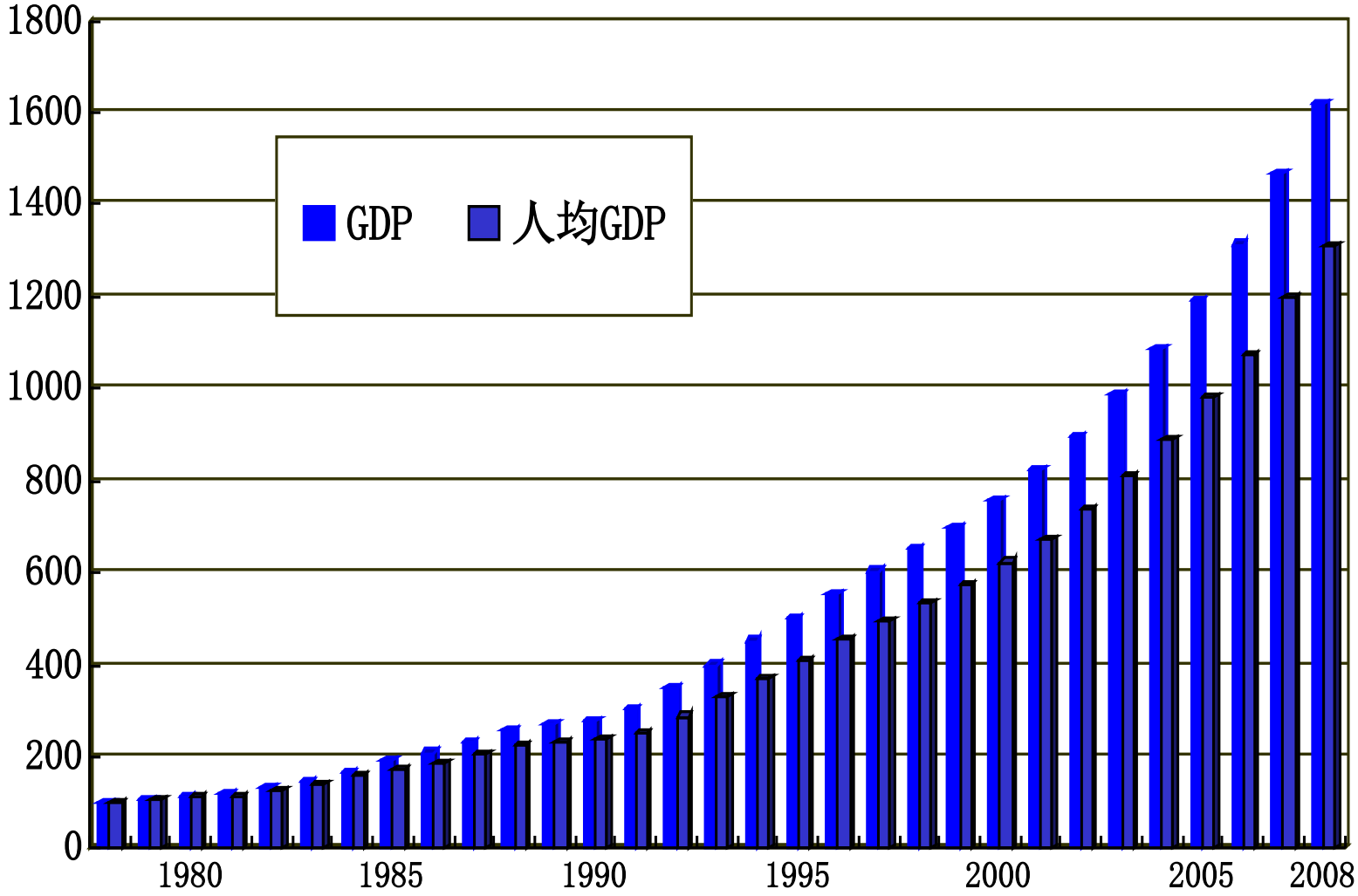
Turning Research Results into Policy - addressing human capital challenges in China

Linxiu Zhang
Professor / Deputy Director
Center for Chinese Agricultural Policy
Chinese Academy of Sciences

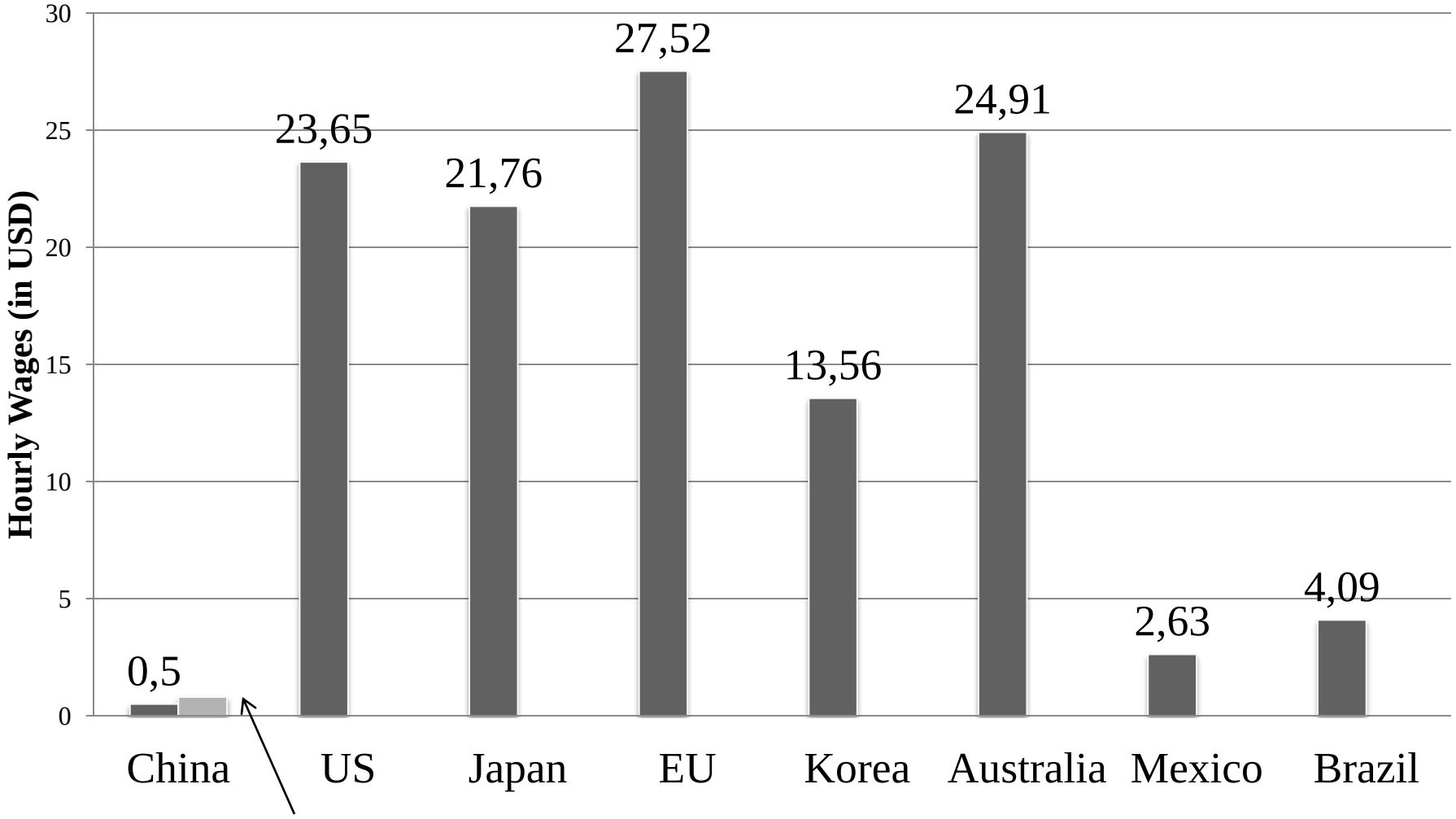
Presentation at IAP conference on Science for Poverty Eradication and Sustainable Development
Rio de Janeiro, Feb.24-27, 2013

Annual GDP growth at nearly 10%

GDP in 2008 was 16 times of that in 1978 (1978=100)

