Learning Loss and Learning Recovery

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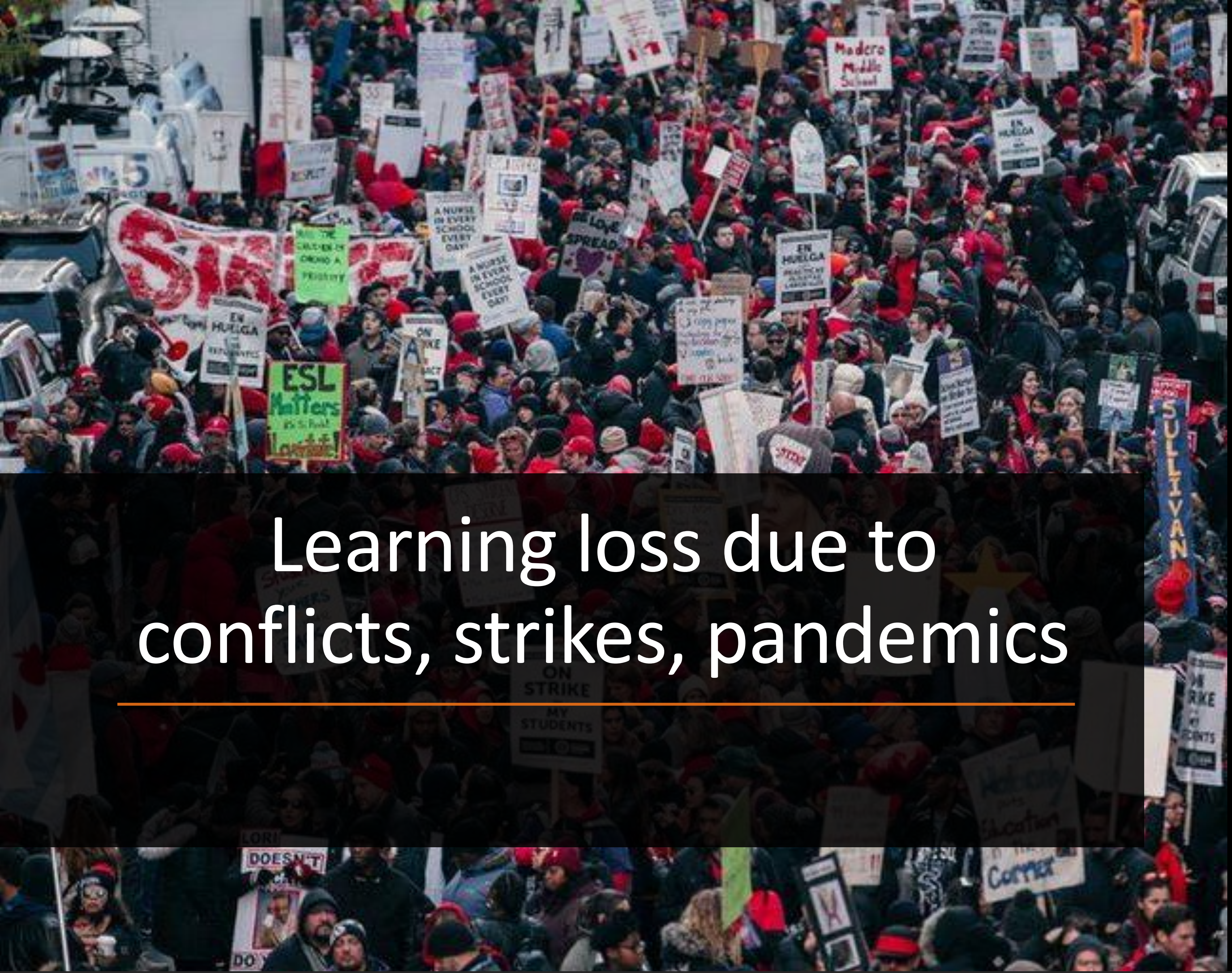
Learning loss due to conflicts, strikes, pandemics



