

# THE ECONOMIC IMPACT OF EDUCATION THROUGH THE LENS OF PISA

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PISA Day  
Alliance for Excellent Education  
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# Commitment to Achievement Growth

- Nation at Risk (1983)
  - Stem a rising tide of mediocrity.
- George H. W. Bush and all Governors (1989)
  - Bring U. S. achievement up to top of world by 2000.
- Clinton: Goals 2000:
  - “All Americans can reach international competitive standards.”
- Bush: No Child Left Behind
  - “All students proficient by 2013”
- Obama: State of the Union 2011
  - “We know what it takes to compete for the jobs and industries of our time. We need to out-innovate, out-educate, and out-build the rest of the world.”

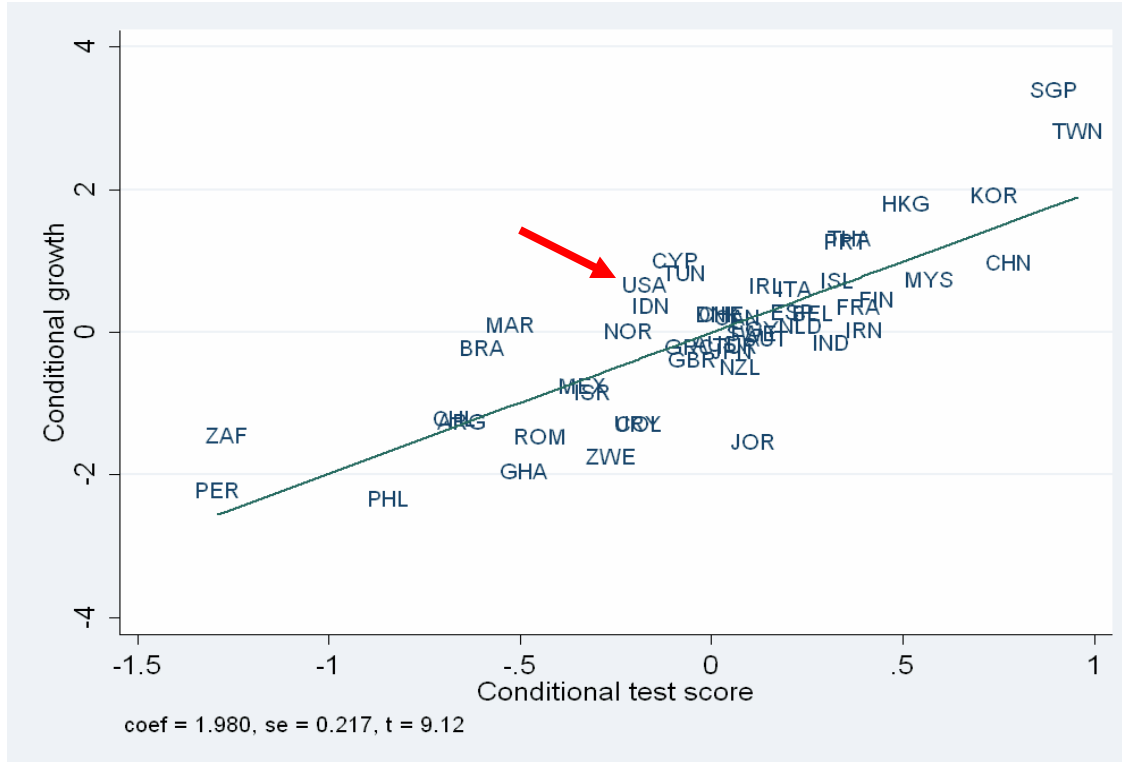
# Importance to the United States



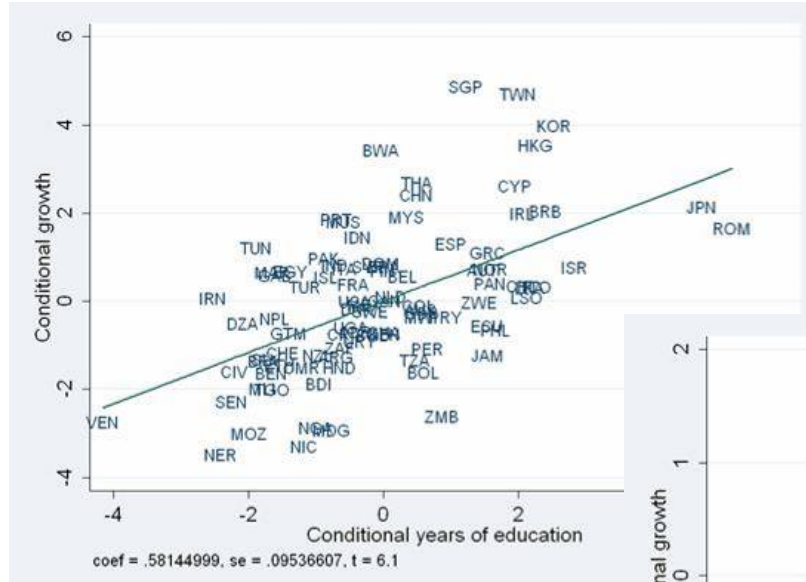
**“Human capital will determine power in the current century, and the failure to produce that capital will undermine America’s security.”**

