Education Quality across Indonesia's Districts

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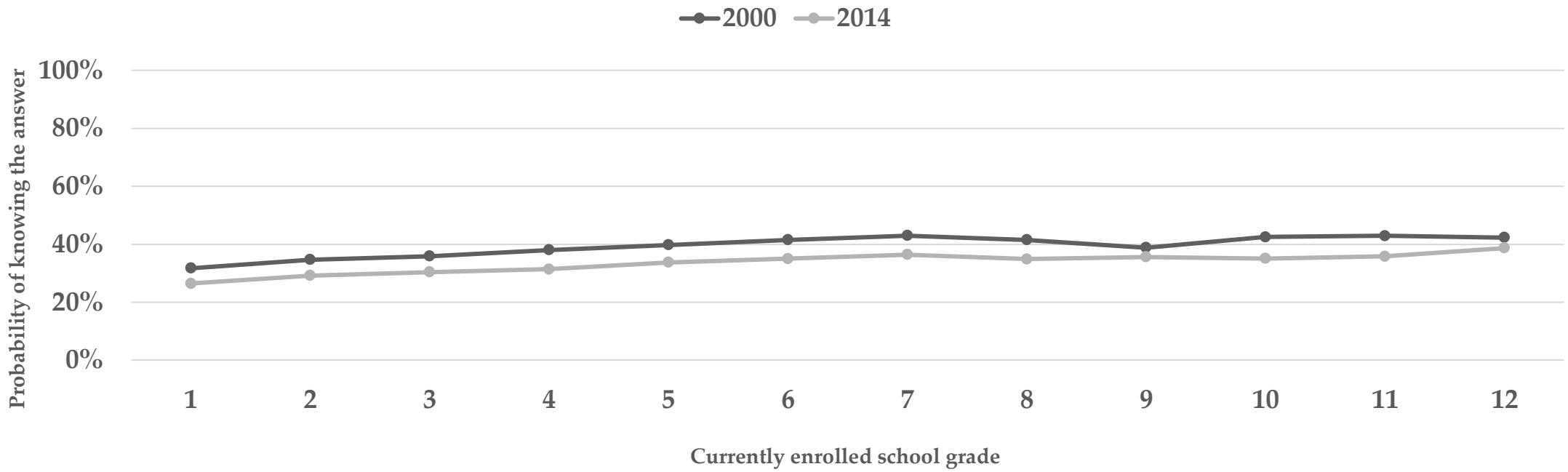
Outline

1. Estimating education quality at the district level
2. Education quality across Indonesia

Indonesian learning profile is **flat** and **low** (Beatty et al, 2021) but we have no information on how is it distributed across districts.

Since mid-2000s, the government has increasingly shifted its attention to improving the quality of education. However, to improve the quality, we need the information of the current education performance.

