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Intergenerational transfer of human capital and its impact on income mobility: Evidence from China

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ABSTRACT

This paper analyzes theoretically and empirically the impact of intergenerational transmission of human capital on the income mobility in China. We use a three-period overlapping-generations (OLG) model to show that the human capital transfer plays a remarkable role in determining the parent-to-offspring investment in human capital and the intergenerational elasticity of income. We then estimate a simultaneous equations model (SEM) using the 1989–2009 China Health and Nutrition Survey (CHNS) data to verify our theoretical predictions. The results show that (i) human capital, measured by health and education, is directly transmitted from one generation to the next, reflecting the parent-induced inequality of development opportunities among offspring in China; (ii) the estimated intergenerational income elasticity increases from 0.429 to 0.481 when the direct transfer of human capital is accounted for, suggesting that omitting this mechanism would overestimate China's income mobility. Our findings provide policy implications on strengthening human capital investments among the disadvantaged groups, reinforcing reforms that promote equality of opportunity, and improving the efficiency of labor markets in China.

1. Introduction

Social mobility, or the changeability of one's socio-economic status, is an important measure of the equality of a society and an essential determinant of a country's sustainability in economic growth. Since the 1980s, China's unprecedentedly rapid economic growth has been accompanied by emerging social problems such as rising income inequality and lack of social mobility. These problems challenge the continuous development of China's economy and threaten to drag the country into the middle income trap. In recent years, several studies that look at the intergenerational correlation of income have consistently found (i) internationally low income mobility (an important dimension of social mobility) in China, and (ii) the sustaining income inequality is to a high extent explained by the inequality of opportunity (Deng, Bjorn, & Li, 2012; Gong, Leigh, & Meng, 2012; Zhang & Eriksson, 2010). Table 1 summarizes the estimated intergenerational elasticity of income in major countries, among which China ranks higher than most of the developed and some of the developing countries, indicating a low level of intergenerational income mobility. This phenomenon is not only against the moral principal of social equity by giving poor people too few opportunities to improve their economic status, but also leads to decreased incentives among individuals to invest in human capital and thus negatively affects the long run economic efficiency (Moaz & Moav, 1999).

Based on the theory of human capital (Becker, 1993), one of the root causes of low intergenerational mobility is that human capital (including health and education) remains invariant through intergenerational transmission. In particular, some studies point out that

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Table 1
International comparison of intergenerational income elasticity.

Country	Elasticity	Data	Source
U.S.	0.45–0.48	PSID	Lee and Solon (2009)
Canada	0.23	Income Tax Information	Corak and Heisz (1999)
U.K.	0.37	Combined Dataset	Nicoletti and Ermish (2007)
Italy	0.33	SHIW	Piraino (2007)
France	0.41	FQP	Lefranc and Trannoy (2005)
Germany	0.24	G-SOEP	Vogel (2008)
Australia	0.25	Combined Dataset	Leigh (2007)
Finland	0.20	Administrative Register Information	Pekkarinen et al. (2009)
Norway	0.25	Administrative Register Information	Nilsen et al. (2008)
Denmark	0.14	Administrative Register Information	Hussain et al. (2008)
Peru	0.50	LSMS	Grawe (2004)
Malaysia	0.40	MFLS	Grawe (2004)
Pakistan	0.18	LSMS	Grawe (2004)
Brazil	0.52	PNAD	Dunn (2007)
China	0.45	CHNS	Zhang and Eriksson (2010)

Notes: (i) Some information in the table is quoted from Deng et al. (2012) and Björklund and Jäntti (2009); (ii) all coefficients represent father–son income elasticity; (iii) PSID stands for Panel Study of Income Dynamics; (iv) SHIW (Survey on Household Income and Wealth) is sponsored by Bank of Italy; (v) FQP (Formation, Qualification, Profession) is conducted by INSEE (Institut National de la Statistique et des Études Économiques); (vi) G-SOEP stands for German Socio-Economic Panel; (vii) LSMS (Living Standard Measurement Survey) is conducted by the Word Bank; (viii) MFLS stands for Malaysian Family Life Survey; (ix) PNAD stands for Pesquisa Nacional por Amostra de Domicilios; (x) CHNS stands for China Health and Nutrition Survey.

the low human capital accumulation of the disadvantaged population is consistently inherited from the previous generations, thus limiting the ability of the poor to improve their income (Yao & Zhao, 2007). To a large extent, China's recent experience has mirrored the above findings. In the health care sector, the traditional rural Cooperative Medical Scheme (CMS) and urban Labor Insurance Scheme (LIS) gradually collapsed during the marketization and privatization reforms in the 1980s and 1990s, leading to persistent deterioration in the access to basic health care (Blumenthal & Hsiao, 2005); consequently, inequality in health capital expands through intergenerational transmission, and people in poor-health groups see little chance to substantially improve their health status. From the perspective of education, the inequality in educational opportunities is also aggravated during China's education reforms in the 1990s that are characterized by industrialization and enrollment expansion in the higher education sector (Liu, 2006); specifically, well-educated parents who are generally in high socio-economic status manage to obtain better access to high-quality educational resources for their children (Li, 2006). Given the above stylized facts, an important theoretical and practical question is: whether and to what extent does the intergenerational persistence of human capital contribute to the decreasing income mobility in China? A valid answer to the above question is not only meaningful to economic theorists, but can also provide policy guidance to China's current reforms in education, health care and income redistribution.

This paper is among the first to study the impact of human capital transmission across generations on the intergenerational income mobility in China from both theoretical and empirical perspectives. In the theoretical analysis, we incorporate the mechanisms of direct and indirect transmission of human capital into a classical three-period overlapping-generations (OLG) framework based on Becker and Tomes (1979), the results of which provide a new way to solve for parents' optimal investment in their children's human capital and to calculate the implied elasticity of income across generations. In the empirical analysis, we use the 1989–2009 China Health and Nutrition Survey (CHNS) data to investigate the intergenerational transmission of income, health and education based on a simultaneous equations model, the results of which show remarkable transmission of human capital (health and education) across generations and that the parent–offspring income elasticity tends to be underestimated (i.e., income mobility tends to be overestimated) if the direct transfer of human capital is not accounted for. Our findings provide a new approach to estimate the intergenerational income elasticity, which facilitates deeper understanding on the root causes of the lack of social mobility in China.

The paper proceeds as follows: Section 2 briefly reviews the relevant literature; Section 3 lays out the theoretical model and its extension; Section 4 describes our empirical strategy and data; Section 5 presents the estimation results and robustness tests; Section 6 concludes the paper.

2. Literature review

The intergenerational income elasticity, estimated by the regression coefficient of parents' logarithmic permanent income on their children's, is commonly used as a measure of social mobility in the economic literature. Limited by data availability and measurement accuracy, the traditional estimates of intergenerational income elasticity tend to be biased downwards; an example is Solon (1999), which estimates that the elasticity in the U.S. is only 0.2. Facilitated by large databases such as the Panel Study of Income Dynamics (PSID), the National Longitudinal Survey of Youth (NLSY) and the National Child Development Study (NCDS), recent studies are able to obtain more accurate estimates for different countries. For example, based on NLSY, NCDS and Nordic register data, Jäntti et al. (2006) conduct a cross-country study on the intergenerational elasticity of income, and find that the estimated elasticity is 0.517 in the U.S., 0.306 in the U.K., and less than 0.2 in three Nordic countries (Norway, Finland and Denmark). Vogel (2008) studies