MEASURING UP

Educational Improvement & Opportunity in 50 Cities

Michael DeArmond, Patrick Denice, Betheny Gross, Jose Hernandez, Ashley Jochim

Foreword by Robin Lake

October 2015

CRPE
REINVENTING
PUBLIC EDUCATION

ABOUT THIS REPORT

Education should be a citywide concern, much like public safety and public health. We designed this research project for city leaders who want to evaluate how well all the schools in their city—whether they are district- or charter-governed—are serving their city's children and how their city's schools compare to those in other cities. To our knowledge, this is the first time a cross-sector, citywide analysis of public education has been made available.

What started out as a technical task—pulling together publicly available data to develop a set of "indicators" city leaders could use to measure school performance and equity—ended up raising serious questions about the health of our urban schools. It also uncovered places where progress in urban education is being made.

For each indicator in the report we've highlighted a few cases that caught our eye; some are areas of concern, others are bright spots. We hope city leaders and others will use these prompts and our online data at crpe.org to frame their own questions and develop their own solutions.

ACKNOWLEDGMENTS

This report is a product of many individuals who helped gather and analyze data from 27 states. We owe many thanks to Thiago Marques and Molly Thomas at CRPE, who provided invaluable research support and patience while gathering and preparing the data. We also received valuable feedback, expertise, and support from our colleagues, Paul Hill and Christine Campbell, whose insights sharpened our findings. The report also benefited from thoughtful comments provided by our reviewers, Matthew Chingos and Alex Johnston. Finally, we would like to thank the Laura and John Arnold Foundation for supporting this work. The report's findings and conclusions are ours alone and do not necessarily represent the Foundation's opinions or those of others who provided feedback on the report.

ABOUT THE CENTER ON REINVENTING PUBLIC EDUCATION

Through research and policy analysis, CRPE seeks ways to make public education more effective, especially for America's disadvantaged students. We help redesign governance, oversight, and dynamic education delivery systems to make it possible for great educators to do their best work with students and to create a wide range of high-quality public school options for families. Our work emphasizes evidence over posture and confronts hard truths. We search outside the traditional boundaries of public education to find pragmatic, equitable, and promising approaches to address the complex challenges facing public education. Our goal is to create new possibilities for the parents, educators, and public officials who strive to improve America's schools. CRPE is a nonpartisan, self-sustaining organization affiliated with the University of Washington Bothell. Our work is funded through philanthropic support, federal grants, and contracts.

ABOUT THE AUTHORS

Michael DeArmond is a Senior Research Analyst at the Center on Reinventing Public Education (CRPE). His research looks at educational governance, bureaucratic reform, and how schools manage teacher talent. He has recently co-authored two CRPE reports on the challenges of public oversight in cities with large charter school sectors: *Making School Choice Work* and *How Parents Experience Public School Choice*. In addition to policy reports, Dr. DeArmond's research has been published in academic journals, including *Education Finance and Policy*, *Education Administration Quarterly,* and *Journal of Education Finance*, as well as in edited volumes from the Brookings Institution Press, the Urban Institute Press, and Harvard Education Press. Dr. DeArmond has a PhD in Education and an MPA in Social Policy and Education, both from the University of Washington, and a BA in History from Brown University. Prior to working as an education researcher, he was a middle school history teacher.

Patrick Denice is a Research Analyst at CRPE. His research focuses on issues of access and equity with regard to school choice. He is also a doctoral candidate in the sociology department at the University of Washington, where he applies quantitative methods to the study of stratification in the higher education and labor markets. His research can be found in the *American Sociological Review* and *Social Science Research*, as well as in a number of policy reports. Mr. Denice holds a BA in Sociology from Boston College and an MA in Sociology from the University of Washington.

Betheny Gross is a Senior Research Analyst and the Research Director at CRPE. She coordinates CRPE's quantitative research initiatives, including analysis of portfolio districts, public school choice, and common enrollment systems. Dr. Gross has examined evidence and outcomes of district reform across the country and has advised and consulted with district leaders to formulate strategy and implementation. She is coauthor of *Strife and Progress: Portfolio Strategies for Managing Urban Schools* (Brookings, 2013) and the author of numerous research reports and articles. Dr. Gross holds a BA in Economics and Urban Studies from the University of Pittsburgh, an MA in Economics from the University of Iowa, and a PhD in Educational Policy Studies from the University of Wisconsin Madison.

Jose Hernandez is a Research Analyst at CRPE. His research focuses on the use of statistical bias reduction methods in education research. Previously, Dr. Hernandez worked as a regional coordinator for a pre-college outreach program at the University of California, Irvine. Dr. Hernandez holds an MEd in Education Leadership and Policy Studies, and a PhD in Education Psychology, Measurement and Statistics, both from the University of Washington College of Education.

Ashley Jochim is a Research Analyst at CRPE. Her research focuses on policy analysis and implementation, including work on state education agencies, Common Core standards, and district reform efforts. She is a coauthor (with CRPE founder Paul Hill) of a recent book, *A Democratic Constitution for Public Education* (University of Chicago Press, 2014), that suggests who governs public education is much less important than what powers they have. Her research can be found in the *Policy Studies Journal, Publius, Politics and Governance*, and *Political Research Quarterly*, as well as numerous edited volumes, including the *Handbook of School Choice* and the *Oxford Handbook of American Bureaucracy*. In 2012, she was selected as one of a dozen emerging education policy scholars interested in narrowing the gap between research and policy. Dr. Jochim holds a BA in Political Science and Psychology and an MA and PhD in Political Science, all from the University of Washington.

Robin Lake is Director of CRPE, and Affiliate Faculty, School of Interdisciplinary Arts and Sciences, at the University of Washington Bothell. She is internationally recognized for her research and analysis of U.S. public school system reforms, including charter schools and charter management organizations, innovation and scale, portfolio school districts, school turnaround efforts, and performance-based accountability systems. Ms. Lake has authored numerous studies and provided expert testimony and technical assistance on charter schools and urban reform. She is the editor of *Unique Schools Serving Unique Students: Charter Schools and Children with Special Needs* (CRPE, 2010) and editor of the annual report, *Hopes, Fears, & Reality: A Balanced Look at American Charter Schools*. She coauthored, with Paul Hill, *Charter Schools and Accountability in Public Education* (Brookings, 2002). Ms. Lake holds an MPA in Education and Urban Policy and a BA in International Studies, both from the University of Washington.

TABLE OF CONTENTS

FOREWORD

Public education has historically provided a pathway out of poverty for our most vulnerable youth. However, that pathway has been eroded.

City leaders know this better than anyone. In April 2015, *Politico Magazine* reported results from a survey of 20 mayors across the country about the challenges facing their cities. The mayors listed public education second only to "deteriorating infrastructure" as their biggest challenge.

The future of our country depends on our youth. Yet our public education system, designed more than 100 years ago, faces significant new challenges in preparing all students for success in career and civic society. Today, students of color and students from low-income families make up the majority of public school students in the U.S.[1] Urban leaders are struggling to provide hope and opportunity for these youth, many of whom live in cities and neighborhoods where the schools are ineffective, jobs are scarce, and poverty is widespread.

For years we have seen evidence of persistent achievement and opportunity gaps between racial and socio-economic student groups. Some have concluded that poverty and racial inequities are conditions that schools cannot overcome.

This report shows that conclusion is, at least, premature. It shows that while the inequities are profound, cities can create schools that serve all students well. It shows that educators can find ways to give more students access to challenging curriculum and a pathway to college and career. The question before us is how we can create those opportunities for all students.

Measuring Up: Educational Improvement and Opportunity in 50 Cities speaks to those who are concerned about the overall health of America's urban schools. It provides the first comprehensive view of all schools in a city, whether district-run or charter.[2] We selected the cities based on their size and because they reflect the complexity of urban public education today, where a single school district is often not the only education game in town. We went beyond test scores, using a variety of publicly available state and federal data to measure school system health and educational opportunity for students from low-income households and students of color.

1. For example, see William J. Hussar & Tabitha M. Bailey, *Projections of Education Statistics to 2022.* 41st ed. (Washington, DC: National Center for Education Statistics, U.S. Department of Education, 2014); and Lesli A. Maxwell, "US School Enrollment Hits Majority-Minority Milestone," *Education Week*, Aug. 19, 2014.

2. The National Assessment of Education Progress, Trial Urban Assessments (NAEP-TUDA) provides limited information on academic achievement based on standardized test results in core subjects. It is limited to 21 urban districts and does not include charter schools. The Center for Research on Education Outcomes (CREDO) has published reports on charter school performance relative to traditional public schools. The Brookings Institution's Education Choice and Competition Index scores large school districts based on choice-related policy and practice but does not assess citywide opportunity and improvement.

Citywide Indicators

How well are the city's schools doing overall?

- School-level gains in math and reading proficiency relative to state performance
- High school graduation rates
- Share of students enrolled in "beat the odds" schools
- Share of schools stuck in bottom 5 percent of the state based on proficiency rates that stay there for three years running

How well are they doing for students from low-income households and students of color?

- Enrollment in highest- and lowest-scoring elementary and middle schools
- Proficiency gaps for students eligible for free and reduced-price lunch (FRL)
- Advanced math course-taking
- ACT/SAT test-taking
- Out-of-school suspensions

Looking across all the cities, we see four themes:

INEQUITY IN PUBLIC EDUCATION, THOUGH WIDESPREAD, IS NOT INEVITABLE.

Results in many cities offer optimism that things can be better:

- In Washington D.C., FRL-eligible students enroll in top-scoring schools at higher rates than their more advantaged peers.
- In 20 of the 50 cities, black students take the ACT/SAT at the same or better rates than white students. In Santa Ana, California, a 6-percentage point ACT/SAT test-taking gap favors black students.[3]
- A handful of cities appear to be successful at either fixing or closing their lowest-performing schools: In New Orleans and Memphis, none of the schools that performed in the bottom 5 percent in the first year of our data (for reading and math) stayed at that level for three consecutive years.

BUT PERFORMANCE IN MOST CITIES IS STILL FLAT.

In the three most recent years of available data:

- Less than a third of the cities we studied made proficiency gains relative to their state's performance (only 12 made overall gains in math proficiency and only 14 made gains in reading).

3. Improving access to the ACT/SAT is important, but a recent report from ACT and the United Negro College Fund highlights the gaps between ACT results for black students and those of other students, showing that access to these tests is not enough to improve college readiness rates among black students. See *The Condition of College and Career Readiness 2014: African American Students.*

- Eight cities are actually falling behind their earlier performance in math, in reading, or in both subjects relative to their state's performance.
- One in four students do not graduate high school in four years.
- Large shares of schools (40 percent across all these cities) that were in the bottom 5 percent of all schools statewide in year one stayed stuck there for three years running.

POOR AND MINORITY STUDENTS STILL FACE STAGGERING ACADEMIC INEQUITIES.

- FRL-eligible students score lower than other students in nearly every city. The gaps are especially large in some cities (Denver, Cleveland, and Raleigh) but smaller in others (Santa Ana, Detroit, and Los Angeles).
- With few exceptions, FRL-eligible students and students of color are less likely than white students in the same cities to enroll in high-scoring elementary and middle schools, take advanced math courses, and take the ACT/SAT.
- In every city, some schools "beat" their demographic odds, but on average, only 8 percent of students in the cities we studied are enrolled in schools (district or charter) that got better results than schools with similar student demographics in the state.

THE PICTURE IS ESPECIALLY BLEAK FOR BLACK STUDENTS.

- In Newark—where a majority of students are black—only 6 percent of black students enrolled in a top-scoring elementary or middle school (in math) compared to 85 percent of white students.
- In every city we studied except for Baton Rouge, black students are much more likely to be suspended than white students.
- In Portland, Oregon, and Seattle, black students were at least four times more likely than white students to attend a school scoring in the cities' bottom 20 percent in math.

How to use this report:

We hope this report and the online data that go with it will serve as a catalyst for cities to take a comprehensive look at their schools, ask tough questions, and find other cities to turn to for inspiration. We did not measure outcomes against specific improvement strategies. However, city leaders looking for solutions can use our analysis to identify and learn more from cities that are ahead of the curve on certain indicators. City leaders might ask, for example,

- **How have New Orleans and other cities managed to improve or replace so many of their lowest-performing schools?**
- **What is happening in cities like Memphis and Chicago—where black students participate in advanced courses and the SAT at high rates?**
- **Why do some cities, like Newark and Cincinnati, have high numbers of schools that "beat the odds" by performing better than schools with similar demographics?**
- **What accounts for the favorable discipline outcomes in cities like Baton Rouge, the only city we studied where black students are not suspended at higher rates than white students? Or Los Angeles, where overall suspension rates are low and Hispanic students are less likely to be suspended than white students?**

The implications of this report should serve as a call to action. In order for America's cities to move forward and for all of our youth to have real opportunities to learn, urban public education needs to focus on more than just incremental improvement.

As a start, we should acknowledge and address the systemic reasons that academic segregation occurs so blatantly in our urban public schools. For years, research has documented within-district inequities in funding and access to quality teachers and other resources. CRPE and others have documented how state funding, district policies, union contracts, and neighborhood assignment provisions can reinforce educational inequity.[4]

Rather than be distracted by dogfights over Common Core, testing, choice, teacher evaluations, charter schools, and other policy debates, our city school system leaders need to aggressively hunt for and be open to new solutions, and respond quickly and meaningfully to shifting demographics and other challenges.

The varied results in this report suggest that no single model for providing or governing schools—district operation, chartering, or vouchers—has been a sure solution to address the needs of urban students. What we can say, however, is that given the enormity of the challenges represented in this study, no city should close off any possible source of good schools, or favor its existing schools over options that might create new opportunities for children. Emerging approaches to school governance and whole community change, starting with early childhood, should be tried more broadly and aggressively.[5]

In the meantime, there are things every city can do immediately to overcome the lack of opportunity facing too many low-income students and students of color. They can:

- **Find ways to improve or replace the bottom 5 to 10 percent of schools with better options and move students into more effective teaching and learning environments.** Cities like New Orleans have done this by having clear and tightly enforced accountability standards and by investing in effective new schools that can replace low-performing schools.
- **Insist that all students can and should have access to advanced placement and other college-prep coursework.** Many of the cities we studied, like Cleveland and Denver, are investing in innovative, technology-driven school models to make that access possible for all students.
- **Make a frontal attack on overly aggressive discipline policies.** Some cities, like Washington, D.C., have started publishing suspension and expulsion rates citywide and asking schools to voluntarily reduce their rates. Safe and orderly schools are necessary, but high-performing schools can find ways to maintain order without overly severe consequences for students.

4. For example, see Natasha Ushomirsky and David Williams, *Funding Gaps 2015: Too Many States Still Spend Less on Educating Students Who Need the Most* (Washington, DC: The Education Trust, 2015); Dan Goldhaber, Lesley Lavery, and Roddy Theobald, "Uneven Playing Field? Assessing the Teacher Quality Gap Between Advantaged and Disadvantaged Students," *Educational Researcher 44* (no. 5): 293-307; Joshua M. Cowen and Katharine O. Strunk, "The Impact of Teachers' Unions on Educational Outcomes: What We Know and What We Need to Learn," *Economics of Education Review* (March 2015); Annette Lareau and Kimberly Goyette, ed., *Choosing Homes, Choosing Schools* (New York, NY: Russell Sage Foundation, 2014); Marguerite Roza and Paul Hill, *How Within-District Spending Inequities Help Some Schools Fail* (Seattle, WA: Center on Reinventing Public Education, 2004).

5. See, for example, Paul Hill, Christine Campbell, and James Harvey, *It Takes a City: Getting Serious About Urban School Reform* (Washington, DC: Brookings Institution Press, 2000); Paul Hill, Christine Campbell, and Betheny Gross, *Strife and Progress: Portfolio Strategies for Managing Urban Schools* (Washington, DC: Brookings Institution Press, 2013); and Paul Hill and Ashley Jochim, *A Democratic Constitution for Public Education* (Chicago, IL: University of Chicago Press, 2014).

At the same time, doing better will require long-term commitment to a search for more effective strategies. We urge cities to:

- **Double down on bold, evidence-based solutions.** Cities must be open to any promising school—district or charter—if it opens up new possibilities. City leaders must address their weaknesses head on and search widely for new solutions.
- **Recognize that the hard work ahead cannot be the work of schools alone.** Cities like Memphis and New Orleans that are radically redesigning their schools and school systems are seeing results, but even these efforts need continued, coordinated support from teacher preparation programs and social and health services. They also need city and state leaders to support them when they have to make hard decisions—new leadership, turnaround, etc.—about failing schools.

CRPE has, over the last 20 years, been developing new citywide governance frameworks and support systems.[6] We will continue to develop and test new approaches and track these cities' progress in coming years.

America is at a profound moment of social struggle. More children grow up in poverty, more young people end up incarcerated, persistent racial bias holds back opportunity. School improvement cannot wait for us to solve poverty or racial injustice. We can create great school options now for young people that can help to mitigate these other social challenges.

We hope this report will be both a source of urgency and a source of hope. Results are discouraging. But what should make us both angry and hopeful is that there is evidence that things don't have to be this way.

We can and we must do better. We cannot improve our cities without improving our schools.

Robin Lake
Director, Center on Reinventing Public Education

6. See crpe.org for our research, proposals, and tools for city leaders.

INTRODUCTION

In the winter of 2015, Armen Hratchian, vice president of Excellent Schools Detroit, was preparing to talk to a group of stakeholders about Detroit's troubled public school system. He and other leaders knew that the city wouldn't fully rebound from its bankruptcy unless it had strong public schools, and they thought the time was right for the community to have a conversation about how Detroit could steer its schools toward a brighter future.[1]

To help set the stage for that conversation, Hratchian wanted to look at how Detroit's schools were doing compared to schools in other cities. He thought the comparison would help people benchmark Detroit's performance and better understand the challenges it faced. But making those comparisons was easier said than done.

Hratchian's first challenge was summarizing the performance of schools citywide. Getting a holistic view of the city's schools was complicated because Detroit had a patchwork school system made up of Detroit Public Schools (DPS), Michigan's Educational Achievement Authority, and a surging charter school sector. Luckily, Hratchian and his colleagues had worked hard to develop a novel citywide scorecard that covered schools in all three systems, allowing them to show how all of the city's public schools were doing, regardless of who oversaw them.

But when it came to comparing Detroit to other cities, Hratchian wasn't sure where to turn. If other cities happened to have patchwork governance systems like Detroit's, he had no way of capturing their citywide performance, since few had citywide scorecards.

Other benchmarks fell short, too. Hratchian respected The Center for Research on Education Outcome's charter school studies (they showed that Detroit's charter schools outperformed DPS), but he wondered how the city's charter schools did compared to those in places like Washington, D.C., or New Orleans, where he suspected the bar was higher. He also knew that Detroit scored at the bottom of *The Nation's Report Card*—the National Assessment of Educational Progress—but those results only included DPS and left out the city's large charter school sector.

Without a single way to measure all public schools citywide and compare Detroit to other cities, Hratchian was having a hard time putting Detroit's overall performance in context. And that made understanding the challenges the city faced and finding ideas, inspiration—and cautions—about big-city school improvement harder than it should have been.