**— *Independent Task Force Report,*  
*Condoleezza Rice, co-chair,*  
*Council on Foreign Relations***

# Cognitive Skills and Economic Growth

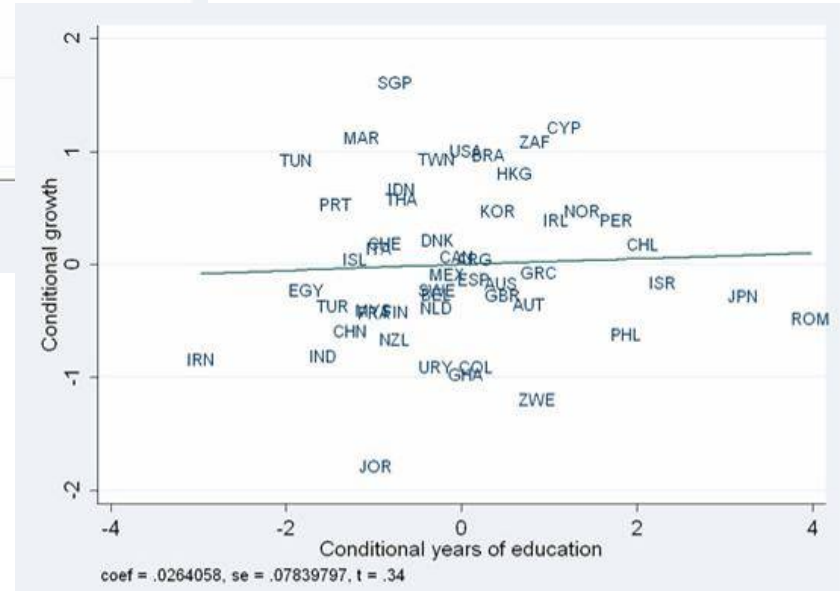


