Growing Socio-Economic Inequalities in Educational Attainment and the Role of Parental Wealth

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Abstract

This study documents growing socio-economic inequalities in educational attainment over four recent U.S. cohort. It considers differential trends in the impact of several components of family background, such as family income, parental occupation, and parental education. Most importantly, this study includes an analysis of the changing importance of parental wealth.

Using all waves of the Panel Study of Income Dynamics since 1984 and drawing on new methods for the comparison of effect sizes in non-linear models, I show that the associations between parental wealth and different measures of educational attainment are strong, that they have grown significantly over recent cohorts, and that they have grown faster than other socio-economic gaps in educational attainment. These results raise serious concerns about the implications of rapidly growing wealth inequality for the educational attainment of today's children.

Motivation

Recent evidence suggests that income gaps in educational achievement have been widening over the last decades (Reardon 2011). In this contribution, I describe how the impact of different indicators of children's socio-economic background on their educational attainment has changed across four recent U.S. cohorts. I lay particular focus on the role of parental wealth, which a growing body of research suggests to play an important role in the educational attainment process of children in the United States and elsewhere (Conley 2001; Morgan and Kim 2006; Pfeffer 2011; Pfeffer and Hällsten 2012). With wealth inequality on the rise since the 1980s (Keister 2000; Wolff 2002, 2006), the question is whether wealth gaps in education have also increased. To date, there is no empirical evidence that could provide an answer to this question. Inferring growing wealth gaps in education from growing income gaps in education is fraught with error because the correlation between income and wealth is far from perfect (by some estimates it is .50; see Keister and Moller 2000). With some work providing suggestive evidence that a considerable part of commonly observed income gaps in U.S. education may in fact be unmeasured wealth gaps (Pfeffer 2010), it is important to correctly identify the main components of socio-economic background that translate into different educational outcomes as well as any trends in their relative importance.

The hypothesis that wealth gaps in education might be on the rise in the United States is not merely based on the observation of increased inequality in the distribution of wealth (see figure 1), but additionally derives from observed institutional changes that may be related to the mechanisms through which parental wealth confers educational opportunities. What I call the "purchasing function" of wealth for children's educational success may gain increasing importance as neighborhoods become economically more segregated (Reardon and Bischoff 2011) and home ownership – a major part of many American families' wealth portfolio – confers access to increasingly advantageous neighborhoods and the schools located within them. On the post-secondary level, pronounced increases in tuition costs (College Board 2011) may have increased the importance of parental wealth in alleviating students' credit constraints. Furthermore, what I call the "insurance function" of parental wealth, that is, its ability to reduce risk by providing "real and psychological safety nets" (Shapiro 2004) for educational decision-making (such as the decision to go to college) may be more consequential as job market insecurity and general levels of life course risks (or the perception therefore) have increased and some public insurance schemes have deteriorated (Hacker 2007; Western et al. 2012).

Research questions

This project addresses the following research questions:

1. Have wealth gaps in educational attainment increased?

2. How has the importance of wealth in comparison to other socio-economic characteristics changed over time? That is, when considering a fuller set of socio-economic indicators jointly (wealth, permanent income, parental education, and parental occupation), which socio-economic gaps are most notable and have grown faster than others?

3. Beyond the changing association between parents' net worth and their children's educational attainment, can we observe important trends in the influence of separate wealth components, namely housing wealth, financial assets, real assets, and debt?

Data and measures

The reasons for why the relationship between children's educational attainment and their parents' wealth has not been studied as much as, for instance, its relationship with income are not conceptual but rather explained by the scarcity of available data. Few nationally representative datasets contain detailed and reliable information on families' wealth position and even fewer allow matching that information to the educational pathways of children growing up in these families. The Panel Study of Income Dynamics (PSID) is the only survey that provides the information necessary for the proposed trend analyses. It continually collects a rich set of indicators of the socio-economic position of families and the longitudinal consistency of those measures (thanks to the application of the same instrument in every survey wave) greatly facilitates over-time comparisons. A wealth asset module that assesses the ownership and value of a multitude of asset components (savings, stocks, home values, mortgages, etc.) has been collected every five years between 1984 and 1999 and bi-annually since. It yields nationally representative estimates of wealth holdings that compare very favorably to the Survey of Consumer Finances (SCF), which is sometimes considered the gold standard in the measurement of wealth (Pfeffer et al. 2013b). Income measures from each panel wave allow the construction of measures of "permanent income". The PSID also collects information on the educational attainment of children born into a panel household from the parents and/or the children themselves depending on their age and household status.

