Adolescent Environment and Noncognitive Skills 導讀 Yu Lin-Hau

I. What is the question?
   A. How the experiences and environments during ones' adolescent years shape their noncognitive skills, such as locus of control.
   B. How these effects on noncognitive skills affect later performance in labor market.

II. Why should we care about it?
   A. Individuals' experiences and environments during their adolescent years are believed to have a strong and persistent impact on their noncognitive skills which have impacts on their labor market performance.
   B. Earlier investigation of the relationship between environment and noncognitive skills usually suffers from endogeneity issues.
   C. *Locus of control* indicates which factors, internal factors like hard-working or external factors like luck, are believed by people to be more important for their success. It is a well established measure for noncognitive skills that persist across situations and remain stable during adulthood.

III. The real world example

   The send-down movement is a national mandatory movement from 1968 to 1976 in China, which forced urban junior and senior high school graduates to live in rural areas. More than 17 millions of urban youths were banished to the countryside, and their lives changed dramatically; they had to work and live with peasants, earned food by hard manual labor every day, and were not allowed to visit their families for years. The movement has significant impact on the human capital or noncognitive skills of rusticated youths.

IV. What is the author's answer?
   A. The sent-down individuals have less external locus of control: They tend to believe less in external circumstances—luck or their family's connections, social status, or wealth—as the determinants for success.
   B. The effects on noncognitive skills can explain about 20.4% of the send-down's effects on yearly earnings, or about 14.3% of the effects on the occupational prestige scale.
   C. The authors interpret these findings as a long-run effect of the adolescent experience of adapting to adversity and expending effort that leads to reward.

V. How did the author get there?
   A. The authors use a regression discontinuity (RD) design to estimate the impact of send-down on noncognitive skills since the send-down movement is unexpected and mandatory. They control for birth-quarter dummies as well as a combined RD and difference-in-difference (RD-DD) estimator to address possible cohort effect.
   B. The data for locus of control and other variables come from the 2010 China Family Panel Studies (CFPS) with data on 14,960 households and 33,600 adult respondents.

VI. Models and notations

A. Skill-formation framework (page 6)

Formally, assume that a child is born with initial conditions θ_1. The production function of skills when the child is t years old is

$$\theta_{t+1} = f_t(\theta_t, I_t),$$

where I_t are inputs at stage t. In other words, a child's skill is a function of his/her stock of skills and inputs from the previous stage. We can also write the stock of skills as a function of all past inputs:

$$\theta_{t+1} = g(\theta_1, I_1, I_2, \cdots, I_t)$$

B. Estimation framework (page 8-9)

$$\beta = \frac{\lim_{c \downarrow c_0} E\left[Y_i | c_i = c\right] - \lim_{c \uparrow c_0} E\left[Y_i | c_i = c\right]}{\lim_{c \downarrow c_0} E\left[D_i | c_i = c\right] - \lim_{c \uparrow c_0} E\left[D_i | c_i = c\right]} = \hat{\beta}_{RD}.$$

Y_0 is the outcome in the absence of send-down movement

Y_1 is the outcome within send-down movement

D_i as the status of send-down, i.e., 1 if individual i was sent down and 0 otherwise

β is the effect of send-down

$$\beta = E\left[Y_{i1} - Y_{i0}\right].$$

c_0 is the cutoff point of the birth cohort (c_i)