At CRPE, we have spent the last year making the case that Hratchian and other civic and education leaders need to start viewing public education as a citywide concern, just as they do related issues like public health, economic development, and public safety. But taking that perspective is difficult when leaders don't have a way of gauging the health of public education citywide.[2] Especially in cities like Detroit, where education governance is fragmented, city leaders can be at a loss to understand whether their public schools are getting better or worse and how they compare to schools in other cities. That's a problem. As urban public education becomes more diverse and complex with district, charter, and—sometimes—state systems co-existing, city leaders need a handle on how all public schools are doing if they want to mobilize political action to address cross-cutting challenges that affect families and schools, from uneven school quality to unequal access to high-performing schools.

This report offers a jumping off point for leaders interested in benchmarking and taking responsibility for the quality of not just some of the public schools in a city but of all of them. It does so by describing public schools in 50 mid- and large-sized cities; places where, like Detroit, a single school district is often no longer the only game in town.

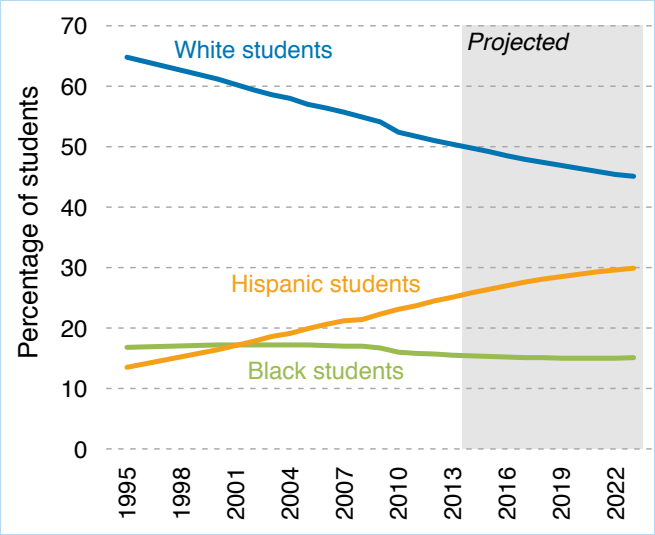
OUR APPROACH

This report is about entire cities, not school districts.[3] Using a combination of federal and state data, we examined information on all of the public schools—regardless of the school district they belong to or who oversees them—in a sample of 50 cities that reflect the complexity of urban public education today.

Many of the cities in this report also reflect the country's changing demographics. Students of color and those from low-income households now make up the majority of public school students nationwide. By 2050, people of color will make up the majority of the U.S. population.[4] These cities are a window into the growing diversity of the United States (see Appendix A for U.S. Census and enrollment data from each city).

Changing Student Demographics

Percentage distribution of public school enrollment by race/ethnicity 1995-2013



Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "State Nonfiscal Survey of Public Elementary and Secondary Education," 1995-96 through 2011-12; and National Elementary and Secondary Enrollment Projection Model, 1972 through 2023. (This table was prepared December 2013.)

How We Selected the Cities

This report intentionally focuses on cities with complex education landscapes, where multiple agencies oversee public schools and enrollments are spread across a variety of school types. To select the cities, we started with lists from the U.S. Department of Education's Common Core of Data (CCD) and Private School Universe Survey (PSS) of every public and private school in the United States that was open during the 2011-12 school year—just over 132,000 schools. Though we don't measure them in the indicators, we included private schools in our selection criteria to capture the entire scope of schools available in urban America today.[5]

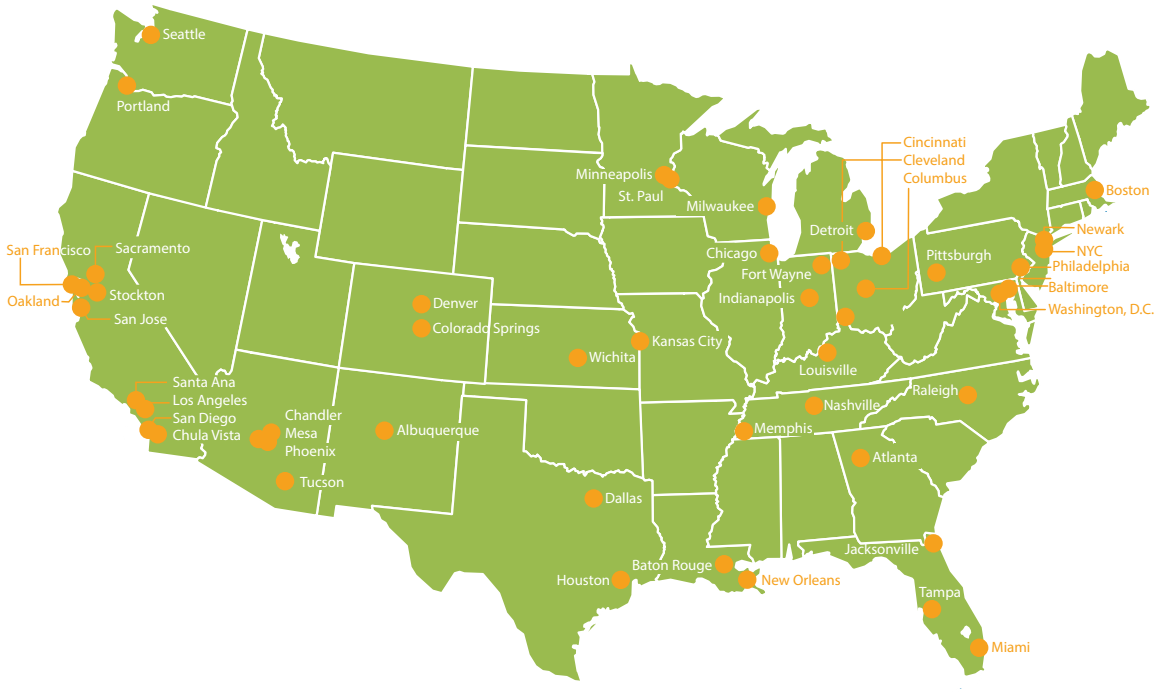
The CCD and PSS include a lot of information about the nation's public and private schools, including each school's geographic coordinates. Using those coordinates, we located each school within a municipal boundary, based on data from the U.S. Census.[6] We didn't look at unusual types of schools—for example, juvenile justice centers or schools for the blind; we only included regular public and private schools in our list.

After linking each school to its municipality, we used information on enrollment and school type to get a sense of how enrollments were spread across traditional district-run, charter, and private schools in different municipalities. To capture the most varied environments, we picked the 50 cities with the largest total enrollments that were also the most widely distributed across the sectors.[7]

The 50 Cities

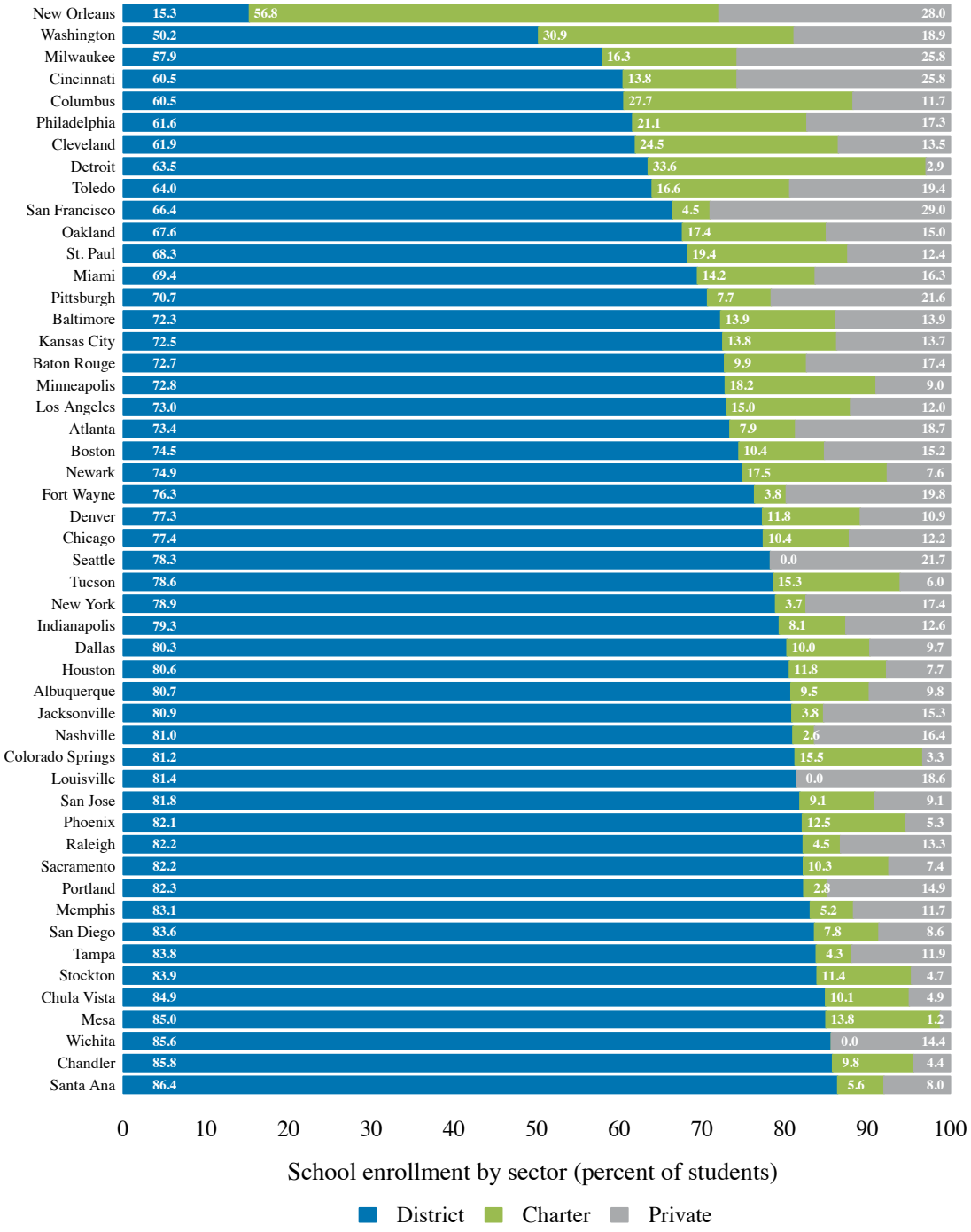
The resulting list includes an interesting mix of cities (Figure 1). It includes cities known for educational reform, like Denver, New Orleans, Washington, D.C., and New York City, but also includes cities that make few headlines beyond the local news such as Tampa, Tucson, and Albuquerque. Since we included private school enrollments, some cities make the list simply because they have large private sectors (e.g., Seattle, where 22 percent of families chose private schools in the 2011-12 school year). Finally, the list captures a range of city sizes. In addition to New York, we've included mega-cities like Los Angeles and Houston, as well as mid-sized cities like St. Paul (MN), Baton Rouge, and Newark.

Figure 1. 50 City Sample



Enrollments in district-run schools, charter schools, and private schools vary widely across the 50 cities (Figure 2).[8] In ten cities, a third of students enrolled in schools outside of the traditional district sector. These cities fell into two types: those where the majority of non-district enrollments were in private schools (San Francisco, Toledo, Milwaukee, and Cincinnati) and those where the majority of non-district enrollments were in charter schools (Cleveland, Columbus, Detroit, New Orleans, Philadelphia, and Washington, D.C.). In the remaining 40 cities, the majority of students enrolled in district schools.

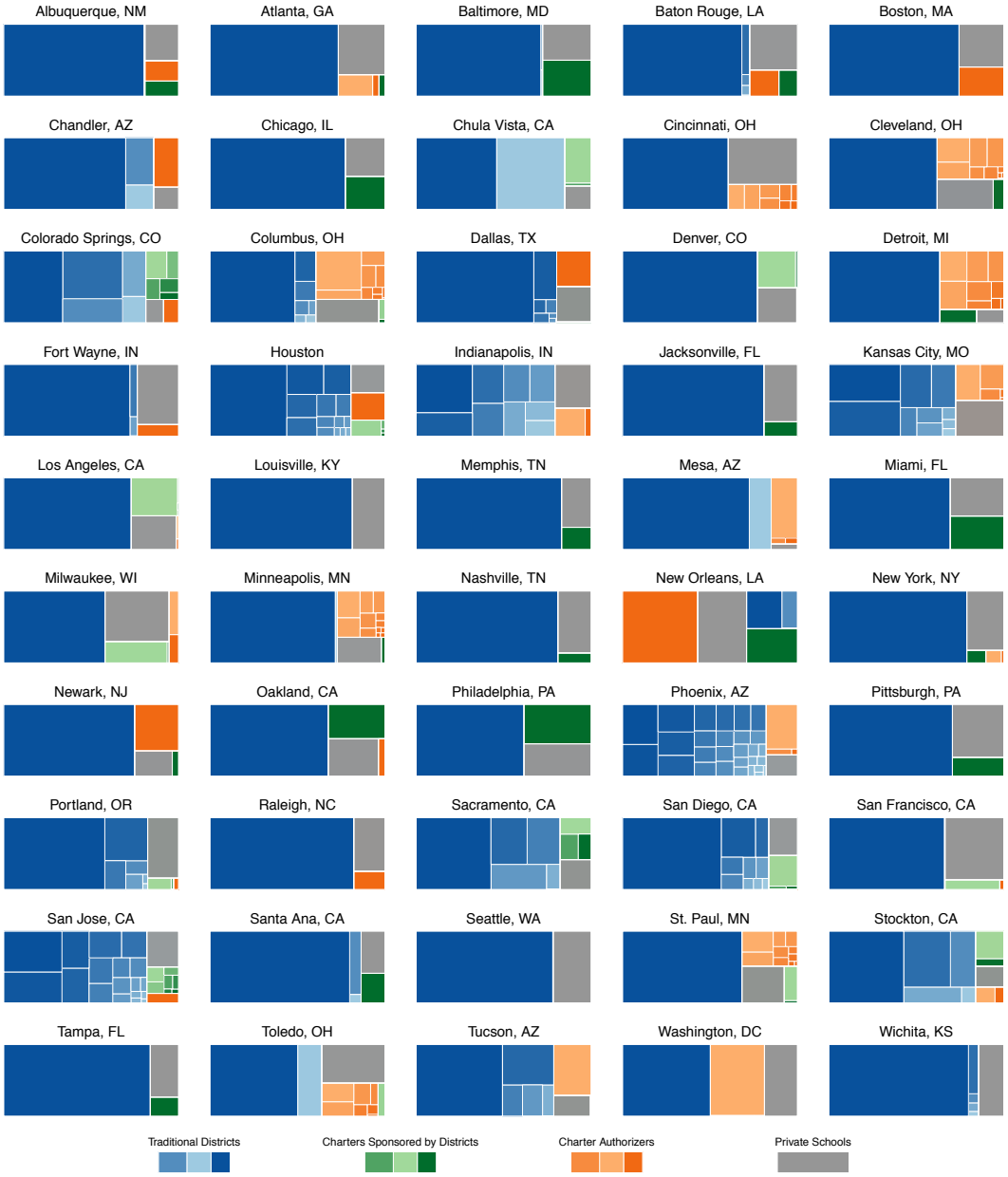
Figure 2. Enrollment Share by Sector, 2011-2012



A patchwork of school districts and charter authorizers oversee public schools in the 50 cities, as shown in Figure 3. Each rectangle in Figure 3 represents citywide K-12 enrollment for 2011-12. Within each rectangle, the blue boxes represent enrollments overseen by school districts, the green boxes represent enrollments in charter schools that were authorized by traditional school districts, the orange boxes represent enrollments overseen by independent charter authorizers, and the gray boxes represent private school enrollments.

Thirty of the 50 cities have multiple traditional school districts and 34 have multiple charter school authorizers. It's critical to keep this pluralism in mind while reading this report.

Figure 3. Educational Oversight Agencies and Private Sectors, 2011-2012



Definitions and Sources

Figures 2 and 3 use enrollment counts from the U.S. Department of Education's Common Core of Data (CCD) and Private School Survey (PSS) from the 2011-12 school year, the most recent year of the PSS available at the time we wrote the report. Figure 3 links these enrollment counts with information on oversight agencies (districts and charter authorizers). To identify oversight agencies associated with traditional public schools, we used the school districts listed for individual schools in the CCD. To identify oversight agencies associated with charter schools, we used data from the National Alliance for Public Charter Schools from 2011-12 that list each charter school's charter school authorizer.

Source: National Center for Education Statistics, Common Core of Data, Public Elementary/Secondary School Universe Survey; Private School Survey, 2011-12; National Alliance for Public Charter Schools, Public Charter Schools Dashboard, 2011-12.

The Advantages and Limitations of Publicly Available School-Level Data

In addition to the CCD, we rely on two other major data sources for the indicators: school-level files from the Office for Civil Rights (OCR), Civil Rights Data Collection (CRDC). We use high school graduation data from the U.S. Department of Education's EdFacts Data Files. We used publicly available, school-level data because they allowed us to create measures across all (or most) of the cities in the sample. Using aggregate school-level data also makes our work transparent and reproducible. Although pulling together the data for this report was time consuming, obtaining and preparing student-level data for every district-run and charter school in all 50 cities and their states would have been even more difficult, if not impossible.

Of course, the data also have several limitations. Because of the time it takes for states to release data, for example, the results are necessarily lagged and do not reflect the most recent developments in any of the cities. In addition, the states in the report do not all provide data that cover the same years. For the majority of the states, the three most recently available years of data cover 2012-2014, but for some states, publicly available data doesn't go beyond 2012 (see Appendix A for the years available for each city's state).

One of the biggest problems with the state data is that most states provide school-level proficiency rates in their publicly available data rather than continuous measures of student achievement (see our data inventory in Appendix A). This creates two issues. First, it makes it impossible to directly compare performance levels across cities because expectations for proficiency vary widely by state.[9] Since we can't directly compare proficiency rates across states, we built the indicators around relative measures of performance, like the share of FRL-eligible students in a city who are enrolled in its top-scoring schools.[10] Second, proficiency rates ignore important information because they are binary: a student is or is not proficient. As a result, two schools can have similar proficiency rates but different underlying proficiency profiles. Imagine, for example, School A, where most students are just over the proficiency line, compared to School B, where a number of students are far above the proficiency line and a similar number are far below. If School B's scores averaged out to the same proficiency rate as School A, they would look the same despite their underlying variation.

Our second major data source, the OCR, also has some important limitations. Although the OCR data are useful for looking across cities, they suffer from shortcomings associated with survey data (e.g., respondents interpreting questions differently). In addition, the way all of these data sources identify groups of students relies on crude measures, such as using "free and reduced-price lunch" (FRL) eligibility as a poverty measure, or using "Hispanic" to identify a population of students that is far more heterogeneous than a single label implies.

Why We Didn't Use NAEP Scores to Compare Performance

Assessing school performance is difficult. It involves measurement issues but also deeper questions about the values and purposes of public education.[11] These challenges notwithstanding, policymakers and leaders need to gauge how well students are learning and, for better or for worse, they currently do so using student performance on standardized tests. As we noted earlier, making cross-city comparisons of proficiency rates is impossible because states define proficiency differently. Researchers have, however, mapped state proficiency standards onto a common scale defined by the National Assessment of Educational Progress (NAEP) to conduct state-to-state comparisons.[12] We explored using the same discounting procedure at the city level for this project, but the results were disappointing. When we compared our NAEP-discounted city rankings to rankings based on the NAEP TUDA (for district schools only), the results did not line up. We also compared NAEP-adjusted city rankings to rankings based on scale scores for cities where scale scores were available, but again, the results pointed in different directions. In the end, the underlying performance distributions in the cities and their states are probably too different to naively apply the NAEP discount; unfortunately, we could not assess that possibility directly because of the limitations of the state data.

