

# Conjectures on Income Inequality in 2030 ... Observations on Human Capital Inequality Today

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Northwest University of Xi'an and others

# Is it inevitable that Developing Countries that are growing fast and achieve Middle Income status always will continue to grow and become rich, industrialized nations?

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- In fact, history is littered with a lot of wannabe OECD members:
  - Argentina ... one of the four richest countries in the world in the early 20<sup>th</sup> century ... collapse and stagnation after WWII
  - Uruguay / Iraq / Venezuela (in the 1960s & 70s)
  - MORE RECENTLY:
    - Or ... as we are seeing before our eyes: Mexico

Observed Fact:

## Association between Inequality and Growth

(as countries attempt to move from middle  
income to high income)

# List of Countries/Regions that Have Moved from Middle Income to High Income After WWII [“Graduates”]

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<b>East Asian Countries / Regions</b>	<b>Mediterranean</b>	<b>Eastern Europe</b>	<b>Others (oil-producing countries excluded)</b>
S. Korea	Portugal	Croatia	Ireland
Taiwan	Spain	Slovenia	New Zea.
	Greece	Slovak Rep.	
	Israel	Hungary	
		Czech	
		Estonia	

# List of Countries/Regions that Have Moved from Middle Income to High Income After WWII and the GINI Ratios

## (“**Graduates**”)

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S. Korea ( <b>32</b> )	Portugal ( <b>38</b> )	Croatia ( <b>34</b> )	Ireland ( <b>34</b> )
Taiwan ( <b>32</b> )	Spain ( <b>35</b> )	Slovenia ( <b>31</b> )	New Zea. ( <b>36</b> )
	Greece ( <b>34</b> )	Slovakia ( <b>26</b> )	
	Israel ( <b>39</b> )	Hungary ( <b>31</b> )	
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**Average Graduates: 33**

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# Aspiring Middle Income Countries (“**Aspirees**”)

- Argentina
- Brazil
- Chile
- Costa Rica
- Malaysia
- Mexico
- Russia
- Thailand
- Tunisia
- Turkey
- Uruguay
- Venezuela

+ *China*

# Aspirees Inequality (gini ratios)

- Argentina (46)
- Brazil (54)
- Chile (52)
- Costa Rica (50)
- Malaysia (46)
- Mexico (52)
- Russia (42)
- Thailand (42)
- Tunisia (41)
- Turkey (43)
- Uruguay (42)
- Venezuela (44)



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*China:*

*50 and rising!*

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*China:*

*50 and rising!*

**Average Aspirees: 47**

# What is the problem of trying to move from middle to high income with such high levels of inequality?

*A lot of it has to do with the slowing growth that occurs during this phase of development ...*

*... and the stability of a country*

*[can all individuals share in the rising prosperity ... and if they can't will they take actions that will slow growth further?]*

# **So: China's real challenge is coming ... and there are fundamental questions:**

- Can China transform itself like:
  - South Korea / Spain / New Zealand
- Or → will China become a:
  - Mexico (now) / Argentina (1960s)

Following this logical argument, a lot will depend on the level of income & inequality in the 2020s

...

- Japan has survived with zero growth not only due to the fact that per capita incomes were quite high

GDP per capita in Japan<sub>1990</sub> > China<sub>2025 or so</sub> by 40%

- ALSO: Japan's inequality in 1990 was very low (Gini=31) most Japanese had high income / most "suffered" equally!

In short:

High Income Inequality TODAY

+

Extreme Human Capital Inequality TODAY

=

Extreme Income Inequality TOMORROW

# What will China's inequality be like in 2025 or so?

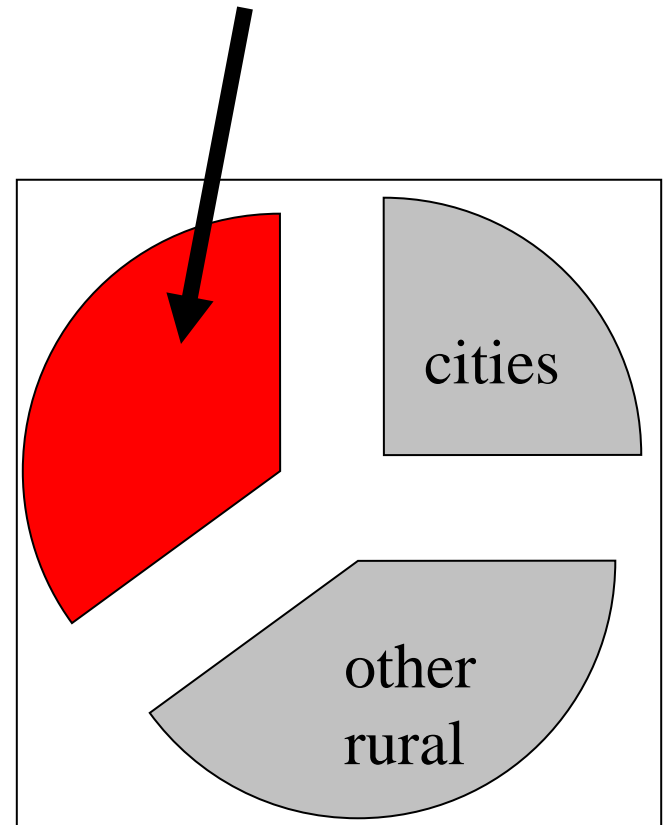
- Sure it is high now ... but, will it be high when China's growth slows?
- To examine this question rely, in part, on part of this equation:

*Today's human capital inequality among children (health / nutrition / education) is one of the strongest determinants of tomorrow income inequality*

# So: What is the nature of China's human capital today? ... in poor rural areas ?

- $\approx 35\%$  of school-aged children in poor rural areas

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



*Remember: today's children are tomorrow workers and professionals ...*



# Investments in basic education (continues)



*So what is the problem: in fact RURAL EDUCATION was a component of China's success (during phase I) ...*

*problem is: while such a system might make for a fundamentally numerate and literate and disciplined labor force, we believe, while necessary, it is not sufficient to provide the tools for healthy, inclusive phase II development!*

While all kids do not need to go to college, they should be going to high school ... to get basic skills for workforce 20 years from now!!

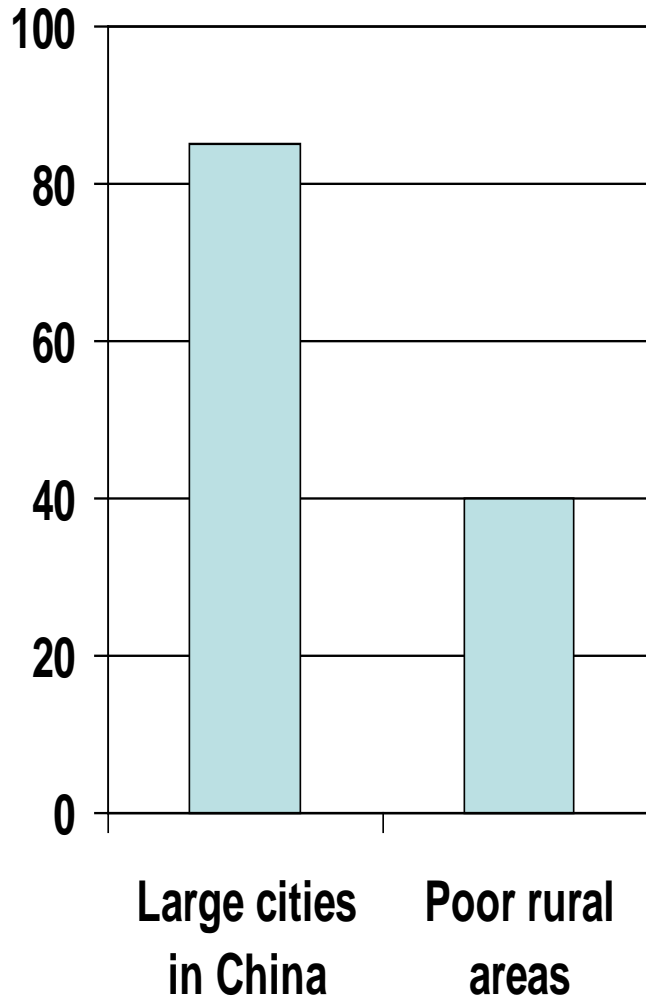
- Going to college ... only 2% of students from poor rural areas go to college

- Only 40% of junior high grads in poor rural areas go on to academic high school ..

# *High School Gap in China today*

*China in the 2005*

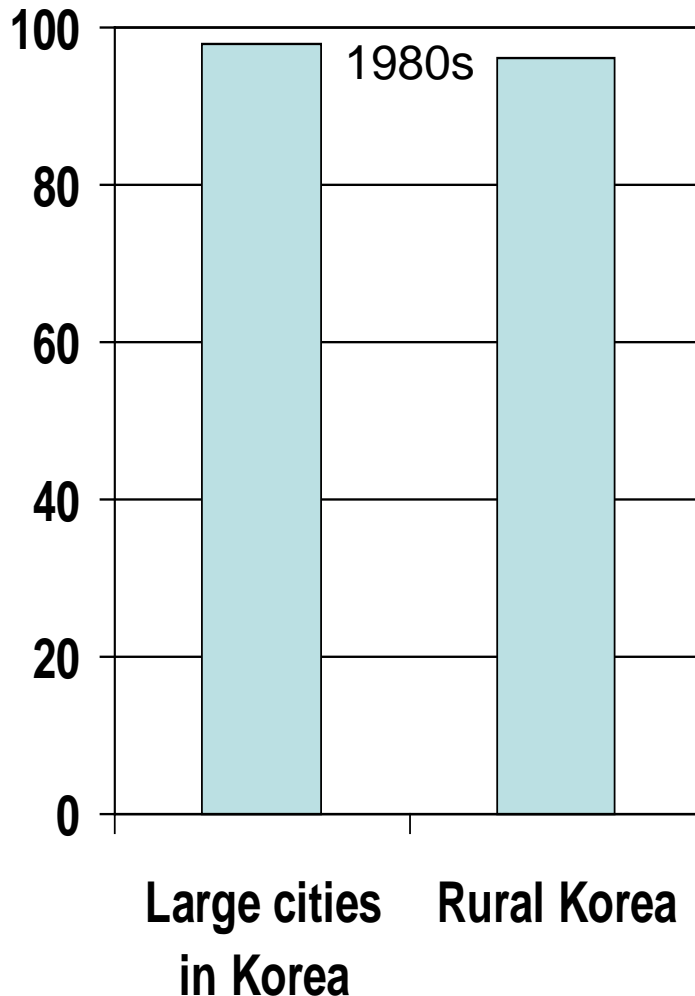
Percent of students that go to **High School**



