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Article (Accepted version) (Refereed)

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June 3, 2015

Abstract

We examine the persistence of socioeconomic status across generations, measured by educational attainment, among urban Chinese born between 1930 and 1985. The persistence of status follows a pronounced, robust U-shaped pattern, falling among cohorts educated following the Communist revolution of 1949, and rising among cohorts educated following the reforms of the late 1970s. The pattern is not driven by the Cultural Revolution or by changing associations between education and income. The U-shape also appears in complementary datasets covering rural China. We discuss the policies behind a non-monotonic relationship between educational expansion and social mobility across the institutional regimes we study.

Keywords: Social Mobility; China; Economic Transition; Educational Policy
JEL codes: J62, N35, P36, I24, I28

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1 Introduction

Economists are increasingly interested in documenting long-run trends in economic inequality and social mobility, which both shed light on the consequences of economic and political changes across time, and also inform contemporary social policy by placing current outcomes in historical perspective.[1] Recent work by Lee and Solon (2009), Chetty et al. (2014), and Clark (2014) suggests that rates of social mobility may be both low and stubbornly stable across time and across countries, which would suggest that social and economic policies aimed at increasing mobility may have little effect, and that current inequality will inevitably be replicated in future generations.[2] Other work suggests that social mobility might vary quite significantly across time and place (see, for example, Hertz et al., 2007), and Long and Ferrie, 2014).

In this paper, we use a retrospective, representative survey of urban Chinese households (the *Chinese Urban Household Education and Employment Survey, 2004*, or UHS) to examine social mobility among cohorts of Chinese children born between 1930 and 1985. We find that the intergenerational transmission of status follows a pronounced and robust U-shaped pattern over the 20th century. While we cannot identify specific causal factors behind the U-shaped pattern of status persistence, there is a striking match between the timing of changes in social mobility and changes in Chinese political, economic, and educational institutions. Cohorts educated under the "Maoist" regime (born between the mid-1940s and the mid-1960s, and educated between the 1950s and the 1970s) experienced significantly greater social mobility (significantly lower status persistence) than individuals educated in Republican China (born in the 1930s and early 1940s). Then, social nobility fell (status persistence increased) among cohorts educated under the post-Mao, "Reform" regime of Deng Xiaoping (cohorts born in the mid-1960s or later, educated in the middle of the 1970s and later).[3] We find this pattern not only among a representative sample of urban Chinese, but also in complementary data sources on rural China (the World Bank's Living Standards Measurement Surveys used by Hertz et al., 2007, and the China Health and Retirement Longitudinal Study).

[1] See, for example, Goldin and Margo (1992), Katz and Murphy (1993), Piketty and Saez (2003), Clark (2014), and Chetty et al. (2014).

[2] Piketty (2014) makes a related argument, that in the absence of negative shocks to the stock of wealth (such as wars), relatively high rates of return to capital tend to produce a class of individuals who accumulate ever larger shares of wealth over time.

[3] The economic consequences of China's reforms have been widely discussed (for example, Naughton, 1995, and Brandt and Rawski, 2008). Note that political institutions, too, have evolved in recent decades—see Martinez-Bravo et al. (2013).

In Figure 1, we present raw data illustrating our basic findings, plotting children's educational attainment—our measure of socioeconomic status—against father's educational attainment for the three institutional regimes we study ("Pre-Mao", "Mao", and "Post-Mao").[4] In the left-hand panel of Figure 1, educational attainment is simply measured as years of schooling, and one can see that the slope of the relationship between fathers' and children's schooling flattens as one moves from the Pre-Mao to the Mao-era cohorts, then steepens again moving from the Mao-era cohorts to the post-Mao cohorts. In the right-hand panel, we use the percentile rank of a child's education within their five-year birth cohort (a rank of 100 indicates the highest education level in the cohort) as a measure of children's education and fathers' education rank among fathers of children in that cohort as a measure of fathers' educational attainment. Using this alternative measure of educational status, one sees the same pattern: fathers' education has a much larger effect on children's education among the pre-Mao and post-Mao cohorts than among the Mao-era cohorts.

Our findings suggest that social mobility is *not* immutable, although meaningfully altering the persistence of socioeconomic status may require fundamental institutional and policy changes. While our primary focus is on documenting the broad pattern of social mobility in China over the 20th century (rather than isolating and identifying particular causal mechanisms), historical evidence suggests that differences in educational policy may be an important determinant of the social mobility patterns we observe. Shortly after taking power, in 1949, the Chinese Communist Party implemented a radical program in the 1950s aimed at increasing economic equality, and increasing the poor's access to education.[5] Our findings suggest that schooling expansion that is explicitly aimed at improving access to mass education can generate increased social mobility, though we cannot identify here the relative importance of schooling expansion and other policy changes.[6]

[4]We use fathers' education as an indicator of parents' status because women's access to education varied significantly across time and space, thus making it a noisier measure of parental status (for a discussion of changes in women's education across time, see Lavely et al., 1990). Including mother's education level as an input in our measure of parents' status does not affect our results, however.

[5]The next several decades saw both economic growth and humanitarian disasters such as the failed "Great Leap Forward" and the associated famine (Meng et al., 2014), and then the Cultural Revolution. The effects of radical institutional change on economic outcomes are studied by Acemoglu et al. (2011), among others.

[6]Nybom and Stuhler (2014) show that variation in social mobility across time need not result from contemporaneous policy changes, but rather may result from "echoes" of earlier changes in the distribution of education. Importantly, our findings of increased social mobility in the Maoist era, followed by reduced mobility in the Reform era, are likely not produced by the sort of non-monotonic effects of educational expansion across generations studied by Nybom and Stuhler (2014). The non-monotonicity in their work comes from higher correlations between parents' endowments and incomes when a more meritocratic education system is implemented for the parents' generation. In

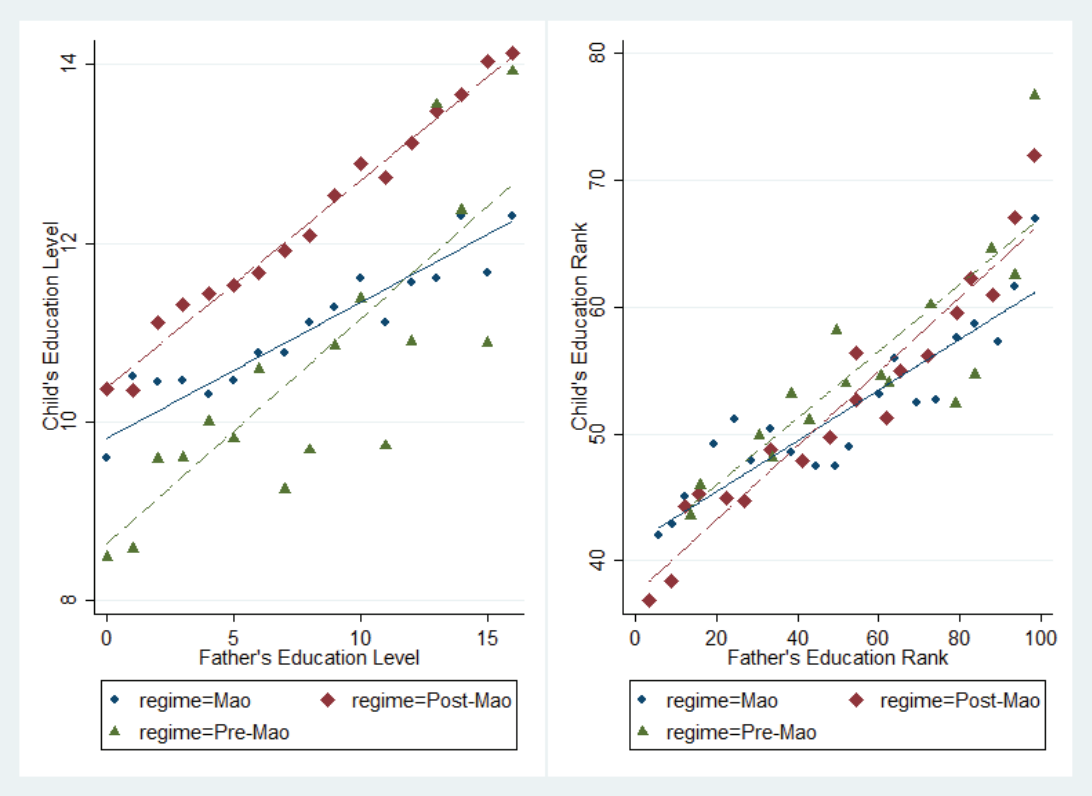

Figure 1: Transmission of educational status by institutional regime. The figure plots children's education against fathers' education (along with the best-fit linear relationship) by institutional regime. Children are assigned to regimes as follows: "Pre-Mao" children were born between 1930 and 1944 (inclusive); "Mao" regime children were born between 1945 and 1964 (inclusive); and, "Post-Mao" regime children were born between 1965 and 1984 (inclusive). The left-hand panel uses years of schooling as a measure of educational attainment for both children and fathers. The right-hand panel uses the percentile rank of a child's education among children born in the same five-year birth cohort (a rank of 100 indicates the highest education level in the cohort) as a measure of children's educational attainment; fathers' educational attainment is measured using the father's education rank among fathers of children born in a particular five-year birth cohort.

We also find evidence that *expansionary* educational policies need not be *equalizing*: educational attainment and expenditures continued to grow in the Reform era, as social mobility *fell*.[7] We present qualitative and quantitative evidence suggesting that, in contrast to the educational expansion of the Maoist era, the benefits of educational expansion in recent decades have gone

our setting, the expansion of schooling in the Maoist era was explicitly *not* meritocratic—it was "equalizing", using affirmative action (we discuss this in detail in Section 3). Thus, if anything, one would expect a lower correlation between incomes and ability among the parents of children born in the Reform era, which would tend to produce *greater* social mobility in the Reform era, not less.

[7]Parman (2011) finds that educational expansion in the United States was associated with reduced social mobility across the 20th century.

predominantly to elites. China, and many other developing countries, may face a trade-off between investing in meritocratic education designed to foster innovation and management expertise (but favoring the children of the existing elite), versus broad schooling that raises the human capital of the lower part of the distribution.[8]

These results contribute to a vast microeconometric literature on intergenerational mobility and the persistence of economic outcomes (see Solon, 1999, and Black and Devereux, 2011, for reviews). Our paper follows recent work that has examined the correlations between parents' and children's incomes and endowments comparatively: across time (Aaronson and Mazumder, 2008; Clark, 2014; and Chetty et al., 2014); across countries (Ichino et al., 2011; Abbott and Gallipoli, 2014); across levels of development (Hertz et al., 2007, and Long and Ferrie, 2014); and even across pre-industrial societies (Borgerhoff Mulder, Bowles, Hertz et al., 2009).[9] One important area of research has been the relationship between intergenerational persistence and structural change of the broader economy. Our work contributes empirical evidence on the question of whether economic development arising from structural change disproportionately benefits the children of the already well-off, or rather, jostles the pre-existing hierarchy and increases social mobility.

Research on economic mobility in China has grown rapidly in recent years, at least in part motivated by concerns about China's growing economic inequality (see Piketty and Qian, 2009, Meng et al., 2013, and Li et al., 2013b).[10] Recent work has often examined contemporary social mobility using a single cross-section of children. For example, Gong et al. (2010), using a 2004 cross-section, find that intergenerational mobility is very low in urban China relative to other countries, in contrast to Guo and Min (2008), who find a very high level of mobility using the same data (but not accounting for life-cycle effects). Knight and Li (1993) and Knight, Li, and Deng (2009) present evidence on educational status transmission from the 1988 and 2002 waves of the China Household Income Project (CHIP), respectively, finding that children's education levels are affected both by their region of birth, as well as by their parents' educational attainment.[11]

[8] Cantoni and Yuchtman (2013) discuss the political economy of the choice of educational content in developing countries. Bai and Jia (2014) describe the importance of education as a mechanism of social mobility in imperial China.

[9] Corak (2012) shows that, within OECD countries, cross-sectional inequality is correlated with intergenerational persistence of income, what has been dubbed the "Great Gatsby Curve".

[10] Chinese citizens are asked to tolerate high levels of inequality with the promise that they (or their children) might rise up the socioeconomic ladder; indeed, President Xi Jinping's policy theme of the "Chinese Dream" is redolent of the hope for upward socioeconomic mobility.

[11] Relatedly, Wang (2013) shows that father-in-law social networks are important for men's labor market outcomes.

Some evidence exists on changes in social mobility in China across long periods of time and multiple institutional regimes. Campbell and Lee (2008) examine social mobility before and after the Communist takeover, and find that social mobility was not affected by this dramatic institutional change. Their work is, however, limited to a small, non-representative sample of Chinese families.[12] Deng and Treiman (1997) examine mobility before and after the Cultural Revolution (1966–1976), and find that mobility increased during the Cultural Revolution period, consistent with our findings. It is worth noting, however, that we find significant increases in social mobility in the Maoist era even *prior* to the Cultural Revolution, and excluding the cohorts most affected by it. Wu and Treiman (2004) examine the rate of rural-to-urban transitions in *hukou* status (an important mechanism of mobility in contemporary China), and find little change following China's economic reforms. Walder and Hu (2009) examine the composition of Chinese elites from 1949 to 1996. They find mixed results: CCP membership was relatively more open after reforms, and elite non-governmental positions were as open after reforms as they were before; on the other hand, elite governmental positions were transmitted more effectively across generations among Party elites.[13]

Some recent work, like ours, also uses retrospective data from representative social surveys to study changes in social mobility across time. Much of this research has used the CHIP series to construct observations of parent-child outcomes across cohorts, mainly for rural households.[14] Sato and Li (2007) study the impact of family class background (e.g., coming from a family of landowners) on rural children's educational outcomes in the three periods we study. They find that descendants of landowners attained relatively high levels of schooling in the Republican era, then relatively low levels in the Maoist era, then high levels again in the Reform era. Knight et al. (2013) use the CHIP data to study intergenerational transmission of educational status among both urban and rural Chinese, but present very little evidence on status transmission prior to 1940, thus missing cohorts educated in the Republican era (the evidence they do present is consistent with our findings). Finally, in another analysis of cohorts educated in the Maoist and Reform eras (based on the Chinese Family Panel Studies, 2010, and the CHIP data), Fan et al. (2013) find

[12] While we find contrasting results, it is important to note that we are unable to take into account information on the extended family, as do Campbell and Lee.

[13] Walder and Hu also find that certain types of status transmission were sharply curtailed during the Cultural Revolution.

[14] Note that rural education, and children's outcomes more generally, during the Maoist period were undoubtedly affected by the Great Famine. We focus on the urban population, which was much less affected by the famine (Meng et al., 2014).

reduced social mobility post-1970, consistent with our results.

While other scholars have examined patterns of social mobility in China across institutional regimes, our findings represent novel, direct evidence on the transmission of educational attainment between fathers and children in China, covering the Republican era, the Maoist era, and the Reform era—across both urban and rural China. As such, we believe we are the first to highlight the U-shaped pattern of the persistence of educational attainment across generations.[15]

Our analysis overcomes several important concerns in the empirical literature on social mobility. First, we mitigate concerns about attenuation bias arising from the use of yearly income as a (noisy) measure of economic and social status by instead considering educational attainment as our indicator. In addition, we examine both the levels and the ranks of fathers and children in the educational attainment distribution for a child's birth cohort, because China saw large changes in the distribution of educational attainment across cohorts.[16]

We also address several important questions surrounding our findings of low rates of persistence of educational attainment (i.e., high social mobility) in the Maoist era. First, one might wonder if, despite the fact that education is measured with less noise than income, it is a result of measurement error in the independent variable. We do not believe this is the case: attenuation bias from measurement error seems likely to more significantly affect measurement of educational attainment among the earlier cohorts educated in Republican China than cohorts educated in the Maoist era; yet estimates of persistence of status are *greater* for the earlier cohorts. One might also wonder if greater social mobility is simply the result of the disruption of education during the Cultural Revolution. In fact, we find that persistence of education across generations is quite low (mobility is extremely high) for cohorts born between 1945 and 1950, the vast majority of whom would have completed their educations in the Maoist era, but *prior* to the Cultural Revolution. In addition, we find that education levels rose throughout the period we study, indicating that high social mobility was not simply a result of low overall levels of schooling in Communist China prior to the economic

[15]Sato and Li (2007) present a related, though very much distinct, finding: that the fortunes of the descendants of the landowning rural elite followed something like a U-shape across the institutional regimes we study. An important difference between our results and theirs (beyond the differences in empirical specifications and samples) is that children from formerly rural elite families who Sato and Li find attained high levels of education in the post-Mao era were born to parents who would have had relatively *little* schooling (because their educations occurred during the Maoist era, when the children of the rural elite attained low levels of education). This would suggest *high* levels of mobility in the post-Mao era, for at least a subset of the population, in contrast to our findings.

