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Intergenerational income mobility in urban China

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Intergenerational Income Mobility in Urban China

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Forschungsinstitut
zur Zukunft der Arbeit
Institute for the Study
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Intergenerational Income Mobility in Urban China

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ABSTRACT

Intergenerational Income Mobility in Urban China*

This paper estimates the intergenerational income elasticity for urban China, paying careful attention to the potential biases induced by income fluctuations and life cycle effects. Our preferred estimates are that the intergenerational income elasticities are 0.74 for father-son, 0.84 for father-daughter, 0.33 for mother-son, and 0.47 for mother-daughter. This suggests that while China has experienced rapid growth of absolute incomes, the relative position of children in the distribution is largely determined by their parents' incomes. Investigating possible causal channels, we find that parental education, occupation, and Communist Party membership all play important roles in transmitting economic status from parents to children.

JEL Classification: D10, D31

Keywords: intergenerational mobility, transgenerational persistence, political party membership

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Intergenerational Income Mobility in Urban China

1. Introduction

Economists have long been interested in the issue of intergenerational mobility. Estimating the relationship between the permanent incomes of parents and children is a critical component of a society's income dynamics. A growing body of research has demonstrated large and systematic differences across nations, with parental income being a major determinant of children's incomes in some countries, and much less important in others. To date, much of the existing research on intergenerational mobility has focused on developed nations. While this has the advantage that data sources are generally more reliable, developed nations also tend to be politically stable and to have experienced modest rates of growth.

By contrast, the growth experience of China over the past three decades has been nothing short of unprecedented. As the world's most populous nation, Chinese living standards have risen six-fold since 1979. These rapid economic changes have also been accompanied by dramatic social transformations. All this makes China a unique case study through which to better understand the relationship between societal change and income mobility.

In traditional Chinese society (prior to 1949), most social welfare was familial. There was a strong reciprocal relationship between parents and children. Parents normally invested a large proportion of their income and assets in their offspring's education and career development (and the parental social network played an important role in children's access to education and the labour market). Children typically lived with their parents until marriage (and in many cases, after marriage as well). In return, parents expected their children to support them in old age.

During the Maoist era (1949-77), social welfare was universally provided in urban areas, with the aim of making Chinese society more egalitarian. By and large, this successfully compressed the distribution of income and wealth over the Maoist period (Meng 2004, 2007; Benjamin, Brandt, Giles and Wang, 2005). In addition, the early socialist revolution attempted to weaken the social ties between parental and children's

occupations by making it impossible for children to inherit any meaningful wealth from their parents, and opening up better opportunities for education and occupational attainment for the children of poor families (Cheng and Dai 1995). These might have facilitated an increase in intergenerational income mobility.

However, close family ties still exist and continue to deliver economic and social advantages from one generation to another. Indeed, some government policies have even decreased mobility. For instance, the policies of intergenerational job replacement (Dingti) and internal recruitment (Neizhao), which were introduced in 1977 and then were to be abolished in 1986, might have reduced the level of mobility in urban China (Yu and Liu, 2004).[4] In addition, the unique household registration system initiated in Mao's era restricted geographic labor mobility, and therefore probably reduced intergenerational mobility (Wu and Treiman, 2003).[5]

The transition from a planned to a market oriented economy initiated in the late 1970s and early 1980s has moved the society away from the social provision of welfare back towards one that relies heavily upon individual and family responsibilities (Cai, Giles and Meng, 2006). As a consequence, income/wealth inequality has increased sharply and family networks play an important role in job attainment, which, in turn, may have resulted in falling inter-generational income mobility. In the meantime, a steady increase in geographic mobility may have boosted intergenerational mobility across China as a whole (Wu and Treiman, 2003; Yu and Liu, 2004; Takenoshita, 2007).[6]

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[4] Yu and Liu (2004) find that since 1978, the sector, rank and size of parents' work unit have had significant effects on that their children's first job, and this effect did not attenuate even after 1986 when these two policies were abolished.

[5] In Mao's era, China's unique household registration system restricted people in rural areas or small cities from accessing better opportunities in urban areas or large cities. They could only move permanently across regions by applying for permission, achieving tertiary education, getting military experience, or being recruited into a state-owned enterprise. Under the household registration system, most parents and children would locate in a same city. The intergenerational persistence in locality enhanced the intergenerational persistence in education and labor market outcomes due to systematic regional disparities in educational quality and labor markets.

[6] Since China's post-1978 economic reforms, the household registration system was gradually relaxed, with permission no longer required for temporary moves across regions, and local registration no longer needed in order to acquire an informal job or to run an individual business. However, to access the jobs in the formal sector, or to permanently change their registration, people still require tertiary education, military experience or sufficient capital.

A few studies on intergenerational mobility in China appear mainly in the sociological literature. These generally focus on social stratification and political affiliation. Such studies mainly concentrate on occupational mobility and find strong intergenerational transmission in occupations and industries (Lin and Bian, 1991; Cheng and Dai 1995; Takenoshita, 2007). In general, Communist Party members and state employees (especially government officials) have many social advantages in obtaining entrance into university, or locating better job opportunities for their children (Lin and Bian, 1991; Walder, Li and Treiman, 2000; Bian, 2002; Meng, 2007).

The only other study on intergenerational income mobility in urban China is Guo and Min (2008), who uses the Chinese Urban Household Education and Employment Survey 2004 (UHEES 2004). They estimate the overall intergenerational income elasticity in urban China to be 0.32 (for fathers and sons) and find that education has played an important role in promoting intergenerational income mobility. However, their study uses only one income observation for parents, and one income observation for children. We aim to advance on this work by accounting for life cycle variation of income, and exploring the possible role of parental social status in determining children's outcomes.

This paper combines UHEES 2004 with repeated cross-sectional datasets covering nearly 20 years. To preview our results, we find a much higher intergenerational income elasticity than the previous estimates by Guo and Min (2008). After accounting for fluctuations in parents' incomes and life cycle variation in children's incomes, we estimate that the intergenerational elasticity in urban China is around 0.74 for father-son, 0.84 for father-daughter, 0.33 for mother-son, and 0.47 for mother-daughter. This is an extremely high level of intergenerational persistence, and implies that intergenerational mobility is much lower in China than in most developed nations. Exploring the channels through which income is transmitted across generations, we conclude that parental education, occupation, industry, and Communist Party membership all play important roles in transmitting economic status from parents to children.

The paper is structured as follows. Section 2 reports the methodology on how to estimate intergenerational income elasticity. Section 3 describes the data and summarizes

the statistics. Section 4 presents estimates of intergenerational income and earnings elasticities. Section 5 explores the main channels through which income is transmitted from parents to children. The final section concludes.

2. Methodology

Studies of intergenerational mobility generally estimate the association between the socioeconomic status of parents and their offspring. Becker and Tomes (1979) first suggested a log-linear intergenerational income regression to estimate the intergenerational elasticity.

$$y_{ci} = \alpha + \beta y_{pi} + \varepsilon_i , \qquad (1)$$

where y_{ci} is the log of children's income, y_{pi} is the log of parents' income. The coefficient β is the intergenerational income elasticity. The larger the elasticity, the less mobility in a given society.

Ideally, intergenerational mobility calculations should estimate the elasticity of lifetime income between children and parents.[7] Using just one year's earnings/income data for parents and children can lead to a significant underestimate of the true lifetime intergenerational elasticity (Solon, 1992; Mazumder, 2005; Haider and Solon, 2006; Bohlmark and Lindquist, 2006; Dunn, 2007).[8]

In order to deal with the measurement error from using one year earnings/income to proxy for lifetime earnings/income, previous studies take an average of income over a number of different years for parents in order to obtain a better estimate of permanent income (Solon, 1992; Lee and Solon, 2006; Nicoletti and Ermisch, 2007). However, Mazumder (2005) argues that the transitory component of income is highly persistent and even a five year average may still provide a rather poor measurement of permanent income.

[7] In theory, one might argue that what should be important is not a parent's lifetime income, but the amount of resources available in the household during the years when the child was growing up. In practice, most researchers have typically regarded this issue as being less important than obtaining a stable measure of parental income or earnings.

