The Quality of Education in Indonesia: Weighed, Measured, and Found Wanting

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Let’s start with a test

Think of a fraction that is smaller than $\frac{4}{9}$

How did 8th graders (*kelas 2 SMP)* perform?

- Singapore (top performer): 84% correct
- Korea and Japan: 81%
- Australia: 71%
- United States: 69%
- Malaysia: 43%
- South Africa: 30%
- Indonesia: 26%
- Ghana (bottom performer): 21%

Source: TIMSS 8th grade test

Should we be worried?

- Yes.
- Student performance in a standardised test is an indicator of school quality.
- Countries with high quality schools have higher economic growth (Hanushek & Woessmann, 08).
  - Most of the effect go through higher skills in the labour market.
  - The rest probably go through social benefits, like lower crime.
- With growth comes lower poverty, higher support for democracy, and a healthier population.

Outline

I. The quality of education in Indonesia
   - Measured using student performance in international mathematics, science, and reading assessments.

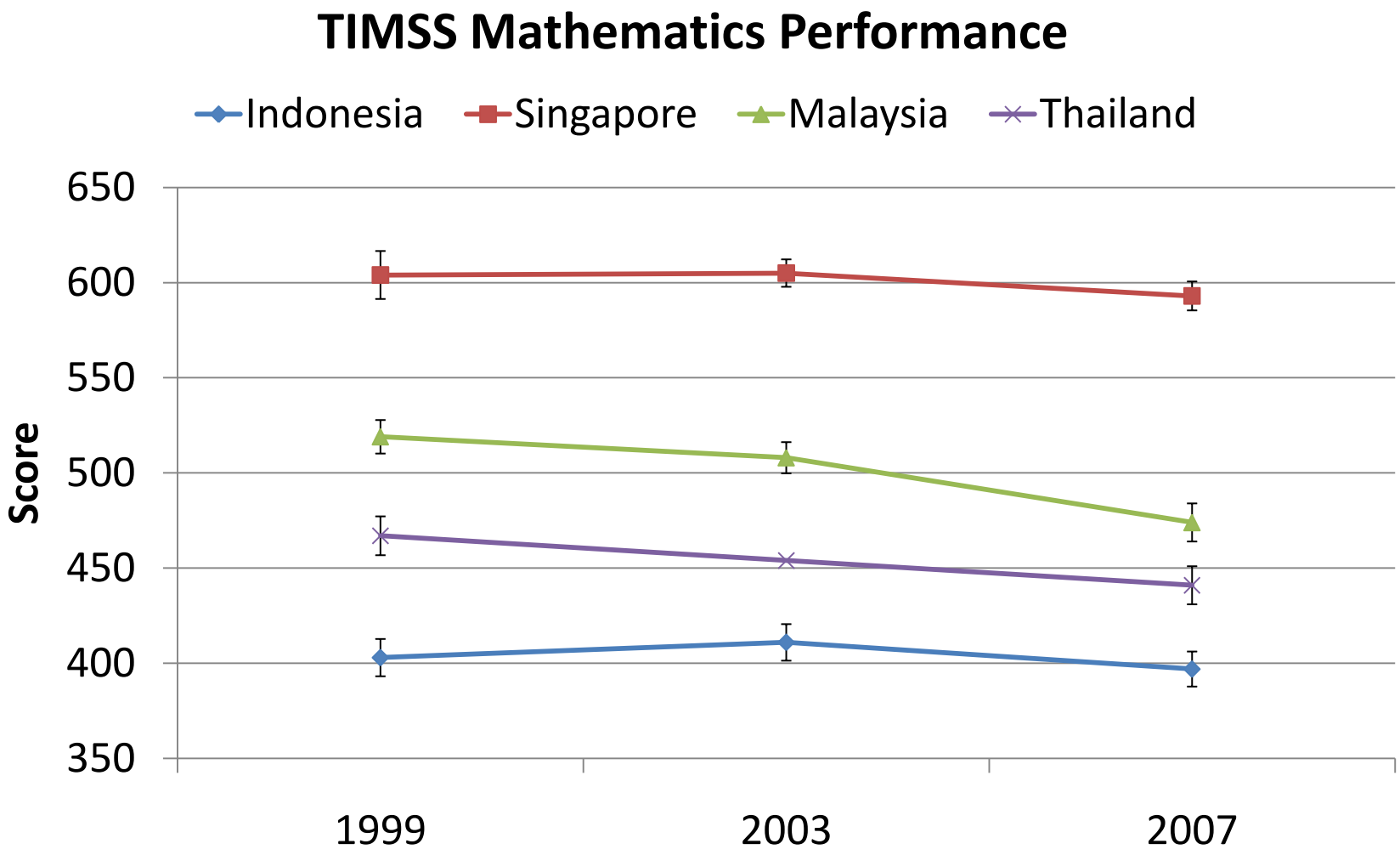
II. Some challenges
   - Curriculum
   - Teacher absence, distribution
   - Teacher qualification