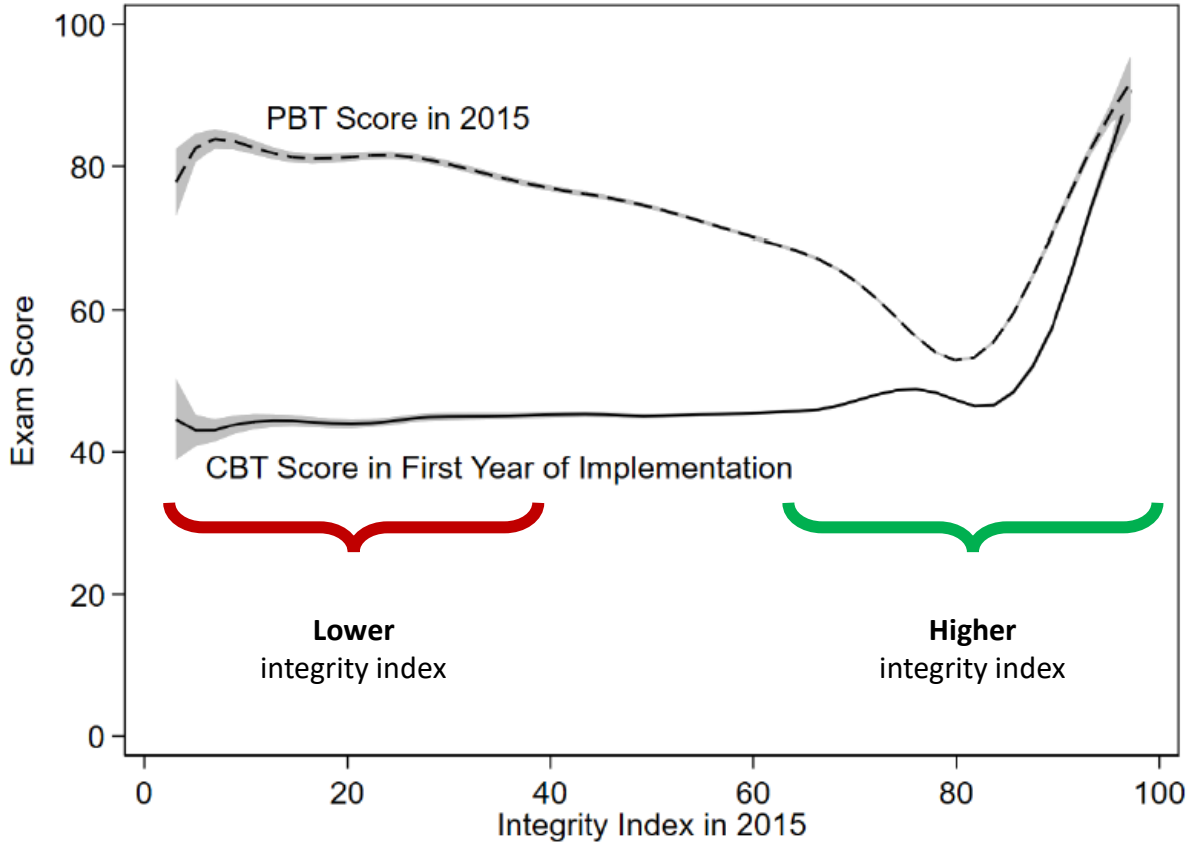


Part 1: Estimating education quality

A major problem in the effort to increase learning outcomes: Indonesia has no reliable disaggregated measure of learning outcomes

- The **primary school** exit examination in grade 6 is not nationally comparable.
- The **national examinations** in grades 9 and 12 are **rife with cheating** (Berkhout et al., 2020).
- The **international tests** are only representative at the national level.
- The **IFLS** is not representative at the provincial level.
- In 2016, MoEC implemented a pilot **provincial representative survey** in 4th grade. First time a reasonably accurate picture of regional learning heterogeneity exists. But it still hides a large heterogeneity within provinces.
  - Result: East Java, Yogyakarta, North Sumatera perform better than Central and North Sulawesi, Eastern Indonesia.
- In 2018, Indonesia oversampled Jakarta and Yogyakarta in **PISA**.
  - Result: Jakarta & Yogyakarta perform on par with Malaysia, Thailand, Brunei. Meaning that the rest of the country may be left far behind.

We use an exogenous policy change (CBT adoption for the national examination) to estimate learning heterogeneity by districts.



Note: The lines represent smoothed results of a local polynomial regression. The figure includes 34,783 out of 39,379 treatment schools for which the 2015 integrity index is non-missing. The CBT score polynomial regression result combines the exam scores of all treatment schools in the first year of CBT implementation, which is between 2016 and 2019. 95% confidence interval in grey.

Switching to CBT caused a significant decline in national examination scores for schools that switched. The decline is larger in schools with a higher likelihood of cheating (lower integrity index).

Source: Berkhout et al. (2020)

Estimation Strategy: *Correcting the national examination performance for cheating in schools that still implement paper-based testing.*

The CBT caused a large correction in exam scores. The correction is larger for schools with integrity below 70. We use this to correct exam scores for schools that still conduct paper-based testing.

