Getting Down to Facts on Adequate School Funding in California

April 12, 2019
Sacramento, California
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 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 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

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

<table>
<thead>
<tr>
<th></th>
<th>California</th>
<th>Texas</th>
<th>Florida</th>
<th>New York</th>
<th>Illinois</th>
<th>Ohio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pupil count</strong></td>
<td>ADA</td>
<td>ADA</td>
<td>ADA</td>
<td>ADM</td>
<td>ADA (best 3-month average)</td>
<td>ADM</td>
</tr>
<tr>
<td><strong>Base Amount</strong></td>
<td>7189</td>
<td>4842</td>
<td>3444</td>
<td>6502</td>
<td>5685</td>
<td>4972</td>
</tr>
<tr>
<td><strong>Compensatory / Low-income</strong></td>
<td>Pupil weight (0.2) with additional weight (0.5) if targeted concentration (FRL, EL, foster youth) above 55%</td>
<td>Pupil weight for FRL (0.20)</td>
<td>NA</td>
<td>Part of Pupil Need Index = [0.65x(FRL + Census Poverty Count) + 0.5xEL + Sparsity] / Total enrollment, applied to base</td>
<td>Per-pupil grant ($255) if concentration &lt; 15%; if concentration &gt;15%, formula increasing w/ concentration ([294.25 + (2,700 (DCR/2))] X low-income pupils) (not equalized)</td>
<td>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)</td>
</tr>
<tr>
<td><strong>English Learners</strong></td>
<td>Pupil weight (0.2) with additional weight (0.5) if targeted concentration (income, EL, foster youth) above 55%</td>
<td>Pupil weight (0.1)</td>
<td>Pupil weight (0.194)</td>
<td>Part of Pupil Need Index = [0.65x(FRL + Census Poverty Count) + 0.5xEL + Sparsity] / Total enrollment, applied to base</td>
<td>Per-pupil grant based on grade level and level of service (3-10 classes per week or 10+)</td>
<td>Per-pupil grant based on 3 categories ($1515, 1126, 758) (wealth equalized)</td>
</tr>
<tr>
<td><strong>Special education</strong></td>
<td>Census-based; allocations based on history</td>
<td>Pupil weights based on disability (1.7 to 5.0)</td>
<td>Pupil weights based on service level (2.607, 4.376); supplement for small (&lt;10K) districts with &lt;3 ESE students</td>
<td>Pupil weights (1.41; 0.5 for students in 1st year after leaving special ed); additional aid for High Cost students</td>
<td>Grant for certified ($9000) &amp; non-certified ($3500) personnel; reimbursement for excess costs of private tuition, special facilities</td>
<td>6 categories based on disability, $ amount per child (wealth equalized)</td>
</tr>
<tr>
<td><strong>School / district</strong></td>
<td>Alternative funding for</td>
<td>Pupil weights for small</td>
<td>Pupil weight for small</td>
<td>Alternative funding for</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
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
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)

<table>
<thead>
<tr>
<th>Status</th>
<th>Very High</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
<th>Very Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levels</td>
<td>Very High</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td>Very Low</td>
</tr>
<tr>
<td>Declined Significantly</td>
<td>Declined</td>
<td>Maintained</td>
<td>Increased</td>
<td>Increased Significantly</td>
<td></td>
</tr>
<tr>
<td>Very High</td>
<td>Yellow</td>
<td>Green</td>
<td>Blue</td>
<td>Blue</td>
<td>Blue</td>
</tr>
<tr>
<td>High</td>
<td>Orange</td>
<td>Yellow</td>
<td>Green</td>
<td>Green</td>
<td>Blue</td>
</tr>
<tr>
<td>Medium</td>
<td>Orange</td>
<td>Orange</td>
<td>Yellow</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>Low</td>
<td>Red</td>
<td>Orange</td>
<td>Orange</td>
<td>Yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>Very Low</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
<td>Orange</td>
<td>Yellow</td>
</tr>
</tbody>
</table>
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

Goals Statement

Professional Judgment Panel (PJP)
Panelists use materials approaches to design adequate educational program and specify resources

Research/Practitioner Briefs
At-risk students, English learners, special education, rural education & successful programs in school

Cost Out Adequate School-Level Programs

Actual Resource Allocation
Resource Profiles of Actual Average Elementary, Middle & High Schools

Estimate District Costs
Administrative, Food, Maintenance & Operation and Transportation

Produce Final Cost Estimates
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 Goals
  – Be Supported by Evidence-based Approaches
  – Represent Efficient (Minimum Cost) Resource Specifications
  – Have a Realistic 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

- **Task 1**: Design Program/Specify Resources for Typical Schools
- **Task 2**: Design Program/Specify Resources for High-Poverty Schools
- **Task 3**: Design Program/Specify Resources for High-Poverty/High-EL Schools
- **Task 4**: Design Program/Specify Resources for High-Special-Education Schools
- **Task 4a**: Specify Resources for District-Level Special Education Ancillary Services
- **Task 5**: Design Program/Specify Resources for Small-Schools
- **Task 6**: Determine Programmatic Priorities
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

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

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

Total Adequate Cost by District Locale

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

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>Coefficient</td>
</tr>
<tr>
<td></td>
<td>Standard Error</td>
<td>Standard Error</td>
</tr>
<tr>
<td>Enrollment: &lt;500</td>
<td>1.21***</td>
<td>1.25***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Enrollment: 500–1,000</td>
<td>1.09**</td>
<td>1.15***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Enrollment: 1,000–2,000</td>
<td>1.05*</td>
<td>1.10***</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Special Education Proportion</td>
<td>2.39**</td>
<td>5.34***</td>
</tr>
<tr>
<td></td>
<td>(0.76)</td>
<td>(0.82)</td>
</tr>
<tr>
<td>Free or Reduced-Price Lunch Proportion</td>
<td>1.29***</td>
<td>1.80***</td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>English Learner Proportion</td>
<td>1.15</td>
<td>1.18***</td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Middle School Enrollment Proportion</td>
<td>0.66**</td>
<td>0.88**</td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>High School Enrollment Proportion</td>
<td>1.02</td>
<td>0.95**</td>
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<tr>
<td></td>
<td>(0.08)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Comparable Wage Index</td>
<td>1.05***</td>
<td>1.08***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Base</td>
<td>10,045***</td>
<td>9,850**</td>
</tr>
<tr>
<td></td>
<td>(483.6)</td>
<td>(255.7)</td>
</tr>
<tr>
<td>N</td>
<td>934</td>
<td>934</td>
</tr>
<tr>
<td>pseudo R²</td>
<td>0.33</td>
<td>0.89</td>
</tr>
</tbody>
</table>

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

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

### Estimated Adequate Cost Per Pupil in California Compared to Actual Spending Per Pupil in Other States

<table>
<thead>
<tr>
<th>State</th>
<th>Per-Pupil Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>California (Actual)</td>
<td>$12,204</td>
</tr>
<tr>
<td>California (Estimated)</td>
<td>$16,890</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>$17,213</td>
</tr>
<tr>
<td>Vermont</td>
<td>$19,502</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$19,574</td>
</tr>
<tr>
<td>Connecticut</td>
<td>$19,763</td>
</tr>
<tr>
<td>New York</td>
<td>$21,555</td>
</tr>
</tbody>
</table>

**Sources:**
- AIR calculations from PIP resource specifications and California Department of Education (CDE) Student & School Data Files (https://www.cde.ca.gov/ds/sd/sd/)
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 suggests 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 reasons 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.
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)