
The High Cost of Low Educational Performance

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Ludger Woessmann

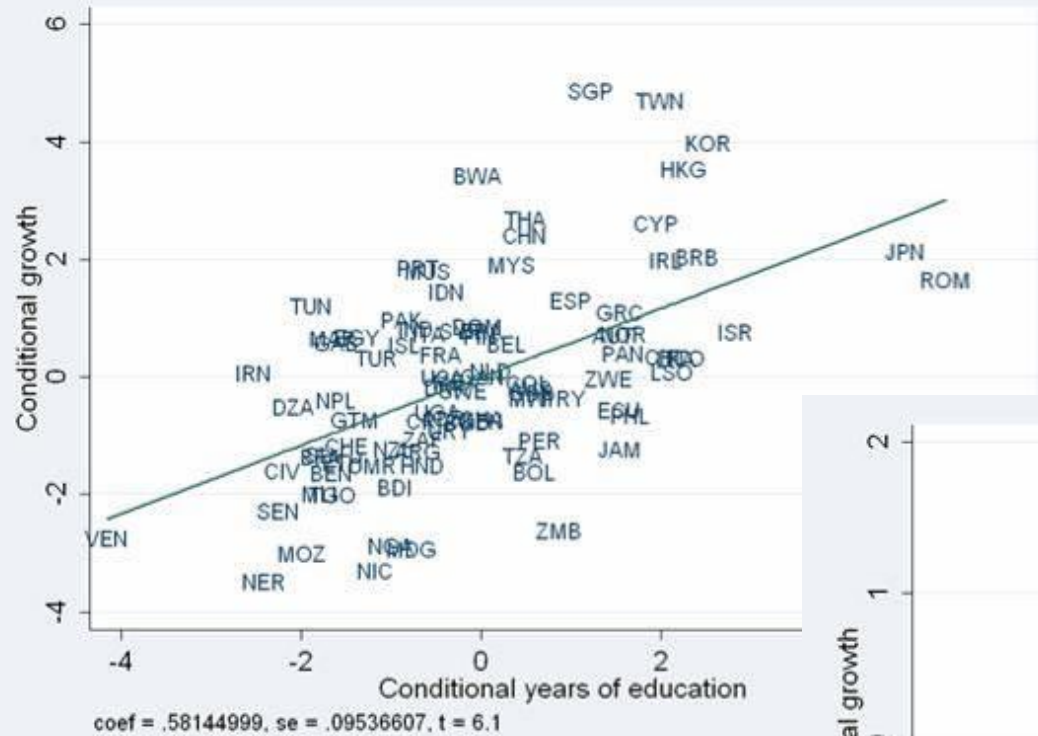
Key Questions

- Does it matter what students know?
 - How well is the United States doing?
 - What can be done to change things?
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Answers to Key Questions

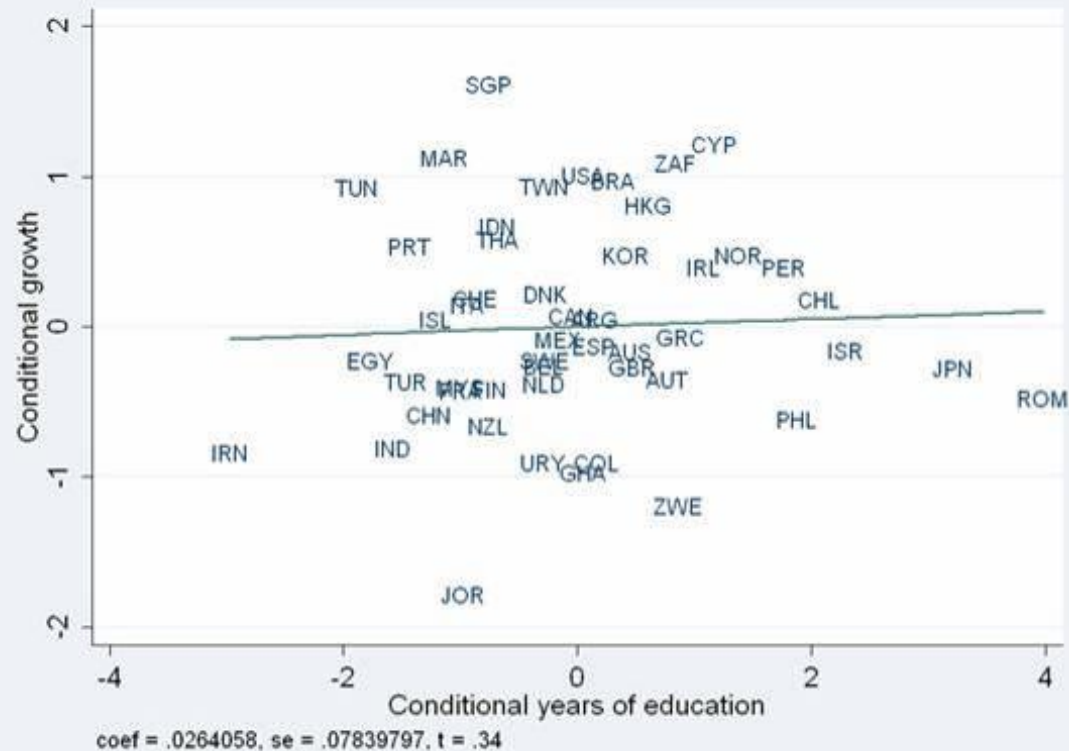
- **Yes.** It matters a lot how much students know.
 - **Not so well.** U.S. students are not competitive internationally.
 - **Improving teacher quality is key.**
 - Nothing about schools is as important as highly effective teachers.
 - Improving teacher quality meets with considerable resistance.
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Quantity of Schooling



