

The logo for the Center for Education Data & Research (CEDR) features the acronym 'CEDR' in a bold, dark blue font. A thin, dark blue line curves around the letters, starting from the top left, looping over the 'D', and ending at the bottom left. Below the acronym, the full name 'Center for Education Data & Research' is written in a smaller, dark blue font.

CEDR

Center for Education
Data & Research

GENDER AND EDUCATIONAL ACHIEVEMENT AND PROGRESSION IN WASHINGTON STATE PUBLIC SCHOOLS

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Center for Education Data and Research (CEDR)

Nov 14th, 2023

Data and Analysis

2

- We draw on annual data maintained by the 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 present
- We look at hundreds of thousands of students with various high school outcomes *and* 3rd grade test scores
 - Results are qualitatively similar if we focus on samples of students in any given year between 3rd grade and year of outcome
 - Sample sizes vary by outcome—data for different outcomes are not available across all years
 - Racial/ethnic group breakdown: Asian (8%), Black (6%), Hispanic (19%), White (60%), Other(7%)
- Our analysis (at this stage) is purely descriptive
 - We document differences in student outcomes by gender and race as students progress through school without any interpretation why these gaps exist

Road Map

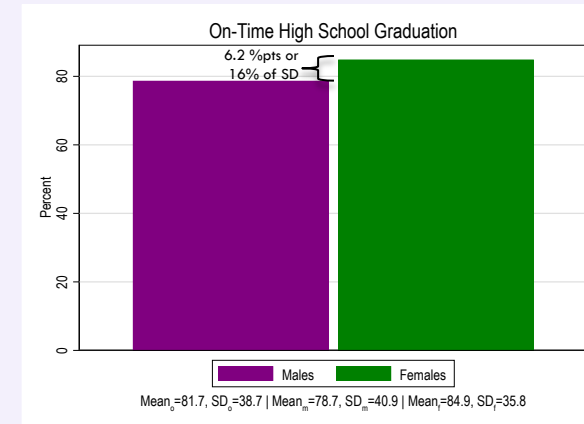
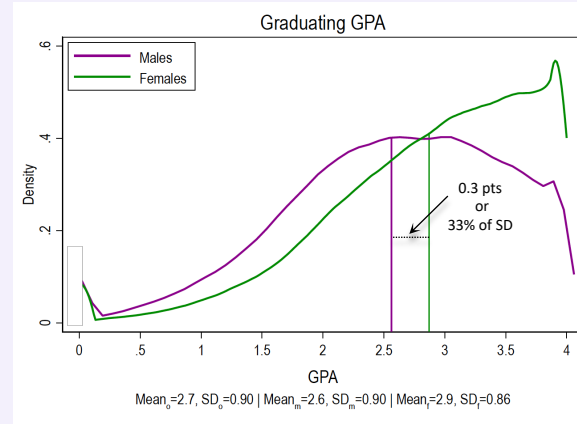
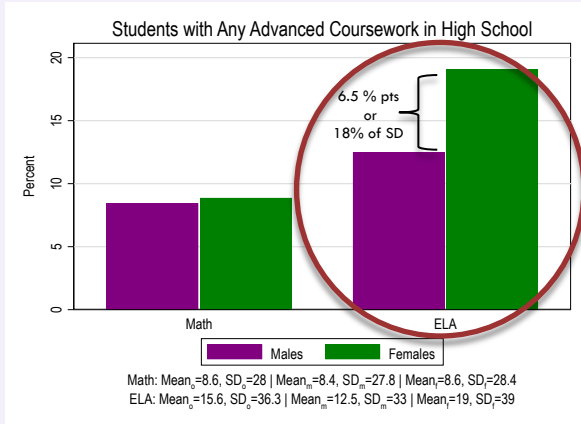
3

1. We begin by looking at gender differences in *high school* for a variety of outcomes
 - Where in the distribution are we seeing gaps?
2. How large are gaps after taking into account students' early achievement levels (i.e., 3rd grade math and ELA tests standardized by grade and subject)?
3. Do gender gaps differ by race/ethnicity?

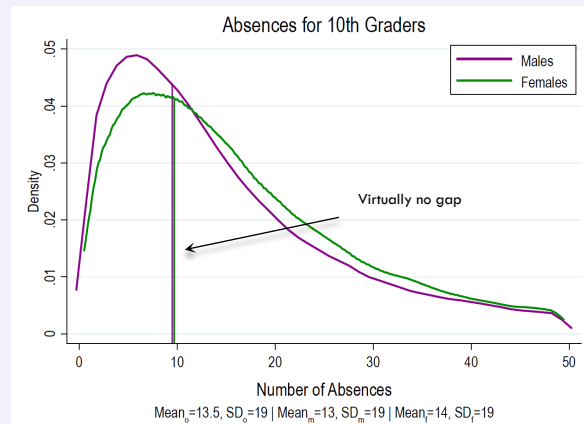
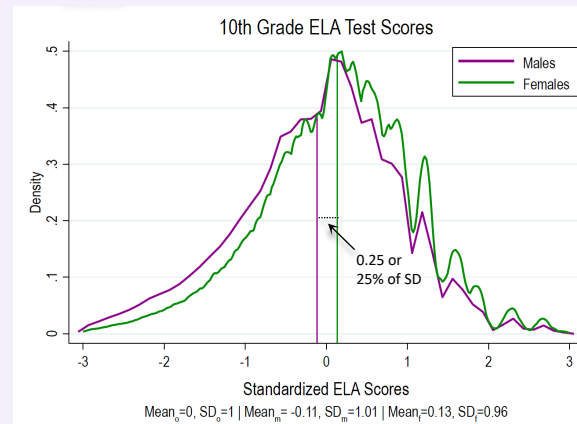
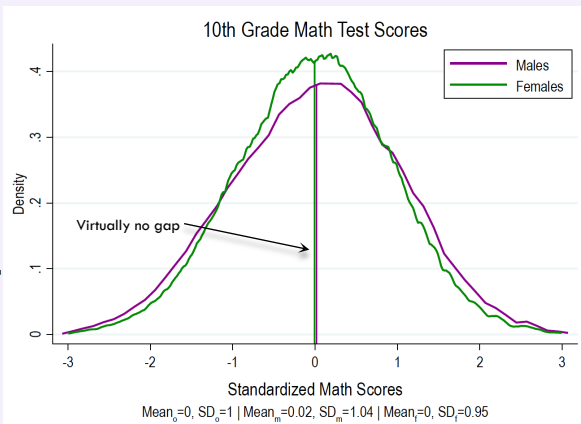
Gender Gaps in High School Outcomes

