Education and Labor Market Consequences of Removal Migration Selectivity: Evidence from the Abolishment of Rural/Urban Hukou

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Question:

► The Hukou system imposes selective rural-urban mobility restrictions.

► What are the effects of removing such restrictions on education and later labor market outcomes?
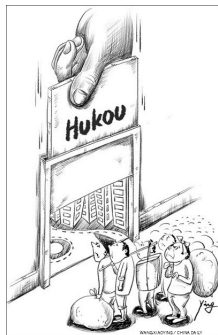
Question:

- ▶ The Hukou system imposes selective rural-urban mobility restrictions.
- ▶ What are the effects of removing such restrictions on education and later labor market outcomes?

My answer:

- ▶ Rural youth edu↓
- ▶ emp↓ wage↓.

The Hukou System in China

▶ Categorized as rural or urban at birth
▶ Urban residents: a series of benefits provided by the government (medicare, unemployment insurance, housing subsidies, pensions, etc.)
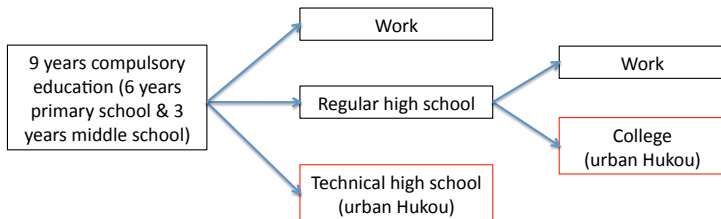▶ Rural residents: make a living themselves; allowed to seek jobs in urban areas (no social benefits)

The Hukou Booklet

Selective Migration

Ways to get urban Hukou

- ▶ Education: technical high school or college

- ▶ Military service
- ▶ Employment in government or SOEs.

Conceptual framework

Channels through which a removal of the rural-urban dichotomy would affect educational investment

- ▶ **Negative**: additional incentive to invest in education is gone → education ↓

- ▶ **Positive**: improved access to urban labor market → higher wage returns to education → education ↑

- ▶ Net effect **uncertain**

Approach of This Paper

Study the causal effect of removing rural-urban migration restrictions on rural education & labor market outcomes

- ▶ Hukou policy reform since 2002
    - ▶ Replace the original rural-urban Hukou with uniform Hukou
    - ▶ Implemented in $1/2$ of the provinces in China by now
    - ▶ Implementation time different across provinces.

- ▶ Identification strategy: DID

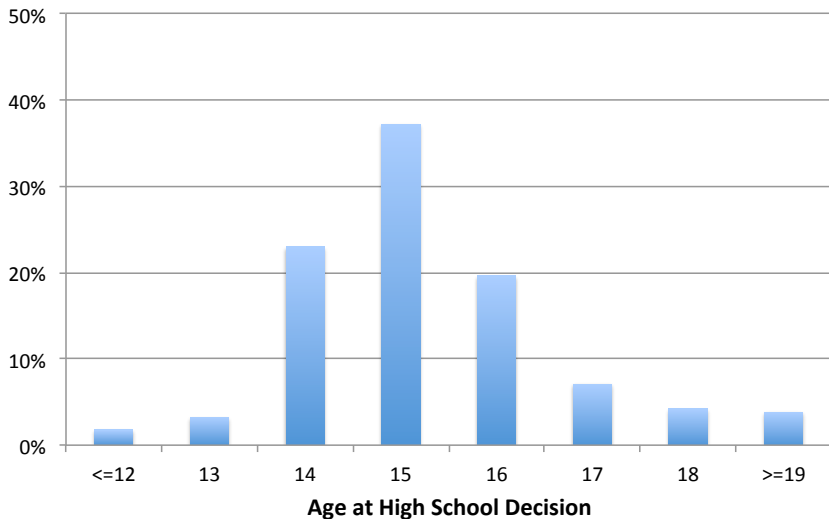- ▶ Outcomes: education (high school & college); employment; wage

Data

- ▶ China Health and Nutrition Survey (CHNS)
- ▶ Panel: 1989 1991 1993 1997 2000 2004 2006 2009 2011
- ▶ 9 provinces (8 reformed)
- ▶ 4400 households
- ▶ Demographic information and labor market performance
- ▶ Hukou status of rural/urban

Sample of Rural Youth

- ▶ Definition of "**rural**": holds rural Hukou before high school decision
- ▶ born between 1981-1995
- ▶ Within the same province, compare
  - ▶ early born cohorts: high school decision before the reform
  - ▶ late born cohorts: high school decision after the reform
- ▶ Use birth year to infer treatment status