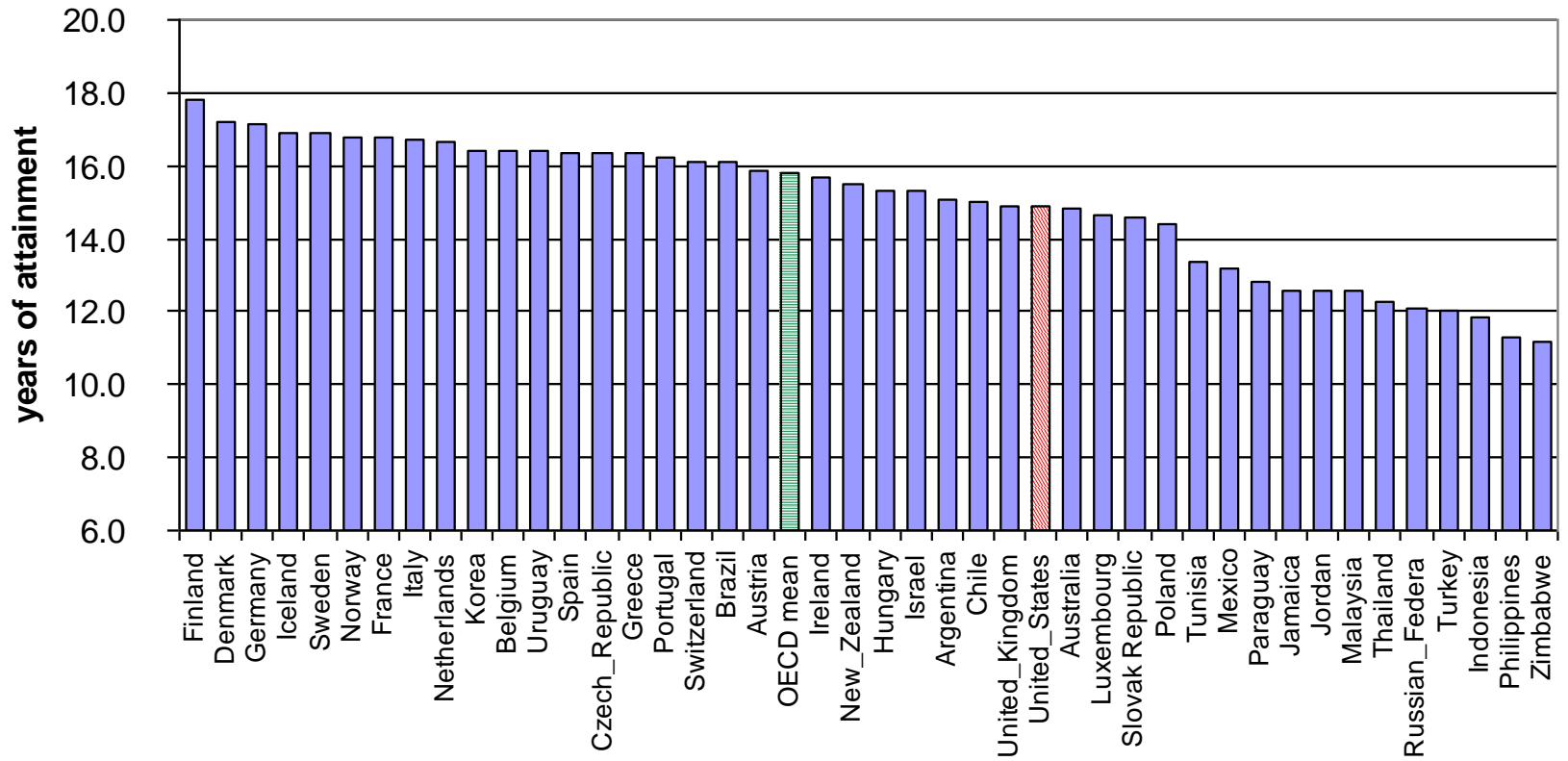
Without quality control

With quality control



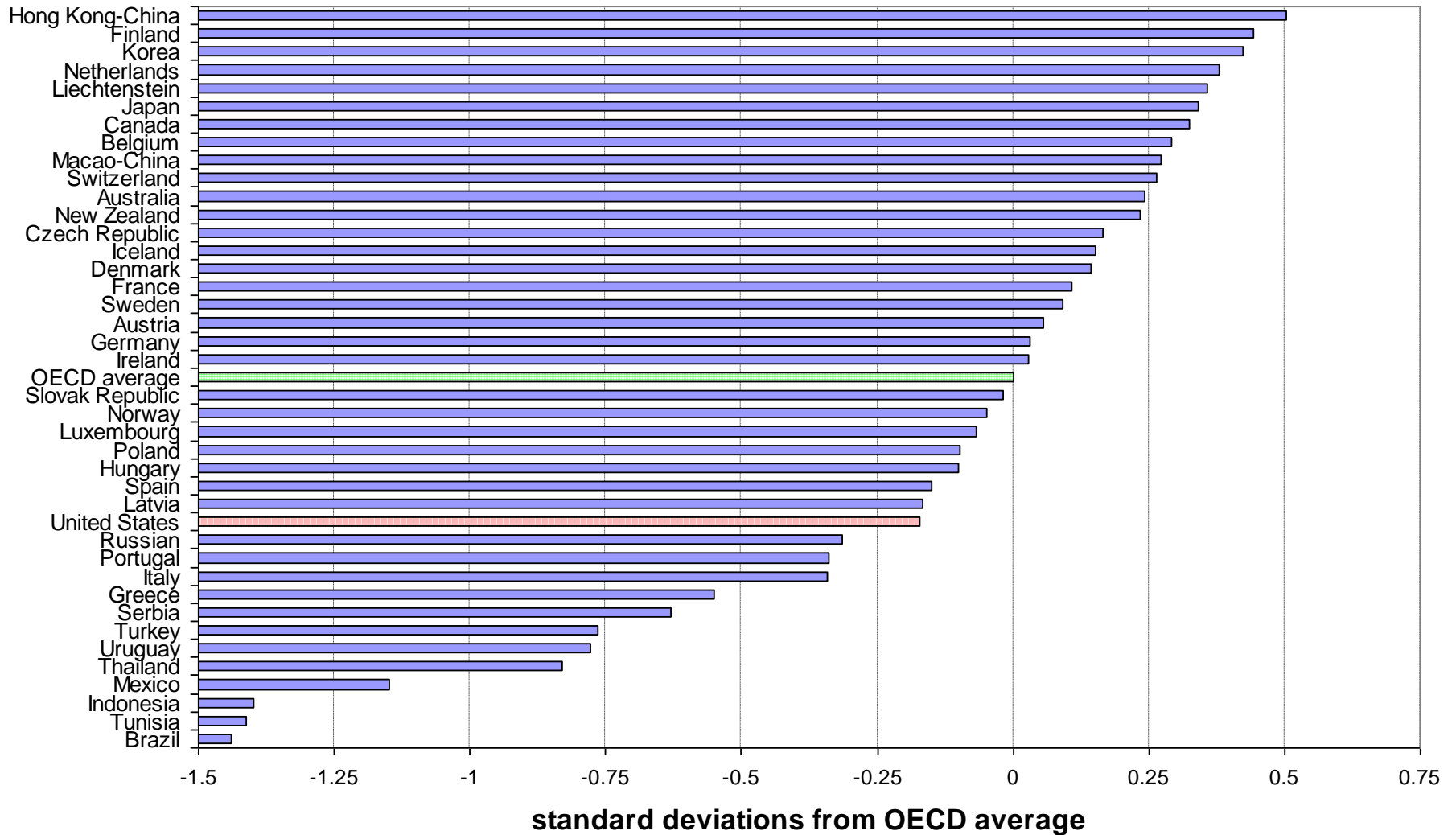
Expected Schooling, 2003

Even developing countries go farther!



Mathematics Performance on PISA, 2003

Our competitors also learn more each year of school!