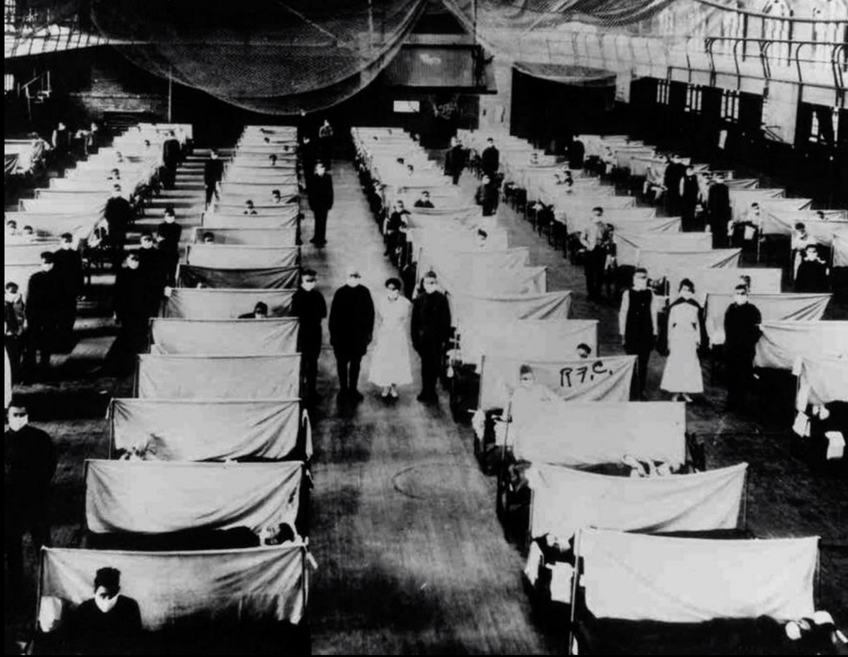
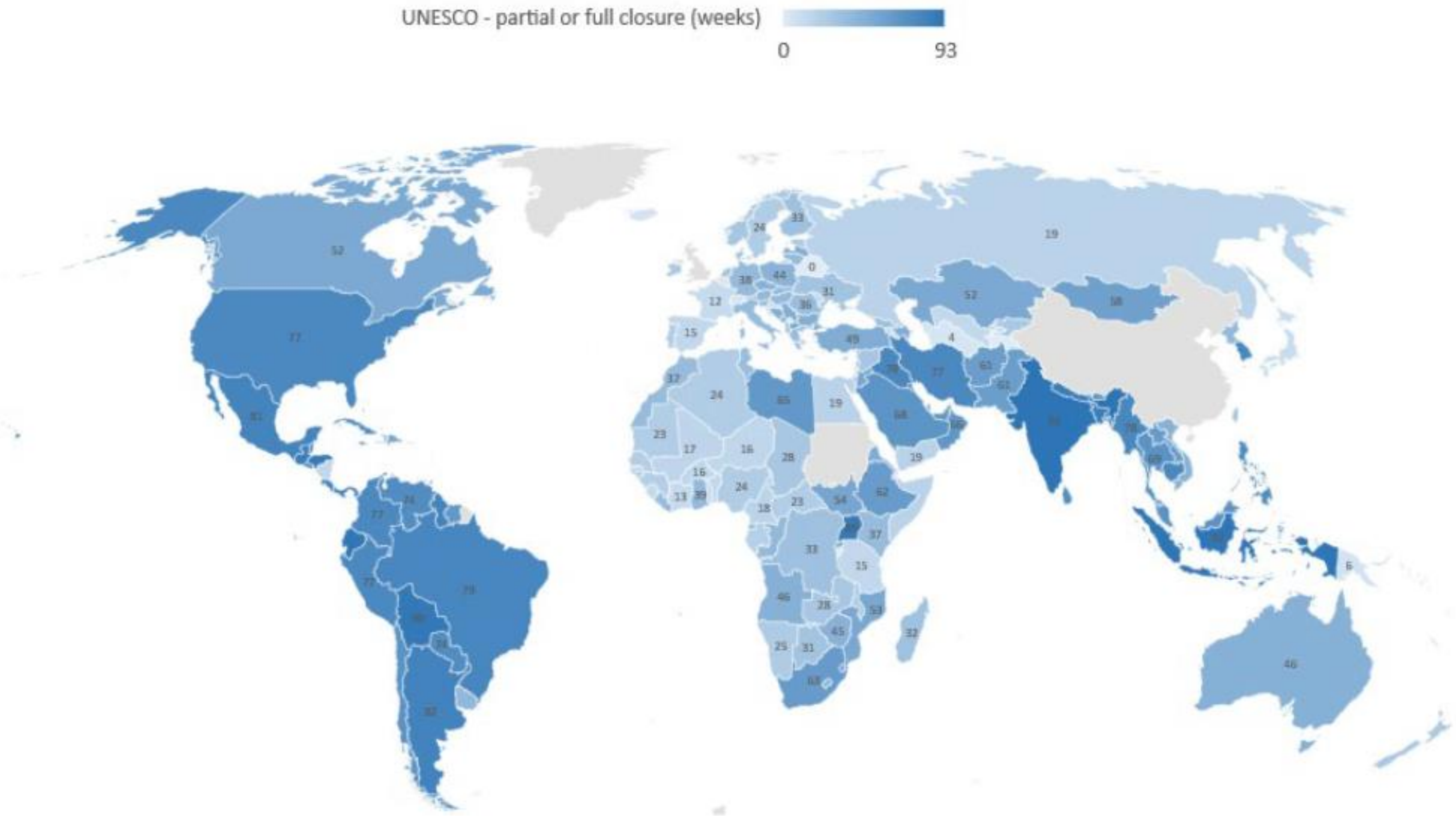


Figure 1. Weeks of partial/ full school closure



Cost of school closures

Learning loss

Earnings loss

Mitigation…but

- Limited capacity
- Weak student connectivity
- Constrained interactions
- Poor attendance

Scores fall coast to coast, especially in math, under pandemic's toll

By Laura Meckler

Updated October 24, 2022 at 2:57 p.m. EDT | Published October 24, 2022 at 12:01 a.m. EDT

OPINION | REVIEW & OUTLOOK

The High Price of Covid Learning Loss

It equates to a drop in lifetime earnings of about $900 billion.

By The Editorial Board Follow

Nov. 18, 2022 6:09 pm ET

Podcasts | The Economist Asks

How can covid learning loss be overcome?

BUSINESS

Pandemic Learning Loss Is a National Crisis

Analysis by Michael R. Bloomberg | Bloomberg

September 14, 2022 at 11:55 a.m. EDT

Don’t Believe the “Learning Loss” Hoax

By dianeravitch

March 17, 2021 // 10

The Pandemic Erased Two Decades of Progress in Math and Reading

The results of a national test showed just how devastating the last two years have been for 9-year-old schoolchildren, especially the most vulnerable.