# Years of Schooling and Economic Growth

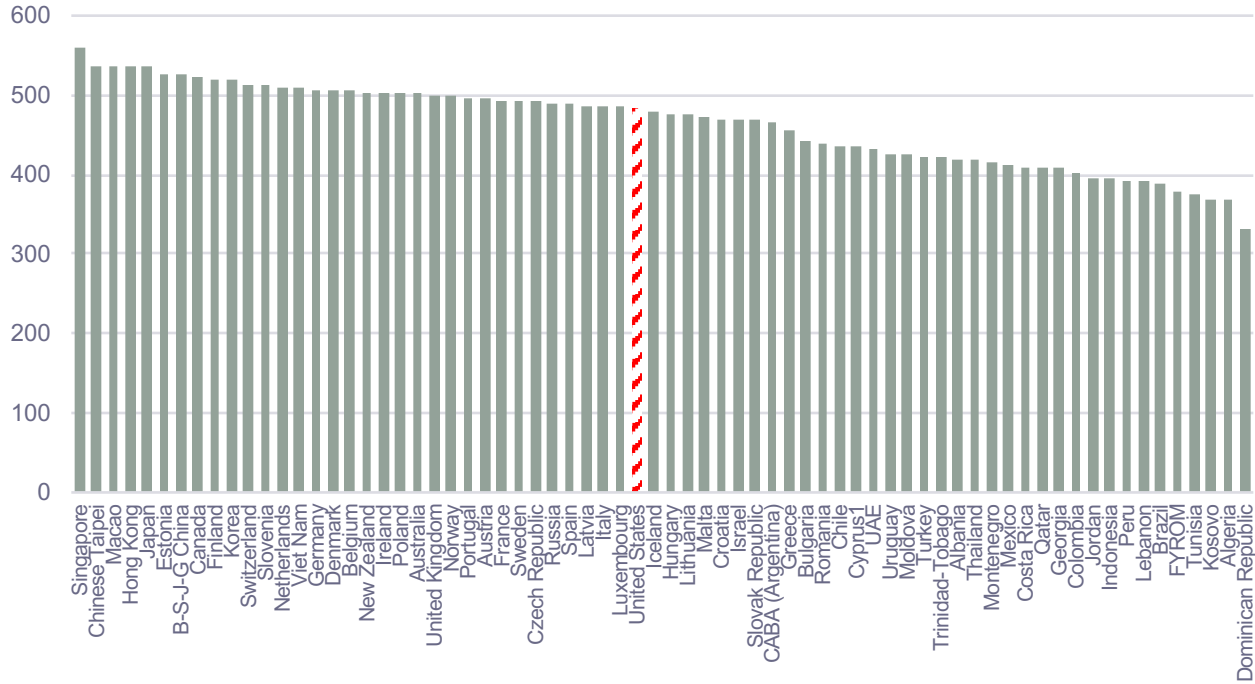


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