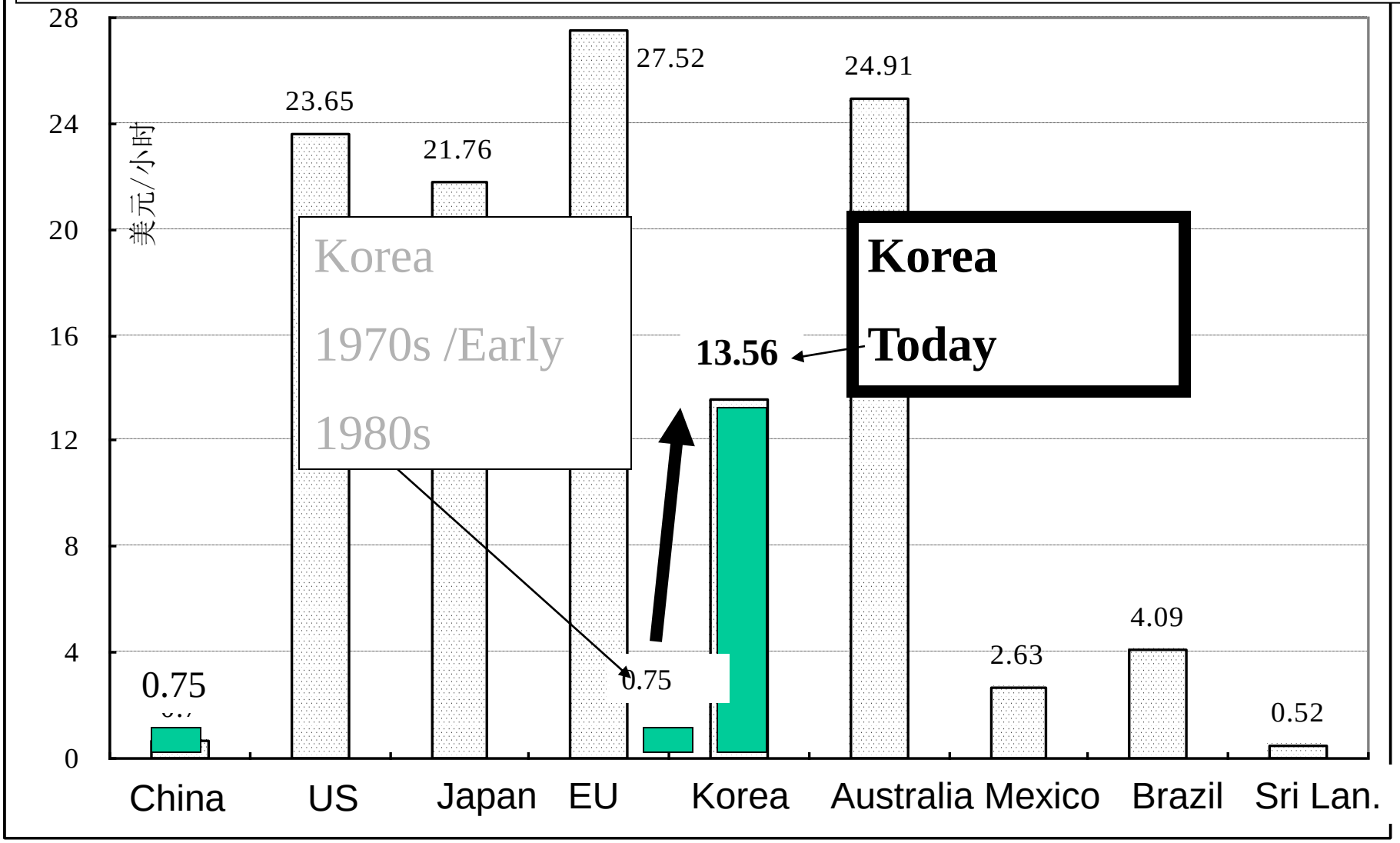


Hourly Wages in the Late 1990s



Park and Cai, 2008

Like South Korea in 1980s. But through the 1980s and 1990s, South Korea's wages rose rapidly …



Hourly Wage, 2005

Transformation



The 1970s/Early 1980s

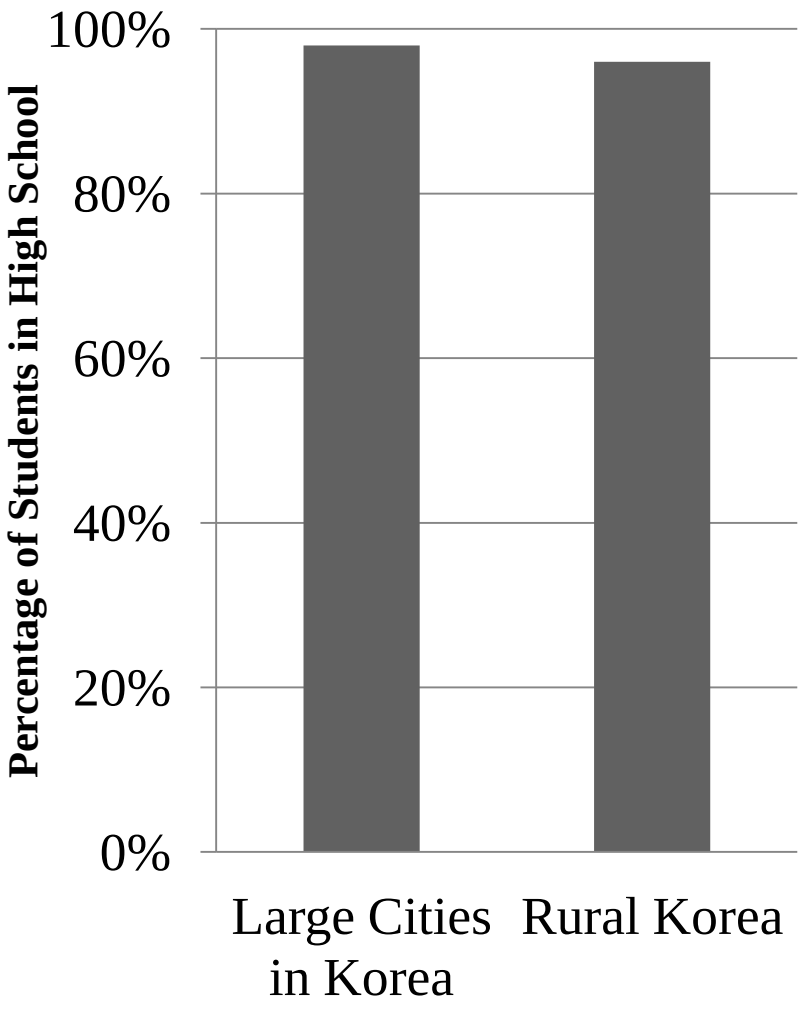


Late 1990s to Today

High-productivity, service-base
Innovative-based economy

Key to development: Education

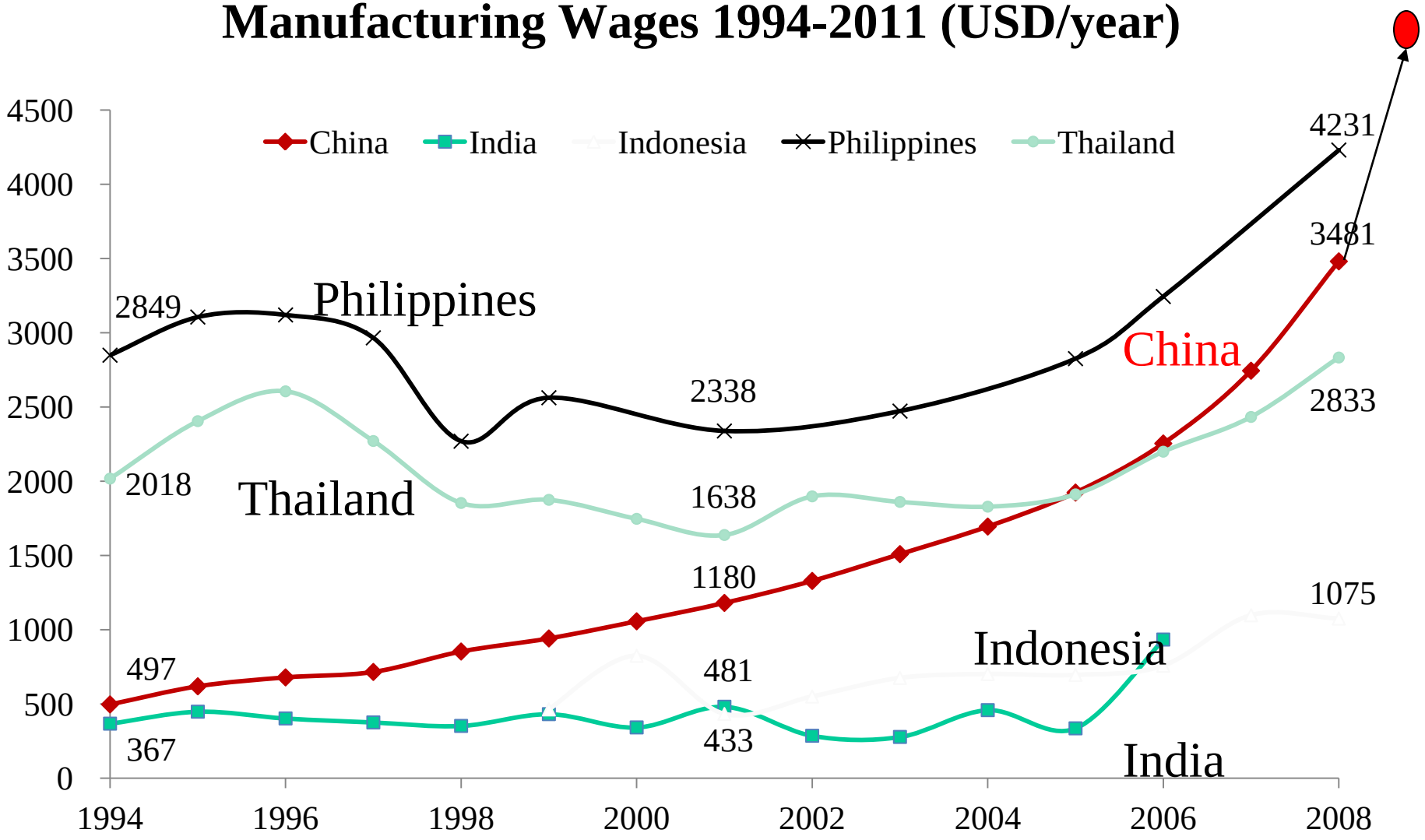
Percent of Students Going to **High School:** South Korea in the 1970s/1980s



