Getting Down to Facts on Adequate School Funding in California

April 12, 2019
Sacramento, California

Stanford University

PACE
Policy Analysis for California Education

GETTING DOWN TO FACTS II

What is Getting Down to Facts II?

National collaborative research project on California's PreK-12 education system including more than 100 researchers across the country.

- Sequel to the first GDTF released 10 years ago
- Input from multiple stakeholders: the public, teachers, principals, CBOs, superintendents (county and district), policy leaders
- 36 research studies, 19 research briefs and a summary paper

Areas Covered

Student Success

Governance

Personnel

Finance

Key Findings from Getting Down to Facts II

- California schools and students have been moving in the right direction.
- Great need remains for policies to address system weakness and build capacity.
- Specifically, areas for California to focus on:
  - Building on current reforms
  - Increasing funding and fixing systems
  - Addressing achievement gaps

Jennifer Imazeki

- Senate Distinguished Professor and Professor of Economics at San Diego State University
- Director of the SDSU Center for Teaching & Learning
- Her research focuses on on the economics of K-12 education, including work on school finance reform, adequacy and teacher labor markets

Jesse Levin

- Principal research economist at American Institute for Research
- His research covers educational production, school finance and adequacy, and resource allocation.
- Director of several cost effectiveness analysis components of randomized control trial studies for various educational interventions
- Led a national study of district weighted student funding systems, and was recently deputy director for a study of Title I resource allocation for the U.S. Department of Education.

Iliana Brodziak de los Reyes

- Senior Research Analyst at the American Institutes for Research
- Focuses on statistical analysis of achievement data, resource allocation data and survey data.
- Oversees the cost analysis for a a randomized control trial to evaluate the efficacy of online credit recovery on student learning and high school graduation.
- Leads the data collection and cost analysis for the study of Funding Provided to Public Schools and Public Charter Schools in Maryland and for the Cost Analysis of Network to Transform Teaching (NT3)
- Leads the cost study of a reading intervention targeted to English learners.

Agenda

- Presentation by Jennifer Imazeki: *Adequacy and State Funding Formulas: What Can California Learn From the Research and National Context?*

- Presentation by Jesse Levin and Iliana Brodziak de los Reyes: *What Does It Cost to Educate California's Students? A Professional Judgment Approach*

- Q&A

Adequacy and State Funding Formulas: What Can California Learn From the Research and National Context?

JENNIFER IMAZEKI

SAN DIEGO STATE UNIVERSITY

Key Questions

Where does the money go?

- How much should different districts get? What factors do/should policymakers consider in determining the adequate level of funding in a given district?
- Cross-state comparison: how are these factors incorporated into funding formulas?

Where does the money come from?

- How do states *pay* for adequacy? What are the revenue sources?

LCFF: A Weighted Funding Formula

California

Everyone Else

CA

Base ($7189 AY1617) +

Weights for

- grade level*
- poverty / EL / foster
- concentration

Other States

Base +

Weights for

- grade level*
- poverty
- EL
- special ed
- labor costs
- density
- enrollment (size)
- GATE
- CTE

Table 1: California Compares Favorably to Some States and Less Favorably to Others in a Comparison of State School Characteristics, 2016

	Student/Teacher Ratio	Average Teacher Salary	School Revenue Per Pupil	Instruction as Percentage of Current Expenditures
California	22.53	$77,179	$10,484	59.5%
Texas	15.23	$48,882	$10,064	61.4%
Florida	16.11	$40,717	$ 8,067	60.9%
New York	12.65	$81,255	$24,342	70.1%
Illinois	16.69	$56,991	$12,856	58.7%
Ohio	16.02	$47,560	$10,760	58.9%

Data: National Education Association (Rankings & Estimates: Rankings of the States 2016 and Estimates of School Statistics 2017).

Table 4. Comparison State Funding Formulas

	California	Texas	Florida	New York	Illinois	Ohio
Pupil count	ADA	ADA	ADA	ADM	ADA (best 3-month average)	ADM
Base Amount[1]	7189	4842	3444	6502	5685	4972
Compensatory / Low-income	Pupil weight (0.2) with additional weight (0.5) if targeted concentration (FRL, EL, foster youth) above 55%	Pupil weight for FRL (0.20)	NA	Part of Pupil Need Index = [0.65x(FRL + Census Poverty Count) + 0.5xEL + Sparsity]/Total enrollment, applied to base	Per-pupil grant ($355) if concentration < 15%; if concentration >15%, formula increasing w/ concentration ([294.25 + (2,700 (DCR)2)] X low-income pupils) (not equalized)	Per-pupil grant ($272) equalized by the poverty index (square of the ratio of the individual district's poverty percentage to the statewide poverty percentage)
English Learners	Pupil weight (0.2) with additional weight (0.5) if targeted concentration (income, EL, foster youth) above 55%	Pupil weight (0.1)	Pupil weight (0.194)	Part of Pupil Need Index = [0.65x(FRL + Census Poverty Count) + 0.5xEL + Sparsity] / Total enrollment, applied to base	Per-pupil grant based on grade level and level of service (5-10 classes per week or 10+)	Per-pupil grant based on 3 categories ($1515, 1126, 758) (wealth equalized)
Special education	Census-based; allocations based on history	Pupil weights based on disability (1.7 to 5.0)	Pupil weights based on service level (2.607, 4.376); supplement for small (<10K) districts with <3 ESE students	Pupil weights (1.41; 0.5 for students in 1st year after leaving special ed); additional aid for High Cost students	Grant for certified ($9000) & non-certified ($3500) personnel; reimbursement for excess costs of private tuition, special facilities	6 categories based on disability, $ amount per child (wealth equalized)
School / district	Alternative funding for	Pupil weights for small	Pupil weight for small (28-	Alternative funding for	NA	NA

CA

Base +

Weights for

- grade level*
- poverty / EL / foster
- concentration

Other States

Base +

Weights for

- grade level*
- poverty
- EL
- special ed
- labor costs
- density
- enrollment (size)
- GATE
- CTE

CA

- Property taxes [capped by Prop 13]
- Sales taxes
- Private $
- Parcel taxes

Other States

- Property taxes
- Sales taxes
- Private $
- Local income taxes

Additional considerations…

- Prop 98
- Serrano v. Priest
- Variation in local tax allocations

GETTING DOWN TO FACTS II | APRIL 2019

WHAT DOES IT COST TO EDUCATE CALIFORNIA'S STUDENTS? A PROFESSIONAL JUDGMENT APPROACH

Jesse Levin| Iliana Brodziak | Drew Atchison| Karen Manship | Melissa Arellanes |Lynn Hu

Policy Analysis for California Education (PACE) Seminar
April 12, 2019

MAKING RESEARCH RELEVANT

AIR®

Meet the Presenters

Jesse Levin, Ph.D.