[16]The advantages of examining status transmission or social mobility in terms of ranks rather than absolute outcomes are discussed in Chetty et al. (2014).

reforms.[17]

A final question is whether education is a good proxy for status across the three eras we study. Qualitatively, education has been *the* metric of social status in China for more than one thousand years (see Elman, 2000); however, the educated elite was certainly stigmatized in the Maoist era. To answer the question quantitatively, we examine the correlation between income and education across the institutional regimes we study. In addition to asking about incomes in the year of the survey (2004), the UHS includes data on the last pre-retirement salary earned by retired individuals, which provides information on earnings in different years. While this information is generally unavailable for cohorts retiring prior to 1960, we can estimate the correlation between education and final income for cohorts retiring during the Maoist and Reform eras. For both of these periods, we find a strong, statistically significant correlation between educational attainment and income (and we show that this relationship is not driven by Communist Party membership, a potential confounding factor). To study the relationship between education and income in the Republican era, we turn to the 1929 employee records of the Tianjin-Pukou Railroad, a rare early source of individual-level data on both earnings and educational attainment (see Yuchtman, 2014). We show that the returns to schooling in the Republican era were positive and statistically significant as well, suggesting that our proxy for socioeconomic status is a good one across the entire period.

In the remainder of the paper, we present our empirical analysis in Section 2. We then discuss the policies (and politics) behind a non-monotonic relationship between educational expansion and social mobility across the institutional regimes we study, in Section 3. We summarize the paper and offer concluding thoughts in Section 4.

2 Inequality and intergenerational mobility in 20th century China

We begin by briefly describing our primary dataset (the UHS), then present long-run patterns of social mobility in urban China. We then estimate a variety of specifications using the UHS data, and also present evidence on social mobility among rural Chinese using data from Hertz et al.

[17] It is necessary to note that not all of the increased mobility resulted from benign policy changes in the Maoist era, either before or during the Cultural Revolution. Coercion and limiting the educational opportunities of the children of the educated elite were involved as well. Zhou (2004), page 18, writes that "the 'Anti-Rightist Campaign' [of 1957] purged over 530,000 'rightists,' over 10 percent of the intellectuals at the time." During the Cultural Revolution, young people were forcibly "sent down" to the country-side; Zhou (2004), pages 134–135, finds that the probability of being sent down was positively associated with fathers' education.

(2007) and the China Health and Retirement Longitudinal Study. We finally examine whether education earned economic returns across the three regimes we study, and consider alternative measures of socioeconomic status.

2.1 The *Chinese Urban Household Education and Employment Survey*

Our data come from a retrospective survey of Chinese urban households, the *Chinese Urban Household Education and Employment Survey, 2004*, or UHS. The survey was conducted jointly by the National Bureau of Statistics (NBS) and Peking University, and includes individuals from 12 provinces (Anhui, Beijing, Gansu, Guangdong, Guizhou, Heilongjiang, Hubei, Liaoning, Shaanxi, Shanxi, Sichuan, and Zhejiang). Fan et al. (2010) describe the UHS sampling procedure: the survey used probability-proportional-to-size sampling from strata at the provincial, city, county, town, and neighborhood levels; households selected for the survey were randomly drawn from each neighborhood selected.[18]

Our analysis will focus on men and women who were household heads in 2004 (and so responded to the survey), as well as their fathers, sons, and daughters (about whom questions were asked in the survey).[19] Because we can link household heads both to their parents and to their children, we are able to study father-child pairs in which the child was born as early as the 1920s (when household heads were old, and reported on their parents), as well as pairs in which the child was born more recently (young household heads reporting on their parents and the children of middle-aged household heads). Our analysis of cohorts ends with individuals born in the mid-1980s, as later cohorts would not have had time to complete their education at the time of the survey.

The UHS contains household head, parent, and child demographic information, data on educational attainment, and economic outcomes such as current total income, or final (pre-retirement) labor market income for retired or deceased individuals. We present summary statistics for variables of interest among the children we study, and their fathers, in Table 1, splitting the sample by the institutional "regime" in which children were educated.[20] We show information on education

[18] The sampling frame is the same as that used by China's National Bureau of Statistics Urban Household Income and Expenditure Survey (UHIES), which itself has been widely used (see, e.g., Iyer et al., 2013).

[19] As noted above, we do not focus on information about mothers as we view fathers' education levels as better indicators of parental status than mothers' across the period we study; including mothers' information does not affect our results, however.

[20] In Appendix Table A1, one can see the number of children in each five-year birth cohort as well as children's average schooling levels, fathers' average schooling level, etc., by five-year birth cohort.

Table 1: Summary Statistics for Children and their Fathers in the UHS, by Institutional Regime

	mean	sd	n
Pre-Mao Birth Cohorts			
Education	9.8	3.8	1196
Education Rank	54.0	28.9	1196
CCP Member	0.4	0.5	1196
Age	65.2	3.9	1196
Urban Native	0.5	0.5	1196
Current Income	13598.1	10616.4	1067
Pre-Retirement Income	8196.4	8826.9	1048
Retirement Year	1995.3	5.4	1051
Female	0.4	0.5	1196
Father's Education	4.4	4.2	1196
Father's Education Rank	50.5	28.8	1196
Father CCP Member	0.1	0.3	1196
Father Urban Native	0.1	0.3	1196
Father's Pre-Retirement Income	1930.4	3246.7	215
Father's Retirement Year	1976.6	8.4	227
Mao-Era Birth Cohorts			
Education	10.7	2.8	9396
Education Rank	51.6	28.9	9396
CCP Member	0.3	0.5	9390
Age	47.4	5.3	9396
Urban Native	0.7	0.4	9396
Current Income	15775.5	19920.8	8752
Pre-Retirement Income	8911.0	9086.0	1598
Retirement Year	2000.7	3.2	1595
Female	0.5	0.5	9396
Father's Education	5.8	4.1	9396
Father's Education Rank	50.6	29.0	9396
Father CCP Member	0.3	0.5	9396
Father's Age	71.2	12.5	9358
Father Urban Native	0.4	0.5	9396
Father's Income	11936.1	11170.9	3420
Father's Pre-Retirement Income	4475.3	8175.7	4915
Father's Retirement Year	1986.6	7.4	5029

Table continues below ...

Table 1: Summary Statistics for Children and their Fathers in the UHS, by Institutional Regime (continued)

	mean	sd	n
Post-Mao Birth Cohorts			
Education	12.1	2.9	5830
Education Rank	52.2	29.3	5830
CCP Member	0.2	0.4	5827
Age	33.9	3.9	5830
Urban Native	0.7	0.4	5830
Current Income	15602.2	14280.2	5280
Female	0.6	0.5	5830
Father's Education	7.5	3.9	5830
Father's Education Rank	50.7	29.1	5830
Father CCP Member	0.4	0.5	5830
Father's Age	63.7	7.9	5760
Father Urban Native	0.6	0.5	5830
Father's Income	12635.2	15821.0	3275
Father's Pre-Retirement Income	8326.8	8605.6	3125
Father's Retirement Year	1995.7	6.1	3159
All Birth Cohorts			
Education	11.1	3.0	16422
Education Rank	52.0	29.0	16422
CCP Member	0.3	0.5	16413
Age	43.9	9.9	16422
Urban Native	0.7	0.5	16422
Current Income	15561.1	17594.6	15099
Pre-Retirement Income	8605.9	9308.1	2676
Retirement Year	1998.6	5.0	2657
Female	0.5	0.5	16422
Father's Education	6.3	4.1	16422
Father's Education Rank	50.6	29.0	16422
Father CCP Member	0.3	0.5	16422
Father's Age	68.5	12.0	16286
Father Urban Native	0.4	0.5	16422
Father's Income	12311.3	14234.5	6781
Father's Pre-Retirement Income	5867.1	8482.0	8255
Father's Retirement Year	1989.7	8.5	8415

Children are assigned to institutional regimes as follows: "Pre-Mao" children were born between 1930 and 1944 (inclusive); "Mao" regime children were born between 1945 and 1964 (inclusive); and, "Post-Mao" regime children were born between 1965 and 1984 (inclusive). Education, for children and fathers, is measured in years; Education Rank is a child's rank (1 = lowest, 100 = highest) within his or her five-year birth cohort; Father's Education Rank is the rank of the father's education among the other fathers within a child's five-year birth cohort; the CCP Member variable is a dummy variable equal to one if a child or father is a member of the Chinese Communist Party; Age is measured in years; Urban Native is a dummy variable equal to 1 if children or fathers acquired their *hukou* status by age 2; Current Income is the reported total income of a child or father in 2004; Pre-retirement Income is a child's or father's final salary prior to retiring (if applicable); Retirement Year is the final year of work for a child or father; Female is a dummy variable equal to 1 if a child is female. All data come from the 2004 UHS, described in the text.

levels, Communist Party membership status, age, "native" urban *hukou* status[21], earnings, and gender.

While the UHS sample was constructed to be broadly representative of urban Chinese households, it is worthwhile to compare the characteristics of the sample we study to the characteristics of the Chinese (urban) population in the provinces from which the UHS sampled. Because we examine variation in status transmission across institutional regimes, it is of interest to examine both the overall representativeness of the UHS sample, and also to examine whether the degree to which the UHS is representative varies across time (this could be thought of as a test of "balance" across regimes).

In Table 2, we compare the characteristics of children born between 1930 and 1984 in the UHS dataset to individuals in the 2005 Chinese census 1% sample who were born between 1930 and 1984 and who have urban *hukou* status, in the provinces included in the UHS data.[22] The two datasets are compared in the fraction of individuals who are male and in individuals' educational attainment.[23] We present this comparison of summary statistics both for the entire 1930–1984 period and by institutional regime. One can see that overall, the UHS dataset has slightly fewer men born between 1930 and 1984 than does the Chinese census; education levels in the UHS are also slightly lower than in the census, though the difference is less than one-half of a year of schooling.

Examining the representativeness of the UHS sample across institutional regimes, one can see that in each regime there are small differences between the UHS sample and the census sample: among the pre-Mao cohorts, the UHS sample has a slightly higher fraction male and slightly higher education level; the differences are reversed for the Mao-era and post-Mao cohorts.[24] Below, we re-weight the UHS data to match the age distribution and educational attainment in the census to determine whether the differences between the UHS sample and the broader Chinese urban population play a role in generating the social mobility patterns that we observe. Using the re-

[21] A household's *hukou* status is its official, registered location of residency, with urban status being particularly valuable (see Li et al., 2010). We define "native" urban *hukou* status as acquiring the right to live in an urban area by age 2.

[22] The census was conducted by the Chinese National Bureau of Statistics. See `http://www.stats.gov.cn/english/NewsEvents/200603/t20060322_25744.html` (last accessed June 3, 2015).

[23] To make educational attainment comparable between the two datasets, we convert educational levels completed in the census into years of schooling, and compare this to the analogous variable for the UHS data (highest level of schooling completed converted into years).

[24] In Appendix Figure A1 we also present the distribution of births across time in the UHS dataset and in the Chinese census. One can see that the UHS dataset captures the peaks and valleys in the birth distribution seen in the census, though the UHS sample slightly under-represents the oldest birth cohorts as well as the youngest.

Table 2: Representativeness of the UHS Data Across Regimes

	UHS Fraction Male	Census Fraction Male	UHS Years of Schooling	Census Years of Schooling
	(1)	(2)	(3)	(4)
Pre-Mao Birth Cohorts				
Mean	0.58	0.53	8.83	8.01
Std. Dev.	0.49	0.50	4.83	4.44
Obs	1196	47114	1196	47114
Mao-Era Birth Cohorts				
Mean	0.51	0.52	9.93	10.41
Std. Dev.	0.50	0.50	3.44	3.19
Obs	9396	138605	9396	138605
Post-Mao Birth Cohorts				
Mean	0.43	0.49	11.41	12.02
Std. Dev.	0.50	0.50	3.50	2.95
Obs	5830	159026	5830	159026
All Birth Cohorts				
Mean	0.49	0.51	10.38	10.83
Std. Dev.	0.50	0.50	3.67	3.55
Obs	16422	344745	16422	344745

Table compares characteristics of children born between 1930 and 1984 in the UHS dataset to individuals born between 1930 and 1984 in the 2005 Chinese census 1% sample who have urban *hukou* status in the provinces included in the UHS data. Children are assigned to institutional regimes as follows: "Pre-Mao" children were born between 1930 and 1944 (inclusive); "Mao" regime children were born between 1945 and 1964 (inclusive); and, "Post-Mao" regime children were born between 1965 and 1984 (inclusive). Datasets are compared in the fraction of individuals who are male and in individuals' educational attainment. To make educational attainment comparable between the two datasets, we convert educational levels completed in the census into years of schooling, and compare this to the analogous variable for the UHS data (highest level of schooling completed converted into years).

weighted data does *not* affect these patterns, supporting our use of the UHS sample as a broadly, albeit not perfectly, representative sample of the urban Chinese population.

2.2 Long-run trends in inequality and social mobility

Our empirical analysis will focus on the relationship between child's education and father's education, across birth cohorts. This has several virtues: first, examining educational attainment as an indicator of socioeconomic status has an advantage over income measured at one point in time (let alone at the same time for parents and children), as it may be less susceptible to measurement error, and thus attenuation bias in estimating the degree of status persistence (see, for example, Zimmerman, 1992). Concerns with using income as a measure of status are especially pronounced when examining patterns of social mobility across time, as measurement may be more accurate for recent cohorts. Second, educational attainment is generally fixed by the end of one's youth (by age 25 in contemporary China, or at a younger age, when education levels were lower), and so is very much a reflection of the institutional regime experienced while young. This allows us to link educational attainment to a particular institutional context, which is far more difficult to do with earnings (which may be a function of experiences in multiple institutional environments). Relatedly, human capital is very difficult, if not impossible, to expropriate (in the absence of slavery). It thus can function as a metric of social status even during periods of radical change to institutions and to property rights over physical capital and land, as experienced in 20th century China. Finally, education data are available for a longer period of time: income data are not available in the UHS for anyone in the Republican period (the earliest data are final pre-retirement earnings for individuals who retired in 1964).[25] It is also worth noting that we prefer using *fathers'* education as an indicator of parents' status because women's access to education varied significantly across time and space, thus making it a noisier measure of parental status. However, including mother's education level as an input in our measure of parents' status does not affect our results.

In Figure 2, we present the basic patterns of educational status transmission in our data, showing coefficients on fathers' educational attainment from a regression of children's educational

[25] One might consider using income at the time of retirement as an indicator of status prior to retirement; however, this exacerbates the problem of measurement error in the explanatory variable and also introduces a wedge—sometimes across institutional regimes—between economic status when income is measured and economic status at the time of a child's birth.

attainment on fathers' educational attainment across birth cohorts, between 1930 and 1980.[26] We estimate regressions for five-year moving birth cohort windows; the year plotted is the center of the five-year interval. In Figure 2, Panel A, we present coefficients from regressions in which we use education levels as measures of fathers' and children's educational attainment. One can see that among children born prior to 1945, there is generally a large coefficient (typically between 0.2 and 0.3) on fathers' education: educational attainment is relatively persistent across generations for these cohorts.[27] The coefficients fall among children born in the late 1940s and stay low (around 0.15) until the mid-1960s: that is to say, the cohorts who were educated after the Communist Party's takeover of China (and after the first five-year educational plan was implemented in 1953) experienced a much lower rate of persistence of educational attainment. Next, one can see a rise in persistence among cohorts born in the late 1960s (and educated in the Reform era), with coefficients returning to the levels seen in Republican China.