Kuan, 2011

The Unskilled Wage in China is Rising Fast!

Manufacturing Wages 1994-2011 (USD/year)



China now has the 6th highest unskilled wage in Asia … after: Japan / S. Korea / Taiwan / Hong Kong / Singapore

China's future development

- Assuming China continues to grow: RISING DEMAND
- Size of labor force falls: FALLING SUPPLY

➔Rising wages in the future

➔Changing industrial structure

→ By 2025 to 2030 ➔ $10/hour









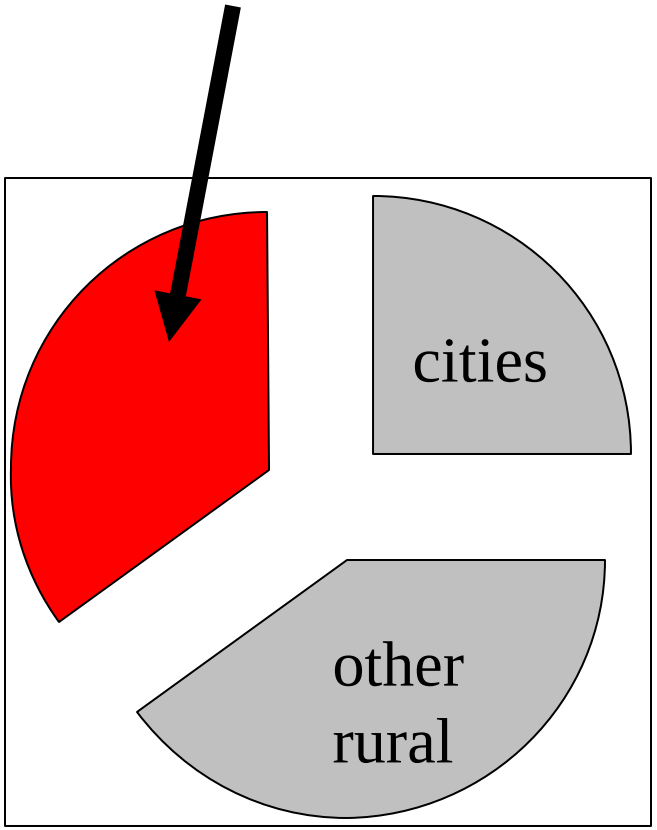
So: China's real challenge is coming … and there are fundamental questions:

- Can China transform itself like, for example: South Korea
- Can China invest enough in innovation and scientific advancements
- **If so, will China has quality labour forces or adequate human capital to make these transformations?**

So: What are the problems with China's human capital … in ***poor rural areas ?***

- ≈ 35% of school-aged children in poor rural areas

  (> **50 million children**, ages 6 to 15)

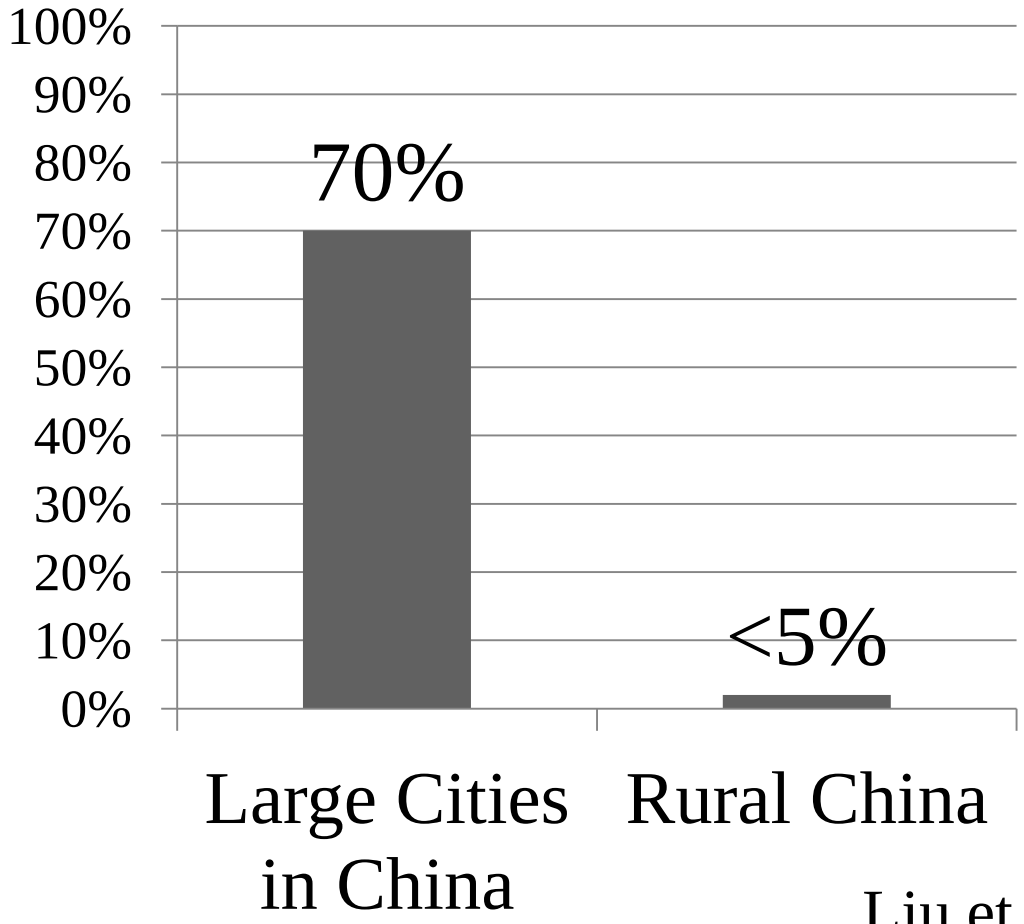


Remember: today's children are tomorrow workers and professionals …

The "greatest gap" in China (>10 times):

The Higher Education Gap

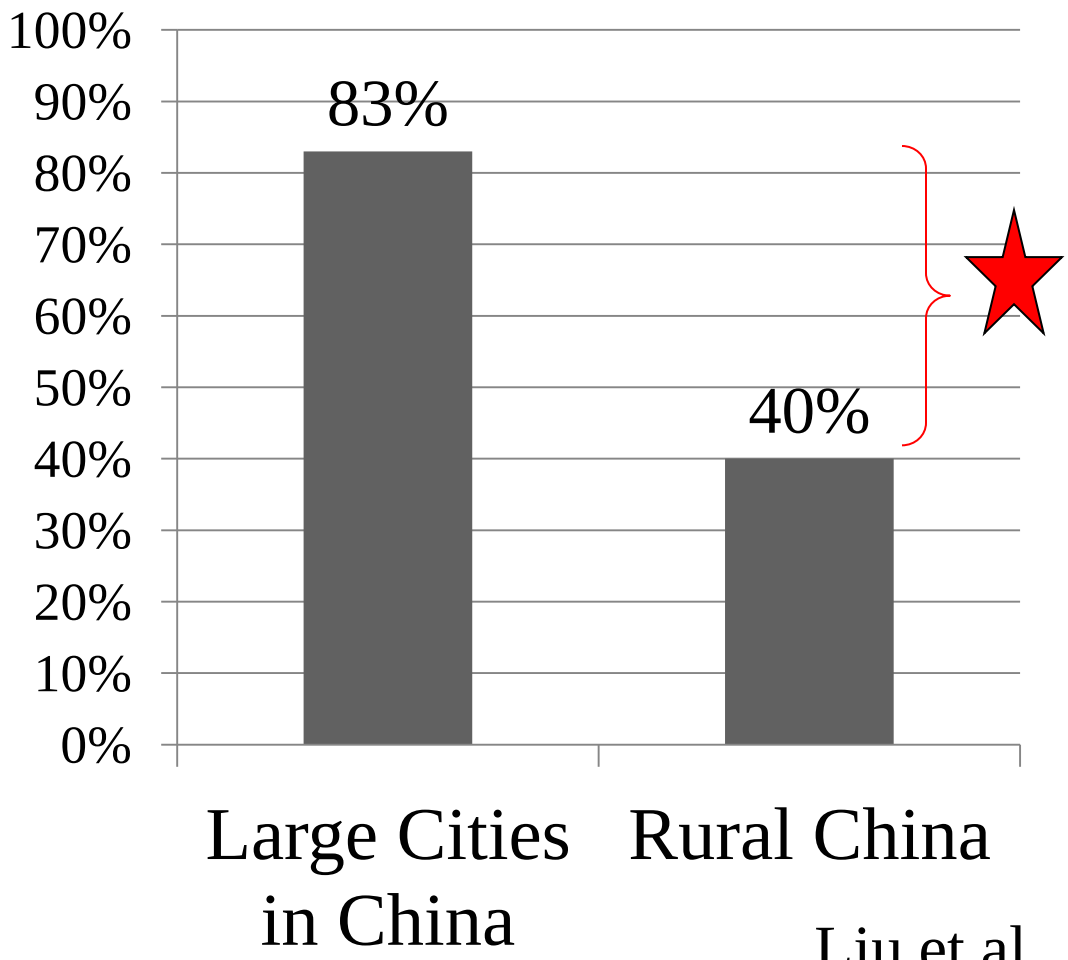
Percent of students that go to **college** in 2005