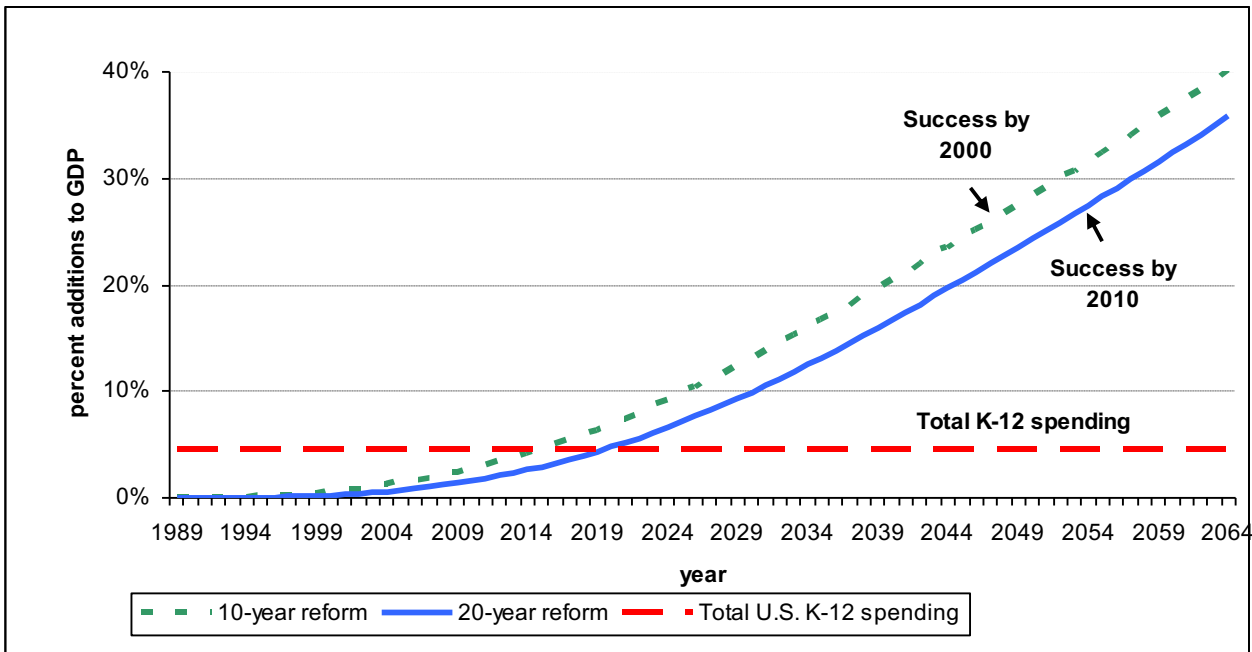
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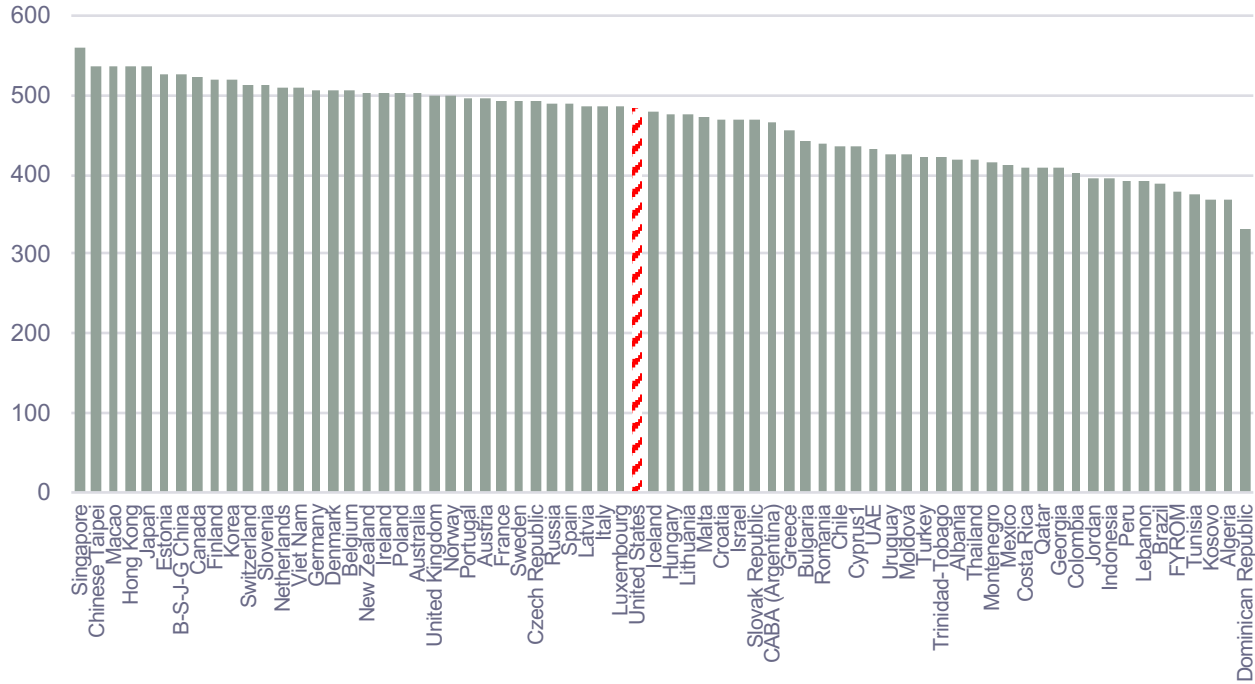
# PISA 2015 -- Math + Science



