DIFFICULTIES IN CROSS-NATIONAL GENERALIZABILITY OF EDUCATION EVALUATIONS

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Rigorous Impact Evaluation in Europe
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Outline of Talk

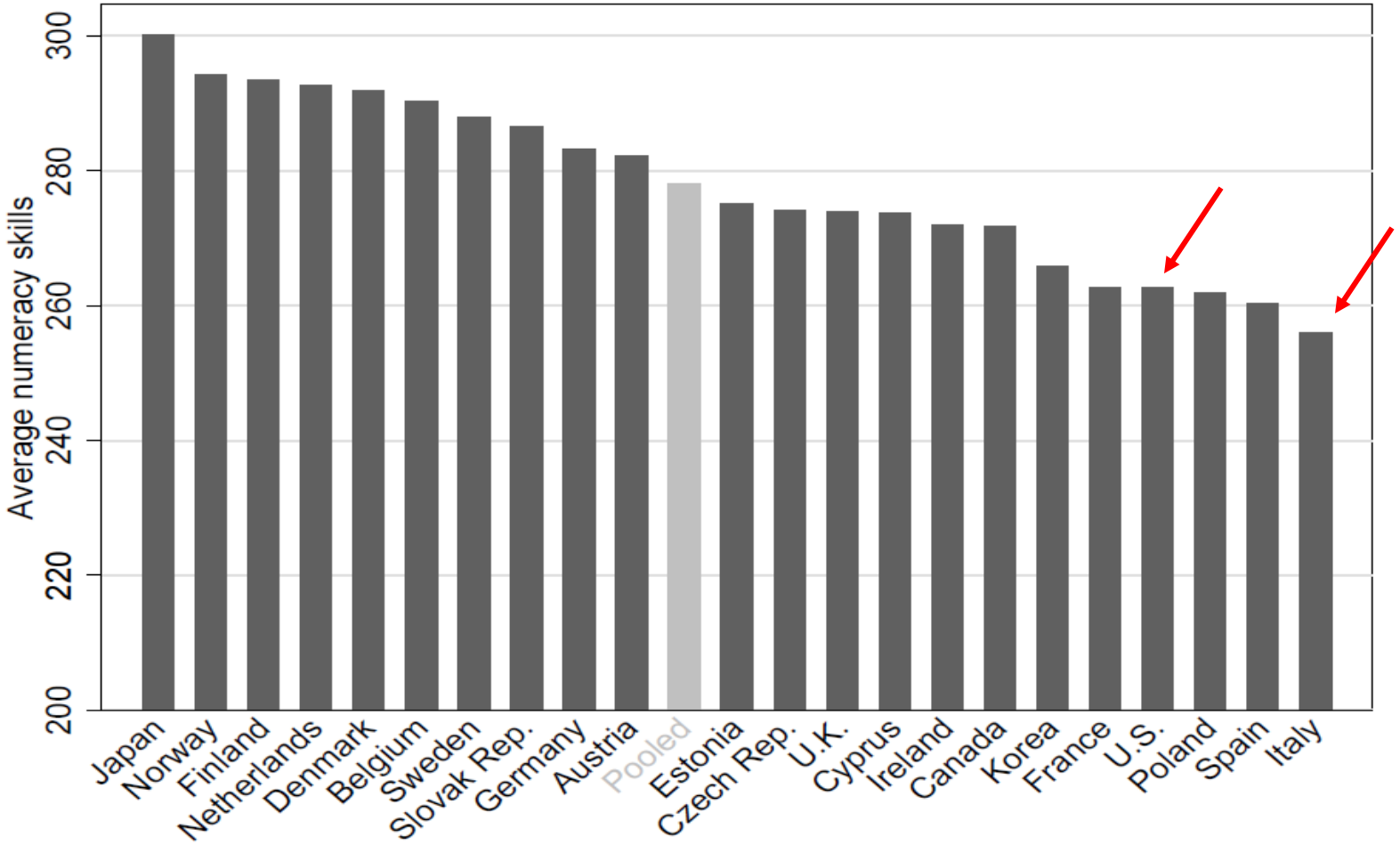
- Motivation from aggregate differences across countries
- Skills in the labor market
- Case studies in educational institutions
  - Differences in (unmeasured) institutions
  - Differences in impacts
- Lessons for how to generalize?

Can Germany learn from U.S.?
Can the U.S. learn from India?
Can Kenya learn from India? Or from the U.S.?