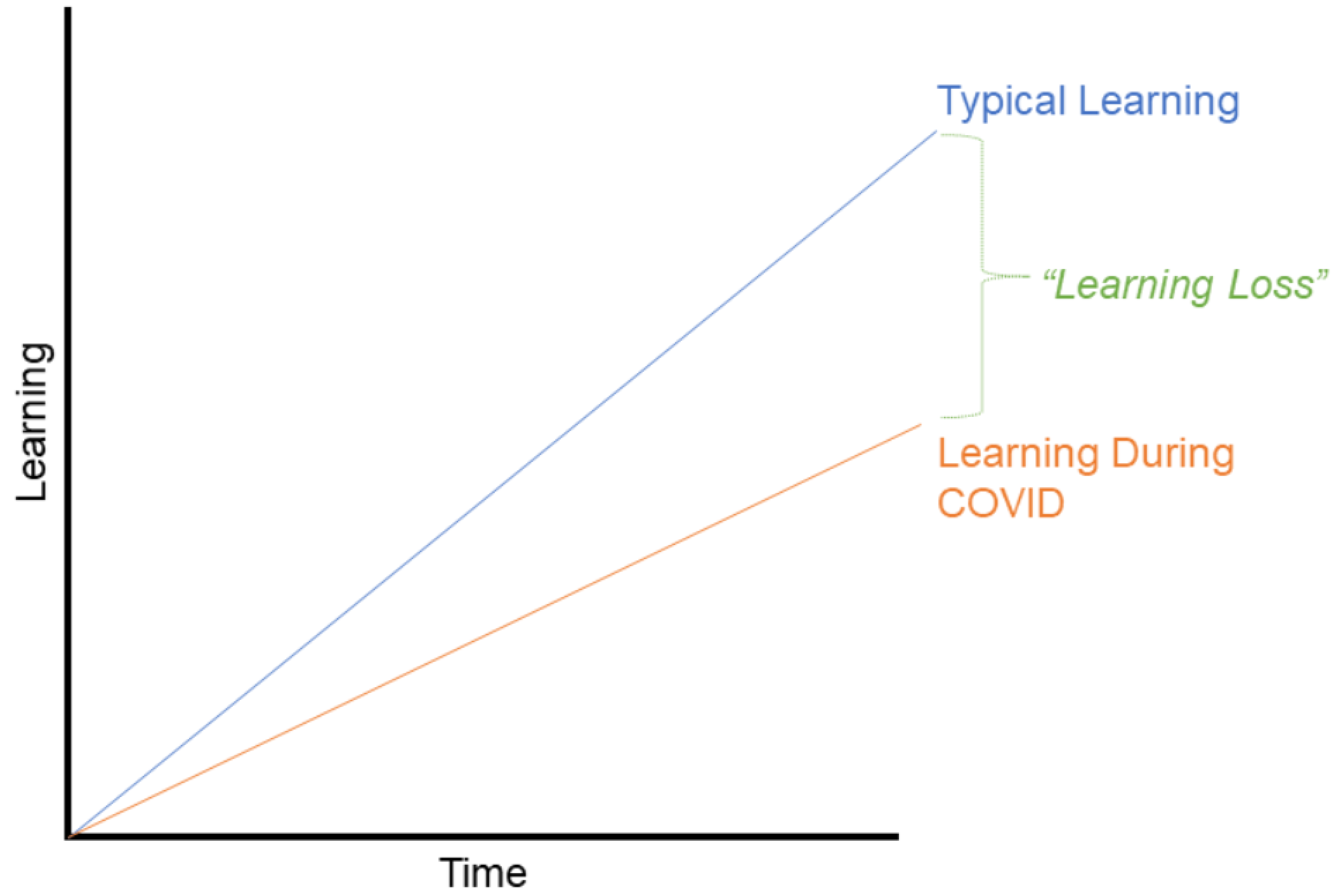
SUBSCRIBER-ONLY NEWSLETTER

David Wallace-Wells

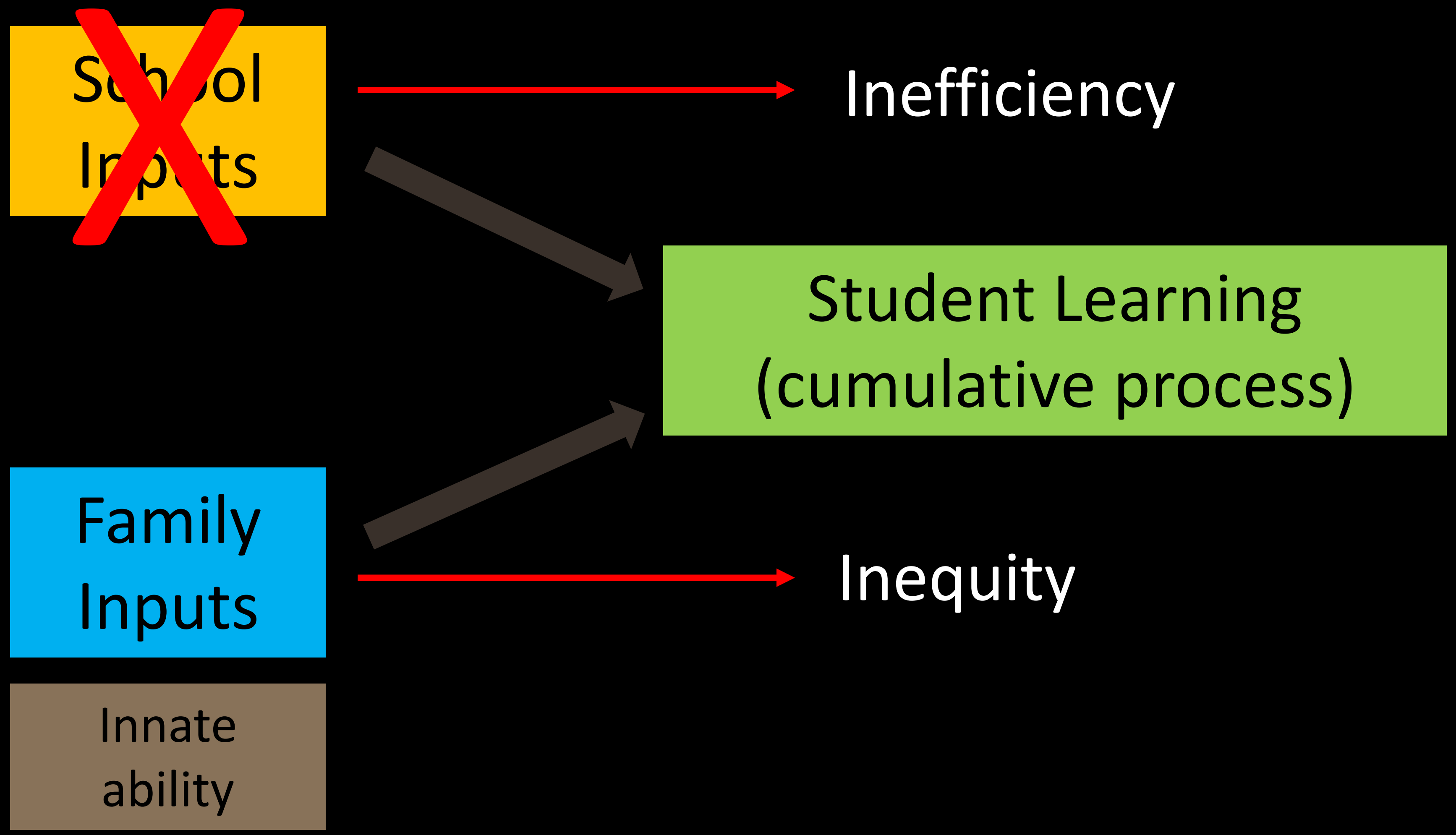
OPINION

Pandemic Learning Loss Is Not an Emergency

Oct. 29, 2022


Typical Learning
"Learning Loss"
Learning During COVID
Learning
Time

Why expect learning loss?