To examine the robustness of this U-shaped pattern of educational persistence across time, we next replicate the analysis from Panel A, but using an alternative measure of educational attainment: for children, we use their rank within their five-year birth cohort; fathers' attainment is measured as their rank among fathers of children born within the relevant five-year window. One can see in Figure 2, Panel B, that again, the U-shaped pattern holds. Next, we replicate the analyses from Panels A and B, but include in the regressions controls for cohort-specific effects of gender, cohort-specific effects of fathers' and children's Communist Party membership status; and quadratic controls for children's ages and cohort-specific fathers' age quadratics. In Figure 2, Panels C and D, one can see that including these controls in the regressions of children's educational attainment on fathers' attainment does not change the U-shaped pattern of intergenerational persistence across birth cohorts.[28]

[26] Older cohorts are extremely small in our sample; younger cohorts are both small and suffer from the disadvantage that their educational attainment may not be complete in 2004.

[27] One can also see a sharp drop in rates of intergenerational educational transmission among children born in the early- to mid-1930s, with the rate of transmission returning to a high level among children born in the late 1930s. It is possible that the Second Sino-Japanese War, which began in 1937, disrupted educational attainment for the mid-1930s birth cohorts and thus interrupted status transmission that would otherwise have occurred. Unfortunately, we are not able to test this hypothesis with any power, due to the small cell sizes among the oldest birth cohorts in our sample.

[28] As an additional robustness check, we produce analogous figures, but using the log years of schooling as our measure of educational attainment for children and fathers. These can be seen in Appendix Figure A2, and they again show the U-shaped pattern of status transmission.

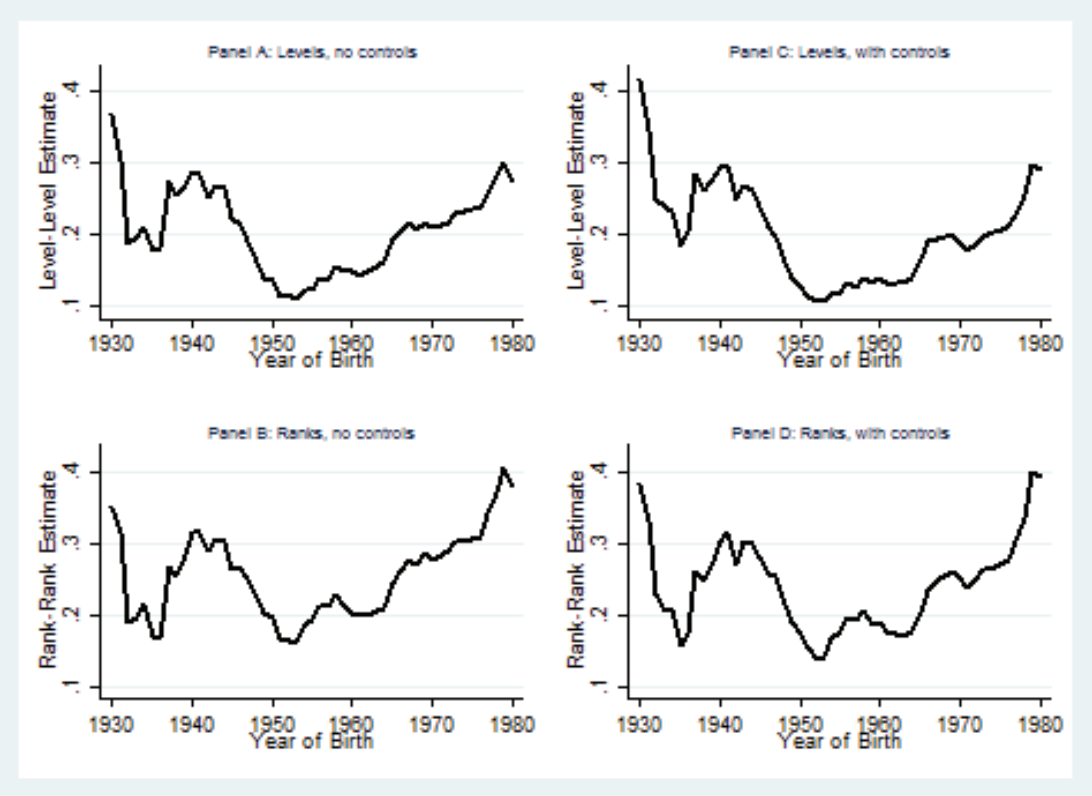

Figure 2: Persistence of educational attainment across cohorts. All panels show coefficients on fathers' educational attainment from a regression of children's educational attainment on fathers' educational attainment. Regressions are estimated for five-year periods, which "roll" across birth cohorts (the year plotted is the center of the five-year interval). Panels A and C measure educational attainment among children and fathers using the level of their years of schooling completed. Panels B and D measure children's educational attainment using their rank within the five-year birth-cohort; fathers' attainment is measured as their rank among fathers of children born within the five-year birth cohort. Panels A and B show coefficients estimated from regressions without any control variables. Panels C and D show coefficients estimated from regressions that include controls for cohort-specific effects of gender, cohort-specific effects of fathers' and children's Communist Party membership status; and quadratic controls for fathers' ages and children's ages (the quadratic controls for fathers' ages are also cohort-specific). All regressions estimated using the UHS data described in the text.

2.3 Regression estimates of social mobility across cohorts

We next present regression estimates of the relationship between fathers' education and children's education, one five-year birth cohort at a time. In our regression analysis, we use three measures of educational attainment: the first is simply years of schooling, measured for fathers and for children. Next, to mitigate concerns about changing distributions of education across time distorting our

comparisons of mobility across cohorts, we also measure educational attainment using children's educational rank within their five-year birth cohort, as well as their fathers' rank among the fathers of children in that cohort. Finally, for robustness, we also examine the log of fathers' and children's education (these results are reported in the appendix).

Our empirical model is as follows:

$$educ_{it} = \sum_{t=1930}^{1980} \beta_t \times fathereduc_i + X_{it} + \delta_t + \epsilon_{it}, \quad (1)$$

where the outcome variable, $educ_{it}$, is the educational attainment measure (levels, logs, or ranks) of child i born in birth cohort t, where t is the first year of a (fixed, not rolling) five-year cohort ($t \in 1930-1934, \ldots\ 1980-1984$). The explanatory variables of interest are coefficients on fathers' education ($fathereduc_i$), which are estimated by five-year birth cohort (thus, we estimate a full set of coefficients, β_t). We always include a full set of birth cohort dummy variables (δ_t), and in some specifications we include controls for cohort-specific effects of gender; cohort-specific effects of fathers' and children's Communist Party membership status; controls for fathers' and children's ages (with fathers' age controls specific to their children's birth cohorts); or province×cohort fixed effects.

In addition to presenting the coefficients on fathers' education by five-year birth cohort, we present differences in coefficients, and standard errors of differences, between the coefficients in the Republican era, the Maoist era, and the Reform era. We assign cohorts born between 1930 and 1944 to the Republican period: these children were too old (9–23 years old) to be very much affected by the Communist Party's first five-year education plan (which came into effect in 1953; see Tsang, 2000), especially considering that children born in the 1930s and early 1940s usually completed their educations at the primary level (see Deng and Treiman, 1997, and Lavely et al., 1990). Children born between 1945 and 1964 are assigned to the Maoist period: they were 8 years old or younger at the time of the first CCP education plan, and had also completed at least their lower secondary schooling prior to the policy reforms of the late 1970s. Finally, children born in 1965 and later (in practice, 1965 through 1984, given our data constraints) are assigned to the post-Mao, Reform period: they were 14 or younger at the time the economic reforms were initiated, meaning all of them would have reached secondary school age during the Reform era (birth cohorts from the late

1960s on typically completed their educations at the lower- or upper-secondary level).[29]

In Table 3, column 1, we present estimates from a specification using children's and fathers' education levels (years of schooling completed) as measures of their educational attainment, without including any controls (other than the cohort fixed effects). In the top panel, one can see that the regression coefficients on five-year birth cohorts for children educated in the Republican period are generally larger than those for cohorts educated in the Maoist period; then, coefficients increase again among the youngest cohorts educated in the Reform era. In Table 3, column 2, we estimate the same specification as in column 1, but add controls for cohort-specific effects of gender, cohort-specific effects of fathers' and children's Communist Party membership status; and quadratic controls for fathers' ages and children's ages. In the top panel, one can see that the basic patterns across five-year birth cohorts are unchanged from column 1: educational persistence was relatively high in the Republican era, decreased in the Maoist era, and increased again in the Reform era.

The evidence in the bottom panel of Table 3, columns 1–2, indicates that social mobility statistically significantly differed across institutional regimes in 20th century China. The Republican coefficients exceed those in the Maoist era by around 0.10, with a standard error around 0.05; the coefficients in the Reform era exceed those in the Maoist era again by around 0.10, with a standard error of 0.02. It is also important to note that finding significantly larger coefficients for the Republican period than for the Maoist period suggests that the larger coefficients found for the Reform era (compared to the Maoist era) are likely not due to measurement error producing attenuation bias for the older cohorts. One would expect such measurement error to be greater for the Republican era, yet coefficients are actually larger among older cohorts.

The additional impact of a year of fathers' schooling in the Republican and Reform eras (relative to the Maoist era) is also economically meaningful. The predicted difference in education between children with high school-educated and college-educated fathers (or, equivalently, between children whose fathers differ by 4 years of secondary schooling[30]) is 0.6 years in the Maoist era; this difference jumps to nearly a full year in the Republican and Reform eras. The additional 0.4 years of children's

[29] The assignment of the transition cohorts between regimes is necessarily somewhat "fuzzy". Importantly, our results are robust to changes in the coding of the transitional cohorts (for example, dropping the 1940–1944 cohort or the 1965–1969 cohort from our comparisons).

[30] Four years of education is approximately 1 standard deviation of fathers' schooling.

Table 3: Intergenerational Persistence By Five-Year Birth Cohort: Education Levels

	(1)	(2)	(3)	(4)	(5)	(6)
1930 X Father Education Level	0.188	0.239	0.193	0.235	0.303	0.555
	(0.131)	(0.112)	(0.118)	(0.117)	(0.099)	(0.174)
1935 X Father Education Level	0.275	0.273	0.226	0.268	0.299	0.310
	(0.043)	(0.043)	(0.037)	(0.041)	(0.037)	(0.213)
1940 X Father Education Level	0.254	0.244	0.231	0.204	0.286	0.158
	(0.029)	(0.017)	(0.016)	(0.014)	(0.022)	(0.070)
1945 X Father Education Level	0.190	0.193	0.165	0.162	0.198	0.177
	(0.019)	(0.021)	(0.026)	(0.025)	(0.022)	(0.032)
1950 X Father Education Level	0.116	0.110	0.097	0.099	0.107	0.118
	(0.011)	(0.006)	(0.005)	(0.009)	(0.012)	(0.011)
1955 X Father Education Level	0.135	0.129	0.117	0.120	0.134	0.124
	(0.014)	(0.013)	(0.015)	(0.011)	(0.020)	(0.018)
1960 X Father Education Level	0.150	0.132	0.127	0.122	0.112	0.165
	(0.006)	(0.007)	(0.006)	(0.007)	(0.011)	(0.004)
1965 X Father Education Level	0.216	0.197	0.193	0.189	0.230	0.169
	(0.014)	(0.018)	(0.018)	(0.016)	(0.024)	(0.018)
1970 X Father Education Level	0.216	0.186	0.184	0.172	0.187	0.189
	(0.013)	(0.011)	(0.011)	(0.010)	(0.012)	(0.027)
1975 X Father Education Level	0.254	0.222	0.215	0.190	0.216	0.235
	(0.016)	(0.017)	(0.017)	(0.021)	(0.038)	(0.013)
1980 X Father Education Level	0.313	0.367	0.389	0.327	0.281	0.381
	(0.050)	(0.076)	(0.065)	(0.087)	(0.047)	(0.095)
Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	Yes	Yes	Yes	Yes
Prov X Cohort FE	No	No	Yes	No	No	No
Extended Controls	No	No	No	Yes	No	No
Sample	All	All	All	All	Non-Native Fathers	Native Fathers
Observations	16422	16277	16277	16277	9288	6989
Pre-Mao - Mao (All) Mean	0.077	0.111	0.090	0.110	0.159	0.195
Pre-Mao - Mao (All) SE	0.047	0.041	0.042	0.042	0.037	0.095
Post-Mao - Mao (All) Mean	0.088	0.102	0.119	0.094	0.091	0.098
Post-Mao - Mao (All) SE	0.014	0.021	0.019	0.024	0.019	0.027
Pre-Mao - Mao (No CR) Mean	0.069	0.090	0.070	0.094	0.141	0.170
Pre-Mao - Mao (No CR) SE	0.048	0.042	0.044	0.043	0.038	0.096
Post-Mao - Mao (No CR) Mean	0.080	0.081	0.099	0.078	0.074	0.073
Post-Mao - Mao (No CR) SE	0.017	0.023	0.022	0.026	0.021	0.030

Standard errors clustered by cohort in parentheses. Pre-Mao five-year birth cohorts begin in 1930, 1935, and 1940. Post-Mao cohorts begin in 1965, 1970, 1975, and 1980. "Mao (No CR)" excludes the five-year cohorts severely exposed to the Cultural Revolution, namely 1950 and 1955. Baseline controls are quadratic polynomials in own and father age (the latter cohort-specific), as well as cohort specific interactions with gender and father and child Communist Party membership. Extended controls are cohort-specific effects of the following: (i) living in a coastal province and (ii) fathers' sector of employment (public or private).

schooling is substantial, relative to the variation in children's schooling we observe (the standard deviation of children's schooling is 3 years), and relative to the urban-rural gap in schooling (2 years, on average, in the CHARLS dataset).

We next examine the importance of the cohorts affected by the Cultural Revolution in generating the greater social mobility we find for the cohorts educated in the Maoist period. The bottom panel of Table 3 (in rows labeled "No CR") shows differences in coefficients across institutional regimes, but excluding from the Maoist period those individuals born between 1950 and 1959, who were most affected by the disruption to education caused by the Cultural Revolution. One can see in Table 3, columns 1–2, that the differences across regimes fall slightly, but remain quite large, suggesting that the cohorts most affected by the Cultural Revolution indeed experienced the highest mobility across generations, though the broader finding of low status persistence during the Maoist era is not simply a product of the Cultural Revolution.

An important question about these patterns is to what extent are they driven by differential economic development across Chinese provinces. In Table 3, column 3, we add province×cohort fixed effects to the specification in column 2. Adding these controls means that we estimate the persistence of educational attainment exploiting only the within-province, within-cohort variation in fathers' educational attainment. These controls allow us to account for changes in educational attainment that occurred over time, at different rates in different provinces. Again, the broad pattern seen in other specifications holds: social mobility was relatively low in the Republican period, increased in the Maoist period, and then fell again in the Reform period.

Fathers' educational attainment is one dimension of household status, but others available in the UHS include Communist Party membership (for which we already controlled in columns 2 and 3), the region of China where one lives (coastal or inland), and the sector of fathers' employment (public or private).[31] Each of these dimensions might, indeed, have a different impact on a child's outcomes for different cohorts of children. To the extent that these measures of status are all correlated with fathers' education (but perhaps differentially so across regimes), and that the returns to differing status dimensions changed over time, one might be concerned that variation in the status persistence coefficients we observed thus far actually reflects differing omitted variables biases across regimes,

[31] The UHS also has information about fathers' incomes, but this is very limited for the pre-Mao birth cohorts. We examine transmission of status measured by income for the Mao-era and post-Mao cohorts in Table 8, below.

rather than changes in status transmission.[32] To determine whether differences in the effects of other status dimensions drive our results, in Table 3, column 4, we control for cohort-specific effects of the following: (i) living in a coastal province and (ii) fathers' sector of employment (public or private). One can see that including these controls does not affect our finding of a U-shaped pattern of educational status transmission.