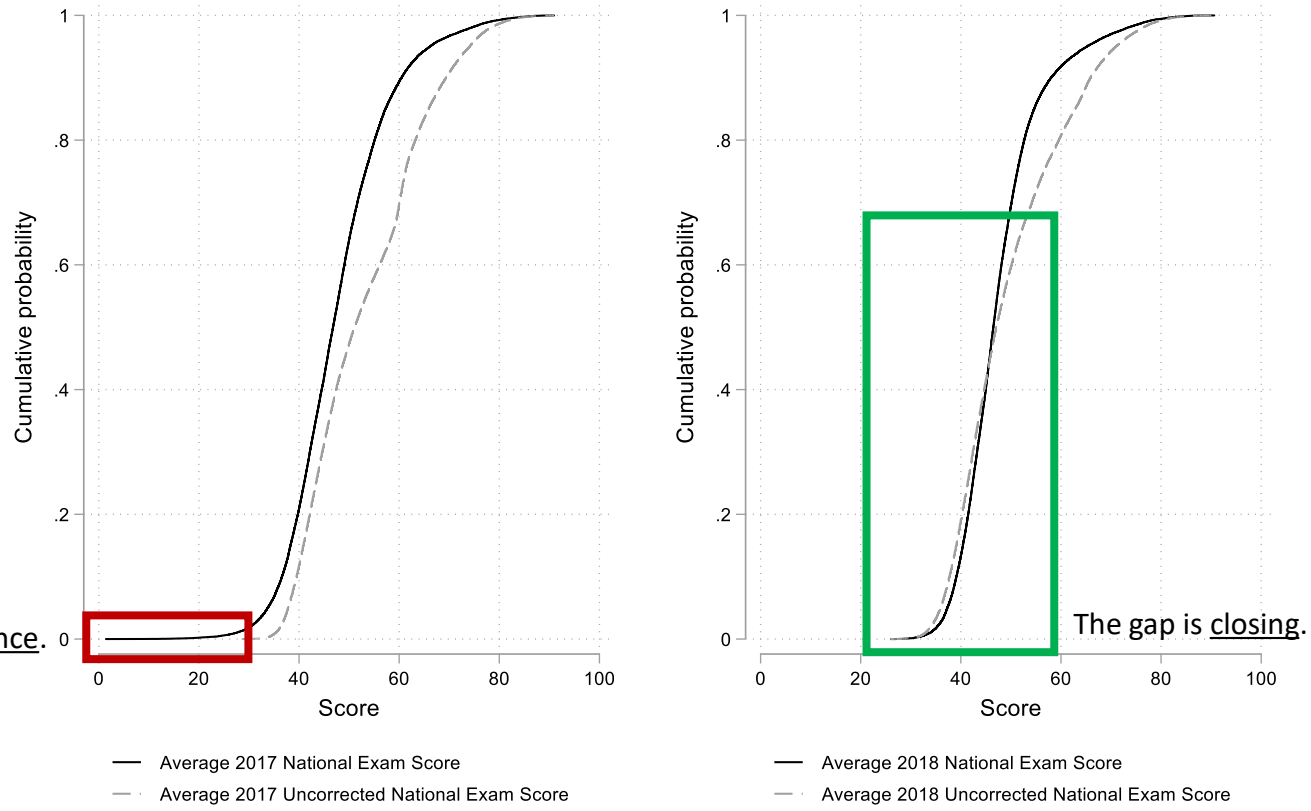
We estimate Equation 1 on schools that switch to CBT for the first time:

$$\overline{y_{ijt}} = \alpha + \beta\overline{y_{ijt-1}} + \gamma\, II_{ijt-1} + \delta_j + \varepsilon_{ijt} \qquad (1)$$

After estimating Equation 1, we take the estimated coefficients and use them to predict the examination scores of schools *i*, all of which still did paper-based test in year *t*. We implemented the estimation and prediction separately for 2017 and 2018.

In 2017, the distribution of national examination score after correcting for cheating is to the left of the uncorrected distribution at all points in the distribution. In 2018, the correction is not as stark.