THE INDICATORS

Our indicators sought to answer two overarching questions:

- How well are each city's schools doing overall?
- How well are they doing for students from low-income households and students of color, who make up a majority of the public school population?

Using the three most recent years of available data for each city (see Appendix A for years covered), we developed nine indicators that address these questions.

Citywide Indicators

How well are the city's schools doing overall?

- School-level gains in math and reading proficiency relative to state performance
- High school graduation rates
- Share of students enrolled in "beat the odds" schools
- Share of schools stuck in bottom 5 percent of the state based on proficiency rates that stay there for three years running

How well are they doing for students from low-income households and students of color?

- Enrollment in highest- and lowest-scoring elementary and middle schools
- Proficiency gaps for students eligible for FRL
- Advanced math course-taking
- ACT/SAT test-taking
- Out-of-school suspensions

Many cities look successful on a few indicators but none look successful across all, or even most, of them. Our results suggest how difficult it is to ensure both quality and equity in urban education.

PART I: ACADEMIC ACHIEVEMENT AND IMPROVEMENT

To gauge citywide academic achievement and improvement in our 50-city sample, this section covers four measures:

1. School-level gains in math and reading proficiency relative to state performance.
2. High school graduation rates.
3. Share of students enrolled in "beat the odds" schools.
4. Share of schools stuck in bottom 5 percent of the state based on proficiency rates that stay there for three years running.

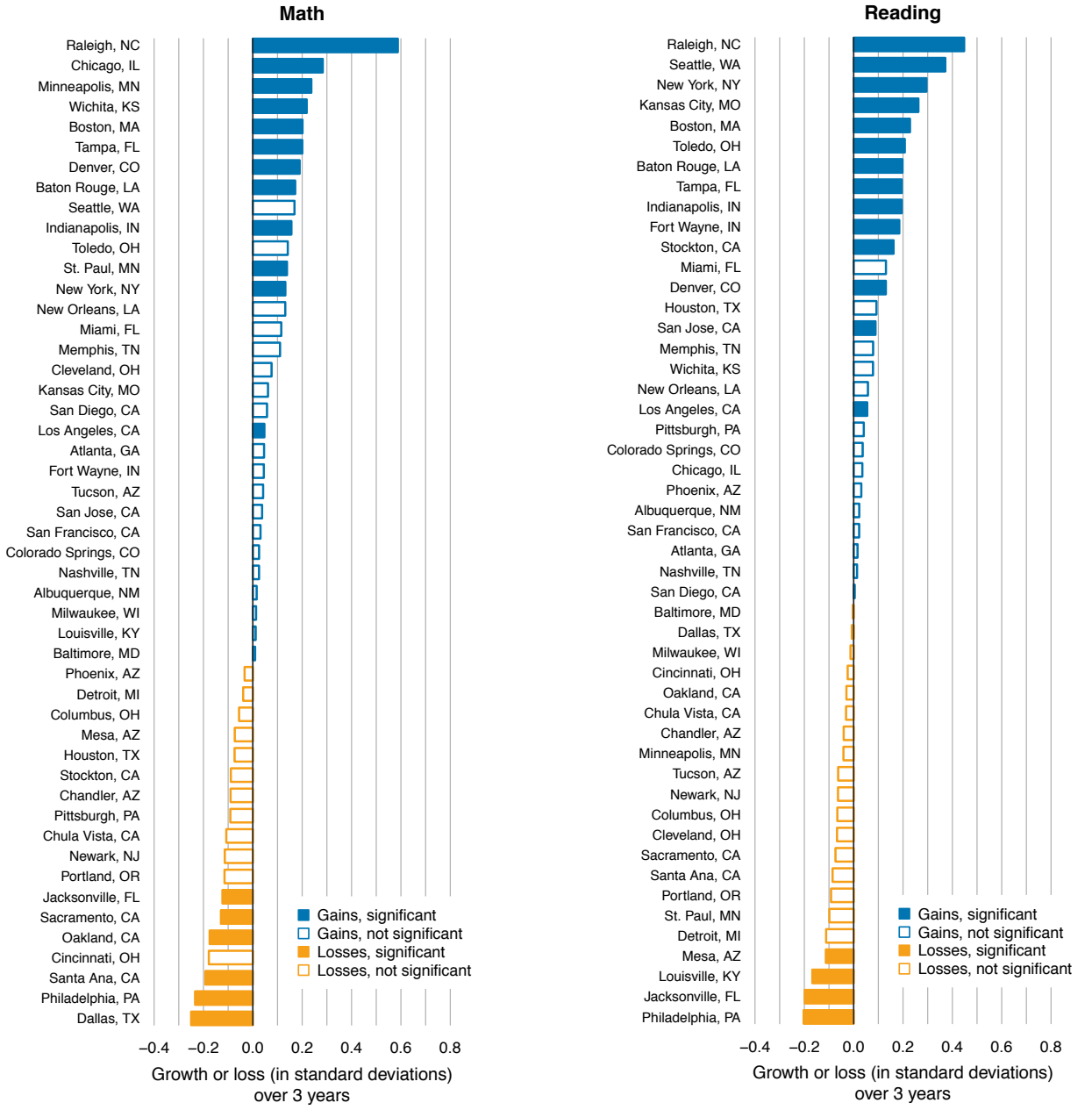
INDICATOR | Citywide Gains in Math and Reading Proficiency

Less than a third of the cities made gains in math or reading proficiency over the three most recent years of data relative to their state's performance.

Cities with proficiency gains in both math and reading for the three most recent years of available data relative to their state's performance:

- Baton Rouge
- Boston
- Denver
- Indianapolis
- Los Angeles
- New York City
- Raleigh (NC)
- Tampa

Figure 4. Citywide Gains in Math and Reading Proficiency Relative to State Performance



Definitions and Sources

Figure 4 shows whether cities made school-level gains in proficiency over the three most recent years of available data (See Appendix A for data range for each city's state). The gains are in standard deviation units and the solid bars in the chart show statistically significant gains (p <0.05). We standardized school proficiency rates by state and year to try to account for differences in state proficiency standards and year-to-year shifts in state assessments or standards. To show gains, a city's schools had to improve relative to its state's performance. We also adjusted the results to account for the different mix of students served by each school; to make those demographic adjustments we used data from the CCD in our calculations because demographic data in state-level files was inconsistent and incomplete (more details on how we estimated the school-level gains are available in Appendix B). Since this metric compares each city to its state, we do not report Washington DC's results because the "city" and "state" in that case are coterminous.

Sources: State Agency School Performance Files (see Appendix A for years/variables); National Center for Education Statistics, Common Core of Data, Public Elementary/Secondary School Universe Surveys 2009-2014.

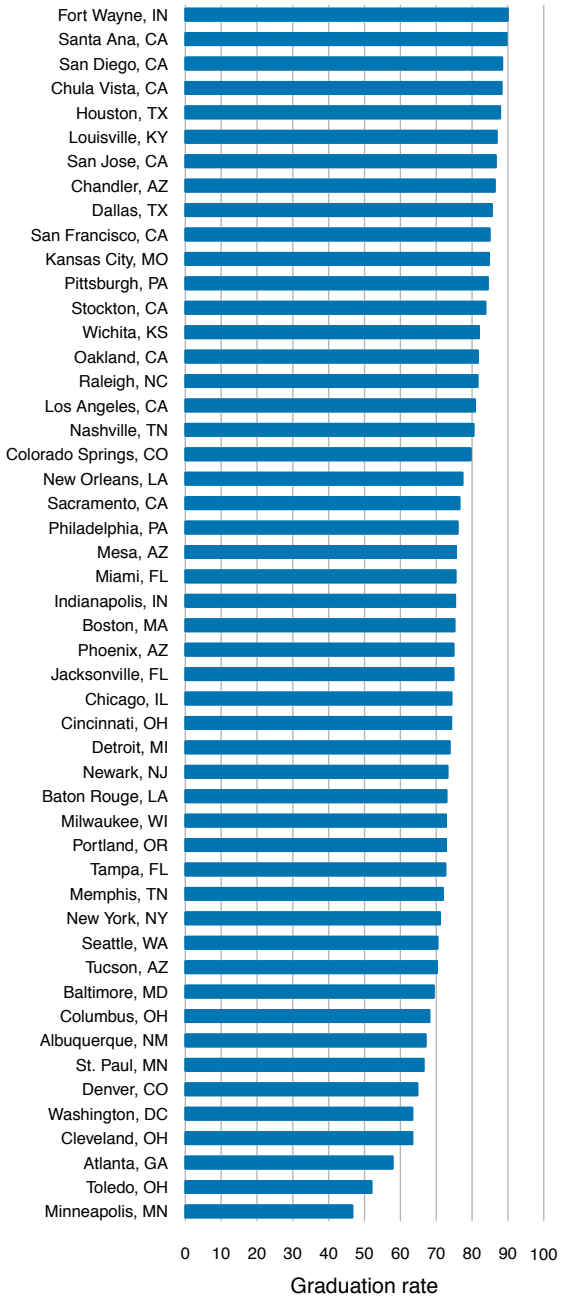
INDICATOR | High School Graduation Rates

The average high school graduation rate across the cities was 75%. One in four ninth graders in 2009 didn't graduate from high school in four years.

90% of students graduated from high school in four years in Fort Wayne (IN) and Santa Ana.

51% or less of students in Toledo and Minneapolis graduated from high school in four years.

Figure 5. High School Graduation Rates for Class of 2013



Definitions and Sources

We estimated graduation rates in Figure 5 using 9th grade cohorts from the 2009-10 school year and a four-year graduation rate. We took the number of those 9th graders who earned a regular high school diploma by 2012-13 and divided it by the number of first-time 9th graders in the starting cohort (fall 2009), plus students who transferred in, minus students who transferred out, emigrated, or died between 2009 and 2013. When the data provided a numerical range for a school's rate, we used the mid-point (e.g., if a school's rate was given as between 50 and 54 percent, we recoded it as 52.5 percent).

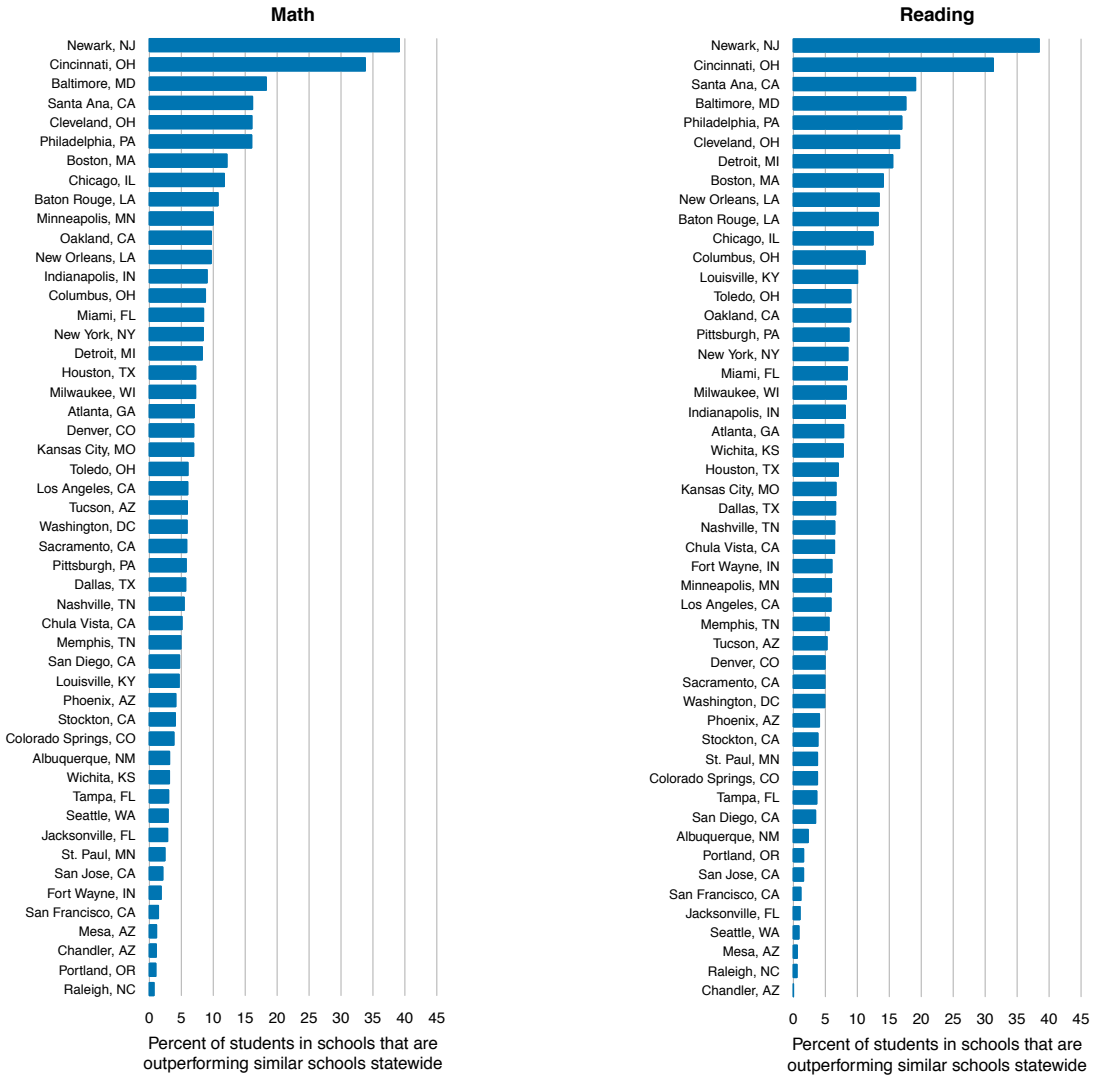
Sources: The EDFacts Initiative, U.S. Department of Education, Assessment and Adjusted Cohort Graduation Rates (ACGR) Data 2009-2013.

INDICATOR | Share of Students in "Beating the Odds" Schools

On average, only 8% of students are enrolled in schools that outperformed similar schools statewide over the last three years.

In Newark and Cincinnati, about one out of three students was enrolled in a school that outperformed similar schools statewide.

Figure 6. Average Share of Students in "Beat the Odds" Schools for Three Most Recent Years of Data



Definitions and Sources

The measures in Figure 6 show the average share of students in a city enrolled in a school whose proficiency rates outpaced demographically similar schools elsewhere in the state, averaged over the three most recent years of available data (see Appendix A for data range for each city's state). The results come from regression models that use information on all of the schools within a city's state to predict the proportion of students in a school who score at or above proficiency based on the school's student demographics and other school characteristics (we run separate models for math and reading; see Appendix B for the specific models). We used aggregate school-level proficiency data from the state files and student sub-group enrollment data from the CCD. The results (specifically the residuals) show the difference between a school's actual proficiency rates and the rates we would predict, given the school's student composition and other characteristics. We only identified schools as outperforming similar schools statewide when the probability that the residual is zero was less than 5 percent ($p < .05$ in a one-tailed significance test). The results can be interpreted as the proportion of students in a city who attended schools that outperformed similar schools in the state (see Appendix B for more detail).

Sources: State Agency School Performance Files (see Appendix A for years/variables available); National Center for Education Statistics, Common Core of Data, Public Elementary/Secondary School Universe Surveys 2009-2014.

INDICATOR | Share of Schools Stuck in the Bottom 5% of State

On average, about 40% of schools that were at the bottom 5% of their state based on proficiency rates stayed stuck there for three years running.

In five cities, none of the schools in the bottom 5% stayed stuck for all three years.

- Memphis (math and reading)
- New Orleans (math and reading)
- Santa Ana, CA (math)
- Washington, DC (math)
- Chandler, AZ (reading)

Half of Milwaukee's public schools ranked in the bottom 5% of Wisconsin schools in the first year of the data we collected. The majority remained stuck in the bottom 5% for the next two years.

Tables 1 and 2 show the percent of each city's public schools (regardless of grade span) that scored in the lowest 5 percent of schools statewide in math and reading in the first year of our data (Column 1), and the share of those same schools that remained in the bottom 5 percent three years later (Column 2).

Table 1. Persistence of Schools in the Bottom 5 Percent From Year 1 to Year 3 in Math

City	Percent of schools in bottom 5% of state in year 1	Percent of year 1 schools stuck for all 3 years
Memphis, TN	31.6	0.0
New Orleans, LA	9.2	0.0
Santa Ana, CA	1.5	0.0
Washington, DC	5.5	0.0
Portland, OR	6.1	14.3
Houston, TX	7.6	15.4
San Diego, CA	4.2	16.7
Cincinnati, OH	15.5	18.2
Dallas, TX	7.9	18.2
Baton Rouge, LA	8.8	20.0
Tampa, FL	6.2	20.0
San Francisco, CA	12.0	23.1
Mesa, AZ	3.6	25.0
Oakland, CA	15.9	25.0
Tucson, AZ	12.7	25.0
Chicago, IL	16.8	26.2
Indianapolis, IN	19.1	29.0
Wichita, KS	19.1	29.4
Phoenix, AZ	4.9	33.3
Detroit, MI	43.5	34.4
Louisville, KY	12.5	35.7
St. Paul, MN	15.3	36.4
Los Angeles, CA	9.2	37.5
Nashville, TN	6.2	37.5
Atlanta, GA	20.3	38.5
New York, NY	6.3	39.2
Fort Wayne, IN	10.2	40.0
San Jose, CA	2.4	40.0
Kansas City, MO	18.2	41.7
Newark, NJ	30.9	42.9
Minneapolis, MN	27.0	45.0
Sacramento, CA	3.5	50.0
Seattle, WA	6.6	50.0
Albuquerque, NM	7.5	54.5
Columbus, OH	24.3	54.8
Jacksonville, FL	3.6	60.0
Miami, FL	9.4	60.0
Boston, MA	12.7	62.5
Toledo, OH	16.5	64.3
Milwaukee, WI	51.7	64.9
Baltimore, MD	23.5	65.1
Denver, CO	9.9	66.7
Raleigh, NC	5.0	66.7
Stockton, CA	7.2	66.7
Philadelphia, PA	24.8	67.6
Colorado Springs, CO	5.3	71.4
Pittsburgh, PA	13.0	71.4
Cleveland, OH	33.1	82.2
Chandler, AZ	1.8	100.0
Chula Vista, CA	3.4	100.0

Table 2. Persistence of Schools in the Bottom 5 Percent From Year 1 to Year 3 in Reading

City	Percent of schools in bottom 5% of state in year 1	Percent of year 1 schools stuck for all 3 years
Chandler, AZ	1.9	0.0
Memphis, TN	30.3	0.0
New Orleans, LA	4.6	0.0
Houston, TX	8.7	13.6
Miami, FL	11.3	16.7
Tucson, AZ	7.8	16.7
Phoenix, AZ	6.8	20.0
Washington, DC	5.5	22.2
Fort Wayne, IN	8.2	25.0
Tampa, FL	9.9	25.0
Wichita, KS	18.0	25.0
Atlanta, GA	17.2	27.3
Indianapolis, IN	20.4	27.3
Dallas, TX	7.8	28.6
Pittsburgh, PA	13.0	28.6
Sacramento, CA	8.7	30.0
San Diego, CA	3.5	30.0
Detroit, MI	37.4	30.9
Chicago, IL	12.8	32.8
Chula Vista, CA	5.1	33.3
Jacksonville, FL	4.3	33.3
Mesa, AZ	2.7	33.3
Raleigh, NC	5.0	33.3
Santa Ana, CA	4.6	33.3
Denver, CO	16.8	34.6
Cincinnati, OH	15.5	36.4
Nashville, TN	8.6	36.4
New York, NY	7.8	40.7
Portland, OR	10.4	41.7
San Francisco, CA	13.2	42.9
Newark, NJ	23.5	43.8
Baton Rouge, LA	15.8	44.4
Oakland, CA	21.4	44.4
Seattle, WA	9.9	44.4
Stockton, CA	15.7	46.2
Los Angeles, CA	8.4	46.6
Kansas City, MO	24.2	46.9
St. Paul, MN	11.1	50.0
Toledo, OH	16.5	50.0
Columbus, OH	24.4	54.8
Albuquerque, NM	6.1	55.6
San Jose, CA	3.3	57.1
Boston, MA	18.3	60.9
Baltimore, MD	25.7	63.8
Milwaukee, WI	51.3	66.2
Minneapolis, MN	24.3	66.7
Philadelphia, PA	28.2	69.0
Louisville, KY	24.1	74.1
Cleveland, OH	30.9	81.0
Colorado Springs, CO	0.8	100.0

Definitions and Sources

Schools with student performance that falls into the lowest 5 percent statewide are often viewed as a state's most troubled schools and a priority for improvement. When schools persist in this status for multiple years, it suggests that the local system—whether it's one with a dominant school district, multiple school districts, or a mix of districts and charter schools—may not have the tools or mechanisms it needs to improve these schools. For the results in Tables 1 and 2, we used state aggregate school-level results to identify schools that ranked in the bottom 5 percent of their state in terms of math proficiency in each of three consecutive years of data (we did the same for reading). Then, using each school's unique identifier, we looked to see how many of the schools that started in the bottom 5 percent in year 1 remained in the bottom 5 percent in years 2 and 3. Schools that escaped "stuck" status may have improved their ranking, closed or been reconstituted, or improved their ranking for year two and returned to a bottom rank for year three. For Washington, DC, where the "city" and "state" are coterminous, the value in the first column is constrained to be about 5%.