The analytic population for this study consists of four cohorts of children who grew up in PSID households in the 1980s and 1990s. Each cohort is composed of children aged 10-14 years when the first wealth modules were administered to their parents in 1984, 1989, 1994, and 1999; in other words, the birth cohorts 1970-74 (N=1,243), 1975-1979 (N=1,092), 1980-1984 (N=1,201), and 1985-1989 (N=1,140).

This study uses three measures of educational attainment, namely whether respondents have completed high school and whether they have enrolled in higher education (at age 20 for all four cohort), and whether they have attained a bachelor's degree (at age 25 for the three oldest cohorts). I draw on a comprehensive

set of indicators of the socio-economic position of families, most importantly measures of net worth as well as separate wealth components, namely housing wealth (home values, home equity), financial wealth (savings, stocks, bonds, other investments), real assets (real estate, business wealth), and debt (credit card debt, other obligations)[1]. I also use measures of permanent family income measures, averaged across five and ten years of observations. Other socio-economic indicators include the highest degree attained by the father and mother as well as the occupational status (SEI) of the father and mother. Further demographic characteristics of these families include the family structure, marital status, and the age of both parents. Children's demographic characteristics included are sex, race, and age (to control for remaining age trends within cohorts). Missing values on all independent variables are multiply imputed using Stata's mi procedures.

Analytic strategy and methods

The analysis begins with a description of the zero-order associations between each indicator of socio-economic background, i.e. parental wealth, income, education, and occupation, and the educational attainment measures across all four cohorts to provide information on the relative size of different socio-economic gaps in education. Table 1 reports preliminary results to illustrate the substantial wealth gaps in educational attainment.

Next, I use logistic regression models to predict each educational outcome for each cohort separately (i.e. fully interactive models). The associations between socio-economic characteristics and the educational outcome are reported in a new correlation metric based on re-scaled logit coefficients (Breen et al. 2011; senstivity tests based on alternative metrics, such as marginal effects and predicted probabilities, yield substantively similar conclusions). I begin with univariate models that include only one socio-economic indicator to assess changes in the zero-order associations. This part of the analysis addresses the question of which socio-economic gaps in education have been rising (or falling) most rapidly. Figure 2 provides a preliminary information on the changing wealth, income, and parental occupation gaps in high school attainment. Next, I estimate models that jointly control for all socio-economic and demographic characteristics to investigate whether the independent effects of some socio-economic background characteristics has been on the rise — a question that moves the analysis considerably closer to the type of evidence needed for the effective targeting of policies seeking to address inequalities in educational opportunities. Figure 3 provides preliminary evidence on trends in the conditional effects of income, wealth, and parental occupation on high

[1] I test a number of different specifications of the wealth variables, namely a continuous measure of net wealth that is logarithmically transformed after setting a ceiling value to further reduce the impact of extreme outliers (and a floor value; the negative part of the wealth distribution, i.e. cases of net worth, is recovered by including a measure of [log] net debt) as well asl the inverse hyperbolic sine transformation that retains negative values. Higher-order terms test for non-linearities in wealth effects. Controls for wealth quintiles also include cases of negative net worth and test for non-linearities. Finally, interactions between wealth and income are assessed.

school attainment. In line with the theoretical expectations described above, the relative effects of parental wealth indeed appear to have been rising most rapidly over these four cohorts. In the presentation, I will discuss this finding in light of the more recent trends in the wealth distribution: Wealth inequality took off in the 2000s and jumped up further during the recent recession despite significant losses across the wealth distribution (Wolff et al. 2011; Pfeffer et al. 2013a). Future trends in wealth inequality may not look much brighter (Morgan and Scott 2007). The results provided here raise serious concerns about the implications of these radical changes for wealth gaps in the educational attainment of today's children.

Finally, in an effort to shed some light on the reasons behind the increased importance of parental wealth, I decompose the net worth measure into indicators of housing wealth, financial wealth, real assets, and debt and assess whether increasing wealth effects can be attributed to the changing impact of specific wealth components. This part of the analysis will considerably facilitate future work that seeks to advance the understanding of the reasons behind the increasing role of parental wealth for children.