LABOR MARKET FOR SKILLS

Individual returns to skills
Structural differences in markets

Numeracy Skills by Country

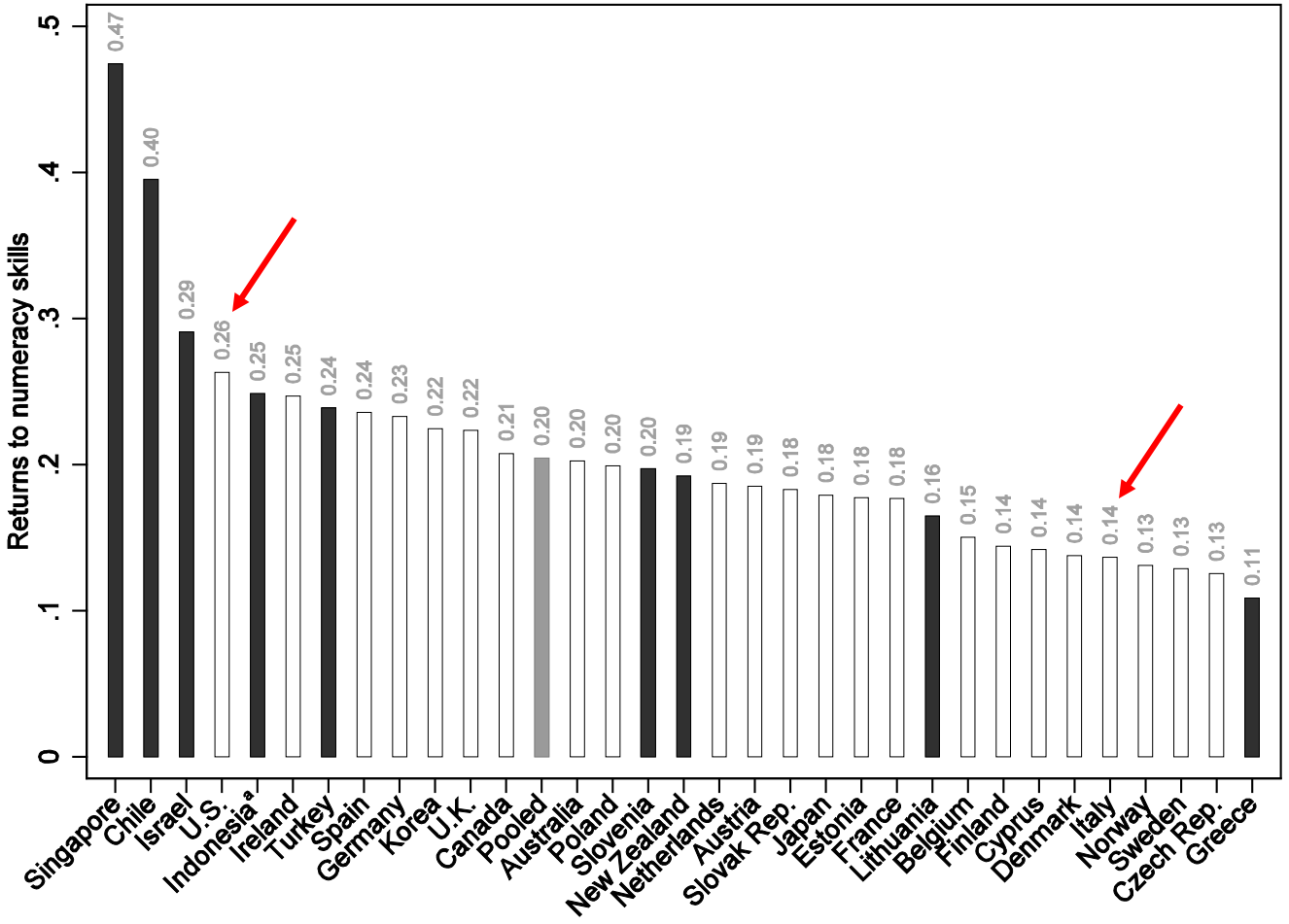


Hanushek, Schwerdt, Wiederhold, and Woessmann, "Coping with change: International differences in the returns to skills." *Economic Letters (*2017*)*

Returns to Skills

$$\ln Y = \alpha_0 + \alpha_1 G + \alpha_2 E + \alpha_3 E^2 + \gamma_n C + \varepsilon$$

Returns to Skills – PIACC Round 2



Returns to Skills

$$\ln Y = \alpha_0 + \alpha_1 G + \alpha_2 E + \alpha_3 E^2 + \gamma C + \varepsilon$$

$$\ln Y = \alpha_0 + \alpha_1 G + \alpha_2 E + \alpha_3 E^2 + \gamma C + \gamma * (C \square X_n) + \mu_n + \varepsilon$$