[8] For instance, Dunn (2007) finds that in Brazil, the intergenerational earnings elasticity grows sharply with son's age, reaching a maximum for sons aged 49, before falling slightly as son's age increases further. Father's age is found to have much less effect on mobility estimates than the son's age and the use of father's age over 40 produces quite stable elasticity estimates.

Although measurement error in the dependent variable does not in itself lead to attenuation bias, Haider and Solon (2006) point out that a attenuation bias can be caused by using log current earnings when children are in their twenties (a point at which current earnings may be quite different from average lifetime earnings). This error can be minimized by using log current earnings measured when children are aged in their thirties or forties (a point at which current earnings are close to average lifetime earnings).

To address these issues, prior researchers have controlled for the age of both children and parents, averaging parental income over multiple years, or predicting parental lifetime income by instrumenting income using parental characteristics (Reville, 1995; Dearden, Machin and Reed, 1997; Bjoklund and Jantti, 1997; Fortin and Lefebvre, 1998; Grawe, 2001; Chadwick and Solon , 2002; Mazumder, 2005; Lefranc and Trannoy, 2005; Haider and Solon, 2006; Grawe, 2006; Ferreira and Veloso, 2006; Lee and Solon, 2006, Nicoletti and Ermisch, 2007; Herz *et al*., 2007; Mocetti, 2007; Dunn, 2007; Leigh, 2007). However, a key issue in the instrumental variable approach is selecting instruments that only affect children's earnings through the channel of parental earnings, and do not directly impact children's earnings (Solon, 1992).

In addition to general issues that arise when estimating intergenerational elasticities, the specific economic environment in China over recent decades may also pose additional difficulty in estimating parental lifetime income. Due to rapid economic growth and sectoral change, the age-earnings profile and the return to particular demographic characteristics have shifted markedly. Figure 1 presents the changes in age-earnings profiles over the period 1988-2007. Figure 1a depicts the log of average real annual earnings for each particular birth cohort as they age. The different lines are for different birth cohorts, starting withthose born between 1970-75 (aged 20-25 in 1995) and ending with people born between 1935-39 (aged 56-60 in 1995). This figure may be read in two ways. Comparing different birth cohorts at a given age it shows earnings growth across cohorts holding age constant. We find that at the same age, the real earnings for different cohorts changed dramatically. For example, at age of 40 those who were born in 1960-64 earned about 50 percent more than those born in 1950-54 earned when they were the same age. We can also follow the trajectory of a single line and it shows age-earnings profile for different birth cohorts. If the age-earnings profile in China

had remained constant, one would expect to see the the shape of the lines remaining parallel to one another. Instead, it is evident that earnings growth has affected the wage profile differentially for different cohorts. For example, for those born in 1950-54 the profile did not flatten out untilage 50, whereas for those born between 1960-64, the profile started to flatten out when they turned 38.

Another way to illustrate the same point is to look at age-earnings profiles over time. Figure 1b takes the average real earnings ratios for each age between 1988 and 1995, 1995 and 2000, and 2000 and 2007. If there is no change in the shape of the age-earnings profile, the graph should show horizontal lines. Figure 1b indicates that between 1988 and 1995, real earnings rose for workers in their 30s, but fell for workers in their 60s. This was partly reversed between 1995 and 2000 (when workers in their 50s and 60s enjoyed the most rapid earnings growth). In the period 2000−2007, prime-aged workers again experienced more rapid growth in real earnings than their older and younger counterparts).

Figure 2 presents the partial and marginal R^2s of age, education, provincial dummy variables, industry and occupation in the earnings equations over the same period. The changes in the importance of age and provincial dummy variables in explaining earnings variation overtime is striking. At the beginning of the period, around one-quarter of the variation in earnings could be explained by age and its squared term alone, while at the end of the period a quadratic in age explained just 2 per cent. Similarly, the impact of provincial dummy variables doubled from about 10 percent to 20 percent between the late 1980s to the mid 1990s, before declining to its original level in the 2000s. Education, on the other hand, explained less than 3 per cent of the variation in earnings at the beginning of the period, but over 10 per cent at the end of the period.

Given the significant changes in the shape of the age-earnings profiles as well as the changing returns to demographics, it is even more problematic to assume that a single year of income can be used to proxy parents' permanent income in urban China.

In our empirical analysis, we modify equation (1) by controlling for a quadratic in children's age and a quadratic in parental age, and including indicator variables for the 16 regions that comprise our sample (see footnote 12):

$$y_{ci} = \alpha + \beta y_{pi} + \varphi_1 A_{ci} + \varphi_2 A_{ci}^2 + \gamma_1 A_{pi} + \gamma_2 A_{pi}^{\ 2} + \delta R_{ci} + \varepsilon_i, \qquad (2)$$

where y_{ci} is the log of the child's observed income, y_{pi} is the log of the parent's observed income, A_{ci} is the child's age minus 40 (and A_{ci}^2 is its square), A_{pi} is the parent's age (and A_{pi}^2 is its square). R_{ci} is a vector of regional dummy variables capturing regional variation in prices and wages.

In our first specification, we use OLS to estimate equation (2), and restrict the age range for children and parents to an interval where current earnings are the best proxy for long-run earnings (we also experiment with varying this age range).[9]

Our second specification aims to address the potential downward bias caused by mis-measurement of parental income by instrumenting reported parental income with parental education.[10] This method, however, may suffer from certain weaknesses. If the rate of return to human capital changes significantly over time, as has occurred in China (Meng and Kidd, 1997; Zhang, Zhao, Park, and Song, 2005; and Meng, Shen, and Xue, 2009), we will mis-estimate different cohorts' lifetime income. Another problem is parental education may have an independent effect on children's income (Solon, 1992). For example, nepotism in the Chinese university admissions process might lead us to overestimate the true intergenerational income elasticity if we instrument using parental education. Similarly, nepotism in the Chinese job market might lead us to overestimate the true intergenerational income elasticity if we instrument using parental occupation.

Our third approach, following Arellano and Meghir (1992), Angrist and Krueger (1992), Bjorklund and Jantti (1997), Mocetti (2007), and Nicoletti and Ermisch (2007) is to adopt the method of two-sample two-stage-least-squares (TS2SLS). To implement this, we use the cross sectional survey (UHEES 2004) containing information on both children's and parents' current income, education, and demographics. We then combine this with repeated cross-sectional data covering a two-decade period, and include information about parental pseudo-cohorts' earnings, education, occupation, and actual

[9] Although we are guided in this analysis by the work of Haider and Solon (2006), their empirical analysis uses U.S. data, and therefore considers an economy with a relatively stable wage growth and age-earnings profile. The situation for China is different. As indicated in Figure 1a, over time the age-earnings profile has changed markedly, with 30-45 year olds experiencing more rapid wage increases than other age groups.
[10] To test sensitivity of the instrument we also use parental occupation and industry of employment as instruments to predict their permanent income.

labour market experience. We predict parental permanent income using the latter data source, hoping that it will allow us to better proxy parental permanent income over a period of significant income changes.

To be precise, we use the repeated cross-section sample to estimate the following equation separately for each gender and year over the period 1986-2004:

$$y_{it} = \alpha + \beta X_{it} + \eta Prov_{it} + v_{it} \quad (3)$$

where y_{it} is the log of observed real income (deflated by province-specific price indices) for individuals who are of working age (men aged 16 to 60 and women aged 16 to 55) and working in year *t*, X_i is a vector of individual characteristics including years of schooling, actual age and its square term in year *t*, while $Prov_{it}$ is a vector of provincial dummies. Since the second stage equation also includes parental age and a vector of provincial dummies, the excluded instrument is parental education. We also repeat the same exercise using occupation and industry of employment as the instruments.

Based on the estimated coefficients from Equation (3) and parental demographics from the survey that contains information on parents and children, we then predict parental income year by year for the period 1986-2004.[11] After doing so, we calculate each individual's average earnings taking away the time trend. Only the sample of individuals who have at least 5 consecutive years of predicted parental income are included.

In addition to the benefit of better capturing parental permanent income, this method also significantly increases the number of observations with both children and parental incomes. However, this method does not avoid the problem of violating the exclusion restriction. Hence, when interpreting the results we should bear this in mind.

