

Understanding the Effects of School Funding

May 24, 2022

Julien Lafortune, with research support from Joseph Herrera



Supported with funding from the Stuart Foundation and the Dirk and Charlene Kabcenell Foundation



PPIC

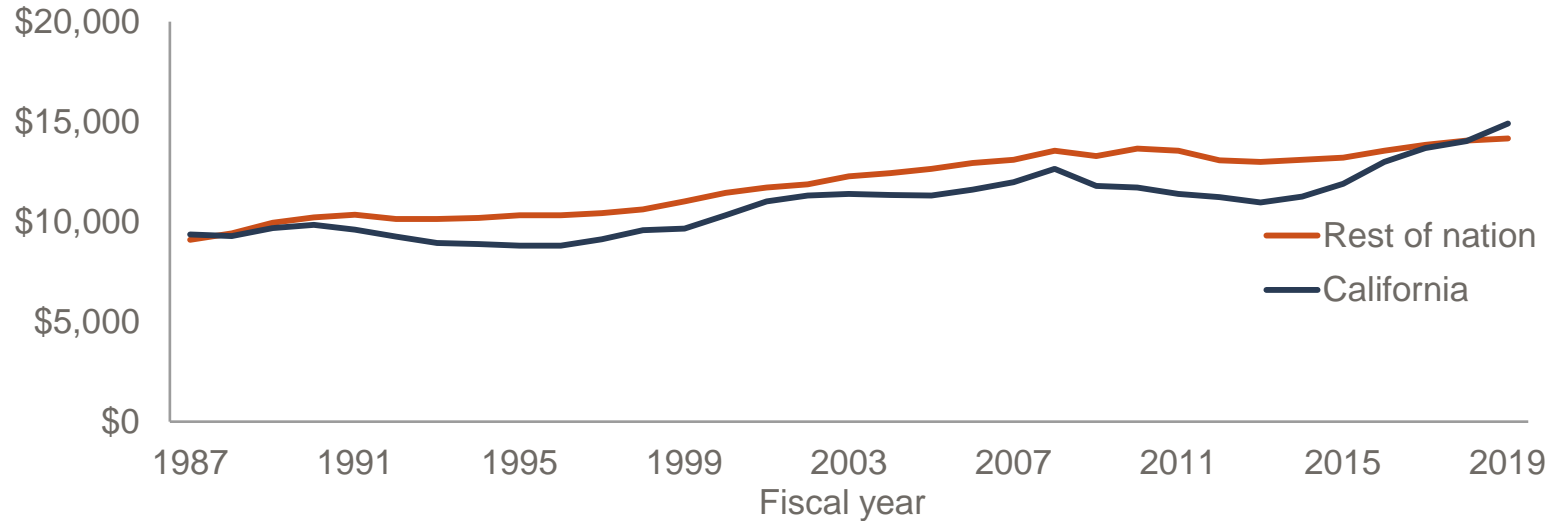
PUBLIC POLICY
INSTITUTE OF CALIFORNIA

Influential moment in California K–12 finance

- Record funding for K–12, with growing state revenues and billions in one-time federal aid
- Local Control Funding Formula (LCFF) more equity-focused
- However:
 - Pandemic caused severe disruptions, exacerbated longstanding inequities
 - Rising costs and declining enrollments
 - Concerns about how LCFF targets funding
- What can we learn from the school spending research?

California now spends slightly more than the rest of the nation

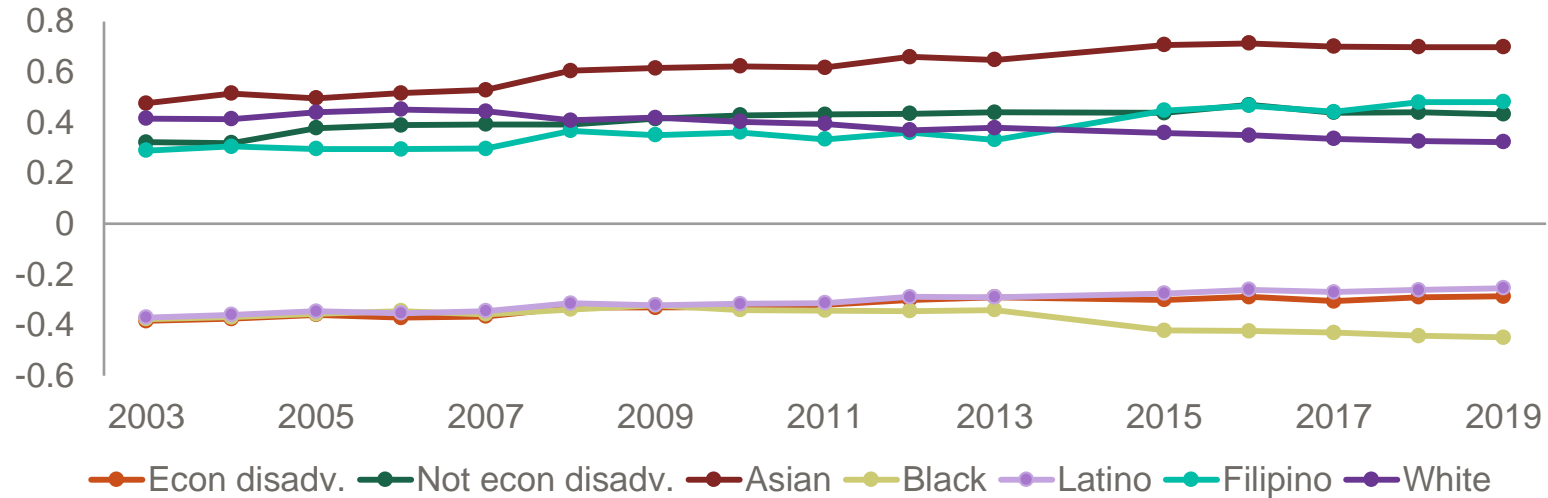
Current spending per pupil (2021 dollars)



Source: National Center for Education Statistics (F-33 survey); authors' calculations.