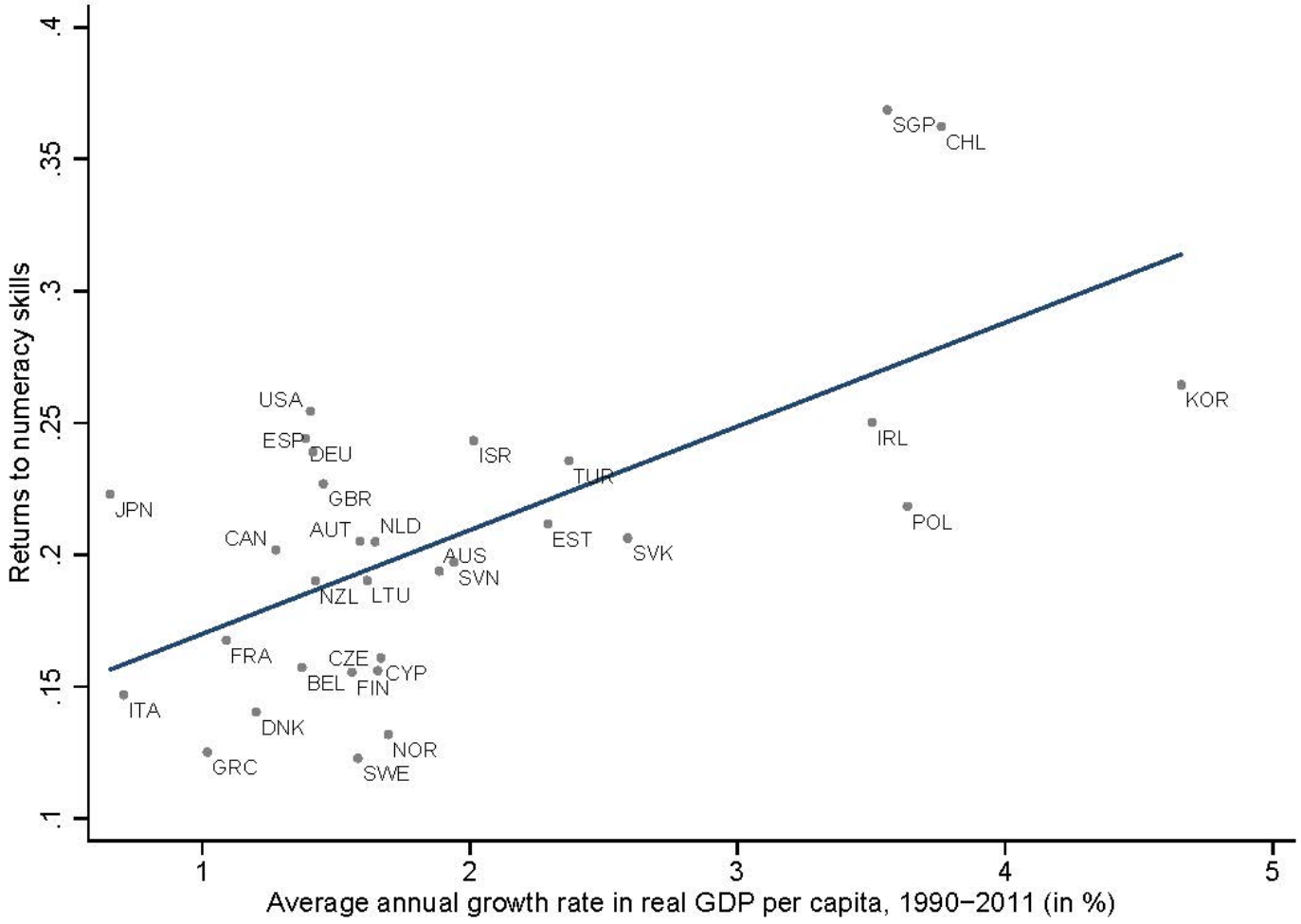
Cross-Country Differences in Returns

	(1)	(2)	(3)
Numeracy (γ)	.178	.184	.090
+union density		-.099	-.092
+emp. protection		-.036	-.037
+public sector		-.188	-.201
country f.e.	yes	yes	yes
occup x ind f.e.			yes
other		min.wage, prod mkt reg, skill inequality, skill mean	

Cross-Country Differences in Returns

	(1)	(2)	(3)
Numeracy (γ)	.178	.184	.090
+union density		-.099	-.092
+emp. protection		-.036	-.037
+public sector		-.188	-.201
country f.e.	yes	yes	yes
occup x ind f.e.			yes
union density		.141	.197
emp. Protection		.151	.221
public sector		.157	.209