[11] The age of the parents for the year *t-n* for the prediction is calculated by ($A_{t-n} = A_t - n$). Because we have information from the parent-child dataset (UHEES 2004) on the exact year in which parents started work and retired, we are able to predict parental income in each of the 19 years for those who were working at the time. For parents who started the first job or retired during the 1986-2004 period, their predicted income is set to missing for the period before they started working or after they retired.

3. Data and Summary Statistics

The data used for this study are from two sources: the Urban Household Education and Employment Survey 2004 (UHEES) and the Urban Household Income and Expenditure Survey 1986-2004 (UHIES). The first survey was conducted jointly by the National Bureau of Statistics (NBS) and Beijing University while the second was conducted by NBS.[12]

The 2004 UHEES collected detailed information on demographic characteristics, educational attainment, labour market status, labour market history, party membership, annual income, and annual earnings in 2004 for all household members residing in the household *as well as non-residing parents of the household head and his or her spouse*.[13] The fact that the UHEES also surveys non-resident parents makes it particularly well-suited to our empirical analysis. For parents who are retired or deceased, the survey records their last occupation and industry. The 2004 UHEES covers 9,994 urban households and 67,132 individuals. The UHIES is a repeated cross-section data for the years 1986-2004, which we use to predict parental permanent income. It includes information on household income, as well as individuals' age, gender, education, occupation and industry.[14]

The survey data can be reorganized into child-parent pairs, where each pair includes individual information for children and parents. There are two different kinds of children in the sample. Some are children residing in their parents' home where a parent is the household head (we call these the 'parent-headed sample'). Another group are children residing in their own home (we call these the 'child-headed sample').

These samples are found to have a different age distribution, with both children and parents being much younger in the parent-headed sample than in the child-headed

[12] The UHIES is a nationwide survey (31 provinces) but due to confidentiality restrictions, we have access to data for only 16 provinces. There are 12 provinces included in the UHEES survey (Beijing, Shanxi, Liaoning, Heilongjiang, Zhejiang, Anhui, Hubei, Guangdong, Sichuan, Guizhou, Shaanxi, and Gansu). When using UHIES to estimate earnings equations as a base for predicted parental earnings, we use data for all 16 provinces we have access to (not just the 12 in the UHEES).
[13] However, non-residing children of the household head and spouse are not surveyed.
[14] For detailed description of the UHIES data, see Meng, Gong, and Wang, 2009.

sample (see Figure 3). We hope that combining the two samples will give us a sample of parents and children who are reasonably representative of the general population.

The UHEES data includes 28,729 child-parent pairs. Excluding pairs with children younger than 16 or currently at school, those with an intergenerational age difference below 14 years, there are 18,596 child-parent pairs. We further restrict our sample to those who are working and who have a positive income in 2004 with a father or mother who is no older than 74 and 69 in 2004, respectively.[15] With these further restrictions and excluding missing values and very few outliers 5475 child-father and 3431 child-mother pairs remain in the sample.[16] For some of our specifications, we restrict the sample to those where both the parent and child are within the working-age range and are currently (in 2004) working, and with non-missing income data. This further reduces the sample size to 1813.[17]

The summary statistics of children's and parents' ages, years of education, income, and earnings are reported in Table 1.[18] The top panel reports all child-parent pairs in our UHEES sample, while the lower panel reports the sample in which both children and parents are working in 2004. Below we only discuss in detail the bottom panel results. Children are between 17 and 41 years old, fathers between 39 and 60 and mothers between 37 and 55. The average age is about 26 for children, 54 for fathers and 50 for mothers. Slightly more than half of the sample children are males. The average number of years of schooling is about 13.5 for children and 10 for parents. The table also shows that (conditional on working) fathers have the highest income and earnings on average, followed by children and then mothers.

[15] This is because when using UHIES data to predict for parental earnings, we restrict for each year that father's and mother's age should be no older than 60 and 55, respectively, they should have at least 5 years of predicted earnings to be included in the sample. The earliest data we have for UHIES is 1986 and to have at least 5 years of predicted earnings the parents have to be no older than 60 or 55 in 1990 (no older than 74 and 69 in 2004).

[16] This is the sample used in Table 3A. Summing across the four combinations (father-son, father-daughter, mother-son, mother-daughter), the sample size is 2813+2662+1734+1697=8906.

[17] This is the sample used in Table 2. Summing across the four combinations (father-son, father-daughter mother-son, , mother-daughter), the sample size is 646+313+592+262=1813.

[18] The incomes in this study are in 2004 prices, based on provincial urban CPI indices.

4. Estimated Intergenerational Income Elasticity

The intergenerational income elasticity is estimated using Equation (2) for father-son, father-daughter, mother-son and mother-daughter and for the different age groups of children separately. We use the three different methods discussed in Section 2. The results from the first method (OLS using just the 2004 UHEES) are presented in the top panel of Table 2. Controlling for child and parent age and their square terms, we estimate a father-son income elasticity of 0.24. Restricting children's age to above 23 and further to above 30, the elasticities increase to 0.25 and 0.32, respectively. A similar pattern is found for father-daughter, mother-son, and mother-daughter elasticities. However, when we restrict the sample to children aged 30 and above, we have relatively few observations with which to estimate mother-son and mother-daughter elasticities and the resulting income elasticities are not precisely estimated. In general, the parent-son elasticities are higher than the parent-daughter elasticities. For the sample of all children, the R-squared statistics range between 0.25 and 0.35, suggesting that parental income and the other demographic controls in our regression can explain up to one-third of the variation in children's incomes. (Note that we do not report the R-squared in subsequent specifications, since it is not a particularly meaningful statistic in instrumental variable regressions.)

The bottom panel of Table 2 presents the results using one cross-sectional survey (the 2004 UHEES), but instrumenting income using parental demographics. The estimated elasticities increase somewhat, but the general pattern does not change much. Again, given that the sample size in the mother-son and mother-daughter samples is extremely small, so we do not place much weight on these estimated intergenerational elasticities.

We then move to use predicted parental income from the UHIES data to estimate Equation (2). Before we do so, we report some basic statistics of the predictions of the parental permanent income and examine briefly the relationship between predicted parental permanent income and their observed income in 2004 for a sample of parents who are working in 2004 and have reported a positive income.

On average fathers' permanent incomes are predicted using 13 years of data, while mothers' permanent incomes are predicted using 12 years of past income data. Figure 4 shows the distribution of the number of years' income used in this analysis. Only 5 per cent of the sample have 5 or fewer years of data, while many have 10 years or more. These data should give us a fairly good measure of the permanent income. As indicated in Mazumder (2005) more years of data eliminates the downward bias due to persistent transitory shocks and corrects for the age-related errors-in-variables bias. In addition, as discussed in Section 2 there have been significant changes in the earnings levels and earnings determination mechanism. Using average predicted earnings from repeated cross-sectional data for the past 20 years will help us account for the non-linear impact of these changes in earnings, thereby helping to reduce errors-in-variables bias.

We then examine the relationship between parental predicted permanent incomes and their reported income in 2004 for a group of parents who were working in 2004 and had positive income. Figure 5 shows a strong positive relationship between current and predicted permanent income (the correlation coefficient is 0.46 for fathers and 0.55 for mothers). In Figure 6, we plot the difference between the current income and predicted permanent income for both mothers and fathers and find only a modest difference between their current and permanent incomes. For both fathers and mothers, the standard deviation of the difference is about 0.6, suggesting that for two-thirds of respondents, the difference between their permanent and current incomes is less than 60 log points (about 80 percent). This is a larger gap than one would expect to observe in a developed nation, but as we have noted, the rapid changes in the Chinese labor market over recent decades have had quite differential impacts across the working-age population.

Having examined the reliability of the predicted permanent income data for parents, we use these data to estimate Equation (2) and report the results in Table 3. Columns 1 to 4 in panels A and B of Table 3 show father-child and mother-child intergenerational income elasticities for different age groups of children, while column 5 restricts the sample to individuals whose fathers were working in 2004. Thus, the permanent income elasticities reported in column 5 are essentially comparable to the

current income elasticities reported in columns 1 and 4 of Table 2 (which use current year reported incomes for both children and parents).[19]

The father-son income elasticities estimated using predicted permanent fathers' incomes are more than double those estimated using current year reported income. For example, for the group of sons aged 30-42 in 2004 the estimated intergenerational income elasticity is 0.32 using reported father's income for 2004 (Table 2, Panel A, column 3, first row). Instrumenting father's income, the elasticity is 0.23 (Table 2, Panel B, column 3). However, if we use fathers' *permanent* income – instrumented with education – the intergenerational elasticity rises to 0.74 (Table 3, Panel A, column 4).[20] A similar pattern is found if the sample is restricted to cases in which the father worked in 2004. In this sample, the elasticity using reported father income in 2004 is 0.24 (column 1 of Table 2), while using father's predicted permanent income the elasticity increases to 0.45 (column 5 in Panel A of Table 3).