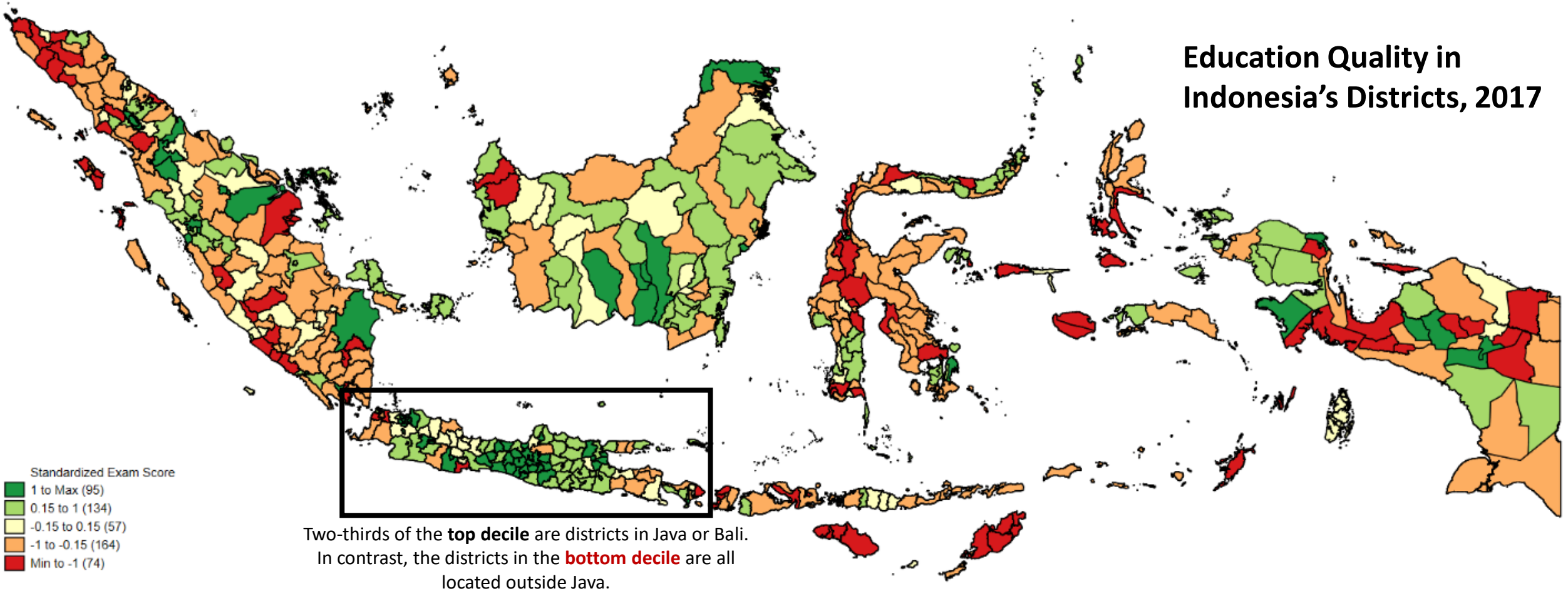
Many schools with very low performance.



The gap is closing.