Principal Research Economist

Iliana Brodziak de los Reyes, Ph.D.

Senior Researcher

A Brief Introduction to Adequacy Studies

Two Fundamental Adequacy Questions

1. What is the cost of providing an adequate educational opportunity to all students in a state's public school system?
2. How should resources be allocated in order to achieve an equitable distribution of funding capable of providing an adequate educational opportunity to all public school students, regardless of need or circumstance?

Motivations for Conducting Costing-Out Studies

- Studies Conducted As a Result of Litigation
  - New York
  - Kansas
- Proactive Studies on the Part of State Legislatures
  - New Mexico
- Independent Investigations Conducted by Researchers
  - California

Methods for Costing Out Educational Adequacy

- Input-oriented approaches – Use "ingredients" approach to determine spending (Levin et al., 2018)
  - Evidence-based
  - Professional judgment
- Outcome-oriented approaches – Spending directly observed without determining ingredients
  - Cost functions
  - Successful schools
- Three key cost factors that must be taken into account
  - Student needs (socioeconomically disadvantage, English learner designation and special education status)
  - Scale of operations (enrollment size)
  - Price level of inputs

Adequacy Study Performed for Getting Down to Facts II

Research Questions

- *What is the cost of providing all California public school students with access to the California content standards and achieving appropriate levels of proficiency in accordance with standards established by the California State Board of Education?*
  - What are the resources needed to enable the California public school system to provide all students with an adequate education?
  - What is the cost associated with providing an adequate education to all students?

Goals Statement – Accountability System

- Regardless of student body, all California schools will meet the criteria to be rated at least GREEN on all four state accountability indicators:
  - Suspension rate
  - English learner progress
  - Graduation rate
  - Academic indicator (English language arts/literacy or mathematics assessments)

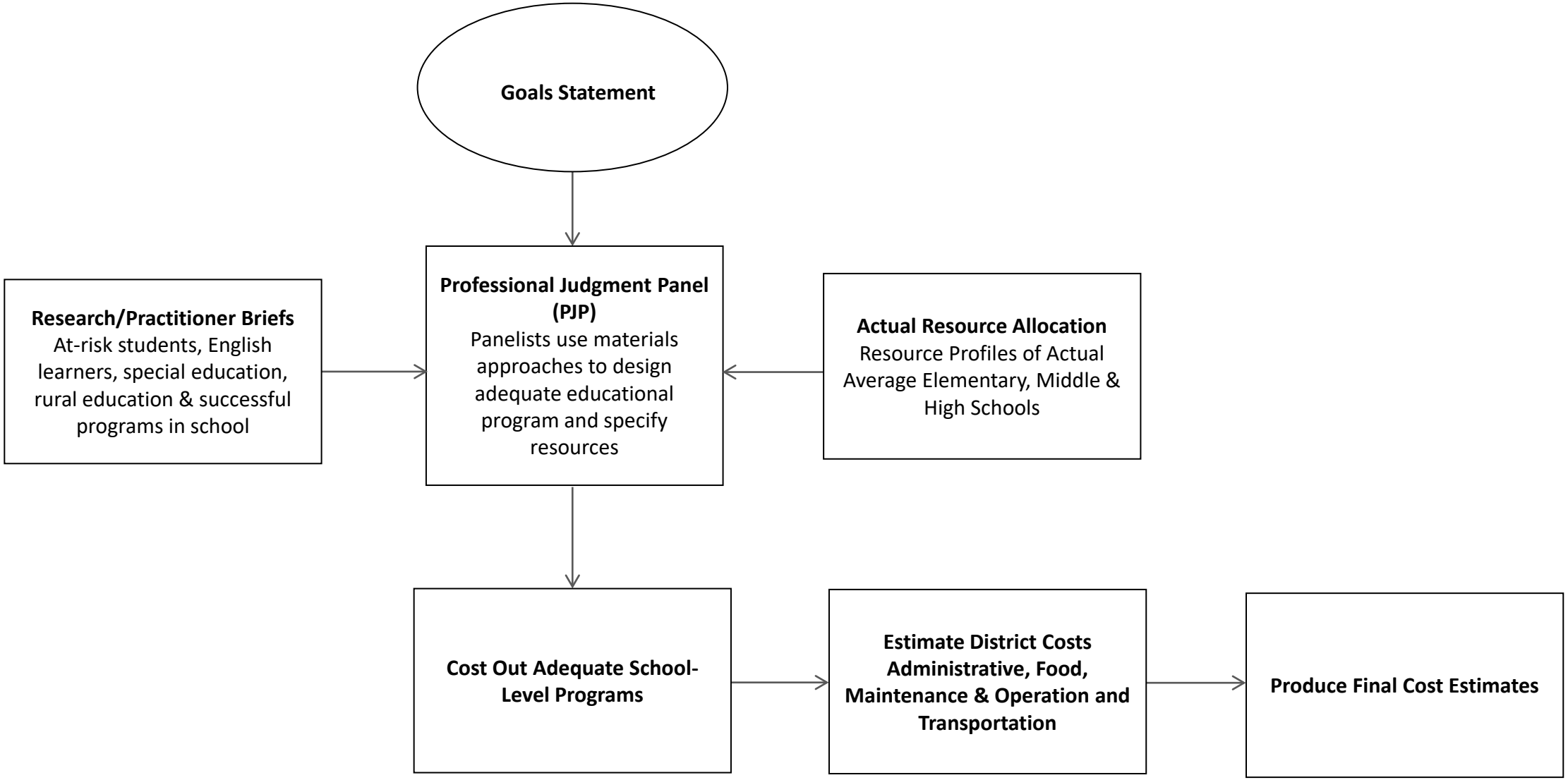
Levels		Change				
		Declined Significantly	Declined	Maintained	Increased	Increased Significantly
Status	Very High	Yellow	Green	Blue	Blue	Blue
	High	Orange	Yellow	Green	Green	Blue
	Medium	Orange	Orange	Yellow	Green	Green
	Low	Red	Orange	Orange	Yellow	Yellow
	Very Low	Red	Red	Red	Orange	Yellow