III. Efforts to improve education quality

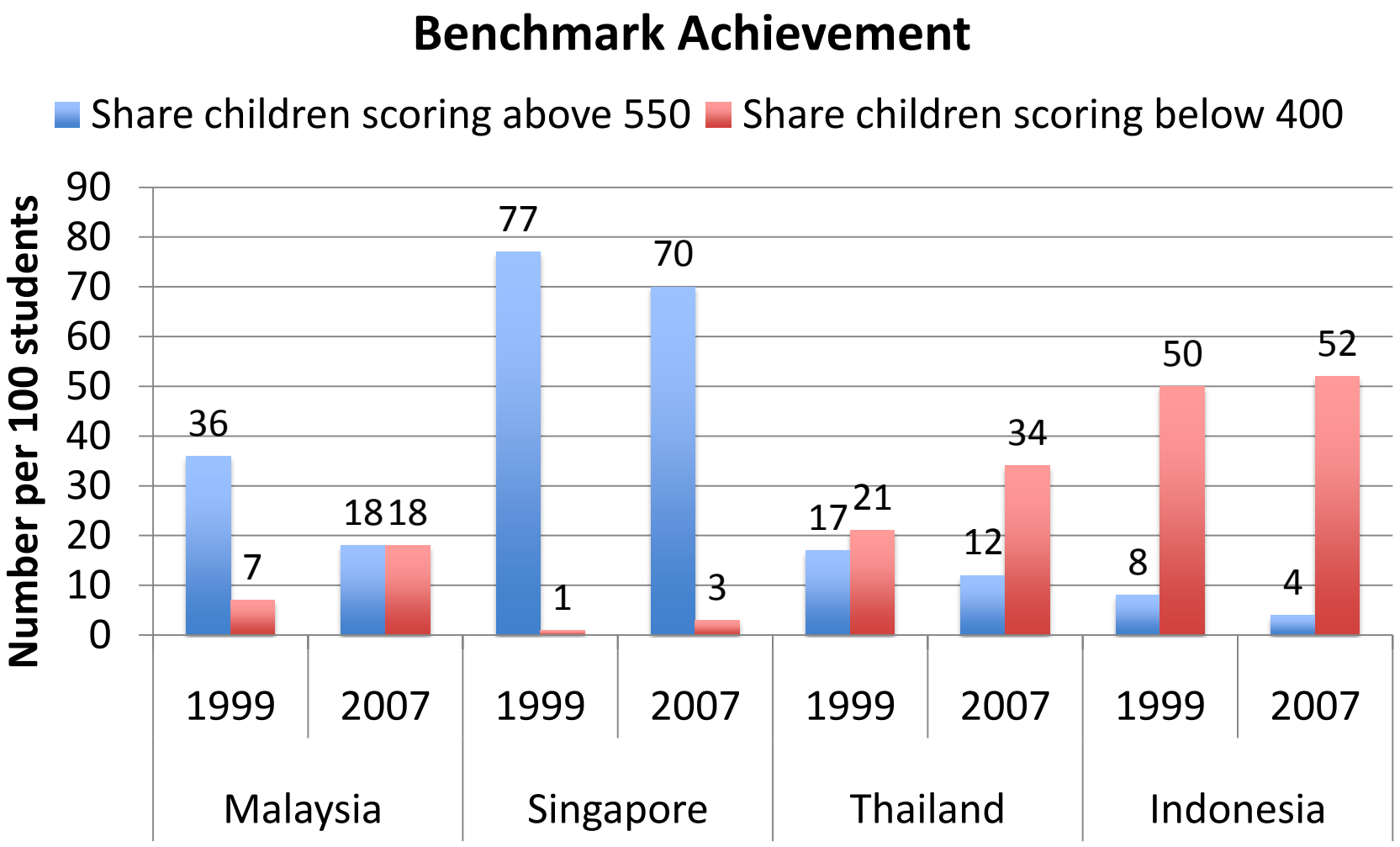
TIMSS 2007

- Also conducted in 1995, 1999, 2003.
- Tests mathematics and science aptitude of 4^{th} and 8^{th} grade students in 50 countries and 7 states in Spain, Canada, US, UAE.
- Indonesia participated since 1999, only 8^{th} grade.
  - In 2007, about 4000 students participated.
- Grading: mean 500, standard deviation 100.
- Benchmark scores:
  - 625 (Advanced): students can organise and draw conclusions from information, make generalizations, and solve non-routine problems.
  - 550 (High): students can apply their understanding and knowledge in a variety of relatively complex situations.
  - 400 (Low): students have some knowledge of whole numbers and decimals, operations, and basic graphs.

