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Means-Tested State Prekindergarten Programs Are More Segregated Than Universal Prekindergarten Programs

An Essay for the Learning Curve by Walker Swain, Shuyang Wang, and Joseph-Emery Kouaho

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Absent a nationwide plan for universal public prekindergarten, states and districts have taken their own approaches to increasing access to school-based learning opportunities for their youngest learners. While some have focused on making public prekindergarten available to all families, others have targeted families most in need by introducing means-tested programs. Though means-tested prekindergarten can help ensure limited public resources go to students who need them most, our research indicates that it may further the racial isolation of Black and Hispanic students during their earliest interactions with public education.

Early efforts to expand access to public schooling for preschool-age children, such as the War on Poverty–era federal Head Start program, focused on reaching low-income children. More recently, states and cities have made significant investments in their own public preschool programs, often citing their utility in combatting racial, ethnic, and income-based test score differences that are apparent at school entry. Through a mix of means-tested and universal public preschool programs, 44 states and several major cities have expanded public prekindergarten programs. In 2019, 34.0 percent of 4-year-olds nationwide were enrolled in public prekindergarten, up from 14.8 percent in 2003.[1]

[1] Allison H. Friedman-Krauss, W. Steven Barnett, Karin A. Garver, Katherine S. Hodges, G. G. Weisenfeld, and Beth Ann Gardiner, *The State of Preschool 2019* (New Brunswick, NJ: Rutgers University–New Brunswick, National Institute for Early Education Research, 2020); and W. Steven Barnett, Kenneth B. Robin, Jason T. Hustedt, and Karen L. Schulman, *The State of Preschool: 2003 State Preschool Yearbook* (New Brunswick, NJ: Rutgers University–New Brunswick, National Institute for Early Education Research, 2003).

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A long-standing debate has weighed the relative merits of targeting resources to equalize early educational opportunities versus providing universal programs that might broaden political support[2] and reduce the administrative burden[3] associated with means testing. But an underexplored distinction between the two approaches is their relative contribution to the persistent racial and ethnic school segregation among this country's youngest students,[4] which has been tied to inequitable distributions of educational resources[5] and limits opportunities for students to benefit from exposure to diversity.[6]

Although means-tested programs do not explicitly target students by race or ethnicity, the long history of racially oppressive policies (and ongoing discriminatory labor force,[7] education,[8] and immigration[9] practices) has left Black and Hispanic families with disproportionately low incomes and wealth compared with other racial and ethnic groups. Thus, a potentially unintended consequence for states with preschool programs that limit public prekindergarten to low-income families may be that Black and Hispanic students attend preschools where children from historically marginalized groups are even more systematically isolated than they are in the K–12 system.

Tracking national trends among students enrolled in means-tested or universal (sometimes open) programs, we find that Black and Hispanic prekindergarten students in means-tested programs experience consistently higher rates of racial isolation and lower rates of exposure to white students relative to their K–12 counterparts than those in open programs. White students in means-tested programs have higher rates of exposure to Black and Hispanic students than those in open programs, but this is likely attributable to the exclusion of higher-income white families who are disproportionately enrolled in even more racially isolated private settings.[10] Notably, means-tested

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[2] W. Steven Barnett, "Universal and Targeted Approaches to Preschool Education in the United States," *International Journal of Child Care and Education Policy* 4 (2010): 1, https://doi.org/10.1007/2288-6729-4-1-1.

[3] Helen F. Ladd, "Weighing the Benefits and Costs of Universal versus Targeted Pre-K Programs," *Brown Center Chalkboard* (blog), Brookings Institution, June 27, 2017, https://www.brookings.edu/blog/brown-center-chalkboard/2017/06/27/weighing-the-benefits-and-costs-of-universal-versus-targeted-pre-k-programs/.

[4] Erica Greenberg, Tomás Monarrez, and Emily Peiffer, "Segregated from the Start: Comparing Segregation in Early Childhood and K–12 Education," Urban Institute, October 1, 2019, https://www.urban.org/features/segregated-start.

[5] Scott Latham, Sean P. Corcoran, Carolyn Sattin-Bajjaj, and Jennifer L. Jennings, "Racial Disparities in Pre-K Quality: Evidence from New York City's Universal Pre-K Program," *Educational Researcher* 50, no. 9 (2021): 607, https://doi.org/10.3102/0013189X211028214; and Rachel Valentino, "Will Public Pre-K Really Close Achievement Gaps? Gaps in Prekindergarten Quality between Students across States," *American Educational Research Journal* 55, no. 1 (2018): 79, https://doi.org/10.3102/0002831217732000.

[6] Jaana Juvonen, Kara Kogachi, and Sandra Graham, "When and How Do Students Benefit from Ethnic Diversity in Middle School?" *Child Development* 89, no. 4 (July/August 2018): 1268, https://doi.org/10.1111/cdev.12834.

[7] Elizabeth Hirsch and Christopher J. Lyons, "Perceiving Discrimination on the Job: Legal Consciousness, Workplace Context, and the Construction of Race Discrimination," *Law and Society Review* 44, no. 2 (June 2010): 269, https://doi.org/10.1111/j.1540-5893.2010.00403.x.

[8] Gary Orfield and John T. Yun, *Resegregation in American Schools* (Cambridge, MA: Harvard University, Civil Rights Project, 1999).

[9] Mary C. Waters, and Karl Eschbach, "Immigration and Ethnic and Racial Inequality in the United States," *Annual Review of Sociology* 21 (1995): 419.

[10] Erin Hardy and Rebecca Huber, "Neighborhood Preschool Enrollment Patterns by Race/Ethnicity," Brandeis University, Heller School for Social Policy and Management, January 15, 2020,

programs also limit public school students' exposure to higher-income Black and Hispanic students who are likely more racially isolated or underrepresented in disproportionately white private preschools.

Our results point to means testing as one of many potential factors contributing to rates of racial and ethnic isolation in preschool environments that are even higher than largely segregated public elementary schools. Achieving parity with the levels of integration first-graders experience represents an exceedingly modest target, suggesting the need for further intervention to disrupt the high degree of segregation in early childhood schooling.[11]

The Context of Expanding State Prekindergarten Programs

Though enrollment levels in federal Head Start programs have stagnated,[12] most states, DC, and several large metropolitan areas have expanded school-based[13] prekindergarten opportunities and enrollment.[14] Current state-funded prekindergarten programs can be grouped into two broad categories (figure 1):

- **Universal programs** that have no eligibility criteria, except age, state residency, and a legal mandate (under state law, administrative code, or constitutional provision) to provide access to all children whose families voluntarily enroll[15]
- **Means-tested, targeted programs** that have specific eligibility thresholds based on family income, sometimes targeting communities or districts by population need levels largely attributable to constrained public resources

https://www.diversitydatakids.org/research-library/data-visualization/neighborhood-preschool-enrollment-patterns-raceethnicity.

[11] Peter Piazza and Erica Frankenberg, *Segregation at an Early Age 2019 Update* (State College: Pennsylvania State University, College of Education, Center for Education and Civil Rights, 2019).

[12] Daphna Bassok, "Competition or Collaboration? Head Start Enrollment during the Rapid Expansion of State Prekindergarten," *Educational Policy* 26, no. 1 (2012): 96, https://doi.org/10.1177/0895904811428973.