Goals Statement – Content Standards

- All students should have access to instructional programs and services that are consistent with the California content standards in all subject areas, listed below, as adopted by the State Board of Education.

  - English Language Arts
  - Mathematics
  - English Language Development
  - Career Technical Education
  - Computer Science
  - Health Education
  - History-Social Science
  - Model School Library
  - Physical Education
  - Science
  - Visual and Performing Arts
  - World Language

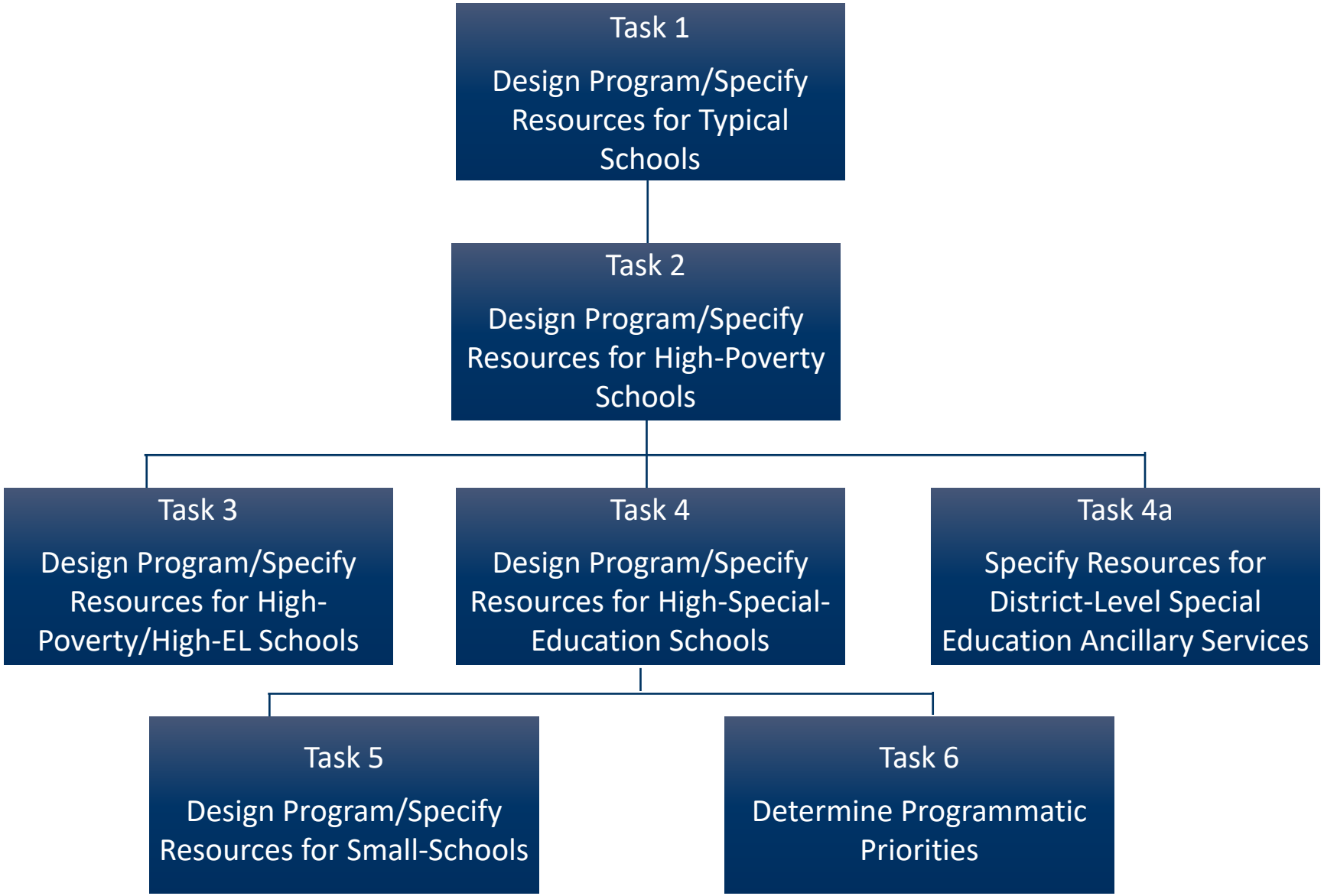
Overview of the Approach



Professional Judgment Panel Workshops

- Panelists must design adequate programs and specify resources necessary for school prototypes serving students of varying needs (at-risk, English learners, special education) in different circumstances.
- In developing their programs the PJP needs to follow (**GEER**):
  - Deliver the Educational **G**oals
  - Be Supported by **E**vidence-based Approaches
  - Represent **E**fficient (Minimum Cost) Resource Specifications
  - Have a **R**ealistic Chance of Being Implemented
- PJP Workshop Materials
  - Goals statement
  - Expert briefs on programmatic elements of schools successfully serving different populations
  - School-level personnel resource profiles of typical schools

