

**Discussion of**  
**“Intergenerational Mobility in China” by**  
**Yi Fan, Junjian Yi, and Junsen Zhang**

**Steven N. Durlauf**  
**University of Wisconsin**

**June 17, 2013**

## Overview

This is important research on an important topic. The paper does three things.

1. Construct of measures of intergenerational mobility
2. Interpret these measures in terms of a variant of the Becker-Tomes model due to Solon.
3. Argue that increasing human capital costs increasing returns to education have combined to produce decreasing intergenerational mobility.

I will divide my comments into two parts. First, I give specific reactions to the details of the paper. Second, I raise some larger questions.

## Theory

Income  $y_{it}$  determined by human capital level  $h_{it}$

$$\log y_{it} = \mu_t + r_t h_{it}$$

Rate of return on human capital determined by physical capital  $K_t$ , technology level  $A_t$ , and level of institutional reform  $M_t$

$$r_t = r(K_t, A_t, M_t)$$

Human capital is determined by parental investment  $I_{it-1}$ , government investment  $G_{i,t-1}$  and ability,  $e_{it}$

$$h_{it} = \log(I_{it-1} + G_{i,t-1}) + e_{i,t}$$

Credit constraints can be represented a tax on the return to capital.  $\gamma_{it}$ , so actual return is

$$(1 - \gamma_{it-1}) r_t$$

## Comments: Theory

1. Credit constraint modeling is unpersuasive. The OLG credit constraint (really due to Glenn Loury) is that parents cannot commit children to pay parental debts. This limitation applies to the US as well as to China. Not really a market imperfection, so reason to link to level of market reform.
2. In order to have a market reform-related measure of credit constraints, one needs a life cycle model. 2-period overlapping generations model is not adequate for the task.

3. Model is not suited to analyze cross sectional inequality. Stationarity of generation-specific shock is not plausible. Example: globalization.
  
4. Other forms of increases in EOP can lower measured mobility (Conlisk)

Example: Matching model

$$o_{m,t} = \lambda_m g_{i,t} g_{j,t}$$

Aristocracy: “random assignment”

Equality of Opportunity: assortative matching

## **Comments: Interpretation of Empirics**

1. Educational provision is public even if there is some private finance. Model should reflect the public provision. Political economy of tuition needs elaboration. What is process by which school-specific tuition rates are set? Why are rates a “head tax” for participants?
2. Peer effects, social norms are, I believe, important in understanding education.
3. Causal arguments are, at this stage, conjectural. Is intergenerational schooling relation causal? Selection issues seem a natural concern.

## Question 1: Is the Intergenerational Elasticity of Income Empirically Meaningful for China?

Statistical model under study is

$$\log y_{i,t,T} = \alpha_T + \beta_T \log y_{i,t-1,T} + v_{i,t,T}$$

where  $T = \text{type}$ . The parameter  $\beta_T$  depends on various factors: ability to borrow against offspring future income, preferences (if credit constraint binding), state of economy (institutions, capital, etc.) and persistence of innate ability.

Equation is standard in studies of the US, and other “close to steady state” economies.

However, for China, the more natural model is

$$\log y_{i,t} = \alpha_{i,t,T} + \beta_{i,t,T} \log y_{i,t-1} + v_{i,t,T}$$

Argument is the following. The econometric framework should instantiate the nonstationary and heterogeneity of the Chinese economy at all levels.

Authors do this by partitions into two time periods. But nonstationarity problem relates to *every* cohort.

Comment: Roberts (2013) shows how failure to allow for intercept heterogeneity can lead to spuriously high persistence estimates.

## **Nonstationarity of Family “Dynasties” Can Affect the Interpretation of an Increase in the IGE**

Example: suppose that families are sequentially transiting to market economy, and parental income facilitates speed of transition.

The market reform increases IGE, but all families are better off in the long run.

Example: How would one interpret IGE for Soviet children born in 1926 versus 1946?

## Question 2. Why $\beta$ Rather than $\alpha$ ?

Paper does not report constant terms, i.e.  $\alpha$  .

For comparisons of men/women or urban/rural, I believe that the issue is not the rate of convergence ( $\beta - 1$ ) but the level of income.

Message of the convergence literature: rates of convergence are misleading if one is worried about poverty traps.

## Spurious Mobility

Suppose that the behavioral model is

$$\log Y_{i,o}^P = \bar{\alpha} + \alpha_i + \rho \log Y_{i,p}^P + \varepsilon_{i,o}$$

Interpret  $\alpha_i$  as indexing steady states. May represent poverty and affluence traps, i.e. indexed by some measure, e.g. income, ethnicity.

The statistical IGE will equal

$$\beta = \rho + \frac{\text{cov}(\alpha_i, \log Y_{i,p}^P)}{\text{var}(\log Y_{i,p}^P)}$$

Sign can still be positive. In fact,  $\beta > \rho$  is possible.

Now, assume that  $\alpha_i$  indexes male/female or urban/rural.

Then a small value of  $\beta$  can be consistent with permanent inequality in terms of average income between groups/types.

Hence the IGE cannot speak to issues of poverty traps, discrimination, etc.

Problem: converging and convergent cannot be differentiated in linear model.

### Question 3. Does IGE for China have Normative Content?

Suppose that a society shifts from  $(\alpha_1, \pi_1)$  to  $(\alpha_2, \pi_2)$  with

$$\alpha_1 \ll \alpha_2$$

$$\pi_1 < \pi_2$$

In other words, persistence of income across generations increases against a background of rapid growth.

What is the normative evaluation of the change? Would one even say mobility is decreasing?

This is one way to differentiate changes in the intergenerational income equation between the US and China.

Standard equality of opportunity arguments most naturally apply to US equation. China equation is open to distinct welfarist counterarguments.

Argument: distributive justice and mobility links are sensitive to the nonstationarity of the constant term.

## **Question 4. Is Income the Relevant Object of Interest for China?**

The current frontier in inequality research focuses on cognitive and noncognitive skills. (Heckman).

These seem especially important in terms of facilitating success in a rapidly transforming society.

Regardless, skills have clearer ethical salience for worrying about intergenerational persistence than income per se.

## **Question 5. What is the Appropriate Theoretical Model for Intergenerational Mobility in China?**

I conjecture we need to modify standard models before applying to China.

Example 1: Kinship networks are much stronger in China than the US. What are the implications for credit constraints?

Example 2: Should OLG model have two-sided altruism for Chinese context? If so, how does this affect conception of credit constraints?

Example 3: Effects of Hukou system on mobility may be first order.

## **Summary of Assessment**

1. Paper very valuable in constructing stylized facts for mobility in China.
2. I urge authors to expand domain of explanatory possibilities.