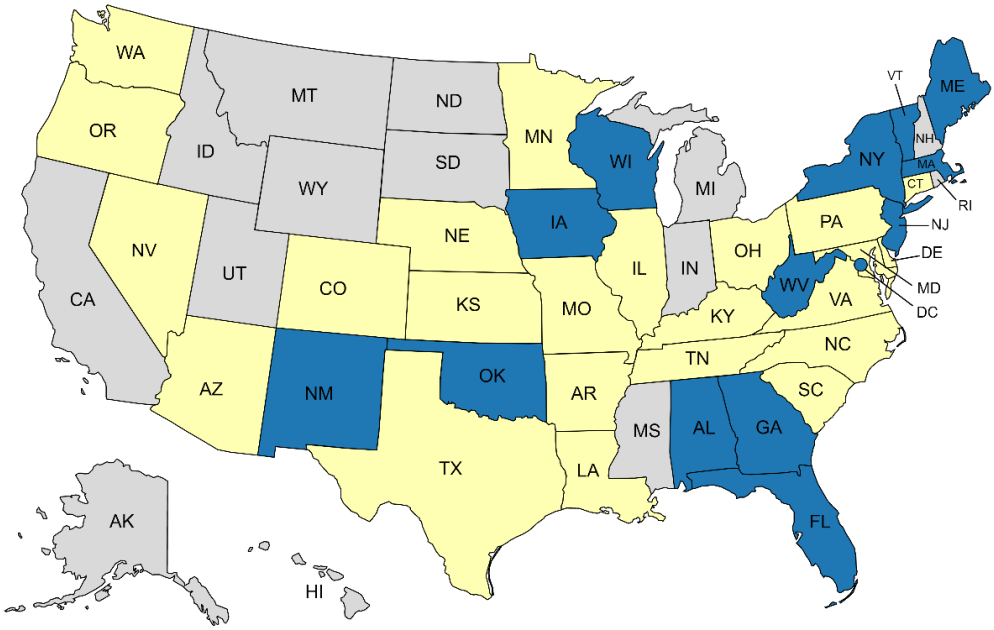
[13] Michael Little, "The New American Elementary School? Prekindergarten in Public Schools and Implications for the Build Back Better Framework" (Washington, DC: Urban Institute, 2021).

[14] Friedman-Krauss, et al., *The State of Preschool 2019*.

[15] We use "open" and "universal" interchangeably. Some states have prekindergarten with an "open" categorization but do not have universal access yet, but our focus is that they do not have an income requirement for enrollment. We use "open" or "open enrollment" to capture these states in our analysis, in addition to those that have achieved "universal" prekindergarten.

FIGURE 1

Prekindergarten Categorization, from 2007 to 2019, for Our Current Analysis



Sources: National Institute for Early Education Research.
Notes: The states in yellow have means-tested state prekindergarten programs, the states in blue have open-enrollment programs, and the states in gray are not in our sample. Alaska, California, Indiana, Mississippi, Michigan, North Dakota, and Utah were excluded from our analysis because data were not available or because their state prekindergarten programs started after 2007 (the beginning year of our analysis).

We use longitudinal data from the National Center for Education Statistics Common Core of Data, downloaded through the Urban Institute's Education Data Portal on student enrollment by race in school-based[16] prekindergarten and first grade to examine differential trends in relative integration rates between states that offer means-tested preschool programs and states that offer open early childhood education programs with no income requirements. We compare the relative segregation of preschool students with first-graders in the same states, as first grade is the earliest grade with full participation required by law in all states.

Though several metrics are used to estimate degrees of racial and ethnic segregation or integration, we focus first on the exposure index, or the probability that a student from one racial or ethnic group

[16] The decision to focus on school-based prekindergarten is because of both data availability and its growing importance. Notably, we also include the small share of prekindergarten enrollments at schools that do not have other grades in the CCD data. See also Michael Little, "The New American Elementary School? Prekindergarten in Public Schools and Implications for the Build Back Better Framework" (Washington, DC: Urban Institute, 2021).

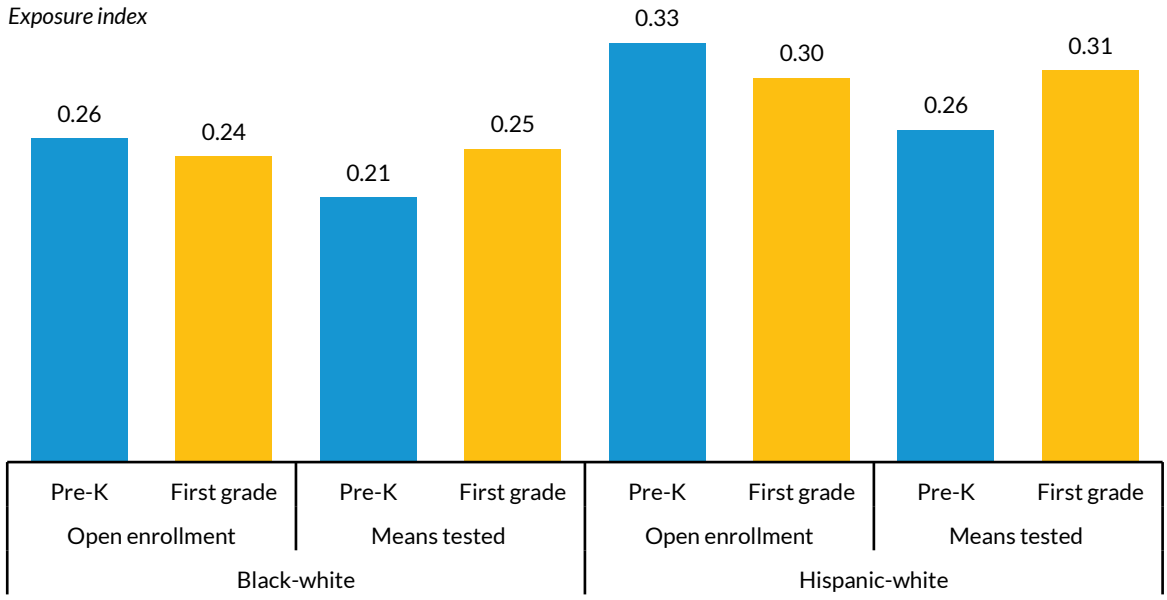
will interact with a member of another group.[17] Because this metric is a function of a community's underlying composition, we report levels of exposure in preschool relative to levels in first grade in the same states, where, if different racial and ethnic groups participated and sorted similarly, exposure rates for prekindergarten and first grade would be identical. In a secondary analysis, we estimate the proportion of Black and Hispanic students attending racially isolated schools in which less than 10 percent of students are white, consistent with the Center for Education and Civil Rights work.

For brevity, we focus on Black-white and Hispanic-white exposure and Black and Hispanic students' racial isolation, which represent the primary equity concerns with respect to resource access. But Black-Hispanic and Hispanic-Black exposure, as well as white-Black and white-Hispanic exposure, are discussed briefly and are included in the appendix. The analysis is limited to the school-based prekindergarten centers captured in the Common Core of Data dataset, which may differ in composition from excluded center-based prekindergarten programs that are often incorporated in both means-tested and universal programs.