Professional Judgment Panel Overview



Key Features of Professional Judgement Program Designs I

- Providing sufficient time for teachers to plan and collaborate
- Keeping class sizes at a reasonable level, but not so small as to be inefficient
- Focusing on opportunities in science, technology, engineering, and mathematics (STEM)
- Providing opportunities outside of core subjects, such as visual and performing arts (VAPA) and other electives to foster student engagement
- Providing resources to serve all four-year-old children in a high-quality prekindergarten or transitional kindergarten (TK) program
- Engaging families in meaningful ways, especially in early childhood and elementary education
- Providing a fully inclusive special education program that incorporates response-to-intervention practices with sufficient staffing levels to provide appropriate student support

Key Features of Professional Judgement Program Designs II

- Supporting dual-language learners to master reading and writing
- Including intentional training for all teachers in language development
- Promoting focused professional development activities that are well-integrated with evaluation and feedback systems
- Acknowledging the diversity of needs among all students and providing sufficient staff for differentiation
- Supporting social-emotional development through a team-based approach to supporting students
- Valuing vertical alignment so that curricula and instruction align across grades and schooling levels

Steps to Determine Costs of Achieving Adequacy

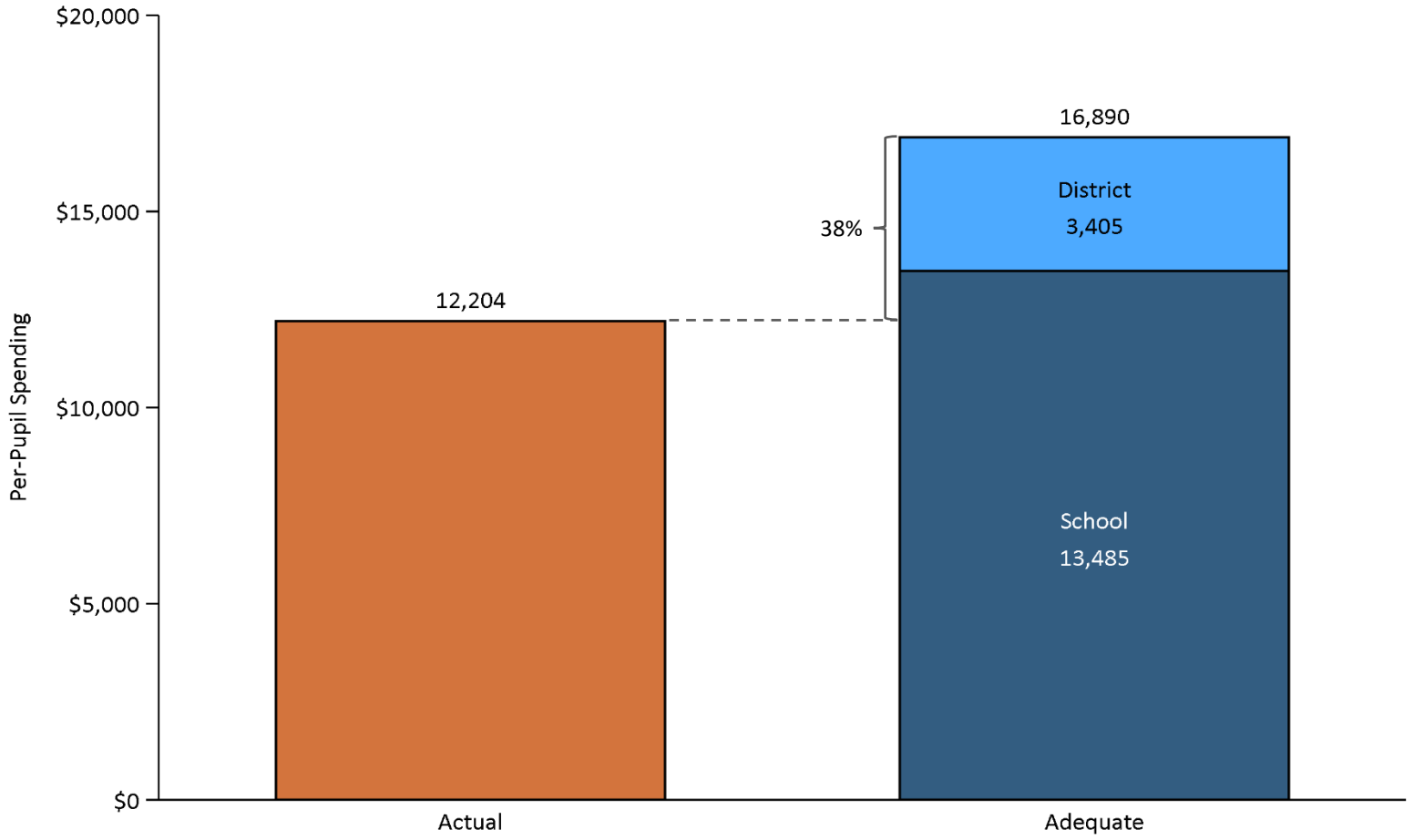
- Use PJP data to determine school-based cost variations and project for all schools
- Aggregate projected school-based costs to district level
- Develop district-based costs and project for all districts
  - Ancillary special education costs
  - Overhead (administration, food, maintenance/operations and transportation)
- Adjust for geographic differences in input price levels
- Sum school- and district-based costs and determine overall cost projections for each district
- Compare adequate cost projections against actual spending

