# School Funding Equity in Brazil

Risk and spending analysis of municipal school networks, nationally and by state

Bruce D. Baker · University of Miami · October 2026

# Spending does not follow student need

**0.65**

High-need ÷ low-need spending per pupil, nationally (grade mix and year held constant)

**0.96**

Same ratio comparing networks in the same state, with size, remoteness and wages held constant

**−0.78**

Correlation between state average need and state spending per pupil

**+2.6%**

More spending per pupil for 10% more local revenue per resident, within states

Ratios compare predicted spending per pupil at the 90th vs. 10th percentile of need (1.00 = equal). 27,718 network-years, 5,560 municipalities, 2019–2023.

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# Two questions from the equal-opportunity framework

## 1a Risk analysis

Which student and community characteristics most strongly predict lower outcomes?

*Outcomes = f(Needs, Context)*

## 1b Spending analysis

Is spending higher where risks are concentrated, net of costs? Does it depend on local revenue?

*Spending = f(Needs, Context, Capacity)*

## 2 Cost modeling (next)

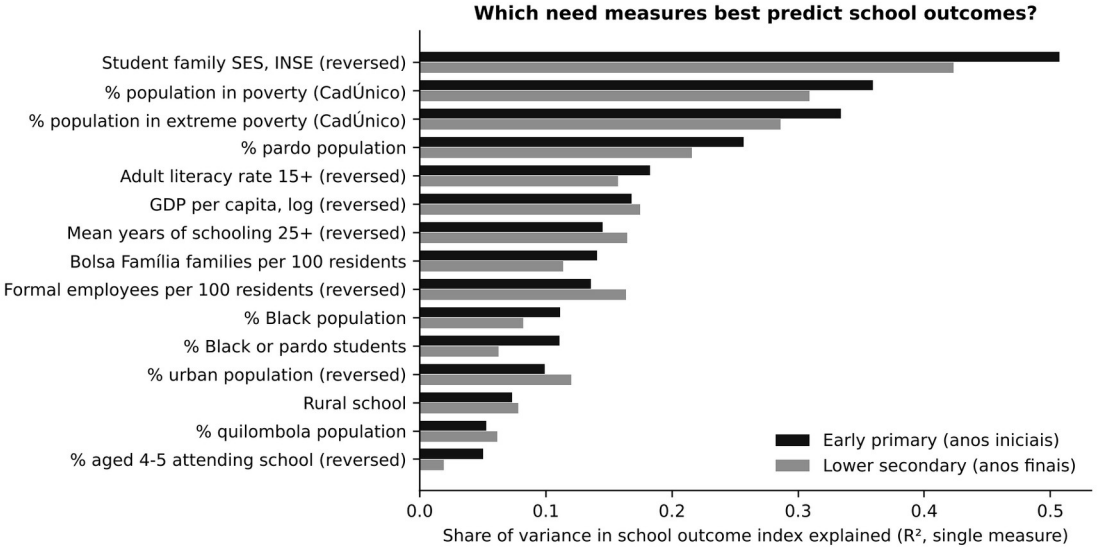
How much more would give high-need networks an equal opportunity to reach common goals?

*An empirical basis for the CAQ*

Purpose of a school finance system: deliver the resources schools need to give every child an equal opportunity to achieve common, adequate outcome goals (Baker, Atchison & Levin, 2026; Constitution Arts. 206, 211).

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# Student SES and poverty predict outcomes best