Age at High School Decision

Treatment Definition

- ► Affected:
    - ► age≤ 14 in the reform year

- ► Unaffected:
    - ► age≥18 in the reform year
    - ► all age groups in provinces without policy change

- ► Partially affected:
    - ► $15 \leq$ age ≤ 17 in the reform year (fraction affected is treatment intensity)

Estimation Equation

For individual i in province j born in year k:

$$Y_{ijk} = \alpha + \beta \times D_{jk} + \gamma_j + \delta_k + \epsilon_{ijk}$$

▶ Y_{ijk}: educational outcome of individual i in province j born in year k

▶ D_{jk}: fraction of individuals in province j born in year k whose high school decision were affected by the policy change

▶ γ_j: province fixed effect

▶ δ_k: birth year fixed effect

▶ ϵ_{ijk}: error clustered at province level

Only 9 clusters, report 95% C.I. from a t-distribution (degree of freedom=7) following Cameron, Gelbach & Miller (2008)
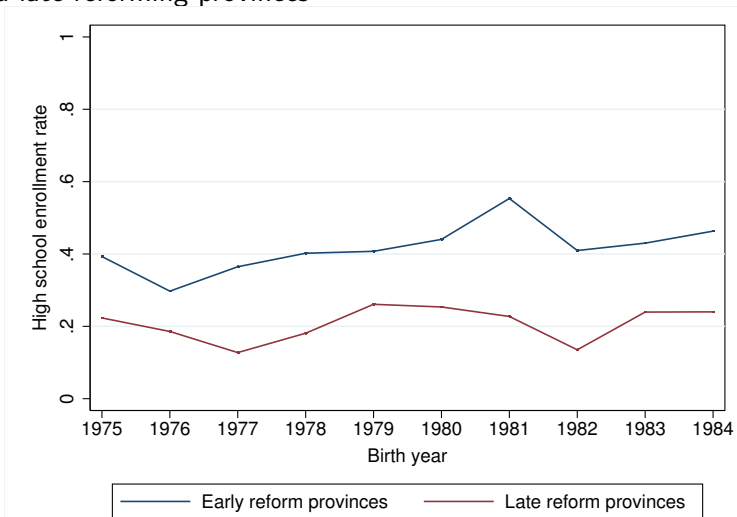
Education

Sample: with middle school education (▸ sample mean)

Panel A: High School Enrollment	
Both types	-0.131
	(-0.190,-0.072)
Regular high school	-0.068
	(-0.094,-0.042)
Technical high school	-0.069
	(-0.120,-0.017)
Panel B: College Enrollment	-0.038
	(-0.089,0.012)
Panel C: Years of schooling	-0.477
	(-0.735,-0.219)

Robustness

DID assumption: common edu trend across birth cohorts b/w early and late reforming provinces

Robustness

- ▶ Robustness to inclusion of province-cohort level controls
- ▶ Robustness to inclusion of province specific trend

Question: Is lowering education investment optimal or myopic?

▶ Literature: increase in compulsory education would lead to an increase in wages (Harmon & Walker, 1995; Oreopoulos, 2006).

Employment and Annual Wage (log)

Sample: middle school graduates

Panel A: Non-agricultural Employment	-0.209
	(-0.394,-0.023)
Panel B: Labor Force Participation	-0.076
	(-0.263,0.112)
Panel C: Log of Annual Wage	-0.124
	(-0.847,0.599)

Summary of Results

Replacing rural-urban Hukou with uniform Hukou:

- ▶ Rural high school attendance decreases by 13.1 pp; schooling decreases by 0.48 years
- ▶ Employment deceases by 21% for previous rural Hukou holders
- ▶ Wage decreases by 12.4% for those employed (not sig)

Policies?

Summary Statistics

	Rural	Urban
	Mean	Mean
Panel A: Educational Outcomes		
High school enrollment (both types)	0.313	0.603
Regular high school enrollment	0.236	0.483
Technical high school enrollment	0.079	0.132
College enrollment	0.048	0.179
Years of schooling	9.69	10.918
Panel B: Labor Market Outcomes (excluding those still in school in 2011)		
Labor force participation in 2011	0.854	0.921
Non-agricultural employment in 2011	0.578	0.724
(including those not in labor force)		
Log wage earnings in 2011	9.727	9.780

▸ edu