4

Static



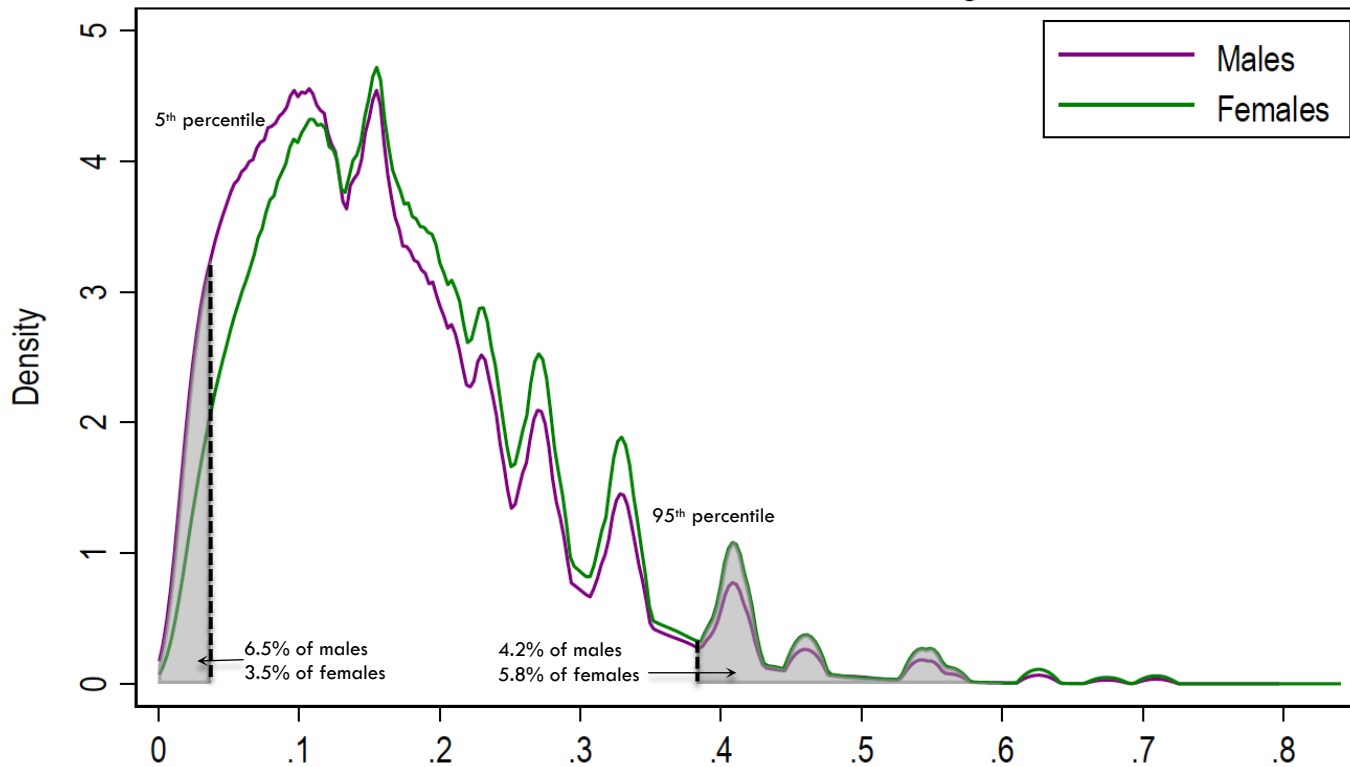
Dynamic



Gaps at Tails for Advanced *ELA* Coursework

5

Advanced *ELA* Coursework in High School



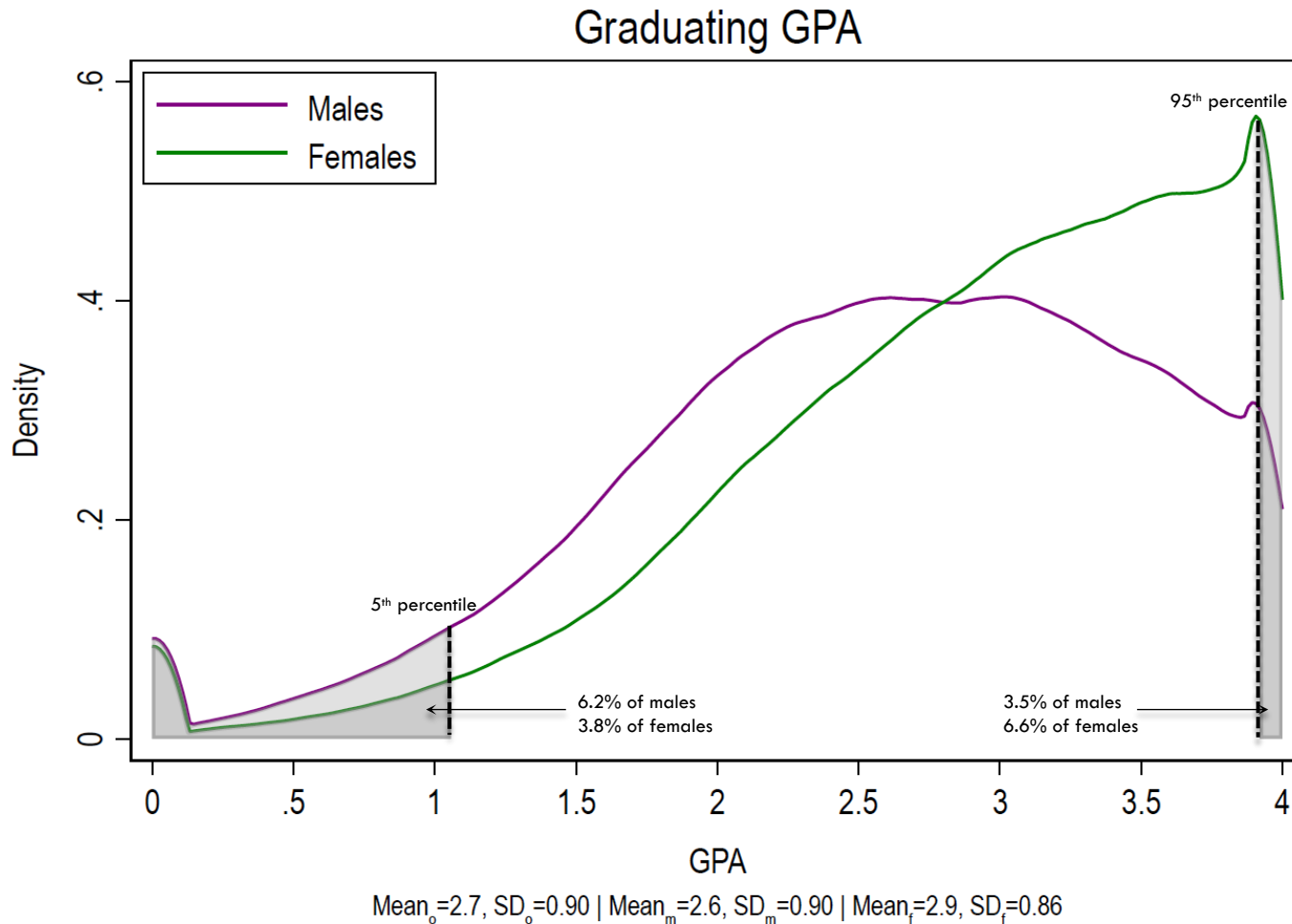
Predicted Probability of Any Advanced *ELA* Coursework