[17] Other segregation measures that focus on the unevenness of the distribution of students, such as the dissimilarity index, would not capture the relationship of interest here, as our primary theory is that means testing affects the composition of all public prekindergarten schools relative to K–12 students, rather than creating a more unequal distribution of students within the system.

FIGURE 2

Black-White and Hispanic-White Exposure Indexes in Prekindergarten and First Grade, by Program Type



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Source: Authors' calculations using school Common Core of Data enrollment files, via Educational Data Portal v. 0.10.0, Urban Institute, under ODC Attribution License.

Figure 2 shows the average levels of Black-white and Hispanic-white exposure indexes in prekindergarten programs beside the levels for first-graders in the same system, separately for states with means-tested prekindergarten programs and states with open-enrollment prekindergarten programs. The Black-white exposure index measures the probability that a Black student will interact with a white student by attending the same school, based on the proportion of the average Black student's school that is white. In states with means-tested prekindergarten, the average Black first-grader's school is roughly 25 percent white, which is also true of Black prekindergarten students in states with open-enrollment prekindergarten (26 percent). But the average Black prekindergarten student in a means-tested state attends a program that is only 21 percent white, suggesting that prekindergarten is more segregated.

The patterns are similar for Hispanic students, but with even higher rates of exposure in the open prekindergarten programs. Specifically, Hispanic first-graders in both sets of states have a Hispanic-white exposure index of just over 30, indicating that their average school is roughly 30 percent white. But for preschoolers in means-tested states, the average Hispanic student attends schools that are roughly 26 percent white, compared with 33 percent for Hispanic preschoolers in states with universal programs. Thus, for both Black students and Hispanic students, universal programs are associated with slightly higher exposure to white students than their first-grade cohorts, and means-tested prekindergarten programs are associated with at least a 15 percent lower exposure rate.

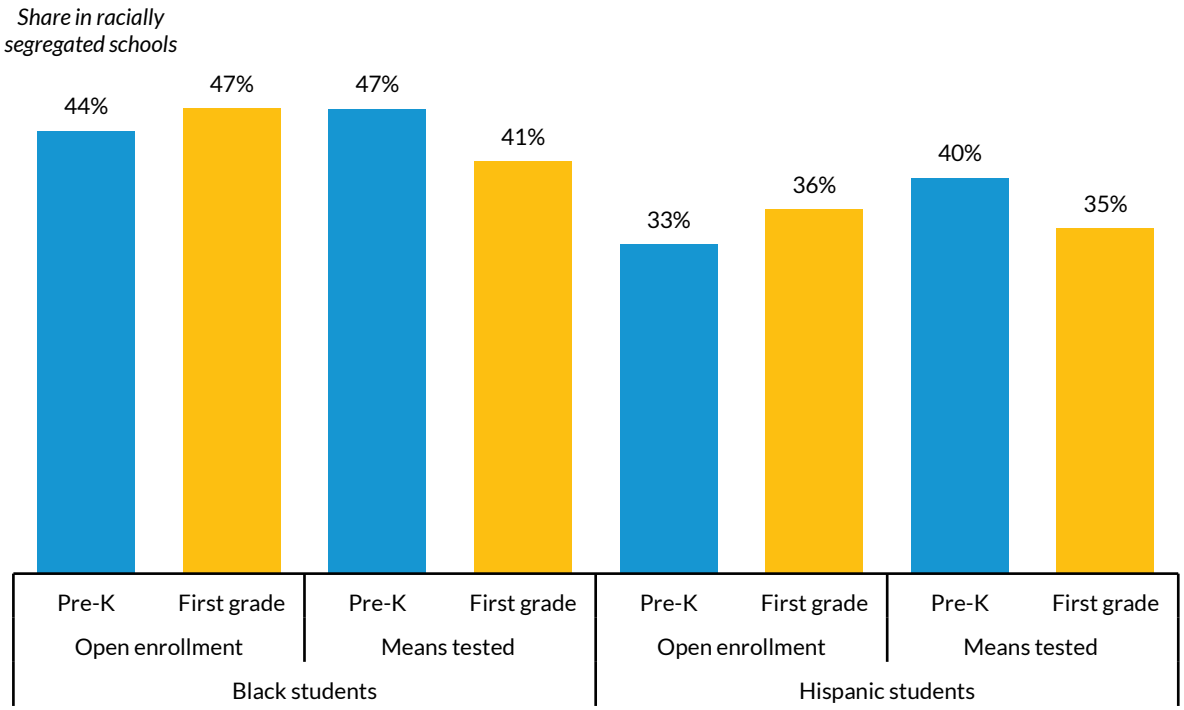
Although the equity implications differ, we also estimate Black-Hispanic, Hispanic-Black, white-Hispanic, and white-Black exposure indexes in the appendix. White-Black exposure rates are low across the board at roughly 10 percent, but the rates in prekindergarten are slightly higher relative to first grade in means-tested states, where disproportionately higher-income white students would be in private programs excluded from the calculation (appendix figure A.1). The white-Hispanic exposure index for prekindergarten in states with means-tested programs is also higher. Differences in Black-Hispanic and Hispanic-Black exposure by prekindergarten type are small, which is unsurprising, given the similar income levels between these two groups during the period we examined (appendix figure A.2).

When we focus on the relationship between means testing and the proportion of students attending highly segregated majority-Black or majority-Hispanic schools, where students of color make up more than 90 percent of students,[18] a similar pattern around the role of means testing emerges. Figure 3 shows that in states with open-enrollment prekindergarten, the proportion of Black prekindergarten students enrolled in racially isolated schools is 3 percentage points lower than their first-grade counterparts. But in states where prekindergarten is means tested, the proportion of Black preschoolers in racially isolated schools is 6 percentage points higher than that of Black first-graders. Hispanic preschool students are also 5 percentage points more likely than their first-grade counterparts to attend racially isolated schools in states with means-tested prekindergarten and are 3 percentage points less likely than first-grade students to do so in states where prekindergarten is open.

[18] Following Piazza and Frankenberg, *Segregation at an Early Age 2019 Update*.

FIGURE 3

Share of Black and Hispanic Students in Racially Segregated Schools Where White Students Make Up Less Than 10 Percent of Students, by Program Type



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Exemplary Universal and Means-Tested Programs in Georgia, Oklahoma, Texas, and North Carolina

To further illustrate the contrast between universal and means-tested prekindergarten programs, we select four diverse Southern states with large prominent preschool programs, two of which are robust means-tested programs (in North Carolina and Texas) and two of which are classified as universal programs (in Oklahoma and Georgia). All four states use public school systems as one of the major delivery methods for their prekindergarten program, and we plot the difference in interracial exposure between preschoolers and first-graders (table 1).

