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STUDENTS' EDUCATIONAL ACHIEVEMENT AND PROGRESSION IN WASHINGTON STATE PUBLIC SCHOOLS AND BEYOND

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Overall Project Questions

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1. How are students progressing through the public school system from pre-kindergarten to postsecondary?
2. What is the predictive validity of various early education indicators in forecasting students' long-term postsecondary outcomes?
3. To what extent is there heterogeneity by student types in students' academic progression?

For full initial report on K-12 samples see: <https://www.cedr.us/working-papers>

Data and Analysis

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- We draw on annual data maintained by
 - Office of Superintendent of Public Instruction (OSPI)
 - Core Student Record System (CSRS) from 2004-05 to 2009-10
 - Comprehensive Education Data and Research System (CEDARS) from 2009-10 to 2022
 - Education Data and Research Center (ERDC)
 - Washington Public Two-year and Four-year Postsecondary Data (PCHEES, SBCTC, NSC) from 2014 to 2022
 - Washington UI Wage and Employment Data from 2014 to 2022
- We look at hundreds of thousands of students with various outcomes from kindergarten through high school and into college and the labor force
 - Sample sizes vary by outcome—data for different outcomes are not available across all years
- Our analysis (at this stage) is primarily descriptive
 - We document differences in student outcomes by race and gender as students progress through school without any interpretation why these gaps exist

Indicators And Outcomes By Year

		School Year																		
		2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	
Indicators and Outcomes	Demographics and Student Classification	18 cohorts of student's data can be linked to 17 cohorts of test data, 11 cohorts of absences data, 10 cohorts of disciplinary incidences, 14 cohort of advanced course taking, and 13 cohorts of HS GPA and 12 cohorts of HS graduation																		
	Kindergarten Readiness Indicators																			3 Cohorts of WaKIDS data can be linked to 3rd grade test scores
	Test Scores		3rd grade standardized math and ELA test scores can be linked to 4 cohorts of students' HS GPA and 3 cohorts of HS graduation; 5th grade scores can be linked to 6 cohorts of students' HS GPA and 5 cohorts of HS graduation																	
	Course Taking					Number of advanced courses and probability of taking advanced courses through middle and high school (i.e., Advanced Placement, College in HS, International Baccalaureate, Running Start, Cambridge Scholars program)														
	Absences									Full- & part-time excused & unexcused absences; chronic absenteeism (i.e., >18 absent days)										
	Disciplinary Incidences									Expulsion and suspensions as well as an index of total disciplinary actions										
	High School GPA						High school GPA on a 4.0 scale													
	High School Graduation						High school graduation: within 4 years, within 5 years													
	College Enrollment										Four-year or two-year; public or private; in-state or out-of-state									
	Labor Force Participation										Sector of employment, total hours and total wages by quarter									

Note: Sample sizes vary by outcome—data for different outcomes are not available across all years

Road Map

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- Kindergarten to 3rd Grade
- 3rd Grade to High School
- High School to College and the Labor Force

Cohorts and Samples

School Year	Cohorts																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2005	4	3	2	1	K	age 4-5	age 3-4	age 2-3	age 1-2	age 0-1							
2006	5	4	3	2	1	K	age 4-5	age 3-4	age 2-3	age 1-2	age 0-1						
2007	6	5	4	3	2	1	K	age 4-5	age 3-4	age 2-3	age 1-2	age 0-1					
2008	7	6	5	4	3	2	1	K	age 4-5	age 3-4	age 2-3	age 1-2	age 0-1				
2009	8	7	6	5	4	3	2	1	K	age 4-5	age 3-4	age 2-3	age 1-2	age 0-1			
2010	9	8	7	6	5	4	3	2	1	K	age 4-5	age 3-4	age 2-3	age 1-2	age 0-1		
2011	10	9	8	7	6	5	4	3	2	1	K	age 4-5	age 3-4	age 2-3	age 1-2	age 0-1	
2012	11	10	9	8	7	6	5	4	3	2	1	K	age 4-5	age 3-4	age 2-3	age 1-2	age 0-1
2013	12	11	10	9	8	7	6	5	4	3	2	1	K	age 4-5	age 3-4	age 2-3	age 1-2
2014	PS1	12	11	10	9	8	7	6	5	4	3	2	1	K	age 4-5	age 3-4	age 2-3
2015	PS2	PS1	12	11	10	9	8	7	6	5	4	3	2	1	K	age 4-5	age 3-4
2016	PS3	PS2	PS1	12	11	10	9	8	7	6	5	4	3	2	1	K	age 4-5
2017	PS4	PS3	PS2	PS1	12	11	10	9	8	7	6	5	4	3	2	1	K
2018	PS5	PS4	PS3	PS2	PS1	12	11	10	9	8	7	6	5	4	3	2	1
2019	PS6	PS5	PS4	PS3	PS2	PS1	12	11	10	9	8	7	6	5	4	3	2
2020	PS7	PS6	PS5	PS4	PS3	PS2	PS1	12	11	10	9	8	7	6	5	4	3
2021	PS8	PS7	PS6	PS5	PS4	PS3	PS2	PS1	12	11	10	9	8	7	6	5	4
2022	PS9	PS8	PS7	PS6	PS5	PS4	PS3	PS2	PS1	12	11	10	9	8	7	6	5