Sources: State Agency School Performance Files (see Appendix A for years/variables available); National Center for Education Statistics, Common Core of Data, Public Elementary/Secondary School Universe Surveys 2009-2014.

PART II: EDUCATIONAL OPPORTUNITY

This section uses five measures to gauge educational opportunity for FRL-eligible students and students of color:

1. Enrollment in highest- and lowest-scoring elementary and middle schools.
2. Proficiency gaps for students eligible for FRL.
3. Advanced math course-taking.
4. ACT/SAT test-taking.
5. Out-of-school suspensions.

INDICATOR | Enrollment in Highest- and Lowest-Scoring Elementary and Middle Schools

In the vast majority of cities, students eligible for FRL and students of color are less likely to enroll in high-scoring elementary and middle schools than non-FRL students and white students, respectively.

In Los Angeles, Hispanic students were almost seven times as likely as white students to be in a low-scoring elementary or middle school in math.

Though blacks represent just over half of Newark's student population, only about 6% of the city's black students attend a top-scoring school in math compared to 85% of white students.

In Phoenix, where the majority of students are Hispanic, Hispanic students were four times more likely than white students to be in a low-scoring elementary or middle school in math.

Students eligible for FRL in Washington, DC enrolled in top-scoring elementary and middle schools at higher rates than their more advantaged peers.

The figures in this section look at who attends the highest- and lowest-scoring elementary and middle schools in each city (top/bottom quintile in reading and math). The markers on the left side of each figure represent the share of each sub-population enrolled in a top- or bottom-scoring elementary or middle school in each city. To put the results in context, if sub-groups enrolled in schools at the same rates, the markers would be even and, by definition, clustered at 20 percent. The numbers on the right side of the figures compare the likelihood of different groups of students enrolling in the top- or bottom-scoring schools. Although student demographics, residence, and school performance are all clearly correlated, we nevertheless might still expect to see some variation across the cities due to the exercise of public school choice and the range of students and schools in the cities.

Figure 7. Share of Students Enrolled in **Top-Scoring** Elementary and Middle Schools in **Math** by **Income Status**

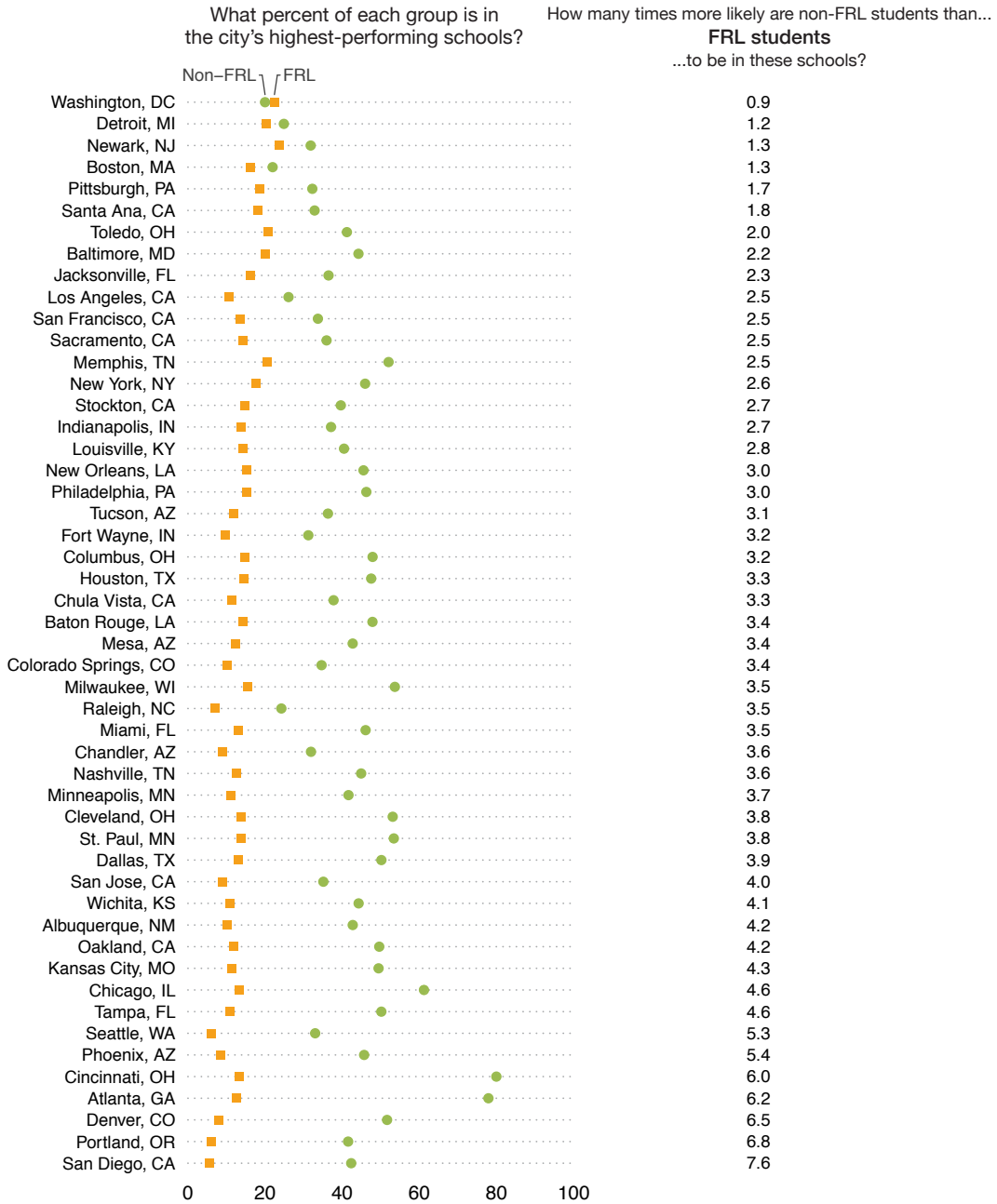


Figure 8. Share of Students Enrolled in **Top-Scoring** Elementary and Middle Schools in **Reading** by **Income Status**

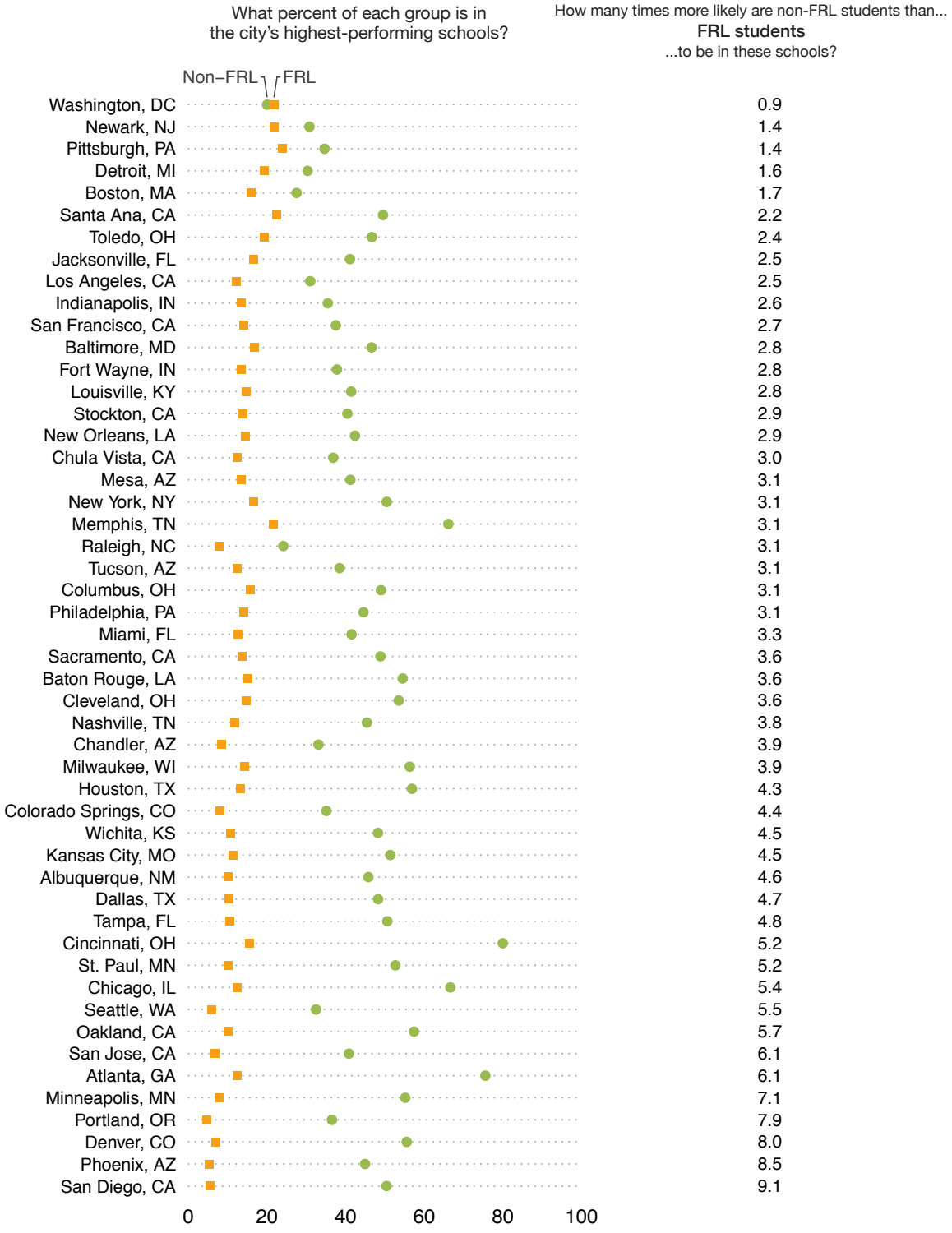
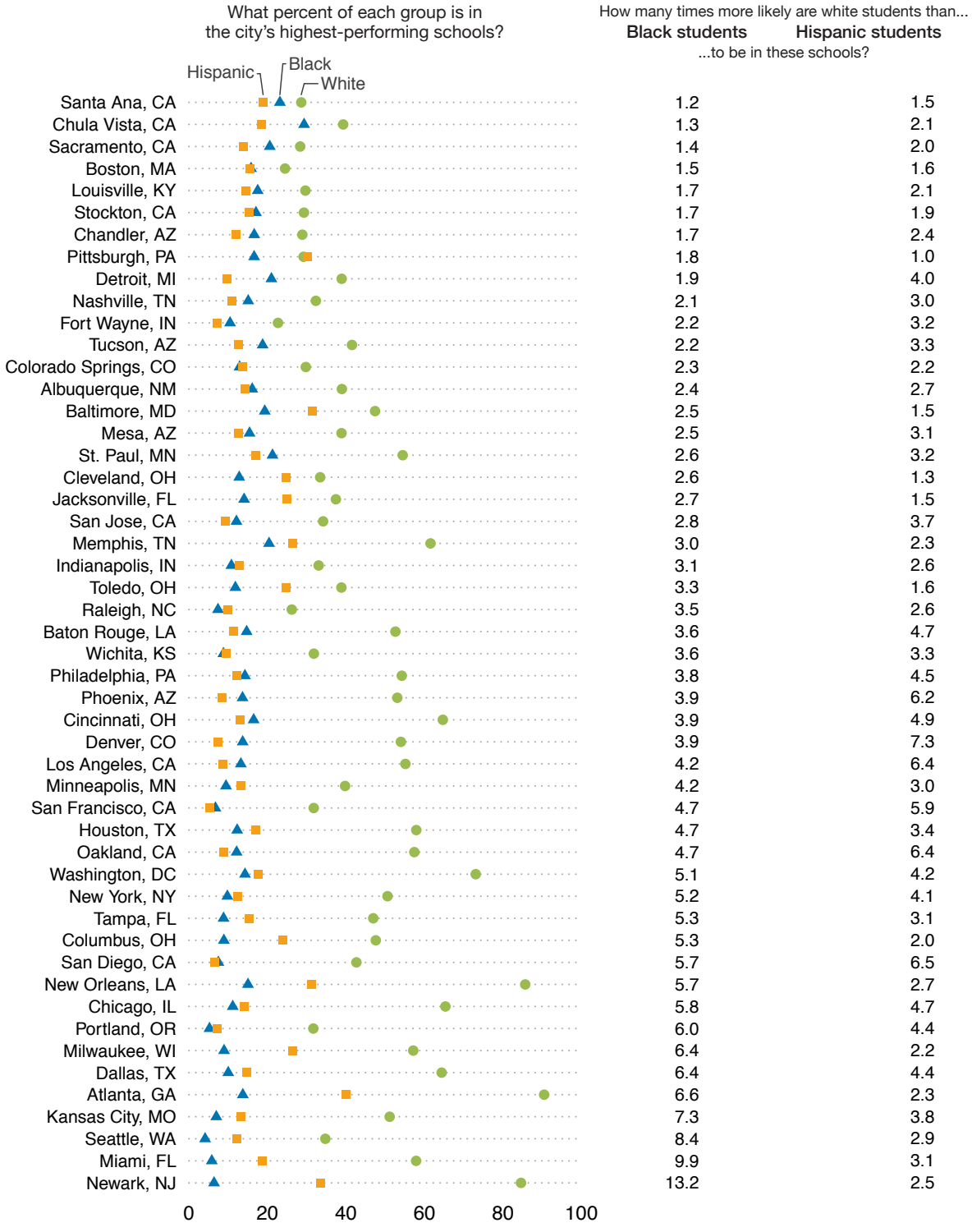
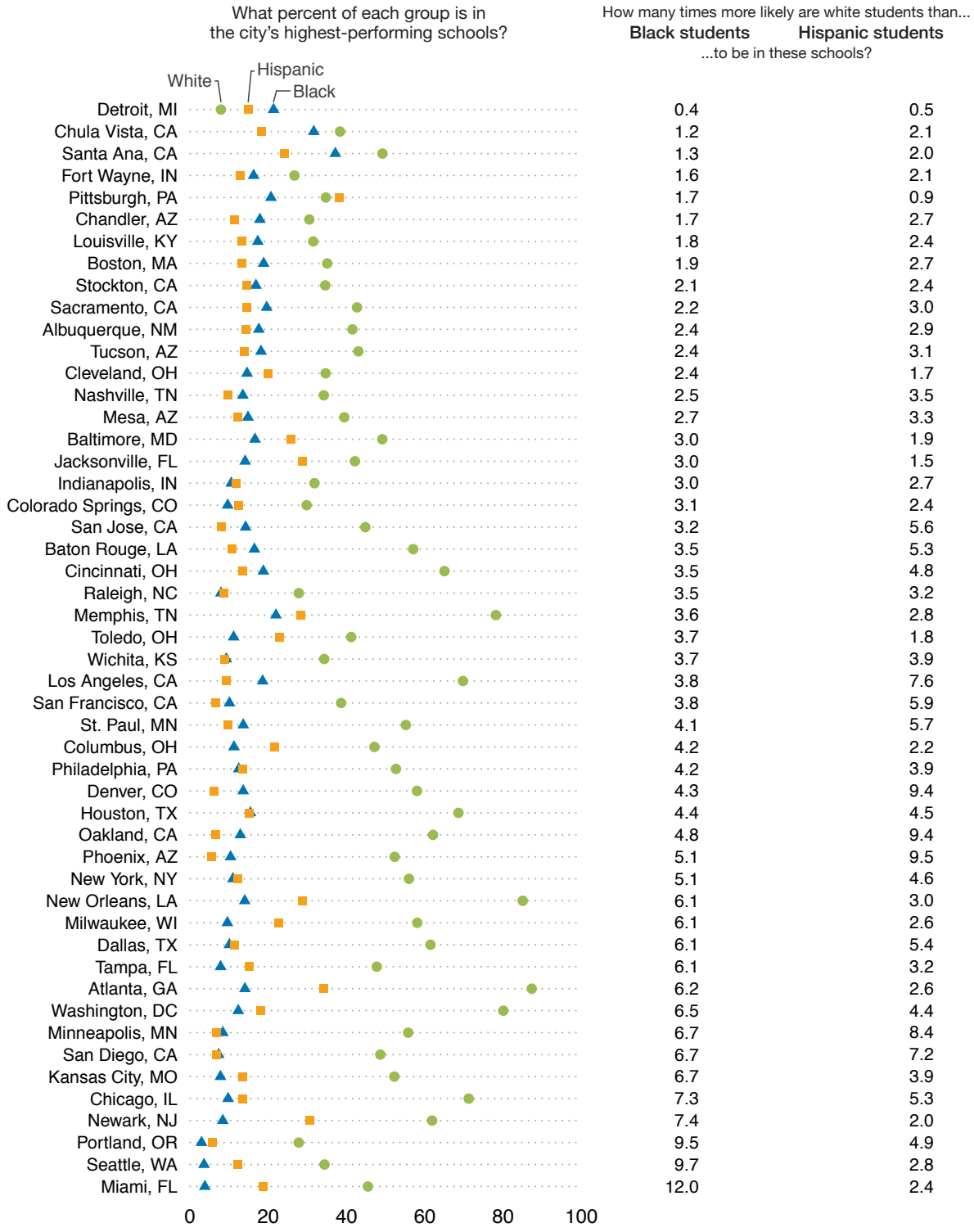