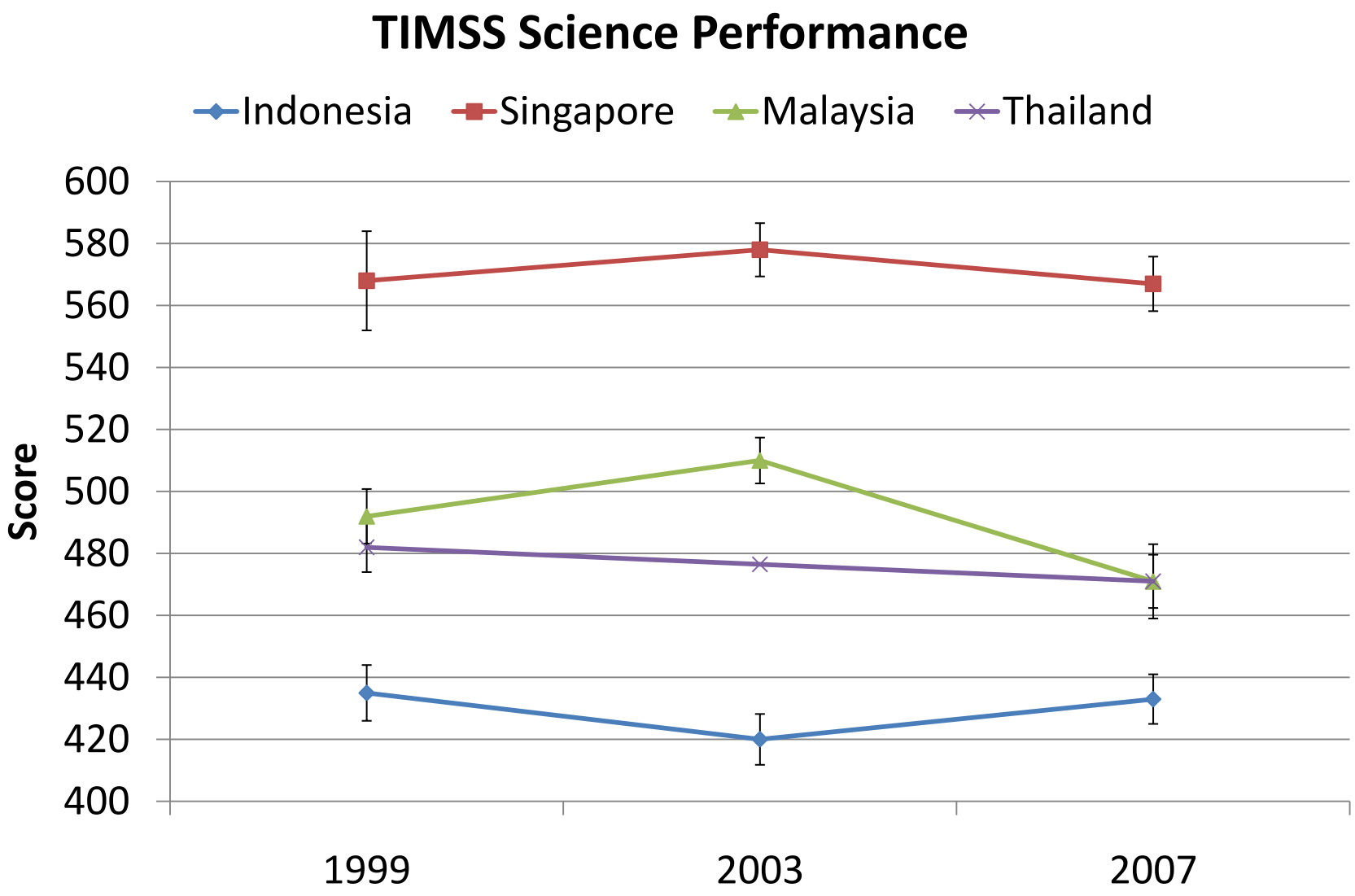
Indonesia's Mathematics Performance (1)



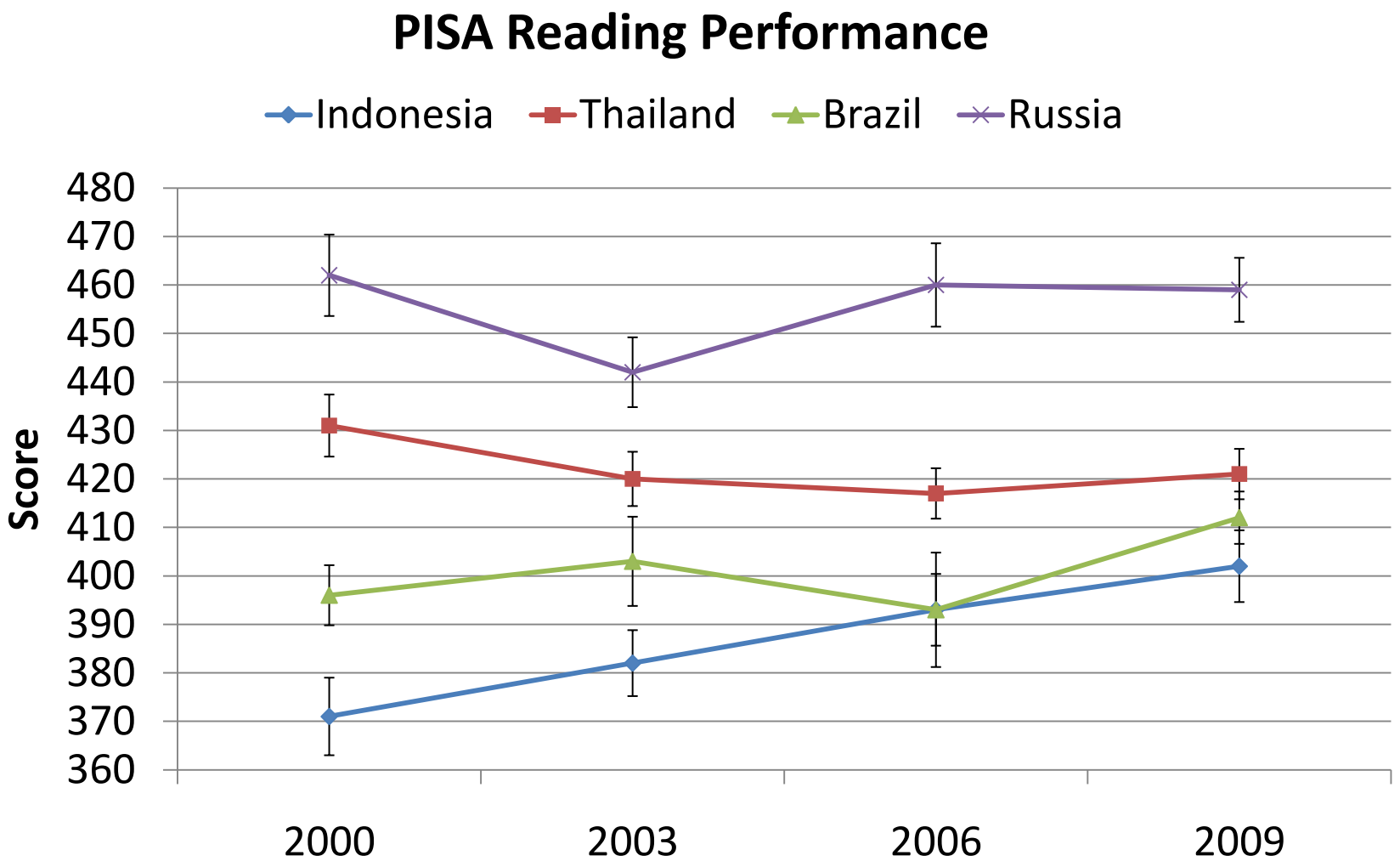
Indonesia's Mathematics Performance (2)