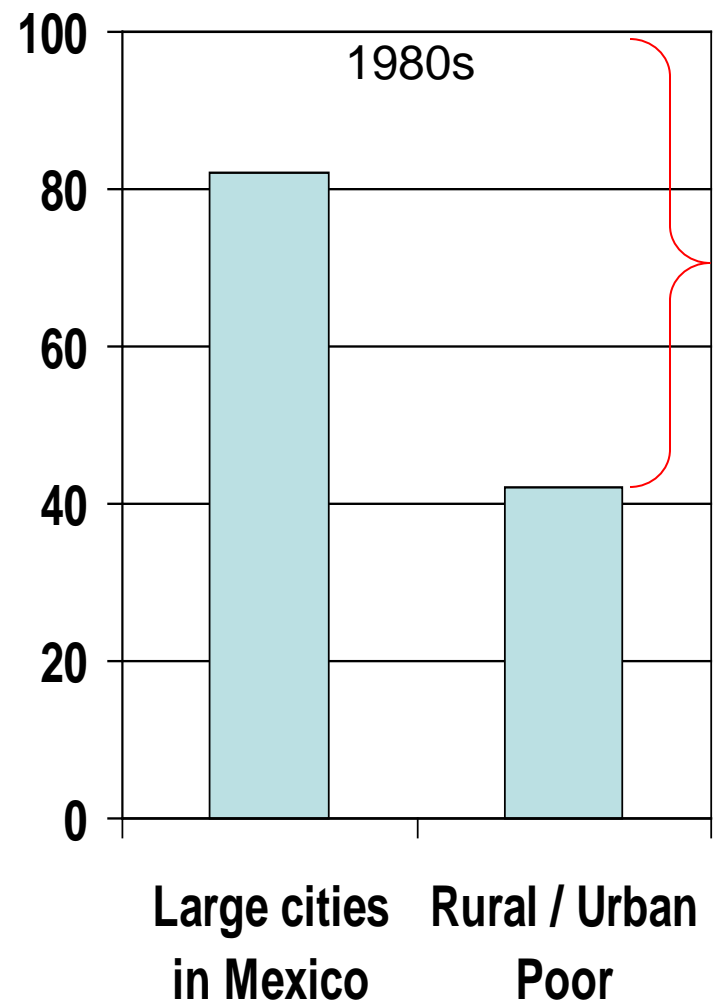
# Who Does China Look Like? South Korea or Mexico?

*South Korea in the 1970s/1980s*

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



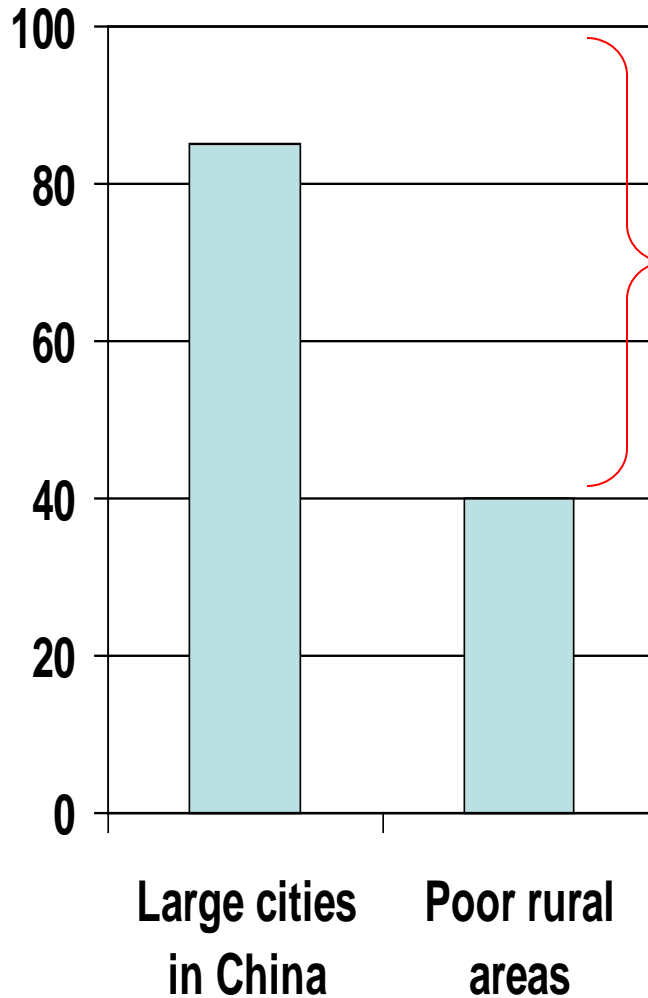
*Mexico in the 1980s!*



# High School Gap in China today

*China in the 2005*

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



Difference between Mexico and China?