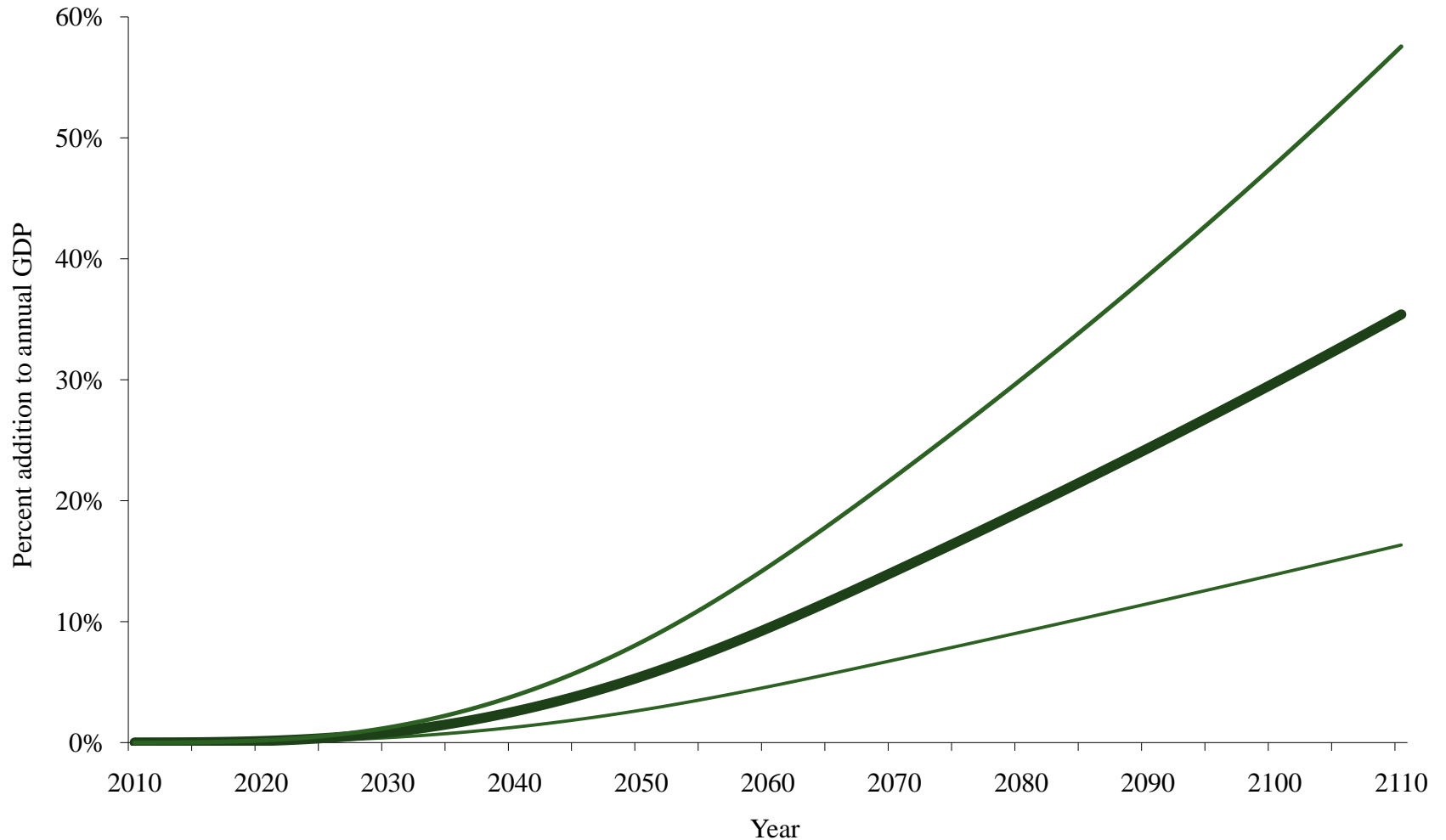
Simulations of Quality Improvement

- Growth follows same pattern as past four decades
 - Growth directly related to human capital of workers measured by international math and science tests
 - School reform takes time (assumed 20 years)
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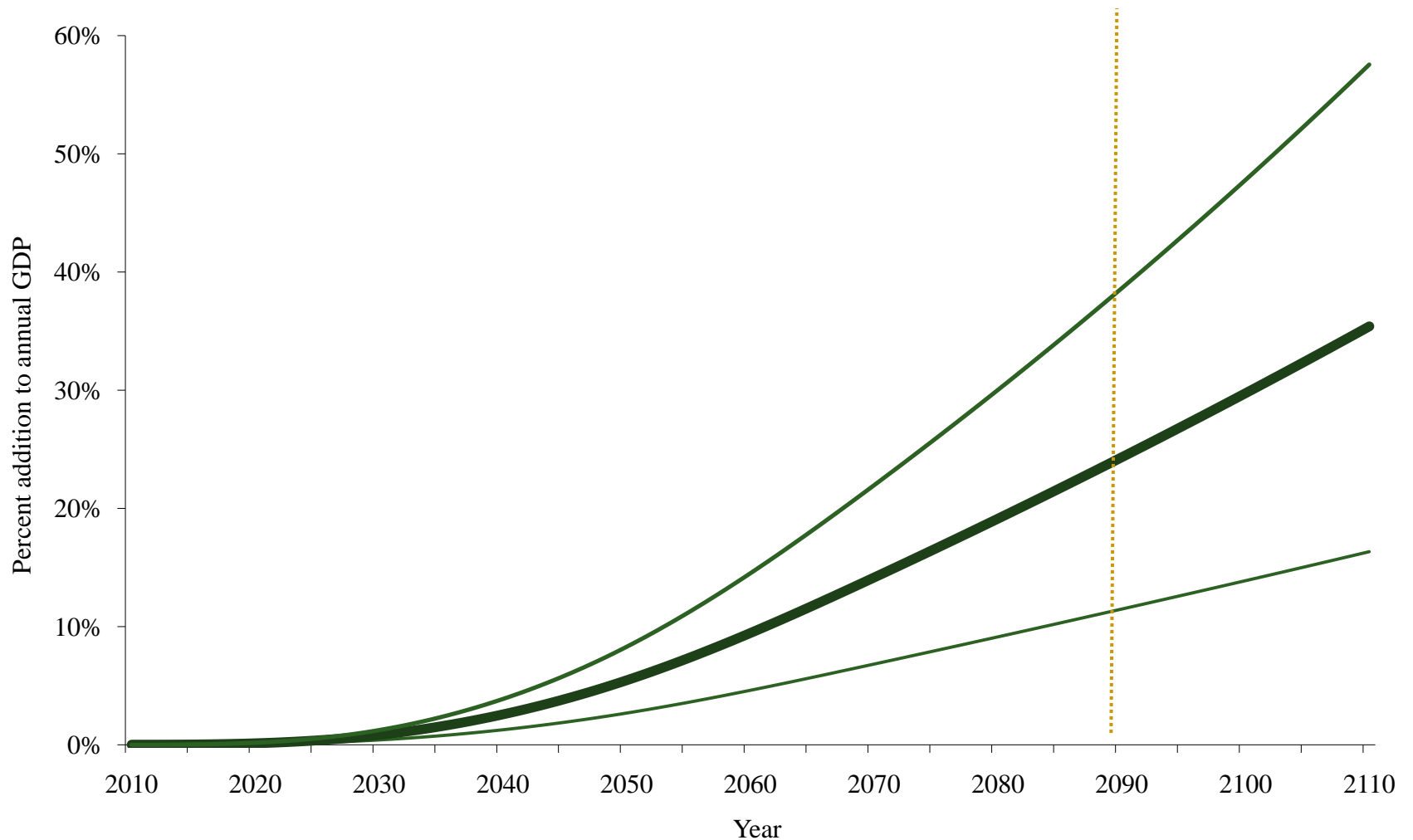
Calculating the Benefits of Reform