TABLE 1

State Prekindergarten Programs

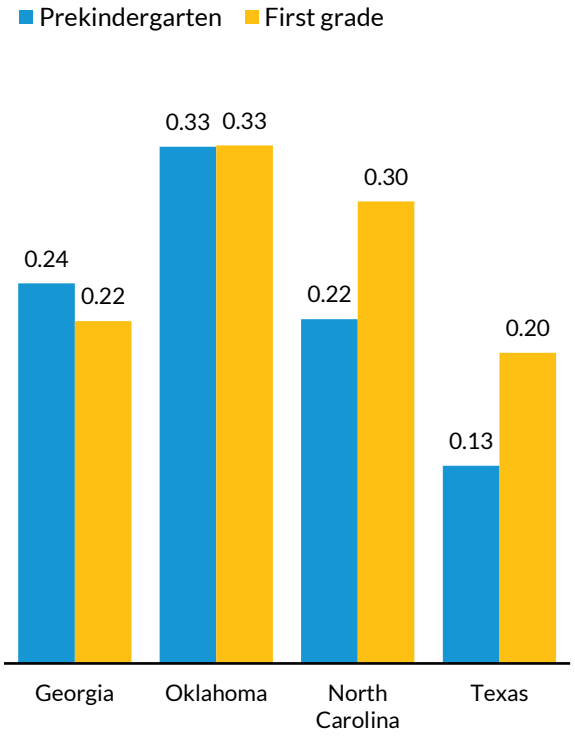
Exemplary states	Program description
Georgia (universal)	Georgia's Pre-K started in 1992 as a small pilot program and expanded in 1995 to become the nation's first state-funded universal preschool program for 4-year-olds. In 2017–18, the program enrolled 80,536 children, or 61 percent of state's 4-year-olds.
Oklahoma (universal)	Oklahoma launched its Early Childhood Four-Year-Old Program in 1980, intending to serve all 4-year-olds in the state. In 1998, Oklahoma became the second state in the nation to offer free preschool for all 4-year-olds, with 99 percent of school districts providing the program. In 2017–18, the program enrolled 39,807 children, or 74 percent of the state's 4-year-olds.
Texas (means tested)	In 1985, Texas began funding half-day prekindergarten for eligible 4-year-olds through the Texas Public School Prekindergarten program. Students are eligible to participate if they meet an income threshold (currently 185 percent of the federal poverty level), are homeless, are in foster care, have a parent on active military duty or who was injured or killed on active duty, cannot speak or comprehend English, or have a parent eligible for the Star of Texas Award. Texas preschools enrolled 231,485 children in 2017–18, or 8 percent of state's 3-year-olds and 49 percent of the state's 4-year-olds.
North Carolina (means tested)	North Carolina has provided state-funded prekindergarten since 2001. The state prekindergarten enrolls 4-year-olds from low-income families who have not participated in other early childhood programs. To be eligible, children must be in a household with income up to 75 percent of the state median income, but up to 20 percent of children may be in a household with a higher income if they have another designated risk factor. In 2017–18, the program enrolled 28,385 children, or 23 percent of the state's 4-year-olds.

The differences between the four programs on our measures are stark. Both states with universal programs show rates of prekindergarten interracial exposure for Black or Hispanic students at or above their first-grade systems, and both states with means-tested programs are more than 5 percentage points below their first-grade systems in every year observed in the data. In Oklahoma, where free preschool is open to all 4-year-olds and 99 percent of districts participate, the rates of Black-white and Hispanic-white exposure are nearly identical for first-graders and preschoolers, with the average Black students and Hispanic students attending schools that are 33 percent white and 36 percent white, respectively (figure 4). In Georgia, Black and Hispanic preschoolers are generally less racially segregated than their first-grade counterparts, possibly because of nuances within the prekindergarten system that limit the link between school registration and residential segregation, allowing, for example, parents to enroll students in preschool near their work.

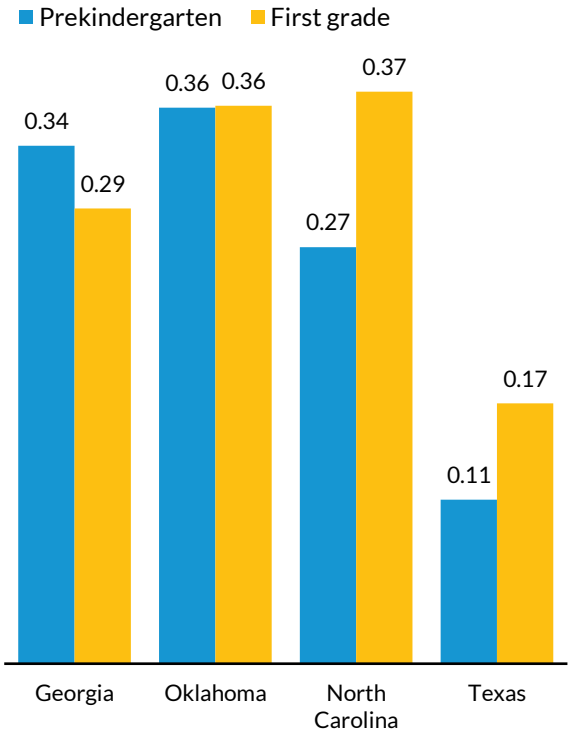
FIGURE 4

Average Black-White and Hispanic-White Exposure Indexes in Exemplary States

Black-white exposure index



Hispanic-white exposure index



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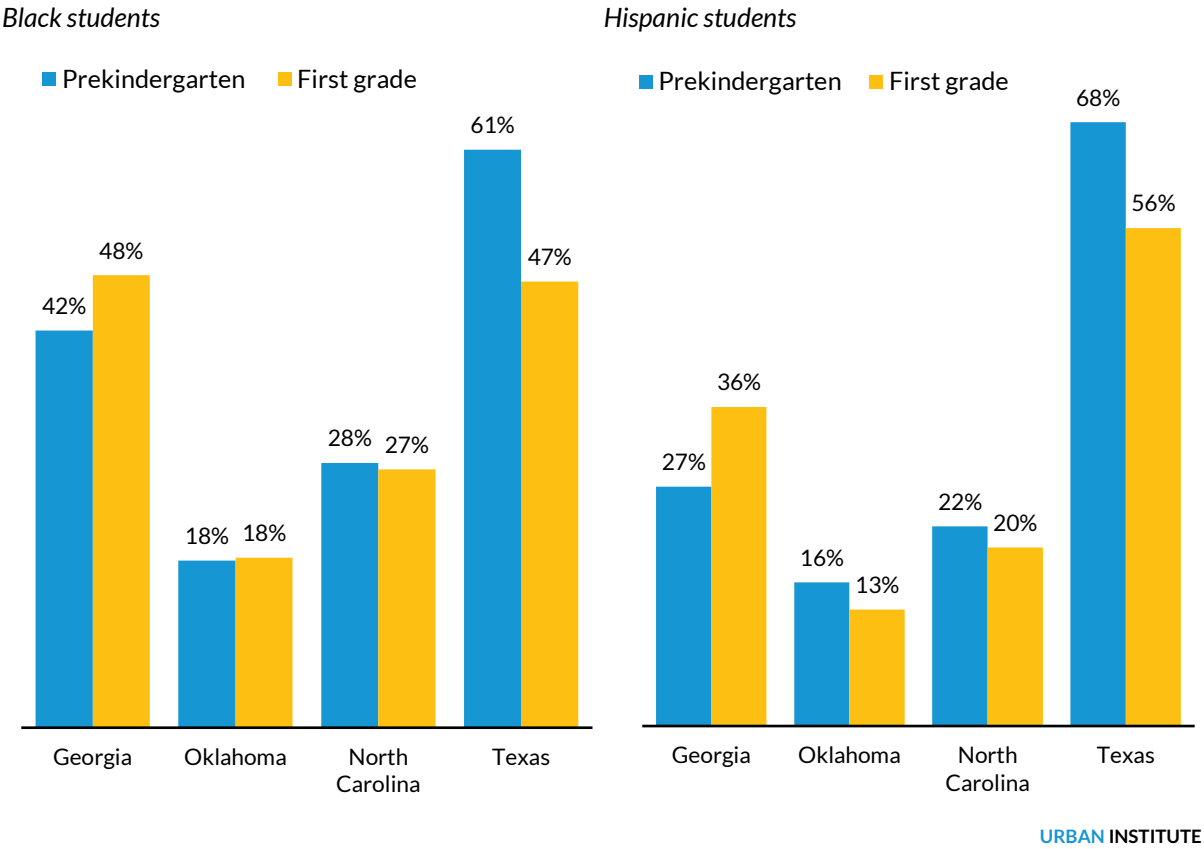
Notes: Georgia and Oklahoma have universal programs. North Carolina and Texas have means-tested programs.