This gap represents more than 100 million children ...

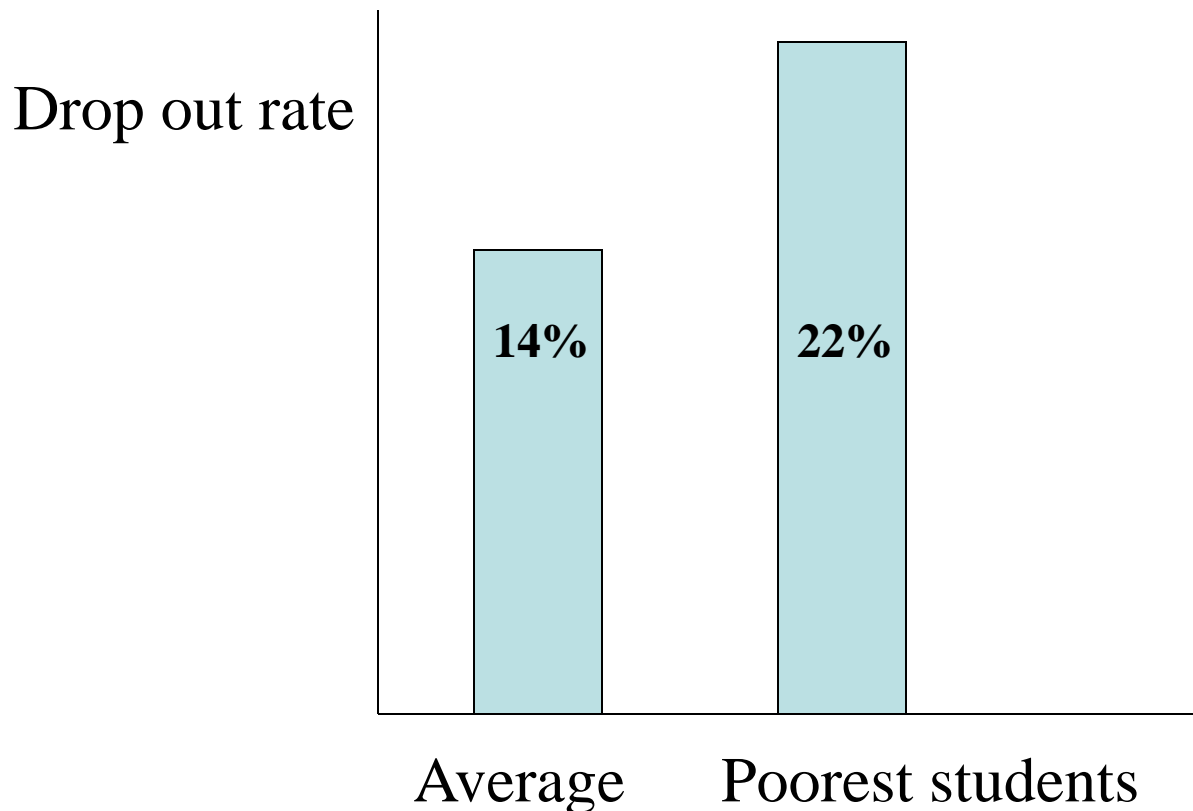
If Chinese children do not get educated today ... what are their options tomorrow?

# New study (just finished analysis this past week)

- Vocational Education and Training (VET):
    - Rich areas (75 VET programs in Zhejiang):
      - Students are learning vocational skills
      - Basic academic skills of students are NOT deteriorating
    - Poor areas (65 VET programs in Shaanxi)
      - Students are not learning any vocational skills
      - Math and Chinese skills are deteriorating
- [Students are NOT learning anything in VET programs]
- [Students in academic high school (AHS) are learning
- [-- matching between AHS / VET → VET schools in poor areas are failing!]*