Figure 9. Share of Students Enrolled in **Top-Scoring** Elementary and Middle Schools in **Math** by **Race/Ethnicity**



	How many times more likely are white students than... ...to be in these schools? Black students	Hispanic students
Santa Ana, CA	1.2	1.5
Chula Vista, CA	1.3	2.1
Sacramento, CA	1.4	2.0
Boston, MA	1.5	1.6
Louisville, KY	1.7	2.1
Stockton, CA	1.7	1.9
Chandler, AZ	1.7	2.4
Pittsburgh, PA	1.8	1.0
Detroit, MI	1.9	4.0
Nashville, TN	2.1	3.0
Fort Wayne, IN	2.2	3.2
Tucson, AZ	2.2	3.3
Colorado Springs, CO	2.3	2.2
Albuquerque, NM	2.4	2.7
Baltimore, MD	2.5	1.5
Mesa, AZ	2.5	3.1
St. Paul, MN	2.6	3.2
Cleveland, OH	2.6	1.3
Jacksonville, FL	2.7	1.5
San Jose, CA	2.8	3.7
Memphis, TN	3.0	2.3
Indianapolis, IN	3.1	2.6
Toledo, OH	3.3	1.6
Raleigh, NC	3.5	2.6
Baton Rouge, LA	3.6	4.7
Wichita, KS	3.6	3.3
Philadelphia, PA	3.8	4.5
Phoenix, AZ	3.9	6.2
Cincinnati, OH	3.9	4.9
Denver, CO	3.9	7.3
Los Angeles, CA	4.2	6.4
Minneapolis, MN	4.2	3.0
San Francisco, CA	4.7	5.9
Houston, TX	4.7	3.4
Oakland, CA	4.7	6.4
Washington, DC	5.1	4.2
New York, NY	5.2	4.1
Tampa, FL	5.3	3.1
Columbus, OH	5.3	2.0
San Diego, CA	5.7	6.5
New Orleans, LA	5.7	2.7
Chicago, IL	5.8	4.7
Portland, OR	6.0	4.4
Milwaukee, WI	6.4	2.2
Dallas, TX	6.4	4.4
Atlanta, GA	6.6	2.3
Kansas City, MO	7.3	3.8
Seattle, WA	8.4	2.9
Miami, FL	9.9	3.1
Newark, NJ	13.2	2.5

Figure 10. Share of Students Enrolled in **Top-Scoring** Elementary and Middle Schools in **Reading** by **Race/Ethnicity**



	How many times more likely are white students than... Black students ...to be in these schools?	Hispanic students ...to be in these schools?
Detroit, MI	0.4	0.5
Chula Vista, CA	1.2	2.1
Santa Ana, CA	1.3	2.0
Fort Wayne, IN	1.6	2.1
Pittsburgh, PA	1.7	0.9
Chandler, AZ	1.7	2.7
Louisville, KY	1.8	2.4
Boston, MA	1.9	2.7
Stockton, CA	2.1	2.4
Sacramento, CA	2.2	3.0
Albuquerque, NM	2.4	2.9
Tucson, AZ	2.4	3.1
Cleveland, OH	2.4	1.7
Nashville, TN	2.5	3.5
Mesa, AZ	2.7	3.3
Baltimore, MD	3.0	1.9
Jacksonville, FL	3.0	1.5
Indianapolis, IN	3.0	2.7
Colorado Springs, CO	3.1	2.4
San Jose, CA	3.2	5.6
Baton Rouge, LA	3.5	5.3
Cincinnati, OH	3.5	4.8
Raleigh, NC	3.5	3.2
Memphis, TN	3.6	2.8
Toledo, OH	3.7	1.8
Wichita, KS	3.7	3.9
Los Angeles, CA	3.8	7.6
San Francisco, CA	3.8	5.9
St. Paul, MN	4.1	5.7
Columbus, OH	4.2	2.2
Philadelphia, PA	4.2	3.9
Denver, CO	4.3	9.4
Houston, TX	4.4	4.5
Oakland, CA	4.8	9.4
Phoenix, AZ	5.1	9.5
New York, NY	5.1	4.6
New Orleans, LA	6.1	3.0
Milwaukee, WI	6.1	2.6
Dallas, TX	6.1	5.4
Tampa, FL	6.1	3.2
Atlanta, GA	6.2	2.6
Washington, DC	6.5	4.4
Minneapolis, MN	6.7	8.4
San Diego, CA	6.7	7.2
Kansas City, MO	6.7	3.9
Chicago, IL	7.3	5.3
Newark, NJ	7.4	2.0
Portland, OR	9.5	4.9
Seattle, WA	9.7	2.8
Miami, FL	12.0	2.4

Definitions and Sources

The measures in figures 7 through 10 look at the enrollment of different groups of students in a city's highest-scoring elementary and middle schools. We define a high-scoring school as one with proficiency rates in the top 20 percent of schools citywide in the most recent year of available data (see Appendix A for data range for each city's state). After using school-level proficiency rates to identify schools in the top 20 percent of each city's performance distribution in the most recent year of available data, we then looked at enrollment rates in these schools by student sub-group to generate the measures in the chart. Although student demographics, residence, and school performance are all highly correlated, we nevertheless might expect to see variation across the cities due to exercise of public school choice and the range of students and schools in the cities. We excluded high schools from the analysis because of limitations in the high school data (e.g., too few tested grades and missing data).

Sources: State Agency School Performance Files (see Appendix A for years/variables available); National Center for Education Statistics, Common Core of Data, Public Elementary/Secondary School Universe Survey.

Figure 11. Share of Students Enrolled in **Bottom-Scoring** Elementary and Middle Schools in **Math** by **Income Status**

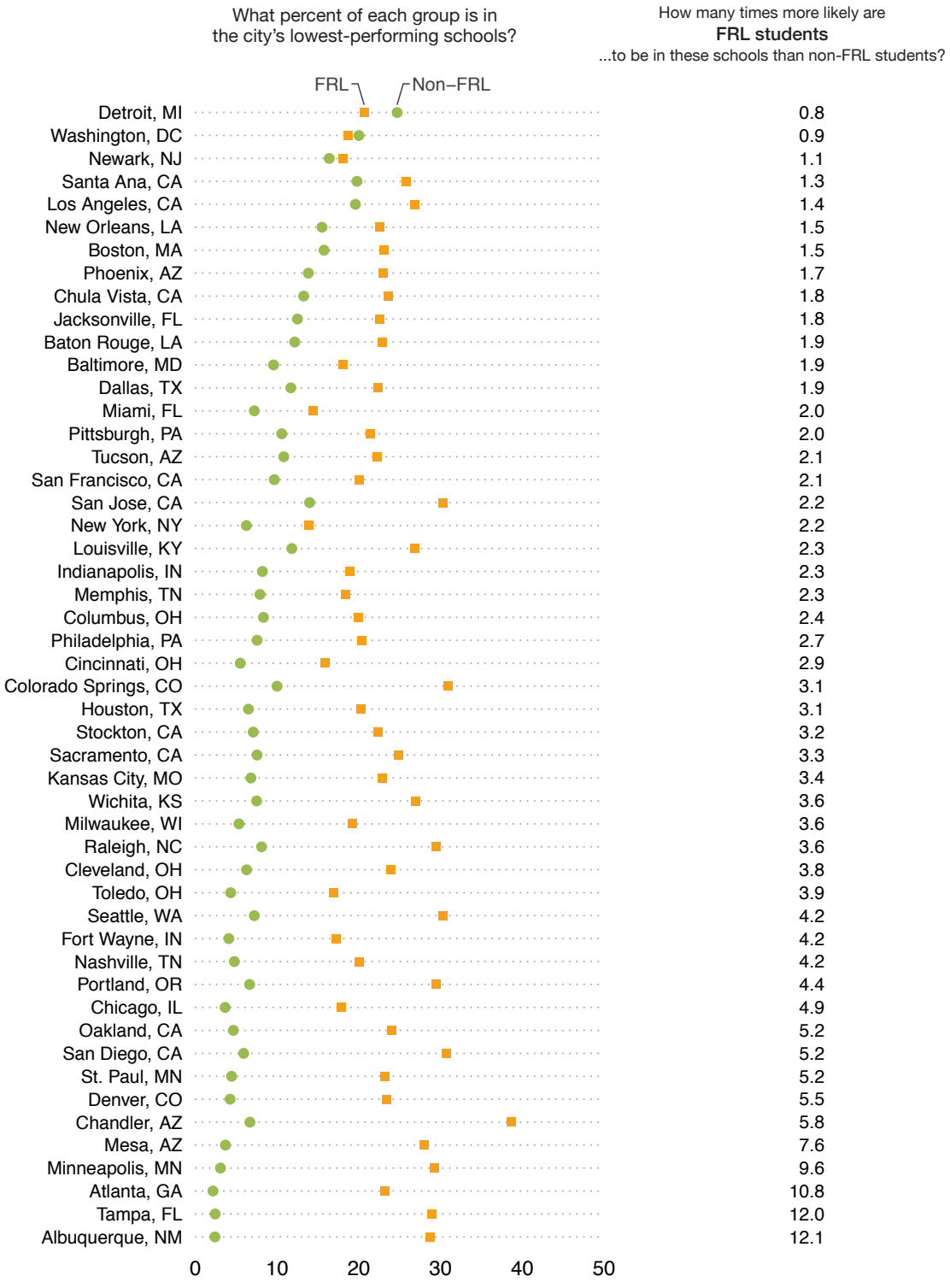


Figure 12. Share of Students Enrolled in **Bottom-Scoring** Elementary and Middle Schools in **Reading** by **Income Status**

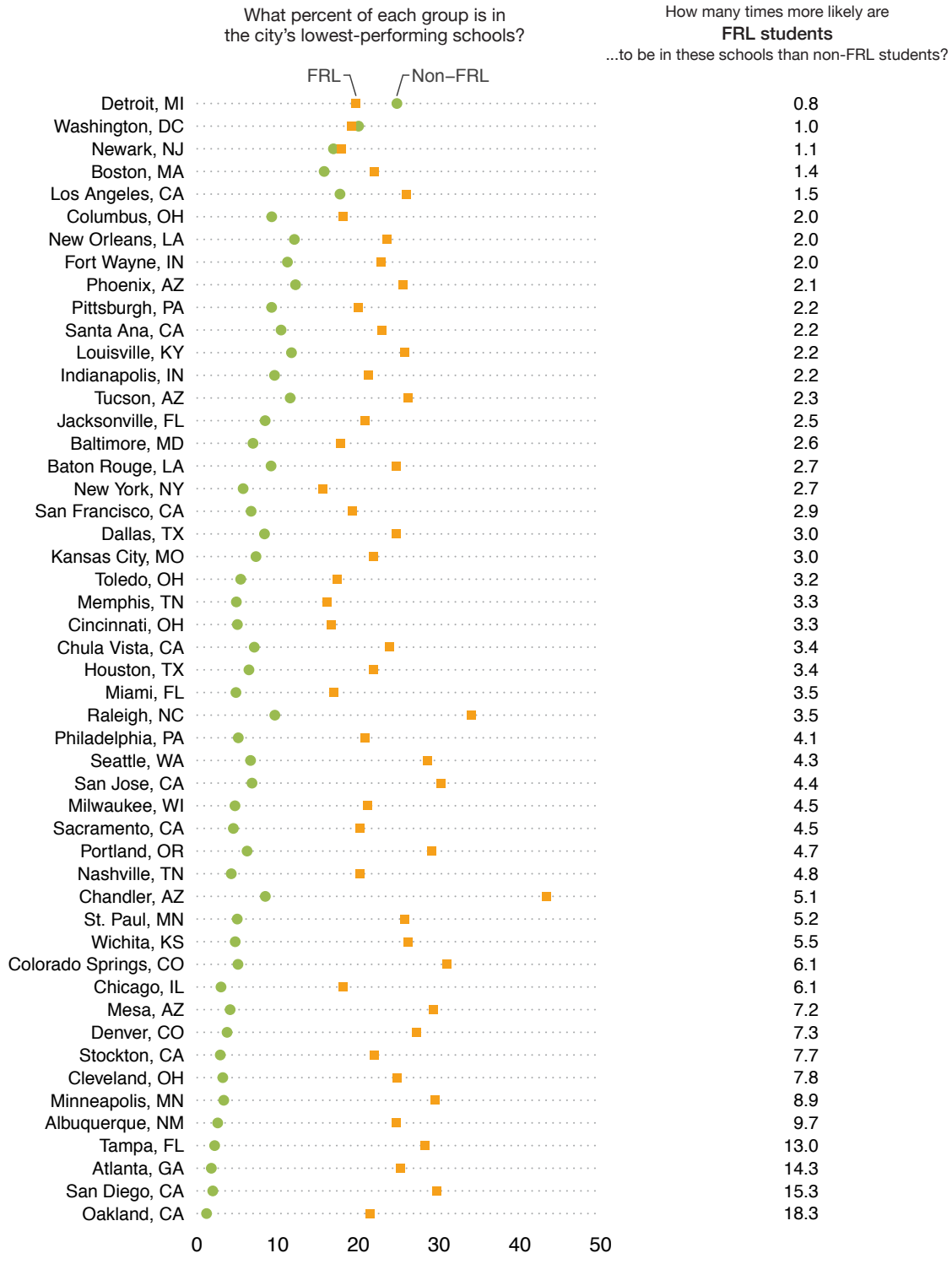
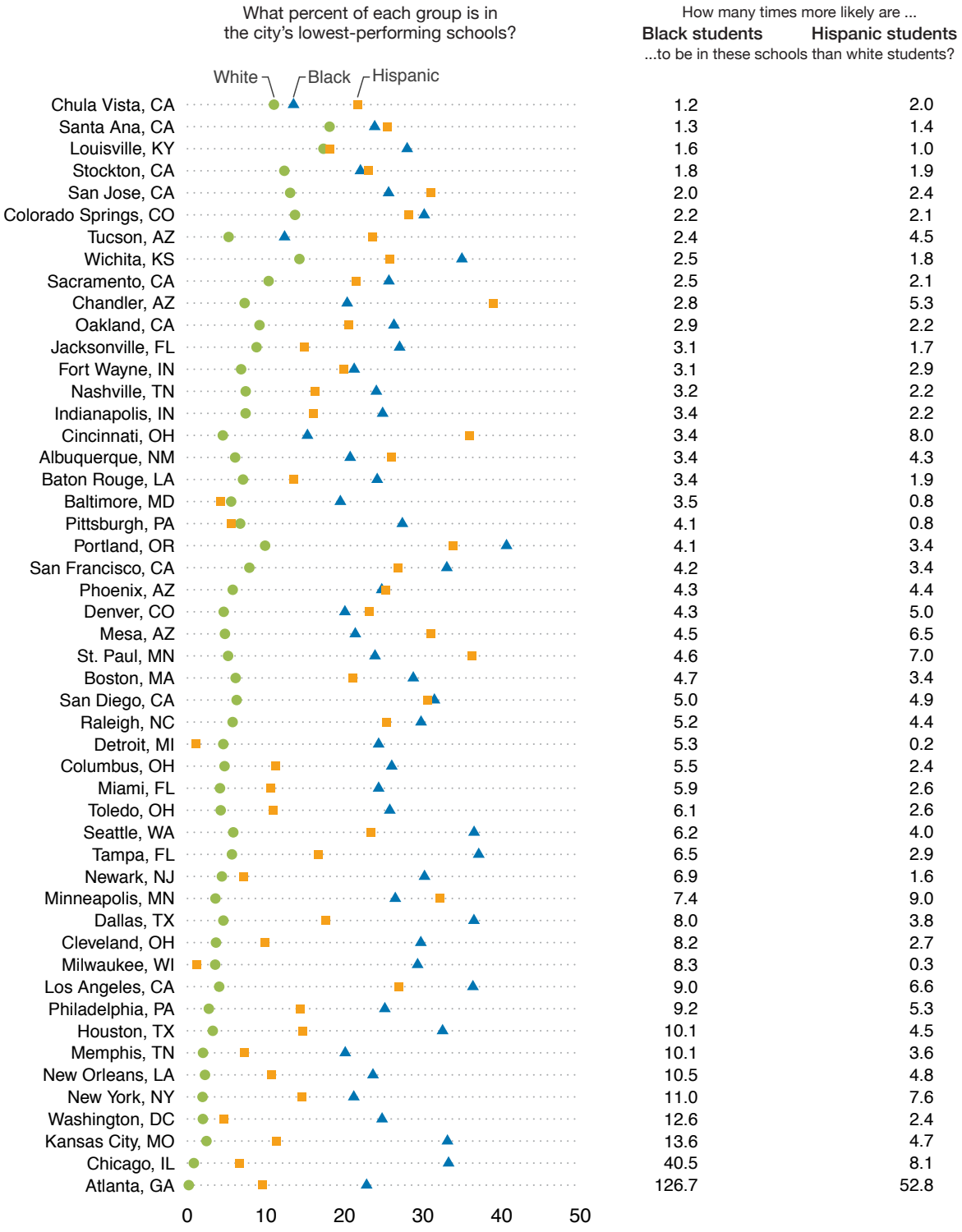
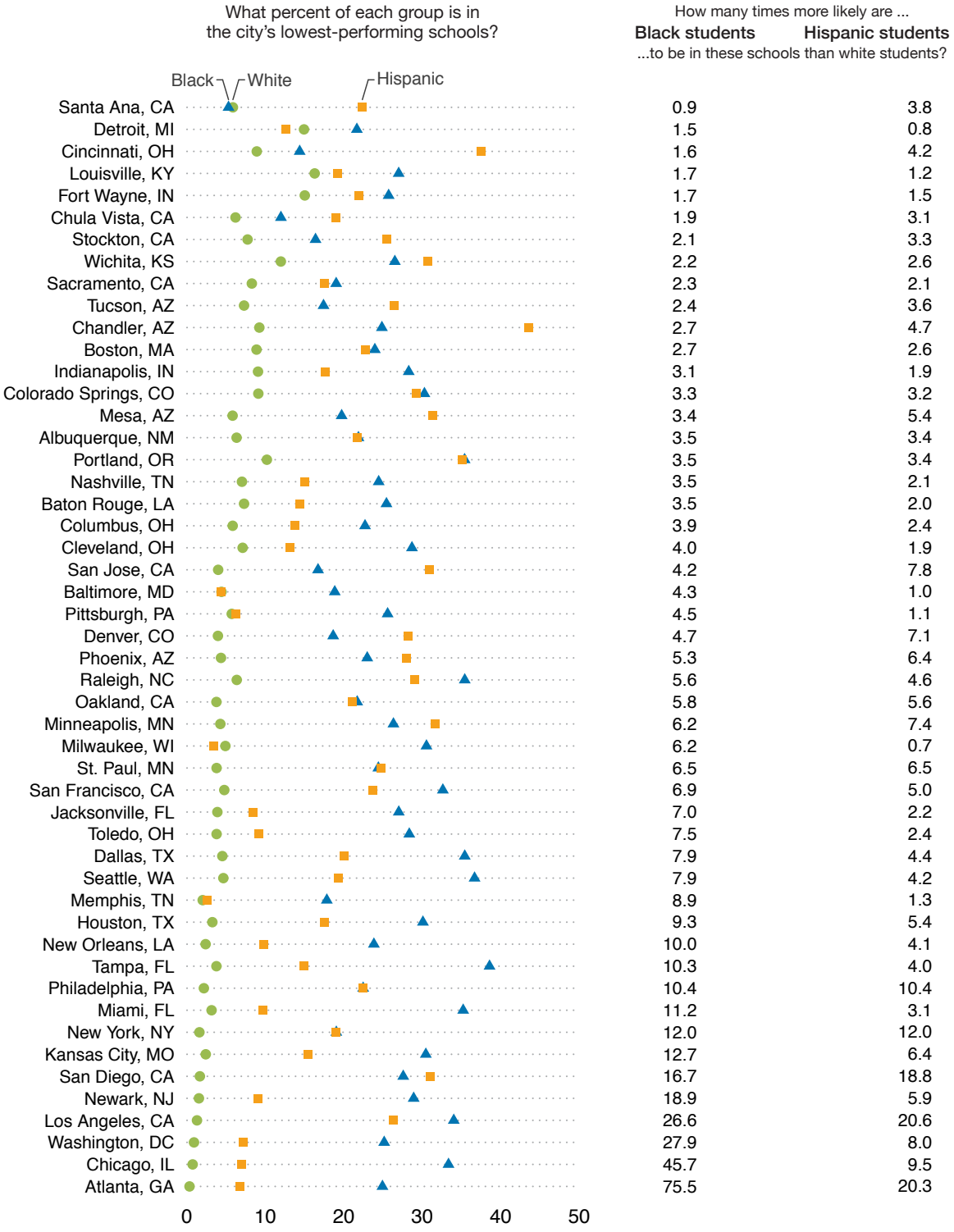