Key Study Findings

Key Findings

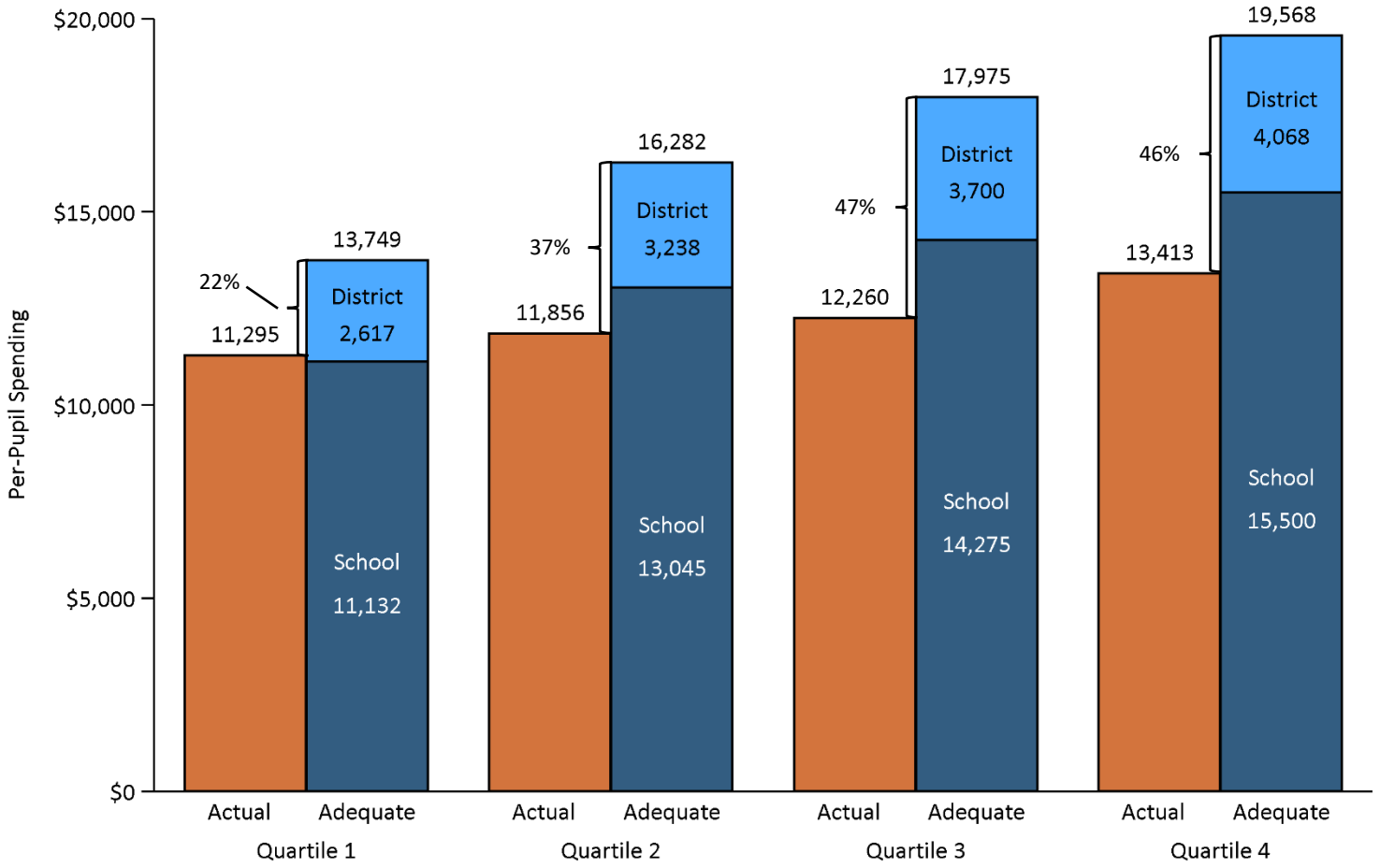
- California needs to spend more in order to provide an adequate educational opportunity for its public school students.
- The estimated gap between adequate cost and actual spending is larger in districts with higher poverty and those located in smaller towns or rural/remote areas.
- While the suggested necessary spending increase may seem large, in the context of spending levels in other states the finding is merely a reflection of the relatively low level of spending in our state.

Differences in Actual Spending and Adequate Cost Per-Pupil



Source: AIR calculations from PJP resource specifications; California Department of Education (CDE) Student & School Data Files (https://www.cde.ca.gov/ds/sd/sd/); and, Standardized Account Code Structure (SACS), California Department of Education (CDE) https://www.cde.ca.gov/fg/ac/ac/.

Actual Per-Pupil Spending and Adequate Per-Pupil Cost by Free and Reduced Price Lunch Quartile



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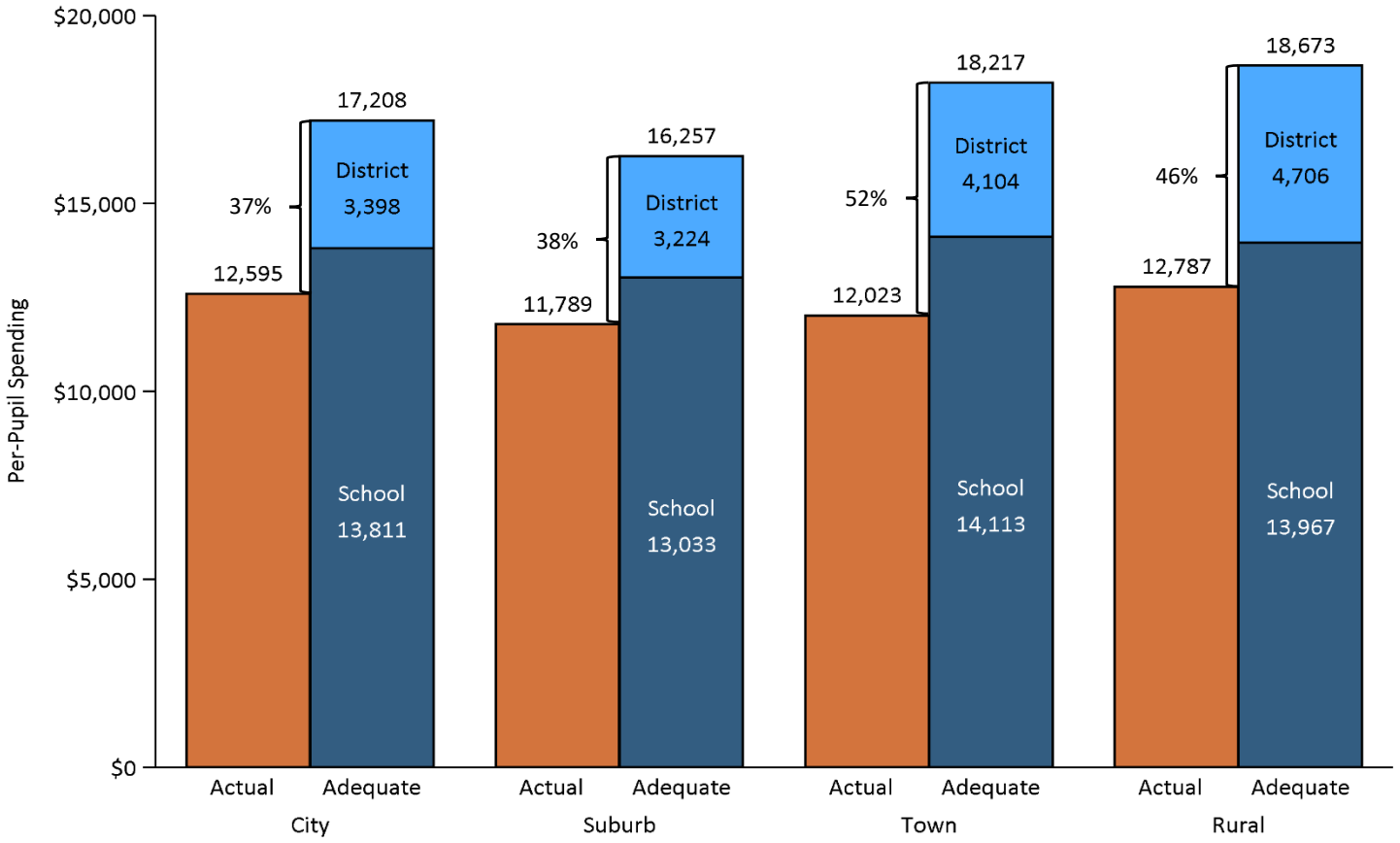
Actual Per-Pupil Spending and Adequate Per-Pupil Cost by District Locale