# As a result: drop outs in VET between October 2011 and May 2012

- Results from 2012 REAP survey, 65 VET programs in Shaanxi



Students apparently are understanding that they are learning nothing



Drop out within first 8 months of VET program

Problems are starting **before** high school

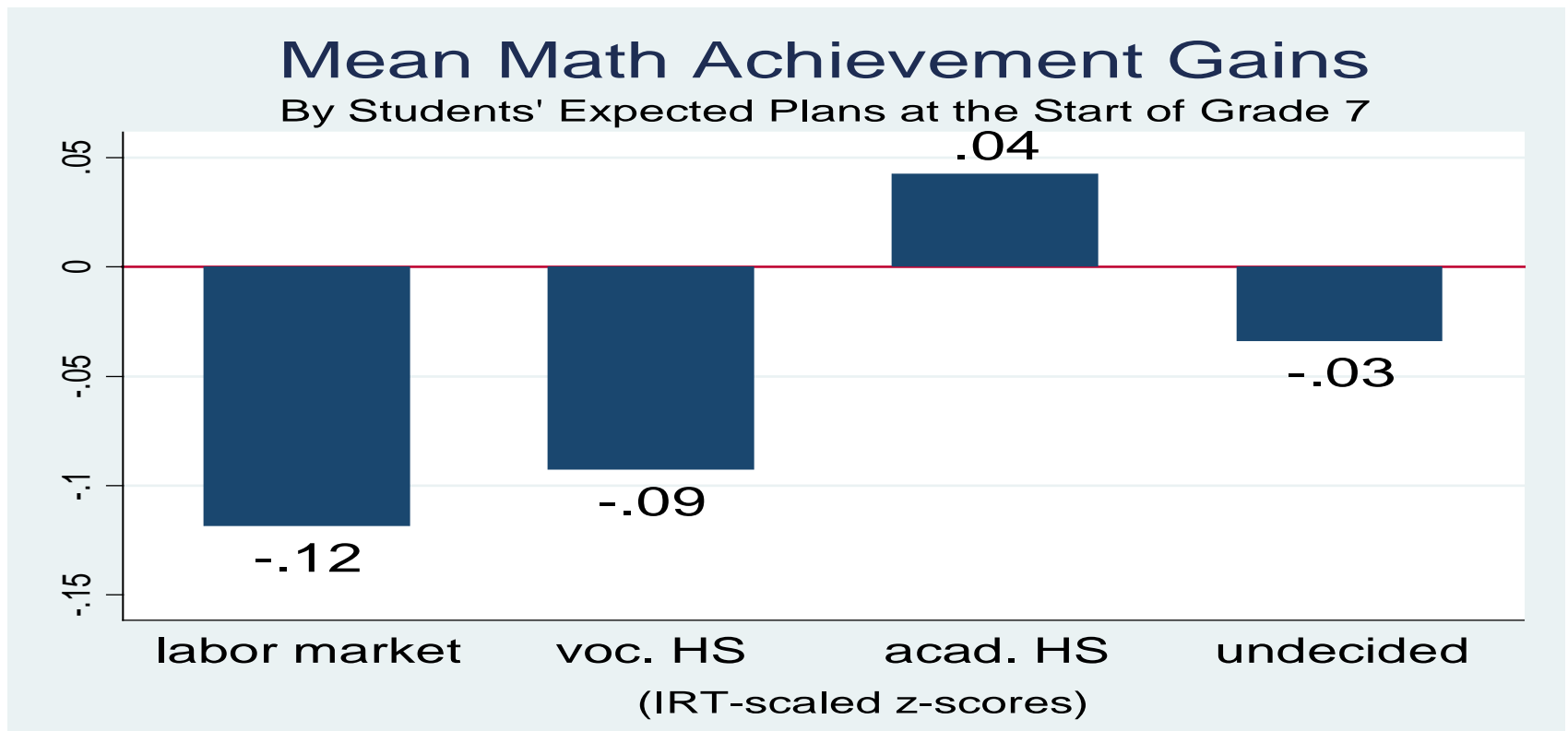
poor quality of education

drop outs



# Junior High School

## Student achievement gains (in poor rural junior high schools)

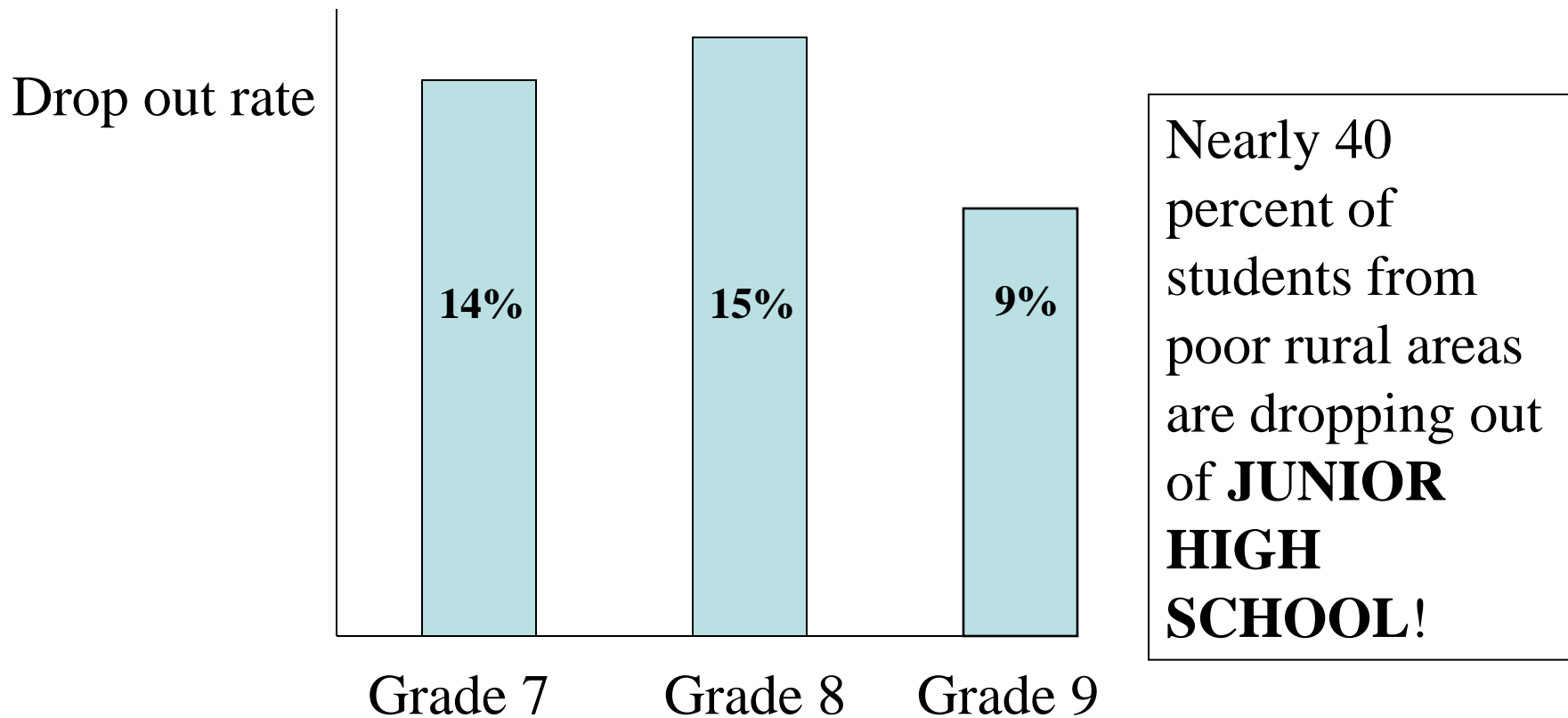


**Lots of students had negative or zero gains in achievement!**

# Unsurprising: REAP study shows (in part due to poor quality of education / and rising wages) China's rural students are not even getting through junior high school

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- Results from 2009/2010 REAP survey



Maybe the “REAL source” of problem begins before junior high school

- **Why?**

- Poor quality of education in grades 1-9 and before

