resources are measured when the offspring are 14-18. Offspring resources are measured when the child is 31-35. Standard errors in parentheses below the coefficient. Standard errors are clustered on PSID family line. The resource measure is residualized before creating the rank.