Returns to Skills across PIAAC Countries

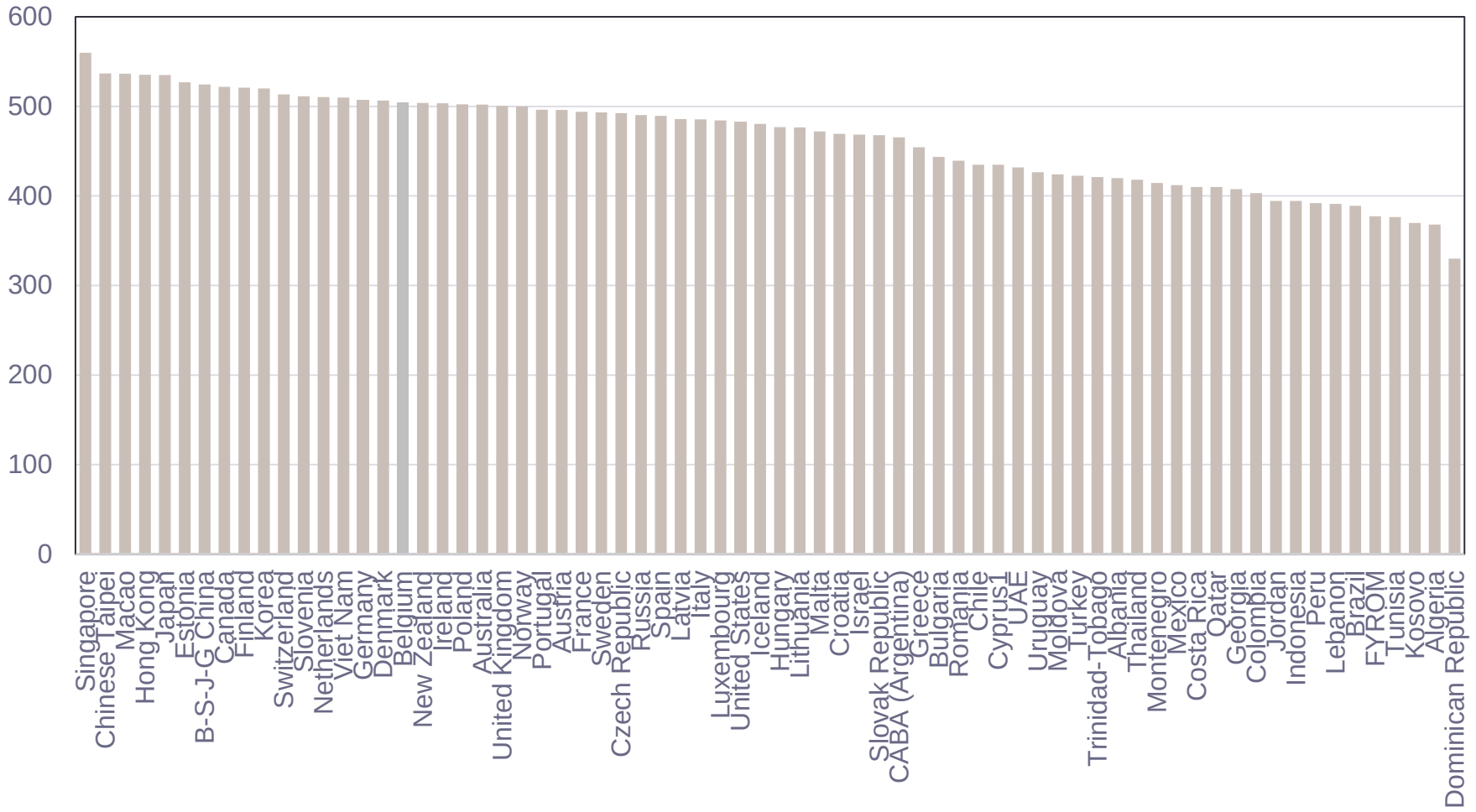


WHAT IS BEHIND INTERNATIONAL DIFFERENCES?