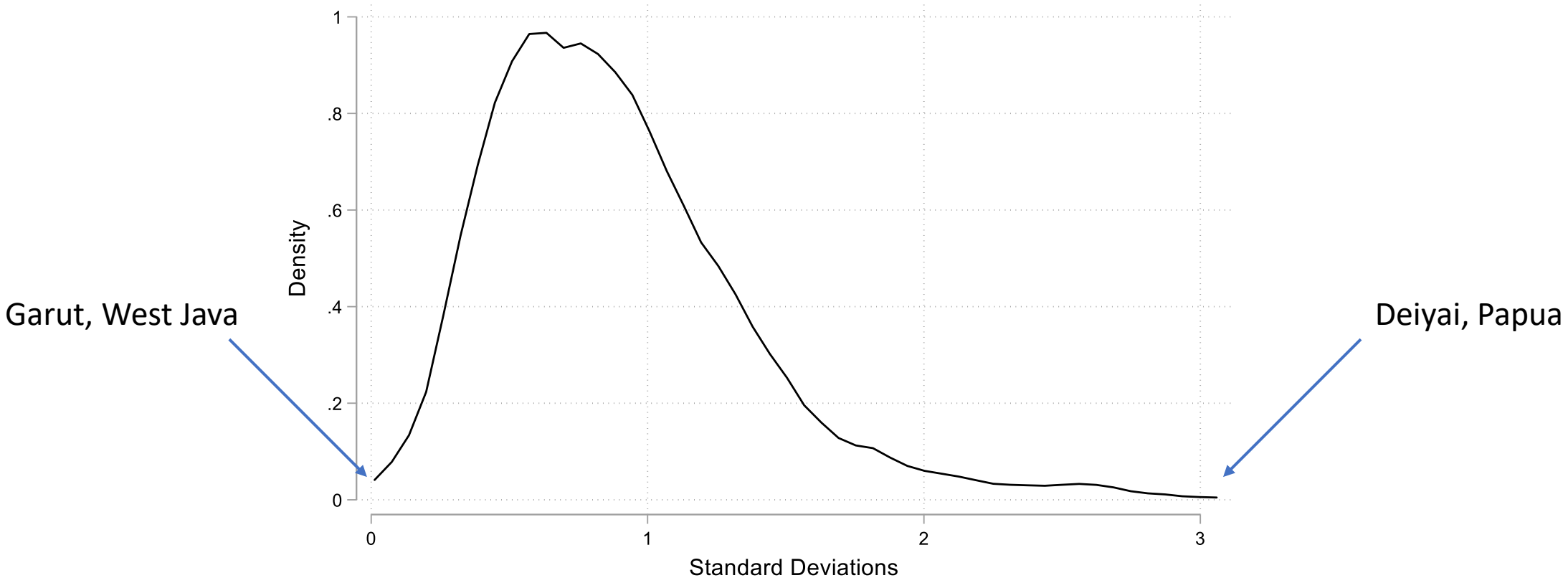
Note: the unit of analysis is school

Part 2: Education Quality across Indonesia



Two-thirds of the **top decile** are districts in Java or Bali. In contrast, the districts in the **bottom decile** are all located outside Java.

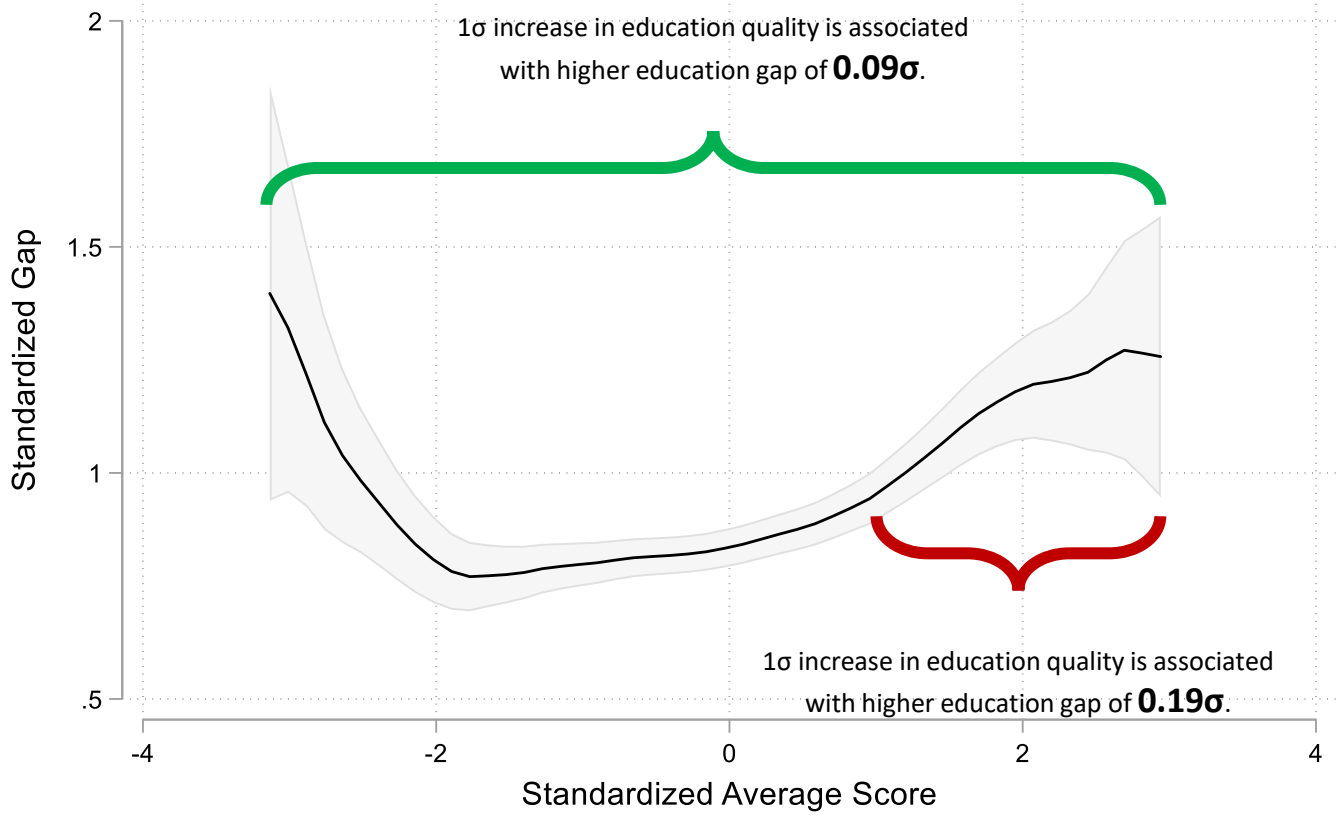
The average education gap (within districts) is equivalent to almost **six years of schooling*** (0.89σ)



Note: the unit of analysis is district

*Suryadarma (2015) finds that an additional year of schooling in Indonesia is associated with a learning gain of 0.15σ.