- Poor facilities ... teachers ... curriculum ...

- Poor nutrition ...

# Maybe the “REAL source” of problem begins before junior high school

- **Why?**

- Poor quality of education in grades 1-9 and before

- Poor facilities ... teachers ... curriculum ...

- Poor nutrition / health!!

*No matter how much investment into facilities / teacher salaries & training / curriculum ... if students are sick or malnourished, may not be able to learn ...*

*Is this a problem?*

Between 2008 and 2012 we tested nearly 40,000 children across China for iron-deficiency anemia

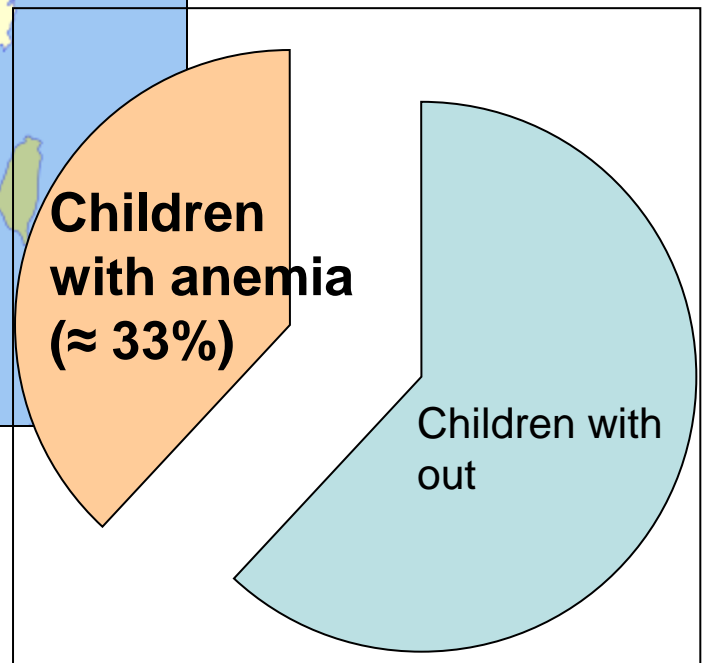
# In fact, anemia is all over China

	Total
Total	33.7
Shaanxi—2008 (Dataset 1)	37.5
Shanxi—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., X. Wang, C. Liu, et al. (2011) "Alarming High Anemia Prevalence in Western China." *Southeast Asian Journal of Tropical Medicine and Public Health* Vol. 42 No. 5



Poor areas of China



≈ 20 million school aged children are estimated to have anemia ...