One important concern with our analysis thus far is that it pools fathers who were urban natives with fathers who selected into urban areas. Many rural to urban migrants in China move in order to pursue educational opportunities (for themselves or for their children), or because of political factors, such as CCP membership or military service (Wu and Treiman, 2004). Furthermore, fathers who were urban natives would likely have better established social networks than fathers who migrated to cities, which might be an additional mechanism linking fathers' status to children's status. One might wish to separately study urban native and non-urban native households to identify status transmission in contexts in which social networks were likely less important (non-urban natives) and in which selection into the sample is less of a concern (urban natives). In Table 3, column 5, we estimate the specification estimated in column 2, but restricting the sample to children of fathers who are non-urban natives.[33] One can see that estimates using only the children of non-urban natives are qualitatively similar to estimates based on the entire sample—if anything, the U-shaped pattern of status transmission is even sharper in this sub-sample. Thus, changing values of family social networks that are associated with educational attainment do not seem to be driving the variation in educational status transmission across institutional regimes. Finally, in Table 3, column 6, we estimate the specification estimated in column 2, but restricting the sample to fathers who are "natives". One can see that estimates using only urban native fathers again reveal a significant increase in social mobility during the Maoist era and a significant decrease in mobility post-Mao. This suggests that selected migration into urban areas does not drive our findings.

One might also be concerned about selection into the sample for reasons other than internal migration. A primary issue is emigration from China that was differential by socioeconomic status.

[32] That is, by failing to control for other dimensions of status directly, the effects of these other status dimensions would "load on" to the coefficient on fathers' education; if the omitted variables bias varied across regime, this would generate variation in the coefficients on fathers' education across cohorts, but for reasons other than changing educational status transmission.

[33] We define an urban native as someone who received their urban *hukou* by age 2, using information in the UHS.

The families with the greatest incentives to exit China in the period we study were elite-background families who fled Communist China (for Taiwan, Hong Kong, or elsewhere). Elite households were able to sustain their status during the Republican period, but may have anticipated *declines* in status for their children under the Communist regime. Thus, there might have been *less* social mobility in the Republican period, and *more* social mobility in the Maoist period if these individuals had not emigrated. A second source of sample selection is differential mortality: we select on good outcomes for older-cohort children in our sample, as household heads born as early as 1930 needed to survive into their 70s to make it into the UHS sample. Because death would have been most likely among the poorest individuals from the Republican birth cohorts (who were disproportionately born into poor households), this source of selection would also suggest that there was even less social mobility in the Republican period than what we observe.[34] Thus, if we were able to eliminate the selection problem, we believe that the U-shaped pattern of persistence would be even more pronounced.

To examine the robustness of our findings with respect to our measurement of educational attainment, we next estimate the specifications from Table 3, but using using the *ranks* of fathers' and children's educational attainment (higher ranks indicating greater educational attainment). In Table 4, columns 1–6, one can see that our results using ranks are very similar to those found using levels. Finally, we estimate the six specifications from Table 3, but measuring educational attainment using the the log years of fathers' and children's schooling. One can see in Appendix Table A2, columns 1–6, that our results using this alternative measure of educational attainment are similar to those found using levels or ranks: again there is a U-shaped pattern of intergenerational persistence across cohorts, with different institutional regimes associated with different levels of social mobility.

As a final exercise, we examine whether the un-representativeness of the UHS sample (compared to the 2005 Chinese census 1% sample) may play an important role in producing the patterns we observe. Specifically, we assign each child in the UHS sample to a cell defined by the institutional regime into which the child was born (pre-Mao, Mao, or post-Mao, as defined above) and by the

[34]The massive famine associated with the Great Leap Forward certainly led to many deaths in the Maoist era, and some of these might have been of children from poor backgrounds who would have ended up poor; but our main results are for urban China, where the mortality consequences of the famine were much less severe, and our results are not driven by the famine-era birth cohorts of the late 1950s and early 1960s.

Table 4: Intergenerational Persistence By Five-Year Birth Cohort: Education Ranks

	(1)	(2)	(3)	(4)	(5)	(6)
1930 X Father Education Rank	0.189	0.223	0.178	0.218	0.281	0.645
	(0.136)	(0.116)	(0.121)	(0.123)	(0.105)	(0.081)
1935 X Father Education Rank	0.268	0.256	0.206	0.250	0.277	0.296
	(0.046)	(0.046)	(0.040)	(0.042)	(0.043)	(0.202)
1940 X Father Education Rank	0.288	0.265	0.254	0.221	0.312	0.145
	(0.034)	(0.023)	(0.024)	(0.023)	(0.027)	(0.117)
1945 X Father Education Rank	0.250	0.250	0.209	0.205	0.254	0.238
	(0.014)	(0.019)	(0.026)	(0.028)	(0.022)	(0.041)
1950 X Father Education Rank	0.164	0.141	0.121	0.123	0.143	0.141
	(0.013)	(0.005)	(0.005)	(0.004)	(0.014)	(0.024)
1955 X Father Education Rank	0.211	0.194	0.173	0.182	0.197	0.196
	(0.022)	(0.022)	(0.022)	(0.018)	(0.031)	(0.028)
1960 X Father Education Rank	0.199	0.172	0.167	0.156	0.144	0.219
	(0.008)	(0.012)	(0.010)	(0.013)	(0.014)	(0.014)
1965 X Father Education Rank	0.277	0.251	0.246	0.241	0.295	0.218
	(0.020)	(0.025)	(0.025)	(0.023)	(0.033)	(0.025)
1970 X Father Education Rank	0.289	0.251	0.248	0.233	0.253	0.255
	(0.015)	(0.012)	(0.013)	(0.010)	(0.022)	(0.034)
1975 X Father Education Rank	0.341	0.302	0.286	0.259	0.280	0.329
	(0.024)	(0.028)	(0.028)	(0.034)	(0.058)	(0.015)
1980 X Father Education Rank	0.389	0.450	0.480	0.397	0.392	0.435
	(0.057)	(0.093)	(0.090)	(0.115)	(0.079)	(0.095)
Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	Yes	Yes	Yes	Yes
Prov X Cohort FE	No	No	Yes	No	No	No
Extended Controls	No	No	No	Yes	No	No
Sample	All	All	All	All	Non-Native Fathers	Native Fathers
Observations	16422	16277	16277	16277	9288	6989
Pre-Mao - Mao (All) Mean	0.042	0.059	0.045	0.063	0.106	0.164
Pre-Mao - Mao (All) SE	0.050	0.043	0.044	0.045	0.040	0.084
Post-Mao - Mao (All) Mean	0.118	0.124	0.148	0.116	0.120	0.111
Post-Mao - Mao (All) SE	0.018	0.026	0.026	0.032	0.029	0.030
Pre-Mao - Mao (No CR) Mean	0.024	0.037	0.025	0.049	0.091	0.134
Pre-Mao - Mao (No CR) SE	0.050	0.044	0.045	0.046	0.041	0.086
Post-Mao - Mao (No CR) Mean	0.100	0.103	0.127	0.102	0.106	0.081
Post-Mao - Mao (No CR) SE	0.019	0.028	0.028	0.034	0.030	0.034

Standard errors clustered by cohort in parentheses. Pre-Mao five-year birth cohorts begin in 1930, 1935, and 1940. Post-Mao cohorts begin in 1965, 1970, 1975, and 1980. "Mao (No CR)" excludes the five-year cohorts severely exposed to the Cultural Revolution, namely 1950 and 1955. Baseline controls are quadratic polynomials in own and father age (the latter cohort-specific), as well as cohort specific interactions with gender and father and child Communist Party membership. Extended controls are cohort-specific effects of the following: (i) living in a coastal province and (ii) fathers' sector of employment (public or private).

child's educational attainment rank among children born into the same institutional regime (above median or below median). We then do the same with individuals in the 2005 Chinese census 1% sample who were born between 1930 and 1984 and who have urban *hukou* status, in the provinces included in the UHS data. We then calculate the ratio of each cell's proportion of the census to the cell's proportion in the UHS sample. This ratio provides weights that we can apply to adjust the composition of the UHS sample to match the census: cells with larger weights are under-represented in the UHS sample relative to the census, and we thus assign greater weight to observations in these cells in our analysis.

In Table 5, we present regression results from specifications measuring educational attainment using both levels and ranks, including our baseline control variables (i.e., the specifications in Table 3, column 2, and Table 4, column 2), but using the re-weighted UHS data. One can see that re-weighting the UHS sample does not qualitatively affect our results: estimated status persistence remains markedly higher in the pre-Mao and post-Mao eras than in the Maoist era.

2.4 Transition matrices across institutional regimes

In presenting patterns of social mobility, we have treated the persistence of educational attainment from one generation to the next as a single parameter that applies uniformly across individuals. Of course, intergenerational transmission may not be so simple: patterns of social mobility may differ depending on children's starting positions. While relatively small cell sizes prevent us from precisely identifying differences in mobility across the distribution of fathers' educational attainment, and across time, we examine changes in intergenerational transition matrices across institutional regimes to provide suggestive evidence on where in the distribution the changes in mobility observed above occurred.

To do so, we estimate ordered probit models predicting the quintile of a child's educational rank (within a five-year birth cohort), with the explanatory variables of interest being quintiles of fathers' education ranks interacted with children's five-year birth cohorts (analogous to our OLS regressions above, but with five discrete outcomes, and fathers' ranks converted to quintiles). We use these estimates to generate five-by-five cell transition matrices showing the distribution of children's quintiles as a function of fathers' quintiles. We generate tables specific to each institutional regime by averaging across five-year cohort interaction terms in the Republican, Maoist, and Reform

Table 5: Intergenerational Persistence By Five-Year Birth Cohort: Education Levels and Ranks Using Re-weighted Data

Education measured in years		*Education measured as a rank*	
1930 X Father Educ. Level	0.244	1930 X Father Educ. Rank	0.225
	(0.109)		(0.123)
1935 X Father Educ. Level	0.224	1935 X Father Educ. Rank	0.214
	(0.047)		(0.052)
1940 X Father Educ. Level	0.214	1940 X Father Educ. Rank	0.249
	(0.018)		(0.024)
1945 X Father Educ. Level	0.186	1945 X Father Educ. Rank	0.244
	(0.016)		(0.013)
1950 X Father Educ. Level	0.111	1950 X Father Educ. Rank	0.146
	(0.006)		(0.005)
1955 X Father Educ. Level	0.129	1955 X Father Educ. Rank	0.196
	(0.014)		(0.023)
1960 X Father Educ. Level	0.126	1960 X Father Educ. Rank	0.163
	(0.008)		(0.013)
1965 X Father Educ. Level	0.138	1965 X Father Educ. Rank	0.177
	(0.015)		(0.021)
1970 X Father Educ. Level	0.121	1970 X Father Educ. Rank	0.160
	(0.009)		(0.009)
1975 X Father Educ. Level	0.156	1975 X Father Educ. Rank	0.221
	(0.017)		(0.026)
1980 X Father Educ. Level	0.353	1980 X Father Educ. Rank	0.393
	(0.037)		(0.062)
Observations	16277		16277
Pre-Mao - Mao (All) Mean	0.089		0.042
Pre-Mao - Mao (All) SE	0.041		0.046
Post-Mao - Mao (All) Mean	0.054		0.051
Post-Mao - Mao (All) SE	0.013		0.019
Pre-Mao - Mao (No CR) Mean	0.071		0.026
Pre-Mao - Mao (No CR) SE	0.041		0.046
Post-Mao - Mao (No CR) Mean	0.036		0.034
Post-Mao - Mao (No CR) SE	0.014		0.020

Standard errors clustered by cohort in parentheses. Pre-Mao five-year birth cohorts begin in 1930, 1935, and 1940. Post-Mao cohorts begin in 1965, 1970, 1975, and 1980. "Mao (No CR)" excludes the five-year cohorts severely exposed to the Cultural Revolution, namely 1950 and 1955. Both regressions include cohort fixed effects and baseline controls: quadratic polynomials in own and father age (the latter cohort-specific), as well as cohort specific interactions with gender and father and child Communist Party membership. Both regressions estimated using UHS data re-weighted to match the 2005 Chinese census 1% sample as follows: observations in the UHS sample are assigned to a cell defined by the institutional regime into which the child was born (pre-Mao, Mao, or post-Mao, as defined above) and by the child's educational attainment rank among children born into the same institutional regime (above median or below median). Individuals in the 2005 Chinese census who were born between 1930 and 1984 and who have urban *hukou* status, in the provinces included in the UHS data, are assigned to the same cells. Weights are calculated as the ratio of each cell's proportion of the census to the cell's proportion in the UHS sample.

eras—these three transition matrices can be seen in Table 6.

The table suggests that changes in status transmission among the highest-education fathers appear to be an important part of the changes in social mobility observed above. Comparing the Pre-Mao (Republican) era transition matrix to the Maoist era matrix, one can see that the likelihood of a child being in the "(5, 5)" cell (highest education quintile father, highest education quintile child) is smaller by more than 5 percentage points in the Maoist era than the Republican era. The children of top-quintile fathers are generally more likely to be lower in the rank distribution in the Maoist era than in the Republican era. One can see this change reversed in a comparison of the Maoist and Reform era matrices: in the Reform era, the fraction of children in the "(5,5)" cell is nearly 3 percentage points greater than in the Maoist era. Top-quintile fathers in general were more likely to have top quintile children in the Reform era than in the Maoist era.

One also sees greater mobility among children born to bottom-quintile fathers in the Maoist era. Children born to first quintile fathers are *less* likely to be in the first quintile themselves in the Maoist period compared to both the Republican and Reform eras. In contrast, children born to fathers in the top 4 quintiles are *more* likely to be in the bottom quintile during the Maoist era than the Republican and Reform eras. Thus, both increased upward mobility from the bottom quintile and increased downward mobility from the top quintile appear to play a role in the greater social mobility we observe in the Maoist era.

2.5 Social mobility in rural China

It is of interest to know whether the U-shaped pattern of persistence observed among urban Chinese is also present among rural Chinese. While no dataset that we know of includes information on fathers' and children's schooling for birth cohorts of *rural* Chinese spanning the three institutional regimes covered by the UHS data, we can turn to multiple datasets which together provide evidence on social mobility across the 1930–1985 birth cohorts in rural China.