# “First in the World by 2000”



# PISA 2015 -- Math + Science





# Importance to United States

- Value of higher skills
  - Germany, Canada
  - No Child Left Behind

# Economic Value of Improvement

	Being Germany
Present value (\$ trillion)	43.8
% future GDP	6.2

# Economic Value of Improvement

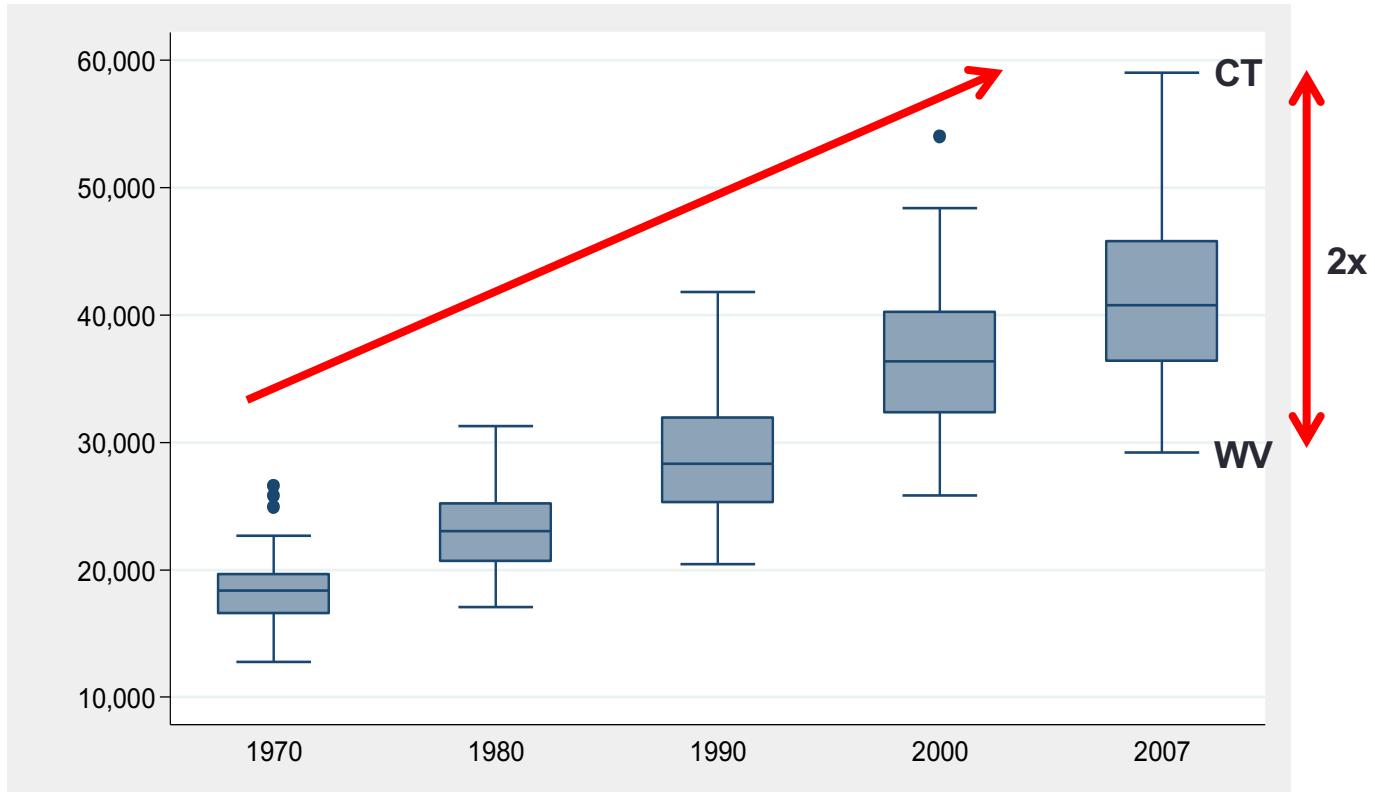
	Being Germany	Being Canada
Present value (\$ trillion)	43.8	82.2
% future GDP	6.2	11.4

# Economic Value of Improvement

	Being Germany	Being Canada	Achieving NCLB
Present value (\$ trillion)	43.8	82.2	86.2
% future GDP	6.2	11.4	12.1