Mean_o=0.17, SD_o=0.11 | Mean_m=0.16, SD_m=0.10 | Mean_f=0.18, SD_f=0.11

Predictor: Average 10th Grade Test Score

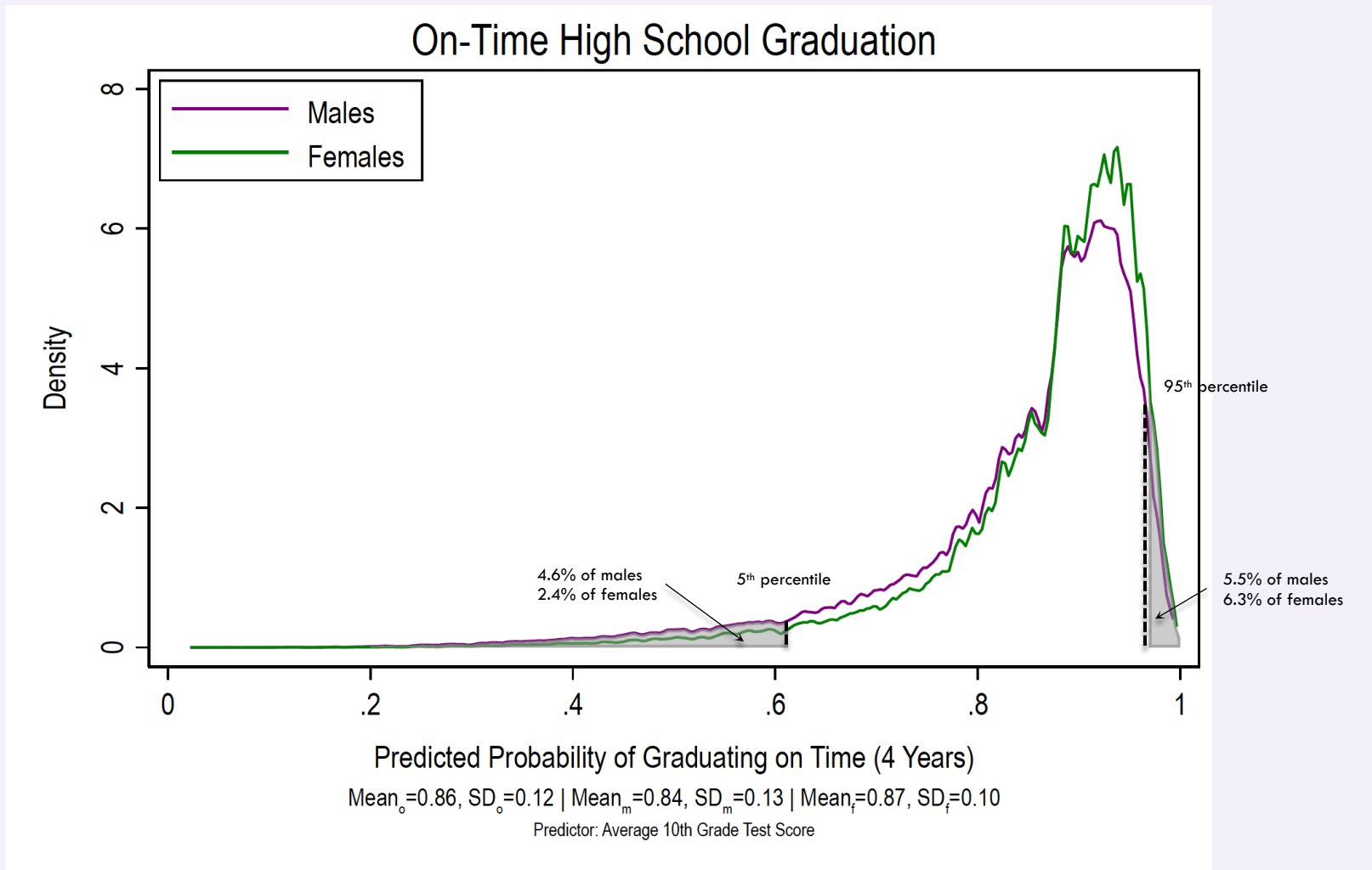
Big GPA Gaps in the Tails

6



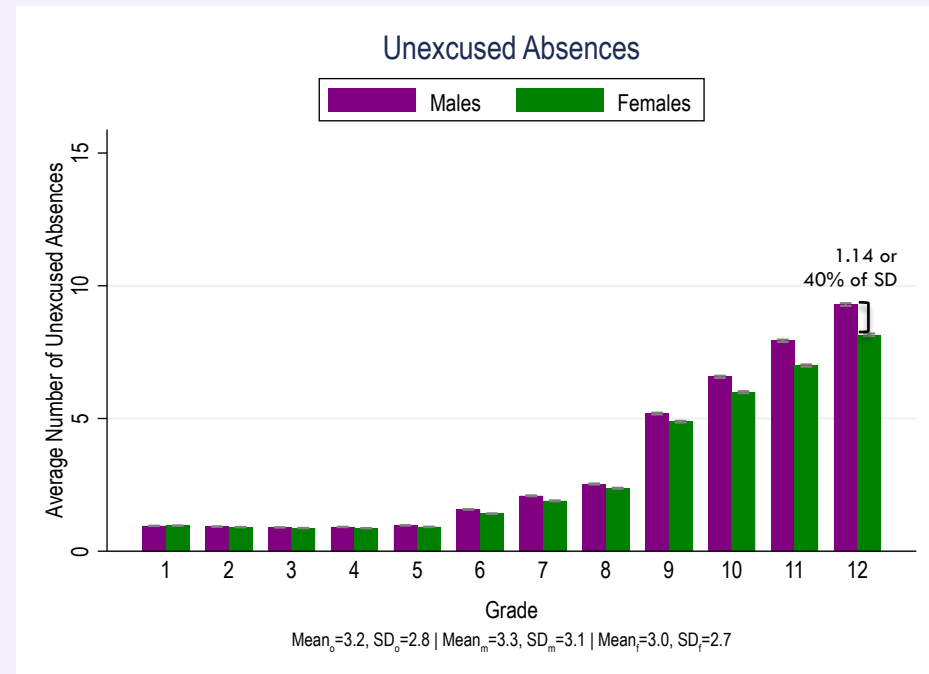
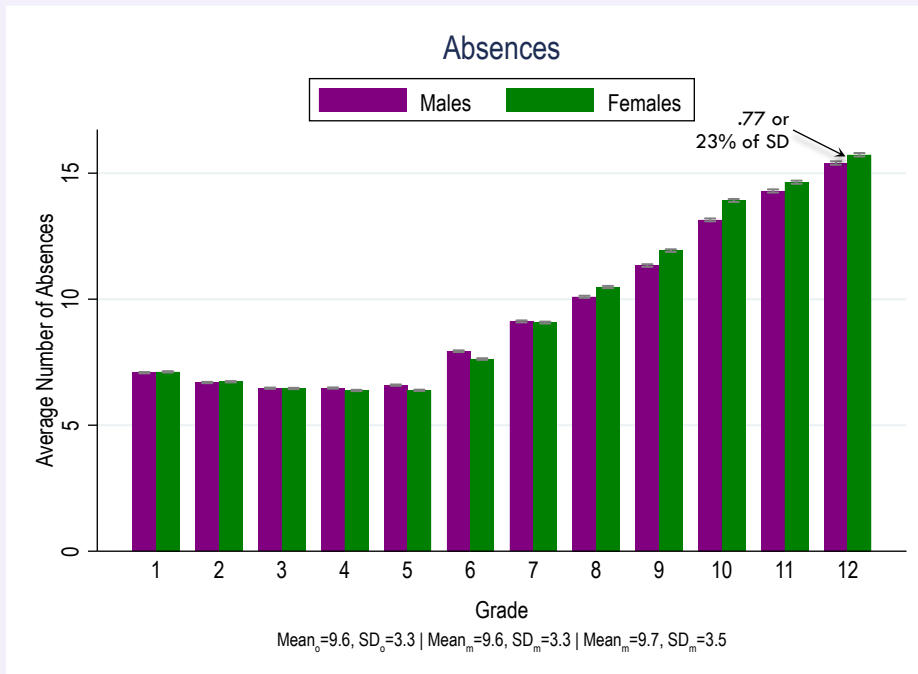
High School Graduation (within 4 years)

7



Absenteeism: A Bit of a Surprise

8



Females have slightly more absences in later grades, but males have even more *unexcused* absences in those same grades