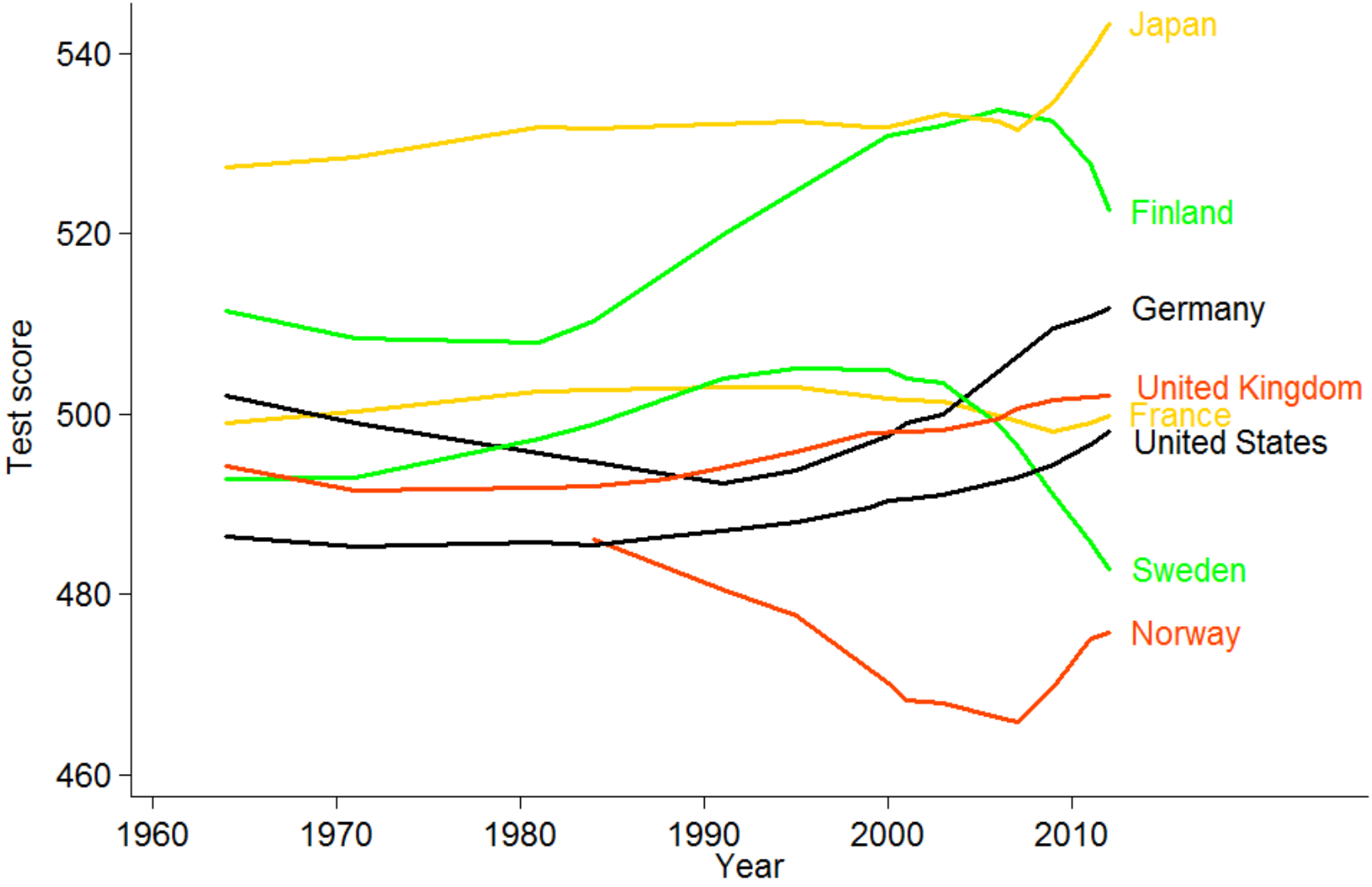
Resources and inputs

Institutions

PISA 2015: Math + Science



Long-Run Test Score Trends in Selected Countries, 1964-2012

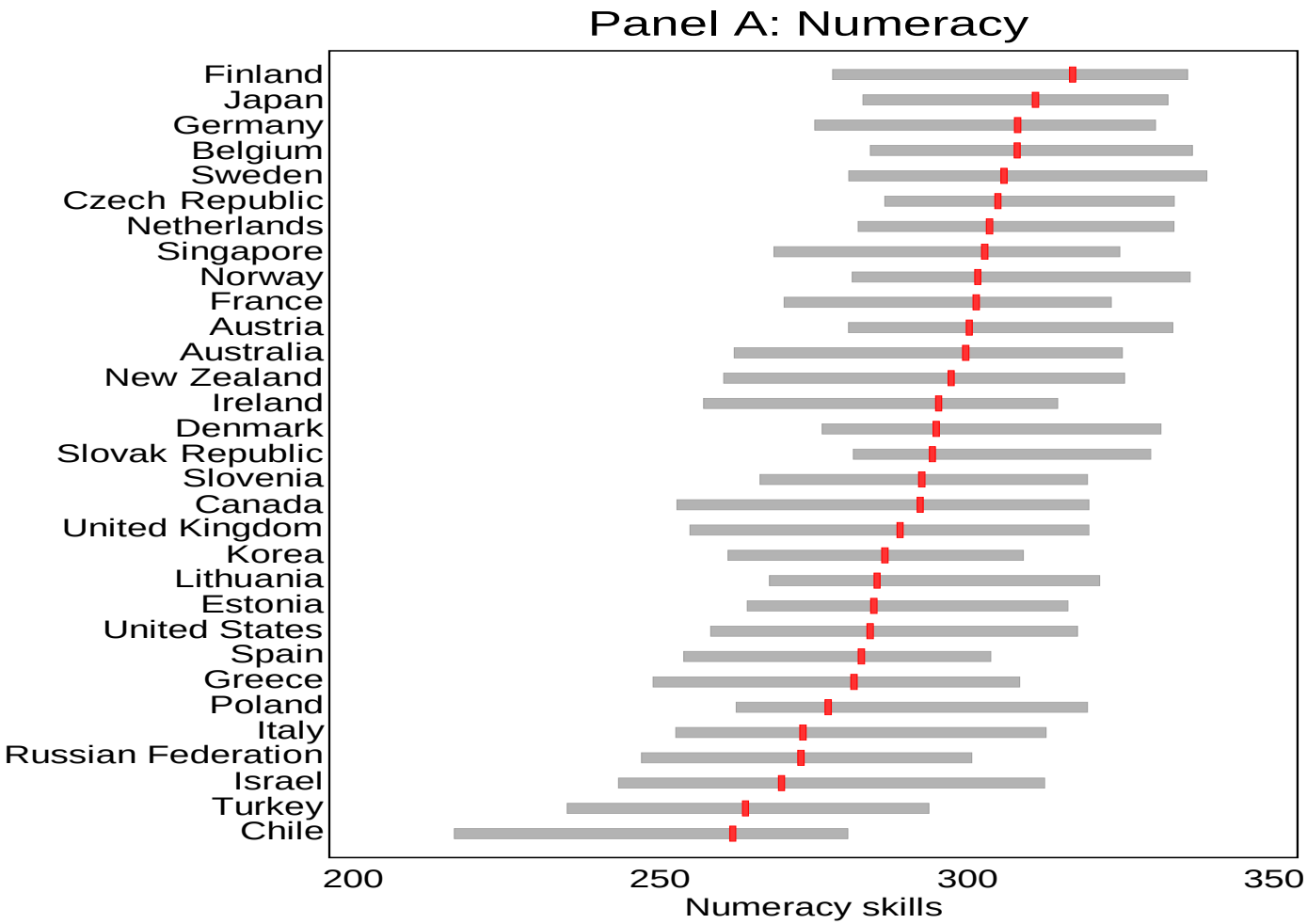


Hanushek and Woessmann, *The knowledge capital of nations (2015)*

CASE STUDIES OF INSTITUTIONS

Teacher policies
Accountability
Autonomy
Tracking

Math Skills: Teachers and College Grads



Hanushek, Piopiunik, and Wiederhold, "The value of smarter teachers: International evidence on teacher cognitive skills and student performance." NBER Working Paper No. 20727 (2016)