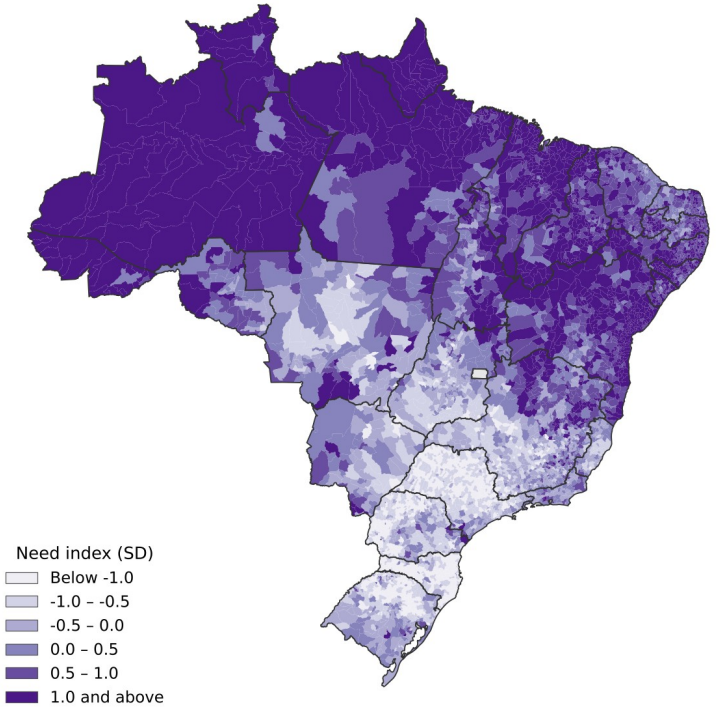

Student SES (**INSE**) alone explains about **half** of the variation in early-primary outcomes

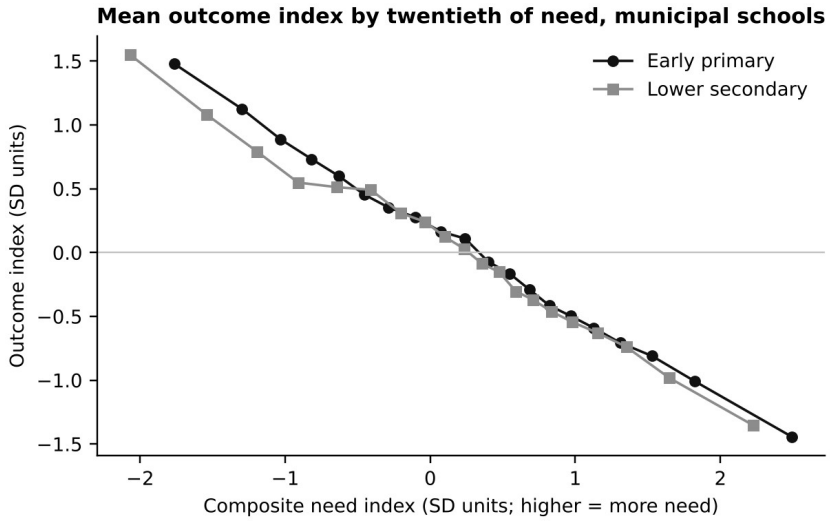
The municipal **Cadastro Único poverty rate** explains about a third, far more than GDP or literacy

Racial composition adds independent risk

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# Need is concentrated in the North and Northeast