Non-poor areas  
of China

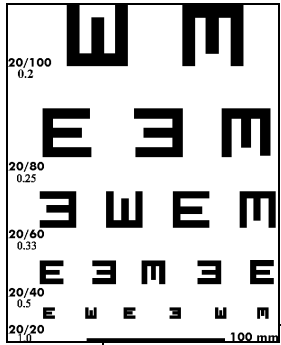
**Children  
with anemia  
( $\approx$  8%)**

Children with  
out (92%)

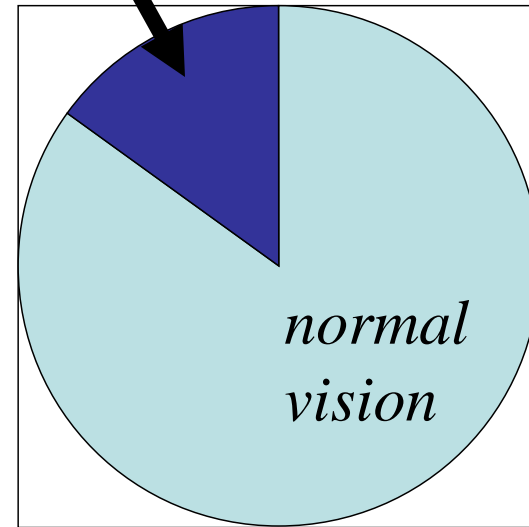
< 5 million school aged children  
in all of the rest of China



# Testing 19,500 children in Gansu and Shaanxi Provinces

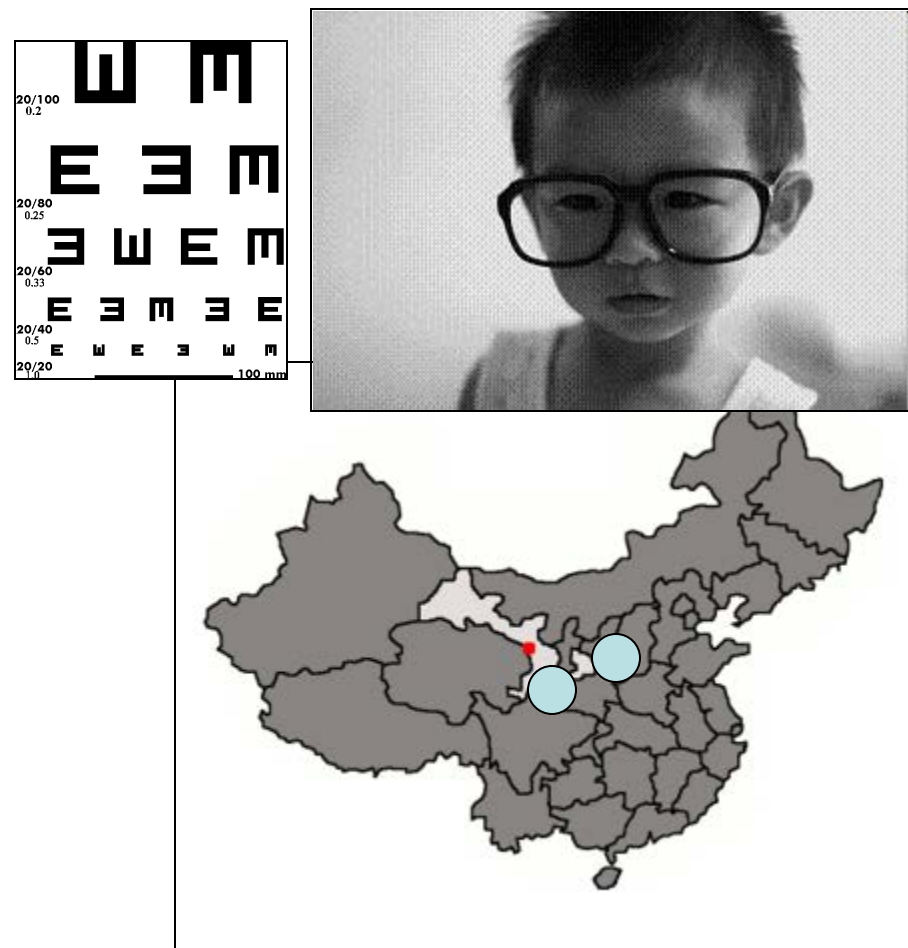


myopic

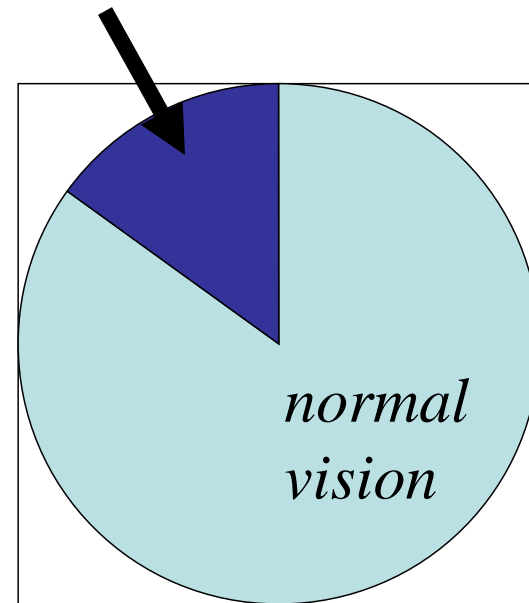


→ 2925 ( $\approx 15\%$ ) were myopic (or nearsighted).