Figure 13. Share of Students Enrolled in **Bottom-Scoring** Elementary and Middle Schools in **Math** by **Race/Ethnicity**



	How many times more likely are ... Black students ...to be in these schools than white students?	Hispanic students ...to be in these schools than white students?
Chula Vista, CA	1.2	2.0
Santa Ana, CA	1.3	1.4
Louisville, KY	1.6	1.0
Stockton, CA	1.8	1.9
San Jose, CA	2.0	2.4
Colorado Springs, CO	2.2	2.1
Tucson, AZ	2.4	4.5
Wichita, KS	2.5	1.8
Sacramento, CA	2.5	2.1
Chandler, AZ	2.8	5.3
Oakland, CA	2.9	2.2
Jacksonville, FL	3.1	1.7
Fort Wayne, IN	3.1	2.9
Nashville, TN	3.2	2.2
Indianapolis, IN	3.4	2.2
Cincinnati, OH	3.4	8.0
Albuquerque, NM	3.4	4.3
Baton Rouge, LA	3.4	1.9
Baltimore, MD	3.5	0.8
Pittsburgh, PA	4.1	0.8
Portland, OR	4.1	3.4
San Francisco, CA	4.2	3.4
Phoenix, AZ	4.3	4.4
Denver, CO	4.3	5.0
Mesa, AZ	4.5	6.5
St. Paul, MN	4.6	7.0
Boston, MA	4.7	3.4
San Diego, CA	5.0	4.9
Raleigh, NC	5.2	4.4
Detroit, MI	5.3	0.2
Columbus, OH	5.5	2.4
Miami, FL	5.9	2.6
Toledo, OH	6.1	2.6
Seattle, WA	6.2	4.0
Tampa, FL	6.5	2.9
Newark, NJ	6.9	1.6
Minneapolis, MN	7.4	9.0
Dallas, TX	8.0	3.8
Cleveland, OH	8.2	2.7
Milwaukee, WI	8.3	0.3
Los Angeles, CA	9.0	6.6
Philadelphia, PA	9.2	5.3
Houston, TX	10.1	4.5
Memphis, TN	10.1	3.6
New Orleans, LA	10.5	4.8
New York, NY	11.0	7.6
Washington, DC	12.6	2.4
Kansas City, MO	13.6	4.7
Chicago, IL	40.5	8.1
Atlanta, GA	126.7	52.8

Figure 14. Share of Students Enrolled in **Bottom-Scoring** Elementary and Middle Schools in **Reading** by **Race/Ethnicity**



	How many times more likely are ... Black students ...to be in these schools than white students?	Hispanic students
Santa Ana, CA	0.9	3.8
Detroit, MI	1.5	0.8
Cincinnati, OH	1.6	4.2
Louisville, KY	1.7	1.2
Fort Wayne, IN	1.7	1.5
Chula Vista, CA	1.9	3.1
Stockton, CA	2.1	3.3
Wichita, KS	2.2	2.6
Sacramento, CA	2.3	2.1
Tucson, AZ	2.4	3.6
Chandler, AZ	2.7	4.7
Boston, MA	2.7	2.6
Indianapolis, IN	3.1	1.9
Colorado Springs, CO	3.3	3.2
Mesa, AZ	3.4	5.4
Albuquerque, NM	3.5	3.4
Portland, OR	3.5	3.4
Nashville, TN	3.5	2.1
Baton Rouge, LA	3.5	2.0
Columbus, OH	3.9	2.4
Cleveland, OH	4.0	1.9
San Jose, CA	4.2	7.8
Baltimore, MD	4.3	1.0
Pittsburgh, PA	4.5	1.1
Denver, CO	4.7	7.1
Phoenix, AZ	5.3	6.4
Raleigh, NC	5.6	4.6
Oakland, CA	5.8	5.6
Minneapolis, MN	6.2	7.4
Milwaukee, WI	6.2	0.7
St. Paul, MN	6.5	6.5
San Francisco, CA	6.9	5.0
Jacksonville, FL	7.0	2.2
Toledo, OH	7.5	2.4
Dallas, TX	7.9	4.4
Seattle, WA	7.9	4.2
Memphis, TN	8.9	1.3
Houston, TX	9.3	5.4
New Orleans, LA	10.0	4.1
Tampa, FL	10.3	4.0
Philadelphia, PA	10.4	10.4
Miami, FL	11.2	3.1
New York, NY	12.0	12.0
Kansas City, MO	12.7	6.4
San Diego, CA	16.7	18.8
Newark, NJ	18.9	5.9
Los Angeles, CA	26.6	20.6
Washington, DC	27.9	8.0
Chicago, IL	45.7	9.5
Atlanta, GA	75.5	20.3

Definitions and Sources

The measures in figures 11 through 14 look at the enrollment of different groups of students in a city's lowest-scoring elementary and middle schools. We define a low-scoring school as one with proficiency rates in the bottom 20 percent of schools citywide in the most recent year of available data (see Appendix A for data range for each city's state). After using school-level proficiency rates to identify schools in the bottom 20 percent of each city's performance distribution in the most recent year of available data, we then looked at enrollment rates in these schools by student sub-group to generate the measures in the chart. Although student demographics, residence, and school performance are all highly correlated, we nevertheless might expect to see variation across the cities due to exercise of public school choice and the range of students and schools in the cities. We excluded high schools from the analysis because of limitations in the high school data (e.g., too few grades and a large amount of missing data).

Sources: State Agency School Performance Files (See Appendix A for years/variables available); National Center for Education Statistics, Common Core of Data, Public Elementary/Secondary School Universe Survey.

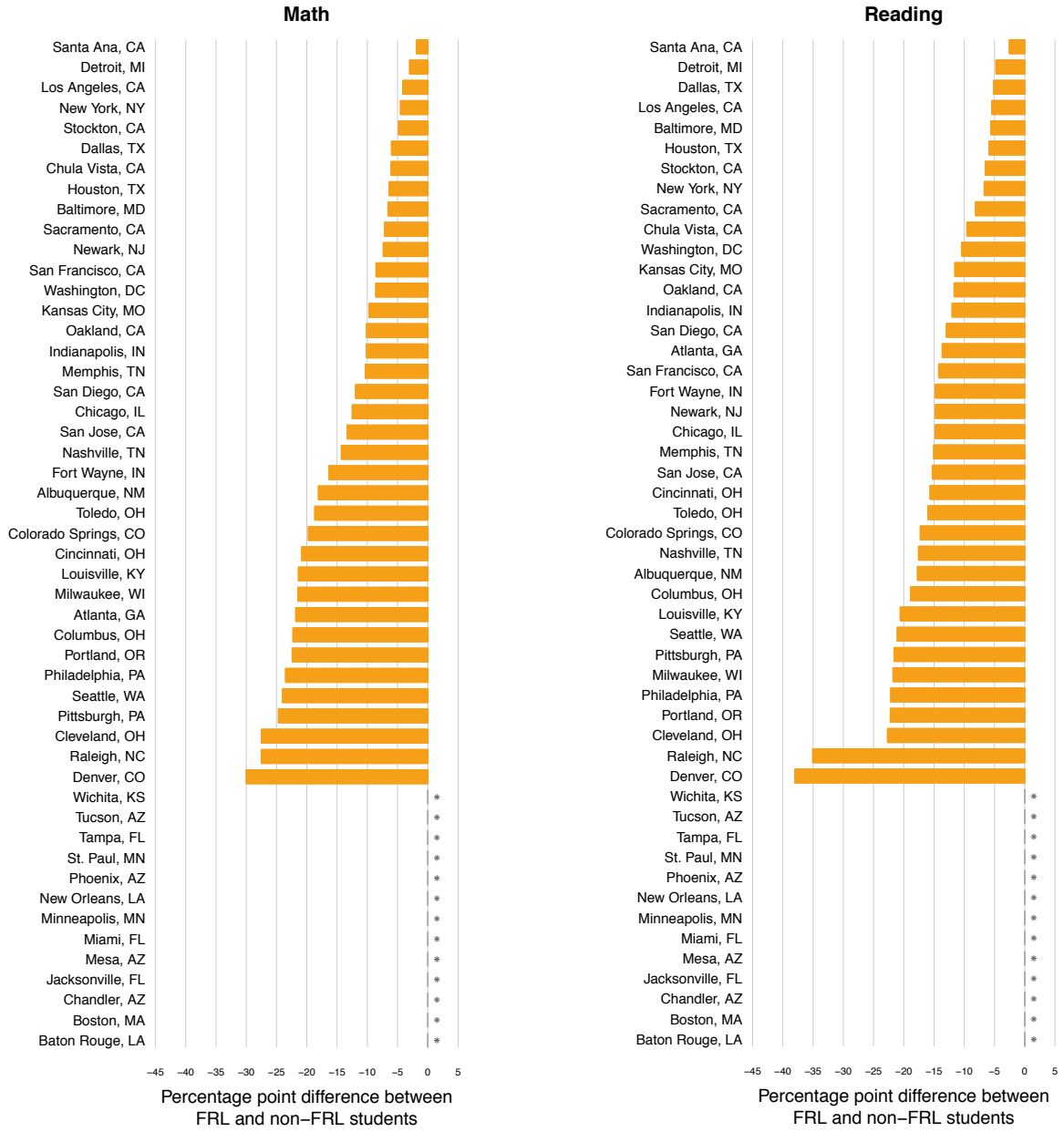
INDICATOR | Proficiency Gaps for Students Eligible for Free and Reduced-Price Lunch

On average, students eligible for FRL face double-digit achievement gaps—around 14 percentage points—compared to other students.

Santa Ana, Detroit, and Los Angeles had the smallest gaps in both math and reading.

Cleveland and Denver had the largest gaps in both math and reading.

Figure 15. Average Achievement Gaps for Students Eligible for FRL Over the Three Most Recent Years of Available Data



Definitions and Sources

Figure 15 looks at gaps in proficiency rates between students eligible for FRL and non-FRL students averaged across the three most recent years of available data. Gaps are calculated by subtracting the proficiency rates of students who *were not* eligible for FRL from proficiency rates of students who qualified for FRL within a school, aggregated for each city. The results in Figure 15 are averaged across three years of data. Because of problems with missing data, we calculate the gap measure for only 37 of the 50 cities. When proficiency rates were only reported for students eligible for FRL, proficiency rates for the comparison group (non-low-income households) were calculated by using the relationships between overall proficiency, the low-income household proficiency, and their corresponding counts.

Source: State Agency School Performance Files (see Appendix A for years/variables available).

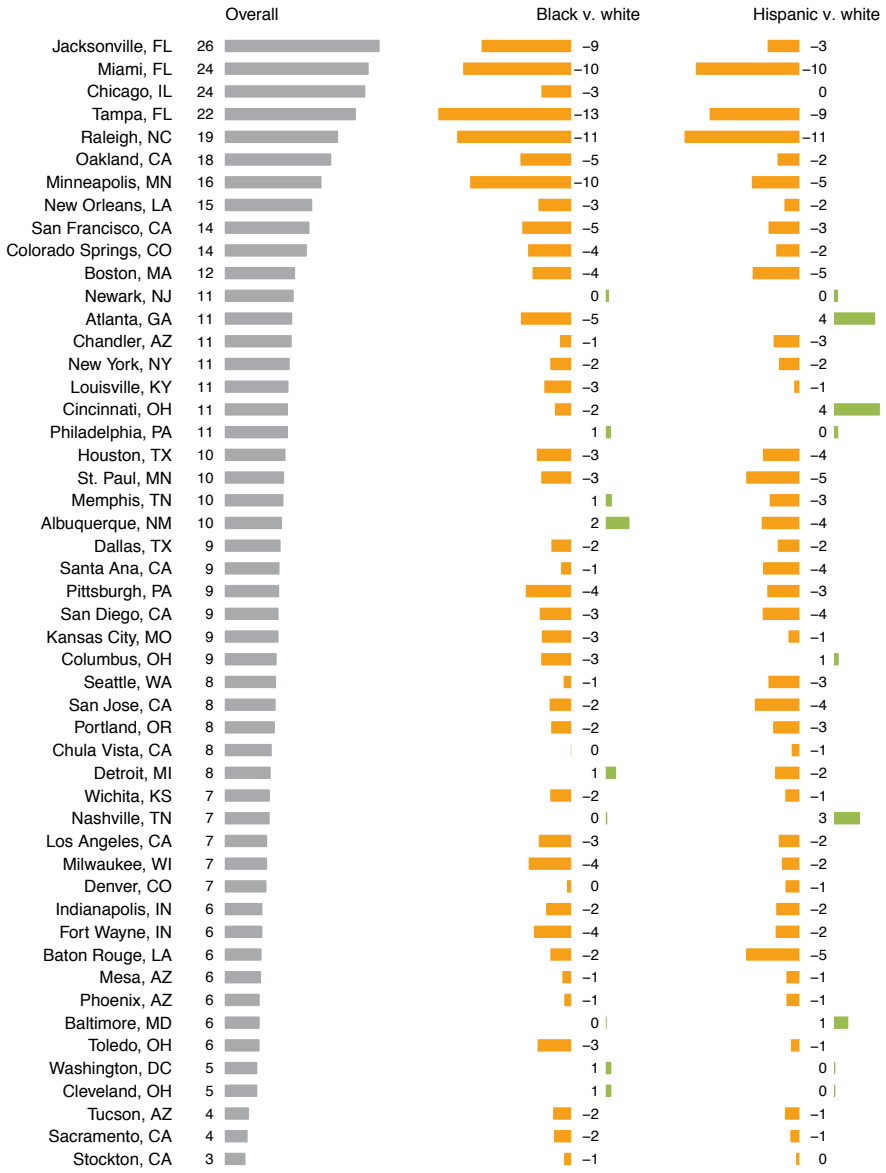
INDICATOR | Enrollment in Advanced Math Courses

In 29 of the 50 cities, less than 10% of high school students enrolled in advanced math classes in a given year.

In Newark, Philadelphia, Memphis, Albuquerque, Detroit, Washington, D.C., and Cleveland, black students took advanced math at higher rates than white students.

In Atlanta, Cincinnati, Columbus, Nashville, and Baltimore, Hispanic students took advanced math at higher rates than white students.

Figure 16. Overall Share of Students Enrolled in Advanced Math and Percentage Point Gaps Between Groups, 2011-2012



Definitions and Sources

The measures in Figure 16 focus on the share of students taking advanced math courses in high school. The data come from the US Department of Education's Office for Civil Rights' CRDC survey. The CRDC defines advanced math courses to include topics like analytic geometry and trigonometry.[13] We calculated the rates by dividing the number of course/test takers in each high school by the total enrollment in that high school. We calculated sub-group rates by dividing the number of course/test takers in the subgroup in each high school by the total enrollment for that sub-group in that high school. Since most students take advanced math in 11th and 12th grade, we might roughly expect that somewhere between 25 and 50 percent of all high school students take these courses and tests in a given year.

Note: After the release of a prior version of this report, we discovered a reporting issue with the OCR data for a small set of schools in Minneapolis. Because of this irregularity, we have dropped these schools from this indicator. The figures in this version of the report reflect the changes.

Source: U.S. Department of Education's Office for Civil Rights, Civil Rights Data Collection 2011-2012.

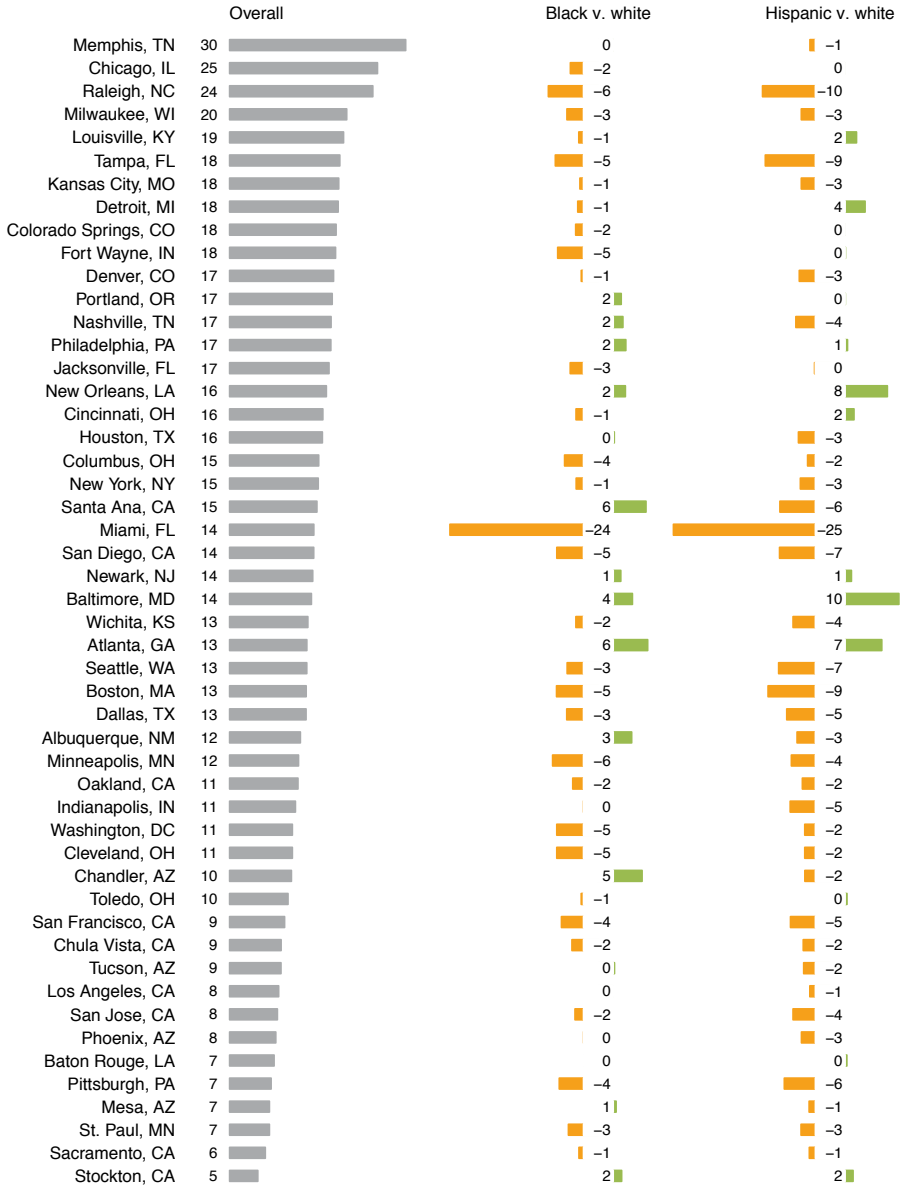
INDICATOR | ACT/SAT Test-Taking

In 30 of the 50 cities, schools report that less than 15% of all high school students take the ACT/SAT in a given year.