In contrast, in North Carolina's and Texas's means-tested programs (for low-income students), Black and Hispanic students have substantially lower exposure rates to white students in prekindergarten than in first grade. In North Carolina, for example, the average Black first-grade student attends a school that is 30 percent white, whereas the average Black preschooler attends a school that is roughly 22 percent white. The difference between prekindergarten and first grade for Hispanic students in North Carolina is 10 percentage points.

Figure 5 tells a similar story as figure 4 by showing the percentage of Black and Hispanic students enrolled in highly segregated schools. For example, in Georgia, both Black students and Hispanic students in prekindergarten are between 5 and 10 percentage points less likely than their peers in first grade to attend schools where more than 90 percent of students are students of color. Whereas in Texas, both groups are more than 10 percentage points more likely than their first-grade counterparts to attend highly segregated schools. Oklahoma and North Carolina's preschoolers are closer to parity on this measure with their first-graders.

FIGURE 5

Average Share of Black and Hispanic Students Enrolled in Schools Where White Students Make Up Less Than 10 Percent of Students in Exemplary States



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Notes: Georgia and Oklahoma have universal programs. North Carolina and Texas have means-tested programs.

Policy Implications for Educational Equity and Integration

As long as significant disparities still exist in access[19] to preschool programs by race and income, there remains a compelling policy imperative to prioritize providing high-quality public prekindergarten first to children with the least means to enroll in high-quality private options. A few cities may experiment with early-learning subsidies, preschool vouchers, or public options that charge progressively graduated tuitions to facilitate socioeconomic integration in the face of apparent budgetary constraints, but restricting programs to needy students remains the prevailing form of targeting prekindergarten. Without careful designs to ensure that access to resources in targeted public programs meet or exceed

[19] Hardy and Huber, "Neighborhood Preschool Enrollment Patterns"; and "Young Children Not in School by Race and Ethnicity in the United States," Kids Count Data Center, accessed June 2, 2023, https://datacenter.aecf.org/data/tables/9012-young-children-not-in-school-by-race-and-ethnicity?loc=1&loct=1#detailed/1/any/false/1691,1607,1572,1485,815/4038,4040,4039,2638,2597,1353,4758/17977,17978.

what is offered in private alternatives, and without student assignment rules that maximize racial and ethnic diversity within the uniformly low-income means-tested programs, efforts to target public prekindergarten resources to historically marginalized children may wind up reinforcing the patterns they seek to redress.

Our findings show that Black and Hispanic students in states that have means-tested prekindergarten programs experience a greater degree of relative racial and ethnic segregation compared with their peers in states that have open programs, at least in school-based prekindergarten settings. State policymakers must continue to work diligently to address the racial and ethnic segregation that exists in school-based preschool programs because research shows that being segregated can affect students' access to equitable resources and limit the beneficial experiences of diverse schools. Indeed, early childhood education scholars found substantial differences in prekindergarten program quality based on race and socioeconomic composition, with low-income and Black and Hispanic students least likely to experience high-quality prekindergarten environments.[20]

Even reaching parity with K–12 schools would not come close to an integrated, equitable system. School resource disparities by race and socioeconomic status in segregated systems exist within and across many school districts.[21] Because school resources are correlated with a student's race and socioeconomic status, failure to better integrate new cohorts of preschoolers would represent another missed opportunity to expose low-income students and students of color to the equitable schooling inputs (e.g., funding, experienced teachers, school resources, and programmatic support) that many do not receive.

This analysis focused on the equity implications of the ongoing segregation of Black and Hispanic children away from their economically advantaged white peers, but the potential benefits of increasing school diversity go beyond improving access to resources for low-income students and students of color. Studies show that learners who are educated in settings where different cultures and backgrounds are represented are more likely to stay engaged in schooling activities, develop a higher self-esteem and a sense of belonging, and show improved outcomes in participation and achievement.[22]

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[20] Rachel Valentino, "Will Public Pre-K Really Close Achievement Gaps? Gaps in Prekindergarten Quality between Students and across States," *American Educational Research Journal* 55, no. 1 (2018): 79, https://doi.org/10.3102/0002831217732000; and Daphna Bassok and Eva Galdo, "Inequality in Preschool Quality? Community-Level Disparities in Access to High-Quality Learning Environments," *Early Education and Development* 27, no. 1 (2016): 128, https://doi.org/10.1080/10409289.2015.1057463.

[21] Victoria E. Sosina and Ericka S. Weathers, "Pathways to Inequality: Between-District Segregation and Racial Disparities in School District Expenditures," *AERA Open* 5, no. 3 (2019), https://doi.org/10.1177/2332858419872445.

[22] Abiola Farinde-Wu, Crystal Glover, and Nakeshia Williams, "It's Not Hard Work; It's Heart Work: Strategies of Effective, Award-Winning Culturally Responsive Teachers," *The Urban Review* 49, no. 2 (2017), https://doi.org/10.1007/s11256-017-0401-5/; Ceren Su Abacioglu, Monique Volman, and Agneta H. Fischer, "Teachers' Multicultural Attitudes and Perspectives Taking Abilities as Factors in Culturally Responsive Teaching," *British Journal of Educational Psychology* 90, no. 3 (September 2020): 736, https:/doi.org/10.1111/bjep.12328; and Patricia J. Bonner, Susan R. Warren, and Ying H. Jiang, "Voices from Urban Classrooms: Teachers' Perceptions on Instructing Diverse Students and Using Culturally Responsive Teaching," *Education and Urban Society* 50, no. 8 (2018): 697, https://doi.org/10.1177/0013124517713820.