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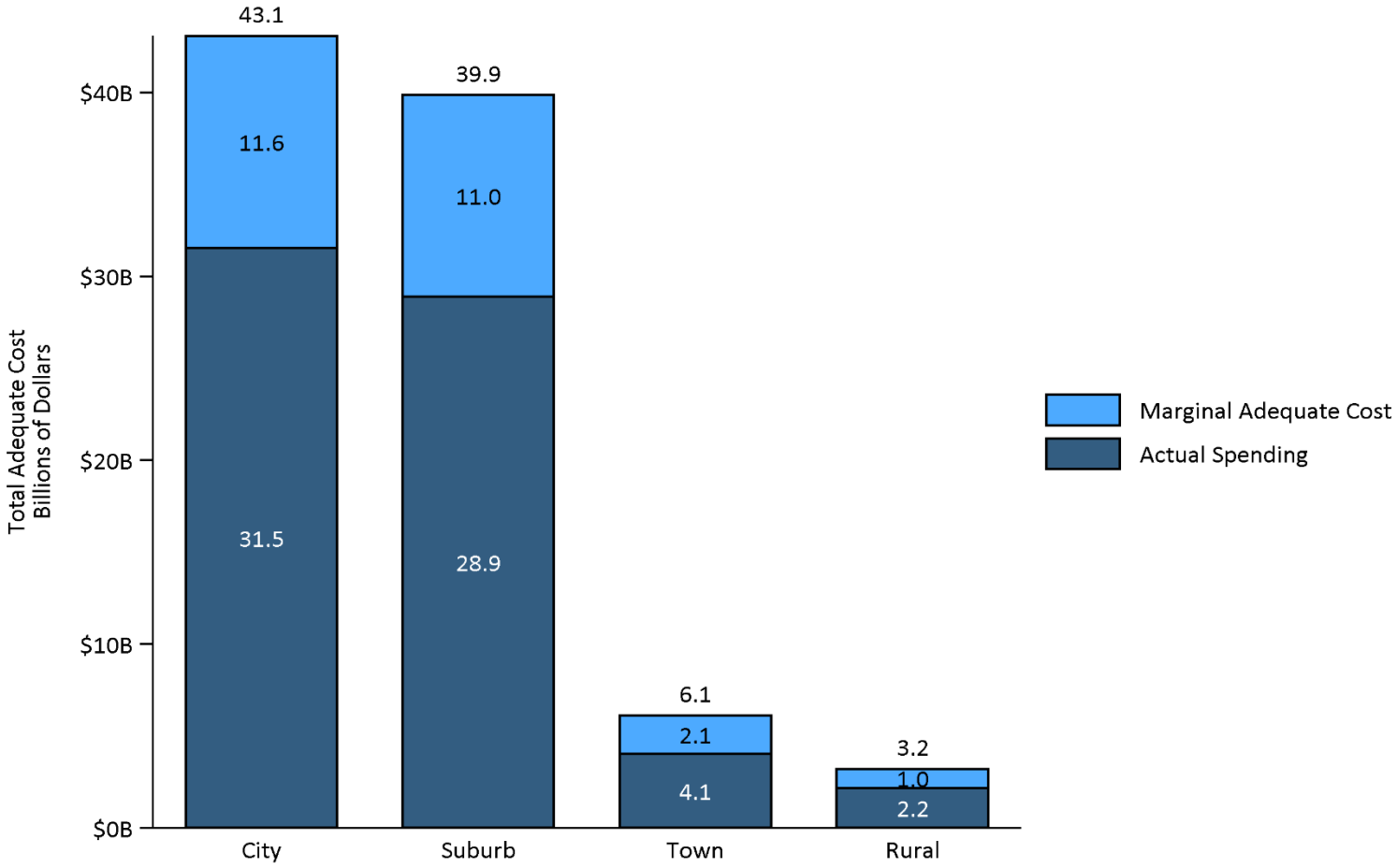
Total Adequate Cost by District Locale