Indonesia's Science Performance



Indonesia's Reading Performance



Pritchett & Viarengo (08): “Economic Mundial” (1)

- We live in a globalised world, where a person competes with others around the world.
  - Football analogy: one can be a very good footballer in Indonesia, but he would likely be mediocre in England. So, you need to be competitive *globally*.
  - Message: It is important to know where you are in the world, not just in your own corner of the world.

Pritchett & Viarengo (08): “Economic Mundial” (2)

- A country’s competitiveness in the world does not depend on the average skills, but on the *number* of the *best* individuals.
  - Football analogy: a country with 11 average players would lose against a country with 6 very good players and 5 mediocre players. Note that the *average* skills of the two teams would be about the same.
  - Message: a country’s competitiveness directly depends on the *number* of superstars that the country can produce.

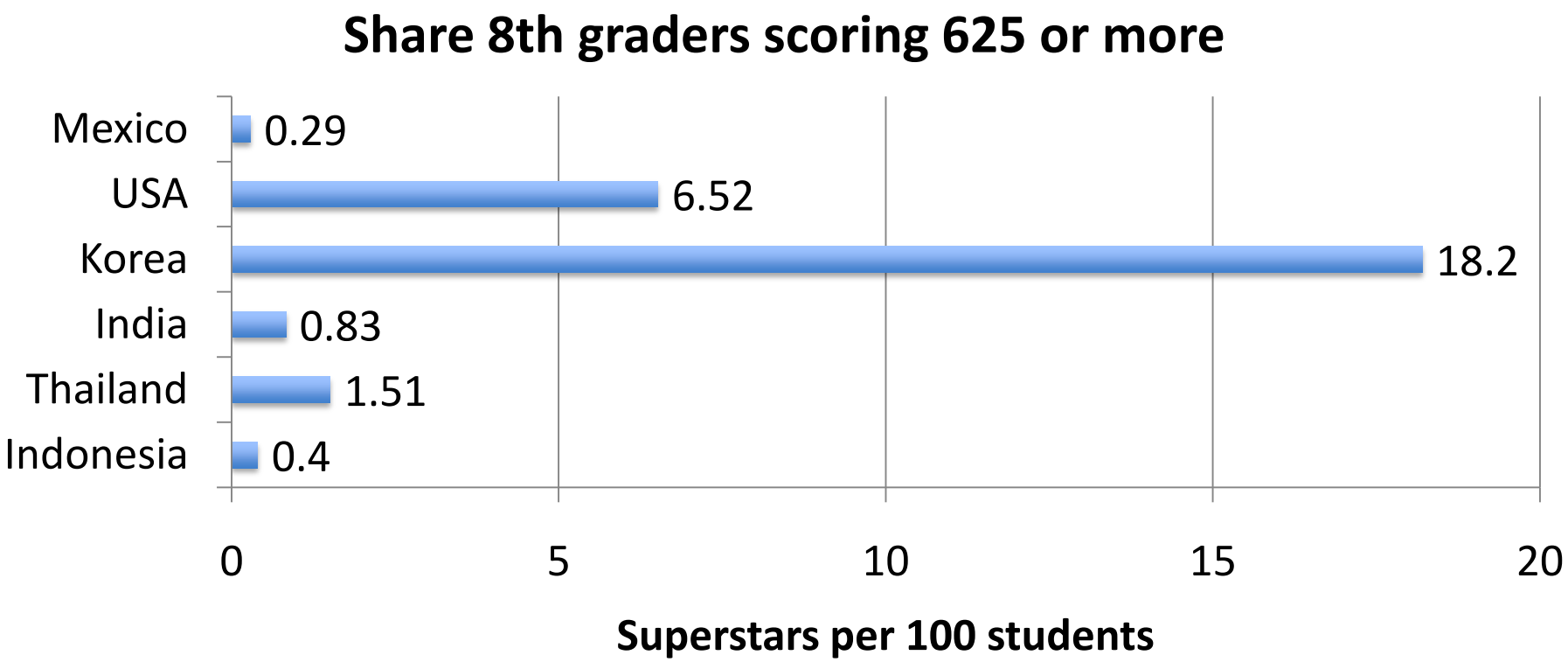
Pritchett & Viarengo (08): “Economic Mundial” (3)

- We don’t really think like that in education.
  - We care about those who fail the national examination.
  - We care about the average skills of the students.
  - We care about those who drop out of school.
- We should start worrying about the *number* of superstars that the education system produces.