Do districts with the highest (relative) qualities also have the highest (relative) gaps?



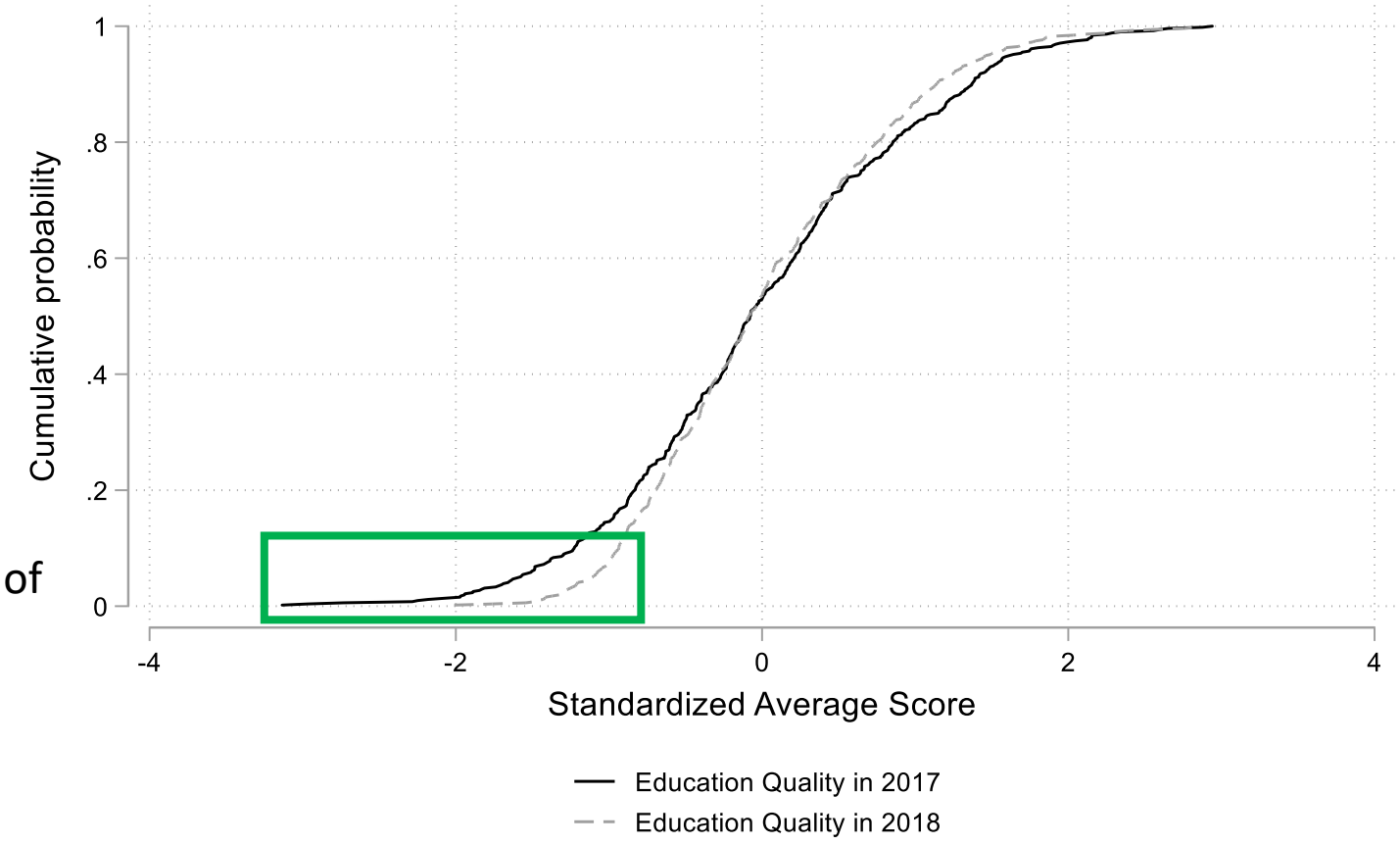
Note: the unit of analysis is district

Education gap is higher at an accelerated rate in districts at the **top end of the quality distribution**.

What happened in 2018?