Road Map

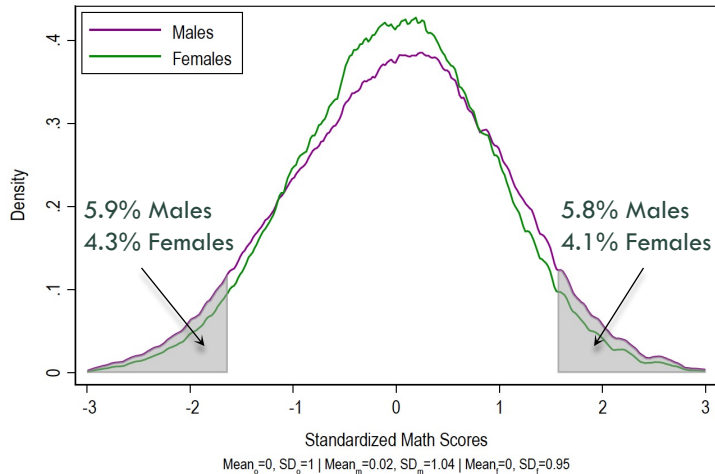
9

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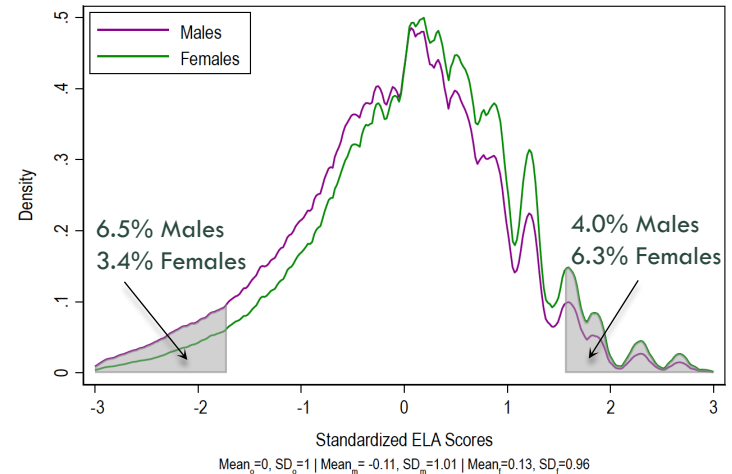
Gaps in Test Scores at Two Points in Time