(Agostinelli et al. 2022; Azevedo et al 2022)

Most national studies find evidence of learning loss

0.12 to 0.25 standard deviations (SDs)

(Patrinos et al. 2023; Haelermans et al. 2022; Betthäuser et al. 2023)

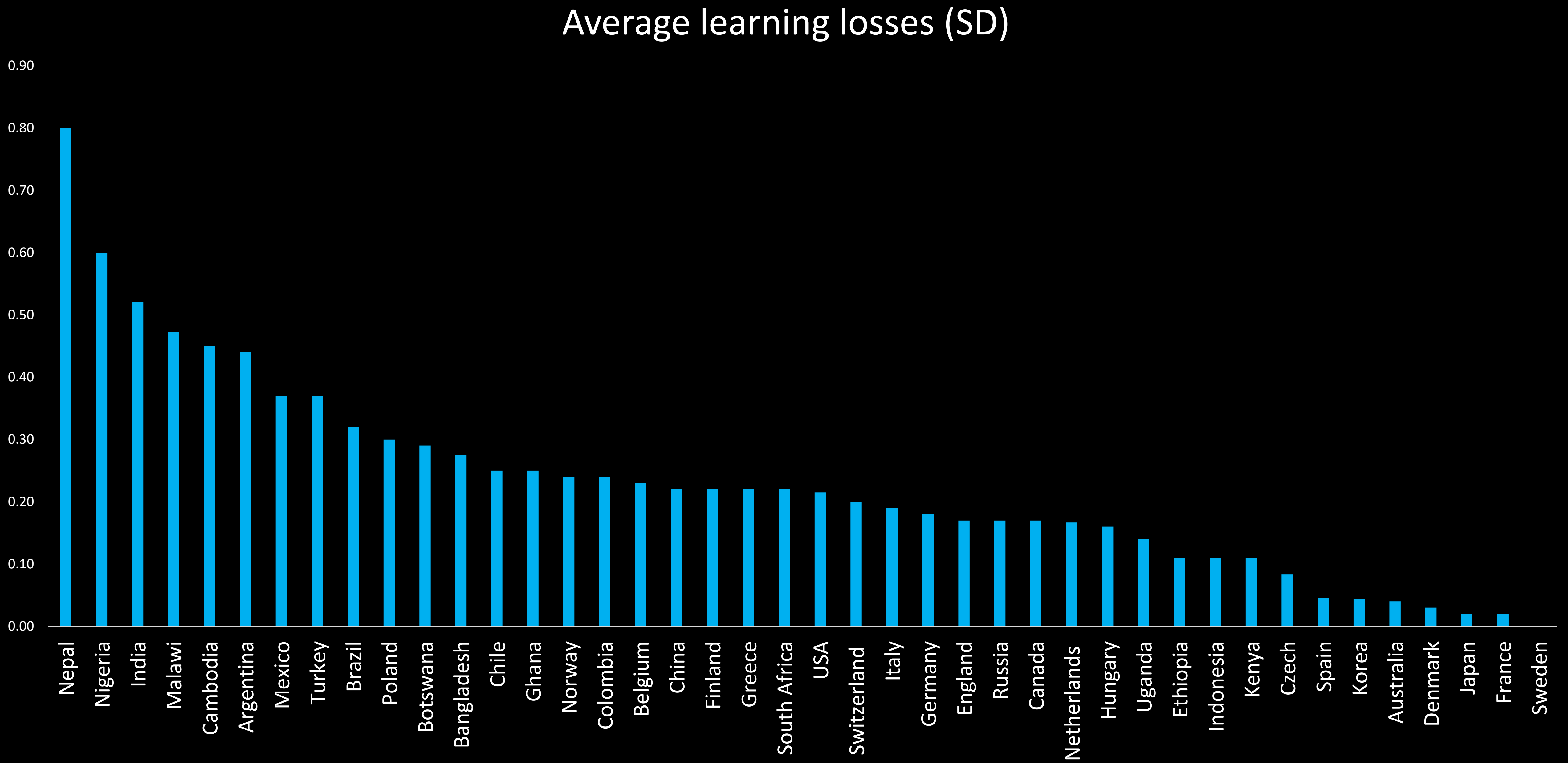
Global evidence

Learning loss

Inequality

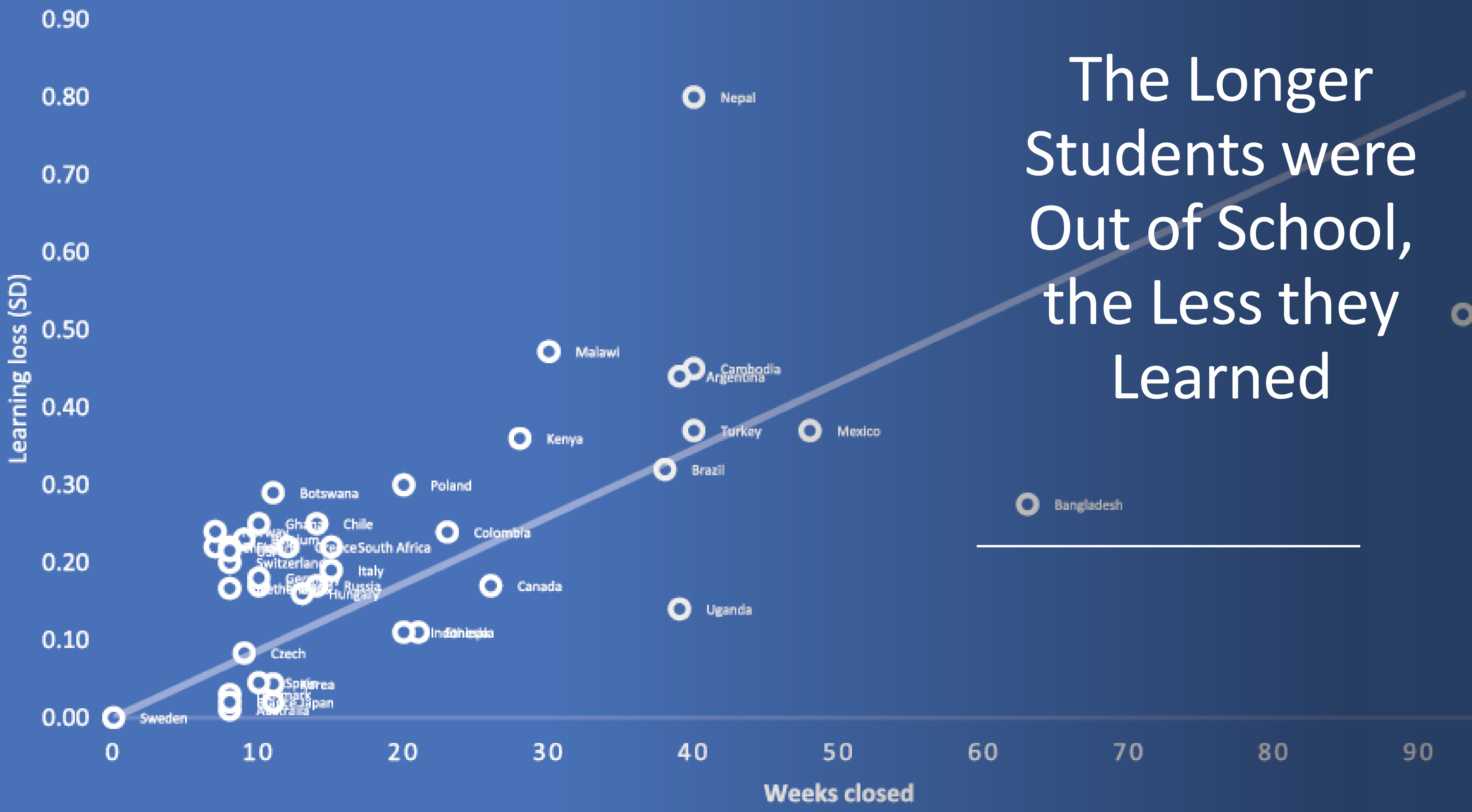
Duration

Global learning losses



Studies find different levels of learning loss by status

The Longer Students were Out of School, the Less they Learned



∴ 20 weeks of closures lead to 1 year loss of learning

What else matters?

- Income
- School quality
- Internet
- Private schools
- Unions
- Democracy
- COVID
  - Death rate
  - Lockdown stringency
  - Vaccination rate

Determinants of learning loss (OLS)

	(1)	(2)
Weeks closed	0.006***	0.007***
	(0.001)	(0.002)
Controls	NO	YES
Observations	41	41
R-squared	0.415	0.542

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Patrinos, H.A., 2023. The longer students were out of school, the less they learned. *Journal of School Choice*, *17*(2), pp.161-175.

Correlates of school closure duration

Increases duration:

- Private schooling
- Quality
- Stringency of lockdown