Kindergarten Sample

High School Outcomes Sample

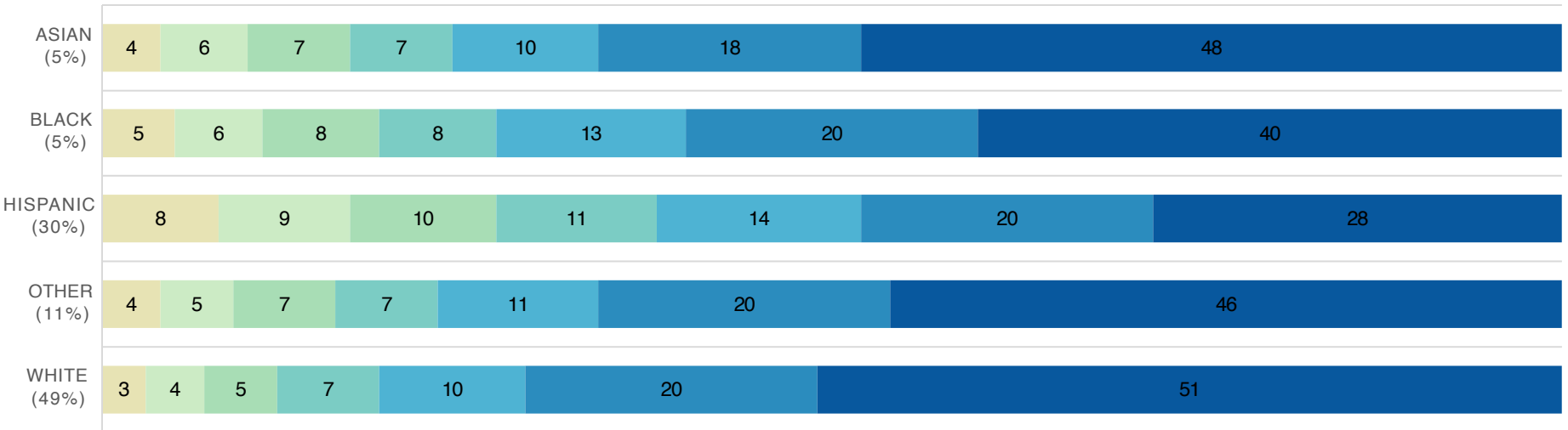
Postsecondary Outcomes Sample

Kindergarten to 3rd Grade

Meeting Kindergarten Readiness Indicators Differs By Race

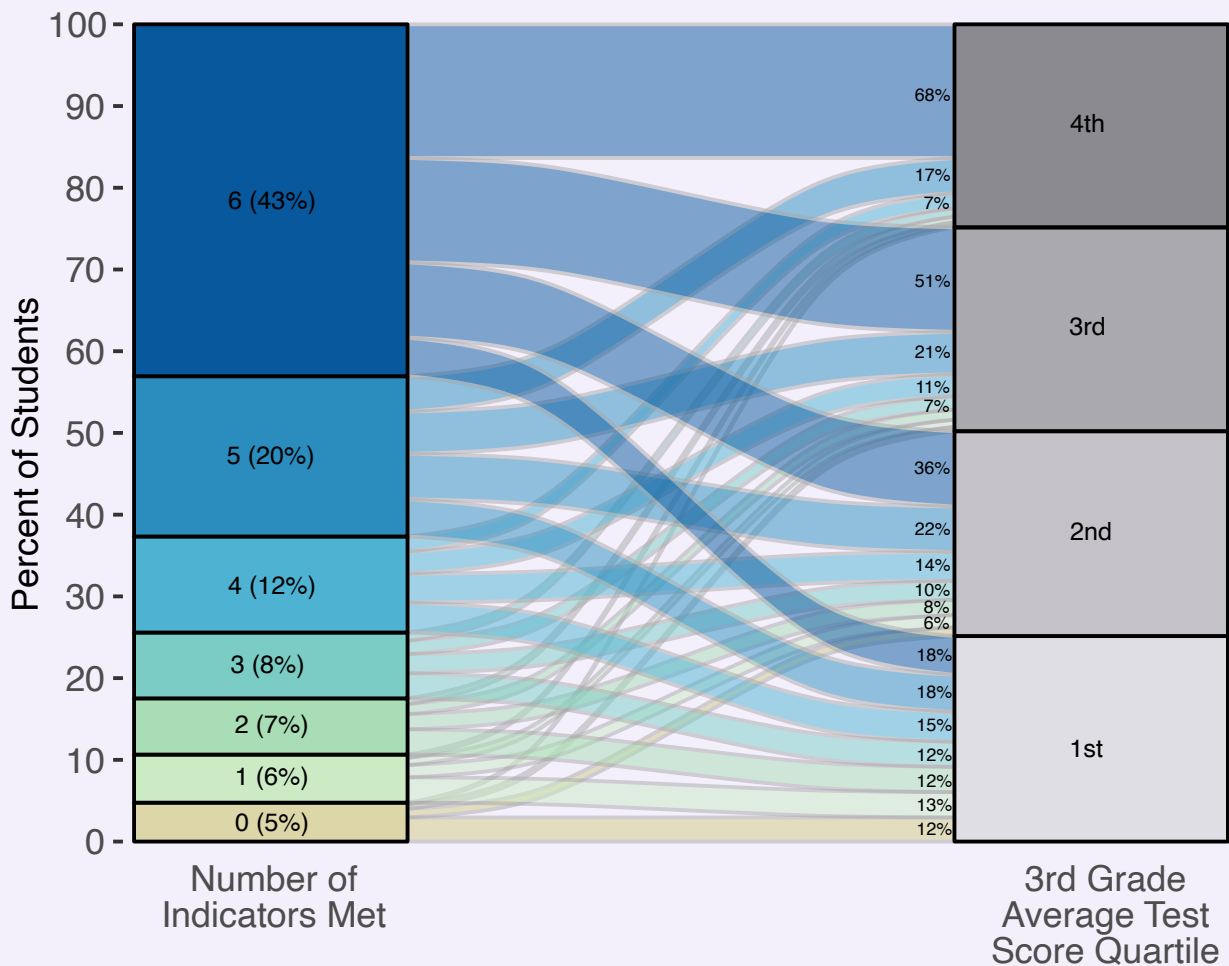
PERCENTAGE OF STUDENTS MEETING VARIOUS NUMBERS OF KINDERGARTEN READINESS INDICATORS (KRIs) BY RACE

0 Indicators 1 2 3 4 5 6 Indicators



Over 1/2 of White students but less than 1/3 of Hispanic students met all 6 standards

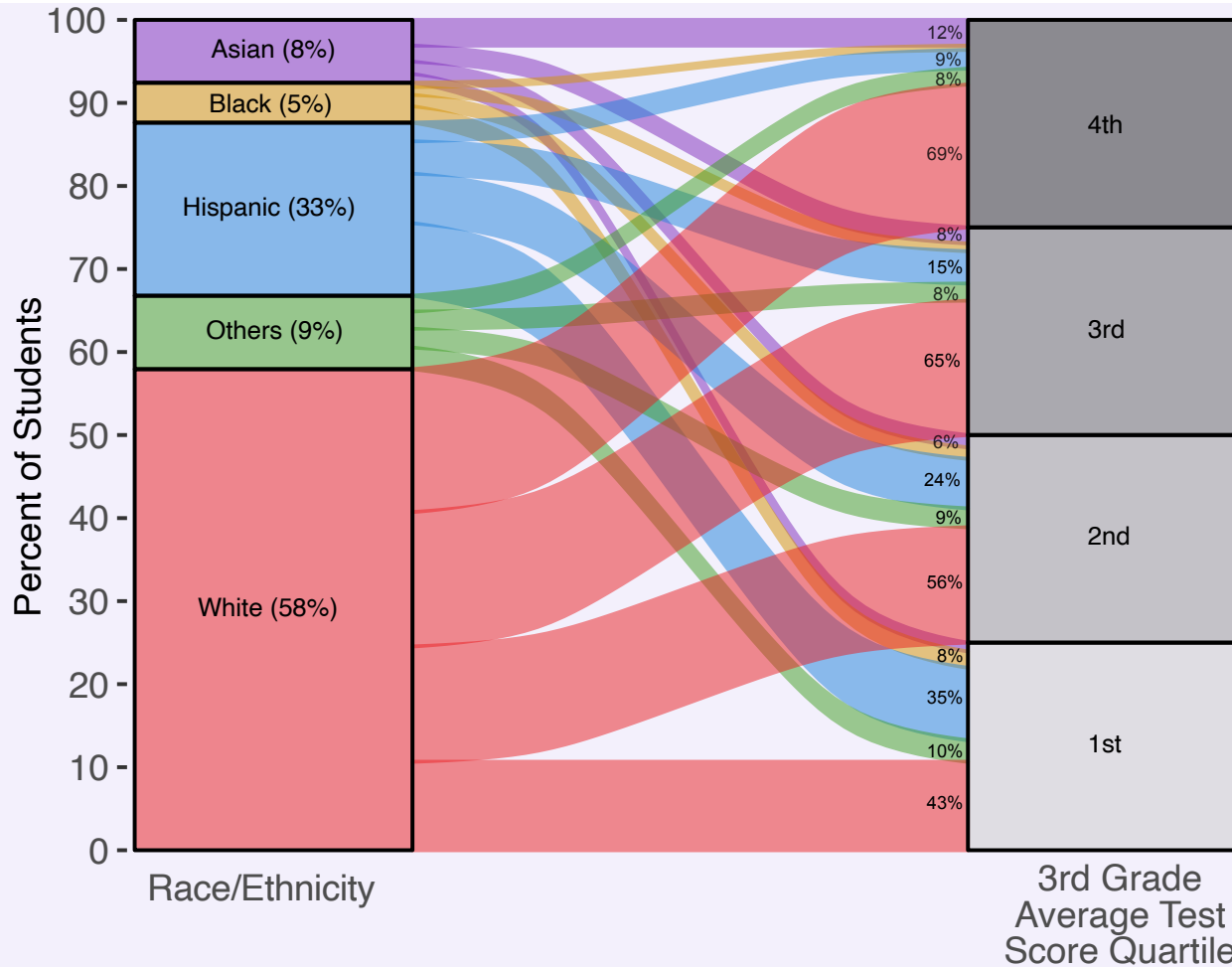
Students Deemed More “Ready” in Kindergarten Were More Likely to Score Higher on 3rd Grade Tests



Students who met 5 or 6 indicators were more likely to score in the highest quartile
 Students who met 2 or fewer indicators were more likely to score in the lowest quartile