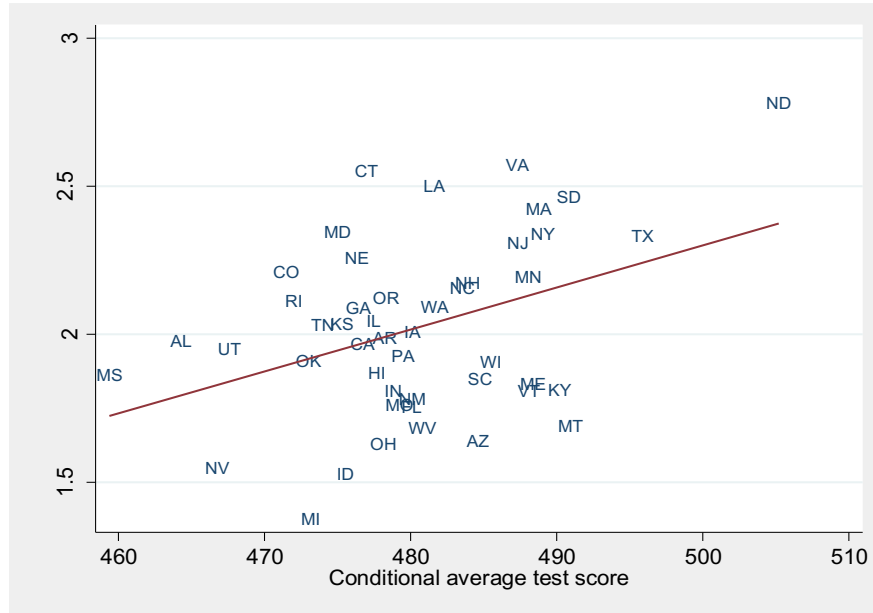
U.S. States

# GDP per Capita of U.S. States, 1970-2007



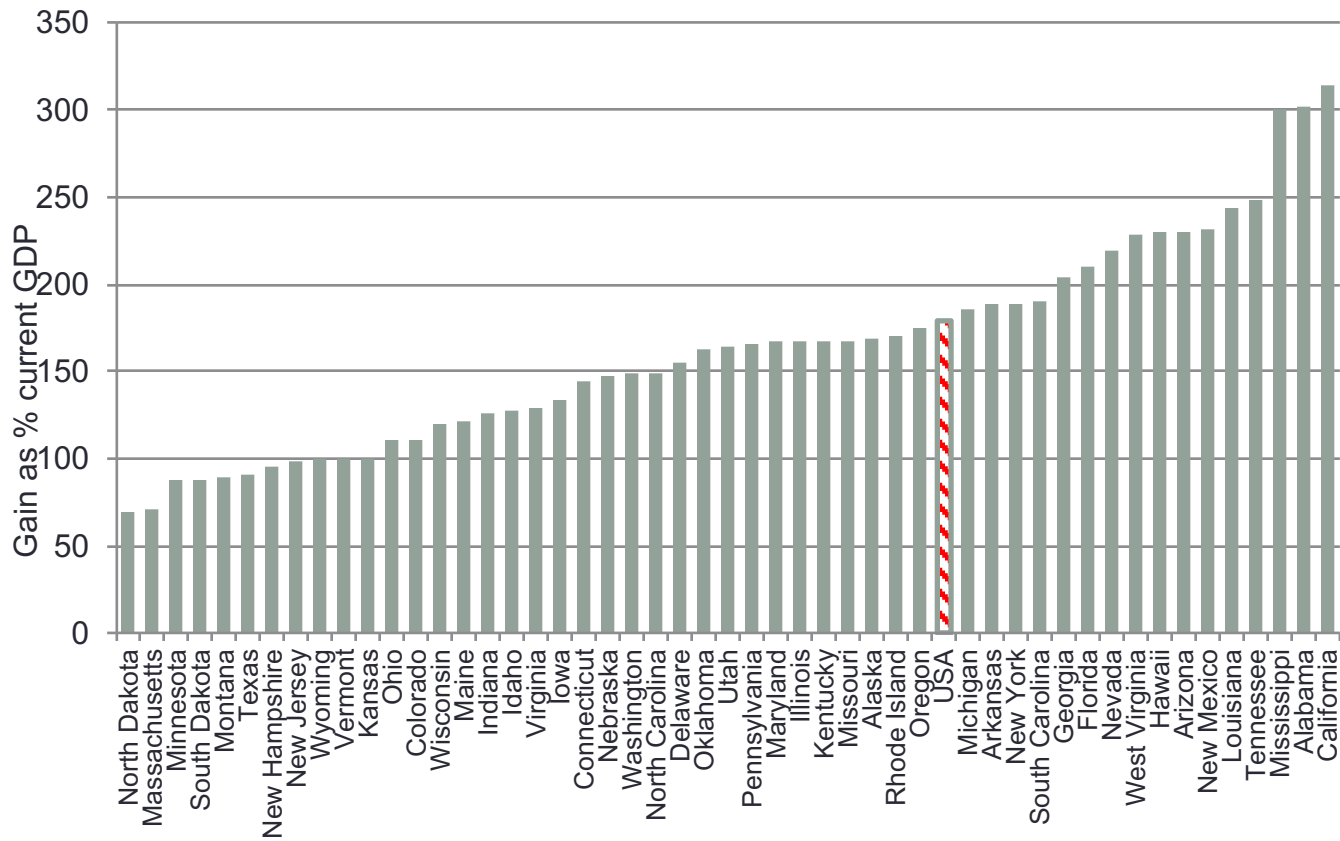
Notes: GDP per capita is denoted in 2005 U.S. dollars. AK, DE, WY are omitted. Source: Authors' calculations based on data from the U.S. Bureau of Economic Analysis. Line in middle of box indicates median; top and bottom of box indicate 75<sup>th</sup> and 25<sup>th</sup> percentiles, respectively. Dots indicate large outliers outside of normal data range.

