

# Preschool and Child Health: Evidence from China's Subsidized Child Care Program

Meiqing Ren, PhD Candidate

Department of Economics, University of Illinois at Chicago

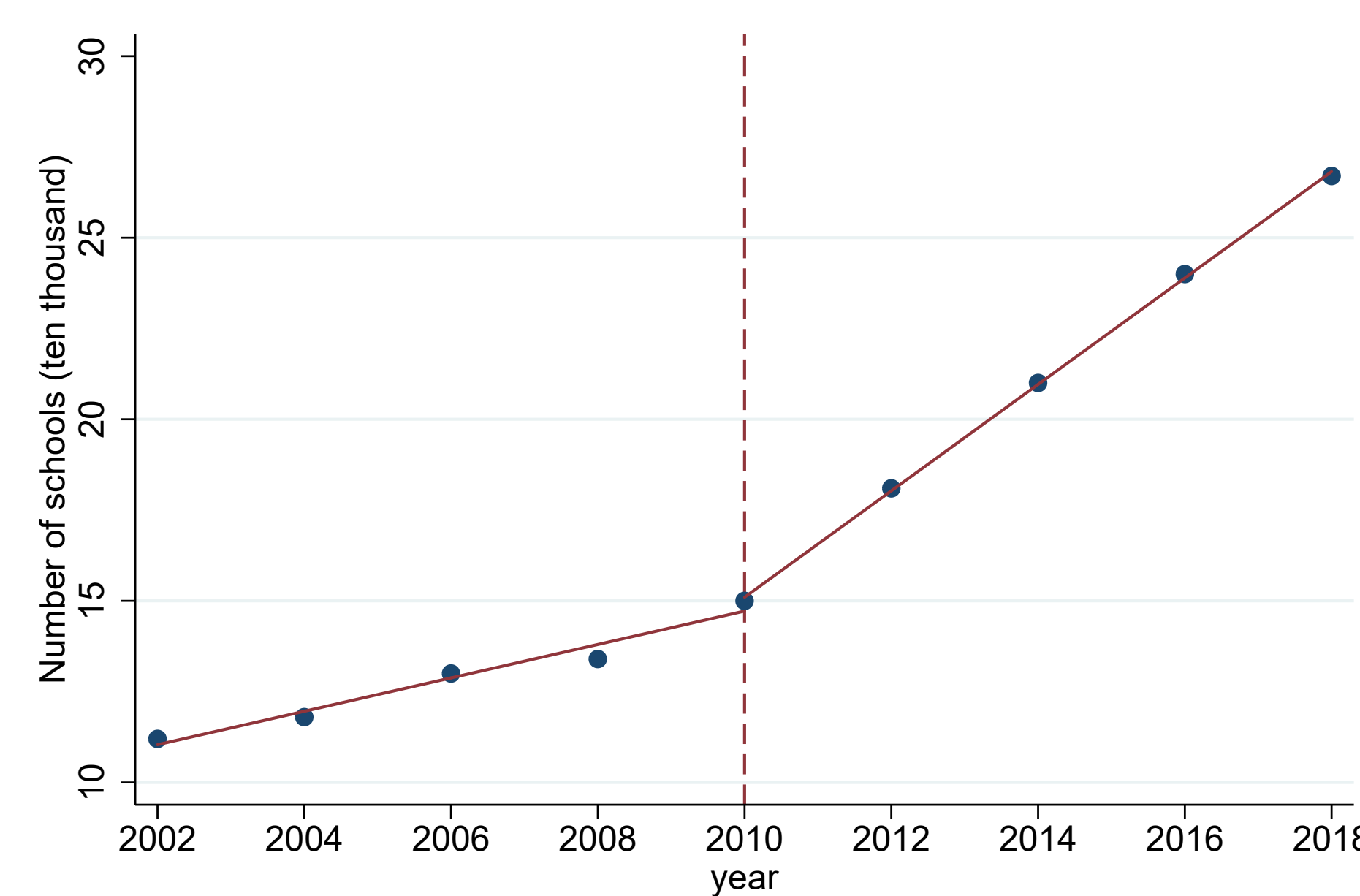
## Abstract

Using a quasi-experiment of the first universal child care program in China from 2010, this paper aims to identify whether preschool attendance together with nutrition and health services at school produces any short-term effects on health-related outcomes of preschoolers.