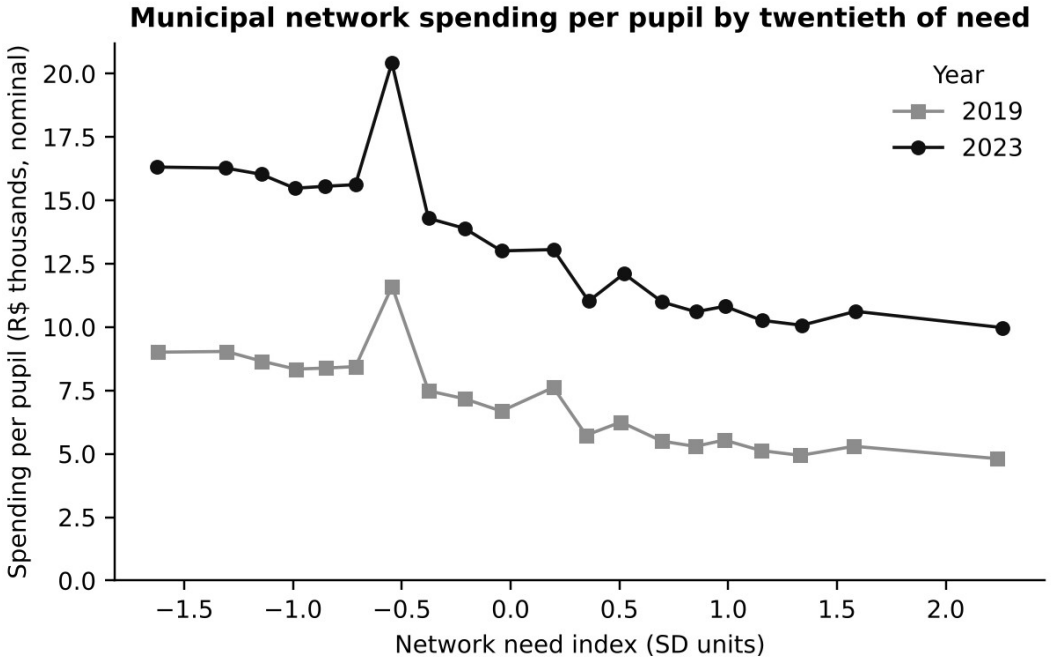



Left: network need index by municipality. Right: mean outcome index by twentieth of need. Top-to-bottom gap ≈ 2 SD.

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# Higher-need networks spend less per pupil



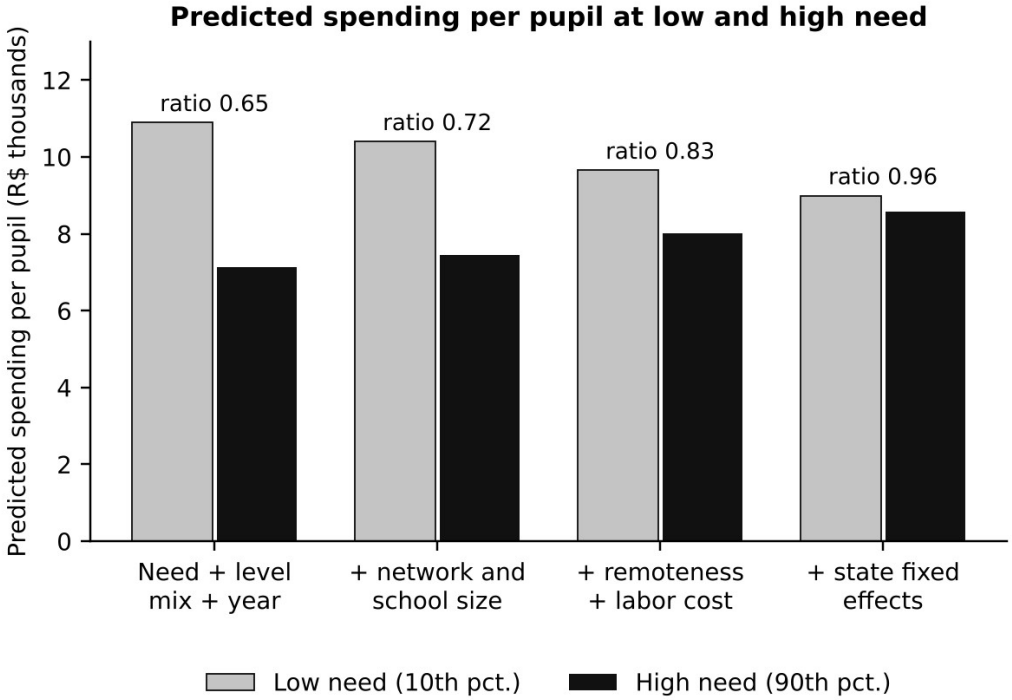

Highest-need fifth of networks: about **R$ 10,200** per pupil vs. **R$ 16,000** in the lowest-need fifth (2023)

Higher-need networks also have far less revenue per resident

The gradient persisted from 2019 to 2023

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# The national gap is mostly between states