Decreases duration:

- Vaccination & Income

Causal impact of duration on learning loss

Instrument weeks closed with **vaccination** rate and **stringency** index

Determinants of learning loss (IV)

Weeks closed	0.006***
	(0.002)
Constant	0.111
Observations	41
R-squared	0.415
F-test	10.98
[*p*-value]	0.002
Sargan	0.409
[*p*-value]	[0.5223]

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Patrinos, H.A., 2023. The longer students were out of school, the less they learned. *Journal of School Choice*, *17*(2), pp.161-175.

Causal impact of duration on learning loss

Every **week** closed increases learning loss **by ~1 point**

∴ **20 weeks of school closures = one year worth of learning**

International Assessments

PIRLS

- 55 countries, 16 million children
- Evolution of reading scores before & after COVID-19
- Model effect of closures on achievement by predicting deviation of most recent results from a linear trend in reading achievement

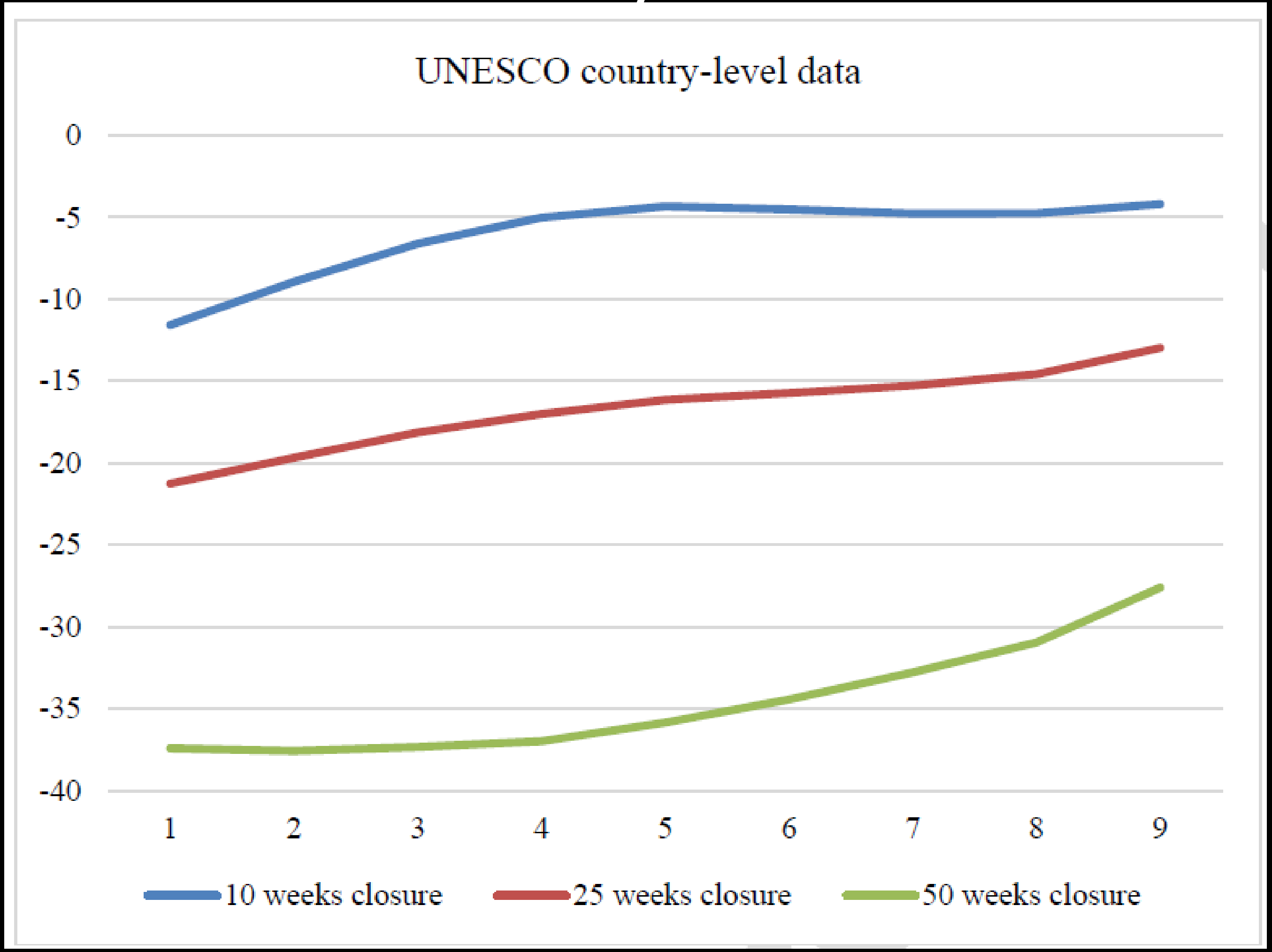
Jakubowski, M., Gajderowicz, T. and Patrinos, H.A., 2023. Global learning loss in student achievement: First estimates using comparable reading scores. *Economics Letters* 232