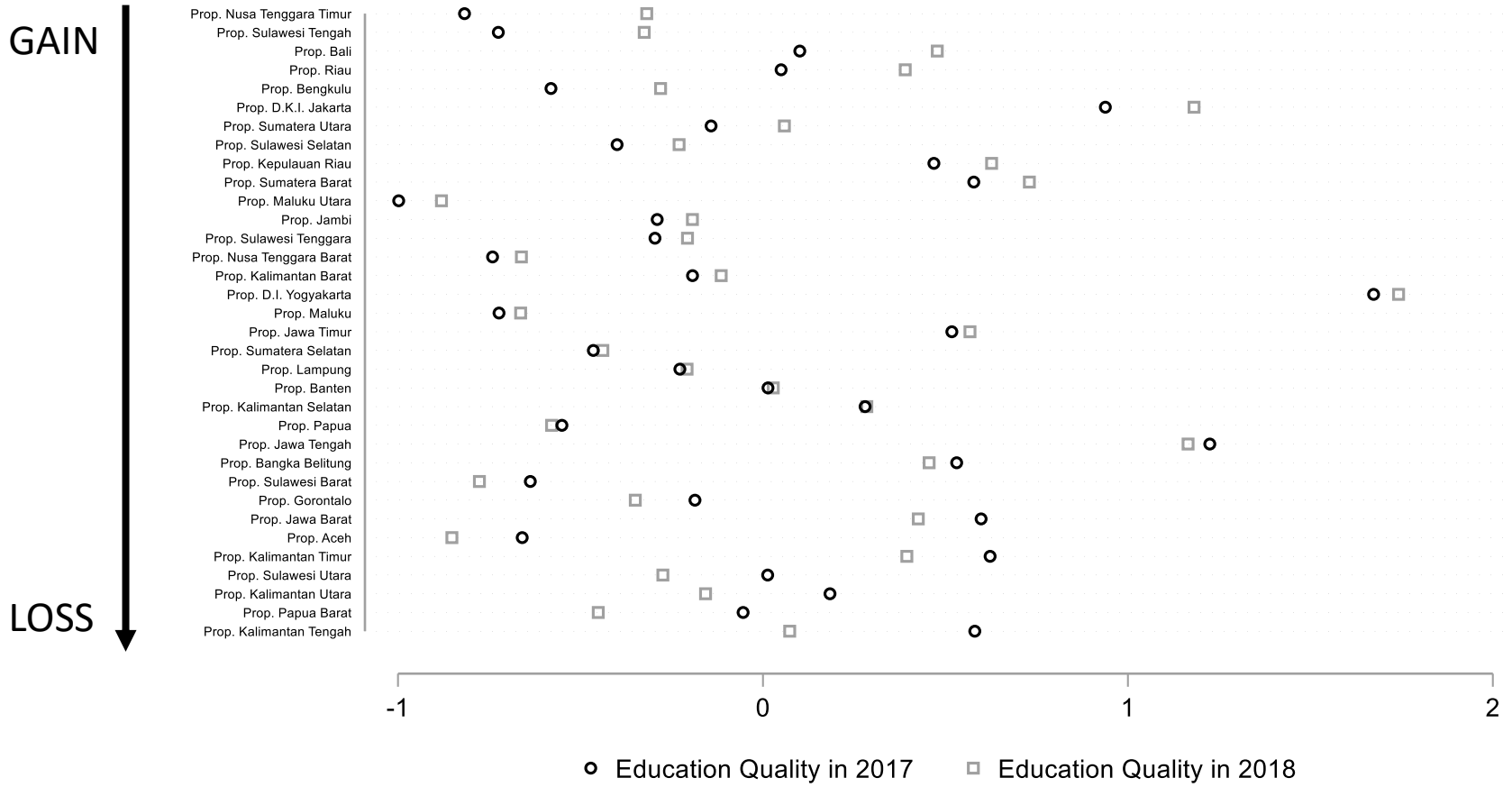
The average quality **increased** by 0.03σ (equivalent to **0.2 years of schooling**).

Significant increase in the quality of the bottom part of the distribution.