Liu et al., 2009

The **"most serious gap"** in China:
The High School Education Gap

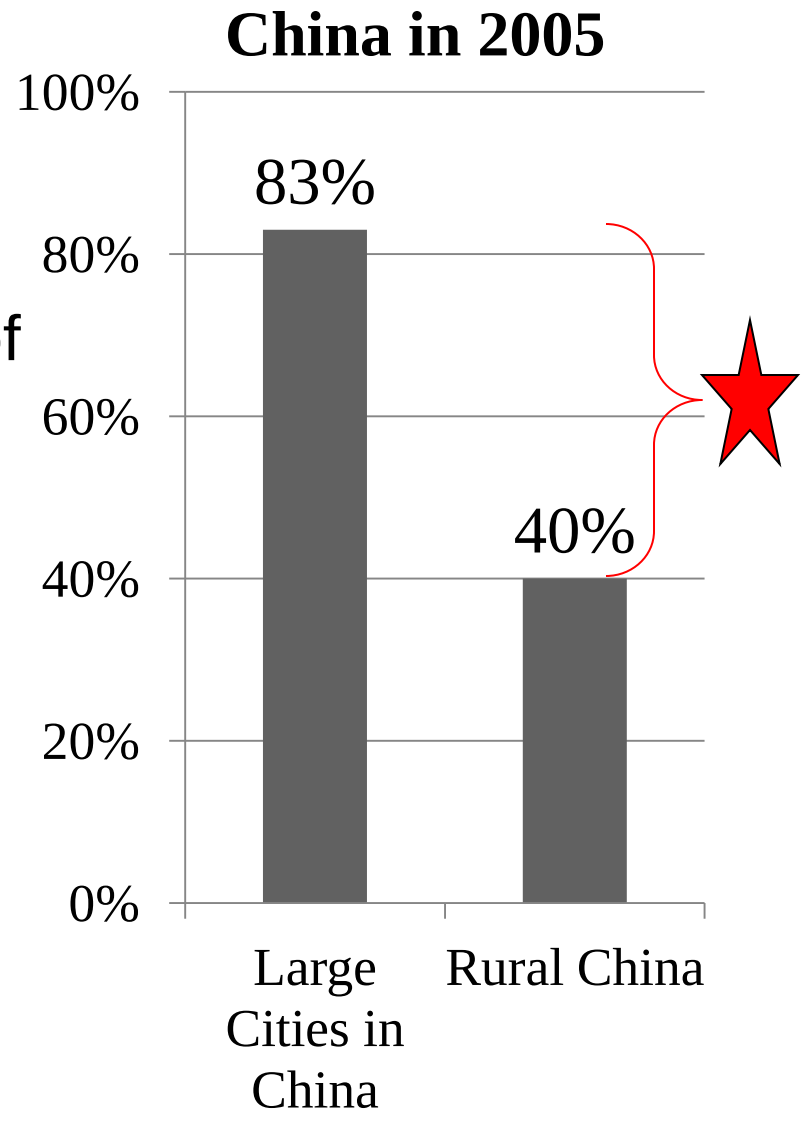
Percent of students that go to **High School** in 2005