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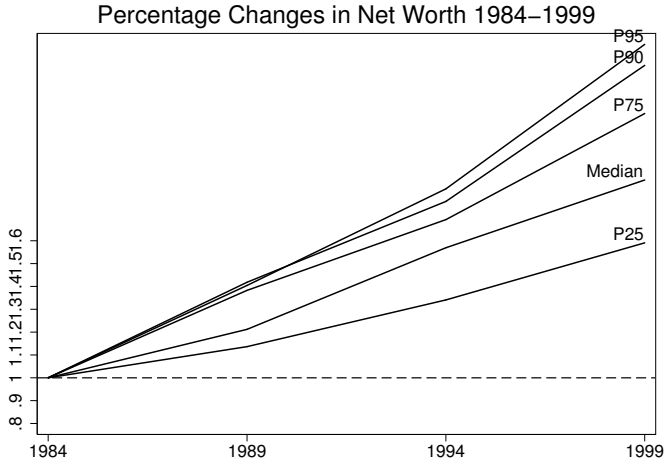
Figures & Tables

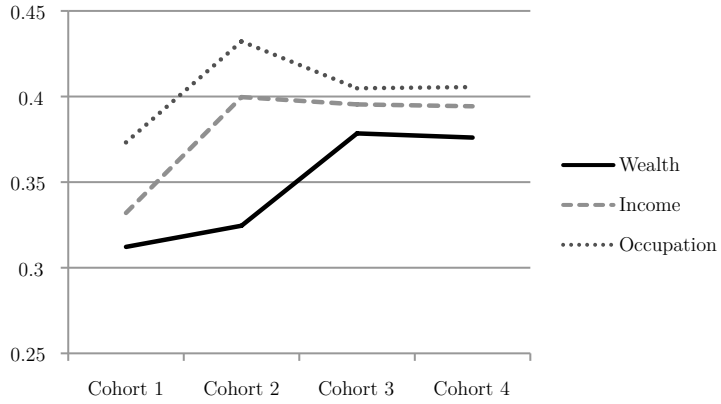
Figure 1: Trends in the distribution of wealth (among the parent generation included in this analysis)



Note: Based on constant dollars

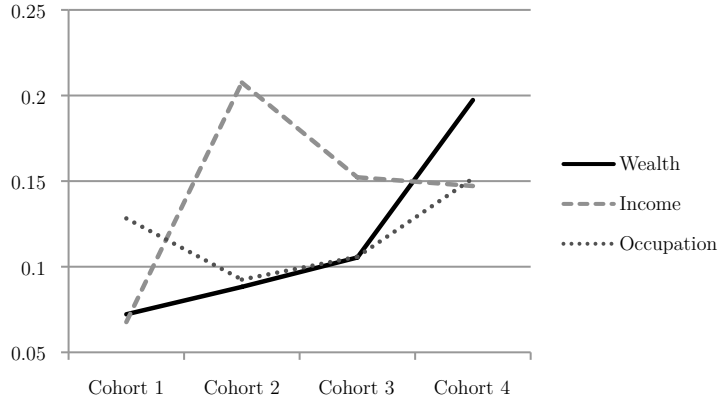
Source: Panel Study of Income Dynamics; calculations by the author

Figure 2: Changing gaps in high school attainment: zero-order effects of wealth, income, and occupations



Note: Effects expressed as correlation coefficients following Breen et al. (2011)
Source: Panel Study of Income Dynamics; calculations by the author

Figure 3: Changing gaps in high school attainment: conditional effects of wealth, income, and occupations



Note: Effects expressed as correlation coefficients following Breen et al. (2011).
Controls for other socio-economic characteristics (parental education) and demographic characteristics included
Source: Panel Study of Income Dynamics; calculations by the author

Table 1: Wealth Gaps in Education (across all cohorts)

	Graduation Rate	
	HS	BA
Children from		
Bottom of net worth distribution (10th percentile = $1k and less)	73%	5%
Top of net worth distribution (90th percentile = $430k)	95%	48%

Source: Panel Study of Income Dynamics; calculations by the author