In 20 of the 50 cities, black students took the ACT/SAT at the same or better rates than white students.

In 17 of the 50 cities, Hispanic students took the ACT/SAT at the same or better rates than white students.

Figure 17. Overall Share of Students Taking ACT/SAT and Percentage Point Gaps Between Groups, 2011-2012



Definitions and Sources

The measures in Figure 17 focus on the share of students taking the ACT/SAT. The data come from the US Department of Education's Office for Civil Rights' CRDC survey. We calculated the rates by dividing the number of course/test takers in each high school by the total enrollment in that high school. We calculated sub-group rates by dividing the number of course/test takers in the subgroup in each high school by the total enrollment for that sub-group in that high school. Since most students take the ACT/SAT in 11th and 12th grade, we might roughly expect that somewhere between 25 and 50 percent of all high school students take these courses and tests in a given year. For example, Memphis's citywide results for the ACT/SAT (gray bars) fall in that range: just under a third of its students took the ACT/SAT in 2011-2012.

Note: After the release of a prior version of this report, we discovered a reporting issue with the OCR data for a small set of schools in Minneapolis. Because of this irregularity, we have dropped these schools from this indicator. The figures in this version of the report reflect the changes.

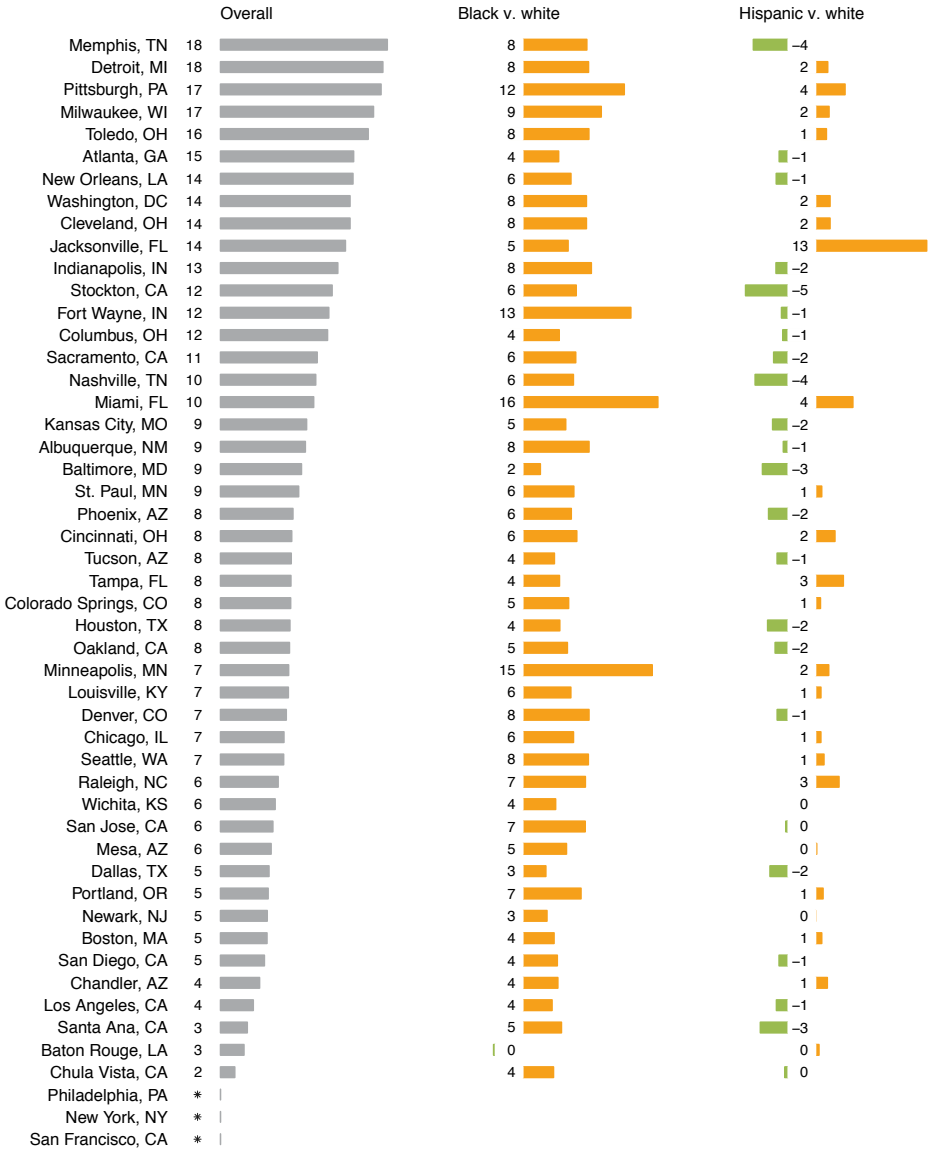
Source: U.S. Department of Education's Office for Civil Rights, Civil Rights Data Collection 2011-2012.

INDICATOR | Out-of-School Suspensions

On average across the 50 cities, black students were nearly twice as likely as white students to receive out-of-school suspensions.

Baton Rouge is the only city where black students were not suspended at higher rates than white students.

Figure 18. Overall Share of Students Receiving Out-of-School Suspensions and Percentage Point Gaps Between Groups, 2011-2012



* We removed these cities for over-reporting or under-reporting out-of-school suspensions following the approach of the Civil Rights Project at UCLA.

Definitions and Sources

For Figure 18, we use school-level survey data from the U.S. Department of Education's Office for Civil Rights' (OCR) CRDC on out-of-school suspensions in 2011-2012. OCR data offers the best available information on student discipline nationwide, but since behaviors that warrant suspensions can differ between cities, direct comparisons between cities should be made with caution (note: we excluded Philadelphia, New York City, and San Francisco because of concerns about data quality, such as reporting zero out-of-school suspensions). We calculated the rates based on the reported number of students who received one or more out-of-school suspensions, and we counted students with multiple suspensions only once. We divided school counts by school enrollments to calculate rates for schools and then we averaged these rates across all schools in the city.

Note: After the release of a prior version of this report, we discovered a reporting issue with the OCR data for a small set of schools in Minneapolis. Because of this irregularity, we have dropped these schools from this indicator. The figures in this version of the report reflect the changes.

Source: U.S. Department of Education's Office for Civil Rights, Civil Rights Data Collection 2011-2012.

APPENDIX A: DATA TABLES

Table A1. State Data Inventory

State	Years covered (Y1, Y2, Y3)	Proficiency categories	Subjects analyzed in this report	School-level scale score available
Arizona	2012, 2013, 2014	Below-basic, basic, proficient, advanced, passing	Math, reading	Yes
California	2011, 2012, 2013	Proficient, advanced	Math, ELA	Yes
Colorado	2012, 2013, 2014	Below-basic, basic, proficient, advanced	Math, reading	No
District of Columbia	2012, 2013, 2014	Below-basic, basic, proficient, advanced	Math, reading	No
Florida	2012, 2013, 2014	Failing, below-basic, proficient, advanced, mastery	Math, reading	Yes
Georgia	2011, 2012, 2013	Below-basic, basic, proficient, advanced	Math, reading	No
Illinois	2012, 2013, 2014	Warning, below-basic, basic, proficient	Math, reading	No
Indiana	2011, 2012, 2013	Passing	Math, ELA	No
Kansas	2011, 2012, 2013	Proficient	Math, reading	No
Kentucky	2012, 2013, 2014	Below-basic, basic, proficient, advanced	Math, ELA, reading	No
Louisiana	2012, 2013, 2014	Unsatisfactory, below-basic, basic, proficient, advanced	Math, ELA	No
Maryland	2011, 2012, 2013	Basic, proficient, advanced	Math, reading	No
Massachusetts	2012, 2013, 2014	Failing, needing improvement, proficient, advanced	Math, ELA	No
Michigan	2012, 2013, 2014	Below-basic, basic, proficient, advanced	Math, ELA	Yes
Minnesota	2012, 2013, 2014	Below-basic, basic, proficient, advanced	Math, reading	Yes
Missouri	2012, 2013, 2014	Level not determined, below-basic, basic, proficient, advanced	Math, ELA	Yes
New Jersey	2011, 2012, 2013	Basic, proficient, advanced	Math, ELA	No
New Mexico	2012, 2013, 2014	Below-basic, basic, proficient, advanced	Math, reading	Yes
New York	2012, 2013, 2014	Below-basic, basic, proficient, advanced	Math, ELA	Yes
North Carolina	2011, 2012, 2013	Below-basic, basic, proficient, advanced	Math, reading	Yes
Ohio	2012, 2013, 2014	Proficient	Math, reading	No
Oregon	2012, 2013, 2014	Basic, proficient, advanced	Math, reading	No
Pennsylvania	2010, 2011, 2012	Below-basic, basic, proficient, advanced	Math, reading	No
Tennessee	2012, 2013, 2014	Below-basic, basic, proficient, advanced	Math, reading, English II, English III	No
Texas	2011, 2013, 2014	Proficient	Math, ELA, reading	No
Washington	2010, 2011, 2012	Below-basic, basic, proficient, advanced	Math, reading	Yes
Wisconsin	2012, 2013, 2014	Below-basic, basic, proficient, advanced	Math, ELA, reading	No

Notes

Years Covered: In Table A1, the year refers to the end of the academic school year. For example, 2014 refers to the 2013-2014 school year.
Proficiency categories: For our analyses we collapsed proficient with higher-proficiency categories.
Subjects: Some states refer to English Language Arts (ELA) achievement and others use the word reading. In our report, we refer to both types of scores as reading.

Table A2. The Education Landscape in the 50 Cities (2011-2012)

City	# Schools	Total enrollment	# Districts	# Traditional schools	# Authorizers	Traditional school enrollment	# Charter schools	Charter school enrollment	# Private schools	# Private enrollment	% White, public school	% Black, public school	% Hispanic, public school	% FRL, public school
Albuquerque, NM	204	89,131	2	111	2	71,971	43	8,448	50	8,712	24.59	2.74	62.56	59.52
Atlanta, GA	146	60,846	1	94	3	44,641	14	4,833	38	11,372	15.22	75.32	6.83	73.62
Baltimore, MD	264	87,960	3	149	1	63,555	38	12,197	77	12,208	7.91	85.51	4.6	83.78
Baton Rouge, LA	102	43,180	5	57	2	31,399	14	4,282	31	7,499	13.73	78.33	3.99	81.64
Boston, MA	187	65,825	1	108	1	49,009	22	6,819	57	9,997	12.48	36.13	41.31	69.37
Chandler, AZ	72	44,843	3	45	1	38,466	13	4,388	14	1,989	53.03	6.86	27.31	31.76
Chicago, IL	942	428,239	1	580	1	331,498	38	44,559	324	52,182	8.82	41.5	44.5	86.69
Chula Vista, CA	76	52,144	2	49	4	44,287	11	5,283	16	2,574	12.09	4.2	68.23	13.2
Cincinnati, OH	121	47,287	1	52	9	28,588	24	6,513	45	12,186	19.91	71.52	2.8	69.76
Cleveland, OH	186	65,173	1	94	9	40,366	57	15,999	35	8,808	18.51	64.89	12.42	75.8
Colorado Springs, CO	155	75,405	5	109	6	61,265	24	11,653	22	2,487	58.7	7.48	24.09	37.31
Columbus, OH	232	88,044	7	116	10	53,304	64	24,401	52	10,339	37.31	47.68	6.75	59.37
Dallas, TX	402	206,235	11	262	2	165,536	56	20,681	84	20,018	6.96	25.93	64.23	84.87
Denver, CO	225	85,401	2	130	3	66,028	31	10,098	64	9,275	20.61	14.08	58.1	71.73
Detroit, MI	230	100,118	1	119	10	63,563	87	33,646	24	2,909	3.69	84.97	10.03	82.33
Fort Wayne, IN	79	39,302	4	53	1	30,007	3	1,506	23	7,789	48.53	23.88	14.2	70
Houston, TX	721	370,909	17	400	5	298,796	138	43,613	183	28,500	10.69	24.24	59.41	76.81
Indianapolis, IN	272	142,608	9	162	2	113,141	28	11,490	82	17,977	38.9	37.6	15.45	67.16
Jacksonville, FL	277	134,549	1	156	1	108,800	18	5,164	103	20,585	37.11	46.13	8.57	54.07
Kansas City, MO	177	72,474	10	98	5	52,548	35	9,983	44	9,943	34.77	43.64	15.69	62.47
Los Angeles, CA	1,134	582,233	3	546	6	424,830	185	87,271	403	70,132	10.88	9.72	70.5	28.8
Louisville, KY	187	95,132	1	129	0	77,432	0	0	58	17,700	49.85	37.46	6.99	61.61
Memphis, TN	271	120,634	1	176	1	100,236	25	6,310	70	14,088	7.21	82.35	8.54	76.5
Mesa, AZ	138	81,670	2	84	3	69,400	41	11,305	13	965	52.79	4.58	35.52	50.25
Miami, FL	115	48,049	1	55	1	33,368	24	6,839	36	7,842	4.7	27.07	67.01	82.69
Milwaukee, WI	292	103,696	1	132	4	60,070	56	16,913	104	26,713	14.18	54.77	24.78	83.13
Minneapolis, MN	139	45,648	2	76	13	33,232	44	8,325	19	4,091	30.45	39.29	16.23	68.79
Nashville, TN	183	87,107	1	120	1	70,539	11	2,277	52	14,291	31.62	46.66	17.34	71.28
New Orleans, LA	136	55,764	3	22	2	8,506	68	31,667	46	15,591	8.92	85.19	2.99	82.87
New York, NY	2,398	1,160,171	1	1,473	3	915,270	135	42,695	790	202,206	14.93	28.92	40.34	75.18
Newark, NJ	107	44,572	1	67	2	33,371	17	7,814	23	3,387	6.71	56.76	35.47	84.95
Oakland, CA	183	55,119	1	97	2	37,276	34	9,592	52	8,251	8.81	30.57	40.95	54.58
Philadelphia, PA	516	221,254	1	240	2	136,305	82	46,628	194	38,321	14.1	58.53	17.81	77.62
Phoenix, AZ	491	268,532	28	275	3	220,544	139	33,691	77	14,297	29.94	7.32	56.08	58.52
Pittsburgh, PA	110	34,204	1	56	1	24,170	9	2,634	45	7,400	32.88	56.77	1.65	69.57
Portland, OR	193	71,357	7	106	4	58,724	11	2,018	76	10,615	52.18	11.26	18.78	55.13
Raleigh, NC	110	71,883	2	69	1	59,108	9	3,244	32	9,531	42.01	31.9	16.09	41.7
Sacramento, CA	144	77,404	6	103	3	63,663	16	8,009	25	5,732	15.19	19.43	37.18	19.32
San Diego, CA	368	199,644	10	242	4	166,906	44	15,541	82	17,197	26.61	8.39	44.23	18.67
San Francisco, CA	213	76,914	2	101	3	51,098	15	3,490	97	22,326	11.99	10.55	25.1	55.55
San Jose, CA	288	166,867	19	189	8	136,550	34	15,159	65	15,158	16.56	2.74	46.71	23.14
Santa Ana, CA	87	66,965	3	62	1	57,858	5	3,751	20	5,356	2.72	0.46	92.39	14.1
Seattle, WA	166	61,292	2	95	0	47,972	0	0	71	13,320	43.26	18.51	12.4	41.16
St. Paul, MN	124	51,954	1	64	12	35,465	33	10,060	27	6,429	27.2	25.43	12.96	71.2
Stockton, CA	107	60,670	5	70	4	50,906	20	6,930	17	2,834	13.03	13.89	47.85	28.49
Tampa, FL	136	61,146	1	81	1	51,242	17	2,641	38	7,263	29.16	34.29	28.88	62.65
Toledo, OH	117	44,883	2	60	9	28,707	30	7,469	27	8,707	44.77	38.88	8.4	64.13
Tucson, AZ	219	85,711	6	114	3	67,386	71	13,149	34	5,176	24.55	5.32	62.37	44.71
Washington, DC	285	74,214	1	111	1	37,277	101	22,936	73	14,001	8.48	74.92	13.67	60.2
Wichita, KS	114	56,969	5	88	0	48,783	0	0	26	8,186	38.37	17.46	29.91	72.18

Notes

These data are for the 2011-2012 school year. The number of districts in a city reflects the count of the number of unique districts in each city, and the number of charter authorizers is a count of the number of unique charter authorizers. Agencies that oversee both traditional schools and charter schools may appear in each measure.