3rd Grade to High School

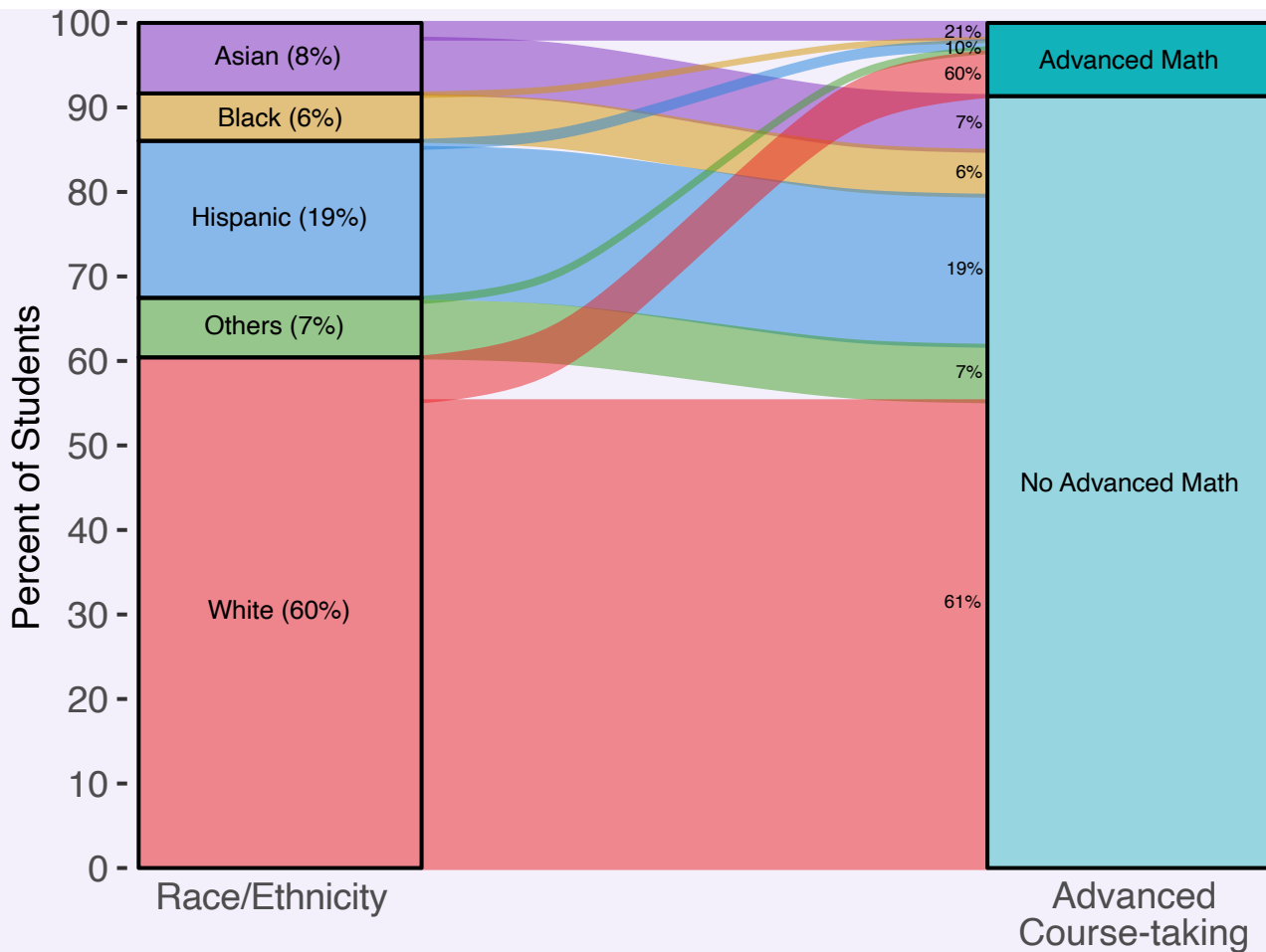
Average 3rd Grade Test Scores Vary by Race/Ethnicity



White and Asian students are overrepresented in the top quartile
 Black students are overrepresented in the bottom quartile

Advanced Math Course-taking in High School Varies by Race/Ethnicity

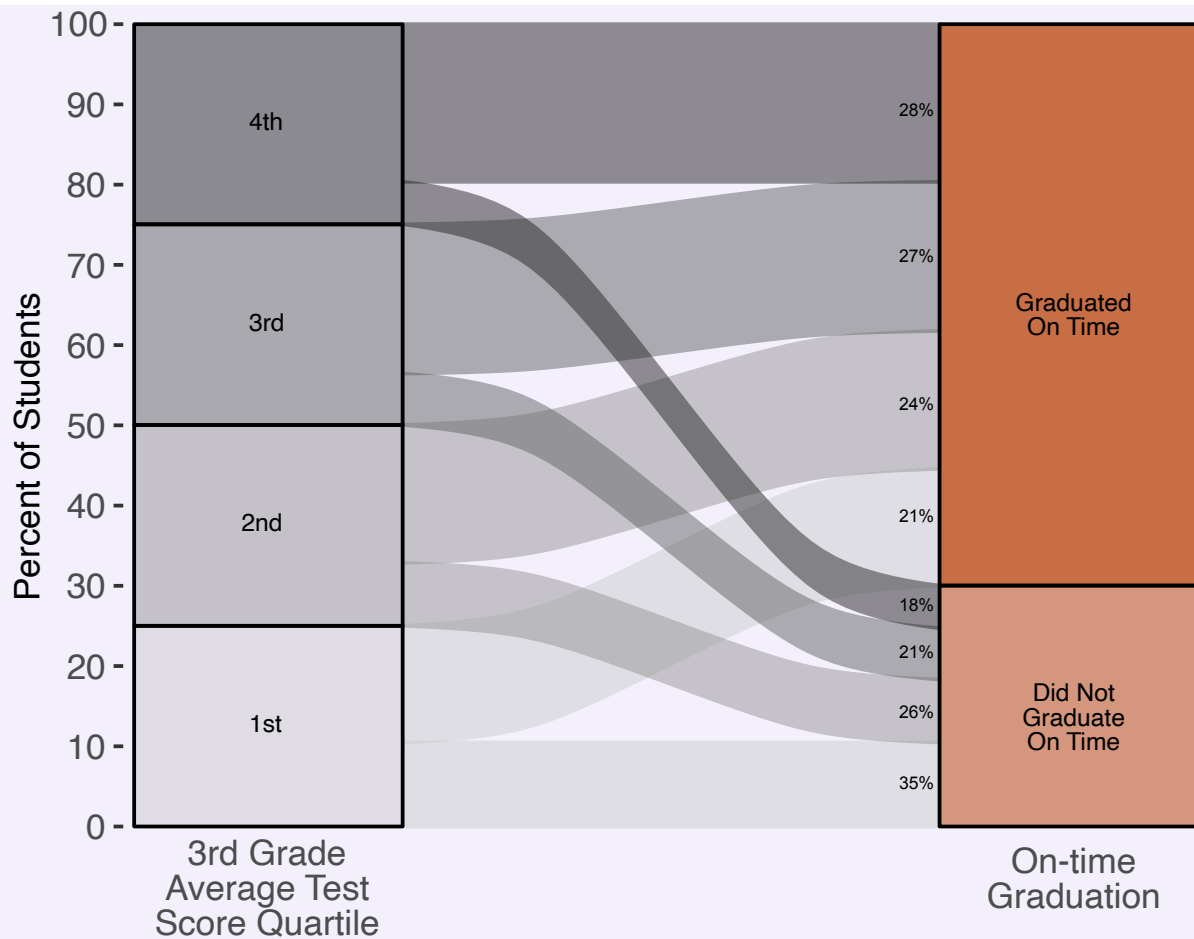
12



Black and Hispanic students are underrepresented in advanced math courses
Asian students are overrepresented (i.e., 8% in overall sample and 21% of those taking advanced math)
White students are proportionally represented in advanced math courses