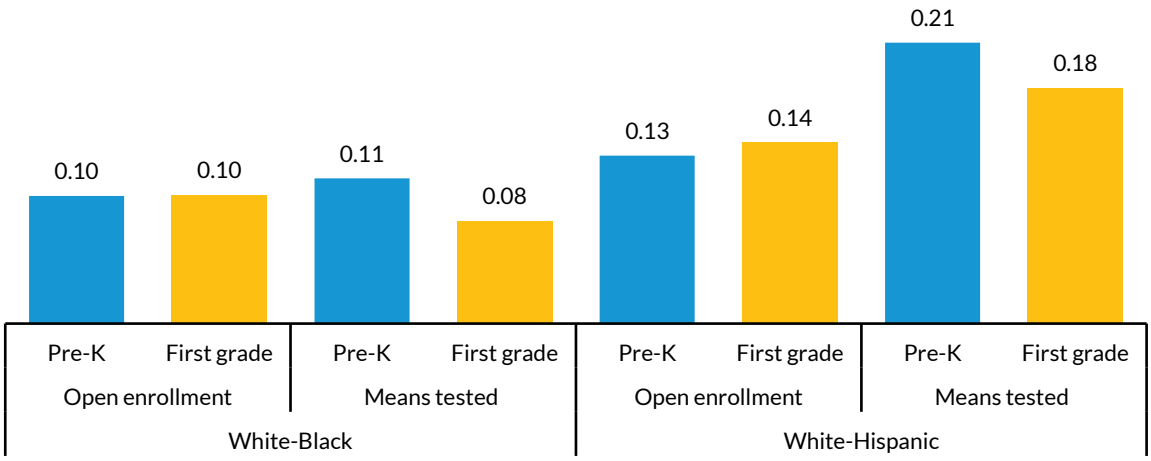
And at least since *Brown v. Board or Education of Topeka*, scholars have raised concerns about the negative psychosocial consequences for white students growing up systematically isolated from their fellow citizens by race and socioeconomic status.

We hope these findings encourage policymakers to consider how standard means-testing policies may contribute to racial and ethnic segregation as they debate how best to support prekindergarten expansion. More universal early childhood programming, with attention to countering the role of housing segregation outside schools and to practices facilitating positive interracial interactions within schools, could represent a strong step toward an integrated public education system. Growing preschool programs could be a useful place to employ strategic shifting of attendance boundaries to promote racial and socioeconomic diversity with limited strain on travel time.[23] A more thorough examination of best practices in promoting socioeconomic, racial, and ethnic classroom diversity, with equal access to early childhood resources, could inform federal and state initiatives that lead our youngest cohorts in a more equitable direction.

Appendix

FIGURE A.1

Average White-Black and White-Hispanic Exposure Indexes, by Program Type



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[23] Nabeel Gillani, Doug Beeferman, Christine Vega-Pourheydarian, Cassandra Overney, Pascal Van Hentenryck, and Deb Roy, "Redrawing Attendance Boundaries to Promote Racial and Ethnic Diversity in Elementary Schools," *Educational Researcher*, https://doi.org/10.3102/0013189X231170858.

FIGURE A.2

Average Black-Hispanic and Hispanic-Black Exposure Indexes, by Program Type

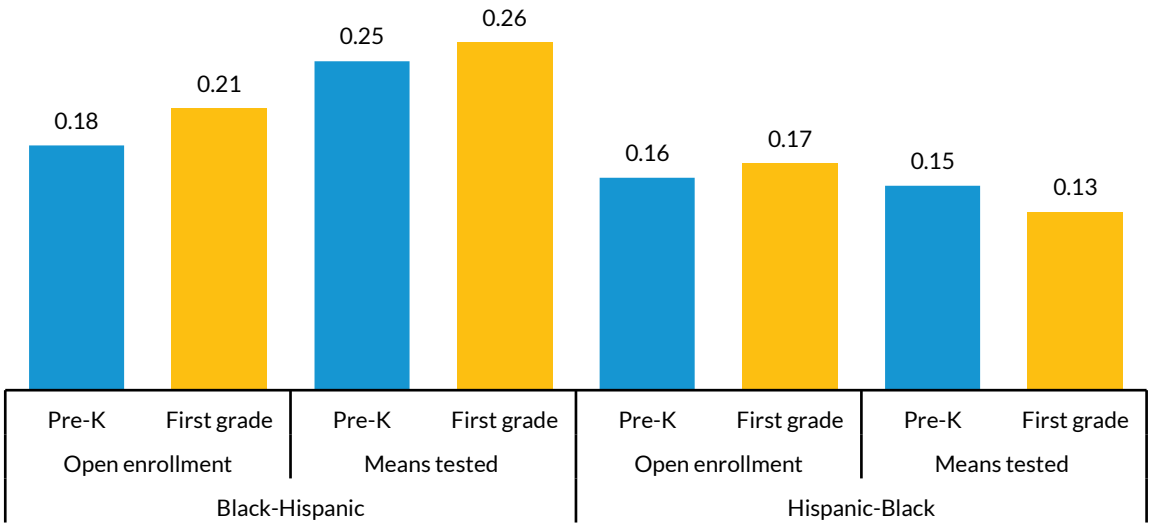

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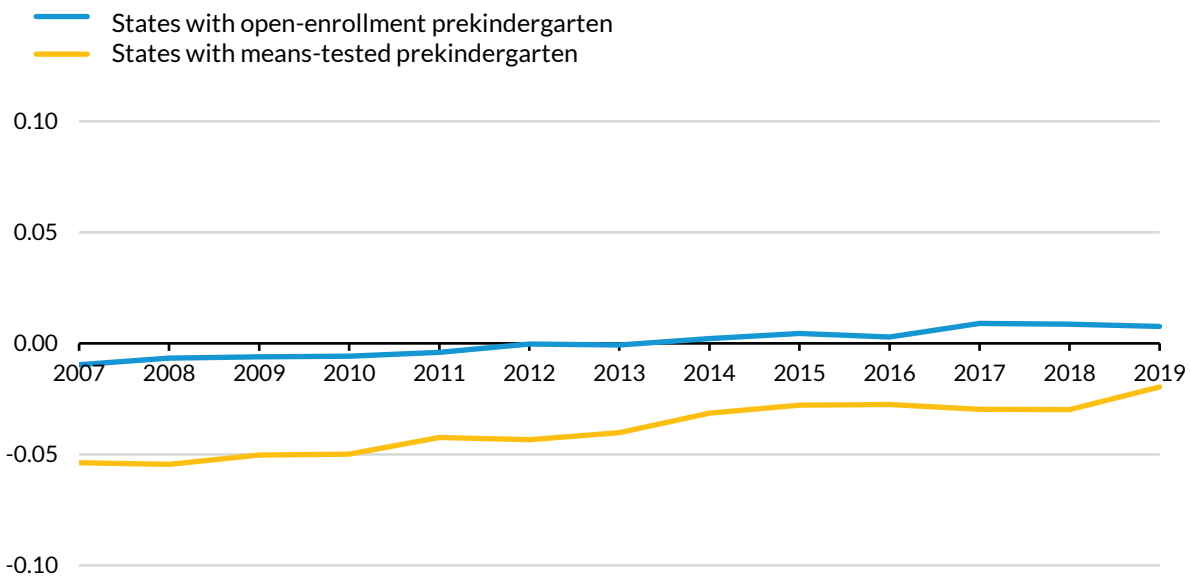
FIGURE A.3

Differences between Prekindergarten and First-Grade Black-White and Hispanic-White Exposure Indexes