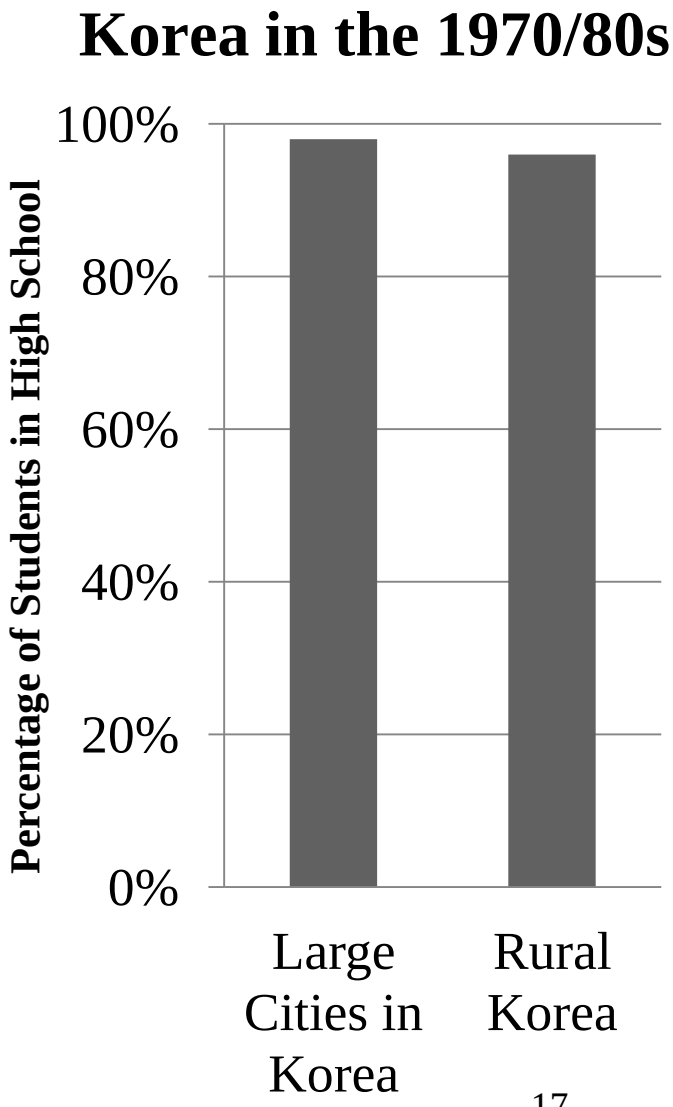


Liu et al., 2010

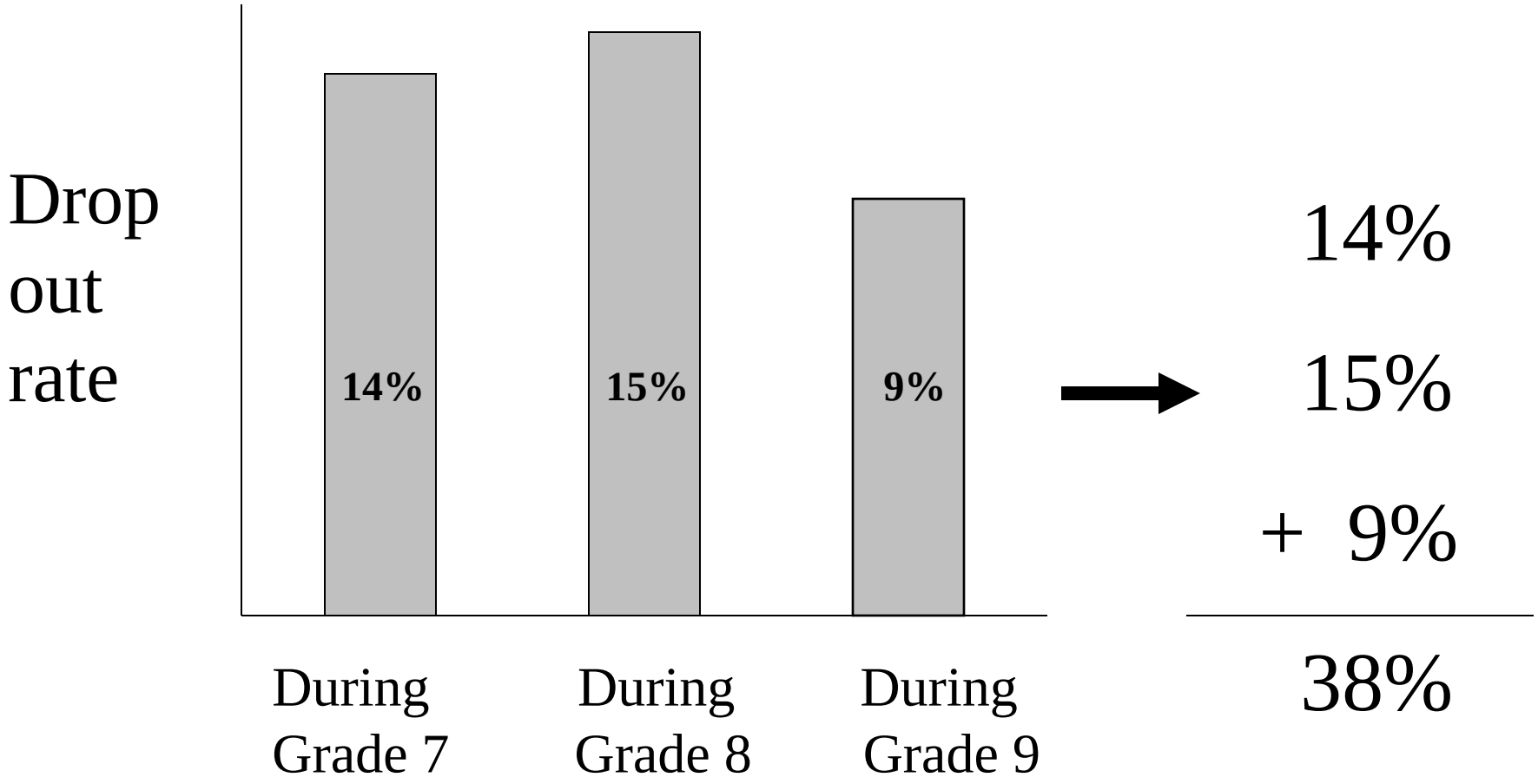
The High School Education Gap

Percent of students that go to **High School**



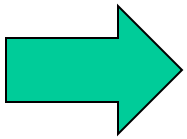


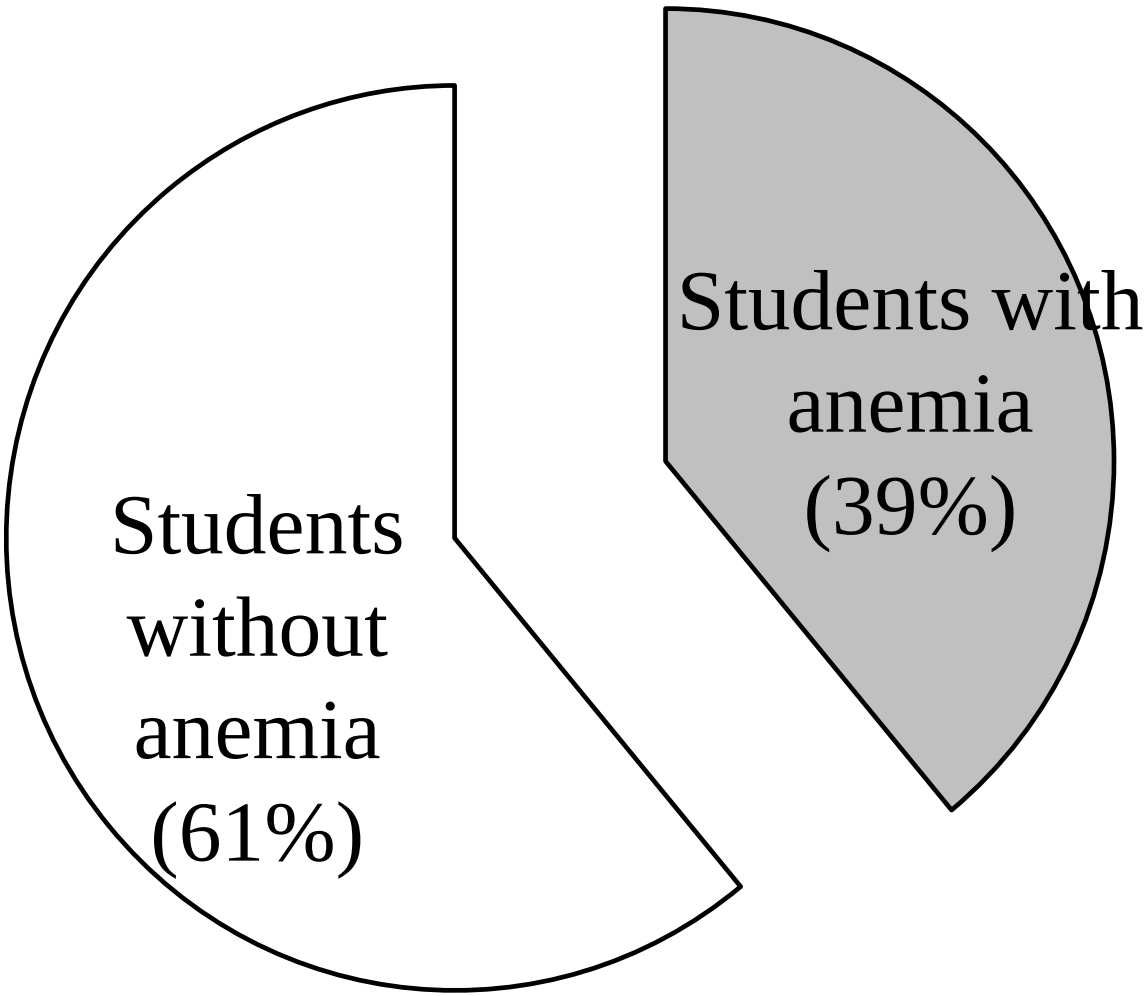
Drop out rate in junior high schools in **poor rural China**



Di et al., 2011

Problems start way before middle school: The underperformance of students from China's underserved rural and migrant areas

Due to 



More than1/3 of kids are anemic.

REAP study (Luo et al., 2010) of 4000 students in rural Shaanxi Province

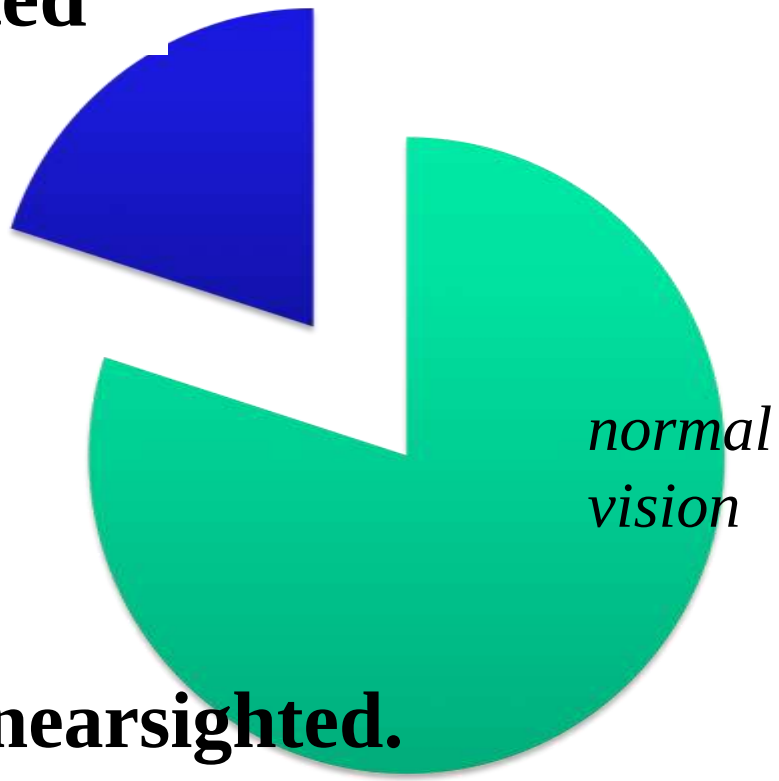
Rates of Anemia in China's Poor Rural Areas

	Total
Total	33.7
Shaanxi—2008 (Dataset 1)	39.0
Shaanxi—2009a (Dataset 2)	31.6
Gansu—2010 (Dataset 3)	31.2
Qinghai—2009 (Dataset 4)	51.1
Ningxia—2009 (Dataset 5)	25.4
Sichuan—2010 (Dataset 6)	24.8
Guizhou—2010 (Dataset 7)	33.1