For father-daughter pairs, the increase in elasticity when using fathers' permanent income relative to using fathers' reported income is almost the same as for the father-son pairs. For mother-son and mother-daughter pairs, the increase in estimated elasticities from using mothers' permanent income is not as large as for father-son and father-daughter pairs, but the general pattern is consistent.

Our preferred specification restricts the sample to children aged 30-42 (to account for lifecycle bias), and uses parental predicted permanent income. The estimated elasticities in this specification are 0.74 for father-son, 0.84 for father-daughter, 0.33 for mother-son, and 0.47 for mother-daughter.

The above results use predicted parental permanent income with education as the instrument. We also estimated the same regressions using predicted parental permanent income with occupation and industry as the instruments. The results are presented in

[19] The sample sizes in columns 1 and 4 of Table 2 are slightly smaller than those shown in column 5 of Table 3A, since there are a handful of parents who are working but for whom we do not observe incomes. Dropping these cases makes no substantive difference to the comparison – the elasticity is much higher when we use permanent parental incomes (Table 3A) than when we use one-year parental incomes (Table 2).

[20] In practice, the age range of the sample that uses current father's income (Table 2, column 3, third row) is 30-39. However, if we place the same age restriction on the sample that uses permanent father's income (Table 3A, column 4), we obtain results very similar to those reported in Table 3A .

Appendix A. Using occupation and industry as instruments the estimated intergenerational elasticities are lower than using education (but still much higher than those using current parental income). In attempting to see what explains the difference, we found that the unconditional correlation between child income and parental income is very similar using either instrument set (see Appendix B for the comparison of the unconditional relationships). Only when we introduce regional dummy variables into the regression do the estimates diverge. Our conjecture is that perhaps within a particular region there is more income variation across education levels than across occupation/industry groups. Thus, within a particular region the predicted income using education has more variation than predicted income using occupation and industry.

We also estimated the elasticity of children's incomes with respect to their parents' combined incomes. The results are presented in Panel C of Table 3. In this specification, the sample is restricted to children whose father works (and thus the sample size is the same as for the father estimates in Table 3A). Note that in the case of two-earner households, combined parental income is the sum of both parents' incomes and in the case of one-earner households, just the father's income. The parent-son elasticity is 0.55 for sons at all ages, and increases slightly to 0.59 when we restrict the sample to sons aged 30-42. This estimate lies below the corresponding father-son elasticities and above mother-son elasticities estimates reported in Panel A and Panel B, respectively. Our estimated parent-son elasticities are closer to the father-son estimates than to the mother-son estimates. This is simply an indication that by definition fathers' incomes dominate the measure of combined parental income.

Our findings are quite consistent with the literature, which shows that the longer the period used to generate parental permanent income, the lower is the attenuation bias and the larger the estimated intergenerational income elasticity. For example, Mazumder (2005) finds that using two year average data for the US the estimated IGE is 0.25 for father-son pairs. It rises to 0.61 when using 16 years' of father's earnings, an increase of 144 per cent. Mazumder (2005) attributes the higher estimate to reducing the downward bias that stems from transitory shocks and correcting for age-related errors-in-variables bias.

Cross-country comparison of intergenerational income mobility is hampered by the fact that different studies use a variety of empirical methods, and observe children at different ages. The intergenerational income elasticity for father-son is the most commonly estimated in the literature. Table 7 compares our results with some recent estimates of intergenerational elasticities (most are for fathers and sons, but some are estimated for other family combinations).

Comparing our TS2SLS results for son aged 30 to 42 with the studies that use similar methods and restrict children to those aged in their thirties and forties, we find that our estimated father-son intergenerational income elasticity in urban China (0.74) is at the upper end of the range of estimates for other countries. For example, the estimated elasticity is 0.22 for Canada (Fortin and Lefebvre, 1998), about 0.25 for Australia (Leigh, 2007), 0.28 for Sweden (Bjorklund and Jantti, 1997), 0.41 for France (leFranc and Trannoy, 2005), 0.44 for Italy (Mocetti, 2007), and 0.4−0.6 for the United States (Solon, 1992; Mazumder, 2005).[21]

5. How Is Income Earning Ability Transmitted Across Generations?

In this section, we analyze how income earning ability is transferred across generations in urban China, focusing particularly on the role of education, party membership, occupation and industry.

Education is believed to be a significant pathway of intergenerational transmission for many countries.[22] Using our full sample, we therefore estimate intergenerational educational transmission by both schooling years and by categories of educational attainment: (1) lower secondary schooling or less; (2) upper secondary schooling; (3) college and above.

[21] There are too few studies of father-daughter, mother-son, and mother-daughter elasticities to draw strong conclusions about how our results compare with those for other countries. However, given that these elasticities tend to be highly correlated within countries, it seems reasonable to conclude that urban China is relatively socially immobile for women as well as men.

[22] For instance, when education is not subsidized, rich parents can invest more in their children's education than poor parents. Subsidized education can be a way of equalizing opportunities for poor children (Eide and Showalter, 1999; Ng, 2007).

Table 4 cross tabulates the education level of parents and children. In the total sample, 28 percent of sons have lower secondary schooling or less, 34 percent have upper secondary schooling, and 38 percent have a college degree. Depending on which combination we look at (father-son, father-daughter, mother-son, or mother-daughter), between 44 and 49 percent of children are in the same education category as their parents. Measured in years of schooling rather than categorically, the correlation coefficient between parents' and children's education ranges from 0.22 for mothers and sons to 0.38 for mothers and daughters (see the bottom panel of Table 4). Among fathers who have a college degree, 62 percent of their sons have a college degree. Among mothers with a college degree, 65 percent of their sons have a college degree. A similar pattern can be observed for daughters.

Figure 7 presents the estimated relationship between parents' and children's schooling years by children's birth year and gender, with the sample restricted to children aged 25 years or older (since respondents aged less than 25 are more likely to be in the process of completing their education). The chart shows that the intergenerational association of schooling is approximately three times higher for children born in the late-1970s than for children born in the early-1950s. This increase can be explained partly by the end of the Chinese Cultural Revolution in 1976, followed by the restoration of the University Entrance Examinations in 1977. For children born after 1960, this increased the gap in educational attainment between those with higher-educated parents and those with less-educated parents (Meng and Gregory, 2002).

By international standards, the intergenerational education correlation in urban China is relatively low (compare our results with Hertz *et al*., 2007), although it has increased significantly over the past half-century. The main factor in this is the high persistence of college attainment across generations.

Parents' social networks can play an important role in providing their children with access to better opportunities in both education and the labor market (Lin and Bian, 1991; Walder, Li and Treiman, 2000; Meng, 2007). Communist Party membership can be transferred across generations through parental role models and social networks. The intergenerational transmission of occupations and industries is more complicated. It

depends on whether the parental social network plays an important role in children's entrance to the labor market and their promotion in the workplace; whether there are entry barriers due to crafts, professional and technical skills that are handed down; whether the attitudes and norms of family ties differ between rich and poor parents; and whether cohabitation with parents strengthens intergenerational persistence through the effects on beliefs and preferences (Mocetti, 2007).

Table 5 reports the persistence matrices of Communist Party membership, occupation, and sector of employment between children and parents by gender using the total sample. The first panel of Table 5 shows that if the parents are party members, their children are between 4 and 10 percentage points more likely to be party members (for sons, this represents about a 10-20 percent increase in the probability of joining the party, while for daughters it represents a more than 50 percent increase in the probability of party membership). The second panel indicates a very strong persistence in occupation between children and parents. If fathers or mothers are working in the occupation "professionals and technicians", their children are 35-40 percentage points more likely to also be working in this occupation than those whose parents are not (this represents a near-tripling in the probability of being in this occupational category). The differences for "administration staff" are 17-23 percentage points (approximately a doubling in the probability), while for "production and transportation workers" the differences are 16-30 percentage points (having a father who was a production worker approximately triples the probability that a child will enter this occupational grouping, while having a mother who was a production worker doubles the probability).