Black-white



Hispanic-white

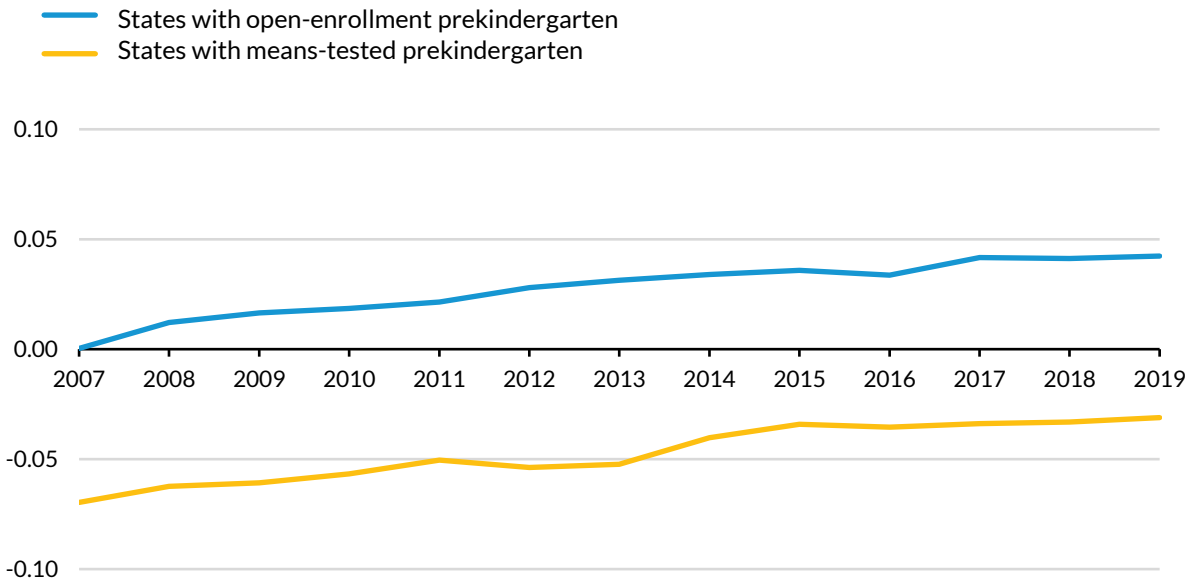


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FIGURE A.4

Differences between Prekindergarten and First-Grade Exposure Indexes

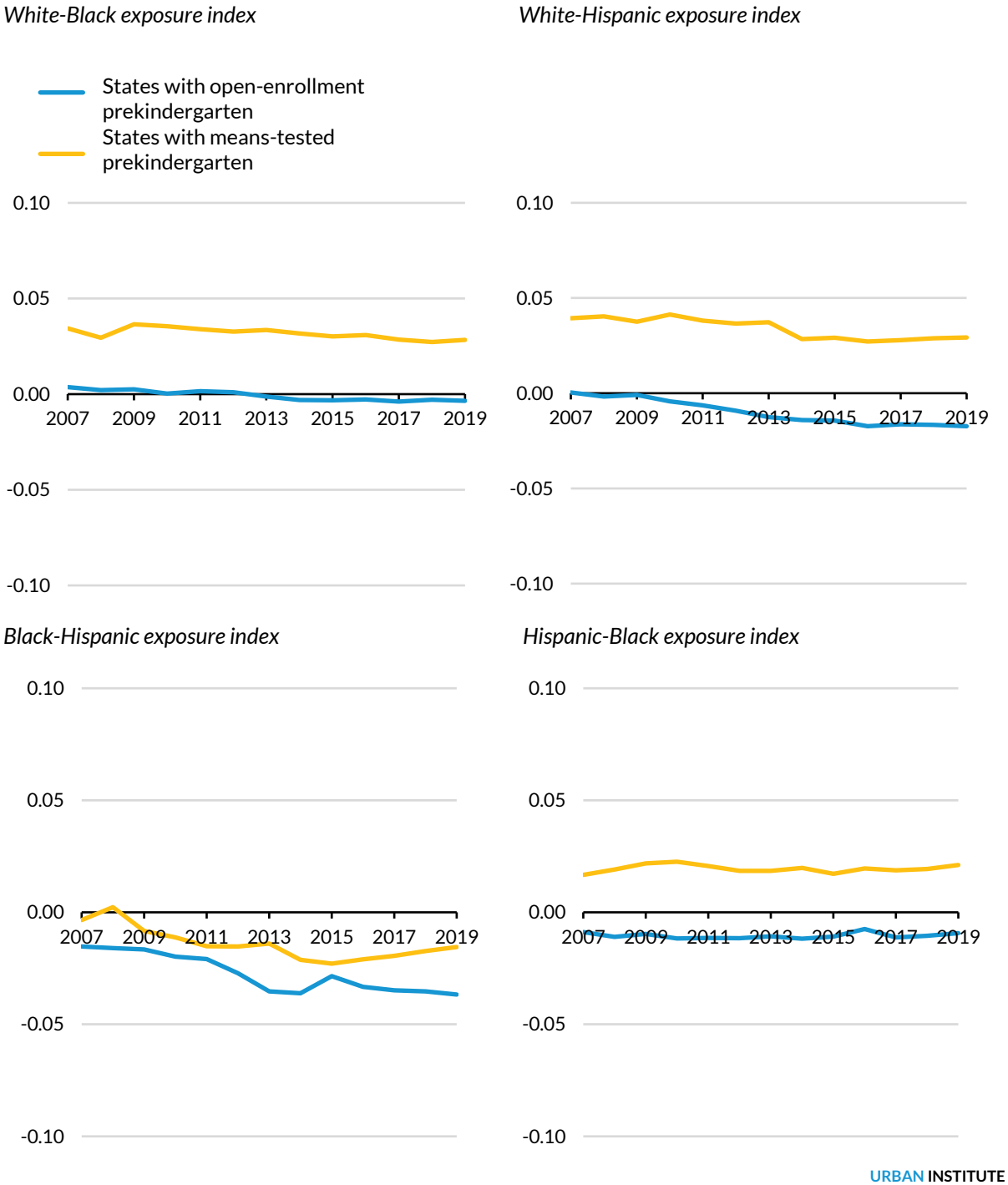

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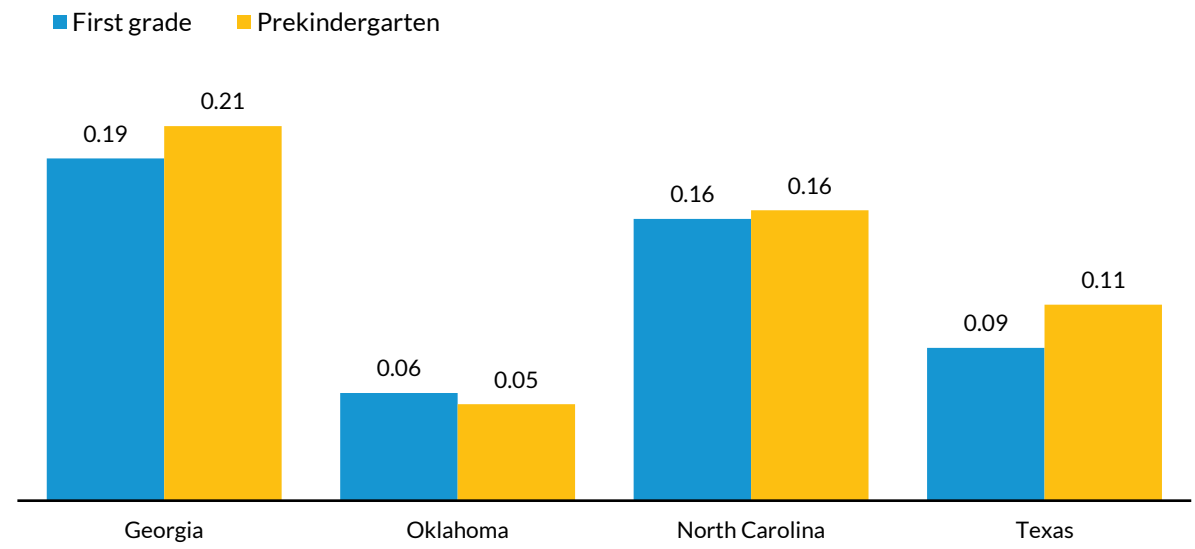
FIGURE A.5