10

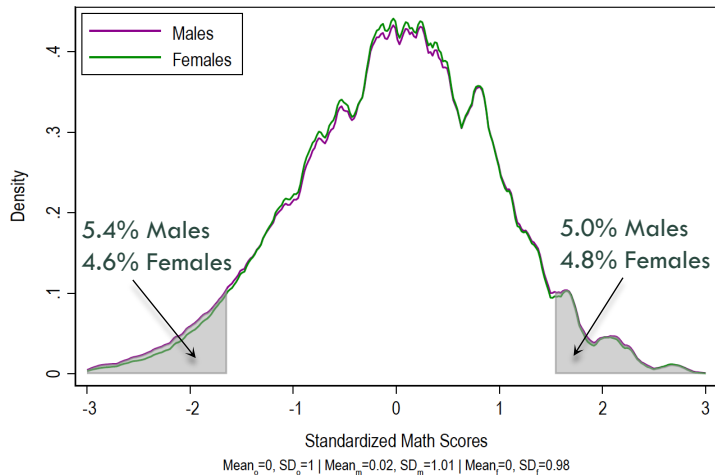
10th Grade Math Test Scores



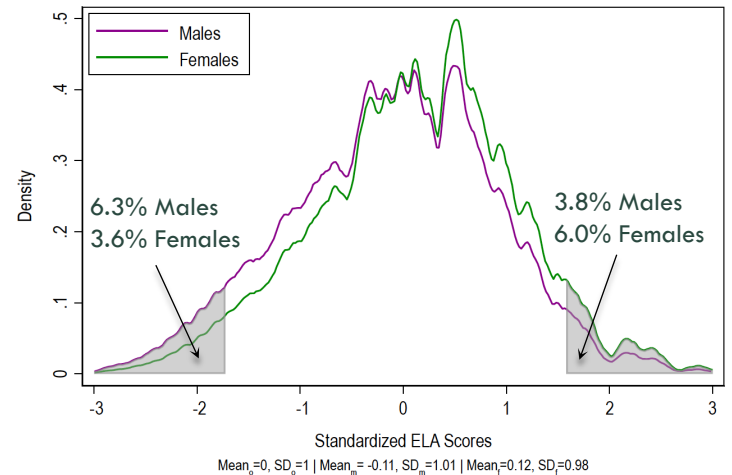
10th Grade ELA Test Scores



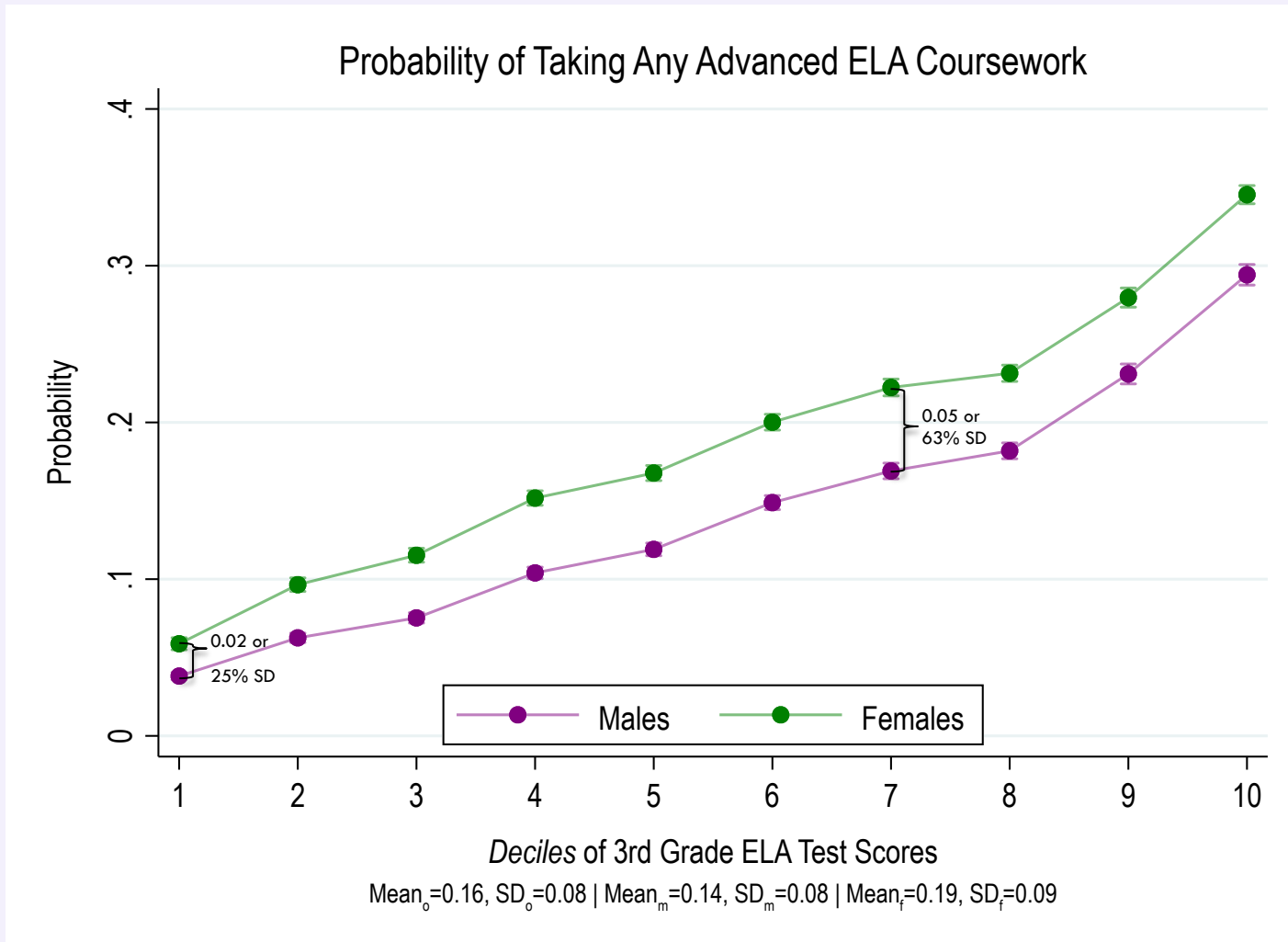