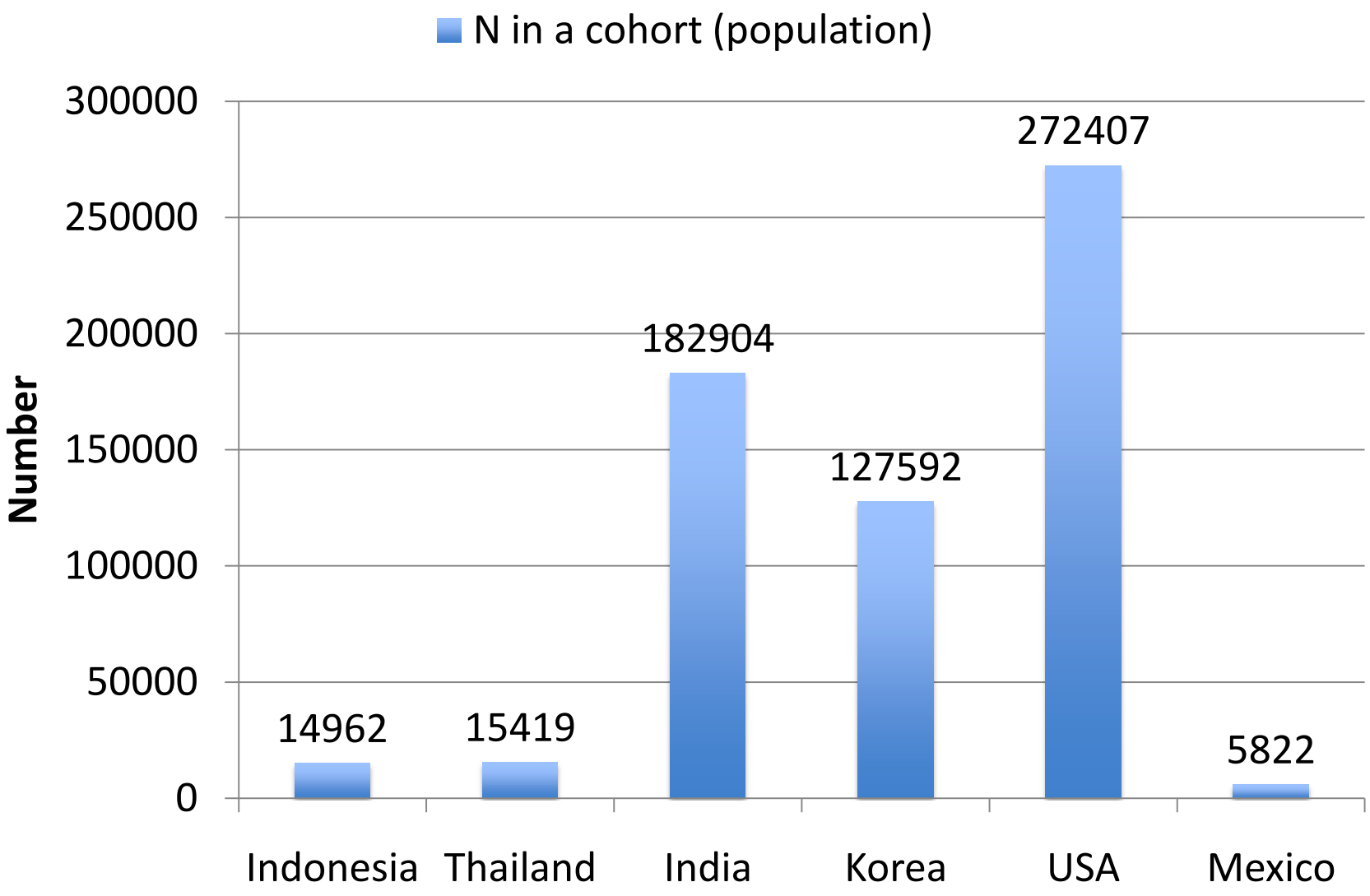
Superstar Production (1)

- How many superstars does the Indonesian education system produce?
  - TIMSS 2007 Math: the upper bound of the share of Indonesian 8th graders who scored 625 or higher is 0.4%.
  - From Susenas 2007: the number of students in 8th grade is 3.7 million students.
  - So, Indonesia produces less than 15 thousand superstars per cohort.

Superstar Production (2)