PIRLS

- COVID-related educational loss equals >than year of schooling
- Losses larger for those who faced longer school closures
- Lower-achieving students experienced larger educational losses

PIRLS

Impact of COVID19-related school closure on students at different achievement levels by duration of closures



Jakubowski et al. 2023

PISA

- Internationally comparable student achievement tests from the OECD’s Programme for International Student Assessment (PISA)
- Latest implementation in 2022 collecting student results after the school closures
- Data explored represent 175 million 15-year-old students in 72 countries
- By combining data from previous rounds and the post-COVID round for countries that have over-time data, we can see the evolution of mathematics scores before and after COVID-19
- We model the effect of closures on achievement by predicting the deviation of the most recent results from a linear trend in math

Jakubowski, M, Gajderowicz, T, Patrinos, HA. 2024. Covid-19, School Closures, and Student Learning Outcomes: New Global Evidence from PISA. IZA Discussion Paper No. 16731

PISA

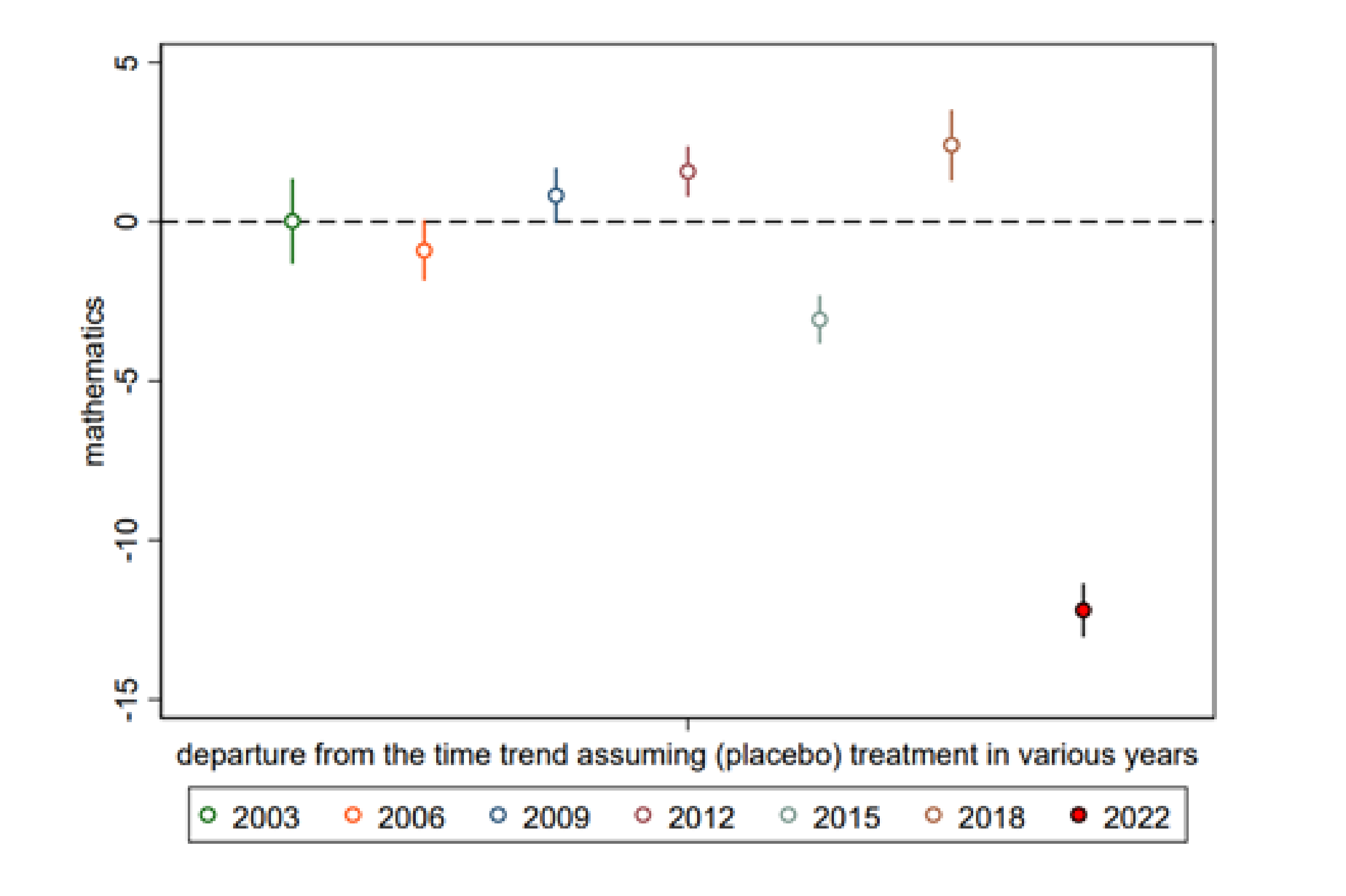
- Math scores declined 2018-2022 by 12 points: 14% of a SD = 7 months of learning
- Larger declines for students that faced longer closures & for lower-achieving students
- Countries with shortest closures experienced relatively small losses: 10% of SD = 5 months of learning
- Countries with average length school closures lost 7 months
- Countries with longest closures lost 12 months of learning