On-time High School Graduation Varies By 3rd Grade Test Quartile

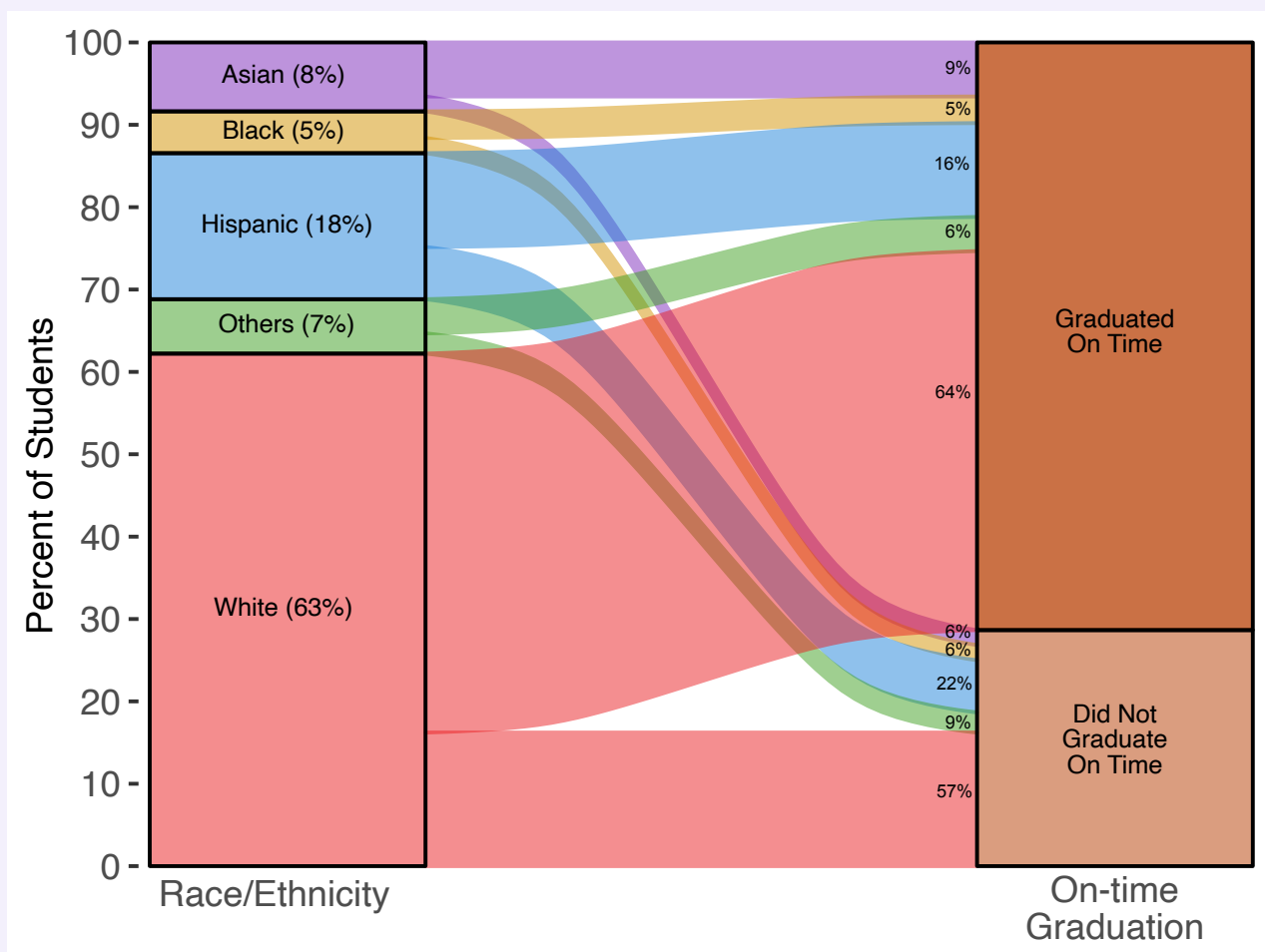
13



Persistence of early grade test scores – students from the bottom test score quartiles are more like not to graduate on time

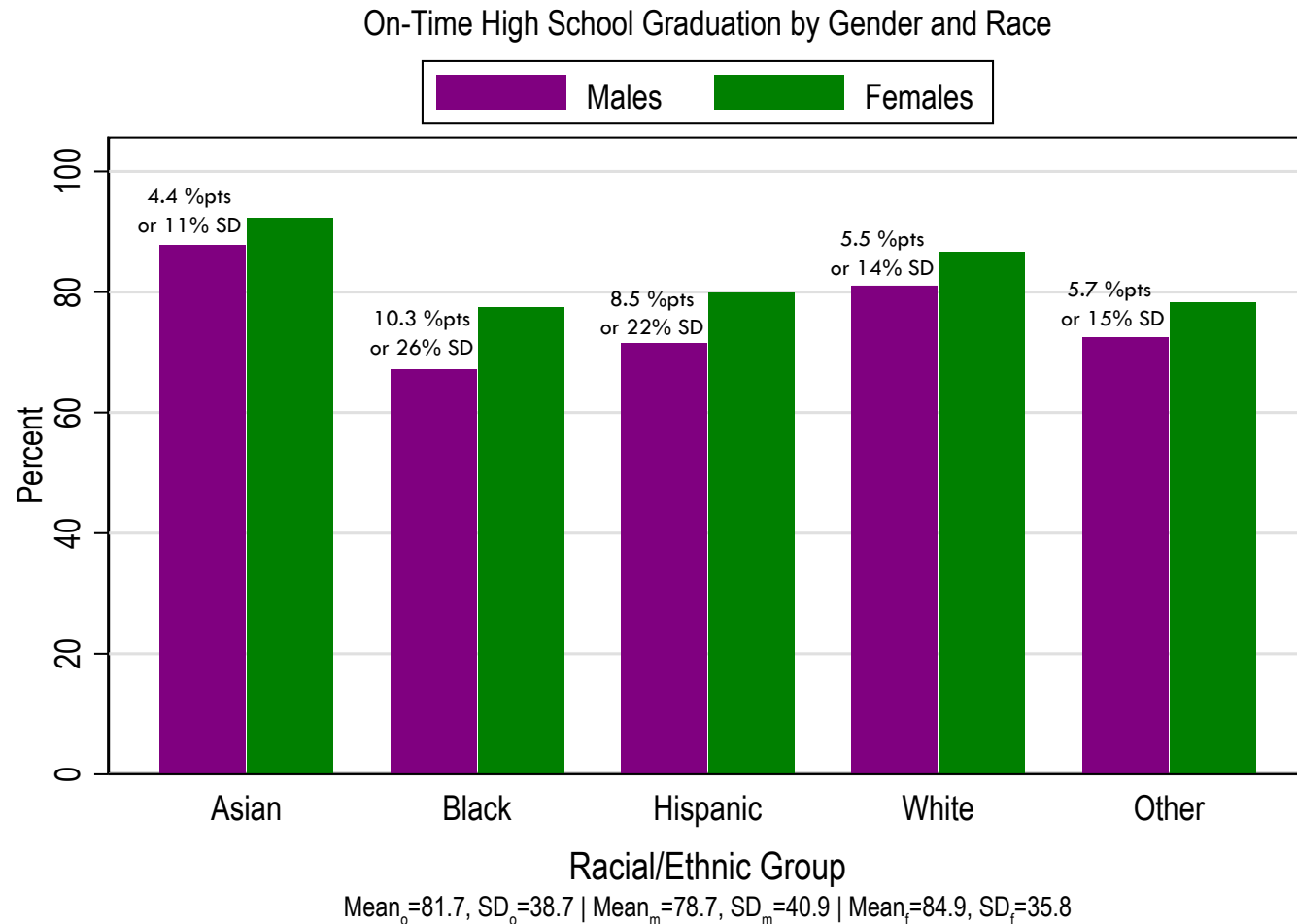
On-time High School Graduation Varies Slightly By Race/Ethnicity

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White and Asian students are slightly more likely to graduate than their peers