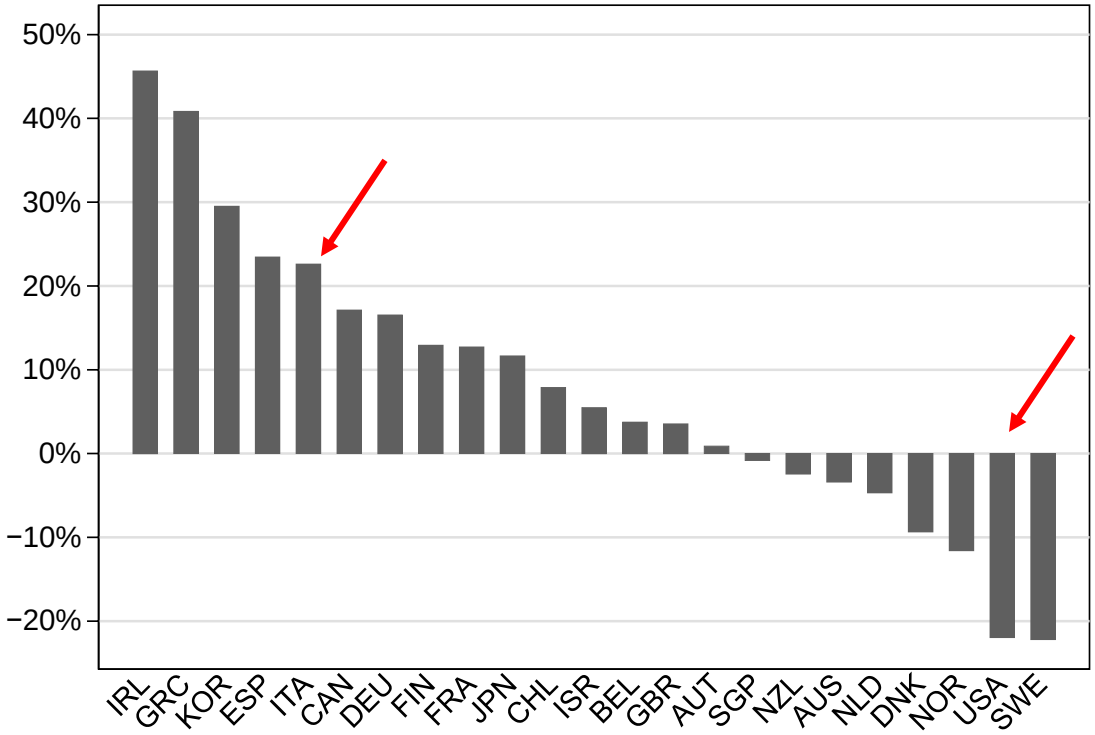
Returns to Skills

$$\ln Y = \alpha_0 + \alpha_1 G + \alpha_2 E + \alpha_3 E^2 + \gamma C + \varepsilon$$

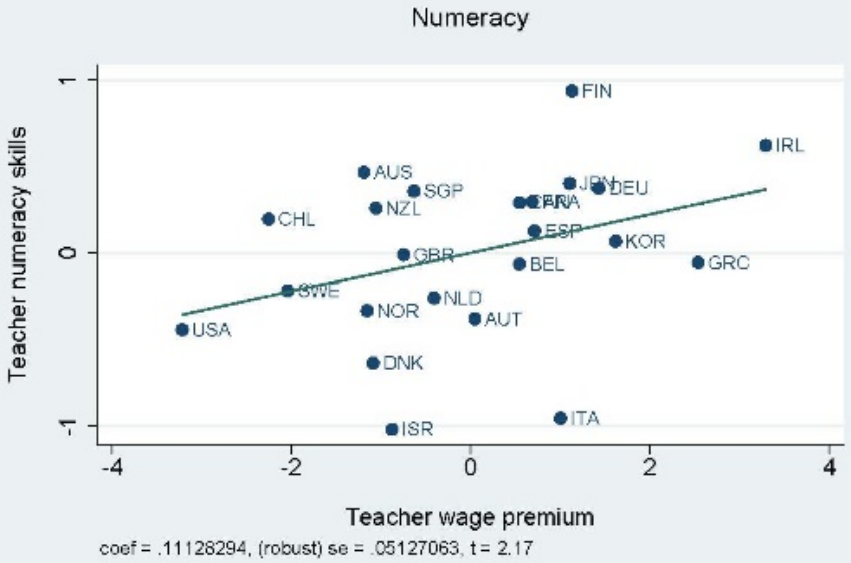
$$\ln Y = \alpha_0 + \alpha_1 G + \alpha_2 E + \alpha_3 E^2 + \gamma C + \delta T + \varepsilon$$

Teacher Wage Premiums around the World

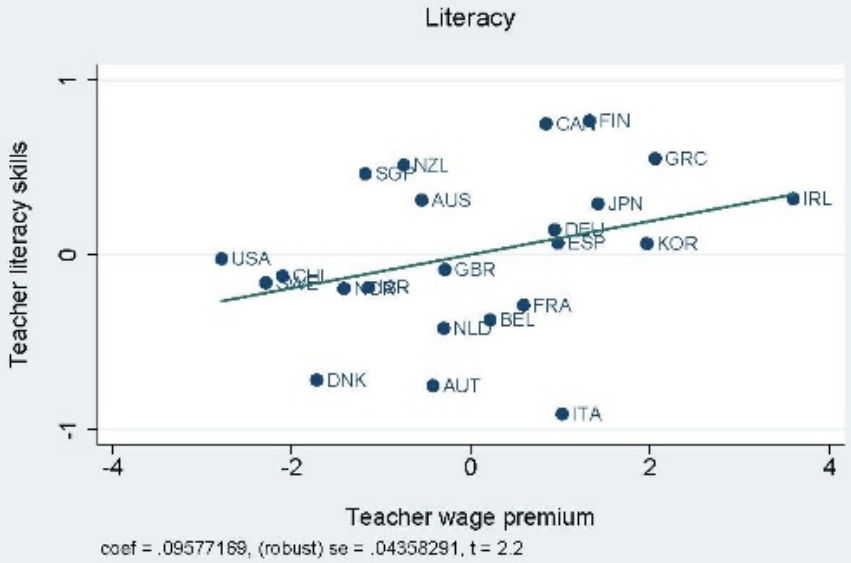
$$\ln Y = \alpha_0 + \alpha_1 G + \alpha_2 E + \alpha_3 E^2 + \gamma C + \delta T + \varepsilon$$