# Testing 19,500 children in Gansu and Shaanxi Provinces



myopic



→ 2925 ( $\approx 15\%$ ) were myopic (or nearsighted).

Only 109 had eyeglasses ( $< 0.5\%$ )

We have tested nearly 2000 children for:

# INTESTINAL WORMS IN RURAL CHINA



Chinese Academy of Sciences

Center for Disease Control, Shanghai

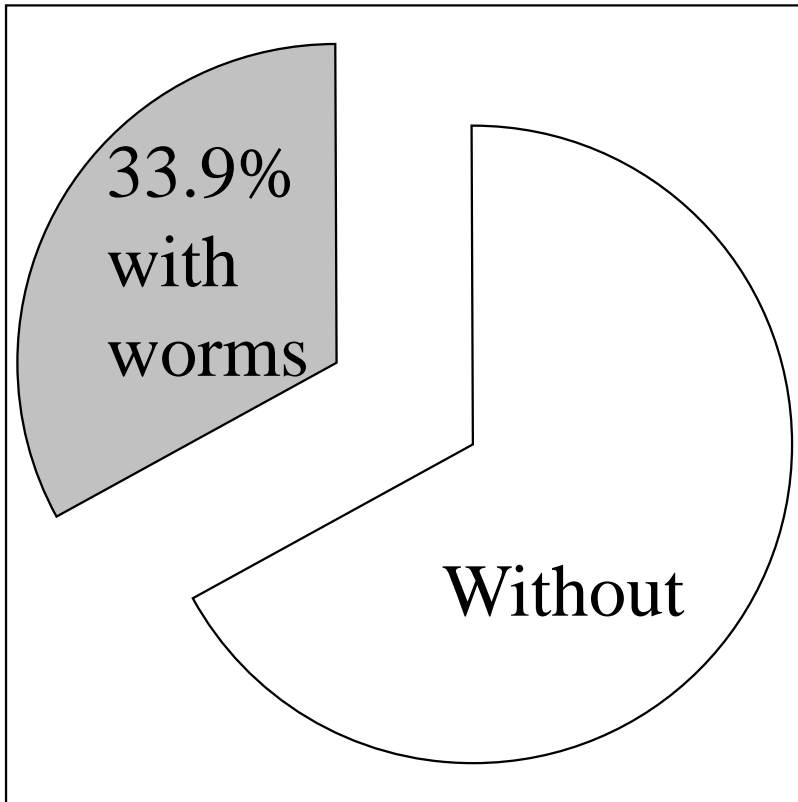
Stanford University (with support of Asia Health Care  
Initiative funding)



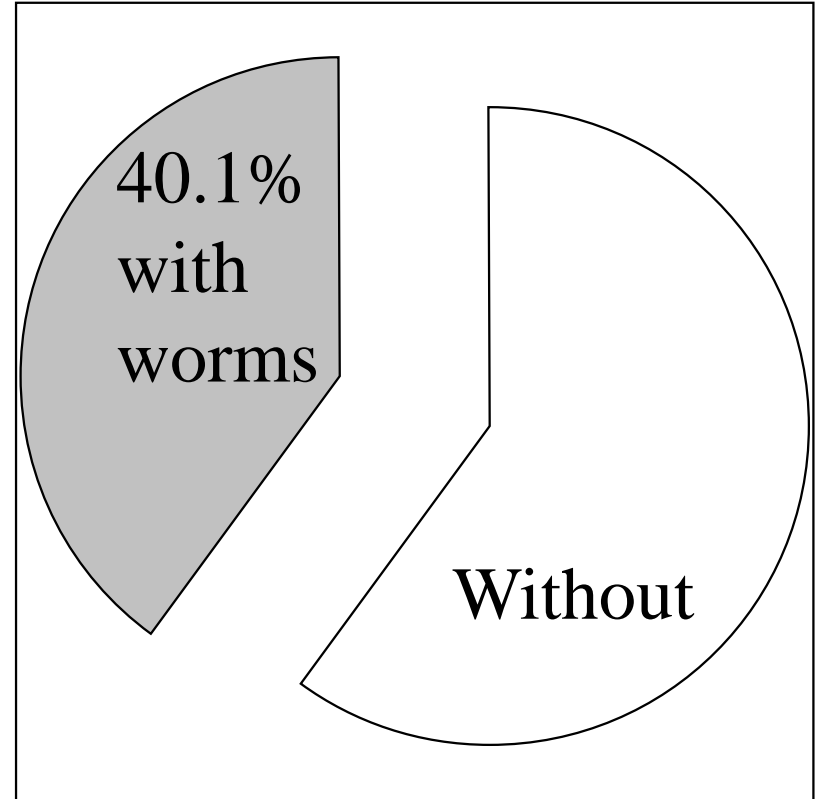




# Incidences of Intestinal Worms, Guizhou Province, 2010



3 to 5 year olds



8 to 10 year olds

What are the prospects for China's  
inequality in the coming years:

High Income Inequality TODAY

+

Extreme Human Capital Inequality TODAY

=

Extreme Income Inequality TOMORROW

Thank you