- The program is effective in promoting preschool attendance and reducing underweight.
- The program has encouraged caregivers of preschoolers to refer kids to a doctor when kids get sick, instead of finding medicines by themselves

## Background

- China's enrollment rate in pre-primary education was only 50.9% in 2009 due to insufficient supply of facilities and cost barriers.
- In 2010, China government issued two key policy documents aiming to establish universal preschool education. Since 2011, each province developed their 3-year Action Plan in several phases (2011-2013, 2014-2016, 2017-2019).
- "Preschool" refers to all center-based early childhood education programs for kids ages between 3 and 6 in China.
- Three common practices of local government: increase the accessibility, affordability, and accountability of preschools.



Notes: The solid lines are the linear fits during pre- and post-reform periods. Data come from Educational Statistics Yearbook of China

Figure 1: Number of preschools in China

- Figure 1 shows the number of preschools in mainland China experienced a 77% rise from 2010 to 2018.

## Data

- The China Family Panel Survey (the CFPS, 2010-2018), a longitudinal social survey conducted every two years since 2010.

- Educational Statistics Yearbook

### Outcome variables:

- 1 Ever attended a preschool
- 2 Health indicator of preschoolers: underweight
- 3 Health indicator of preschoolers: overweight
- 4 Preschooler's healthcare seeking behavior (whether a caregiver takes their children to see a doctor when they get sick, instead of finding medicines by themselves)

## Effects on preschool attendance

**Outcome:** Have you ever attended preschool?

**Methodology:** Difference-in-differences (DID)

- Difference 1: high intensity provinces vs low intensity provinces (the program intensity is defined as the provincial number of newly established preschools per 1,000 children)
- Difference 2: young cohort (age below 6 in 2010) vs old cohort (age 9-13 in 2010)

**Result:** Significant positive effects on preschool attendance rates that result from providing access to affordable preschool education.

## Effects on health-related outcomes

**Outcome:** Health-related outcomes in each year for kids aged 1-6

**Methodology:** Triple-difference (DDD)

- Diff1: high intensity province vs low intensity province
- Diff2: pre-reform (2010) vs post-reform (2012, 2014, 2016, 2018)
- Diff3: preschoolers (3-6 years old) vs toddlers (1-2 years old)

$$Y_{ist} = \alpha_0 + \alpha_1 Post + \alpha_2 High + \alpha_3 Presch + \alpha_4 \{Post * High\} + \alpha_5 \{Presch * High\} + \alpha_6 \{Post * Presch\} + \gamma Post * High * Presch + \delta_1 \sum \{E_s * \beta_t\} + \eta_1 X_{ist} + \epsilon_{ist}(1)$$

- $Y_{ist}$  represents the health-related outcome for kids  $i$  in province  $s$  in year  $t$ .  $Post$  is a post-reform dummy.  $High$  denotes a high-intensity dummy.  $Presch$  is a preschooler (aged 3-6) dummy.

- $\gamma$  is the triple-difference estimate of the effect of the universal preschool program on child's health-related outcomes.

Table 1: Effects on health-related outcomes

Outcome	Underweight	Overweight	See a doctor
Post*High intensity*Preschooler	-0.052** (0.022)	-0.016 (0.035)	0.079** (0.037)
Year Dummy*Pre-reform Enrollment	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes
R-squared	0.028	0.044	0.026
N	17220	17220	17220
Mean of dep. variable (aged 3-6)	0.128	0.117	0.743

Standard errors in parentheses. Robust standard errors are clustered at the province level.

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

## Mechanisms

- Nutritional meals and healthy eating habits in school
- Common interactions between caregivers and health physicians on campus
- Potential impact on kid's probability of getting sick
- Potential impact on caregiver's labor supply and income

## Main Takeaways

- Find a sizeable impact of the first universal child care program in China on preschool attendance rate.
- Preschool attendance together with nutrition and health services at school reduces the prevalence of underweight.
- Underweight alleviation mainly comes from kids living in rural areas.
- The program has encouraged caregivers of preschoolers to refer kids to a doctor when kids get sick, instead of finding medicines by themselves.

## Contact Information

- Email: mren8@uic.edu
- Phone: +1 312-618-4587