Teacher cognitive skills

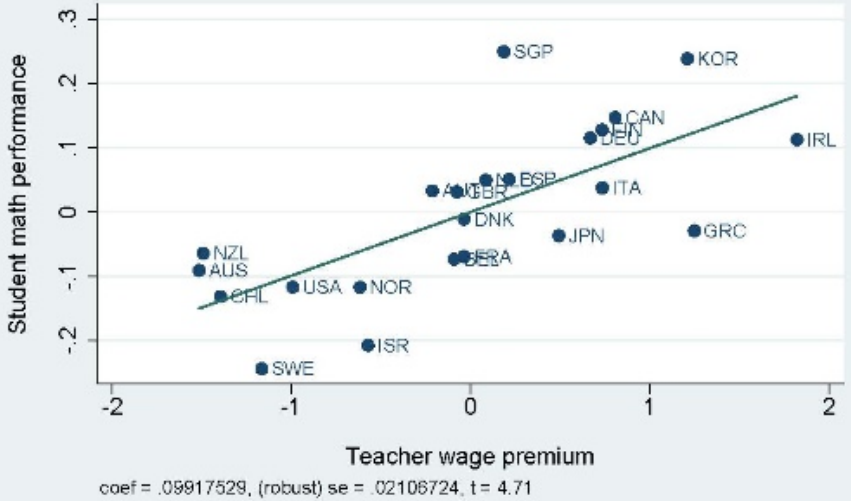


coef = .11128294, (robust) se = .05127063, t = 2.17

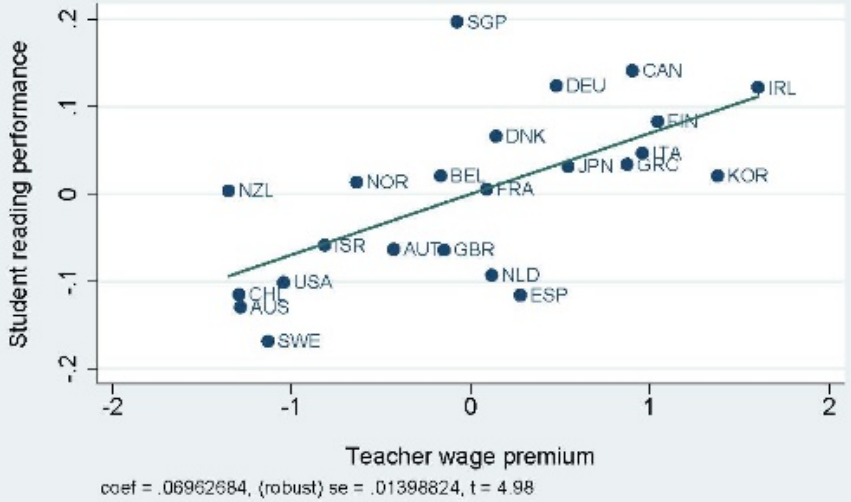


coef = .09577169, (robust) se = .04358291, t = 2.2

Student performance



coef = .09917529, (robust) se = .02106724, t = 4.71



coef = .06962684, (robust) se = .01398824, t = 4.98

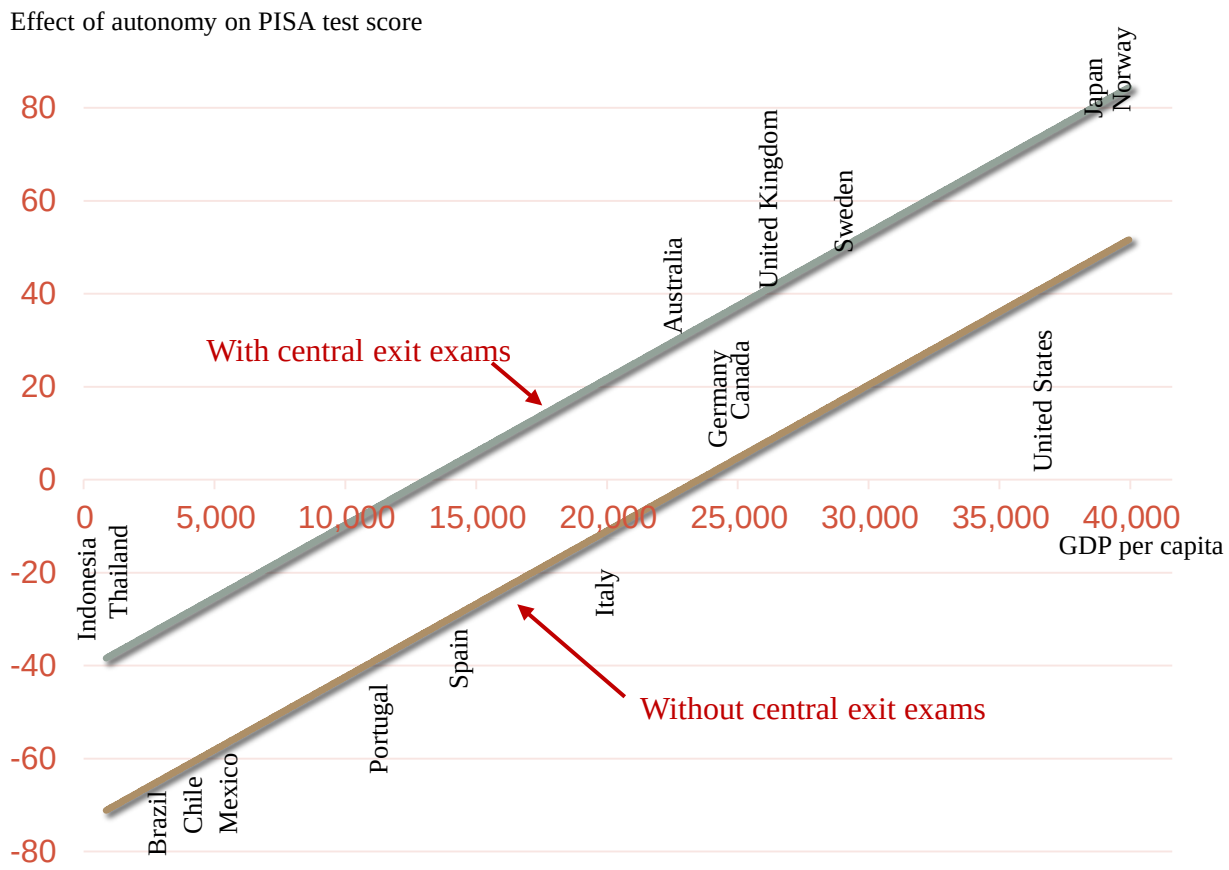
Institutions and incentives

- Accountability
- Autonomy
- Tracking

Local Decision Making (Autonomy)

- PISA panel
- Principal-agent

Autonomy Reforms by Level of Development

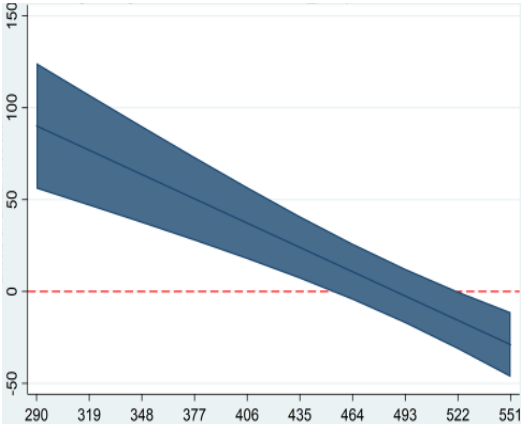


Hanushek, Eric A., Susanne Link, and Ludger Woessmann. 2013. "Does school autonomy make sense everywhere? Panel estimates from PISA." *Journal of Development Economics* 104: 212-232.

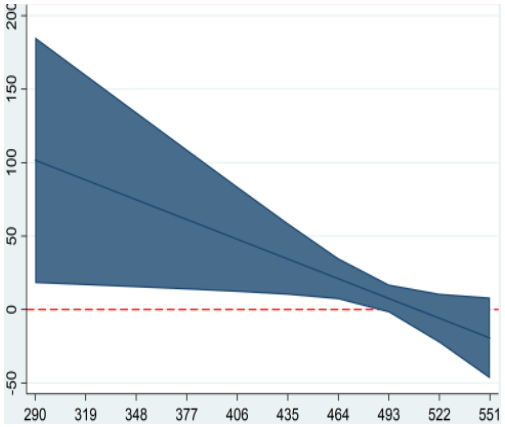
Testing and accountability

- PISA panel
- Alternative use of tests

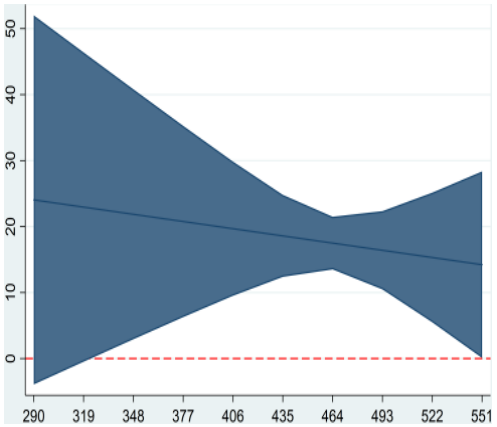
Effect of Alternative Uses of Tests



External comparison



Natl standardized exams



Tests for career decisions

Bergbauer, Annika B., Eric A. Hanushek, and Ludger Woessmann. in process. "The Differing Dimensions of Student Assessments: Accountability Reforms around the World." (in process).