The third panel of Table 5 presents the proportions of sons and daughters working in the state-owned sector based on whether their fathers and mothers also work in that sector. Seventy-one percent of sons and 67 percent of daughters work in the state-owned sector. Children are 6-9 percentage points (about 10 percent) more likely to work in the state-owned sector if one of their parents also worked in that sector.

6. Conclusions

An old Chinese saying holds that families will "be poor no more than three generations and be rich no more than three generations".[23] This suggests that in China, as in many nations, there is a strong popular belief in social mobility. Our findings challenge this view. At least for modern-day urban China, we find a strikingly low level of intergenerational mobility. Our preferred estimates show that the intergenerational income elasticities are 0.74 for father-son, 0.84 for father-daughter, 0.33 for mother-son, and 0.47 for mother-daughter. Internationally, our estimated father-son elasticity places urban China among the least socially mobile places in the world.

Empirically, our analysis shows the importance of obtaining a measure of permanent income, and accounting for lifecycle bias. If we use single-year income measures for parents, we obtain substantially lower estimates of the intergenerational income elasticity for China (indeed, such estimates imply that urban China is an extremely socially mobile place). However, when we use predicted permanent incomes, and restrict the sample of children to those aged 30-42 (to account for lifecycle bias), we obtain intergenerational elasticities that are sometimes twice as large.

Note that we do not formally calculate intergenerational *correlations* for urban China, since doing so would require information on the underlying variance in permanent incomes (recall that we predict parental income using parental demographics). However, given that income inequality in urban China (measured by annual incomes) has risen markedly over recent decades, it is likely that inequality of permanent incomes has also risen. The intergenerational correlation (ρ) is simply equal to the elasticity (β), multiplied by the ratio of the standard deviation of log income in the parents' generation (σ_p) and the children's generation (σ_c), i.e. $\rho = \beta \frac{\sigma_p}{\sigma_c}$. Since permanent income is likely more dispersed in the 2000s than in the 1980s, it is probable that the intergenerational income correlation in urban China would be lower than the intergenerational income elasticity.[24]

[23] "Qiong bu guo san dai, fu bu guo san dai".
[24] For example, the coefficient variation of annual real earnings rose from 0.45 in 1988 to 0.81 in 2004.

However, even taking this into account, China's intergenerational correlation is likely to be higher than that observed for most developed nations.

Another factor to bear in mind is that our study focuses only on urban China. Given the large income differences between rural and urban China, it is likely that intergenerational mobility is higher for individuals born in rural parts of the country, and therefore that the intergenerational elasticity of income (or earnings) for the entire country is likely to be lower than that which we estimate for urban China. However, from a policy perspective, our estimated elasticity is still an important parameter. Although rural-urban migration offers the potential for upwards social mobility for those born in rural areas, it only offers the potential for downwards social mobility for those born in urban areas.

Exploring possible pathways, we find that education, especially college study, is one channel through which earnings ability is transmitted from parents to children (though the intergenerational association of education is still lower in urban China than in many other nations). We also find intergenerational correlations for parental party membership, occupation, and industry. The occupational correlation is particularly high, suggesting that occupation may be the most important channel through which intergenerational transmission occurs in urban China. However, it is also possible that factors we do not perfectly observe in our data – such as genes, health, or social networks – are also significant explanators of intergenerational transmission in urban China.

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Table 1: Summary Statistics, UHEE 2004

		Father-child		Mother-child	
Total Sample	**Individuals**	**Age range**		**Age range**	
	Children	17-56		17-53	
	Parents	38-73		37-68	
Age	Children	34.16	7.14	31.75	6.76
	Parents	62.3	7.02	57.34	6.28
Males	Children	0.51		0.50	
Years of schooling	Children	13.15	2.31	13.46	2.18
	Parents	10.06	2.31	9.88	3.64
Annual income	Children	15455	12782	15613	12930
Predicted average annual income between 1986 and 2004	Parents	7628	2295	6000	2199
Predicted combined parental annual income between 1986 and 2004	Parents	11973	4843		
No. of pairs		5475		3431	
Sample with both children and parents working	Children	17-41		17-39	
	Parents	39-60		37-55	
		Mean	**Std. Dev.**	**Mean**	**Std. Dev.**
Age	Children	26.51	3.91	24.94	3.25
	Parents	53.76	3.79	49.98	3.38
Males	Children	0.52		0.54	
Years of schooling	Children	13.4	2.56	13.37	2.53
	Parents	10.24	2.96	9.98	2.73
Annual income	Children	14067	13155	13441	13643
	Parents	17642	13513	13849	10801
Annual earnings	Children	13634	12593	13173	13235
	Parents	16903	12235	13372	10687
No. of pairs		1238		507	

Table 2: Intergenerational Income Elasticities Using Current Incomes

Panel A: OLS	**Sons**			**Daughters**		
Father	**All children**	**Children aged >= 23**	**Children aged >= 30**	**All children**	**Children aged >= 23**	**Children aged >= 30**
Log(father's income)	0.241***	0.245***	0.321***	0.215***	0.183***	0.318***
	[0.0330]	[0.0326]	[0.102]	[0.0458]	[0.0456]	[0.100]
Observations	646	572	127	592	515	137
R-squared	0.301	0.265	0.444	0.254	0.231	0.426
Children's age range	17-39	23-39	30-39	17-41	23-41	30-42
Father's age range	39-60	40-60	50-60	42-60	43-60	52-60
Mother						
Log(mother's income)	0.302***	0.356***	0.342	0.174**	0.185***	0.490
	[0.0840]	[0.0631]	[0.333]	[0.0689]	[0.0662]	[0.524]
Observations	313	254	34	262	212	24
R-squared	0.348	0.349	0.686	0.303	0.294	0.611
Children's age range	17-39	23-39	30-39	17-43	23-38	30-38
Mother's age range	37-55	41-55	51-55	40-55	42-55	48-55
Panel B: IV	**Sons**			**Daughters**		
Father	**All children**	**Children aged >= 23**	**Children aged >= 30**	**All children**	**Children aged >= 23**	**Children aged >= 30**
Log(father's income) [IV=educ.]	0.346***	0.352***	0.231	0.301***	0.190	0.084
	[0.123]	[0.127]	[0.207]	[0.116]	[0.116]	[0.246]
Observations	646	572	127	592	515	137
Children's age range	17-39	23-39	30-39	17-42	23-42	30-42
Father's age range	39-60	40-60	50-60	42-60	43-60	50-60
Mother						
Log(mother's income) [IV=educ.]	0.644***	0.451***	Sample too small.	0.355**	0.303**	
	[0.173]	[0.131]		[0.144]	[0.134]	
Observations	313	254		262	212	
Children's age range	17-43	23-43		17-43	23-43	
Mother's age range	37-55	41-55		40-55	42-55	

Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Father's income and mother's income are single-year incomes (measured in 2004). Each elasticity is from a separate regression.

R-squared statistics are reported for OLS, but not for IV (since the latter is not a particularly meaningful statistic).

