Global Universal Basic Skills: Current State and Implications for World Development

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Motivation

- Primary development goal: all youth around the world achieve at least basic skills
- Immense importance for inclusive world development
- Limited country coverage of previous work

1. Constructing a Global Data Base

Universal Basic Skills
Fully achieving PISA Level 1 (420 points in math and 410 in science) → lowest of 6 performance levels in PISA

China and India

- Sub-territorial PISA participation
- **India**: Educational Initiative: Tamil Nadu scores 0.02 sd below the national mean → **shift the PISA distribution for Tamil Nadu to estimate the national distribution**
- **China**: Use the 2014 wave of the China Family Panel Studies (CFPS) to **re-center PISA scores**

Skill Level of Children who are not in School

36 % of the 15-year-olds are not in school ➞ how many of them are below basic skills?

- PISA-D out-of-school assessment 2018-2020
- PIAAC Data: Dropouts from upper secondary school

➞ **We assume out-of-school kids to be on the 25th percentile of each country on average** and add multiple sensitivity checks

2. The Economic Gains from Global Universal Basic Skills

Three Reform Scenarios

Scenario I
All children who are currently in school reach at least basic skills.

Scenario II

The average achievement of out-of-school children is lifted to the average achievement of in-school children in the respective country.

Scenario III
Full participation in secondary school with every student attaining at least the basic skill level.

name: model

Economic effects of this upskilling of the labor force

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GDP growth:

$$g_\tau = \gamma \bar{A_\tau}$$

where γ is the estimated impact of aggregated skills on growth rates and $\bar{A_\tau}$ are the skills of the workforce

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GDP for the reform simulation over the period S:

$$GDP_\tau = (1 + g_\tau) GDP_{reform}^{t-1}$$

Level of GDP without the reform grows at a constant rate of potential GDP, i.e., $g_\tau = p$

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The total value V of the reform

Parameters

Projection Results

Projection Results

Conclusion

Share of children not achieving basic skills

- At least 2/3 of the world's youth do not obtain basic skills.
- In high-income countries, 25 % of children lack basic skills.
- Skill deficits reach 94 % in Sub-Saharan Africa and 90 % in South Asia but also hit 70 % in Middle East and North Africa and 66 % in Latin America.

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Immense consequences for global economic development

- The world would gain over 700 trillion US dollars in added GDP over the remaining century if it were to reach global universal basic skills

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Need for an internationally standardized test

- Our analysis provides a first global picture of the distribution of skills around the world, but it comes with uncertainty.
- Half of the world's youth live in the 35 countries that fail to participate in international tests.
- It would be a great service to world development if an international development organization were to institute a regular, internationally standardized test of representative samples of students in all countries of the global South.

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Four Phases of Reform

Each cohort of new, higher achieving students is only a fraction of the total labour force

$$\Delta^t = g * \Delta TS * \frac{1}{40} * \frac{t - 2020}{15} + \Delta^{t-1}$$

with - $\Delta^t =$ additional growth in GDP per capita due to reform in year t - $g = 1.98\%$ of additional average annual growth for a one standard deviation increase in test scores - $\Delta TS =$ increase in average test score due to reform - 40 years working life - 15 years reform duration

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Sensitivity of simulation results: Alternative parameter choices

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class: hide-count name: rb_skill

Sensitivity of simulation results: Measurement error in skill estimates

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Sensitivity of simulation results: Lower and upper bound for China and India

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