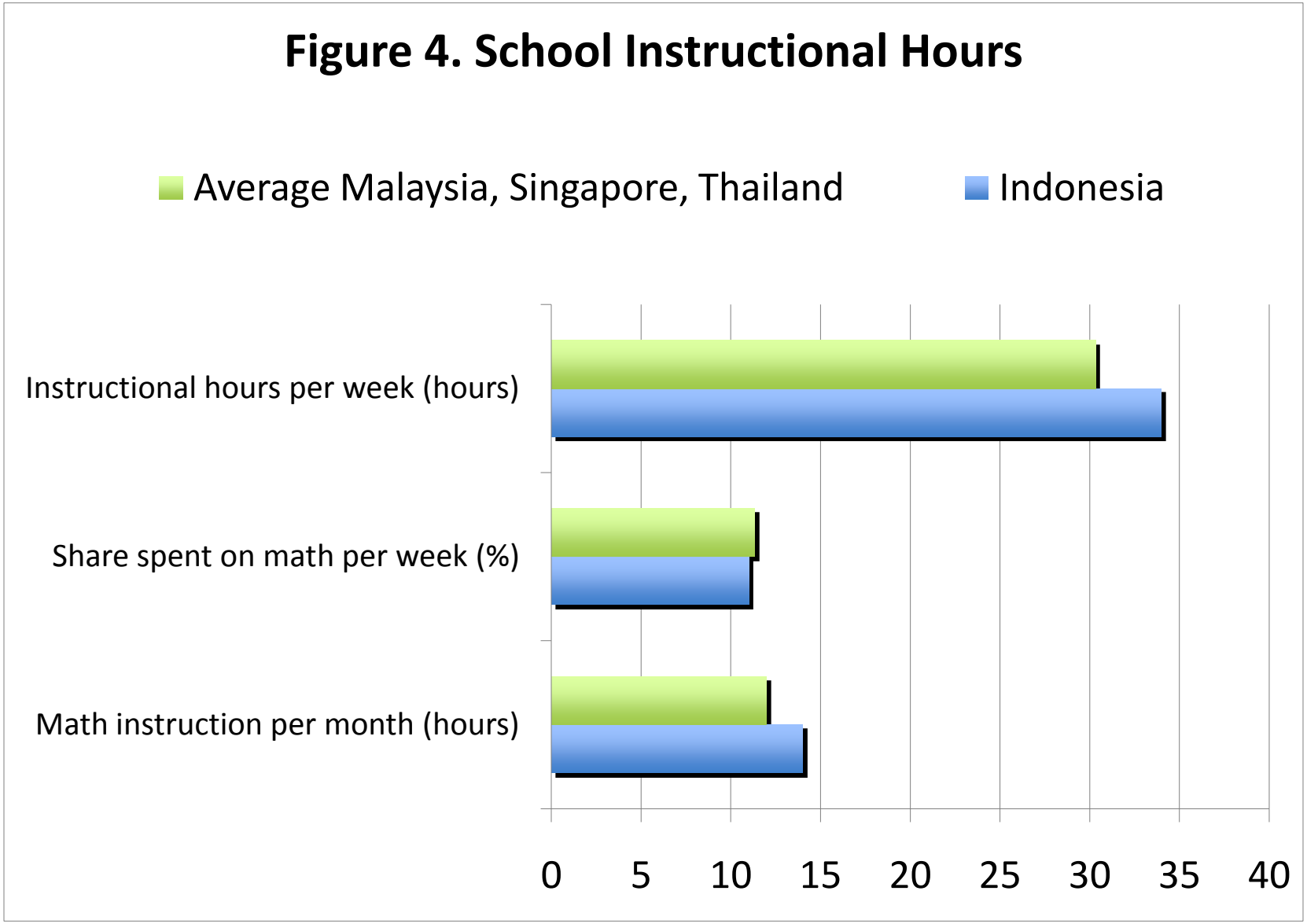


Superstar Production (3)

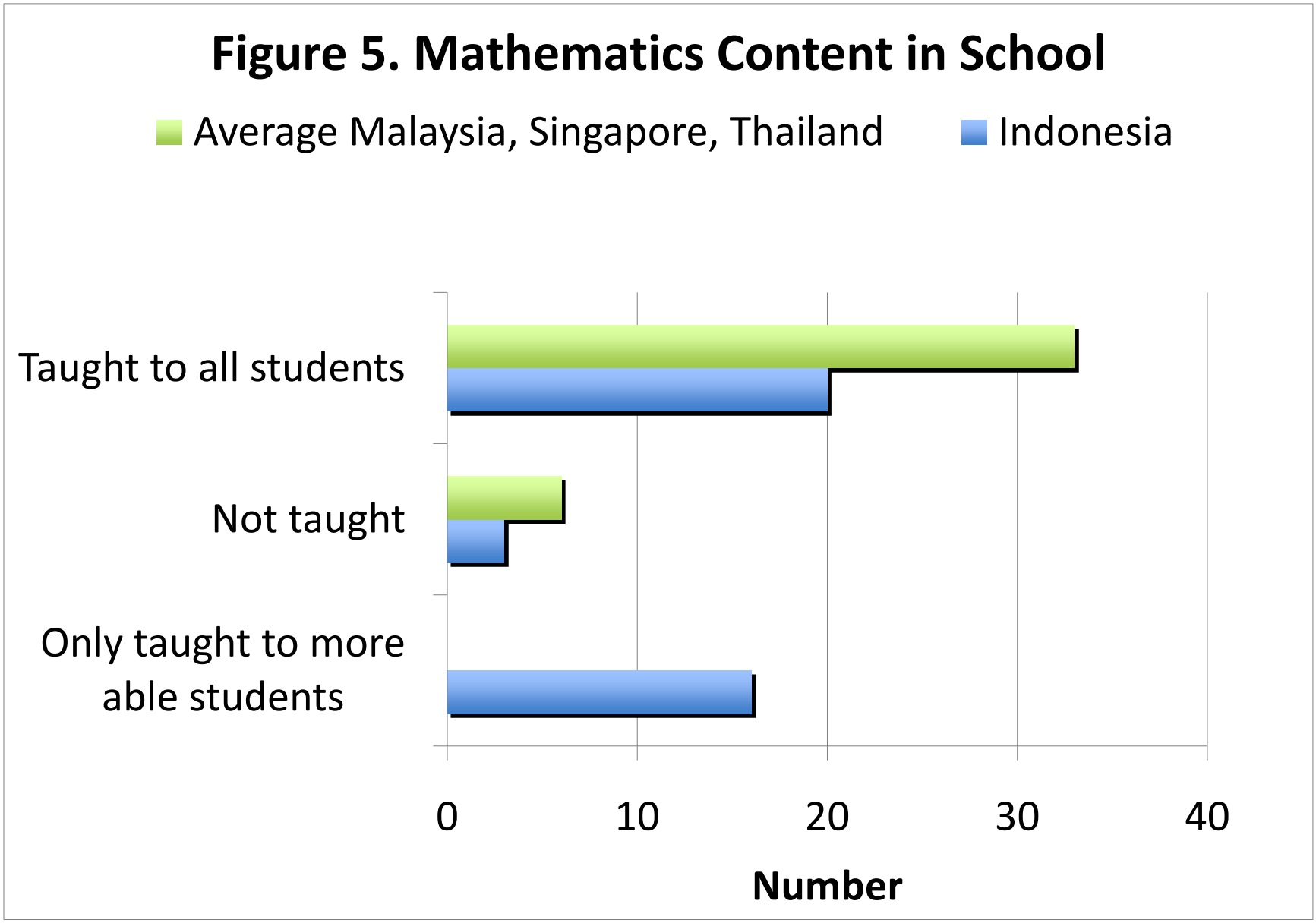


Some Factors that Affect School Quality

Curriculum: Instructional Hours and Content (1)