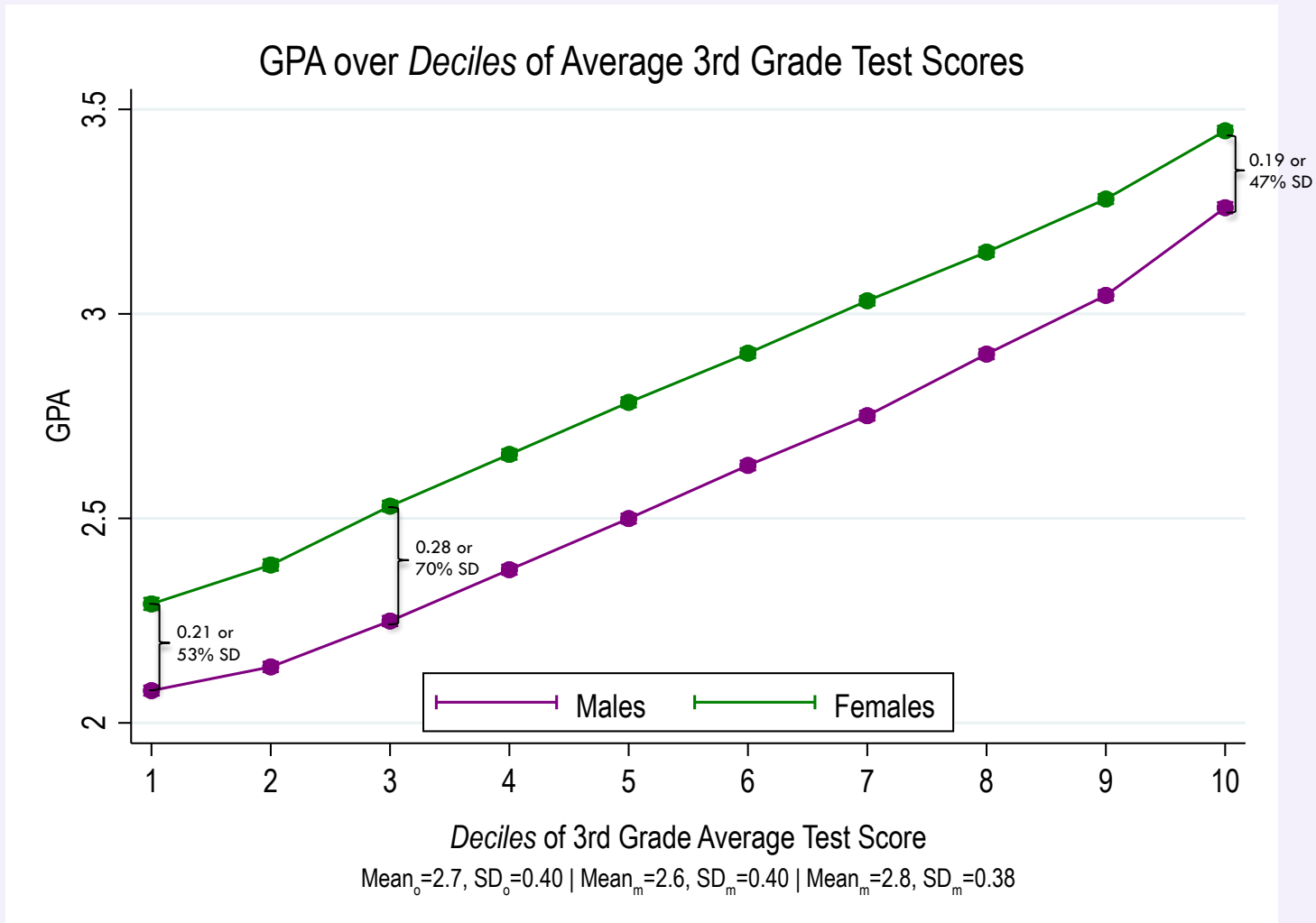
On-time Graduation by Race and Gender



Gender gaps in graduation rates are especially big for Black students

Gaps in GPA Exist Throughout the 3rd Grade Test Distribution

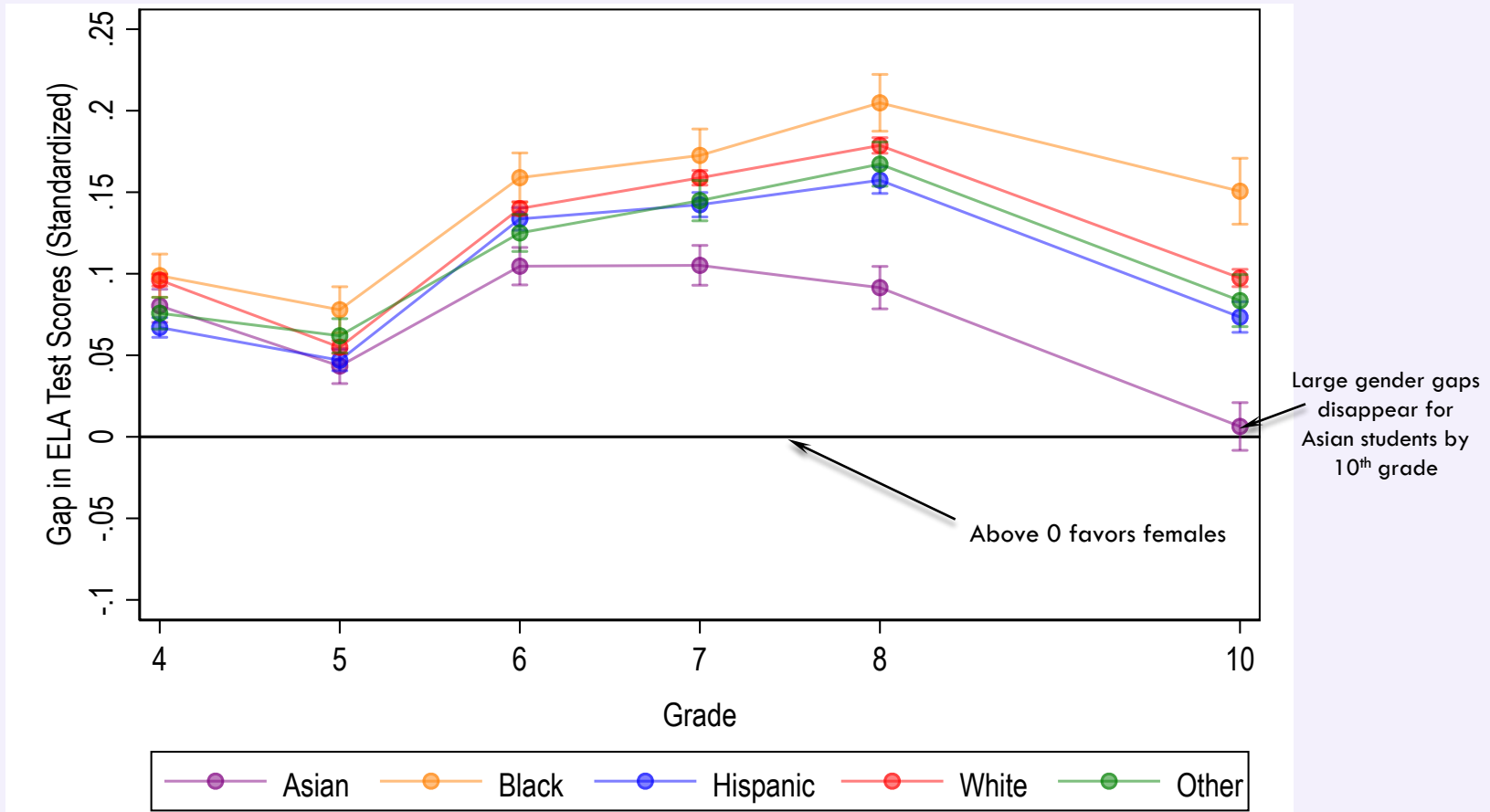
16



Gender gaps (across various outcomes) are largely not explained by 3rd grade test scores

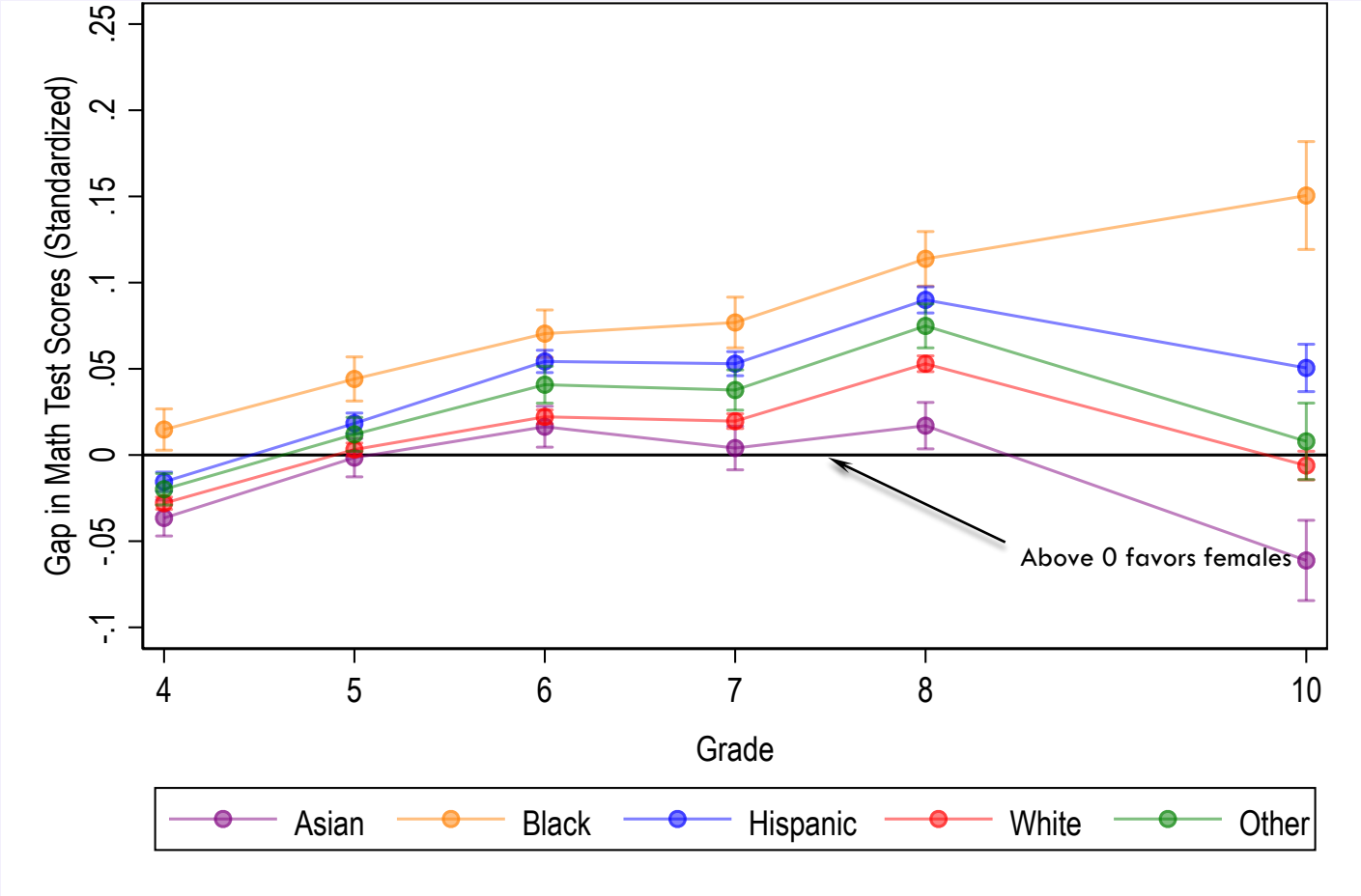
Gender Gaps in ELA Test Scores by Race and Grade