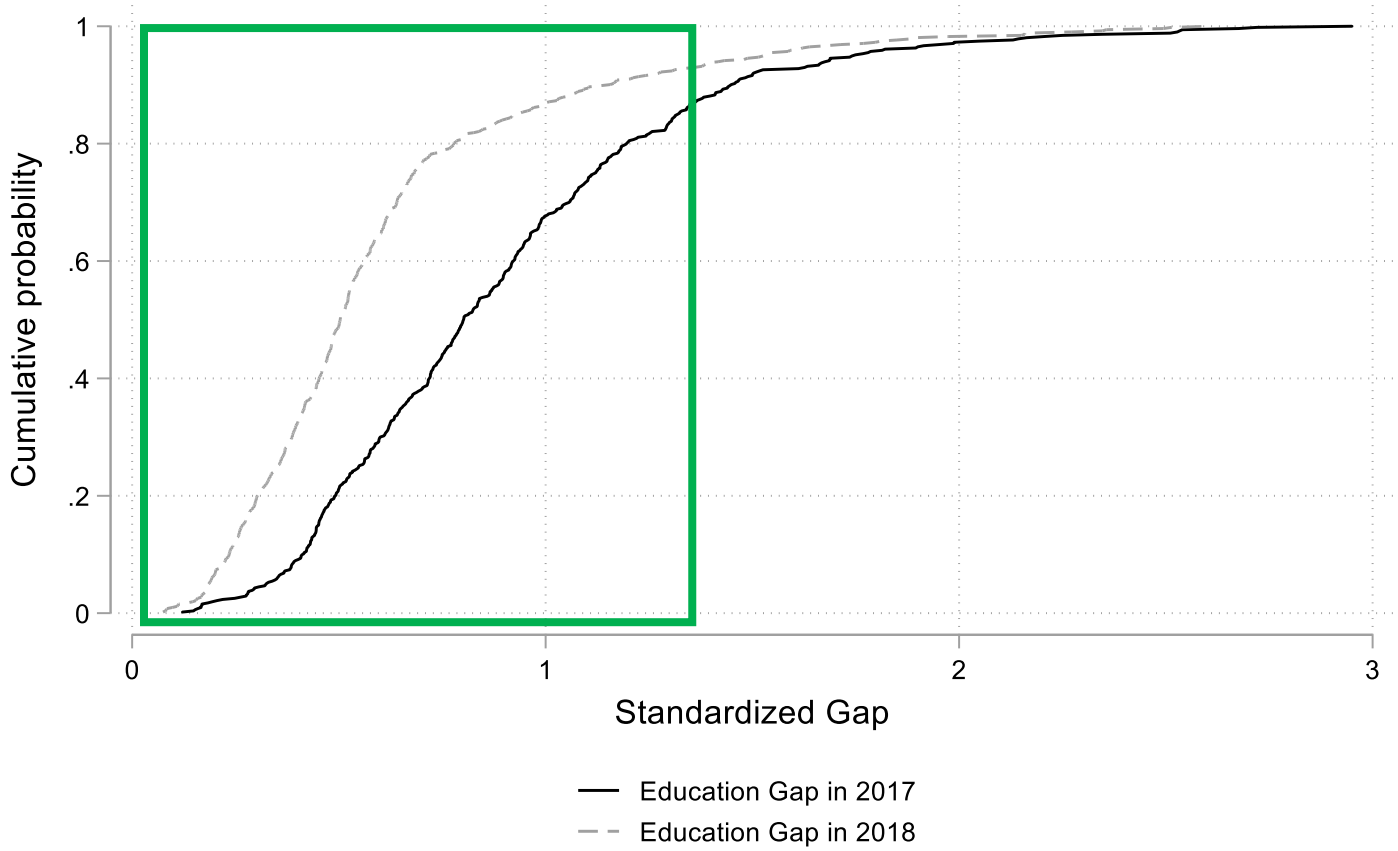
Note: standardized values to 2017 sample mean and standard deviation

The slight increase in overall average quality and reduction in the gap between the lowest and highest quality districts appear to mask **massive heterogeneities**.



Note: standardized values to 2017 sample mean and standard deviation

The education **quality gap within districts declined** significantly between the two years. The average gap declined from 0.89σ to 0.61σ, or equivalent to about **2 years of schooling**.



Note: standardized values to 2017 sample mean and standard deviation

Conclusion

- We find that the quality of education **varies significantly** across districts.
- The gap between the lowest and the highest quality districts implies that in the **lowest quality** districts, **hardly any learning is taking place** despite students being enrolled in school for nine years.
- Similarly, we find that within a district, **the average gap** in the level of learning between students enrolled in a low quality school and those enrolled in a high quality school is as high as **six years of schooling**.
- We argue that one of the fundamental constraints is **the lack of sufficiently disaggregated information on education quality**.
- These findings have so far **escaped the attention of policymakers**.