Early Tracking

- Hanushek, Eric A., and Ludger Woessmann. 2006. "Does Educational Tracking Affect Performance and Inequality? Differences- in-Differences Evidence Across Countries." *Economic Journal* 116, no. 510: C63-C76.

Tracking and Inequality: *PIRLS and PISA 2003*

Change:

1.	Germany	0.71
2.	Greece	0.30
3.	Czech Rep.	0.25
4.	Italy	0.22
5.	Sweden	0.21
6.	Latvia	0.12
7.	Netherlands	0.11
8.	France	0.09
9.	Russian Fed.	0.08
10.	Hungary	0.04
11.	Iceland	-0.07
12.	Slovak Rep.	-0.08
13.	Hong Kong	-0.13
14.	Norway	-0.14
15.	United States	-0.27
16.	Canada	-0.32
17.	New Zealand	-0.50
18.	Turkey	-0.63

- **Early tracking**
- **No early tracking**

IMPLICATIONS FOR GENERALIZABILITY

Generalizability

- Very different markets for skills
- Heterogeneity of institutions
  - Teacher salaries widely different
  - Autonomy varies by GDP and accountability
  - Testing varies by performance level
  - Tracking varies by age of tracking

When do institutions and impacts transfer across countries?

Can Germany learn from U.S.?
Can the U.S. learn from India?
Can Kenya learn from India? Or from the U.S.?

THANK YOU!

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Returns to Skills in Alternative Subgroups