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Asian students had relatively small differentials for most outcomes

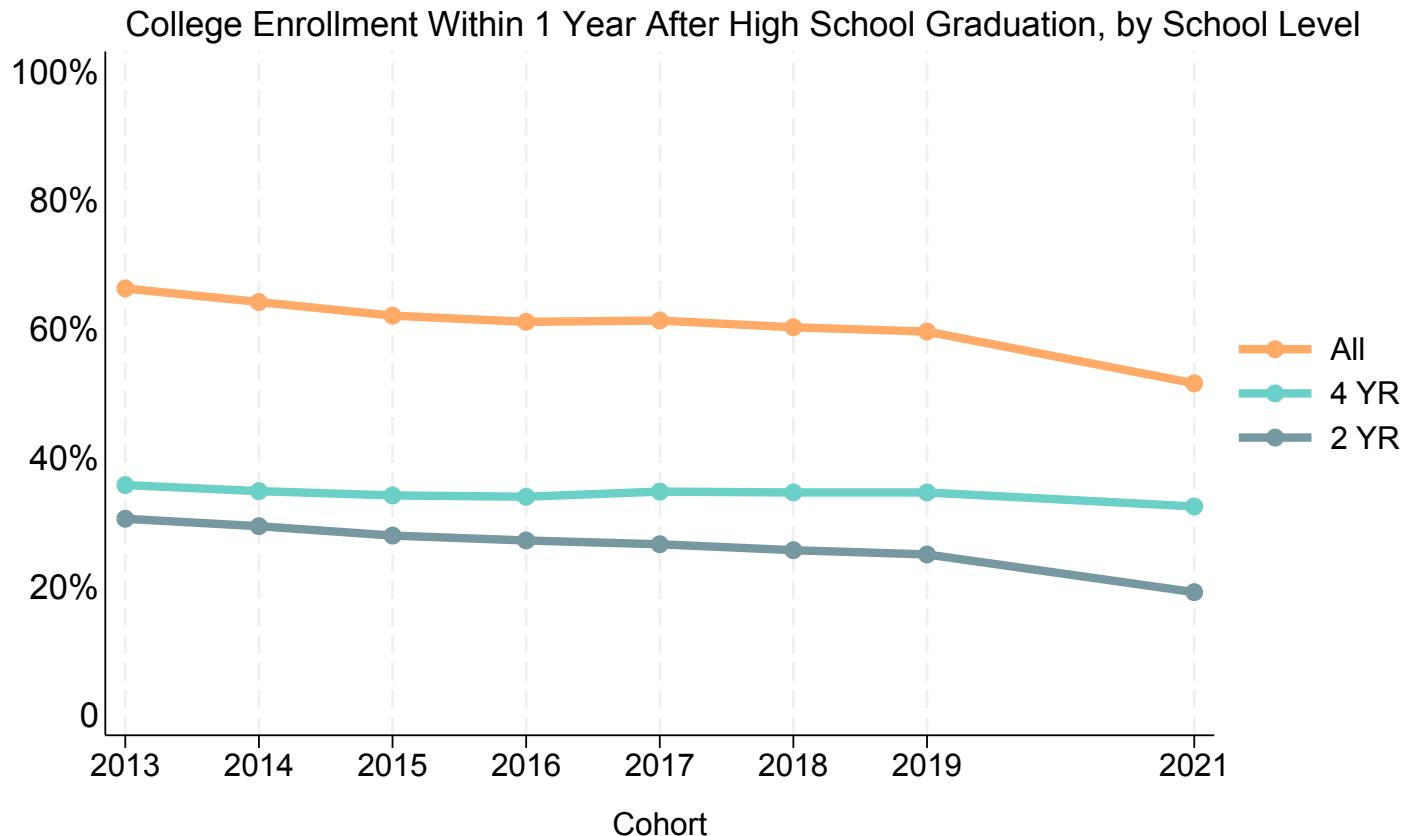
Gender Gaps in Math Test Scores by Race and Grade



High School to College and the Labor Force

College Enrollment Is Declining, Mostly in 2-Year Institutions

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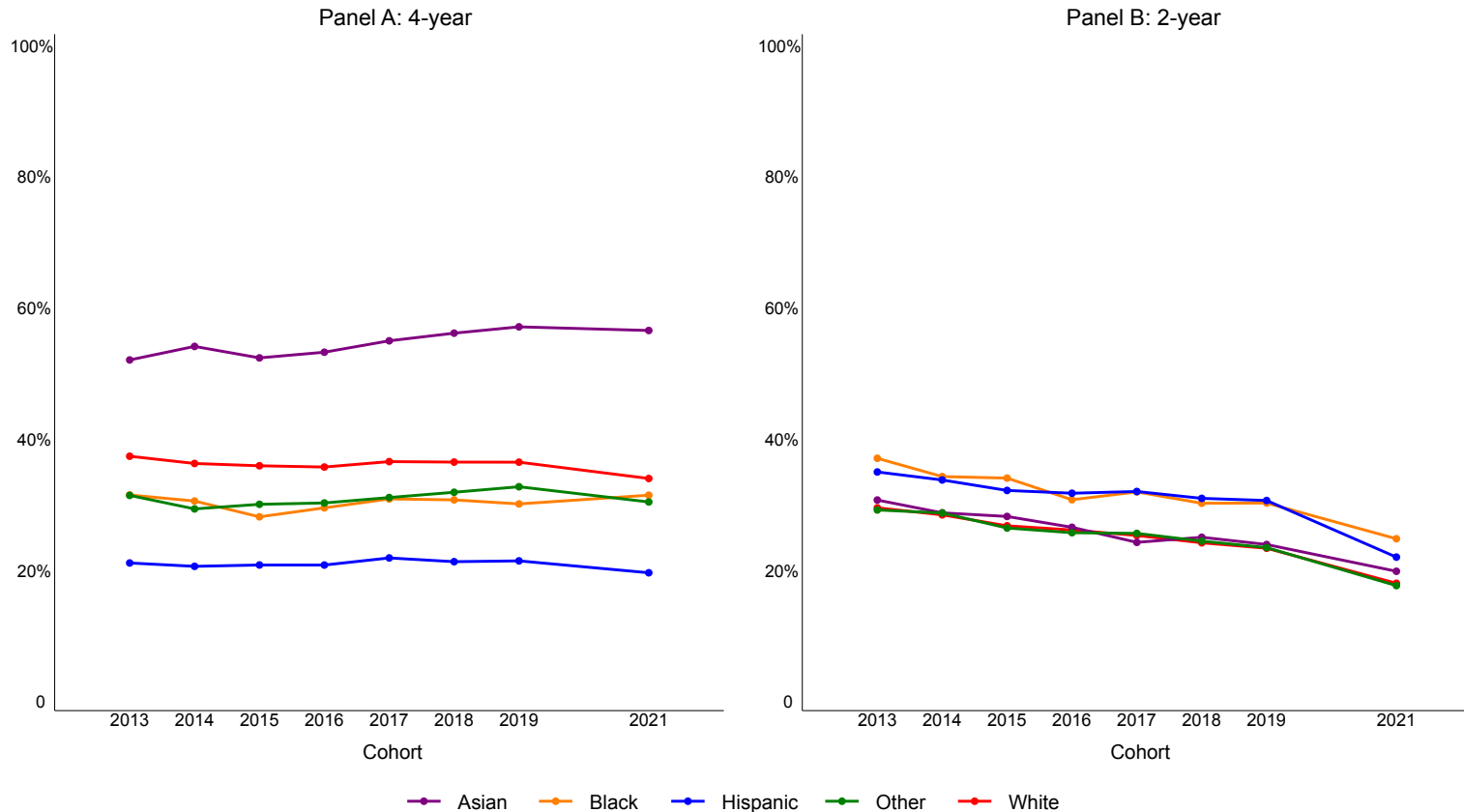


Note: Cohorts are the graduating classes from public high schools in a given school year. For comparison purposes, see Figure 1 in this [report](#) from ERDC.