We begin with data taken from Hertz et al. (2007), originally from the World Bank's (1995) Living Standards Measurement Surveys. The dataset allows one to estimate the relationship between fathers' and children's education for rural Chinese in birth cohorts between the 1930s and 1970s; that is, covering the Republican era and the Maoist one, but not including much data on cohorts educated following the post-1979 reforms. We complement the Hertz et al. (2007) data with data

Table 6: Predicted Transition Probabilities By Regime

	Children's Quintile in Pre-Mao Period				
	1	2	3	4	5
Father's Quintile 1					
Mean	0.375	0.232	0.164	0.134	0.095
Std. Dev	0.030	0.001	0.006	0.011	0.014
Father's Quintile 2					
Mean	0.285	0.222	0.179	0.167	0.147
Std. Dev	0.049	0.006	0.008	0.018	0.029
Father's Quintile 3					
Mean	0.229	0.210	0.185	0.188	0.188
Std. Dev	0.024	0.007	0.001	0.009	0.021
Father's Quintile 4					
Mean	0.200	0.199	0.185	0.198	0.218
Std. Dev	0.035	0.013	0.000	0.012	0.036
Father's Quintile 5					
Mean	0.131	0.166	0.178	0.218	0.307
Std. Dev	0.020	0.013	0.006	0.004	0.035
	Children's Quintile in Mao Period				
	1	2	3	4	5
Father's Quintile 1					
Mean	0.361	0.231	0.167	0.139	0.102
Std. Dev	0.037	0.001	0.008	0.013	0.017
Father's Quintile 2					
Mean	0.322	0.227	0.174	0.154	0.124
Std. Dev	0.047	0.005	0.008	0.017	0.027
Father's Quintile 3					
Mean	0.275	0.221	0.181	0.171	0.152
Std. Dev	0.031	0.006	0.004	0.012	0.022
Father's Quintile 4					
Mean	0.238	0.213	0.185	0.185	0.180
Std. Dev	0.021	0.005	0.002	0.008	0.017
Father's Quintile 5					
Mean	0.167	0.186	0.184	0.209	0.254
Std. Dev	0.018	0.010	0.003	0.005	0.025
	Children's Quintile in Post-Mao Period				
	1	2	3	4	5
Father's Quintile 1					
Mean	0.391	0.232	0.161	0.129	0.088
Std. Dev	0.016	0.001	0.004	0.005	0.006
Father's Quintile 2					
Mean	0.316	0.228	0.176	0.155	0.125
Std. Dev	0.012	0.001	0.002	0.005	0.007
Father's Quintile 3					
Mean	0.273	0.221	0.181	0.171	0.154
Std. Dev	0.033	0.008	0.003	0.012	0.026
Father's Quintile 4					
Mean	0.202	0.201	0.186	0.197	0.213
Std. Dev	0.018	0.007	0.000	0.006	0.019
Father's Quintile 5					
Mean	0.146	0.175	0.181	0.215	0.282
Std. Dev	0.016	0.011	0.005	0.003	0.028

Table shows transitions across generations from a particular quintile in the distribution of educational ranks (among fathers) to a particular quintile in the distribution of educational ranks among children. To generate a transition matrix for each institutional regime, we estimate ordered probit models predicting the quintile of a child's educational rank (within a five-year birth cohort), with the explanatory variables of interest being quintiles of fathers' education ranks interacted with children's five-year birth cohorts. We generate tables specific to each institutional regime by averaging across five-year cohort interaction terms in the Republican (born 1930–1944), Maoist (born 1945–1964), and Reform (born 1965–1984) eras.

from the China Health and Retirement Longitudinal Study (CHARLS), collected in 2011–2012. The dataset comes from a survey of households with members aged 45 years or above; we examine information on fathers' and children's education for rural Chinese in birth cohorts between 1940 through the 1980s.[35] Together the two datasets span the birth cohorts included in the UHS data.

For the two rural datasets, we regress children's educational levels on fathers' educational levels, running separate regressions for each ten-year birth cohort, and we plot the coefficients on fathers' education for each ten-year cohort (we plot the first year of a ten-year birth cohort, so the 1960 datapoint represents cohorts born between 1960 and 1969, inclusive). This specification was chosen as it most closely matched the structure of the Hertz et al. (2007) data while allowing for large enough cells on which to estimate the regressions. One can see in Figure 3 that the Hertz. et al. (2007) data show an almost continuous decline in intergenerational persistence from the 1920–1929 cohort through the 1960–1969 cohort. There is a small uptick in the 1970–1979 cohort. Examining the CHARLS data, one sees a low, but increasing rate of intergenerational persistence for the 1940–1949 cohort through the 1960–1969 cohort, then a marked jump to very high levels of persistence for the cohorts born after 1970. We also plot the same specification using our UHS data, for the cohorts born between 1930 and 1985.[36]

Examining Figure 3, one can see that the U-shaped pattern of status transmission across time observed in urban China also seems to hold in rural China: the Hertz et al. (2007) data reveal a decline in intergenerational persistence (increase in mobility) from the Republican era to the Maoist era. The CHARLS data show a striking increase in persistence (decline in mobility) from the pre-Reform to the Reform period. The pattern of social mobility across time in rural China closely resembles that for urban China.[37] Thus, changes in social mobility in urban China were not

[35]The CHARLS dataset includes both urban and rural Chinese. Patterns of social mobility for the urban Chinese in the CHARLS sample match those in the UHS for the Maoist and Reform eras (results available from the authors upon request).

[36]This is implicitly another robustness exercise for the urban China sample, as we now use decade-by-decade variation in the impact of fathers' educational attainment on children's educational attainment, rather than examine five-year cohorts. One can see that the U-shaped pattern is present using this specification as well.

[37]One exception is the increase in status persistence between the 1940s and 1950s birth cohorts in rural areas, in contrast with the fall in persistence between these cohorts in urban areas. There are several possible explanations for this difference. A first possibility is differences in "treatment": rural and urban China experienced the Second Sino-Japanese War (World War II) and the Chinese Civil War (1946–1949) very differently. The economic disruptions and institutional changes resulting from conflict and the Chinese Communist Party's victory may have produced different patterns of status transmission between rural and urban areas among children born in these decades (e.g., increased social mobility in rural areas where the CCP was in power as early as the 1940s, and then very high mobility specifically in urban areas once the CCP took power in the 1950s). A second possibility is that the difference is due to "selection": internal migration and emigration from China may have differentially affected rural and urban China,

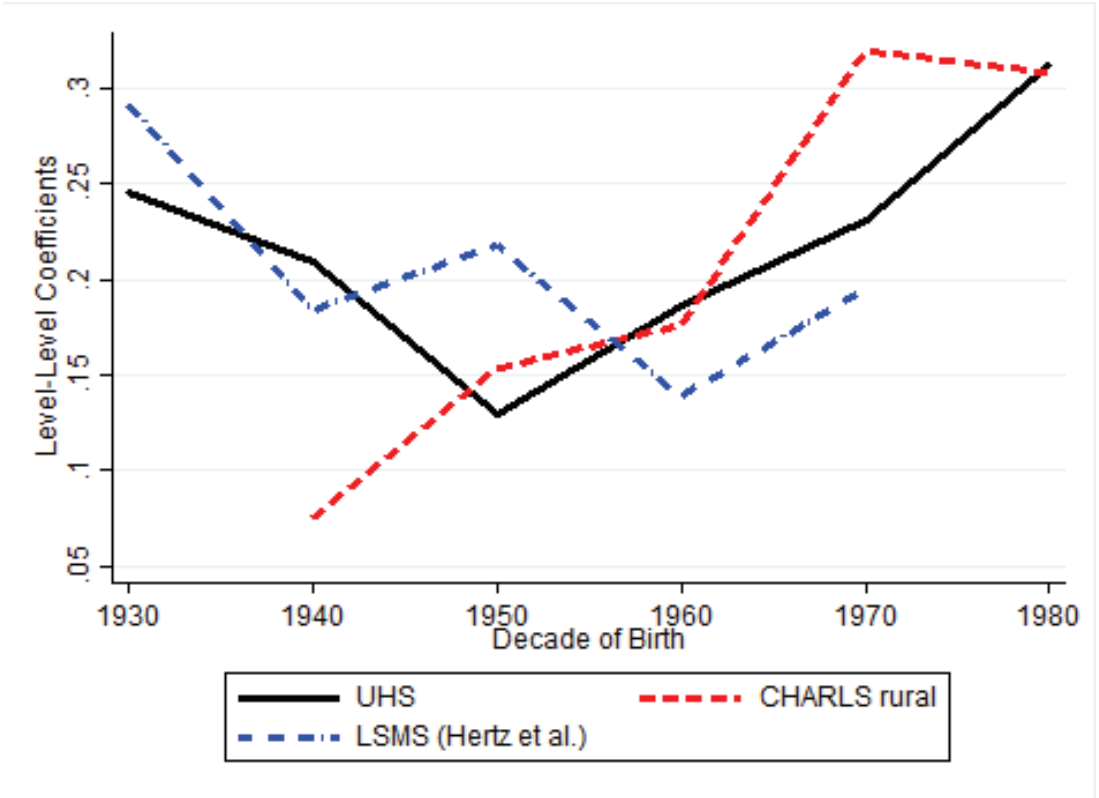

Figure 3: Social mobility in urban and rural China. The graph shows coefficients on fathers' education levels from a regression of children's education levels on fathers' education levels, estimated decade by decade. Two rural datasets are used: the CHARLS rural subsample and the World Bank's LSMS data used in Hertz et al. (2007). We estimate the same specification using the (urban) UHS dataset.

offset by different patterns of social mobility in rural China. It is also worth noting that although rural to urban migration is an important mechanism of social mobility in China, Wu and Treiman (2004), page 381, describe a "tightening of the *hukou* system after the Great Leap Forward and subsequent maintenance of a very low rate of [rural to urban] *hukou* conversion through 1996." Thus, changes in patterns of rural to urban migration likely did not undo the U-shaped pattern of persistence we observe in both urban and rural China.

particularly during the chaotic 1940s and 1950s (this may produce estimated levels of status transmission in the 1940s that are "too low" in rural areas).

2.6 The returns to schooling across institutional regimes

An important assumption underlying our analysis is that education is a good proxy for socioeconomic status across the entire time period we study. One might be especially concerned that higher education levels in fact did not confer higher status during the Maoist period of analysis. However, while very high levels of education (and "intellectual" status) were problematic during the time of the Cultural Revolution, more generally, qualitative evidence suggests that higher levels of education were associated with higher status in Communist China—the entrenchment of a *Communist* educated elite was precisely Mao's concern during the Cultural Revolution (see, for example, Deng and Treiman, 1997, and Andreas, 2009). To provide some quantitative evidence on the link between education and economic outcomes across the time period we study, we estimate the relationship between years of schooling and income for the Republican era, the Maoist era, and the Reform era, respectively.

To study the relationship between education and income in the Republican era, we turn to the 1929 employee records of the Tianjin-Pukou (JinPu) Railroad, a rare early source of individual-level data on both earnings and educational attainment (see Yuchtman, 2014). The employee records include information on the school attended, which is converted into years of schooling by assigning primary/middle schools a level of 7 years completed; assigning high school 12 years; and, assigning university 16 years.

We use the UHS data to estimate the returns to schooling for individuals who were in the labor force during the Maoist and Reform eras. As noted above, in addition to asking about incomes at the time of the survey (2004), the UHS includes data on the final pre-retirement salary earned by an individual, which provides information on earnings in different years. While the UHS dataset lacks individuals retiring prior to the Communist takeover, we can estimate the correlation between education and final income for cohorts retiring during the Maoist and post-1979 Reform eras. We can also exploit cross-sectional information on incomes in 2004 to estimate the returns to schooling in the post-Mao era using "current" income (as opposed to final pre-retirement income) for individuals who are currently in the workforce.

In Table 7, we present estimates of the returns to a year of schooling, for each of the three periods we study: Republican China, the Maoist period, and the Reform period. We examine the

Table 7: Returns to Education Across Institutional Regimes in 20th Century China

	Pre-Mao Current Income (1)	Mao-Era Final Income (2)	Mao-Era Final Income (3)	Post-Reform Final Income (4)	Post-Reform Final Income (5)	Post-Reform Current Income (6)	Post-Reform Current Income (7)
Years of Schooling	0.093	0.045	0.045	0.046	0.041	0.085	0.076
	(0.008)	(0.010)	(0.010)	(0.003)	(0.003)	(0.003)	(0.003)
CCP Member			0.155		0.224		0.151
			(0.099)		(0.023)		(0.018)
Age Quadratic	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Retirement Year X Age Quadratic	No	Yes	Yes	Yes	Yes	No	No
Observations	337	877	877	8294	8294	7535	7532
R2	0.39	0.15	0.15	0.34	0.35	0.13	0.14
Mean Years Schooling	6.1	6.6	6.6	8.3	8.3	9.5	9.5

Column 1 uses data from the 1929 JinPu Railroad employee records (see Yuchtman, 2014). Columns 2 through 7 use pooled fathers' and sons' UHS data (sample restricted to males to match composition of JinPu employees). Columns 2 and 3 are restricted to males retiring between 1949 and 1979. Columns 4 and 5 are restricted to males retiring after 1979 (and before the year of the UHS survey, 2004). Columns 6 and 7 use the 2004 current income for fathers and sons employed at the time. Robust standard errors in parentheses.

returns to schooling only among men to match the composition of the JinPu data and to avoid concerns about changes in women's labor market experiences across this long time period. In column 1, we use the sample of JinPu Railroad workers, and regress "current" (in 1929) log salary on years of schooling, controlling for age and age-squared. One can see that the return to a year of schooling is estimated to be around 9%, and is highly statistically significant. In column 2, we examine individuals in the UHS sample who retired between 1964 (the earliest retirement we have) and 1979, regressing the log of their *final* salary on their years of schooling (again, controlling for age and age-squared, as well as an interaction between individuals' retirement year and an age quadratic). We find that the return to a year of schooling in the Maoist era was around 4%, and highly statistically significant.[38]

Particularly after the Communist takeover in 1949, one might wonder if the returns to education we observe reflect returns to CCP membership, which might be positively correlated with education. We thus estimate the same specification as column 2, but including a CCP member dummy as a control. In Table 7, column 3, one can see that Communist Party membership is associated with higher pre-retirement earnings in the Maoist era, but it does not drive the positive returns to schooling. In fact, the coefficient on schooling is unchanged when we include the CCP member control.

In Table 7, column 4, we estimate the same specification as column 2, but using the final incomes of individuals in the UHS sample who retired between 1980 and 2004. One can see that the estimated return to a year of schooling in the Reform period is again around 4% and highly significant. In column 5, we add the CCP member dummy to the specification in column 4, and we continue to find a significant, positive return to schooling. Finally, in columns 6 and 7, we estimate the specifications in columns 4 and 5, but using the *current* income of individuals in the UHS sample working in 2004 (and excluding the retirement year interactions). We find returns to schooling of around 8–9% in these specifications. Thus, across institutional regimes, we find a significant association between education and income. Importantly, while Communist Party membership is associated with higher earnings, it does not account for the higher earnings

[38]Note that this estimate is not directly comparable to the Republican period estimate because, in addition to coming from a very different sample, the measure of income is the final preretirement income, rather than "current" income in an arbitrary year. Because retirement is an endogenous choice, final income may be a worse proxy for lifetime earnings than "current" income.

of individuals with greater educational attainment.

2.7 Alternative measures of status

The evidence in Table 7 suggests that education was positively associated with socioeconomic status across the time period we study. We next explore variation in the transmission of other dimensions of status across regimes. Here we examine status transmission using income and CCP membership as indicators of fathers' and children's social status. Both are plausible indicators of status in 20th century China, though examination of both measures is limited by the available data.

We begin by examining patterns of status transmission using income as an indicator of fathers' and children's socioeconomic status. We measure children's status using the rank of their current income or their final pre-retirement salary within their five-year birth cohort.[39] We analogously measure fathers' status using the rank of their current income or their final pre-retirement salary among fathers of children born within a five-year birth cohort. Because our income measures are only from the 1964–2004 period, we examine status transmission from fathers to children only among the children born in the Maoist (1945–1964) and Reform (1965–1984) eras. As noted above, one might use income at the time of retirement as an indicator of status prior to retirement for earlier birth cohorts. However, the gap between a father's earnings at retirement and earnings at the time of a child's birth exacerbates the problem of measurement error in the explanatory variable. This gap may also span across multiple institutional regimes, making it even more difficult to properly measure economic status at the time of a child's birth.

In Table 8, column 1, we show the era-specific (Maoist or Reform) coefficient on fathers' income rank (higher "rank" indicates a higher income) from a regression of children's status (also measured using income) on an interaction between fathers' status and a Maoist cohort dummy, an interaction between fathers' status and a Reform cohort dummy, and cohort fixed effects. One can see that there is a significant, positive coefficient on fathers' status in each period, and that the coefficient on fathers' status increases by 50% in the Reform era, consistent with our finding of greater persistence of status in the Reform era when we used educational attainment as an indicator of fathers' and children's status. In the bottom panel of the table, we show the difference between the two eras'

[39] If both final salary and income are available, we average the two ranks. Results are very similar using either one of the two income variables alone.

coefficients and the standard error of the difference. In Table 8, column 2, we add quadratic controls for both fathers' and children's ages (the fathers' age quadratic is cohort-specific) and cohort-specific gender effects, and results are practically unchanged.