3rd Grade Math Test Scores



3rd Grade ELA Test Scores

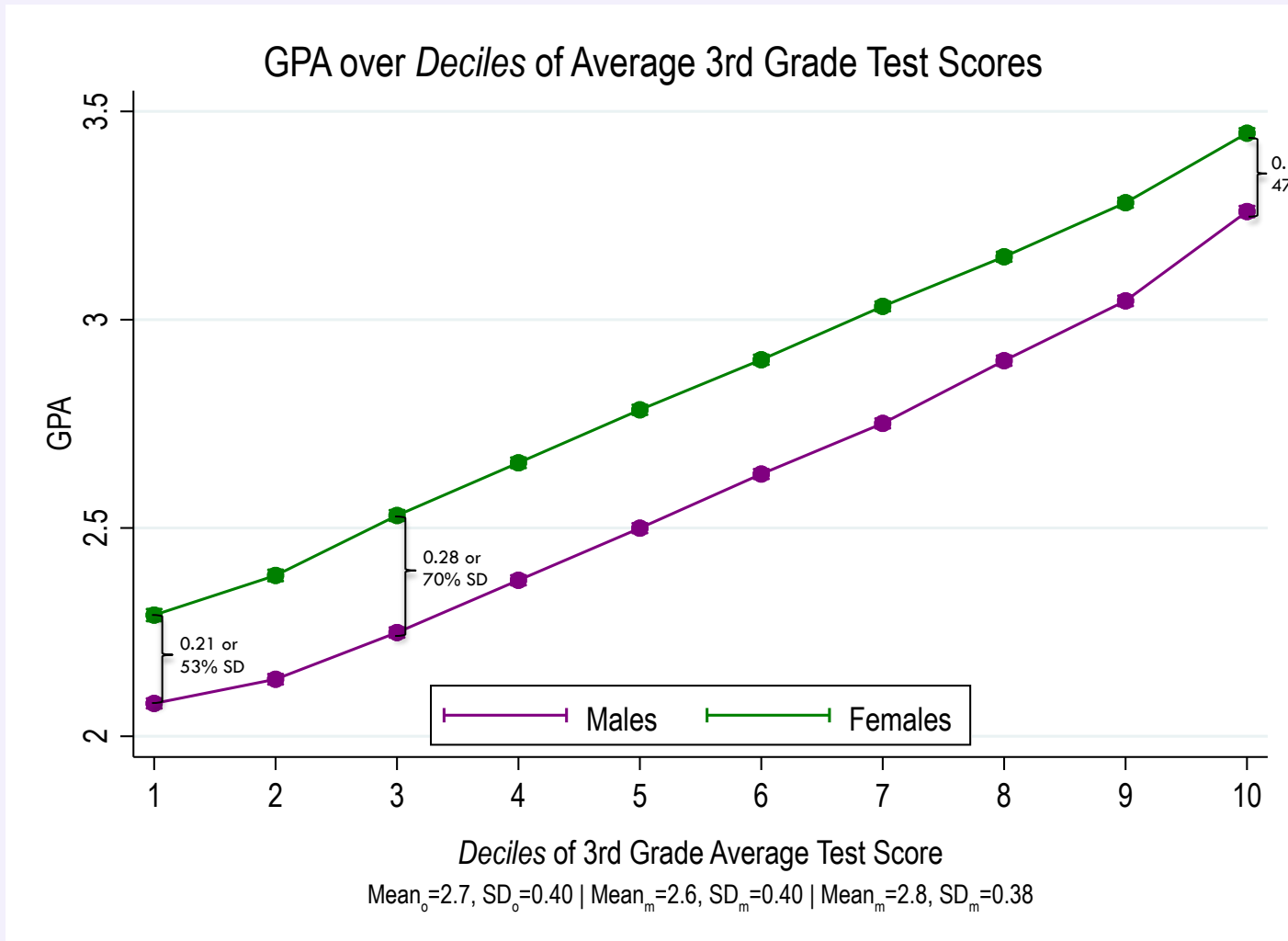


Gaps in Advanced *ELA* Coursework Exist Throughout the 3rd Grade Test Distribution