College Enrollment Trends Vary by Race/Ethnicity, Especially in 4-Year Institutions

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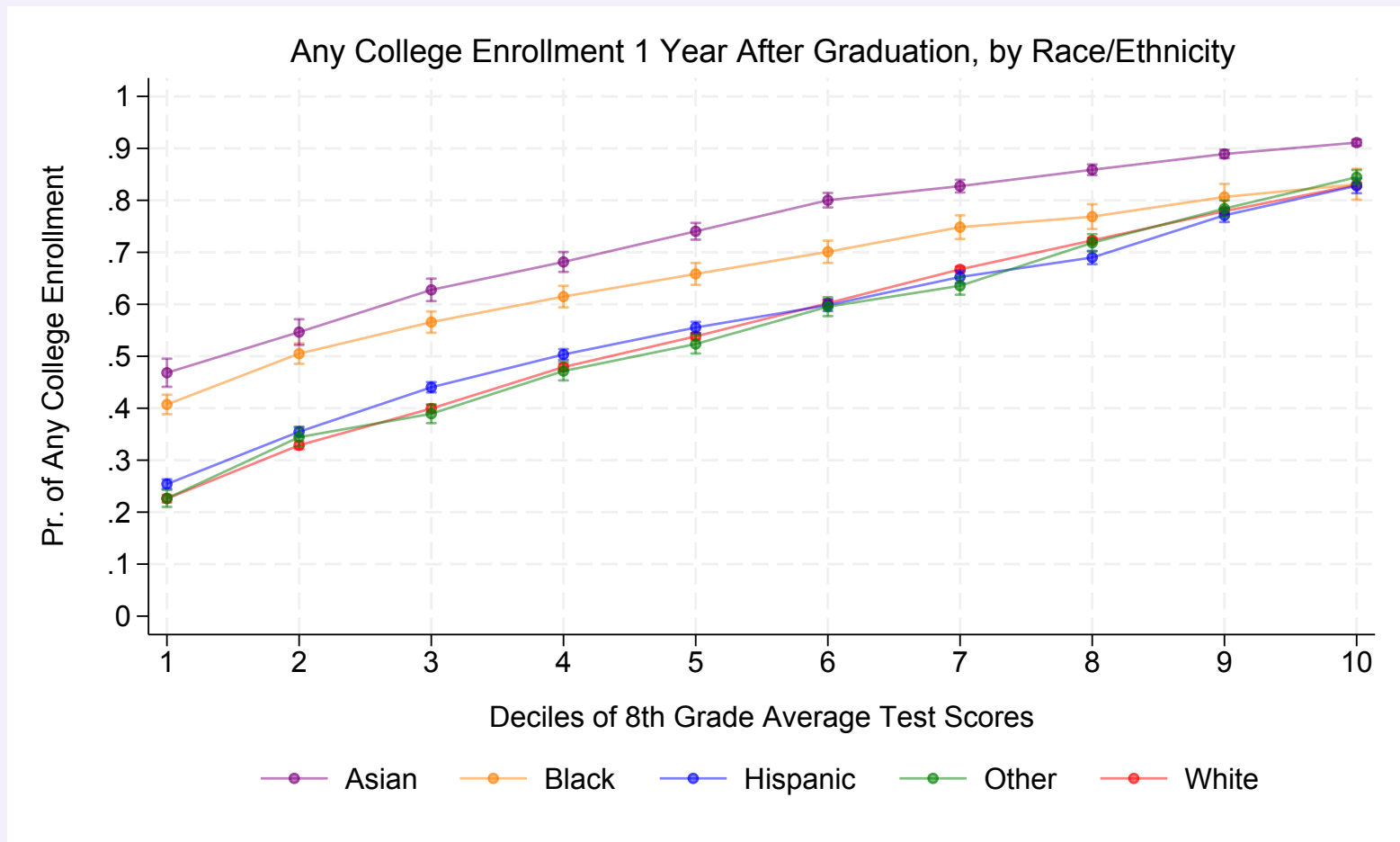
College Enrollment Within 1 Year After Graduation, by School Level and Race/Ethnicity



Graduates enrolled in 4-year colleges were far more likely to be Asian and least likely to be Hispanic
In 2-year colleges, graduates were most likely to be Hispanic or Black

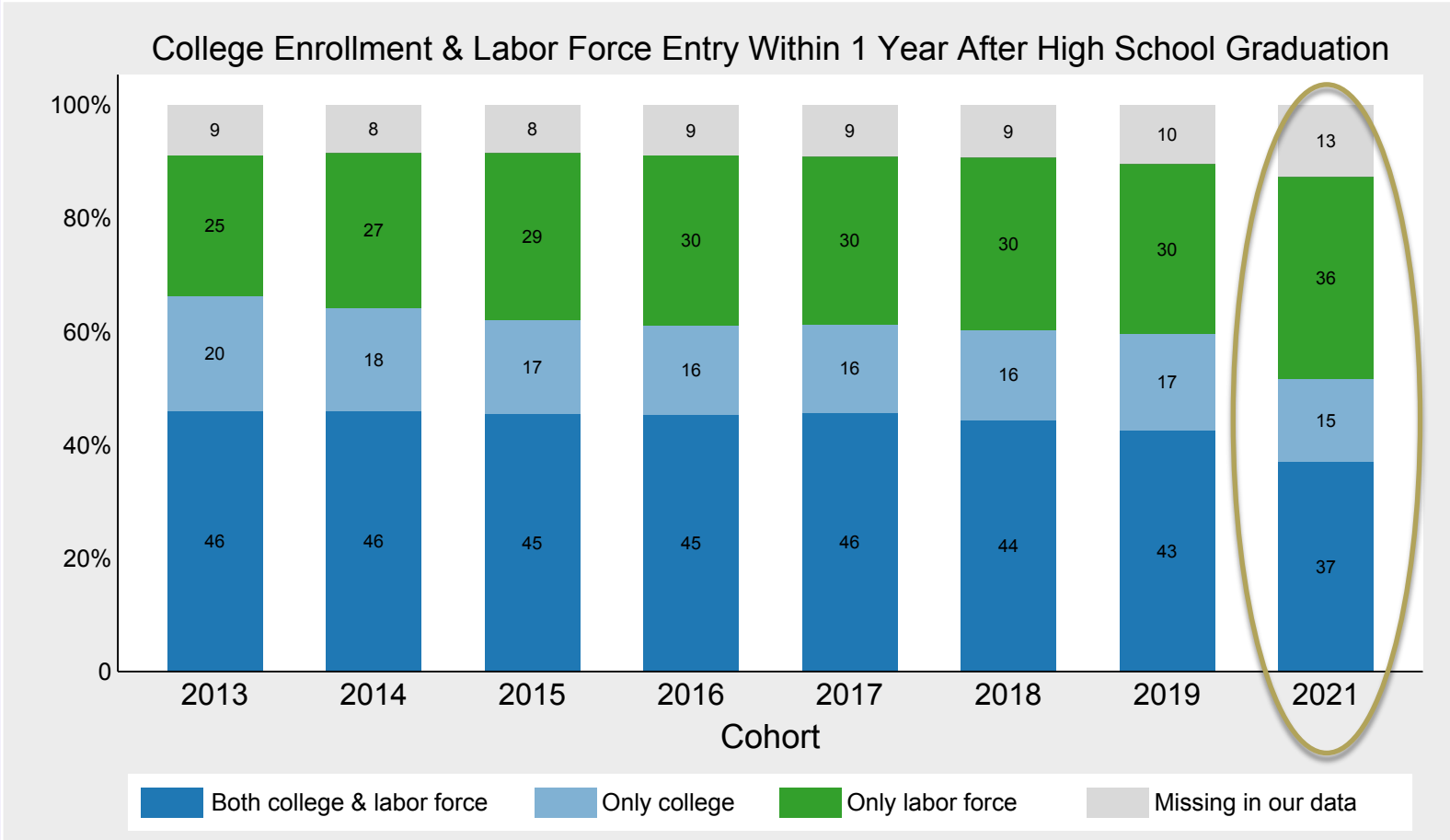
Gaps In Enrollment Narrow At The Top Of The 8th Grade Test Score Distribution

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Along most of the 8th grade test score distribution, Asian and Black graduates were significantly more likely to enroll in college after high school

Where Do Graduates End Up One Year After High School?