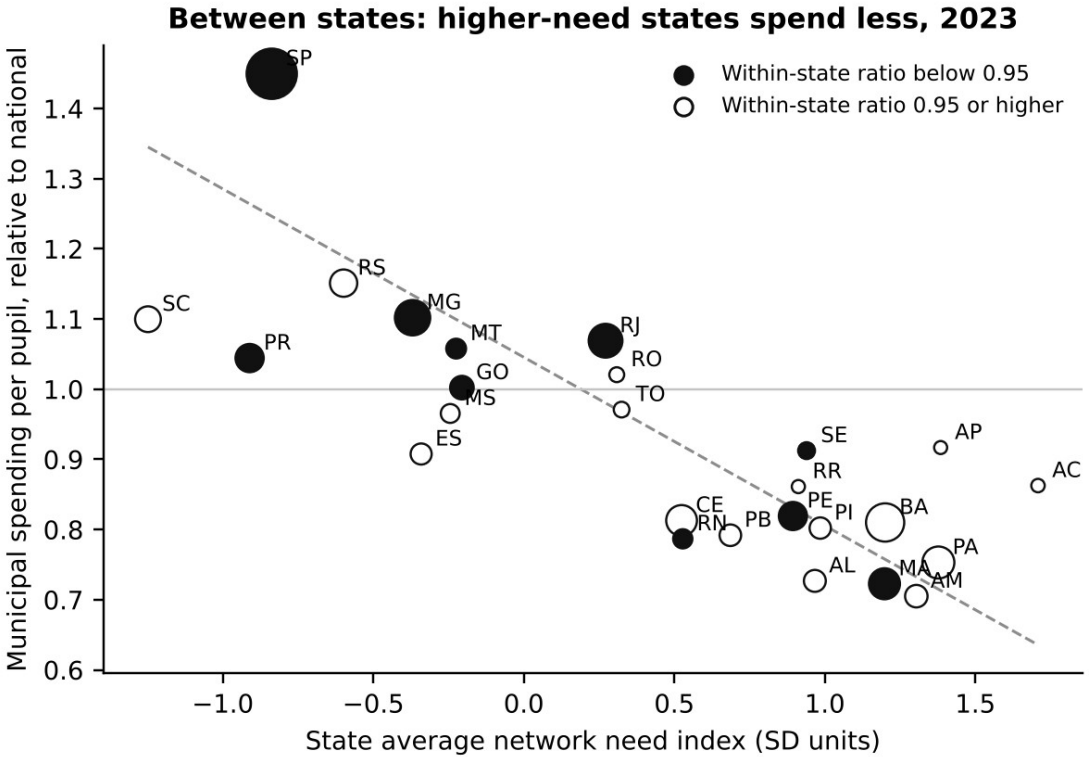

Grade mix and year only: high-need networks get **0.65×**

Add size, remoteness and wages: **0.83×**

Compare networks within the same state: **0.96×**, close to neutral

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# Between states, higher need means less money