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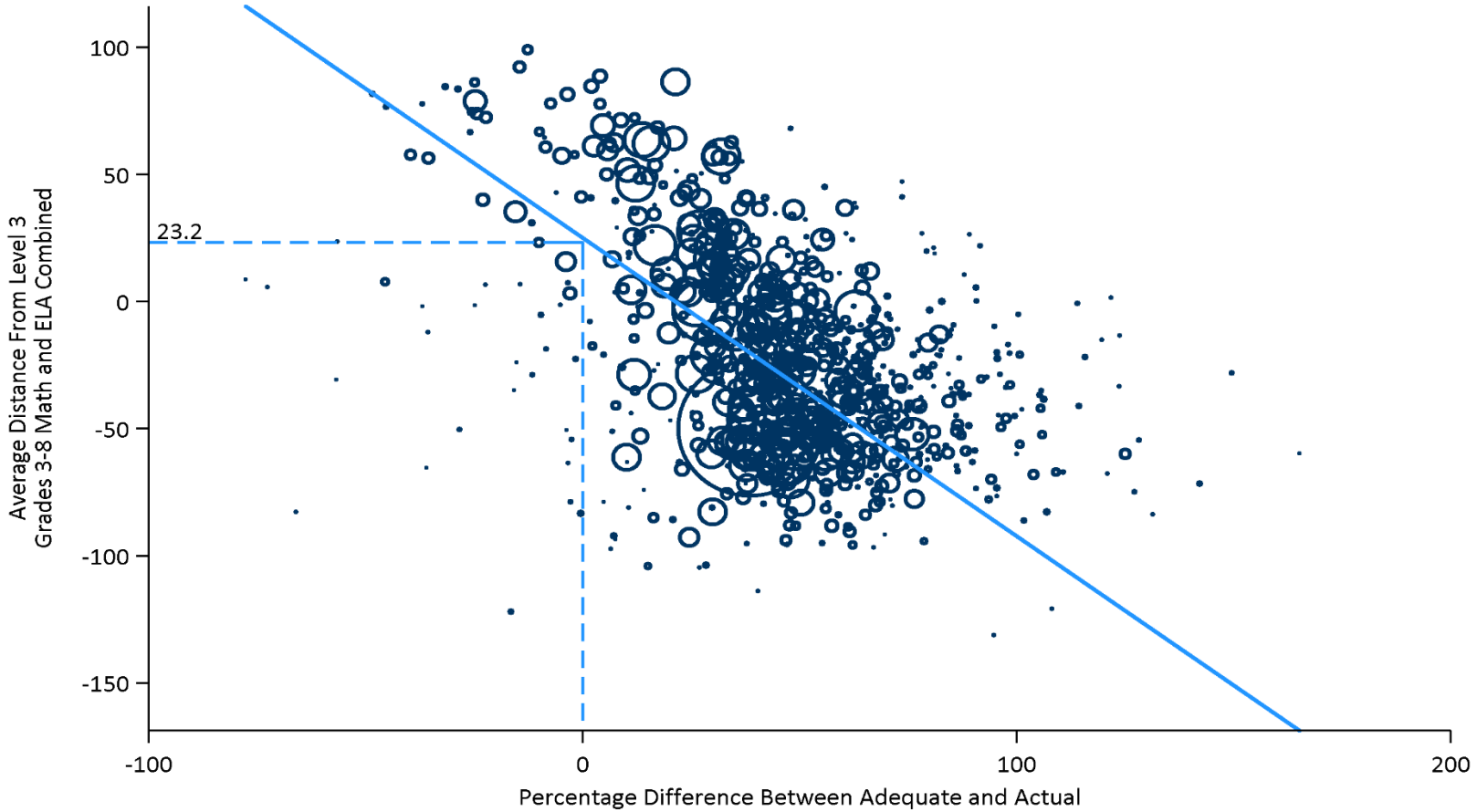
Regression Results Predicting District-Level Actual and Adequate Per-Pupil Costs

	Actual	Adequate
Enrollment: <500	1.21***	1.25***
	(0.03)	(0.01)
Enrollment: 500–1,000	1.09**	1.15***
	(0.03)	(0.01)
Enrollment: 1,000–2,000	1.05*	1.10***
	(0.02)	(0.01)
Special Education Proportion	2.39**	5.34***
	(0.76)	(0.82)
Free or Reduced-Price Lunch Proportion	1.29***	1.80***
	(0.08)	(0.03)
English Learner Proportion	1.15	1.18***
	(0.09)	(0.04)
Middle School Enrollment Proportion	0.66**	0.88**
	(0.08)	(0.04)
High School Enrollment Proportion	1.02	0.95**
	(0.04)	(0.02)
Comparable Wage Index	1.05***	1.08***
(10 percentage point increase)	(0.01)	(0.00)
Base	10,045***	9,850**
	(483.6)	(255.7)
N	934	934
pseudo R^2	0.33	0.89

Note: Exponentiated coefficients; Standard errors in parentheses; Regressions weighted by K–12 enrollment.
** $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