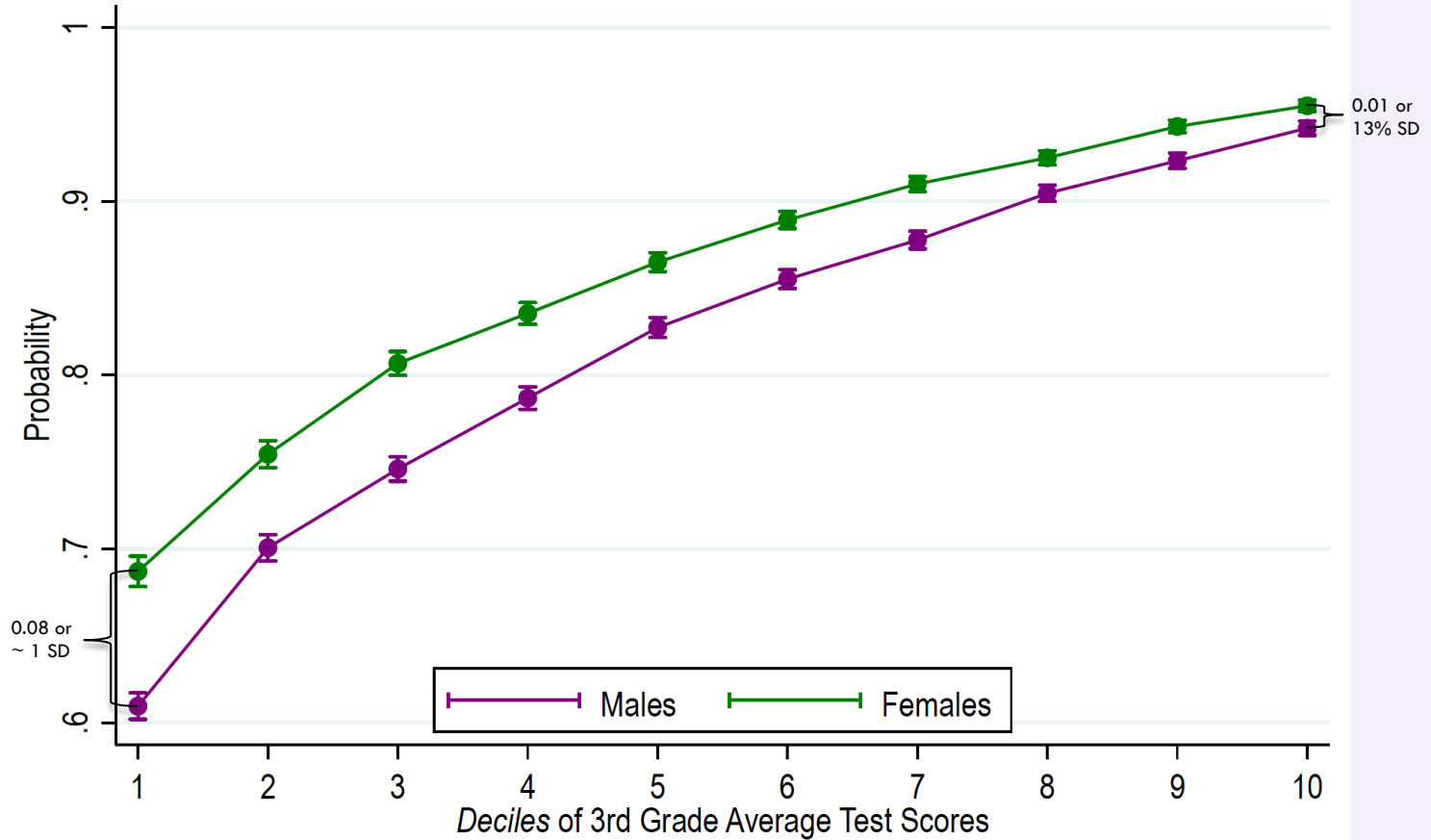
Gaps in GPA Exist Throughout the 3rd Grade Test Distribution

12



Gender Gaps in On-time Graduation Vary Across Deciles of Prior Achievement

Probability of On-time Graduation across *Deciles* of Average 3rd Grade Test Scores