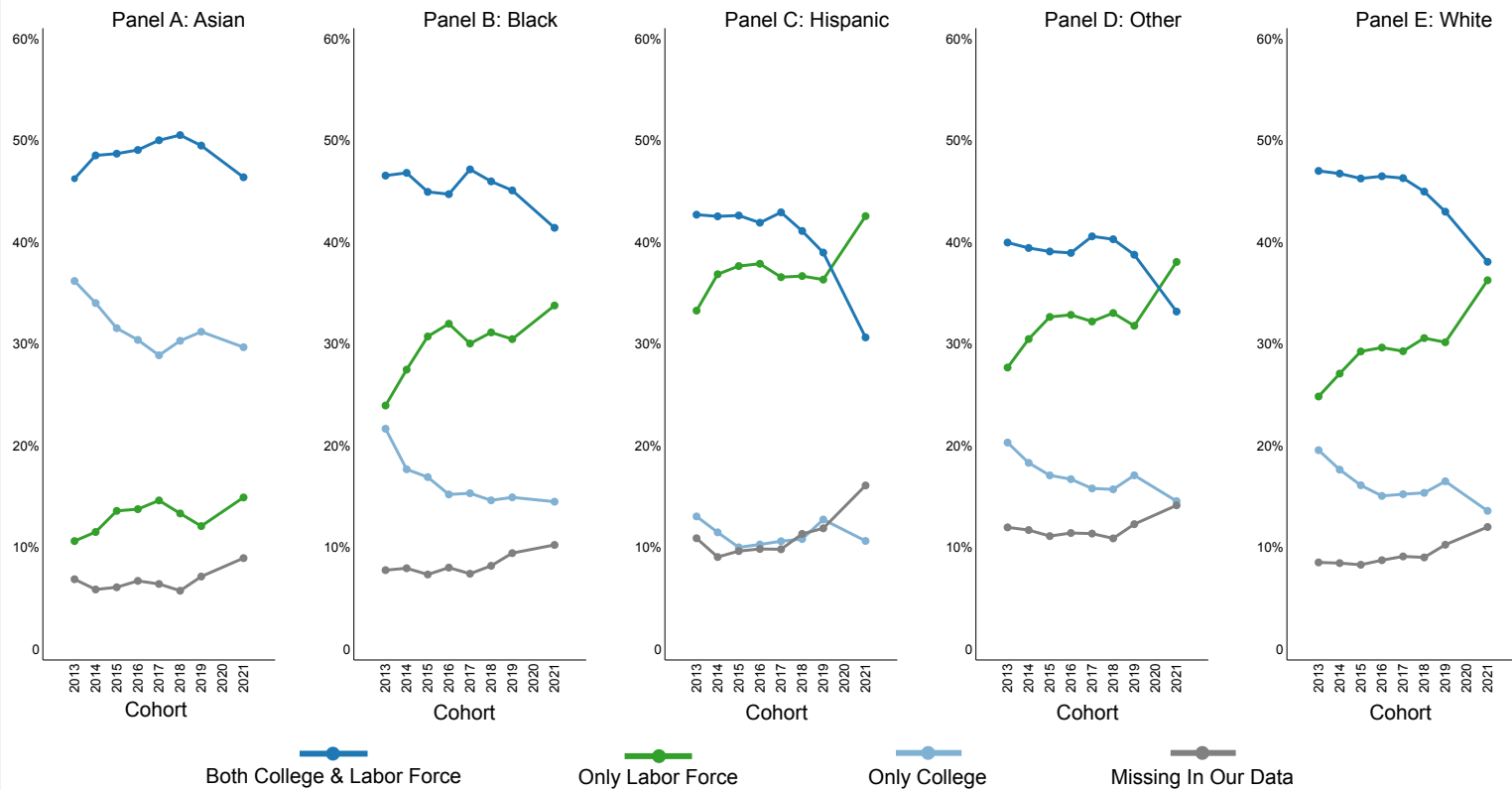


In the past, the largest share of graduates have entered both college and the labor force
Post pandemic, more graduates are found only in the labor force

Caveat: Employment includes summer jobs and part-time work

Postsecondary Outcomes 1 Year After Graduation, by Race/Ethnicity

College & Labor Force Entry Within 1 Year of High School Graduation, by Race/Ethnicity



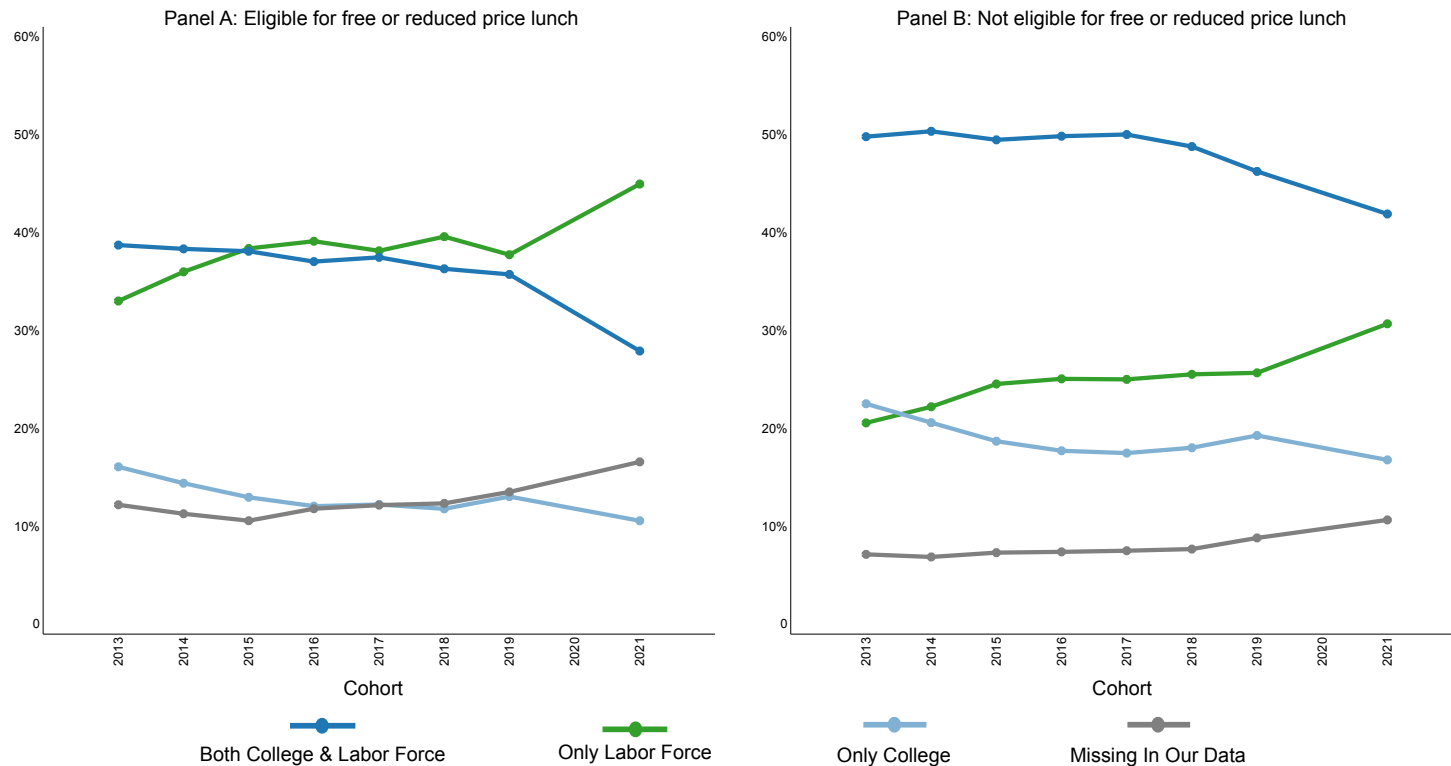
Asian graduates have a distinct pattern – much more likely to only enroll in college

Hispanic graduates were more likely to only enter the labor force

Across the board, a decreasing trend in college-going and in increasing trend in entering the labor market

Postsecondary Outcomes 1 Year After Graduation, by Free Lunch Eligibility

College & Labor Force Entry Within 1 Year of High School Graduation by Eligibility for Free or Reduced Price Lunch



Graduates who were eligible for free/reduced prices lunches, were less likely to go the college and more likely to enter the labor force