Jakubowski et al 2024

PISA

Departures from the time trend separately for each year of PISA assessment

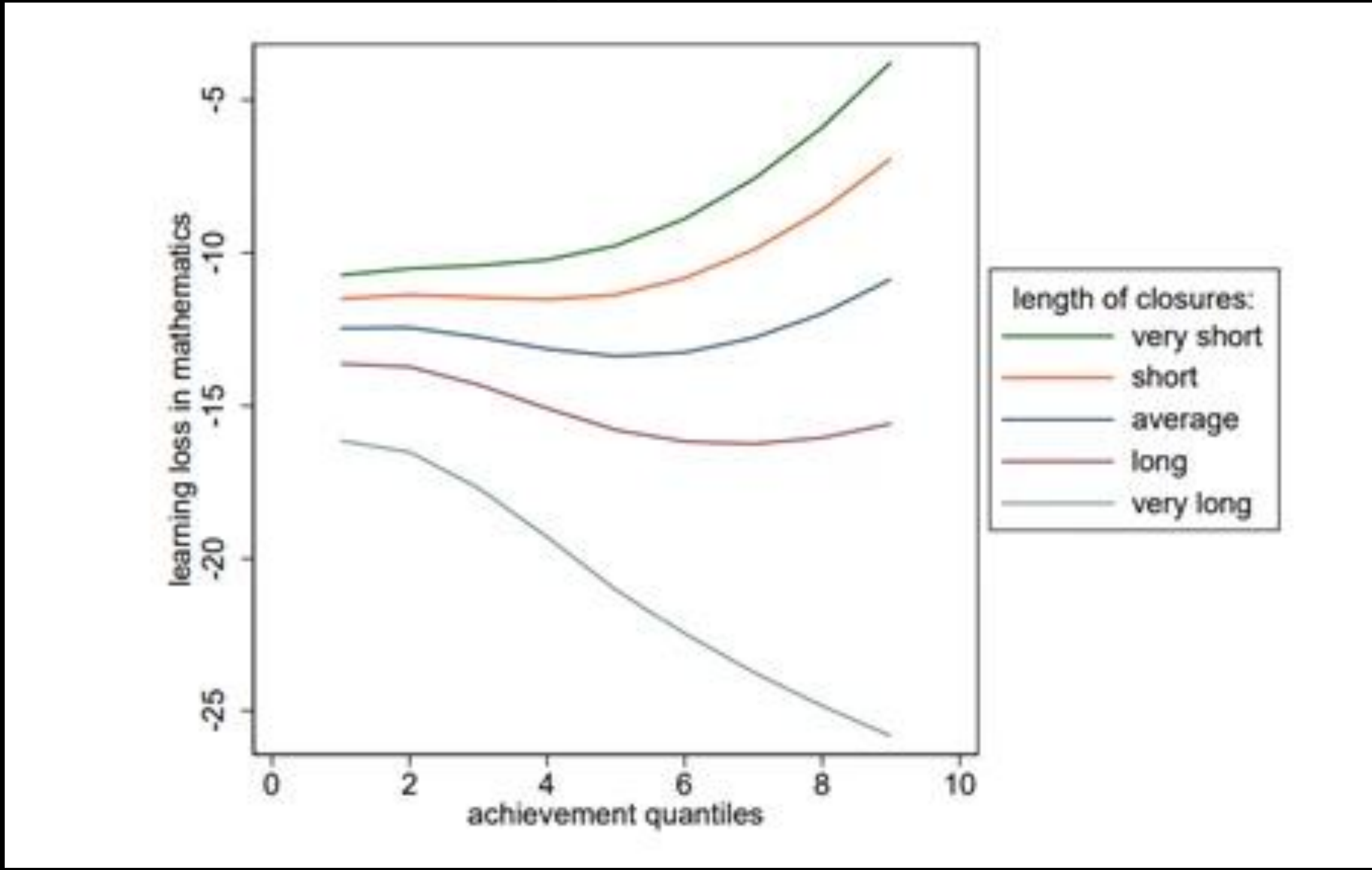
(95% confidence intervals)



Jakubowski et al 2024

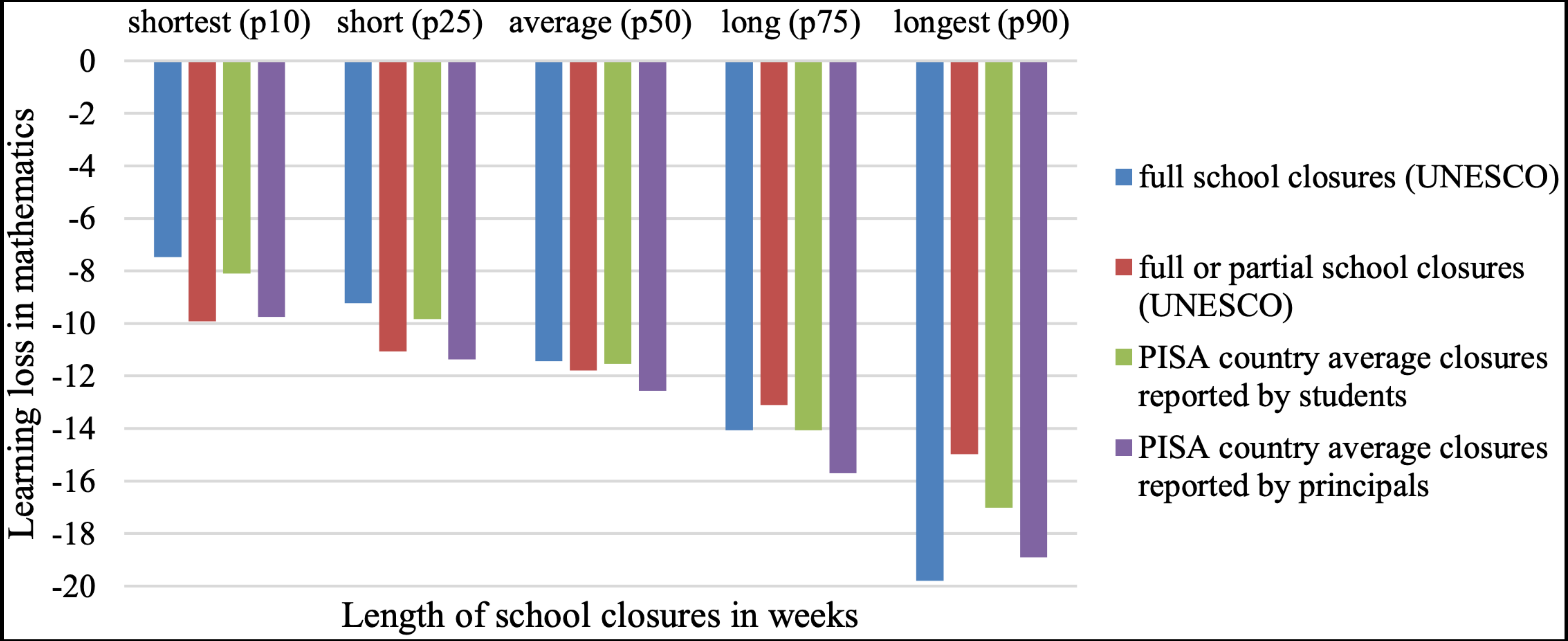
PISA

Learning loss estimates depending on student achievement quantiles and the length of closures



Jakubowski et al 2024

PISA



Jakubowski et al 2024

Implications

- Negative effect of school closures on student achievement
- Schooling matters, esp. for poor
- Policy matters

Economic implications

- Time and money spent on education builds human capital
- Loss of a year over school children’s life: 10% earnings loss

Psacharopoulos, G., Collis, V., Patrinos, H.A. and Vegas, E., 2021. The COVID-19 cost of school closures in earnings and income across the world. *Comparative Education Review*, *65*(2), pp.271-287.