Test score gaps are large and persistent

Mean test score (in standard deviations)



Sources: California Department of Education, California Standards Test (CST) and Smarter Balanced (SBAC); authors' calculations.

Historically, a lack of consensus on the effects of school spending

- Debates over whether “money matters”—inconsistent relationship between spending and outcomes
- Problem: difficult to determine cause and effect
 - School funding often compensatory; many other confounds
 - Infeasible to run experiments at scale
- Solution: “natural experiments”

State-level spending reforms improved outcomes

- Most prominent “natural experiments”: state-level reforms
 - Increased state aid for low-income districts
 - **Short- and long-run:** higher test scores, graduation, college, earnings, intergenerational mobility, house prices; lower crime
 - 10% increase in school spending for 12 years → 8% increase in wages in adulthood (Jackson et al. 2016)
 - Evidence nationally, in specific states, across decades

Positive effects on outcomes across a variety of settings

- School finance reforms
- Close school bond/tax elections
- Funding formula “quirks”
- Housing market dynamics and relationship with funding formula
- Spending cuts had a negative impact

Larger impacts for low-income students and districts

- When funding targeted to low-income districts and students, studies show larger impacts per dollar
 - For 10% higher spending, adult wage gains of 10% for low-income children; 6% for high-income children (Jackson et al. 2016)
 - On average, test score impacts 2x larger per dollar vs high-income (Jackson and Mackevicius 2021)
 - Over 75% of studies show larger impacts for low-income

Effects of capital spending are less consistent

- Higher test scores, attendance in district-level studies (e.g., LAUSD)
- Positive impacts for specific facility components (e.g., HVAC)
- Mixed findings at the state level; some positive, some null
- **Exception:** research in CA suggests larger positive effects here
 - Potential explanation: harder to raise funds, less state support than in other states → greater need

California-specific research shows nuances of statewide policies

- Class Size Reduction (CSR) of the 1990s: inconclusive on test scores; drop in teacher qualifications
 - Later research: lower teacher qualifications offset gains from smaller classes
 - Restricted spending increase at scale + supply constraints may diminish potential impacts of a policy
- LCFF: higher spending improved outcomes
 - But: imperfect targeting of funds to high-need students, schools

Contextualizing spending levels: What does the research imply?

- Why have test score gaps persisted despite rising spending?
- Simple comparison: examine *relative* differences in spending and scores between student groups
 - Extrapolate using estimates of per-dollar test score impacts

Higher spending for low-income, Black, and Latino students

	Low-income	Non-Low-income	Asian	Black	Latino	White
Total spending per pupil (2019–20)	\$19,142	\$18,335	\$18,622	\$20,254	\$18,930	\$18,337
Difference: vs. non-low-income	\$807	\$0				
Difference: vs. white			\$285	\$1,917	\$593	\$0

Source: California Department of Education, SACS files, enrollment files; authors' calculations.

Contextualizing spending levels: What does the research imply?

- Estimates imply closing income gap in 8th grade scores could require:
 - \$7,200 to \$10,200 for 8 years
 - Current spending progressivity only 8% to 11% of implied amount
 - At current levels: 70+ years to close income gaps in test scores
- **Many caveats!** Likely not linear, additive
- **Upshot:** Spending is effective per dollar (and passes cost-benefit), but current levels far from what *could* close gaps

How spending is targeted matters

- To target *student-level* gaps, need to know how funding reaches schools and students within districts
 - Many districts segregated across school sites
 - National: reforms led to improvements for low-income *districts* but not *students*
 - Michigan reform: larger increases for high-income *schools within districts*
 - LCFF: extent of targeting to school sites varies

How should we spend a given dollar?

- Current research provides little concrete guidance
 - Difficult to study: easier to find natural experiments on spending level than on composition
 - Exceptions: class size, smaller programs
- Staff quantity vs. “quality” can be a tradeoff
 - Low-income schools have smaller class sizes, but spend less per teacher
 - Is this the best use of funds?

Rising costs crowd out spending increases

- Benefit costs rising faster than inflation
- Rising cost of living, broad wage increases (“cost disease”)
- Pension contribution rate increases:
 - District contribution rate more than double since 2013
 - Crowds out roughly 25% of spending increase post-LCFF
- **Key:** is additional dollar buying same level of resources?

Declining enrollment poses immediate and long-term challenges

- State enrollment projected to decline 9% in next decade
 - Largely driven by demographics (migration; falling birth rates)
 - Pandemic accelerated trend; some increase in private school
- Adjusting to lower enrollment challenging for districts
 - Can lose efficiencies in downsizing; closing schools difficult choice
- **Silver lining:** more funding per student statewide

Conclusion

- Robust body of research finds that spending improves outcomes
 - Short- and long-run outcomes
 - *On average, not always or for all*
 - True across contexts—and when funding is unrestricted
 - Largest impacts for low-income students and districts
- Research less clear about specific inputs
 - Capital impacts generally smaller per dollar
 - Tradeoffs between staff quantity vs. quality may be consequential

Recommendations for policy and research

- Improve targeting to address inequities more efficiently
- Staffing differences across schools need more attention
 - Spending more via smaller classes but with novice educators?
- Better data can better inform what works—and for whom
 - Research often limited to test scores
 - Role of school has expanded (e.g., mental health; community schools)

Notes on the use of these slides

These slides were created to accompany a presentation. They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

Julien Lafortune (lafortune@ppic.org; 415-291-4473)

Thank you for your interest in this work.