We next show analogous regressions using CCP membership as an indicator of fathers' and children's socioeconomic status. In our analysis of status transmission using CCP membership as an indicator of status, we again focus on children born in the Maoist and Reform eras.[40] In Table 8, column 3, one can see that there is a significant, positive coefficient on fathers' CCP membership status in each period, but there is no increase in status transmission in the Reform era, when status is measured by CCP membership (indeed, there is a slight decline in the coefficient on fathers' status). In column 4, we add controls, and again find a positive coefficient on fathers' CCP membership status in both periods, with a decline in the coefficient on fathers' CCP membership status in the Reform era. While the findings in columns 3 and 4 might indicate a less significant role of parents' CCP membership status in determining children's CCP status, the difference in coefficients might also be a product of data limitations: children in the youngest cohorts in our dataset may yet attain CCP status (and whether they do so may be a function of their parents' status), so the rate of status transmission for younger cohorts might change as they age.

For comparison, in Table 8, columns 5 and 6, we estimate the same specifications as columns 1 and 2 (and 3 and 4), but using the rank of educational attainment as the indicator of children's and fathers' status (as we did above). These estimates both serve as a comparison for the other two measures of status, and serve as yet another robustness exercise for our primary results. One can see that we again find a significant increase in educational status transmission in the post-Mao Reform era using this specification; interestingly, the magnitudes of the coefficients on fathers' education rank are very similar to those when we examine fathers' income rank.

Observing significant status transmission along the income, CCP membership, and educational attainment dimensions in both Mao-era and post-Mao China—and observing that income transmission seems to have increased across regimes alongside educational status transmission, while CCP

[40] Children born in the Republican era to fathers who eventually became members of the Communist Party may have been born to fathers who were CCP members during the Republican era (in which case their fathers' status at the time of their birth may not have been especially high) or they may have been born to fathers who eventually became CCP members long after their children's births (in which case their fathers' status at the time of their birth is unclear). The wedge between a parent's CCP membership in our dataset, and their status at the time a child was raised may result in severe measurement error, especially when comparing across institutional regimes.

Table 8: Alternative Measures of Social Status

	Income Rank (1)	Income Rank (2)	CCP Member (3)	CCP Member (4)	Educ. Rank (5)	Educ. Rank (6)	Educ. Rank (7)	Educ. Rank (8)
Father Mean Income Rank X Post Mao	0.279	0.275					0.033	0.025
	(0.021)	(0.018)					(0.020)	(0.021)
Father Mean Income Rank X Mao	0.187	0.184					0.006	0.004
	(0.016)	(0.014)					(0.011)	(0.014)
Father CCP X Post Mao			0.092	0.088			0.823	0.908
			(0.012)	(0.010)			(0.763)	(0.925)
Father CCP X Mao			0.120	0.119			2.288	1.909
			(0.012)	(0.012)			(0.525)	(0.523)
Father Education Rank X Post Mao					0.292	0.292	0.229	0.163
					(0.013)	(0.014)	(0.016)	(0.024)
Father Education Rank X Mao					0.200	0.213	0.152	0.120
					(0.009)	(0.009)	(0.014)	(0.015)
Mother Education Rank X Post Mao								0.110
								(0.020)
Mother Education Rank X Mao								0.078
								(0.013)
Age and Gender Controls	No	Yes	No	Yes	No	Yes	Yes	Yes
Own CCP and Income Control	No	No	No	No	No	No	Yes	Yes
Sector and Region Controls	No	No	No	No	No	No	No	Yes
Observations	8313	8310	15074	15049	15226	15118	8296	7198
Post-Mao - Mao	0.092	0.091	-0.029	-0.032	0.092	0.079	0.077	0.043
Std. Error	0.026	0.023	0.017	0.016	0.016	0.016	0.021	0.028

Standard errors in parenthesis, clustered by cohort. Table shows the persistence of status using income, CCP status, and education as measures of social status, for the Maoist and Reform eras only. Post Mao-Mao calculation is for the two reported coefficients in columns 1–6, and for the difference between fathers' education coefficients in columns 7–8. The income measure used for children's status is the rank of their current income or their final pre-retirement salary within their five-year birth cohort. If both final salary and income are available, we average the two ranks. We analogously measure fathers' status using the rank of their current income or their final pre-retirement salary among fathers of children born within a five-year birth cohort. The CCP status variable is simply a dummy variable equal to 1 if a child or father is a member of the CCP. The Maoist era includes cohorts of children born between 1945 and 1964; the Reform era includes cohorts of children born between 1965 and 1984. All columns include cohort fixed effects. Column 1 shows the coefficient on father's income rank (higher "rank" indicates a higher income) from a regression of children's income rank (within five-year cohort) on fathers' income rank interacted with indicators for the Mao period and the Post-Mao period. Column 2 adds controls for cohort-specific effects of gender and quadratic controls for fathers' ages (these are cohort-specific) and children's ages. Columns 3 and 4 replicate columns 1 and 2, but using the CCP membership measure of social status for fathers and children. Columns 5 and 6 replicate columns 1 and 2, but using educational rank, our baseline measure of social status for fathers and children, for comparison. Column 7 adds to column 6 regime-varying effects of fathers' incomes and CCP status as well as children's incomes and CCP status. Column 8 adds to column 7 controls for regime-varying effects of mothers' education rank and children's sector of employment (public or private), as well as cohort-varying effects of fathers' sector and of children's region (coastal or non-coastal province).

membership transmission did not—raises interesting questions about the relationships among these dimensions of status (as well as other dimensions). In particular, it is natural to wonder whether our baseline finding of changing educational status transmission across regimes reflects changing intergenerational correlations of characteristics that are correlated with educational attainment (other dimensions of status, household characteristics, etc.).

In our discussion of Tables 3 and 4, we raised the possibility that household characteristics were differentially correlated with educational attainment across cohorts, or were differentially transmitted across generations, which might distort our estimates of intergenerational status transmission. We found, however, that controlling for cohort-varying effects of fathers' CCP membership, living in a coastal province, and fathers' sector of employment (public or private) did not affect our finding of a U-shaped pattern of educational status transmission. We then considered the possibility that fathers' social networks affected children's status—perhaps differentially across institutional regimes. However, we found similar results for fathers who were urban natives (and likely had well-established social networks) and non-urban natives.

We next examine the effects of controlling directly for fathers' and children's incomes and CCP membership on the relationship between fathers' and children's educational attainment. If our baseline results (e.g., Table 8, columns 5 and 6) were driven by changes in the intergenerational correlations of these other measures of status, then controlling for them should have a noticeable effect on the coefficients on fathers' educational attainment. In Table 8, column 7, one can see that the coefficients on fathers' educational attainment fall for both the Maoist era and the post-Mao era, when we control for fathers' and children's CCP membership and income (though they remain highly statistically significant). This is what one would expect given that educational attainment is a proxy for social status, which is positively correlated with income. Importantly, however, one can see in the bottom panel of Table 8 that the *difference* in educational status transmission coefficients across regimes is almost unchanged when we control for the alternative dimensions of status. The difference between Mao-era and post-Mao intergenerational transmission of educational attainment does not seem to be driven by changes in the intergenerational correlations of CCP membership or income.

We next examine the effects of other household characteristics, controlling for regime-varying effects of *mothers'* education rank and children's sector of employment (public or private), as well

as cohort-varying effects of fathers' sector and of children's region (coastal or non-coastal province). One can see in Table 8, column 8, that there is again a decrease in the coefficients on fathers' educational attainment for both the Maoist era and the post-Mao era, and the difference in transmission of fathers' educational status across regimes also falls, from 0.077 to 0.043. However, examining the coefficients on mothers' education, one can see that there was an increase in mothers' educational status transmission across regimes of 0.032; thus, the sums of the coefficients on mothers' and fathers' education show a difference in educational status transmission across regimes (0.075) that is quite similar to what was observed in Table 8, columns 5–7.[41] These findings suggest that educational attainment *per se* is a robust component of the changes in intergenerational status transmission we observe across regimes.

3 Discussion: educational policies and politics

A broad range of policies varied across the institutional regimes we study and might have affected the intergenerational transmission of educational status: changes in the distribution of wealth and income; changes in health care and other social services; and, changes in the labor market all play an important role in shaping the preferences and constraints of households making human capital investment decisions.[42] While we cannot identify the causal effects of specific policies (or of other time-varying changes) that produced the U-shaped pattern of status persistence observed above, we explore one plausible mechanism: the provision of schooling by the state. Educational expansion has historically played a role in reducing economic inequality (Goldin and Katz, 1994, 2008), and, indeed, the Communist Party made notable efforts to expand school enrollments and literacy around the time we observe social mobility increasing (Tsang, 2000).

We examine the relationship between social mobility and the expansion of education in Figure 4. We first plot the pattern of educational persistence in the UHS sample, five-year cohort by five-

[41] We examine whether there are significant changes in assortative mating (i.e., stronger correlations between fathers' and mothers' educations) between the Mao and the post-Mao era, but do not find a significant difference. Another possibility, as noted above, is that unobservables (ability) were differentially correlated with educational attainment in different institutional regimes. However, if anything, it seems likely that the unobservables of the high education parents in the post-Mao regime were worse than one might expect, due to the non-meritocratic expansion of schooling in the Maoist era (in which most post-Mao parents were educated).

[42] See Zhou (2004) for a detailed discussion of social and economic policies in urban China since the Communist revolution.

year cohort, converting the coefficients into an index equal to 100 in 1940.[43] The pattern is the familiar U-shape, seen in Figure 2. Alongside the pattern of status transmission, we show an index (again, 1940=100) of average educational attainment for each five-year birth cohort in our UHS sample. One can see in Figure 4 that the relationship between increased educational attainment and social mobility is far from simple. On the one hand, educational attainment certainly increased from the Republican era into the Maoist era, as social mobility increased. But on the other hand, educational attainment continued to increase into the Reform era as social mobility fell (the slight decline in educational attainment among the 1980–1984 birth cohort is a result of the youngest cohorts having incomplete educational attainment in the year of the UHS survey, 2004).

We also show in Figure 4 another series: the Gini coefficient for educational attainment by five-year birth cohort in the UHS sample (again converted into an index). The pattern of the Gini suggests that while *average* education levels increased during both the Maoist and Reform eras, the two expansions had differing effects on the *equality* of education levels across individuals within a cohort. The Maoist educational expansion saw the Gini index fall from a peak over 120 to around 70 in the 1960–1964 birth cohort. Beginning with the 1965 cohort, however, although average educational attainment continued to rise steadily, the Gini fell only slightly, from 70 to 60 (and the Gini for the 1980–1984 cohort is likely understated due to incomplete educational attainment in the youngest cohort in the sample).

These patterns suggest that some educational expansions are much more equalizing than others. Indeed, an examination of educational policy across regimes shows that the politics of each era shaped education policies in ways that differentially benefitted different groups.

3.1 Education in Republican China

Chinese education underwent a transition from traditional, Confucian education to modern schools teaching Western subjects in the late 19th and early 20th centuries (Yuchtman, 2014).[44] The rise of modern, Western schools was extremely rapid following the 1905 elimination of the Imperial

[43] We regress children's education levels on fathers' education levels, separately by five-year birth cohorts of children; then, we divide the coefficients on fathers' education for each five-year birth cohort by the value of the coefficient for the 1940–1944 cohort, and multiply by 100.

[44] The traditional system trained individuals for a series of exams which conferred social status, income, and positions in the Imperial civil service if passed (see Chang, 1955). While only a small fraction of individuals passed the civil service exams, a larger group (perhaps a third of men) attained at least basic literacy within the traditional system (Rawski, 1979).

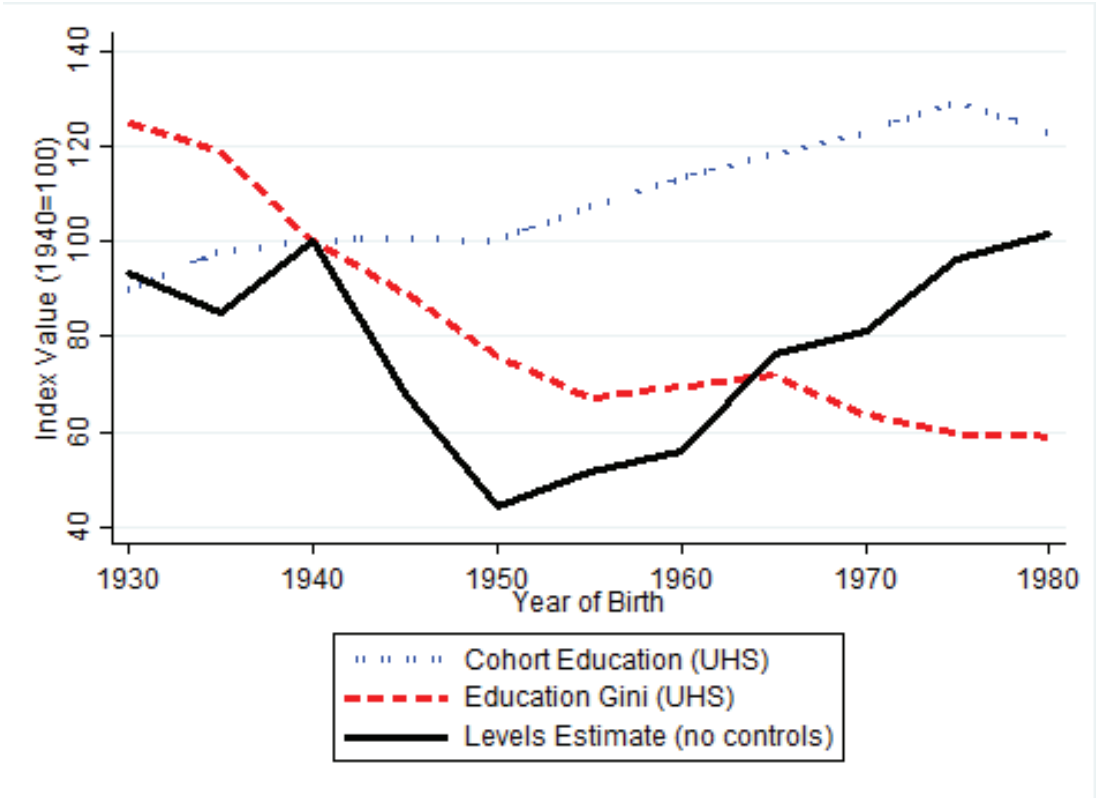

Figure 4: Educational attainment, inequality, and status persistence. The graph shows the pattern of educational persistence across cohorts, from regressions of children's years of schooling on fathers' years of schooling (without controls), separately estimated for each five-year birth cohort. It also shows the average educational attainment by five-year birth cohort, as well as the Gini coefficient for educational attainment by five-year birth cohort. All series generated using the UHS sample described in the text.

Exams that were based on the Confucian classics. Yan (2011) shows that the number of students enrolled in modern schools increased six-fold between 1912 and 1936, from 3 million students to around 19 million.

While education levels increased, access to tertiary education remained extremely limited: the number of college students was practically unchanged between 1912 and 1936, remaining at around 40,000, despite an increase in the number of high school students from around 100,000 to 600,000 over the same period. The scarcity of slots at university is reflected in Yan's estimate of the salary premiums paid to the highly skilled, which increased dramatically in the 1930s. Yuchtman (2014) also finds high salary premiums paid by the JinPu railroad in 1929 to individuals with university training.

The modern education system in Republican China was designed to produce a Westernized, but nationalist, elite able to modernize the country. This elite was disproportionately drawn from wealthy, urban families. Beijing and Shanghai had nearly 40% of all universities and over half of the most prestigious national public universities. Nearly all of these schools (with the exception of the Normal Schools) were extremely expensive to attend—living expenses and tuition could run well over the yearly income of the average urban household (Yeh, 1990).

Yeh (1990), page 5, describes the hierarchy of backgrounds of students in Republican colleges and universities: "The highest provincial elite with metropolitan connections, along with the commercial and professional elites of major cities, sent their children to colleges and universities in Beijing and Shanghai, where Western subjects were often stressed along with mathematics and sciences. The progeny of the intermediate levels of prefectural societies and rural towns—former members of the lower degree-holding gentry and aspiring landlord households, petty rice brokers and rentiers, and so forth—attended provincial institutions."