Curriculum: Instructional Hours and Content (2)



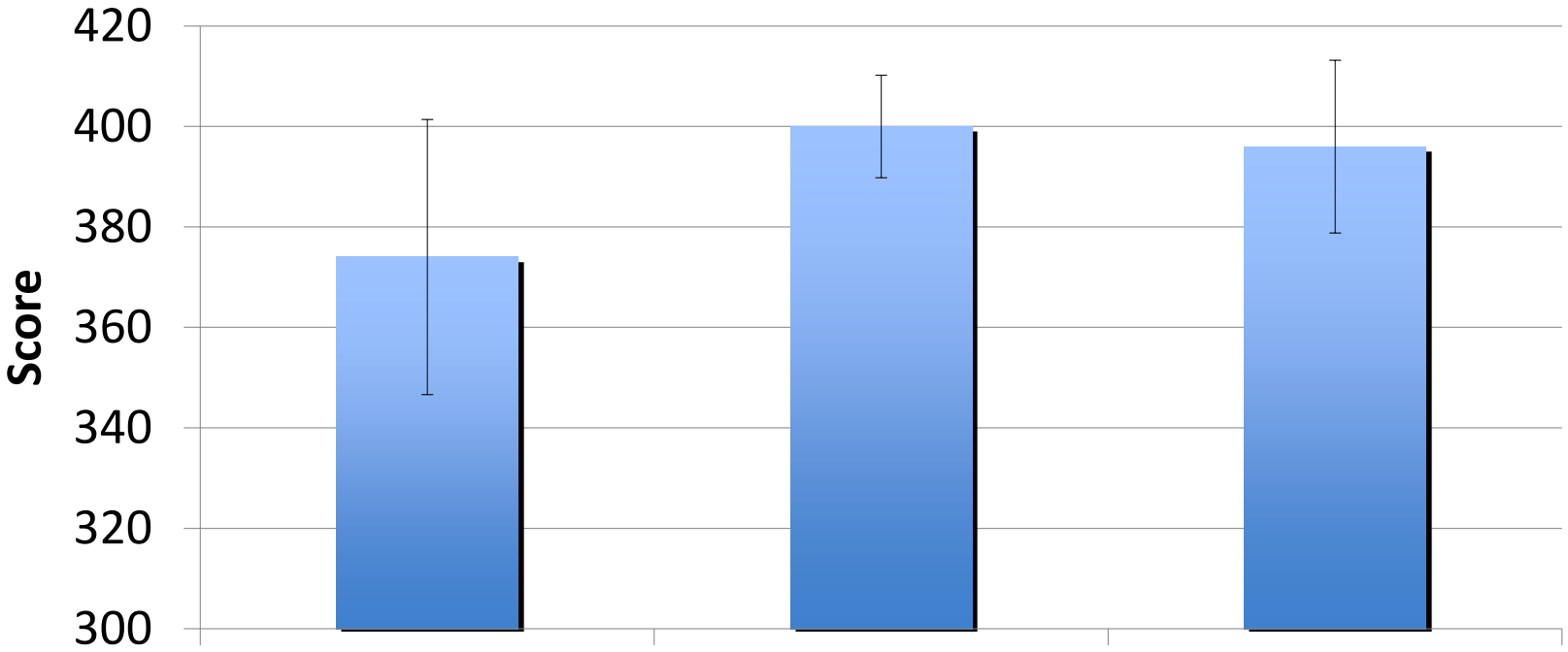
Teacher Absence

- 19% (SMERU's studies)
  - Excludes anticipated absences.
  - Higher than Bangladesh, Ecuador, Peru.
  - Unchanged between 2003 and 2008.
- Suryadarma et al (06): Teacher absence has a significant and negative relationship with mathematics performance.