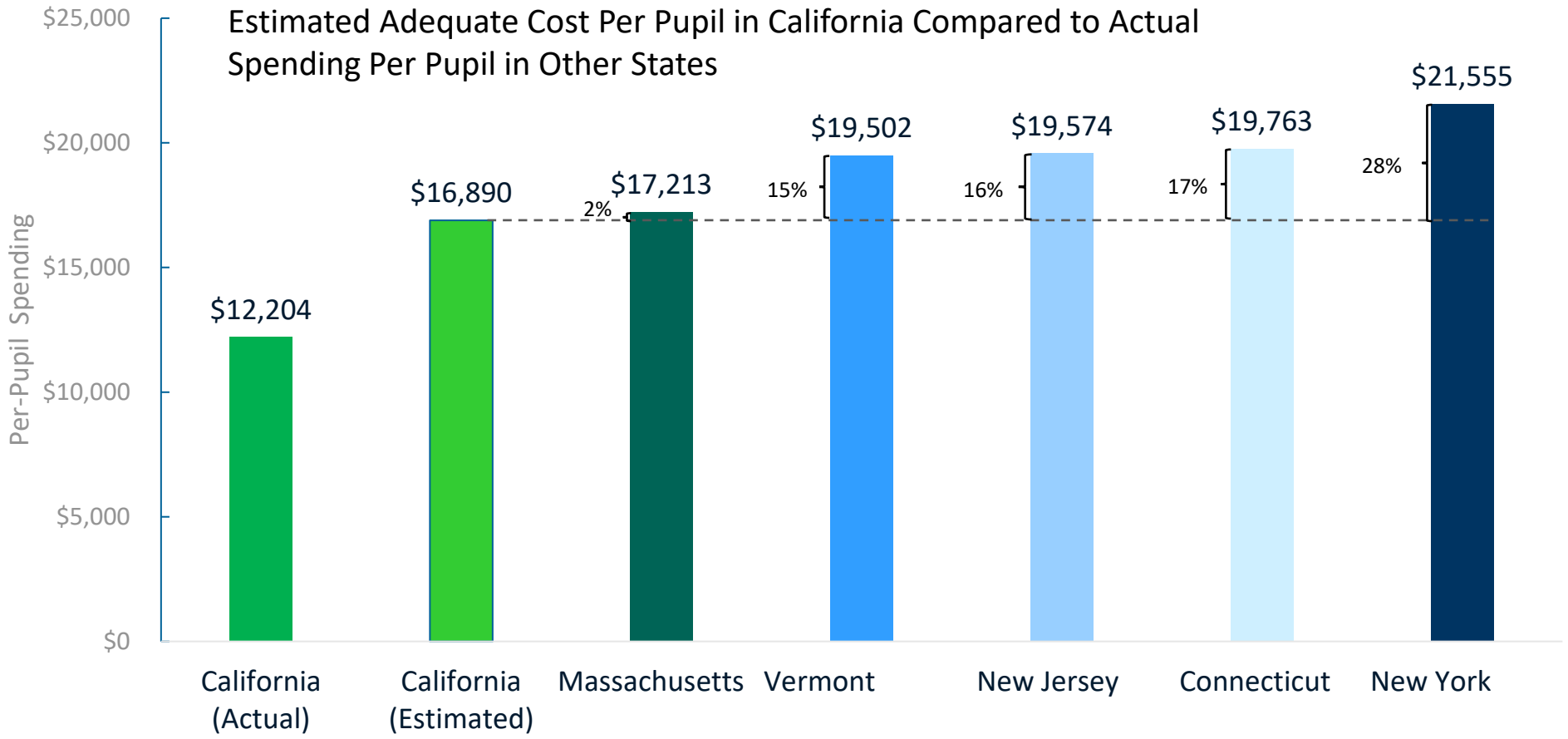
Source: AIR calculations from PJP resource specifications; California Department of Education (CDE) Student & School Data Files (https://www.cde.ca.gov/ds/sd/sd/); and, Standardized Account Code Structure (SACS), California Department of Education (CDE) https://www.cde.ca.gov/fg/ac/ac/.

Grades 3–8 Test Scores in Relation to the Percentage Difference Between Adequate Cost and Actual Spending



Source: AIR calculations from PJP resource specifications; California Department of Education (CDE) Student & School Data Files (https://www.cde.ca.gov/ds/sd/sd/); California Assessment of Student Performance and Progress (CAASPP) https://caaspp.cde.ca.gov/sb2017/ResearchFileList; and, Standardized Account Code Structure (SACS), California Department of Education (CDE) https://www.cde.ca.gov/fg/ac/ac/.

The estimated adequate funding for California is still below other states' actual spending levels.



Sources: *AIR calculations from PJP resource specifications and California Department of Education (CDE) Student & School Data Files* (https://www.cde.ca.gov/ds/sd/sd/).
Cornman, S. Q., Zhou, L., Howell, M. R., & Young, J. (2018). *Revenues and expenditures for public elementary and secondary education: School year 2014–15 (fiscal year 2015): First look* (NCES 2018-301). Washington, DC: National Center for Education Statistics. Retrieved from https://nces.ed.gov/pubs2018/2018301.pdf. 2016-17 actual spending per pupil figures are inflation-adjusted measures of the 2014-15 dollars using the Bureau of Labor Statistics Consumer Price Index (CPI) Inflation Calculator (https://data.bls.gov/cgi-bin/cpicalc.pl).

Reasons Why Adequacy Estimates May Be A Lower Bound

- Why might the adequacy estimates represent a lower-bound of the true cost of providing an adequate education?
  - There has been a significant increase in the financial burden placed on districts due to state pension costs, which is scheduled to increase in future years.
  - Increases in staffing corresponding with the provision of adequate funding could have knock on effects to a teacher labor market that already exhibits significant shortages.
  - The estimates represent the exact amount necessary to provide educational adequacy in each district while implementing a policy to promote adequate funding would require holding districts harmless.

Recap of Key Findings

- California needs to spend more in order to provide an adequate educational opportunity for its public school students.
  - In 2016–17, the state spent about $66.7 billion ($12,204 per student) to educate its public school students in grades K-12, while the overall estimated adequate cost for 2016–17 amounted to $92.3 billion ($16,890 per student).
  - The estimate suggest that California would need to invest an additional $25.6 billion or 38% above actual spending to ensure that all students had the opportunity to meet the state's goals.
- The estimated gap between adequate cost and actual spending is larger in districts with higher poverty and those located in smaller towns or rural/remote areas.
- While the suggested necessary spending increase may seem large, in the context of spending levels in other states the finding is merely a reflection of the relatively low level of spending in California.
- Important reason why the adequacy estimates may represent a lower-bound:
  - There has been a significant increase in the financial burden placed on districts due to state pension costs, which is scheduled to increase in future years.

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MAKING
RESEARCH
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THANK YOU

Questions?

Upcoming PACE Seminars

Making Data Systems Useful for California

Jesse Rothstein and Evan White

May 10, 2019, 11:30- 1:00pm

The Challenges of Employee and Retiree Health Benefit Costs for California Districts

Paul Bruno

June 11, 2019, AM (Time TBD)