Thus, Republican China's education system provided opportunities to the children of the non-elite up to a point: school enrollments expanded greatly. However, the highest levels of education remained quite closed, promising extremely high payments to a lucky few, disproportionately drawn from the landowning classes and the urban wealthy.

3.2 Education in Maoist China

While the Chinese Communist Party was broadly committed to educational expansion after taking power in 1949, the details of its education policy were the subject of intense internal political conflict (see, for example, Deng and Treiman, 1997, and Andreas, 2009).[45] The debate posed those on the far left, who stressed political ideology and mass education, against those on the "right" (still within the Party), who stressed the development of technical expertise and the education of a meritocratic elite. The left-wing "Red" faction was generally dominant between 1948 and 1976 (our "Maoist" period).

Deng and Treiman (1997) present a detailed discussion of education policy and data on edu-

[45] As Andreas (2009) documents, the educational system was a key tool for cementing the eventual alliance between new political elites (the CCP members) and old cultural and economic elites (who tended to control the universities). This discussion relates to an older Marxist literature analyzing the class structure and internal politics of the socialist economies (see, for example, Djilas, 1957, and Cliff, 1988).

cational attainment during the Maoist era. Using the 1982 Chinese census, they show that CCP efforts to expand schooling for the masses were fruitful. Consistent with our findings, cohorts of boys educated in the Maoist era had significantly higher levels of education on average, with much of the increase coming from increased levels of secondary schooling (see Deng and Treiman, 1997, Figure 2). Lavely et al. (1990) show that education rose (and illiteracy was dramatically reduced) among girls educated during the Maoist era as well (again, this matches what we find in Figure 4).

Deng and Treiman (1997), page 396, describe policies implemented by the CCP at the primary, secondary, and tertiary levels specifically aimed at improving access to education *among the poor*. Among these were:

> [P]olitical measures designed to equalize educational opportunity and reduce the influence of inheritance [including] affordable primary and secondary education and free tertiary education. The state appropriated all universities and colleges in 1950, abolished tuition fees, provided subsidies for students, and guaranteed jobs following graduation. In this way, students were freed from constraints imposed by their ability to pay or their need to work to help support their families."

Andreas (2009) provides a vivid account of the changes experienced at Tsinghua University, the leading science and engineering university in China. In 1952, the Chinese government inaugurated a national examination system for university admission. In that year, Tsinghua saw only 14% of its enrollment come from poor ("worker-peasant") families. The CCP, with the "Red" faction in control, responded by radically altering admissions criteria for students from disadvantaged backgrounds. Education was to follow the "mass road" as opposed to the "genius road"; university slots were reserved for "worker-peasant-soldier students", often older and with much less preparation than traditional students. Teachers were encouraged to pay more attention to students who were having difficulty, rather than those who were star performers. As a result of these policies, Tsinghua saw significant growth in the enrollment of worker-peasant students, up to nearly one-half of students in the early 1960s.

The Cultural Revolution, beginning in 1966, took the egalitarian "Red" logic to extremes, and severely politicized and disrupted education. Universities, and schools more generally, became sites where Red Guards terrorized students, and particularly teachers and professors. One result of the

period's social and political conflict was a massive disruption of education in China, with schools at different levels and in different places interrupted to differing degrees. While primary schools were able to operate, Deng and Treiman (1997) note that almost all secondary and post-secondary schools were closed from 1966 through 1968 and most colleges and universities were closed for the entire 1966 to 1972 period. Even when schools reopened, the education system was badly damaged by the extreme politicization of education in the early to mid-1970s, with many teachers purged, urban students "sent down" to work in the countryside, and student selection even more focused on political qualifications and class background than in the early 1960s (see Deng and Treiman, 1997, p. 400).

Thus, both the pre-Cultural Revolution and Cultural Revolution periods of the Maoist era saw efforts made to support the schooling of children from poorer backgrounds. Our findings above suggest that the more mild policies of the early Maoist era produced a significant increase in social mobility; the social upheaval of the Cultural Revolution then may have led to even more social mobility among the cohorts most affected by it.

3.3 Education in the Reform era

Deng Xiaoping's rise to power in the years following the end of the Cultural Revolution was associated not only with economic liberalization, but also with significant reforms to education, away from the increasingly "Red" education system in place during the Cultural Revolution, and toward a system that would train a meritocratic, technical elite. Notably, the *gaokao* college entrance exam was re-instated in 1977 as the primary criterion for admission to the universities. Elite primary and middle schools that had been opened up to villages were now to take students based on performance on standardized tests.

Alongside the shift toward a test-based system of educational selection and advancement, the CCP continued to enact policies aimed at expanding educational attainment. Tsang (2000) shows that government spending on education significantly increased during the Reform era, nearly doubling as a share of government expenditure between the 1950–1978 period and the 1979–1992 period. The increased spending is reflected in increased educational attainment, as can be seen in Figure 4.

While educational opportunities may have increased for all, it is clear that inequalities in the Chinese education system (and inequalities in children's backgrounds), along with test-based ad-

mission to high schools and universities, meant that improved educational opportunities went disproportionately to the children of the educated elite. Li et al. (2013a) describe how unequal access to quality education is rooted early in childhood, with poor students "less qualified for academic high schools ... [due to] unequal access to high quality kindergartens, primary schools, and junior high schools, which could help prepare them for competitive entrance exams." Of course, being unqualified for an academic high school means university education is out of the question.

In addition to differences in preparation and qualifications among children from differing backgrounds, specific educational policies in the Reform era have further advantaged the children of elites. For example, tertiary education funding and admissions quotas vary significantly across regions, with the richest Chinese cities receiving a disproportionate share of spending and seats. Figure 5 shows the evolution across the Reform era of an "opportunity index" measuring the availability of university seats to a province's students, relative to secondary school enrollments. The data on university positions and secondary school enrollments are disaggregated by province, with an "opportunity index" value of 1 indicating that a province has the national average number of university seats per secondary student (data are taken from Li, 2010b). For simplicity, we present the values of the index for three rich province-level municipalities (Tianjin, Shanghai, and Beijing), and the average for the rest of China. One can see that in the late 1970s and early 1980s, students in the rich municipalities already enjoyed disproportionate access to universities, and this persisted across time. While the index values for the rich cities have declined somewhat since the mid-1990s, it is still the case that university slots are disproportionately going to regions that are already rich—precisely the opposite of the affirmative action programs of the Maoist era.[46]

Li et al. (2013a), page 22, summarize Chinese educational expansion at the tertiary level as follows: "even one of the most rapid expansions of college enrollments in history was not, in and of itself, able to substantially reduce inequality in access." The Reform era saw education expenditures and levels expand; however, the primary beneficiaries of these expansions have been the children of the urban rich, who have access to the best schools, teachers, and test preparation programs from a young age, and who can thus succeed in exams qualifying them for the best high schools and

[46]The elite-oriented nature of contemporary Chinese educational policy can be seen in other policy choices as well. For example, a hierarchy of universities has been established which determines access to government funds, with far greater funding going to the elite universities. Li (2010a), page 278, describes "The 211 Project [which] was designed to provide special support to the top 100 universities to help improve their teaching, research, and infrastructure. ... [and the] 985 Project [which] is aimed at helping the top forty universities to become world-class universities."

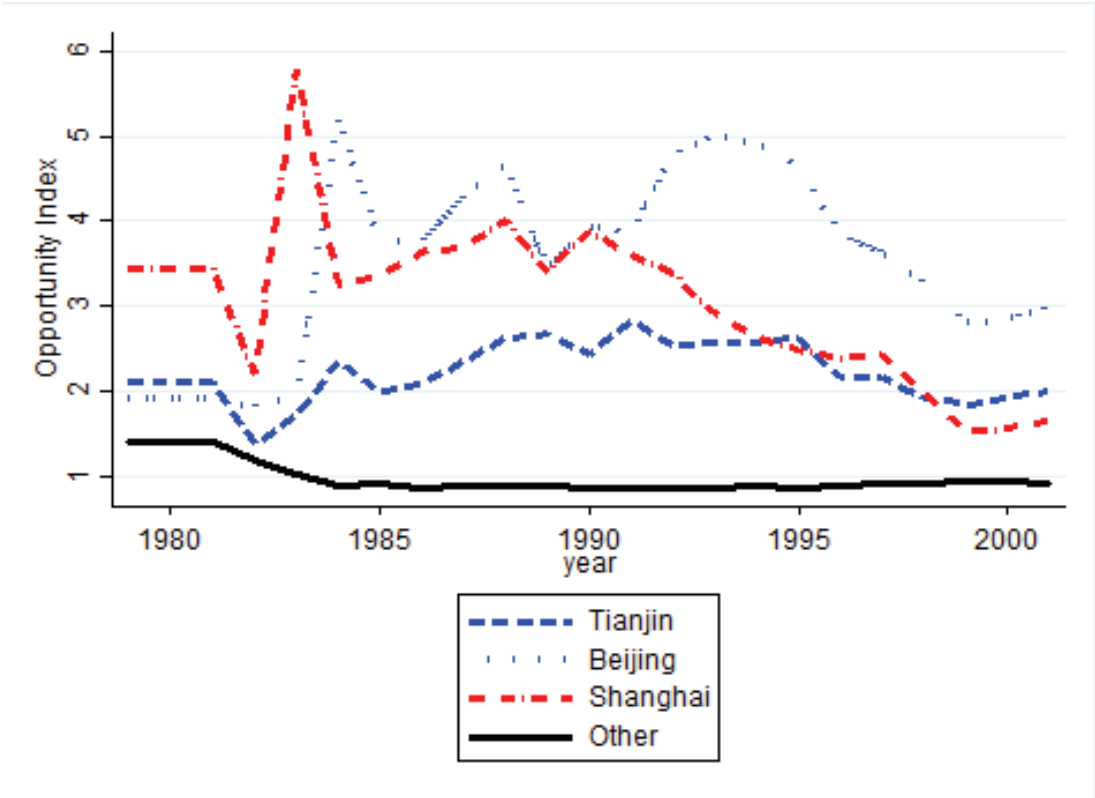

Figure 5: Opportunity Index for Three Rich Province-level Municipalities and for Other Provinces. Graph shows an index of university access—a province's university seats relative to its number of secondary students, relative to the national average—for each year, 1980–2002. The index values for three rich, province-level municipalities of Shanghai, Beijing, and Tianjin are shown alongside the average for the remaining provinces of China. Data from Li (2010b).

universities (where government spending is increasingly concentrated). The consequence of this system has been a reduction in social mobility alongside greater educational attainment overall.[47]

4 Conclusion

We have presented evidence that social mobility in China varied significantly across the 20th century, with status persistence following a U-shaped pattern that coincides with the institutional changes experienced in the 20th century: social mobility rose following the Communist takeover of 1949 and then fell to pre-1949 levels in the post-Mao era of economic reforms.

[47] We also find evidence that the returns to the highest levels of schooling have increased in the post-Mao era: returns to schooling are convex in the Reform era (and the Republican era), while they are not in the Maoist era (see Appendix Table A3).

The sharp drop in status transmission following the Communist revolution contrasts with recent work finding very little change in social mobility rates across time in a variety of settings, and suggests that social mobility *can* be affected by radical institutional and policy changes. However, the rapid return to pre-revolution levels of status transmission in the post-Mao era suggests a powerful tendency toward a high rate of status transmission—an intergenerational mobility analogue to Michels' (1949) "Iron Law of Oligarchy". The reversion to a relatively high rate of status transmission could derive from a variety of mechanisms—political, economic, sociological, and genetic—which warrant further study (see also Clark, 2014).

Our findings of a decline in social mobility in the post-Mao era also raise important questions about the role of competitive, meritocratic educational institutions in generating social mobility, both historically and today. For centuries, imperial China's educational system was oriented around a series of competitive exams, which conferred social status and economic returns (see Chang, 1955, Ho, 1962, and Elman, 2000). These exams also offered a clear path for the upwardly-mobile: talented students from humble backgrounds could rise to the top of China's social hierarchy if they performed exceptionally well on the imperial exams. Contemporary Chinese educational institutions offer a similar promise of social mobility to students who are able to perform well on high school and college entrance exams.

However, both historically and today, the promise of upward mobility through a meritocratic education system has differed from the practice. The very high stakes associated with educational attainment incentivize incumbent elites to shape policy to the benefit of their children; unequal endowments allow elites to differentially invest in their children's educations. Ho (1962) finds that while the imperial exams did offer the opportunity for upward mobility to some, the descendants of civil service elites were vastly over-represented among individuals who succeeded on the exams in the Ming and especially in the Qing Dynasty.[48] Our analysis suggests that the return to a competitive, exam-oriented education system in post-Mao China has been associated with unequal access to educational institutions and *reduced* social mobility. Even if social status is conferred on the basis of meritocratic exams, the children of the elite are typically better positioned (though

[48] Ho (1962), page 261, writes that the numbers of *jinshi* elites from humble backgrounds, "were highest at the beginning of Ming times ... began to decline drastically in the late sixteenth century, and further dropped to a stabilized low level of below 20 percent after the late seventeenth century. Other things being equal, members of successful families naturally had various competitive advantages and must in the long run prevail over the humble and poor in the competitive examination."

better schools, better training, a more supportive home environment) to achieve that merit; in some cases, competitive, meritocratic educational institutions may not allow for the upward mobility that is one of their greatest potential virtues.

Our results thus suggest that if the Communist Party wishes to generate greater social mobility, it will need to do more than establish exams that are meritocratic, but the preparation for which depends on vastly unequal endowments across households. It will need to reach out to the children of the poor and pull them into the higher education system despite their disadvantages. It will also need to confront the politically (and economically) complicated trade-off between investing in its elite educational institutions, which aim to produce world-class levels of research and innovation, and investing in less exalted schools in poorer areas, where tertiary education, and even secondary education, are currently severely lacking. These choices are not unique to contemporary China: societies across time and space have faced a trade-off between competitive, meritocratic education designed to develop expertise versus broad schooling that raises the human capital of the lower part of the distribution.

Acknowledgements

We thank the editor, Joachim Voth, and two referees for very helpful comments that greatly improved the paper. We also thank Tom Hertz and Ruixue Jia, as well as participants in the All-UC Economic History Workshop, the Cambridge INET Conference on Institutions, Networks, and History, the China Summer Institute, the Chinese Economist Society Annual Conference, the Harvard Economic History Workshop, the IAST Economic History Workshop, the University of Munich Conference on the Long Shadow of History, and the Williams College Conference on Historical Persistence in Comparative Development for their comments.

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Appendix: Additional Descriptive Statistics and Empirical Analysis

In this appendix we present results that complement the main descriptive statistics and empirical analyses that appear in the main text. We first describe the UHS data in more detail. In the main text, Table 1, we presented detailed descriptive statistics for children educated under each of the three institutional regimes we study (as well as for their fathers). We next disaggregate the data further and present descriptive statistics for children by five-year birth cohort (as well as for their fathers). In Table A1, one can see the number of children in each five-year cohort as well as their average schooling levels, their father's average schooling level, etc.

Next, we provide an additional comparison between the UHS data and the 2005 Chinese census 1% sample to complement the comparisons made in Table 2 in the main text. In Figure A1, we present the distribution (kernel density) of births by year in (i) the UHS data that we examine, (ii) the urban population in the Chinese census, and (iii) the urban population in the Chinese census in the provinces covered by the UHS data. One can see that while much of the variation across cohorts in the Chinese census is reflected in the UHS sample (e.g., the dip in births in the late 1950s), the UHS sample somewhat under-represents individuals from the oldest and youngest birth cohorts, and over-represents individuals born between 1945 and 1975. This un-representativeness (along with other dimensions along which the UHS and Chinese census differ—see Table 2) motivates our estimation of our main regression models using re-weighted observations to match the UHS composition to the Chinese census (see Table 5). Reassuringly, we find that re-weighting the UHS data (over-weighting observations in age×education cells that are under-represented in the UHS) does not alter our findings.