# Test Scores and Growth: U.S. States



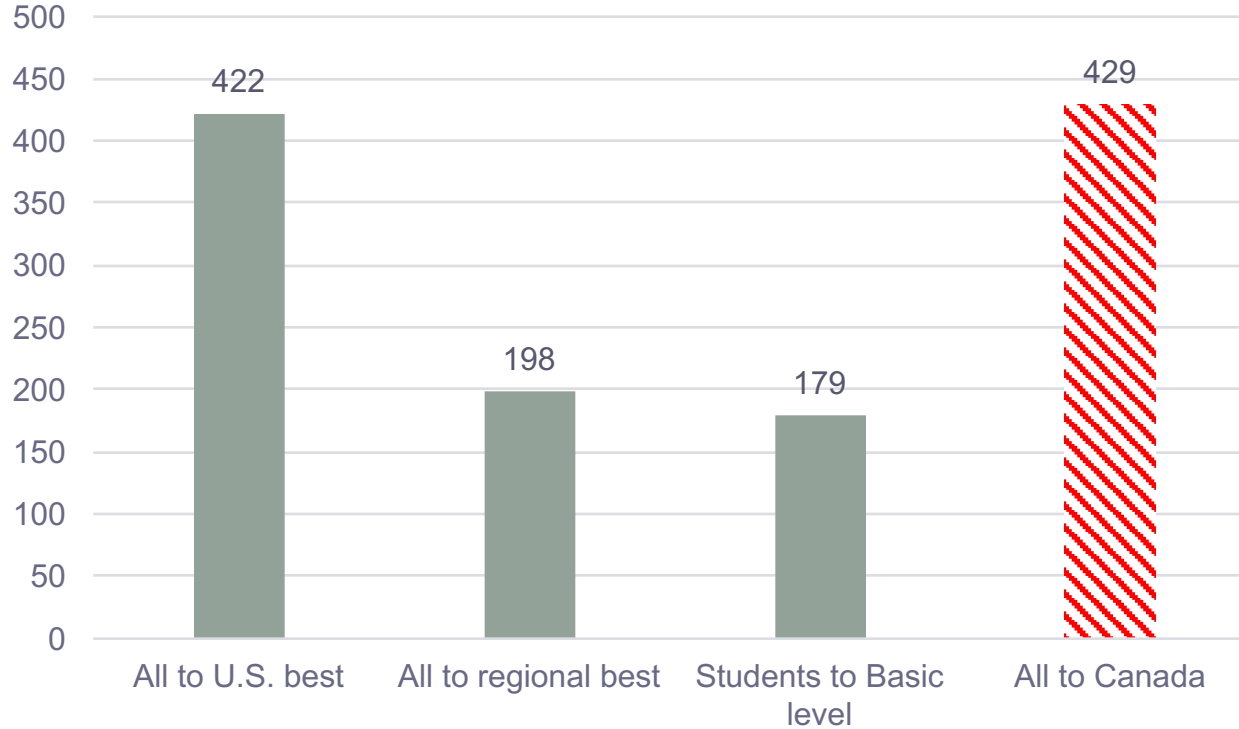
Growth in GDP/pop over 1970-2010 for states as related to math skills and conditional on income levels in 1970