Luo, R. et al. 2011

Tested more than 30,000 10-12 yr children in Gansu/Shaanxi Provinces

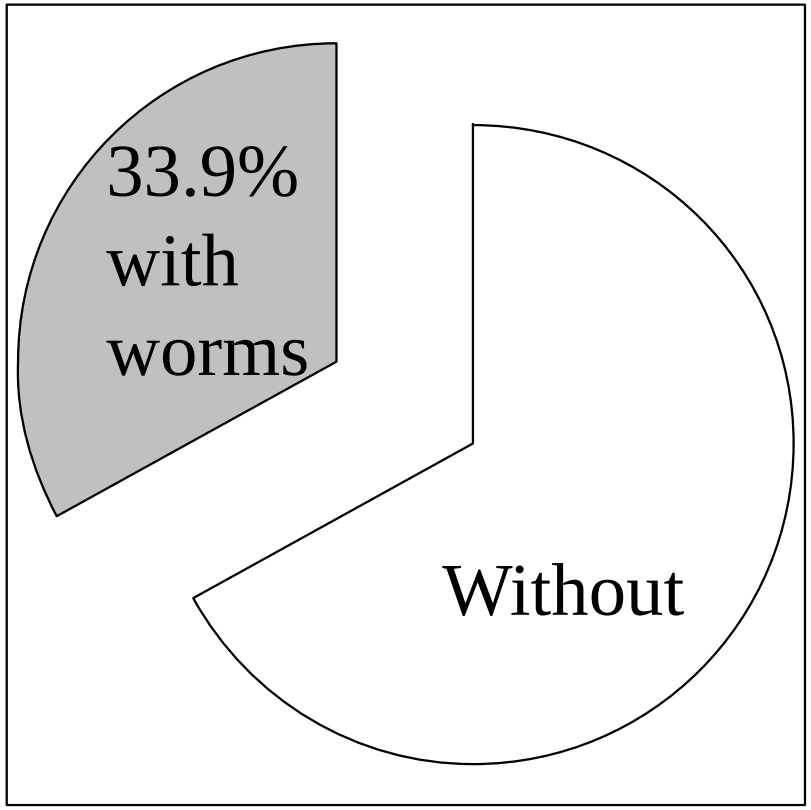
nearsighted



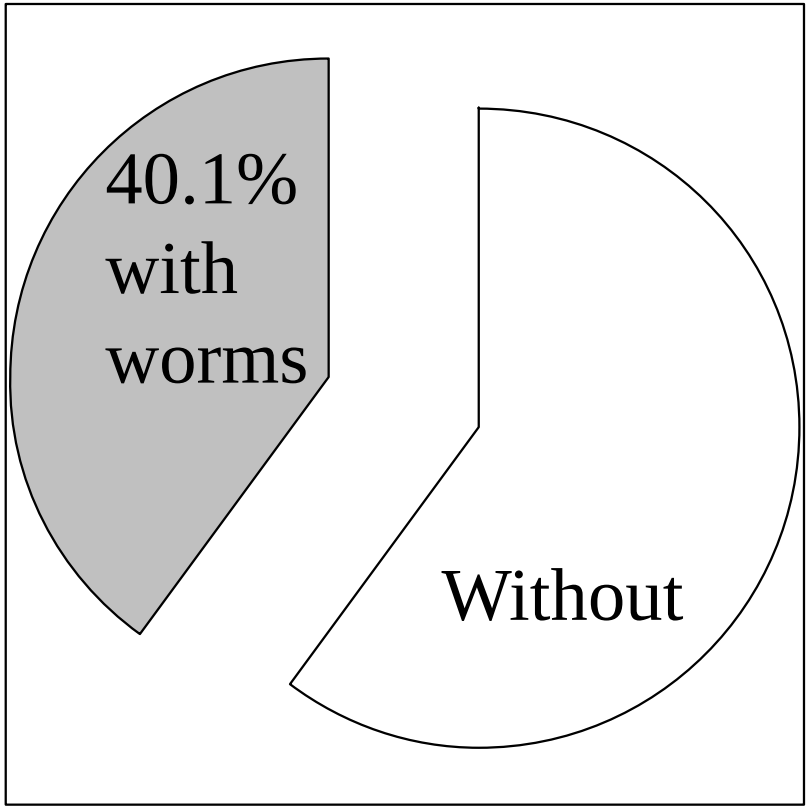
➔ **20% were nearsighted.**

➔ **1 or 2% ware eyeglasses**

Incidence of Intestinal Worms, Guizhou Province, 2010



3 to 5 year olds



8 to 10 year olds

Zhang et al., 2011

What happens when we provide these results to policy makers?

Ministry of Education:

"Why should we care? This is the Health System's problem"

Ministry of Health:

"We know they exist … tell us how to solve them in a effective / cost efficient way"

A Story of persistence & policy success:

Rural Education Action Project (REAP) a Research Organization/NGO/Government Organization/Policy Action partnership

At Stanford University

FSI FREEMAN SPOGLI INSTITUTE FOR INTENATIONAL STUDIES

STANFORD SCHOOL OF MEDICINE

Stanford University School of Education

STANFORD ENGINEERING

In China

中国科学院农业政策研究中心
Center for Chinese Agricultural Policy, Chinese Academy of Sciences

NSDRC NW China Solving NW China's Problems
西北社会经济发展研究中心

清華大學 Tsinghua University

CIEFR
中国教育财政科学研究所

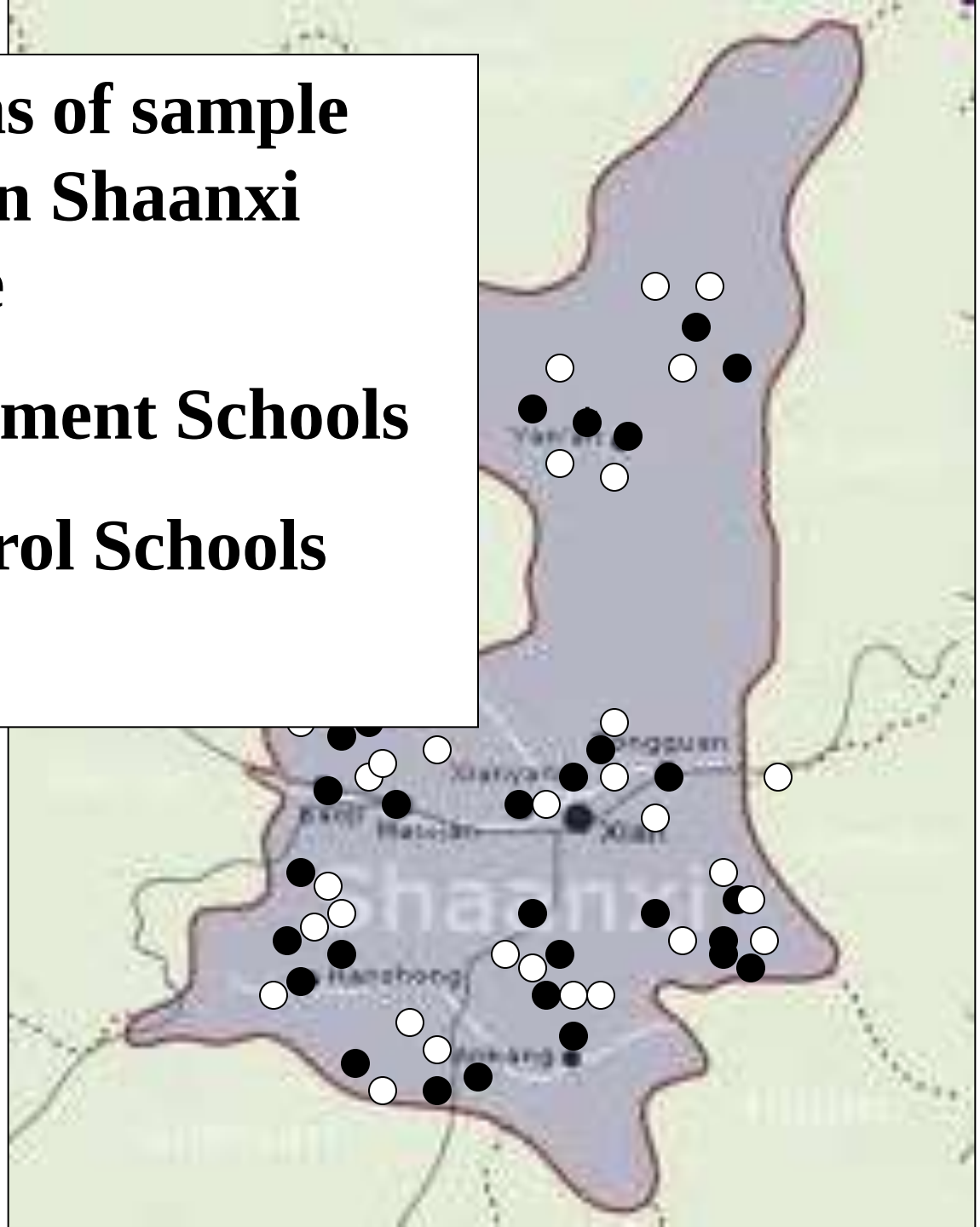
The FIRST anti-anemia intervention: October, 2008 – June, 2009