Long term implications

- Students lose 1/3 to a full year of education

- Globally students lose $15+ trillion in future earnings

Psacharopoulos, G., Collis, V., Patrinos, H.A. and Vegas, E., 2021. The COVID-19 cost of school closures in earnings and income across the world. *Comparative Education Review*, *65*(2), pp.271-287.

Cost of school closures

- Losses over lifetime as % current year GDP: 18
- Annual losses as % of GDP: 0.8

Psacharopoulos, G., Collis, V., Patrinos, H.A. and Vegas, E., 2021. The COVID-19 cost of school closures in earnings and income across the world. *Comparative Education Review*, *65*(2), pp.271-287.

Other costs of school closures

- 5.53 million years of life lost (USA)
- Mental health
- Childcare issues
- Inequality: women dropping out of labor market

Christakis, DA, Van Cleve, W, Zimmerman, FJ. 2020. Estimation of US children's educational attainment and years of life lost associated with primary school closures during the coronavirus disease 2019 pandemic. JAMA 3(11)

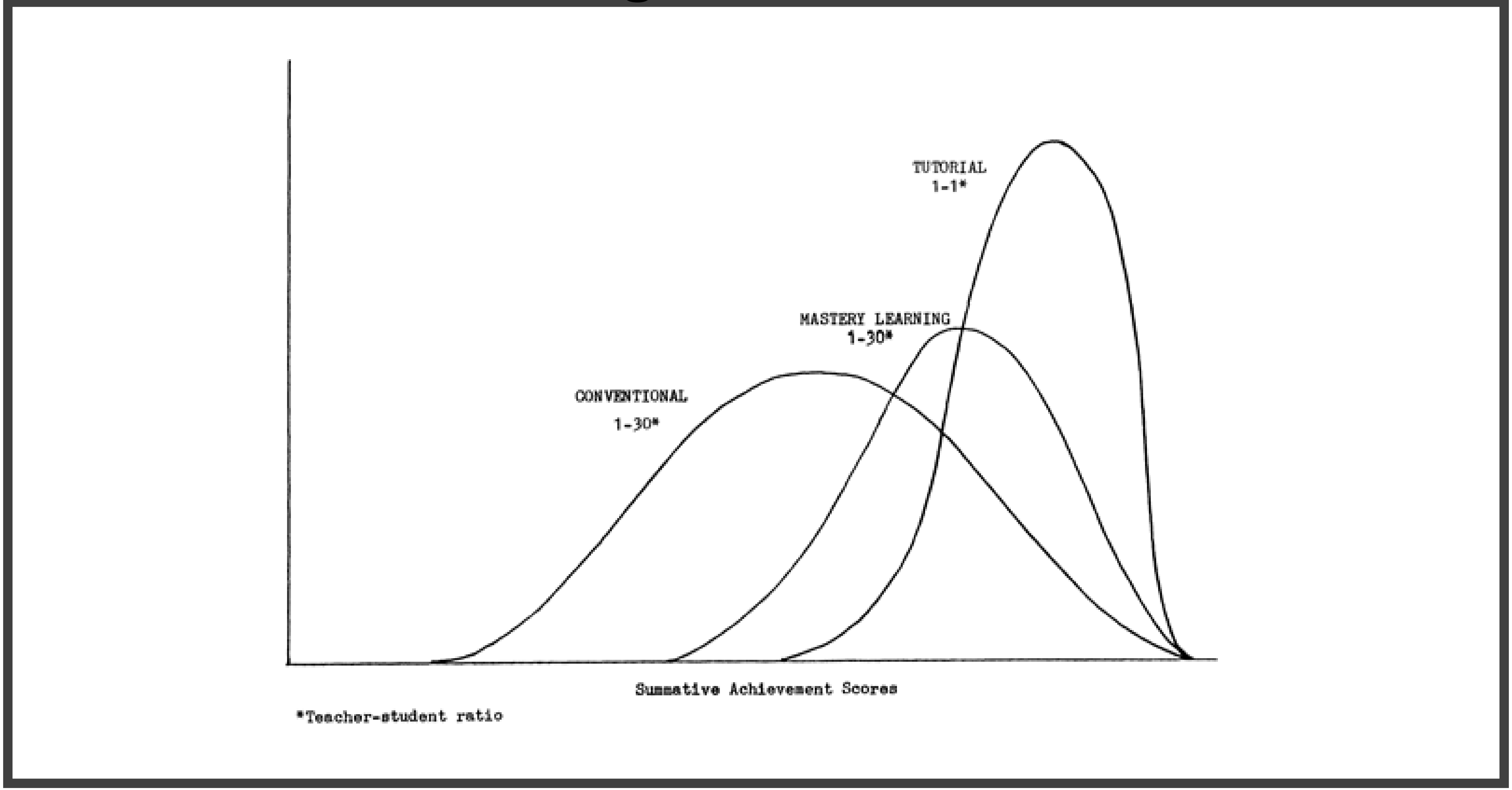
Recovery

Policies

- Reopen schools
- Telementoring during school closures
- Tutoring – in person
- Tutoring – online
- Remedial education

Dela Cruz, NA, Adona, AJ, Molato-Gayares, R, Park. A. 2024. Learning Loss and Recovery from the COVID-19 Pandemic: A Systematic Review of Evidence. ADB Economics Working Paper Series 717

2 Sigma Problem



Benjamin Bloom 1984

Response

1. Implement learning recovery programs
2. Protect the education budget
3. Prepare for future shocks

Most importantly, before doing any of these things, measure learning outcomes

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World Bank

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