- Improved schools take time to impact average skills of workers (2.5% replaced each year)
 - Growth without improvement at 1.5%
 - Present value of reform bonus discounted at 3%
 - Calculated for lifetime of person born today
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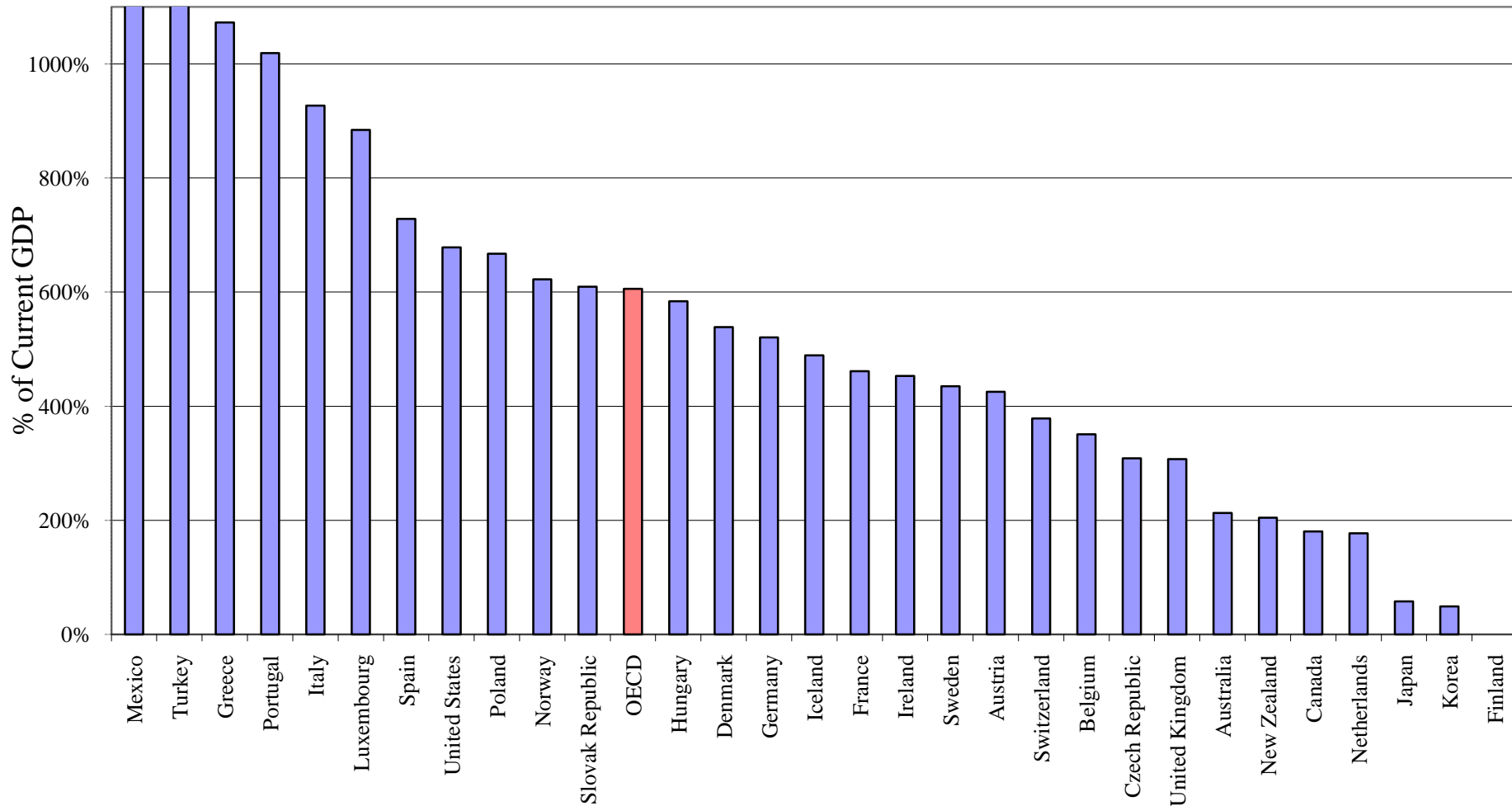
Annual Gains from 25 Point Improvement