# All Students to Basic Level (NCLB)





# Economic impact if student performance improves in...



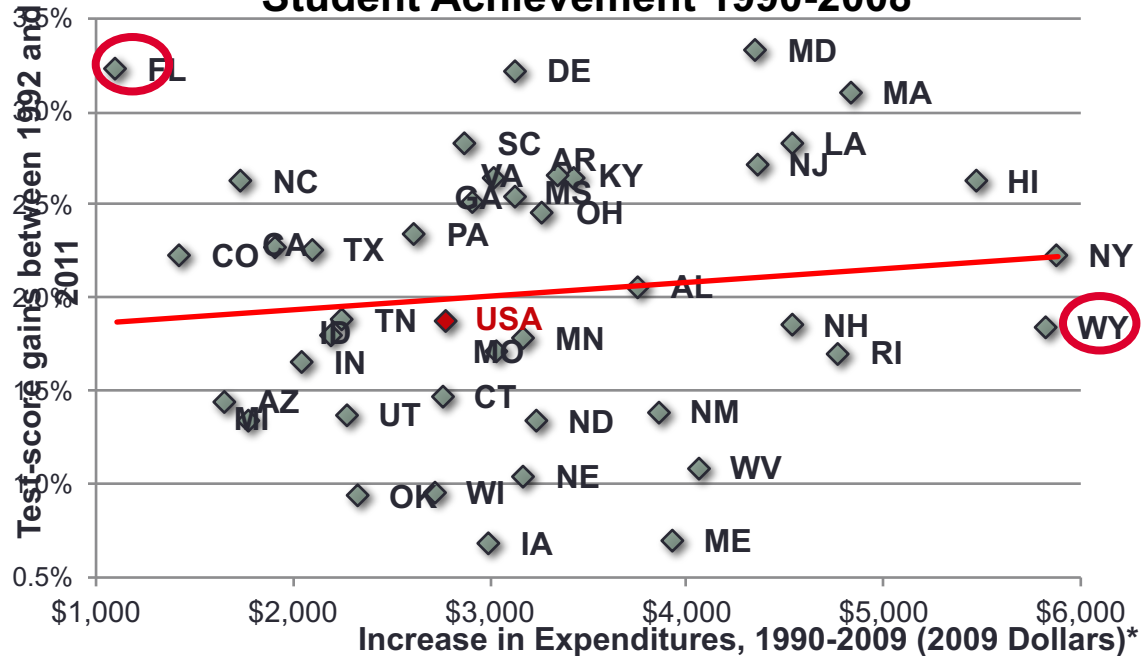
# Economic impact if student performance improves in...

	% increase in average GDP level
All states move to top U.S. state	9.0
All states move to top regional state	4.2
All students achieve BASIC level	3.8
All states move to Canadian level	9.2

# No Simple Answers

Improvement is possible but not easy

## Increments in Expenditures and Gains in Student Achievement 1990-2008



# What Can Be Done?

1. Improve teacher quality
2. Improve teacher quality
3. Improve teacher quality

# Teacher Quality: The Big Picture

- Good teachers are essential to improved schools
- BUT
- Too hard to change so we will stay with current policies

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*Very different economic futures based on today's actions*

- Total focus on current problems
- Ignoring long run means constant future problems

# Teacher Quality

- No identifiable characteristics
  - Master's degrees
  - Experience\*
  - Certification
  - Preparation
  - Professional development
- Cannot regulate and pay on characteristics
- Observable through both student performance *and* supervisor ratings

# Range of Approaches

- Align pay and performance
  - Evaluation
  - Reward success
  - Zero option
- Accountability
- Local autonomy
- Parental choice of schools
- Preschool education



# Key Questions

1. Does achievement matter?
2. Is the U.S. competitive?
3. Does it matter to states?
4. Are there things to be done?

# Key Questions

1. Does achievement matter?

**YES**

2. Is the U.S. competitive?

**NO**

3. Does it matter to states?

**YES**

4. Are there things to be done?

**YES**

# Contact

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