Table 3: Intergenerational Income Elasticities Using Permanent Incomes

	All Children	Aged >=23	Aged >=30	Aged 30-42	Child and parents work in 2004
Panel A:					
Father-son					
Log(father's income) [IV=educ.]	0.603	0.601	0.720	0.735	0.445
	[0.086]***	[0.088]***	[0.103]***	[0.110]***	[0.178]**
Observations	2813	2721	2011	1638	650
Children's age range	17-58	23-58	30-58	30-42	17-39
Father's age range	38-74	40-74	48-74	48-74	39-60
Father-daughter					
Log(father's income) [IV=educ.]	0.730	0.690	0.830	0.841	0.501
	[0.087]***	[0.087]***	[0.112]***	[0.119]***	[0.163]***
Observations	2662	2573	1896	1593	595
Children's age range	17-54	23-54	30-54	30-42	17-41
Father's age range	40-74	40-74	47-74	47-74	42-60
Panel B:					
Mother-son					
Log(mother's income) [IV=educ.]	0.369	0.364	0.344	0.330	0.526
	[0.067]***	[0.068]***	[0.082]***	[0.085]***	[0.134]***
Observations	1734	1648	1014	909	352
Children's age range	17-53	23-53	30-53	30-42	17-39
Mother's age range	37-69	41-69	49-69	49-69	37-55
Mother-daughter					
Log(mother's income) [IV=educ.]	0.388	0.370	0.468	0.465	0.356
	[0.071]***	[0.072]***	[0.091]***	[0.093]***	[0.160]**
Observations	1697	1616	1015	944	307
Children's age range	17-50	23-50	30-50	30-42	17-38
Mother's age range	40-69	42-69	48-69	48-69	40-55
Panel C:					
Parents-son					
Log(parental income) [IV=educ.]	0.554	0.557	0.574	0.586	0.598
	[0.078]***	[0.079]***	[0.090]***	[0.097]***	[0.183]***
Observations	2813	2721	2011	1638	650
Parents-daughter					
Log(parental income) [IV=educ.]	0.775	0.718	0.858	0.864	0.491
	[0.078]***	[0.078]***	[0.097]***	[0.102]***	[0.160]***
Observations	2662	2573	1896	1593	595

Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%
Father's income and mother's income are permanent incomes (see text for details). Each elasticity is from a separate regression.

Table 4: Intergenerational education correlation

			Son's education	
	Parents' education	Lower secondary schooling or less	Upper secondary schooling	College and above
All	All	27.74	34.12	38.14
	Lower secondary schooling or less	**32.84**	34.42	32.74
Fathers	Upper secondary schooling	14.23	**37.35**	48.42
	College study	10.95	27.09	**61.96**
	Lower secondary schooling or less	**30.88**	34.23	34.89
Mothers	Upper secondary schooling	12.86	**36.17**	50.97
	College study	9.5	25.7	**64.8**
			Daughter's education	
	Parents' education	Lower secondary schooling or less	Upper secondary schooling	College study
All	All	32.53	37.27	30.19
	Lower secondary schooling or less	**38.99**	37.91	23.1
Fathers	Upper secondary schooling	16.49	**39.72**	43.79
	College study	9.28	28.31	**62.41**
	Lower secondary schooling or less	**36.99**	38.09	24.92
Mothers	Upper secondary schooling	10.37	**35.73**	53.9
	College study	4.35	22.41	**73.24**
Variables	Father-son	Mother-son	Father-daughter	Mother-daughter
In same educational categories	44.05	43.95	47.04	48.65
Correlation coefficient of schooling ye	0.26	0.22	0.37	0.38

Table 5: Intergenerational persistence in party membership, occupation and sector of employment

Communist party membership		Sons	Daughters
All		33.56%	18.88%
	Yes	37.13%	25.11%
Fathers	No	31.57%	15.51%
	Difference	5.56 pp	9.6 pp
	Yes	36.85%	27.50%
Mothers	No	33.14%	17.80%
	Difference	3.71 pp	9.70 pp
Occupation:			
Professionals and technicians	All	30.26%	29.89%
Fathers	Yes	60.31%	56.24%
	No	20.28%	20.84%
	Difference	40.03 pp	35.41 pp
Mothers	Yes	59.59%	60.61%
	No	24.32%	23.35%
	Difference	35.27 pp	37.26 pp
Administrative staff		22.41%	22.36%
Fathers	Yes	40.37%	37.83%
	No	18.29%	18.85%
	Difference	22.09 pp	18.98 pp
Mothers	Yes	37.87%	43.75%
	No	20.92%	20.37%
	Difference	16.95 pp	23.38 pp
Production workers		31.03%	24.10%
Fathers	Yes	49.47%	41.08%
	No	19.78%	14.38%
	Difference	29.7 pp	26.7 pp
Mothers	Yes	45.06%	35.82%
	No	25.82%	19.52%
	Difference	19.24 pp	16.30 pp
Working in the state sector			
		70.57%	66.69%
	Yes	73.88%	71.03%
	No	68.36%	63.15%
Fathers	Difference	5.51 pp	7.89 pp
	Yes	71.93%	72.81%
	No	66.40%	64.00%
Mothers	Difference	5.53 pp	8.81 pp

Note: 'pp' means 'percentage points'

Table 6: Does Party Membership Explain the Intergenerational Elasticity?

	Father-son		Father-daughter		Mother-son		Mother-daughter	
	IV=occ. & ind.	IV=educ.	IV=occ. & ind.	IV=educ.	IV=occ. & ind.	IV=educ.	IV=occ. & ind.	IV=educ.
Log(parent income) [Instrumen	0.607	0.520	0.607	0.596	0.171	0.298	0.447	0.318
	[0.100]***	[0.088]***	[0.100]***	[0.088]***	[0.086]**	[0.072]***	[0.092]***	[0.075]***
Child is a party member	0.209	0.184	0.209	0.201	0.134	0.130	0.199	0.196
	[0.030]***	[0.024]***	[0.030]***	[0.030]***	[0.033]***	[0.033]***	[0.037]***	[0.037]***
Parent is a party member	0.109	0.042	0.109	0.106	0.108	0.080	0.094	0.092
	[0.026]***	[0.024]*	[0.026]***	[0.025]***	[0.035]***	[0.036]**	[0.038]**	[0.039]**
Observations	2657	2811	2657	2657	1734	1734	1695	1695

Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Parent income is the permanent income of the child's mother or father (see text for details). Each column is a separate regression.

Table 7: Summary of recent studies on intergenerational income elasticity for different countries

	Country	Data year	Elasticity	Children's age	Parents' age	Methods	Authors
Father-son	Australia	2004	0.2-0.3	25-55	40 (assigned)	IV	Leigh (2007)
	Brazil	1996	0.80-0.83	30-39	30-50 (in 1976)	TS2SLS	Dunn(2007)
	Britain	1991-2003	0.32	31-45	N.A.	IV	Nicoletti and Ermisch (2007)
	Britain	1991	0.56-0.58	33 (mean)	47.5 (mean)	IV	Dearden et al. (1997)
	Canada	1986-1994	0.22	30-39	when child aged 15	IV	Fortin and Lefebvre (1998)
	Canada	1998	0.21	32-35	45.5 (mean)	OLS	Corak (2001, 2006)
	China (Urban)	2004	0.32	N.A.	N.A.	OLS	Guo and Min (2008)
	Ecuador	1994	1.13	24-40	45-60	TS2SLS	Grawe (2001,04)
	France	1993	0.41	30-40	55-70	TS2SLS	Lefranc and Trannoy (2005)
	Germany	1984	0.12	25 (mean)	50-51 (mean)	OLS	Couch and Dunn (1997)
	Italy	2000-2004	0.44	30-45	30-50 (in 1977-1979)	TS2SLS	Mocetti (2007)
	Malaysia	1976/1989	0.54	>=23	24-59	IV	Grawe (2004)
	Nepal	1995	0.32	24-40	45-60	TS2SLS	Grawe (2001,04)
	Pakistan	1991	0.24	25-35	45-60	TS2SLS	Grawe (2001,04)
	Peru	1985	0.67	24-40	45-60	TS2SLS	Grawe (2001,04)
	South Africa	1993-1998	0.61	25.1(mean)	53.7(mean)	OLS	Hertz(2001)
	Sweden	1991	0.28	30-39	43.3 (mean)	TS2SLS	Bjorklund and Jantti (1997)
	Sweden	1992	0.13	25-51	52	OLS	Osterberg (2001)
	United States	1993	0.47	28-41	40.2 (mean)	IV	Grawe (2004)
	United States	1981/1984	0.39	14-59	N.A.	IV	Altonji and Dunn (2000)
	United States	1984	0.41	25-33	44 (mean)	OLS	Solon (1992)
	United States	1984	0.53	25-33	44 (mean)	IV	Solon (1992)
	United States	1987	0.52	28-36	45 (mean)	TS2SLS	Bjorklund and Jantti (1997)
	United States	1995-98 for children 1970-85 for father	0.57	27-32 (1995) 30-35 (1998)	13-55 (1970) 27-69 (1984)	TS2SLS	Mazumder (2005)
Father-daughter	Canada	1986-1994	0.22	30-39	when child aged 15	IV	Fortin and Lefebvre (1998)
	Britain	1991	0.64-0.66	33 (mean)	47.5 (mean)	IV	Dearden et al. (1997)
	United States	1995-98 for children 1970-85 for father	0.61	27-32 (1995) 30-35 (1998)	13-55 (1970) 27-69 (1984)	TS2SLS	Mazumder (2005)
	United States	1981/1984	0.4	14-59	N.A.	IV	Altonji and Dunn (2000)
Mother-son	United States	1981/1984	0.29	14-59	N.A.	IV	Altonji and Dunn (2000)
Mother-daughter	United States	1981/1984	0.27	14-59	N.A.	IV	Altonji and Dunn (2000)
	South Africa	1993-1998	0.66	27.7 (mean)	52.4 (mean)	OLS	Hertz(2001)

N.A.= Not available.