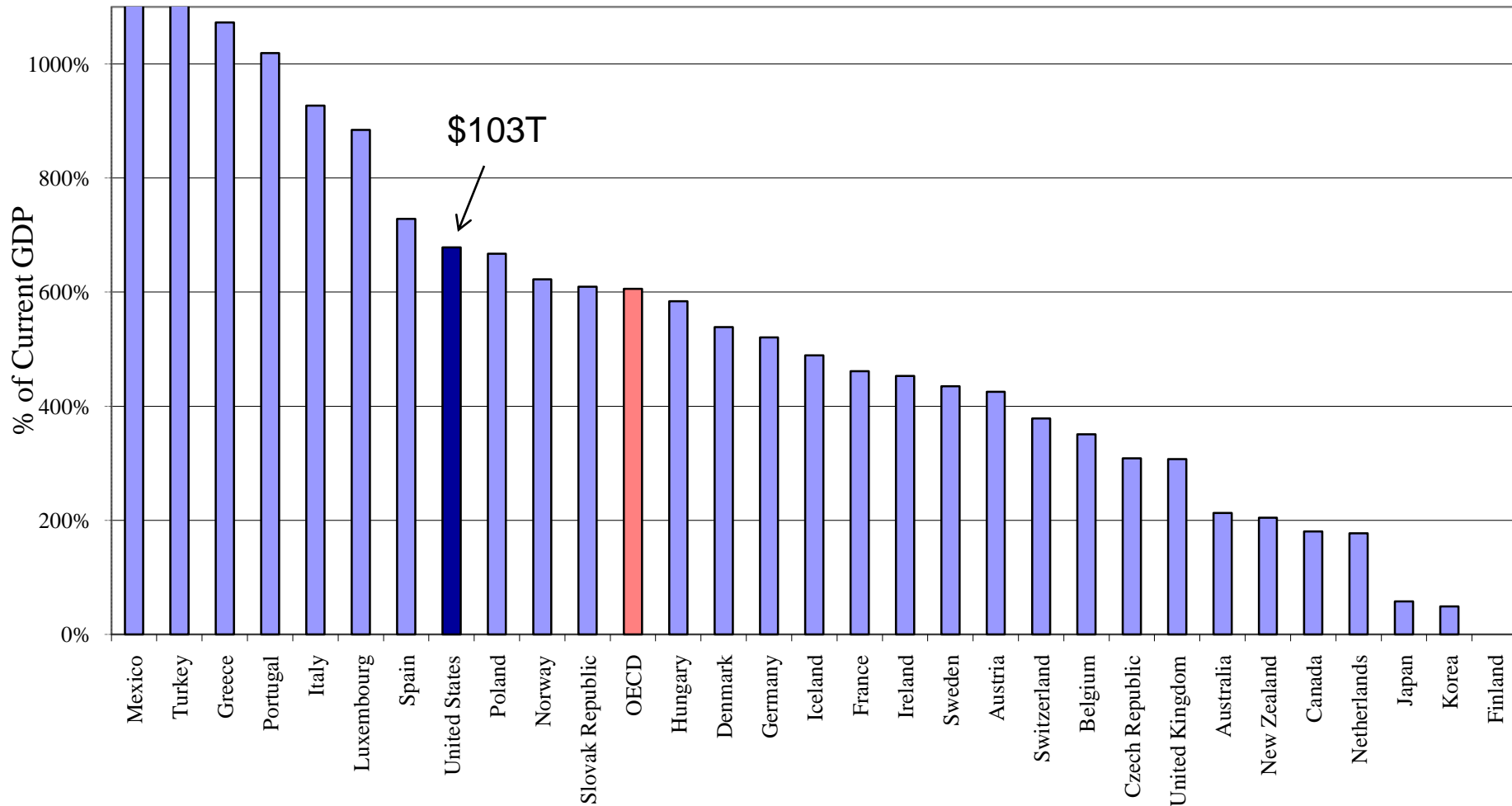
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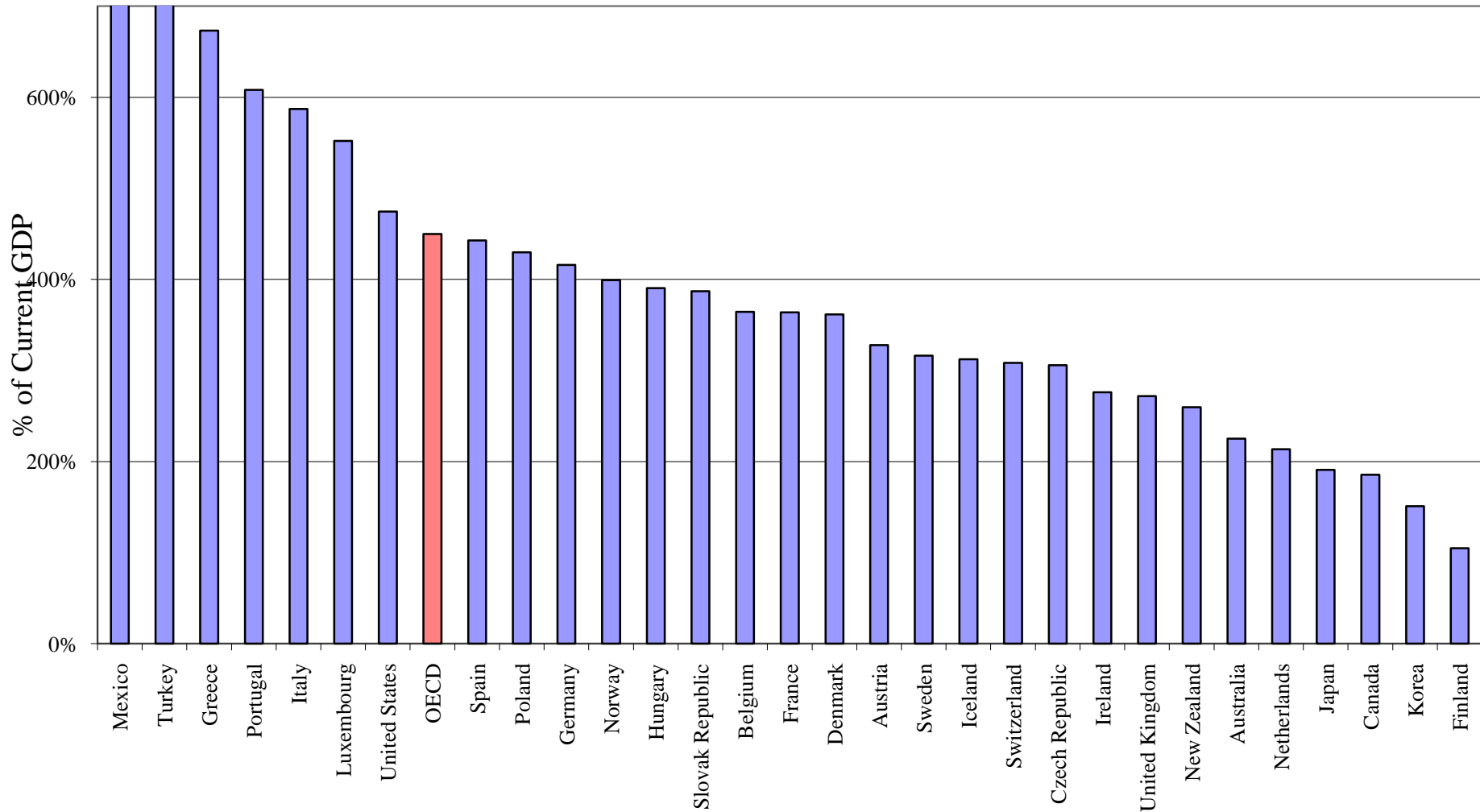
Catching Up to Finland