We next replicate Figure 2, but using log years of schooling, rather than levels of years of schooling or educational attainment ranks, as in the main text. We regress children's log years of schooling on fathers' log schooling for "rolling" five-year birth cohort windows, and plot the coefficient on fathers' schooling for each five-year window (we estimate models with and without controls). One can see in Figure A2 that using log years of schooling produces the same U-shaped pattern of educational status transmission as using education levels or ranks.

We next examine the robustness of our main set of regression estimates (in Table 3) to measuring educational attainment using log years of schooling, rather than levels of years of schooling or educational attainment ranks, as in the main text. In Table A2, we estimate the same specifications as in Table 3, but with the alternative measure of educational attainment for fathers and children. As one can see, our results are very similar when we use the alternative measure of educational attainment.

Table A1: Summary Statistics by Five-year Birth Cohort

	Education	CCP Member	Urban Native	Father's Education	Father CCP Member	Father Urban Native
	(1)	(2)	(3)	(4)	(5)	(6)
1930-1934 birth cohort						
Mean	8.99	0.53	0.43	4.33	0.03	0.11
Std. Dev.	3.91	0.50	0.50	4.11	0.17	0.31
Obs	214	214	214	214	214	214
1935-1939 birth cohort						
Mean	9.80	0.45	0.40	4.29	0.10	0.10
Std. Dev.	4.05	0.50	0.49	4.25	0.30	0.31
Obs	405	405	405	405	405	405
1940-1944 birth cohort						
Mean	10.01	0.40	0.55	4.57	0.10	0.17
Std. Dev.	3.54	0.49	0.50	4.19	0.30	0.38
Obs	577	577	577	577	577	577
1945-1949 birth cohort						
Mean	10.07	0.38	0.61	5.34	0.18	0.25
Std. Dev.	3.19	0.49	0.49	4.48	0.38	0.43
Obs	1141	1140	1141	1141	1141	1141
1950-1954 birth cohort						
Mean	10.01	0.36	0.72	5.45	0.27	0.33
Std. Dev.	2.76	0.48	0.45	4.29	0.44	0.47
Obs	2221	2221	2221	2221	2221	2221
1955-1959 birth cohort						
Mean	10.73	0.31	0.77	5.77	0.35	0.39
Std. Dev.	2.57	0.46	0.42	4.07	0.48	0.49
Obs	2630	2630	2630	2630	2630	2630
1960-1964 birth cohort						
Mean	11.33	0.29	0.76	6.13	0.38	0.46
Std. Dev.	2.76	0.46	0.42	3.77	0.48	0.50
Obs	3404	3399	3404	3404	3404	3404
1965-1969 birth cohort						
Mean	11.82	0.26	0.73	6.98	0.37	0.53
Std. Dev.	2.96	0.44	0.44	3.92	0.48	0.50
Obs	2942	2939	2942	2942	2942	2942
1970-1974 birth cohort						
Mean	12.29	0.21	0.71	7.86	0.38	0.56
Std. Dev.	2.75	0.41	0.45	3.79	0.48	0.50
Obs	2026	2026	2026	2026	2026	2026
1975-1979 birth cohort						
Mean	12.93	0.18	0.72	8.70	0.37	0.61
Std. Dev.	2.73	0.38	0.45	3.64	0.48	0.49
Obs	750	750	750	750	750	750
1980-1984 birth cohort						
Mean	12.30	0.05	0.80	8.97	0.21	0.67
Std. Dev.	2.59	0.23	0.40	3.53	0.41	0.47
Obs	112	112	112	112	112	112
All birth cohorts						
Mean	11.14	0.30	0.71	6.30	0.32	0.43
Std. Dev.	3.02	0.46	0.45	4.14	0.47	0.49
Obs	16422	16413	16422	16422	16422	16422

Table contains information on children born between 1930 and 1984 in the UHS dataset, as well as on their fathers. Education is measured in years. CCP membership is a dummy variable equal to 1 if a child (or father) is a CCP member. Native urban status is defined as receiving urban registration (*hukou*) by age 2.

Table A2: Intergenerational Persistence By Five-Year Birth Cohort: Log Education

	(1)	(2)	(3)	(4)	(5)	(6)
1930 X Log Father Education	0.169	0.263	0.210	0.257	0.302	0.338
	(0.075)	(0.084)	(0.093)	(0.086)	(0.084)	(0.101)
1935 X Log Father Education	0.157	0.171	0.151	0.161	0.178	0.388
	(0.015)	(0.039)	(0.030)	(0.032)	(0.029)	(0.183)
1940 X Log Father Education	0.090	0.095	0.083	0.078	0.128	-0.027
	(0.024)	(0.023)	(0.025)	(0.027)	(0.029)	(0.065)
1945 X Log Father Education	0.078	0.087	0.082	0.067	0.081	0.091
	(0.020)	(0.020)	(0.024)	(0.018)	(0.023)	(0.033)
1950 X Log Father Education	0.049	0.047	0.040	0.040	0.053	0.041
	(0.012)	(0.009)	(0.009)	(0.009)	(0.017)	(0.010)
1955 X Log Father Education	0.059	0.055	0.050	0.050	0.062	0.043
	(0.010)	(0.010)	(0.010)	(0.009)	(0.014)	(0.009)
1960 X Log Father Education	0.068	0.060	0.060	0.052	0.042	0.084
	(0.005)	(0.003)	(0.003)	(0.004)	(0.005)	(0.003)
1965 X Log Father Education	0.112	0.105	0.104	0.097	0.122	0.091
	(0.008)	(0.010)	(0.011)	(0.009)	(0.015)	(0.013)
1970 X Log Father Education	0.129	0.114	0.112	0.104	0.116	0.114
	(0.007)	(0.009)	(0.008)	(0.008)	(0.009)	(0.017)
1975 X Log Father Education	0.143	0.124	0.121	0.104	0.138	0.121
	(0.005)	(0.003)	(0.004)	(0.010)	(0.022)	(0.009)
1980 X Log Father Education	0.183	0.215	0.245	0.188	0.230	0.187
	(0.078)	(0.096)	(0.093)	(0.089)	(0.057)	(0.115)
Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	Yes	Yes	Yes	Yes
Prov X Cohort FE	No	No	Yes	No	No	No
Extended Controls	No	No	No	Yes	No	No
Sample	All	All	All	All	Non-Native Fathers	Native Fathers
Observations	14462	14326	14326	14326	7847	6479
Pre-Mao - Mao (All) Mean	0.075	0.114	0.090	0.113	0.143	0.168
Pre-Mao - Mao (All) SE	0.028	0.032	0.034	0.032	0.032	0.074
Post-Mao - Mao (All) Mean	0.078	0.077	0.087	0.071	0.092	0.063
Post-Mao - Mao (All) SE	0.021	0.025	0.024	0.023	0.018	0.030
Pre-Mao - Mao (No CR) Mean	0.066	0.103	0.077	0.106	0.141	0.145
Pre-Mao - Mao (No CR) SE	0.029	0.033	0.036	0.033	0.033	0.075
Post-Mao - Mao (No CR) Mean	0.069	0.066	0.074	0.063	0.090	0.041
Post-Mao - Mao (No CR) SE	0.022	0.026	0.026	0.024	0.020	0.033

Standard errors clustered by cohort in parentheses. Pre-Mao five-year birth cohorts begin in 1930, 1935, and 1940. Post-Mao cohorts begin in 1965, 1970, 1975, and 1980. "Mao (No CR)" excludes the five-year cohorts severely exposed to the Cultural Revolution, namely 1950 and 1955. Baseline controls are quadratic polynomials in own and father age (the latter cohort-specific), as well as cohort specific interactions with gender and father and child Communist Party membership. Extended controls are cohort-specific effects of the following: (i) living in a coastal province and (ii) fathers' sector of employment (public or private).

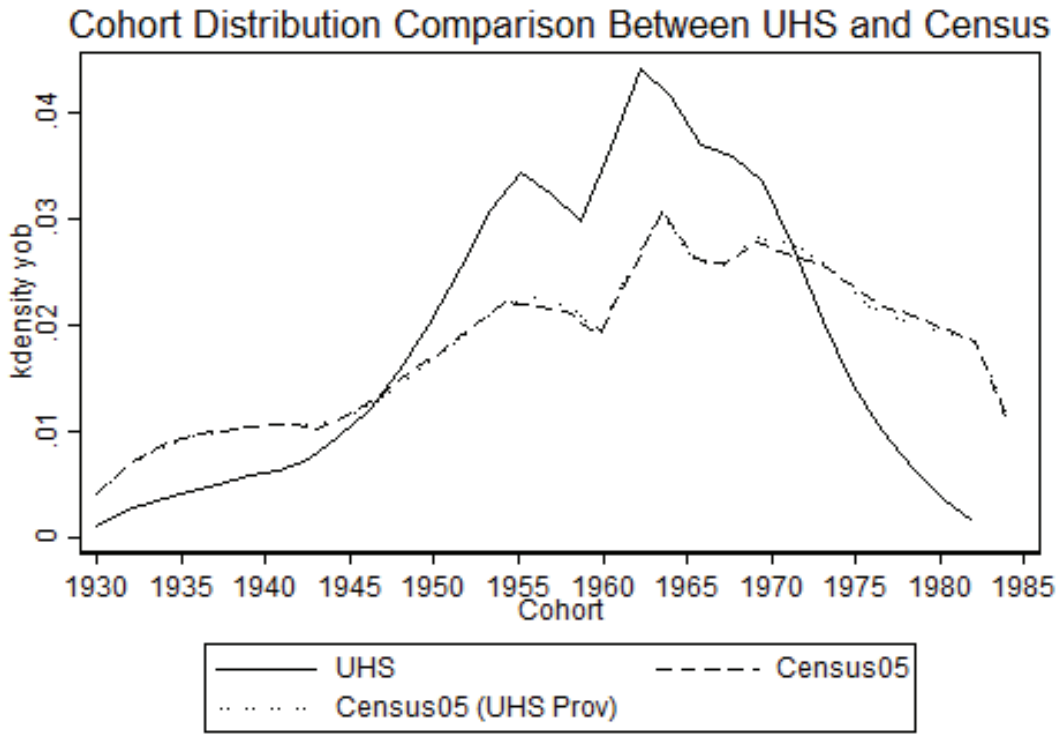

Figure A1: Cohort density in the UHS sample and in the 2005 Chinese census 1% sample. The UHS sample includes children born between 1930 and 1984; the census data show 1930–1984 births of individuals with urban *hukou* status, and 1930–1984 births of individuals with urban *hukou* status in the UHS provinces.

Finally, we examine whether returns to the highest levels of education have changed across the institutional regimes we study. In Table 7 (in the main text), we presented evidence of significant, positive returns to schooling in each institutional regime using a log-linear model; we now add a quadratic term in years of schooling to test for a non-linear return to education. In Table A3, one can see that the coefficient on *Years of Schooling*^{2} is positive and significant in the pre-Mao era, is *negative* in the Mao era, and positive again in the post-Mao era (statistical significance varies depending on the income measure used). This suggests that there were convex returns to schooling in the Republican era, which then were eliminated in the Mao era, before reappearing in the post-Mao era.

Table A3: Nonlinear Returns to Education Across Institutional Regimes in 20th Century China

	Pre-Mao Current Income	Mao-Era Final Income	Mao-Era Final Income	Post-Reform Final Income	Post-Reform Final Income	Post-Reform Current Income	Post-Reform Current Income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Years of Schooling	0.070	0.050	0.049	0.046	0.041	0.083	0.076
	(0.011)	(0.012)	(0.012)	(0.003)	(0.003)	(0.007)	(0.007)
Years of Schooling^2	0.014	-0.001	-0.001	0.002	0.002	0.000	0.000
	(0.005)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
CCP Member			0.150		0.225		0.151
			(0.099)		(0.023)		(0.018)
Age Quadratic	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Retirement Year X Age Quadratic	No	Yes	Yes	Yes	Yes	No	No
Observations	337	877	877	8294	8294	7535	7532
R2	0.40	0.15	0.15	0.34	0.35	0.13	0.14
Mean Years Schooling	6.1	6.6	6.6	8.3	8.3	9.5	9.5

Column 1 uses data from the 1929 JinPu Railroad employee records (see Yuchtman, 2014). Columns 2 through 7 use pooled fathers' and sons' UHS data (sample restricted to males to match composition of JinPu employees). Columns 2 and 3 are restricted to males retiring between 1949 and 1979. Columns 4 and 5 are restricted to males retiring after 1979 (and before the year of the UHS survey, 2004). Columns 6 and 7 use the 2004 current income for fathers and sons employed at the time. Robust standard errors in parentheses.

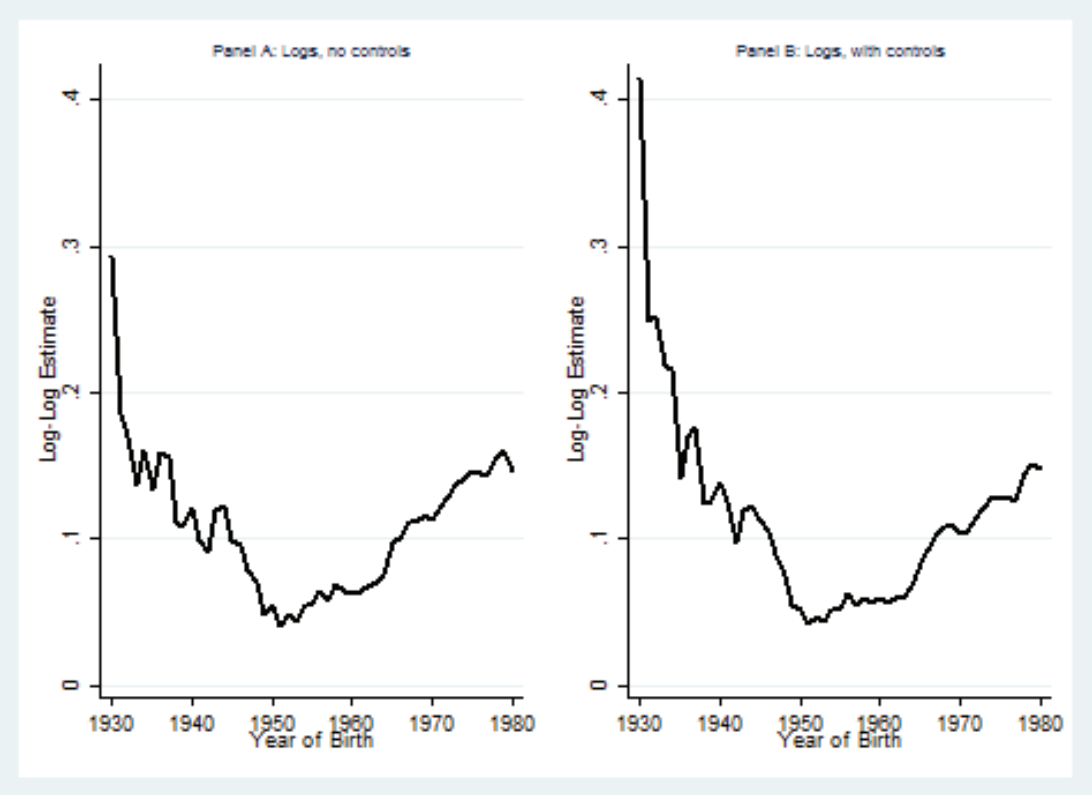

Figure A2: Persistence of educational attainment across cohorts. Both panels show coefficients on fathers' educational attainment from a regression of children's educational attainment on fathers' educational attainment. Regressions are estimated for five-year periods, which "roll" across birth cohorts (the year plotted is the center of the five-year interval). Educational attainment among children and fathers is measured using the log of children's and fathers' years of schooling. Panel A shows coefficients estimated from regressions without any control variables. Panel B shows coefficients estimated from regressions that include controls for cohort-specific effects of gender, cohort-specific effects of fathers' and children's Communist Party membership status; and quadratic controls for fathers' ages and children's ages (the quadratic controls for fathers' ages are also cohort-specific). All regressions estimated using the UHS data described in the text.