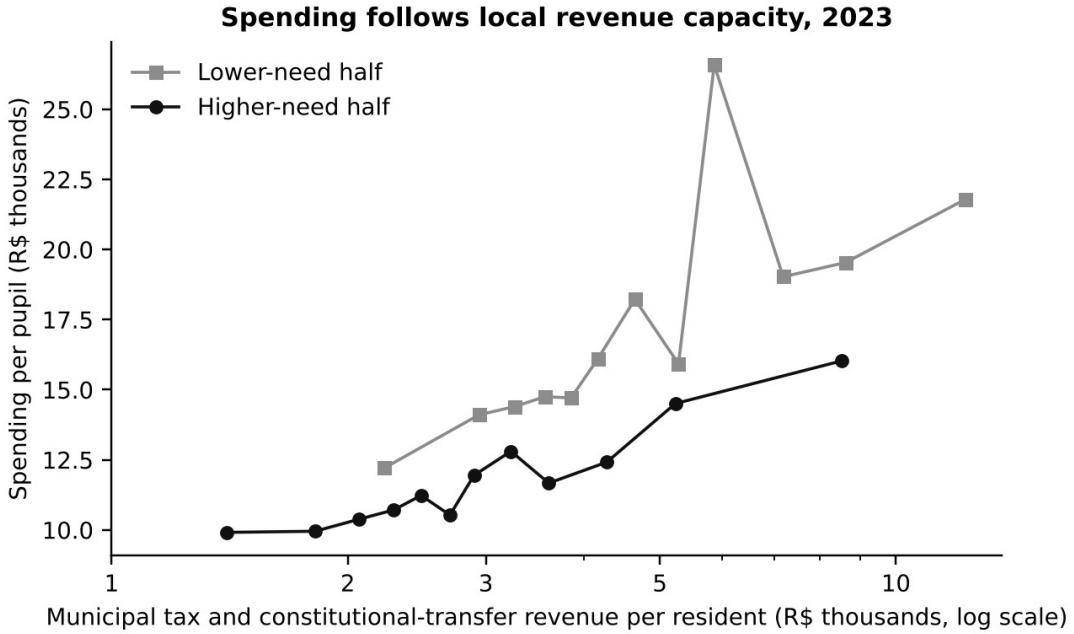

State need and spending correlate at **−0.78**

São Paulo's municipal networks spend **45%** above average

Maranhão, Amazonas, Alagoas and Pará spend **25–30%** below

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# Within states, spending tracks local revenue



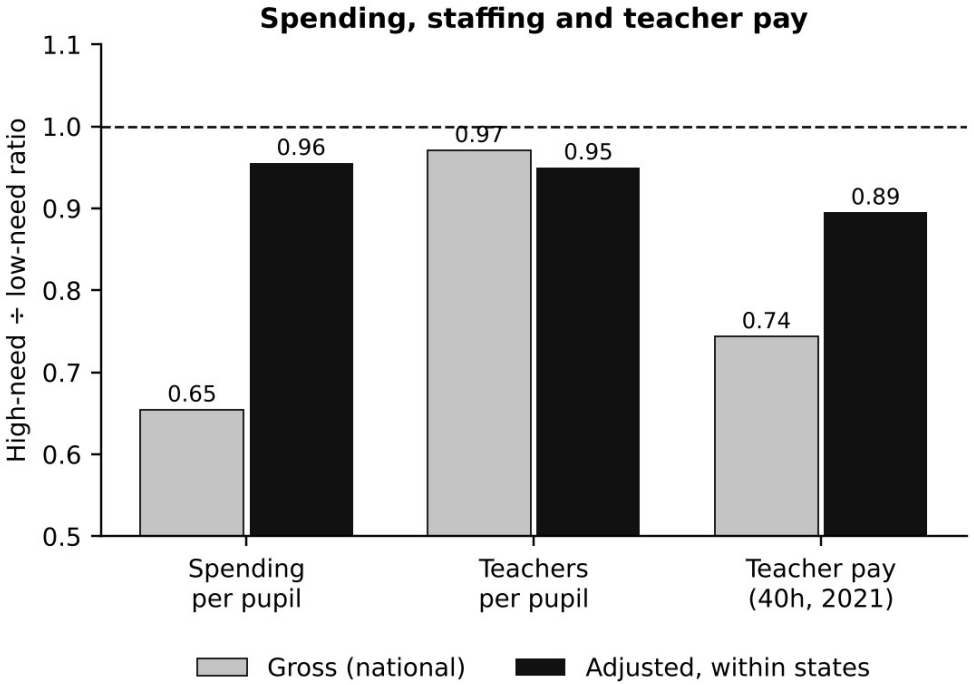

Among similar networks in the same state, **10%** more revenue per resident brings about **2.6%** more spending per pupil

The system is neither progressive nor fiscally neutral

Higher-need networks sit on the lower curve at every revenue level

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# Teacher pay, not staffing, drives the national gap