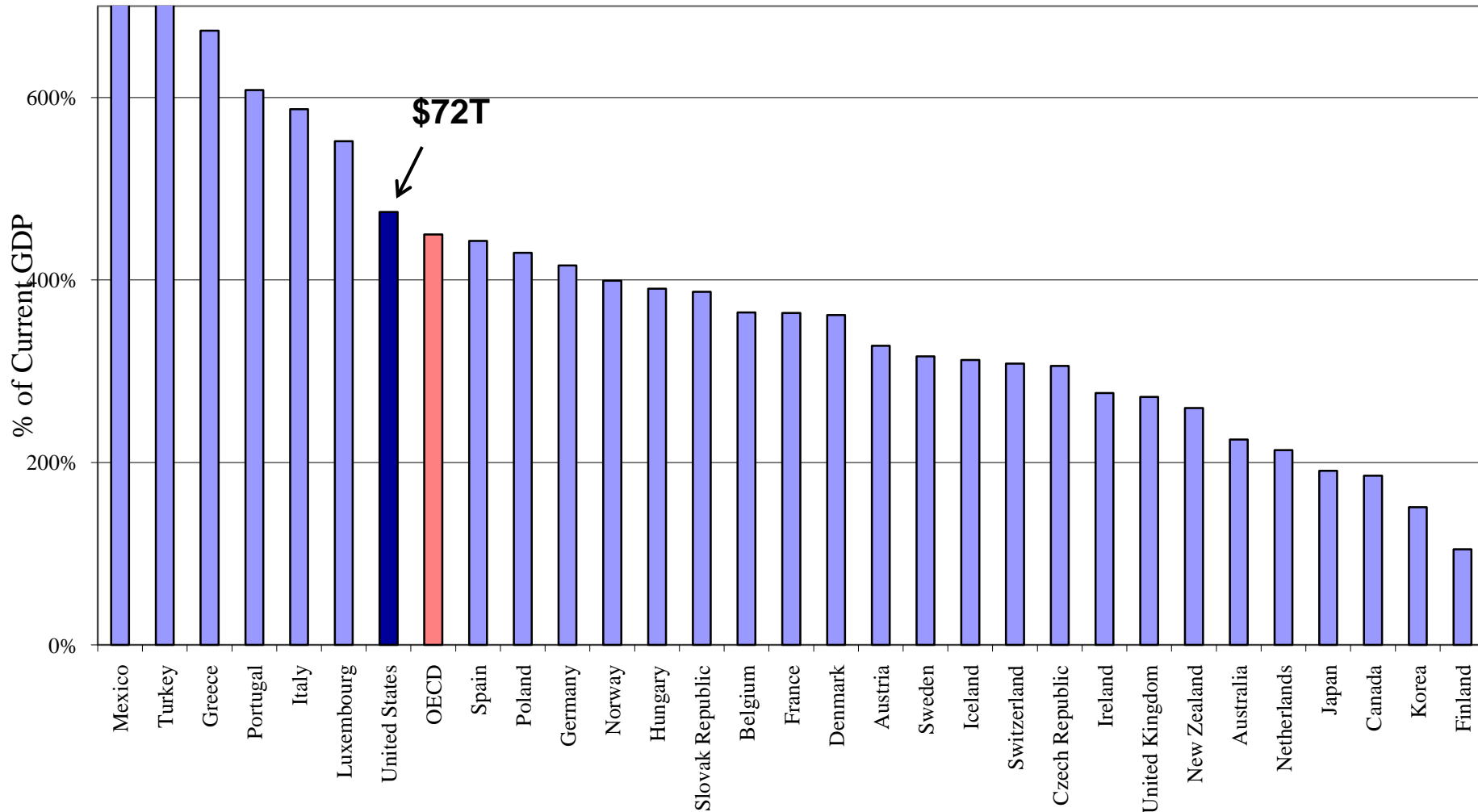
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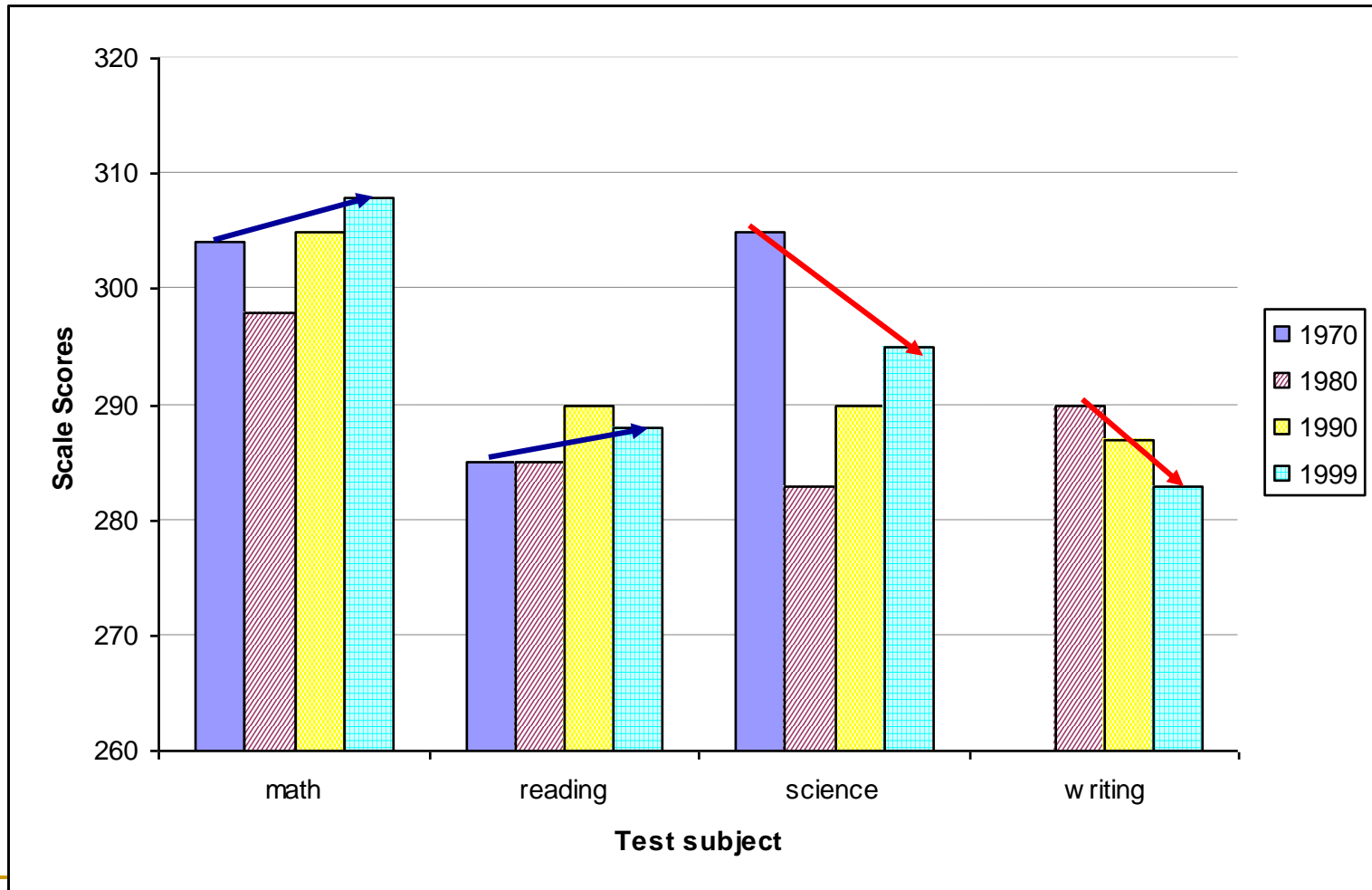
Bringing Up the Bottom