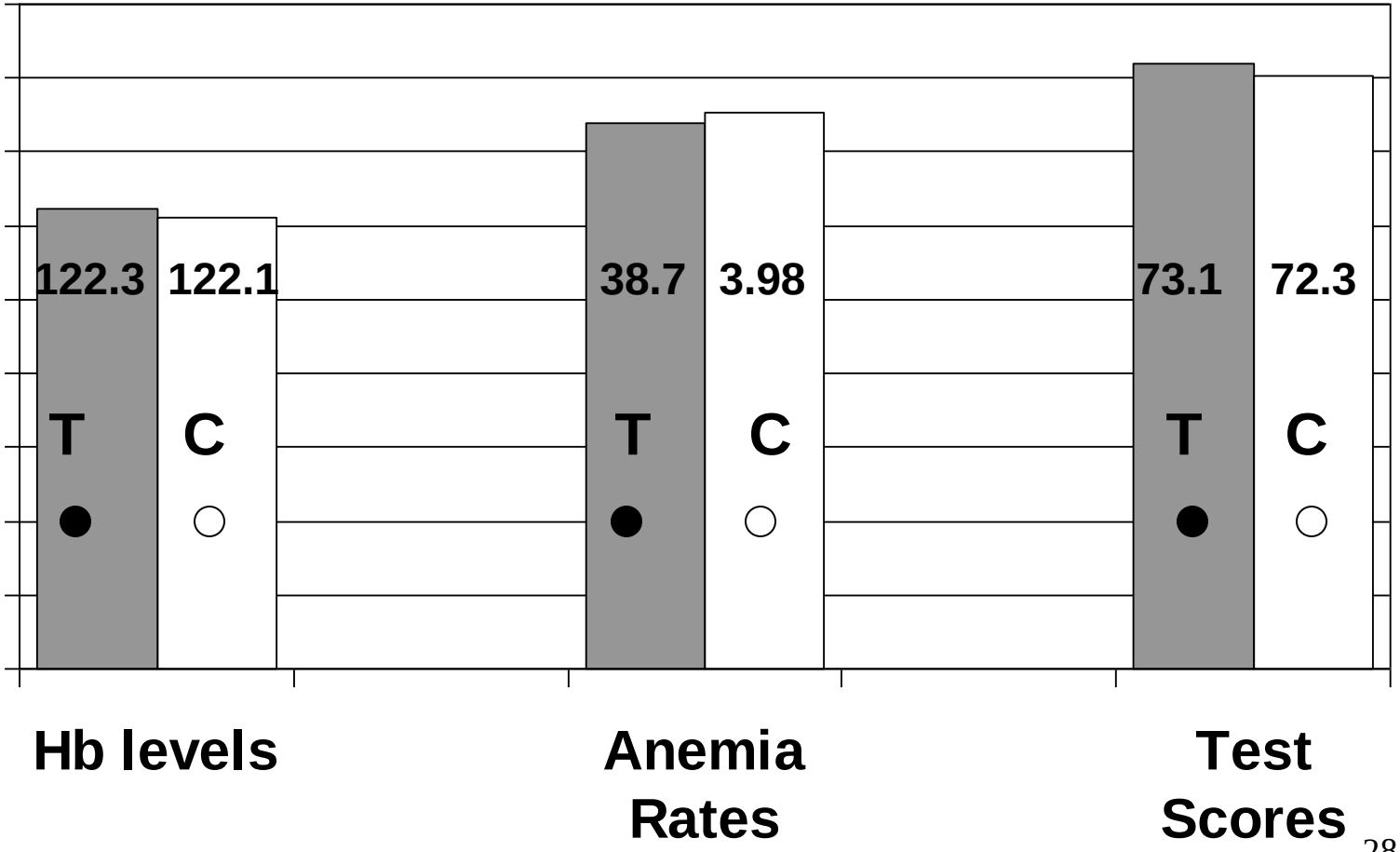
Locations of sample schools in Shaanxi Province

(●) Treatment Schools

(○) Control Schools



Pre-balanced at the baseline between 30 Treatment (T) Schools & 30 Control (C) Schools



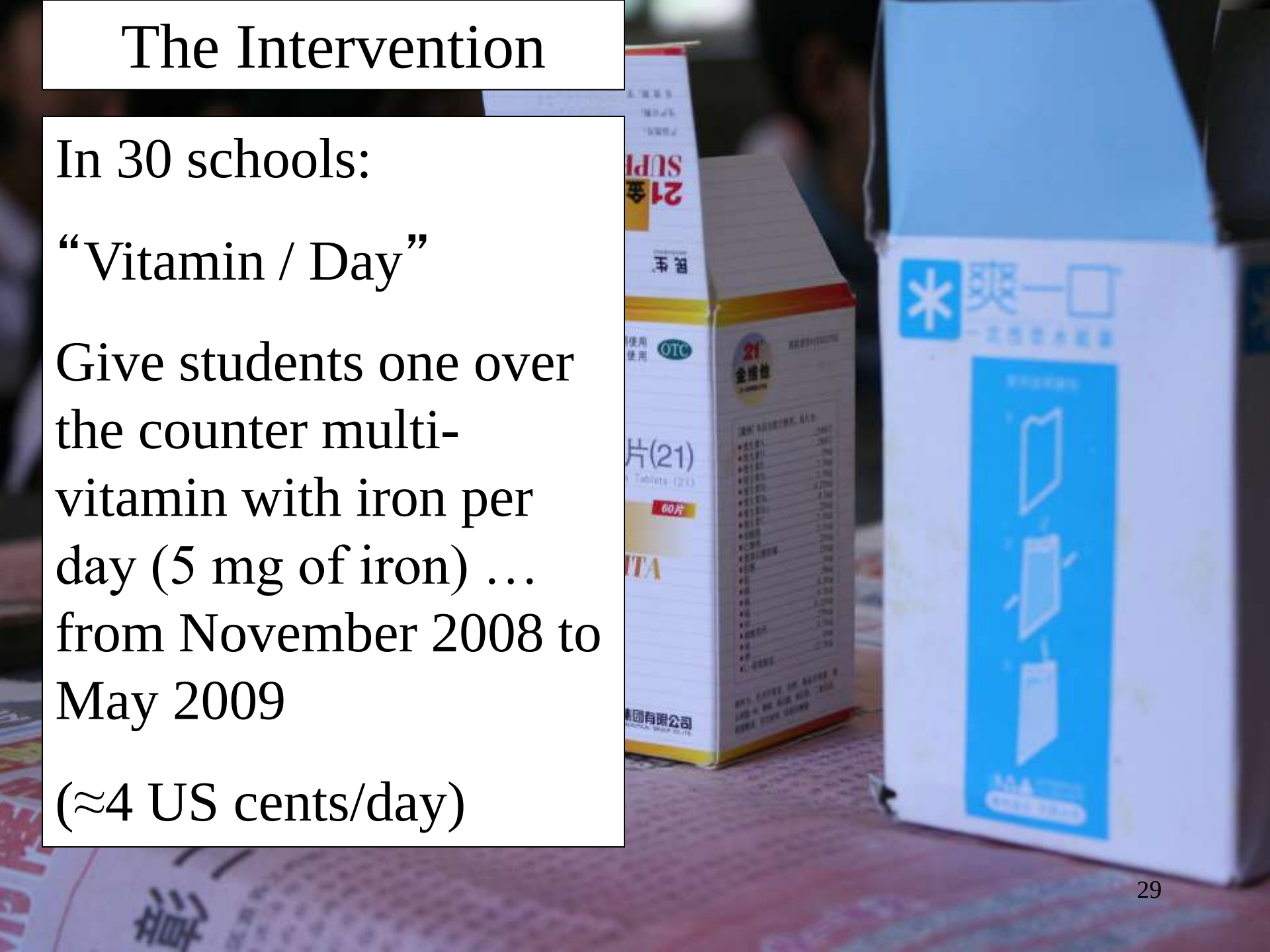
The Intervention

In 30 schools:

“Vitamin / Day”