Figure 1: Change in the level and shape of the age-earnings profile, 1986-2007

Figure 2: Changes in impacts of different attributes on earnings, 1988-2007

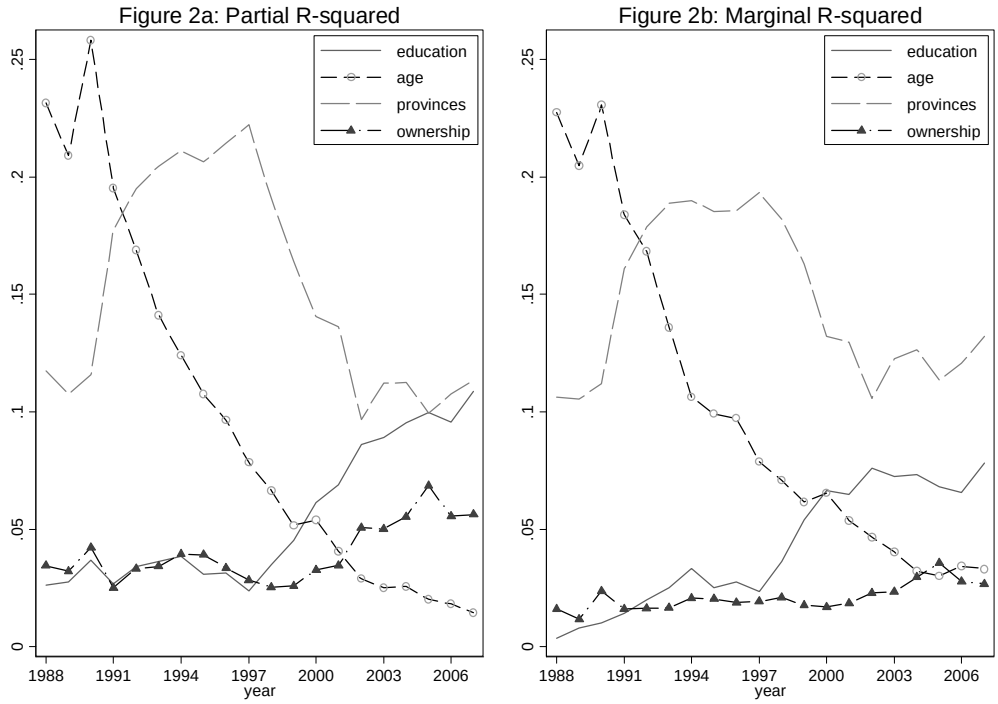


Figure 3: Age Difference between Parent-headed and Child-headed Samples

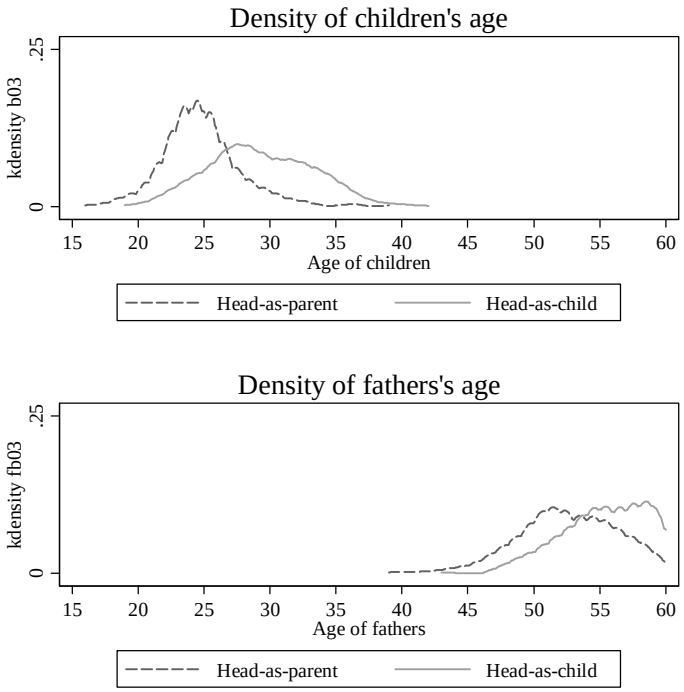


Figure 4: Distribution of the number of years predicted income used to calculate parental permanent income

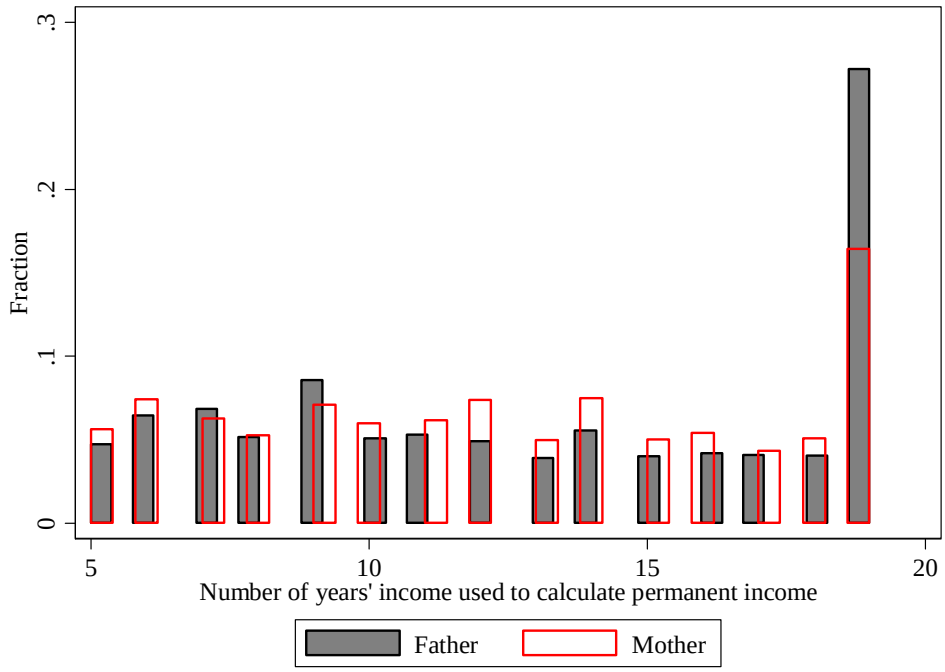


Figure 5: Relationship between parental current income and predicted permanent income