Bringing Up the Bottom



National Assessment of Educational Progress (NAEP), age 17

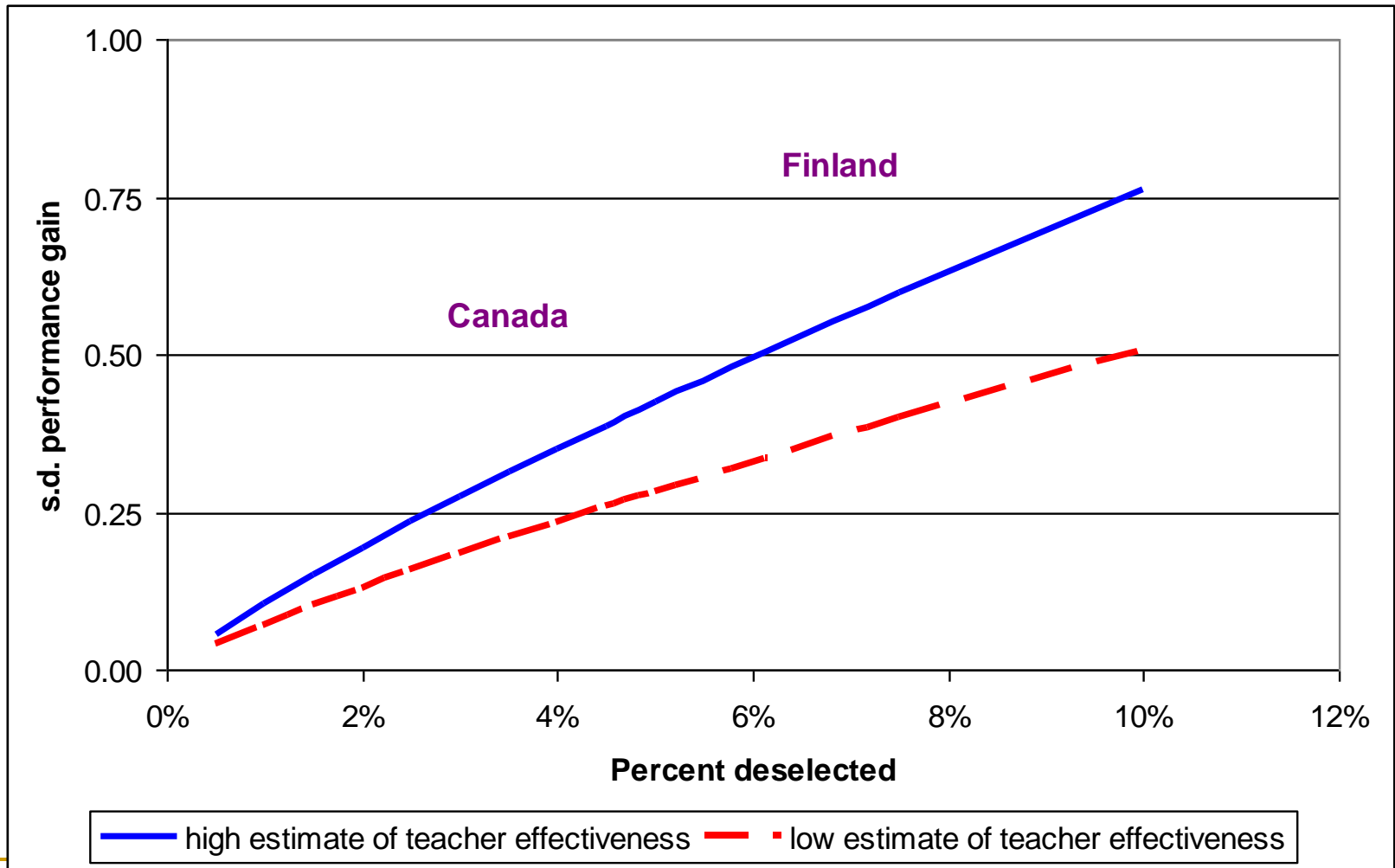


Public School Resources

1960-2000

	1960	1980	2000
Pupil-teacher ratio	25.8	18.7	16.0
Master's degree	23.5%	49.6%	56.8%
Experience	11	12	14
\$/pupil (2006 \$'s)	\$2,541	\$5,823	\$8,691

The Cost of Bad Teachers



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