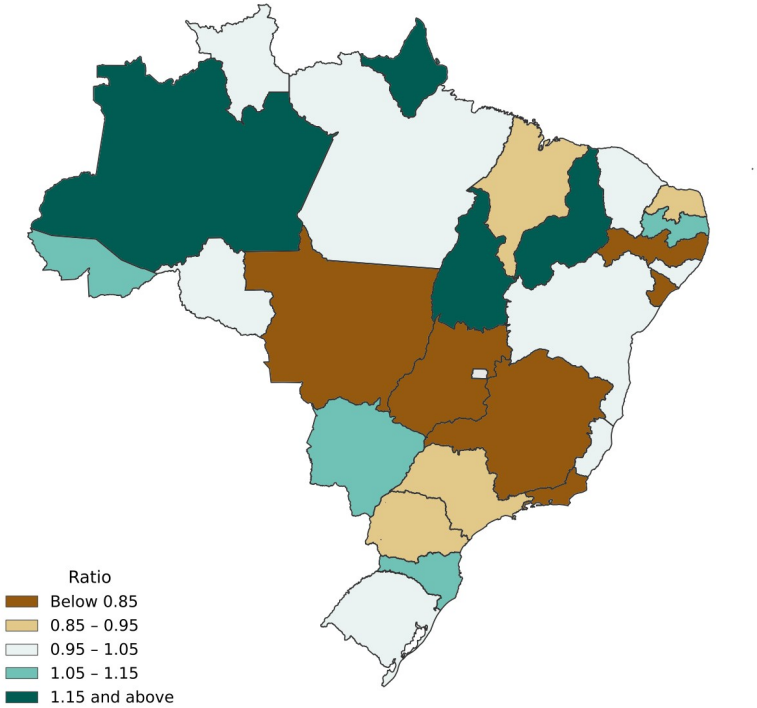

Teachers per pupil are nearly equal across need levels (**0.97**)

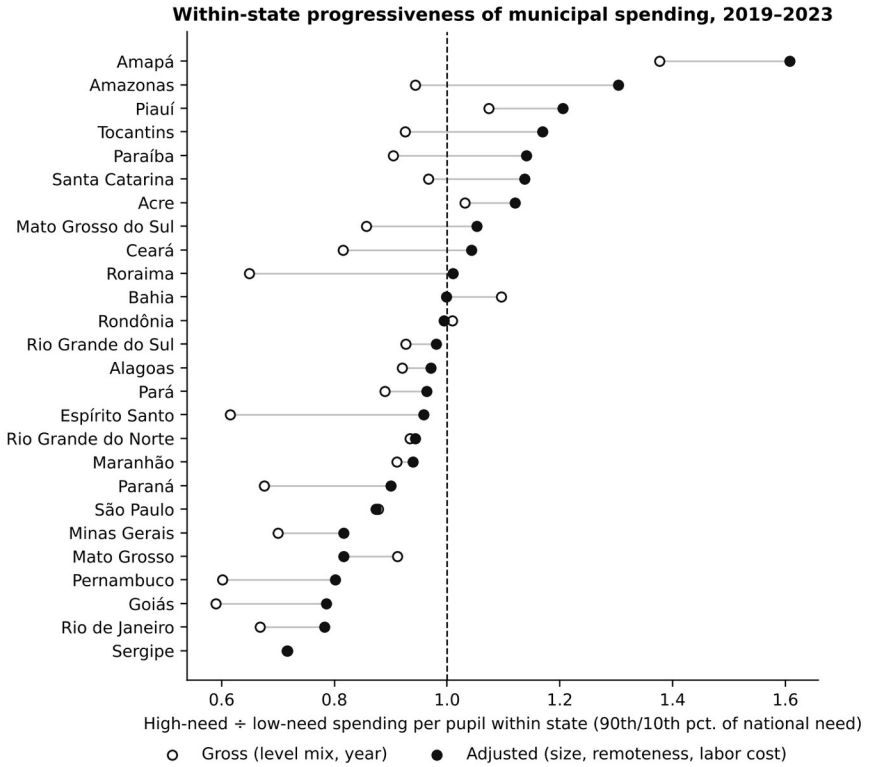
Teacher pay (40h) in high-need networks is **0.74×** that of low-need networks nationally