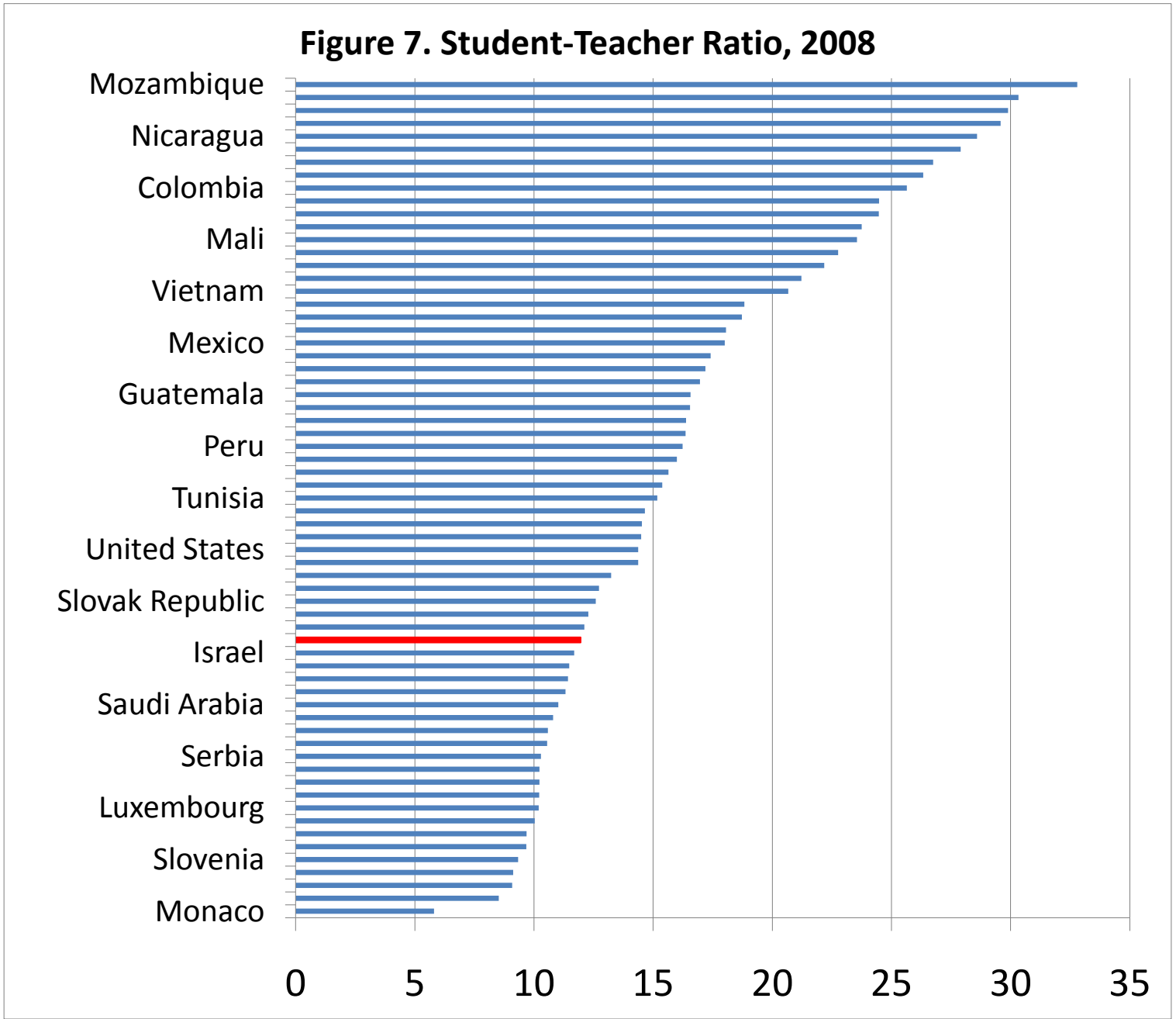
Class Size and Teacher Distribution (1)

- Suryadarma et al (06): The ideal class size for primary schools in Indonesia is 25.

Figure 8. Class Size and TIMSS 2007 Score, Indonesia



Class Size and Teacher Distribution (2)



Class size and teacher distribution (3)

- The issue in Indonesia is not class size/student-teacher ratio.
- It is an imbalance in teacher distribution.
  - Related to teacher absence.
- del Granado et al (07)
  - Urban areas: 68% of schools have too many teachers; 21% have too few.
  - Remote areas: 17% of school have too many teachers; 66% of schools have too few.
- However, Indonesia needs more *qualified* teachers.
  - 75% of SMP teachers have an S1.
  - Malaysia: 82%; Thailand: 99%; Singapore: 95%.
  - Education attainment is only a rough indicator of quality.

Efforts for Improvement

Interventions around the world

- Recap
  - In 2007, Indonesia was 80 points behind Malaysia; 200 points behind Singapore in mathematics.
- There is no panacea for improving education quality.
- Various interventions and their impact (from Wai-Poi, 2009; Pradhan et al, 2011).

Intervention	Country	Effect (points)
Improving community participation	Indonesia	17 - 22
Merit-based scholarships	Kenya	12
Teacher performance pay	Kenya	14 - 34
Teacher performance pay	India	12 - 19
Camera-based monitoring	India	17 - 21
Class-size reduction	Israel	10 - 50

Current efforts in Indonesia (1)

- Central Government's efforts:
  - Teacher certification.
  - Teacher professional development.
  - To my knowledge, there is yet to be a quantitative impact evaluation on these efforts.
- Not much is known on local governments' efforts.

Current efforts in Indonesia (2)

- Private sector efforts:
  - Some interesting ideas:
    - Abolishing education streaming in senior secondary schools.
    - Boarding school model.
    - Indonesia Mengajar.
    - Improving the quality of teacher education institutions.
  - Lessons from successful endeavors:
    - International-standard education is expensive.
    - Risk of failure remains high.
  - Most have no rigorous impact evaluation either.

Summary (1)

- On average, school quality in Indonesia is low compared to its neighbours and other comparable countries.
  - The skills gap between Indonesia and its neighbours is staggering.
  - Most education interventions do not have large enough effects to bring Indonesia to parity.
- Superstar production is also low in Indonesia.
- Helping only the low performers is insufficient for Indonesia to be globally competitive.
- Highly talented individuals must also be nurtured.

Summary (2)

- Have we focused too much on piecemeal approaches?
  - We need many groundbreaking ideas that are tailored to the Indonesian culture.
  - We need the freedom to test these ideas in the field (subject to passing ethical standards.
  - Some ideas (from Finland):
    - matching students with the same teachers throughout SD.
    - Rather than 3 classes of 12 students each, what about a class of 36 students with 3 teachers?
- Every education intervention needs to be rigorously evaluated.
  - To identify ideas that really work.
  - The evaluation framework should be designed from the ground up.
- In 2015, the ASEAN Economic Community will begin.
  - Free movement of goods and capital.
  - And labour.