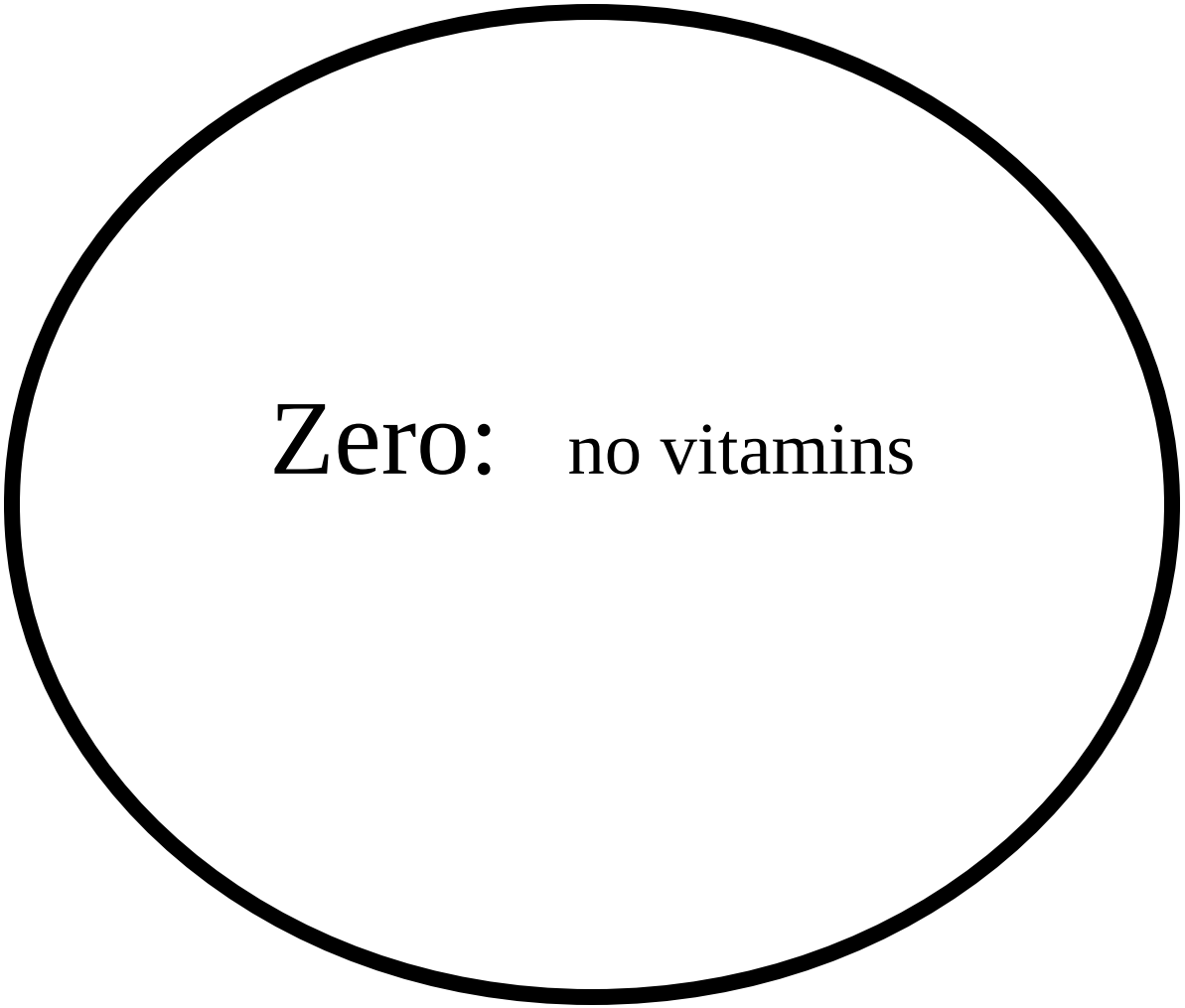
Give students one over the counter multi-vitamin with iron per day (5 mg of iron) … from November 2008 to May 2009

(≈4 US cents/day)



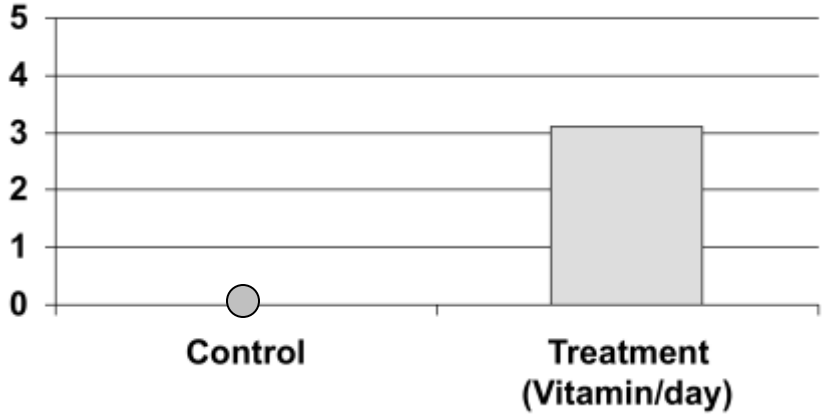


30 control schools

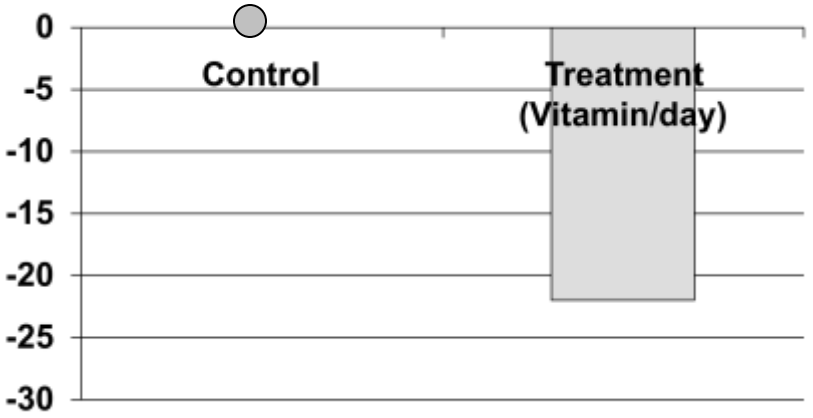


Impact of vitamin on students:

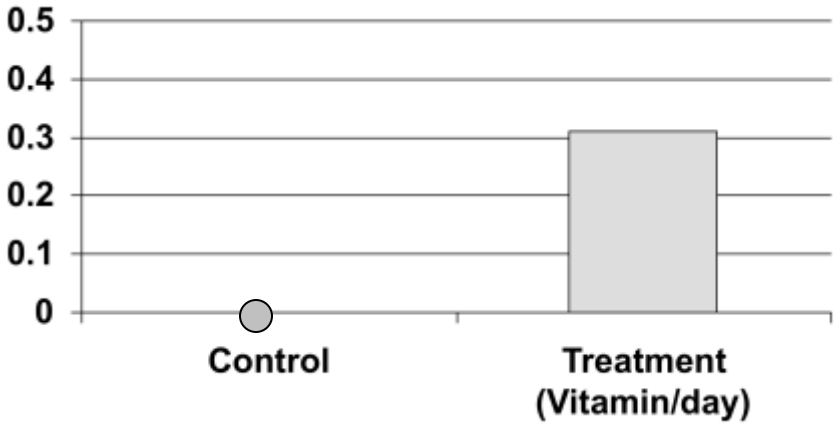
Hemoglobin Points



Anemia Rates (%)



Math Test Scores (std. dev.)



After all that … 4 years of hard work and more than 10 evaluations to test what works and what does not work and why?… 3 policy briefs

October 30, 2011:
China's new nutrition program:

$2.5 billion USD / year for 10 year: put nutrition into schools of 680 poor Western China counties

We also tested many low cost, effective solutions beyond reducing anemia

- Vitamin / day ➔ 0.3 yuan per day
- Deworming ➔ 1-2 yuan per year
- Eyeglasses ➔ 100 yuan per year
  (< 0.10 yuan per day)
- Early Childhood Education
- Extra-curricula with Computer assisted learning
- Conditional cash transfers for junior high students
- ……

Summary: Policy Results



- We have good experience making our voice heard at the national level
- Through CAS channel, we have submitted a total of **15** official policy briefs to the State Council….

We try to address the "grand challenge" problem: What can be done to overcome the gap in human capital between China's:

rural, unskilled poor

&

the urban, skilled middle class?





Leaders in China needs to realize

- For China to invest and overcome today's human capital gap … and tomorrow' inequality gap …the price tag is high … but feasible

- And this is NOT only spending on the poor and vulnerable … this is an investment into China's stable … sustainable growth … this is an investment into the future of everyone that has a future in China …

The optimistic view

- China can overcome it …
- If aggressively invest … it is late … but, not too late …
- China has plenty of fiscal resources …the key is to recognize the significance

Concluding…

- There are many other grand challenges that China facing, like any other country..
  - Climate change
  - Environmental degradation
  - Aging population
  - …..
- Investing into science and technology innovation is **necessary** but not **sufficient**,
- We need to pay equal attention to address the missing link between research to policy

Thank You!

www.reapchina. org

www.ccap.org.cn