Within states the pay gap narrows to **0.89**

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

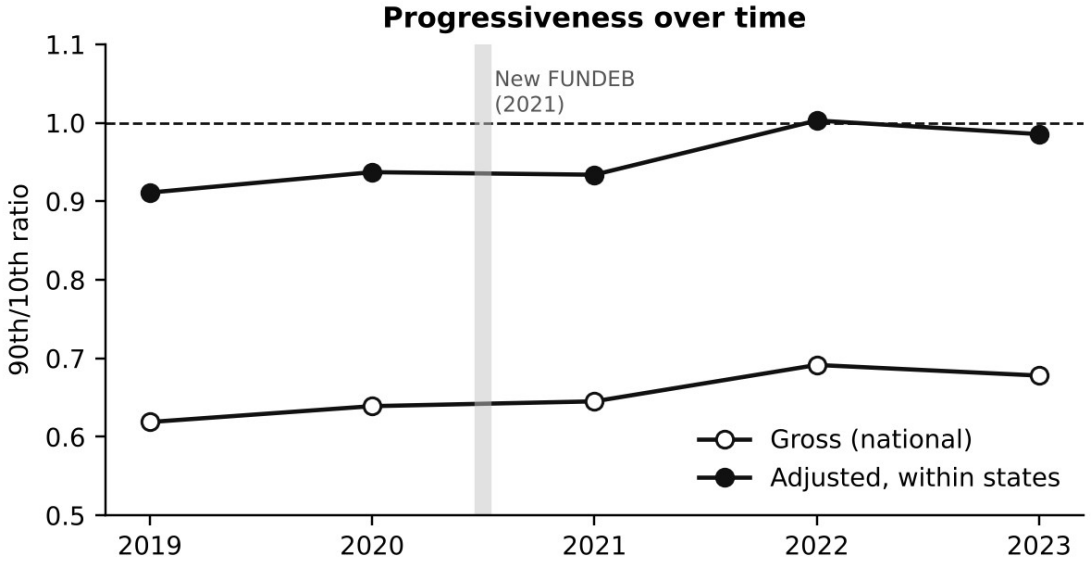
# Within-state progressiveness varies widely




Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# The new FUNDEB moved states toward neutrality



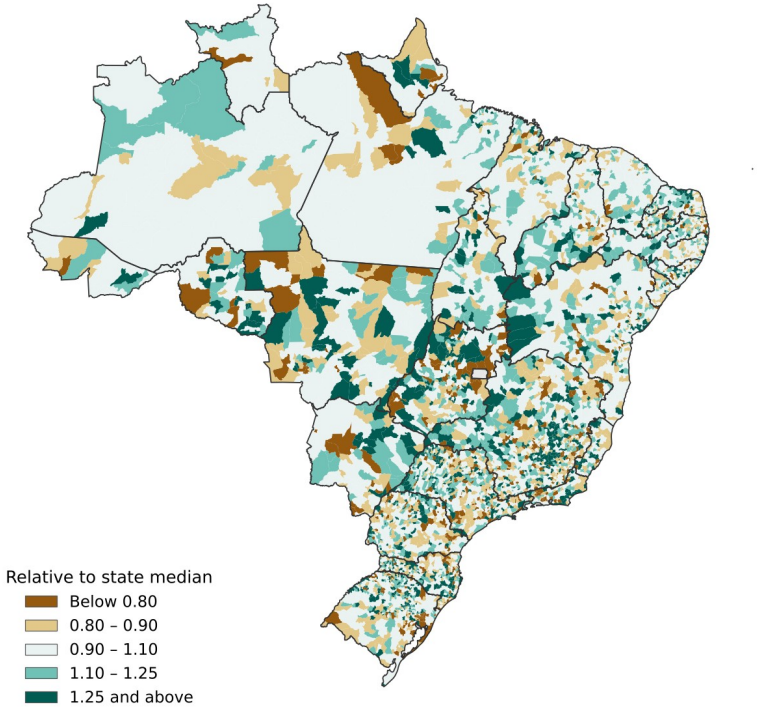

Within-state ratio: **0.91** (2019) → **0.99** (2023)

National ratio: **0.62** → **0.68**

The 2021 reform added VAAT complementation for the lowest-resourced networks

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# Spending vs. the state median, by municipality




Each municipality's 2023 spending per pupil relative to the median network in its state

Teal = above the state median; brown = below

Large differences persist among neighboring municipalities, reflecting local revenue

Source: B. D. Baker analysis of FNDE SIOPE, INEP (Censo Escolar, SAEB, INSE), IBGE Census 2022 and MDS Cadastro Único. Municipal school networks.

# Implications

- Weight FUNDEB and VAAT allocations by measured need (INSE, Cadastro Único poverty), not enrollment alone
- Strengthen the federal role between states, where the largest disparities lie
- Reduce the link between local revenue and spending; publish school-level spending
- Next: cost modeling to give the Custo Aluno Qualidade an empirical basis