Table A3. Changing Population Demographics in the 50 Cities

City	Total population			White population			Black population			Hispanic population			Asian population		
	2000	2013	% Δ	2000	2013	% Δ	2000	2013	% Δ	2000	2013	% Δ	2000	2013	% Δ
Albuquerque, NM	473,729	556,489	17.47	239,837	235,427	-1.84	15,238	20,536	34.77	189,075	263,196	39.2	11,632	17,218	48.02
Atlanta, GA	433,364	447,848	3.34	132,100	166,290	25.88	271,974	233,453	-14.16	18,632	24,004	28.83	8,901	20,889	134.68
Baltimore, MD	651,154	622,104	-4.46	204,200	176,691	-13.47	420,811	394,132	-6.34	11,101	28,440	156.19	11,392	17,191	50.9
Baton Rouge, LA	247,290	229,405	-7.23	118,360	82,121	-30.62	116,068	128,637	10.83	5,043	6,230	23.54	6,871	9,711	41.33
Boston, MA	603,388	644,710	6.85	308,480	297,158	-3.67	151,510	157,777	4.14	85,859	121,496	41.51	47,033	61,697	31.18
Chandler, AZ	180,022	249,139	38.39	125,049	149,683	19.7	6,734	15,181	125.44	37,536	55,810	48.68	8,538	26,579	211.3
Chicago, IL	2,895,409	2,718,789	-6.1	928,974	877,092	-5.58	1,100,000	870,752	-18.23	753,751	782,617	3.83	137,433	177,697	29.3
Chula Vista, CA	179,862	256,765	42.76	59,682	46,316	-22.4	8,653	10,860	25.51	88,015	160,801	82.7	21,491	36,315	68.98
Cincinnati, OH	344,107	297,498	-13.54	186,759	149,710	-19.84	145,485	128,929	-11.38	4,225	9,924	134.89	5,743	6,224	8.38
Cleveland, OH	478,600	390,106	-18.49	189,473	132,768	-29.93	244,678	206,587	-15.57	34,549	41,976	21.5	7,628	7,294	-4.38
Colorado Springs, CO	382,234	439,858	15.08	291,361	309,760	6.31	27,553	31,405	13.98	45,550	75,393	65.52	13,739	18,110	31.81
Columbus, OH	756,172	822,762	8.81	521,287	484,234	-7.11	183,649	237,043	29.07	19,424	49,851	156.65	27,681	39,406	42.36
Dallas, TX	1,186,496	1,257,676	6	415,611	375,952	-9.54	309,081	309,699	0.2	421,611	519,736	23.27	35,099	46,691	33.03
Denver, CO	554,603	649,495	17.11	291,693	350,602	20.2	63,883	66,380	3.91	176,039	200,805	14.07	17,417	26,412	51.64
Detroit, MI	955,916	688,740	-27.95	110,828	62,165	-43.91	781,642	558,087	-28.6	47,317	53,300	12.64	11,296	10,193	-9.76
Fort Wayne, IN	274,834	251,340	-8.55	216,328	173,751	-19.68	38,948	44,254	13.62	13,190	21,064	59.7	4,920	9,213	87.26
Houston, TX	2,595,962	2,197,374	-15.35	958,246	573,334	-40.17	581,686	510,171	-12.29	888,228	960,558	8.14	157,164	149,195	-5.07
Indianapolis, IN	783,941	838,425	6.95	533,403	481,281	-9.77	204,064	244,444	19.79	29,725	83,427	180.66	12,270	23,171	88.84
Jacksonville, FL	733,607	842,588	14.86	460,618	460,261	-0.08	215,317	264,854	23.01	30,117	68,727	128.2	23,077	43,704	89.38
Kansas City, MO	453,311	467,082	3.04	269,851	261,240	-3.19	139,822	136,099	-2.66	30,612	48,562	58.64	9,791	14,584	48.95
Los Angeles, CA	3,740,133	3,884,340	3.86	1,172,810	1,108,784	-5.46	421,722	358,536	-14.98	1,720,739	1,913,501	11.2	399,506	471,672	18.06
Louisville, KY	579,826	609,908	5.19	434,578	414,179	-4.69	124,344	146,030	17.44	9,686	29,740	207.04	8,579	15,865	84.93
Memphis, TN	732,608	653,450	-10.8	279,088	179,954	-35.52	418,039	415,155	-0.69	19,910	43,373	117.85	13,278	12,616	-4.99
Mesa, AZ	440,867	457,595	3.79	326,143	292,307	-10.37	11,565	18,080	56.33	83,825	123,972	47.89	8,128	11,112	36.71
Miami, FL	374,798	417,670	11.44	47,581	41,422	-12.94	77,588	74,559	-3.9	246,104	296,926	20.65	2,487	3,121	25.49
Milwaukee, WI	596,854	599,168	0.39	275,776	224,654	-18.54	225,701	242,144	7.29	70,992	104,627	47.38	17,867	23,499	31.52
Minneapolis, MN	382,465	400,079	4.61	242,634	244,126	0.61	76,088	81,692	7.37	29,085	38,624	32.8	26,454	27,157	2.66
Nashville, TN	544,538	634,465	16.51	352,389	358,699	1.79	149,777	183,398	22.45	25,397	64,932	155.67	13,808	23,896	73.06
New Orleans, LA	484,674	378,715	-21.86	130,707	118,490	-9.35	325,424	225,257	-30.78	15,032	20,849	38.7	11,293	12,034	6.56
New York, NY	8,008,278	8,405,837	4.96	2,870,205	2,753,018	-4.08	2,000,000	1,959,076	-4.32	2,161,530	2,428,756	12.36	847,587	1,173,030	38.4
Newark, NJ	273,115	278,436	1.95	41,911	29,414	-29.82	144,687	139,613	-3.51	80,279	102,582	27.78	3,507	2,779	-20.76
Oakland, CA	396,638	406,228	2.42	96,229	108,415	12.66	144,430	109,241	-24.36	86,544	108,081	24.89	63,856	74,130	16.09
Philadelphia, PA	1,517,550	1,553,165	2.35	653,240	565,546	-13.42	658,728	666,344	1.16	128,300	206,033	60.59	70,220	109,779	56.34
Phoenix, AZ	1,331,131	1,513,350	13.69	753,122	689,708	-8.42	68,833	113,299	64.6	453,386	624,916	37.83	29,647	54,187	82.77
Pittsburgh, PA	334,524	305,838	-8.58	225,611	202,282	-10.34	92,395	76,815	-16.86	4,514	8,216	82.01	9,869	16,279	64.95
Portland, OR	546,950	611,134	11.73	421,394	444,576	5.5	39,754	41,493	4.37	37,626	60,974	62.05	39,439	54,119	37.22
Raleigh, NC	325,013	431,897	32.89	206,824	228,077	10.28	83,427	129,681	55.44	21,174	46,387	119.08	11,730	21,999	87.54
Sacramento, CA	403,496	479,671	18.88	169,581	171,567	1.17	65,857	71,508	8.58	86,849	128,472	47.93	72,934	95,971	31.59
San Diego, CA	1,278,876	1,355,885	6.02	651,806	589,241	-9.6	106,672	90,903	-14.78	320,224	405,789	26.72	185,037	257,807	39.33
San Francisco, CA	776,733	837,442	7.82	345,686	350,032	1.26	63,407	50,078	-21.02	109,565	128,395	17.19	249,887	294,308	17.78
San Jose, CA	931,917	998,514	7.15	350,732	278,164	-20.69	33,525	34,196	2	282,860	334,735	18.34	255,681	345,643	35.19
Santa Ana, CA	329,820	334,241	1.34	41,311	36,419	-11.84	4,400	2,759	-37.3	250,846	259,230	3.34	31,023	34,826	12.26
Seattle, WA	596,104	652,429	9.45	414,237	442,438	6.81	55,242	53,934	-2.37	31,418	41,990	33.65	85,415	103,019	20.61
St. Paul, MN	287,144	294,873	2.69	186,174	160,171	-13.97	36,613	53,054	44.9	22,693	28,229	24.4	38,225	51,169	33.86
Stockton, CA	267,710	298,115	11.36	94,036	66,919	-28.84	27,941	35,973	28.75	88,995	129,855	45.91	53,463	66,725	24.81
Tampa, FL	313,179	352,981	12.71	164,041	162,746	-0.79	78,287	86,266	10.19	61,220	83,677	36.68	7,522	16,191	115.25
Toledo, OH	328,951	282,313	-14.18	229,003	174,870	-23.64	76,752	80,059	4.31	17,622	22,084	25.32	4,084	4,083	-0.02
Tucson, AZ	496,411	526,141	5.99	272,131	241,153	-11.38	21,870	31,011	41.8	178,852	222,400	24.35	13,653	20,820	52.49
Washington, DC	572,059	646,449	13	160,525	232,279	44.7	346,354	315,559	-8.89	45,015	65,560	45.64	16,565	28,118	69.74
Wichita, KS	373,597	386,558	3.47	277,587	247,580	-10.81	42,480	50,489	18.85	33,729	63,684	88.81	15,017	21,209	41.23

Notes

Decennial census surveys were used for 2000. We use data from the 2013 American Community Survey one-year estimates for population numbers in 2013. These data are available at the place-level (e.g., "Chicago city"). Data at the place-level and for racial/ethnic group counts are not available for 2014 and 2015. Starting in 2000, the Census allowed survey respondents to select more than one racial category, introducing multiracial categories. We use race-bridging variables to compare racial and ethnic group counts between 2000 and 2013. Race-bridging variables are created by reassigning multiracial counts to single-race groups. We create new racial-ethnic group variables by adopting the method used in the GeoLytics Neighborhood Change Database, previously developed at the Urban Institute by Jeffrey Passel. See the GeoLytics Data Users Guide for more information. White, black, and Asian population counts exclude respondents who identify as Hispanic/Latino. In other words, these groups reflect *non-Hispanic/Latino whites, blacks, and Asians.* Percent change is calculated as (2013 - 2000) / 2000 * 100.

APPENDIX B: HOW WE MEASURED THE INDICATORS

Measuring Citywide Gains in Math and Reading Proficiency

For each city, we calculated the average gains made in math and reading proficiency over the three-year period for which we have data. Specifically, we estimated a separate linear regression model for each city in our sample, in which the outcome variable is the mean-centered (by state and year) proportion of students in a school scoring at or above "proficient" on each state's standardized math test (we also did the same for reading). The model can be expressed as follows:

$$Y_{jt} = ß_0 + ß_1 (Year_t) + ß_2 X_{jt} + ß_3 S_{jt} + \mathcal{E}_{jt}$$

where Y_{jt} is the dependent variable (the within-state-year standardized proportion of students in school *i* at time *t* scoring at or above "proficient" in math or reading), $Year_t$ represents the year as a linear term (1 = year 1, 2 = year 2, 3 = year 3), X_{jt} is a vector representing a school's student composition (the proportion FRL, white, black, Hispanic and Asian) S_{jt} is a vector representing other school characteristics (whether the school is in an urban area, the grade level of the school, and the school's total enrollment) and $\mathcal{E}_{jt}$ is the residual error. We exclude schools with missing information on these variables. The coefficient of primary interest here is $ß_1$, which tells us the average change in performance per year for the schools in a given city. To approximate the change over two years (from year one to year three), we multiply $ß_1$ by 2, yielding the results presented in Figure 4. Positive values indicate gains made by schools in a city, while negative values indicate losses.

To account for the fact that schools will show up multiple times in our data over the three years, we used clustered standard errors to compute confidence intervals. If the 95 percent confidence interval includes zero, then the gain (or loss) is not statistically significant and the bars in the figure are not shaded. If the 95 percent confidence interval does not contain zero, then the gain (or loss) is statistically significant and the city's bar in the figure is shaded.

We also estimated a series of simple growth models in which we allowed the intercepts to vary randomly among schools; results were substantively similar to those presented in the report.

Measuring High School Graduation Rates

For each city we calculated graduation rates using the following expression:

$$\frac{\textit{Number of cohort members who earned a regular high school diploma by the end of the 2012-13 school year}}{\textit{Number of first-time 9th graders in fall 2009 (starting cohort) plus students who transferred in, minus students who transferred out, emigrated, or died during school years 2009-10, 2010-11, 2011-12, and 2012-13}}$$

When graduation rates were expressed as a range due to suppression (e.g., 50-54 percent), the midpoint for that range was used as the rate (e.g., 52.5 percent).

Measuring Share of Students in Schools That Are "Beating the Odds "

We used the proportion of students in each school scoring at or above "proficient" on the state's standardized test in math as the outcome measure, and the school's demographic measures as predictors in a series of multivariate linear regression models. We estimate separate models for each state and each year. These models can be expressed by the following equation:

$$Y_j = ß_0 + ß_1(White)_j + ß_2(Black)_j + ß_3(Hispanic)_j + ß_4(Asian)_j + ß_5(FRL)_j + ß_6(ELL)_j + ß_7(Urban)_j + ß_8(SchoolLevel)_j + ß_9(SchoolSize)_j + \mathcal{E}_j$$

where Y_j is the dependent variable (the proportion of students in school *j* scoring at or above "proficient"), controlling for the proportion of students who are white, black, Hispanic, Asian/Pacific Islander, eligible for FRL, and English language learners, as well as for whether the school is in an urban area, its highest grade level (a set of dummy variables indicating whether highest grade is in middle school [6-8], high school [9-12], and ungraded/missing, with elementary school [K-5] as the reference category), and its size (i.e., total enrollment). We exclude schools with missing information on these variables. Across all of the models, the R-squared values range from 0.33 to 0.78.

The school-level residual, ε_j, indicates whether a school outperformed similar schools statewide. Schools are said to have performed *better than expected* if their residuals are positive (their observed proficiency rate is greater than their expected rate), while schools are said to have performed *worse than expected* if their residuals are negative (their observed proficiency rate is less than their expected rate). We used the standard error of the residual to calculate a 90 percent confidence interval around each school's residual as a measure of the residual's precision using the formula below:

90% CI = school residual ± 1.645 x residual standard error

If the confidence interval contains 0, then whether the school was outperforming similar schools statewide cannot be determined with reliability. Therefore, schools are considered to be outperforming similar schools statewide only if their residuals were positive and their residuals' confidence interval did not contain zero.

We then calculated the percentage of students in each city in each year that attended schools that were outperforming similar schools statewide according to our definition.

Measuring Enrollment in High- and Low-Scoring Elementary and Middle Schools

By city, year, and school level, we identified the 20th and 80th percentile in terms of percent of students scoring proficient on the reading and math tests. We then calculated the percentage of students in the city that fell into the bottom and top 20 percent of schools. We did this for overall enrollment, as well as for students in particular subgroups: FRL vs. non-FRL, and white vs. black vs. Hispanic.

In these analyses, we focus on elementary and middle schools because proficiency data is widely available for 3rd through 8th grades. To identify school level, we used the NCES CCD definition to construct two categories: (1) schools classified as primary (low grade: Pre-K through 03; high grade: Pre-K through 08) or middle (low grade: 04 through 07; high grade: 04 through 11) schools; and (2) schools classified as high schools (low grade: 07 through 12; high grade: 12). We excluded schools classified by the CCD as "other" (any other configuration not falling within the above three categories, including ungraded and operational schools with non-applicable grade spans). Because not all state datasets include high school test scores, we can report only the primary and middle school results.

ENDNOTES

1. For background on the problems facing Detroit's education system, see Robin Lake, Ashley Jochim, and Michael DeArmond, "Fixing Detroit's Broken School System," *Education Next* 15, no. 1(Winter 2015): 20-27. For more on Hratchian and others' work on rebuilding Detroit, see *The Choice is Ours* (Detroit, MI: Coalition for the Future of Detroit Schoolchildren, 2015); Rochelle Riley, "Detroit Commission Reaches Consensus on School Governance," *Detroit Free Press,* Feb. 27, 2015.

2. In most places, state education agencies have longitudinal data systems that link information about students' academic achievement with information on their teachers, schools, and districts (for example, see *Data for Action 2014* (Washington, DC: Data Quality Campaign, 2014). These data allow city leaders to pull individual reports on schools and districts, but state data systems do not typically provide a way to pull city-level reports. If a leader in Memphis wanted to know how all of her city's schools were doing, for example, she would need to pull reports on a subset of schools that are part of the Shelby County Schools and the Tennessee's Achievement School District and then piece together a citywide summary. If that same leader, like Hratchian, wanted to see how her city's schools compared to other places—perhaps she is especially concerned about the prospects for Memphis's short- and long-term economic development—she would also be out of luck. As Hratchian's story shows, the best available tool for cross-city comparisons, the U.S. Department of Education's Trial Urban District Assessment, or TUDA, includes only school districts (see The Nation's Report Card, *Trial Urban District Assessment,* www.nationsreportcard.gov, for a list of the 21 cities in the NAEP TUDA). Today's educational landscape is more complex than that. Multiple agencies oversee public schools in cities like Memphis, multiple school districts operate in cities like Phoenix, and large charter sectors operate in cities like Cleveland. Leaders have very few places to turn if they want a holistic comparison of their schools and schools in other cities. This is not to say state data systems are not important. Researchers are using them to rigorously study important topics ranging from teacher quality to school accountability. Studies done by researchers at the American Institutes for Research's National Center for Analysis of Longitudinal Data in Education Research (CALDER) illustrate the importance of this work. Nevertheless, these studies tend to focus on high-profile school districts or entire states, rather than the public school options that families actually have in a given city. These rigorous studies also rarely compare cases across city or state boundaries.

3. For example, see Grover J. Whitehurst and Ellie Klein, *The 2014 Education Choice and Competition Index* (Washington, DC: The Brookings Institution, 2014); George W. Bush Institute, *Mayor's Report Card on Education* (Dallas, TX: George W. Bush Institute, 2015).

4. For example, see William H. Frey, *Diversity Explosion: How New Racial Demographics Are Remaking America* (Washington, DC: Brookings Institution Press, 2014); Hussar and Bailey, *Projections of Education Statistics to 2022*; Maxwell, "US School Enrollment Hits Majority-Minority Milestone," *Education Week*; Suitts, *A New Majority: Low-Income Students Now a Majority in the Nation's Schools*; and NCES, *Digest of Education Statistics: 2013*, Table 203.50.

5. Private schools make up a non-trivial share of enrollments in several cities; however, we were unable to include any information on private schools for the indicators because we do not have any performance data for private schools.

6. Specifically, we used the boundaries of "incorporated places" from the U.S. Census.

7. More specifically, we calculated a Herfindahl index to identify difference in competition in the cities (technically, the sum of the squares of each sector's market shares). The enrollment distributions we used to calculate the index clearly *understate* the amount of choice parents have in each city because the data don't capture whether parents have choices *within* or *between* traditional school districts, whether they exercise choice by choosing their *residence*, or whether they use public *vouchers* to attend private schools. After sorting by the Herfindahl index we then sorted the cities by total enrollments and selected the top 50.

8. All but three of our cities—Seattle, Louisville, and Wichita—offered charter schools during the 2011-12 school year.

9. For example, see Gary Phillips and Alicia Garcia, *Aiming High: Setting Performance Standards for Student Success* (Washington DC: Education Policy Center at American Institutes for Research, 2015): 1-12; Douglas N. Harris, *Value-Added Measures in Education: What Every Educator Needs to Know* (Cambridge, MA: Harvard Education Press, 2011); Institute of Education Sciences, *Mapping State Proficiency Standards Onto the NAEP Scales: Variation and Change in State Standards for Reading and Math, 2005-2009* (Washington, DC: National Center for Education Statistics, US Department of Education, 2011).

10. States could and should easily fix the problems associated with proficiency data by making aggregate school-level scale scores publicly available (as a handful of states already do). In the meantime, however, our indicators rely on aggregate data and necessarily trade off some precision in favor of coverage and transparency. For an excellent discussion of these issues see Robin T. Jacob, Robert D. Goddard, and Eun Sook Kim, "Assessing the Use of Aggregate Data in the Evaluation of School-Based Interventions: Implications for Evaluation Research and State Policy Regarding Public-Use Data," *Educational Evaluation and Policy Analysis* 36, no. 1 (May 31, 2013): 44-66.

11. Harris, *Value-Added Measures in Education*; Jal Mehta, *The Allure of Order: High Hopes, Dashed Expectations, and the Troubled Quest to Remake American Schooling* (New York, NY: Oxford University Press, 2013).

12. Institute of Education Sciences, *Mapping State Proficiency Standards Onto the NAEP Scales*.

13. These courses include trigonometry, trigonometry/algebra, trigonometry/analytic geometry, trigonometry/math analysis, analytic geometry, math analysis, math analysis/analytic geometry, probability and statistics, and pre-calculus. According to OCR, "trigonometry courses prepare students for eventual work in calculus, and typically include the following topics: trigonometric and circular functions; their inverses and graphs; relations among the parts of a triangle; trigonometric identities and equations; solutions of right and oblique triangles; and complex numbers. Analytic geometry courses include the study of the nature and intersection of lines and planes in space. Math analysis courses include the study of polynomial, logarithmic, exponential, and rational functions and their graphs; vectors; set theory; Boolean algebra and symbolic logic; mathematical induction; matrix algebra; sequences and series; and limits and continuity. Probability and statistics courses introduce the study of likely events and the analysis, interpretation, and presentation of quantitative data. Pre-calculus courses combine the study of trigonometry, elementary functions, analytic geometry, and math analysis topics as preparation for calculus." Office for Civil Rights, personal communication with the author, June 28, 2015.