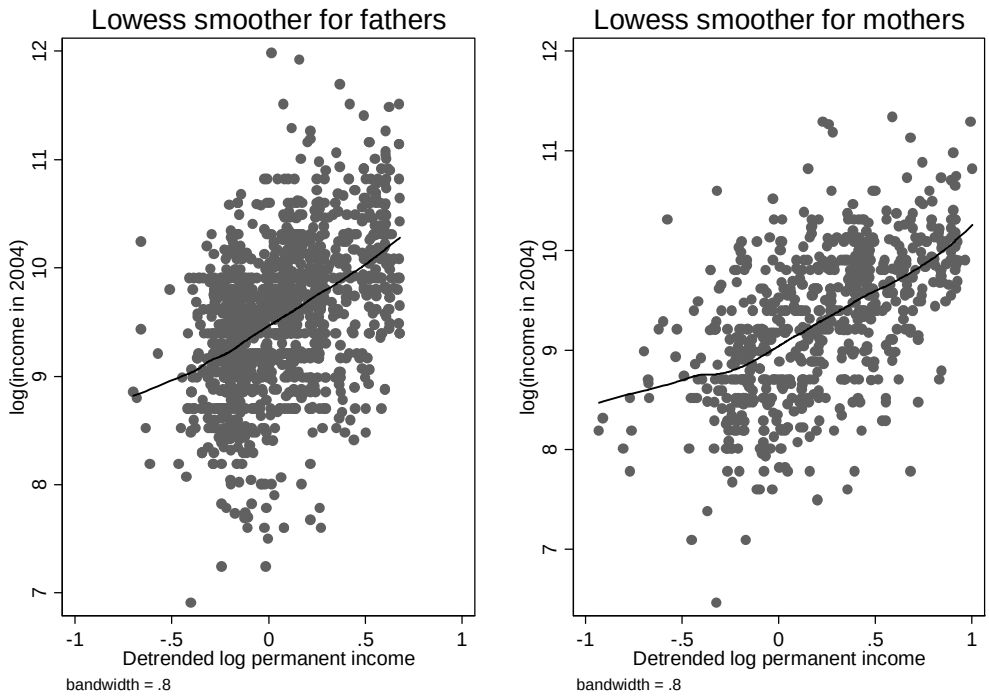


Figure 6: Parental transitory income distribution

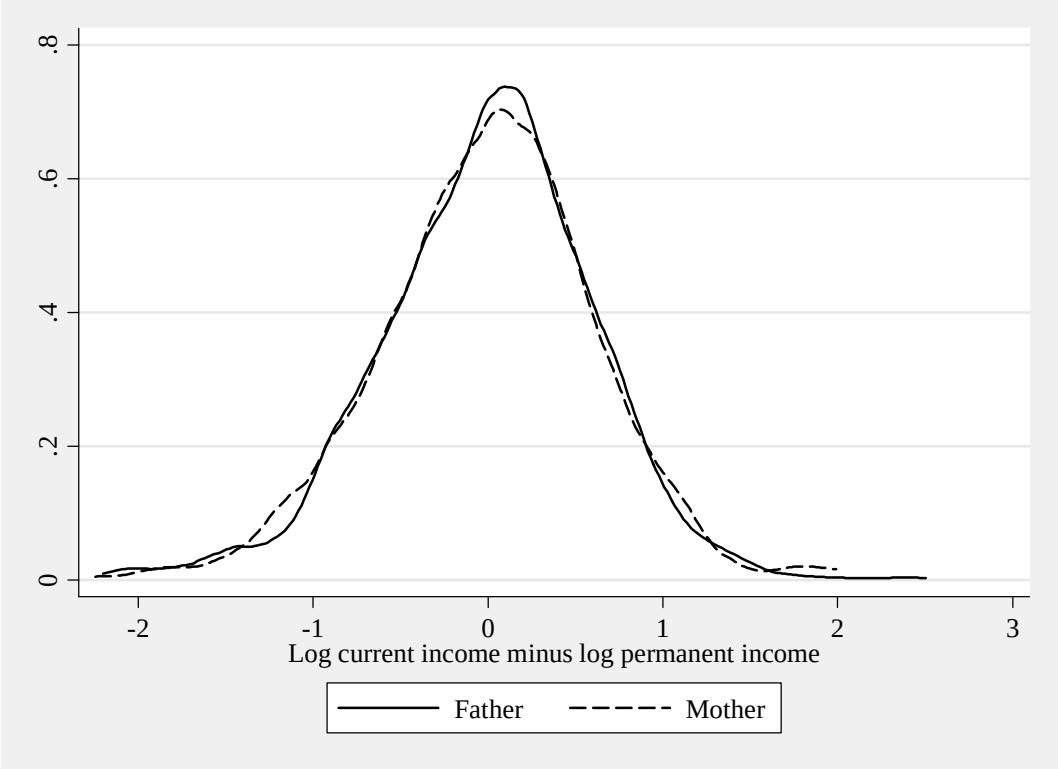
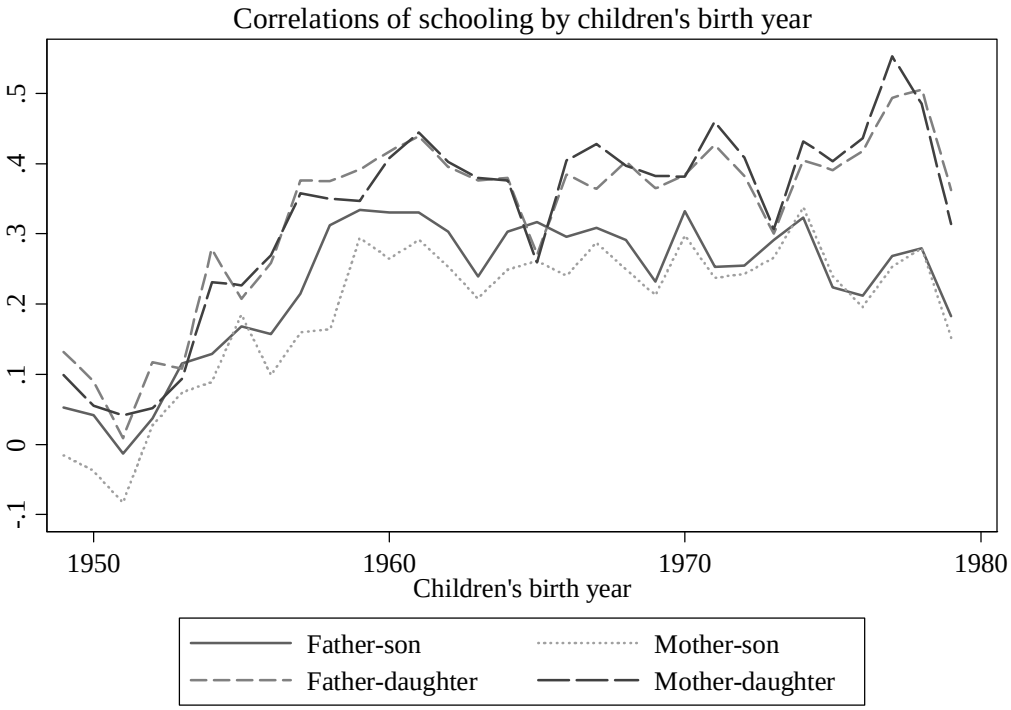


Figure 7: Intergenerational Education correlation (regression coefficients) by Children's Birth Year in Urban China, 2004



Appendix A: Intergenerational mobility elasticities using permanent parental income with occupation/industry as instruments

	All Children	Aged >=23	Aged >=30	Aged 30-42	Children with parents working in 2004
Father-son					
Log(father's income) [IV=occ. & ind.]	0.476	0.471	0.564	0.477	0.466
	[0.102]***	[0.103]***	[0.130]***	[0.136]***	[0.197]**
Observations	2813	2721	2011	1638	650
Father-daughter					
Log(father's income) [IV=occ. & ind.]	0.739	0.739	1.013	0.991	0.306
	[0.099]***	[0.101]***	[0.135]***	[0.142]***	[0.174]*
Observations	2662	2573	1896	1593	595
Mother-son					
Log(mother's income) [IV=occ. & ind.]	0.264	0.260	0.337	0.326	0.519
	[0.083]***	[0.085]***	[0.112]***	[0.117]***	[0.168]***
Observations	1734	1648	1014	909	352
Mother-daughter					
Log(mother's income) [IV=occ. & ind.]	0.518	0.520	0.711	0.726	0.356
	[0.090]***	[0.091]***	[0.129]***	[0.133]***	[0.204]*
Observations	1697	1616	1015	944	307
Parents-son					
Log(parental income) [IV=occ. & ind.]	0.263	0.262	0.26	0.234	0.243
	[0.045]***	[0.046]***	[0.052]***	[0.055]***	[0.114]**
Observations	2813	2721	2011	1638	650
Parents-daughter					
Log(parental income) [IV=occ. & ind.]	0.396	0.371	0.423	0.413	0.151
	[0.049]***	[0.049]***	[0.060]***	[0.061]***	[0.103]
Observations	2662	2573	1896	1593	595

Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Father's income and mother's income are permanent incomes (see text for details). Each elasticity is from a separate regression.

Appendix B: Unconditional correlation between children and father's predicted incomes using education or occupation/industry as instruments