Average White-Black and White-Hispanic Exposure Indexes in Exemplary States

White-Black



White-Hispanic

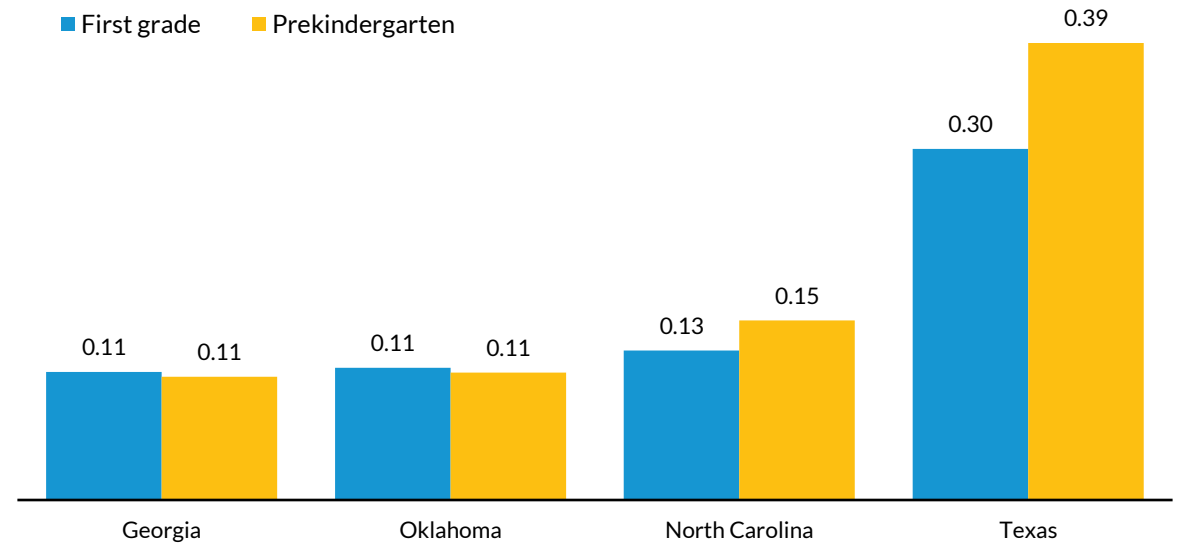


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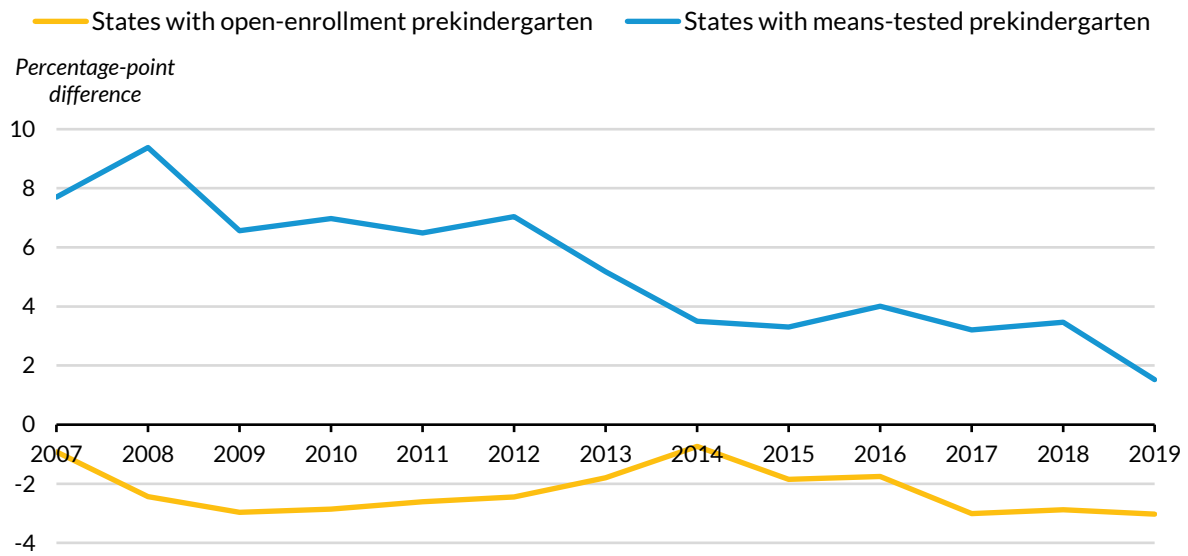
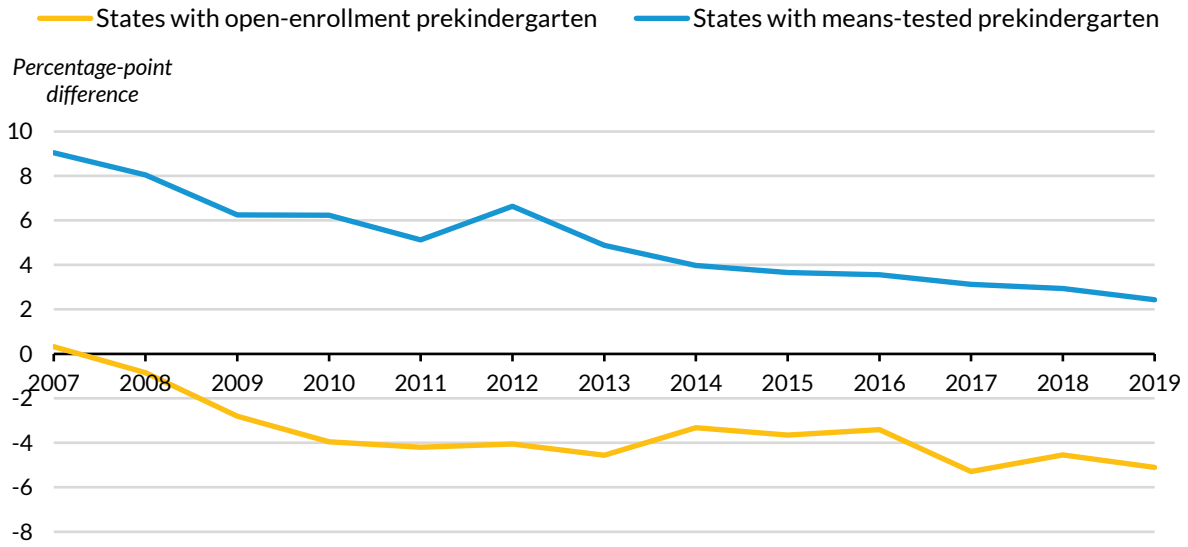
FIGURE A.6

Students' Enrollment Gaps (between Prekindergarten and First Grade) in Highly Segregated Schools Where Less Than 10 Percent of Students Are White, for Black and Hispanic Students

Black students



Hispanic students



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