Mean_o=0.87, SD_o=0.08 | Mean_m=0.85, SD_m=0.09 | Mean_f=0.88, SD_f=0.07

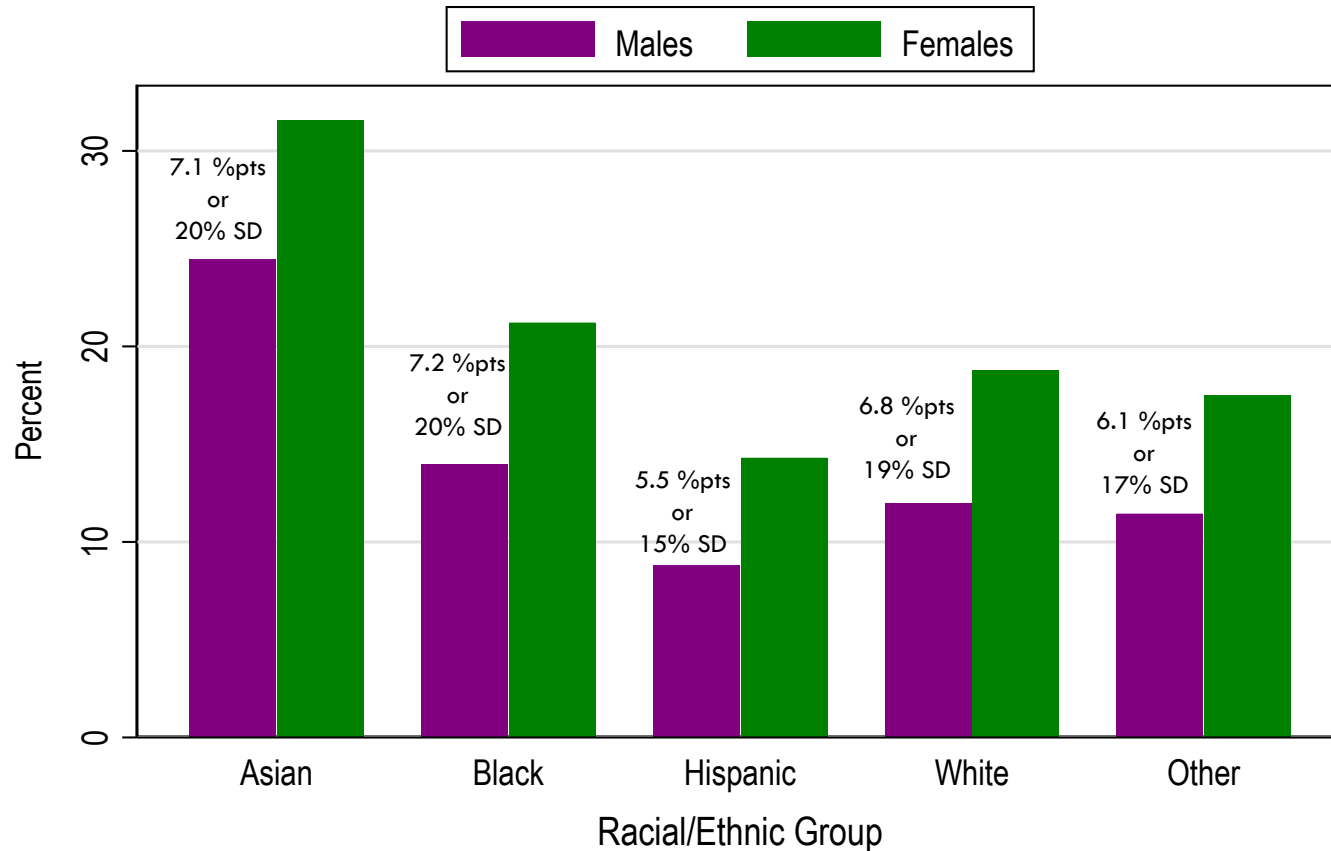
Road Map

14

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Advanced ELA Coursework by Gender and Race

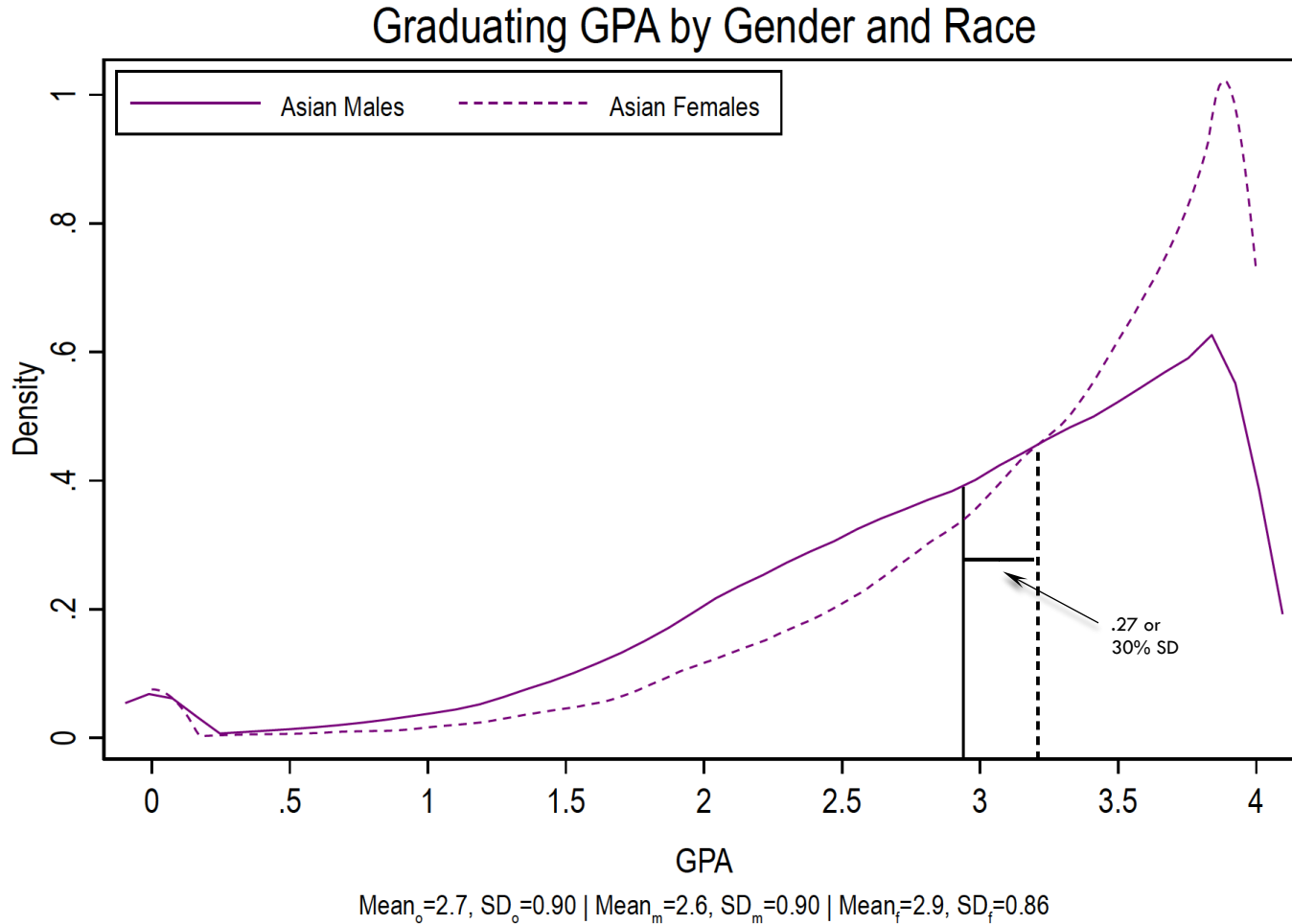
Students Taking Any Advanced ELA Coursework in High School by Race



Mean_o=15.6, SD_o=36.3 | Mean_m=12.5, SD_m=33 | Mean_f=19, SD_f=39

GPA Gender Gaps Largely Consistent Across Race/Ethnicity

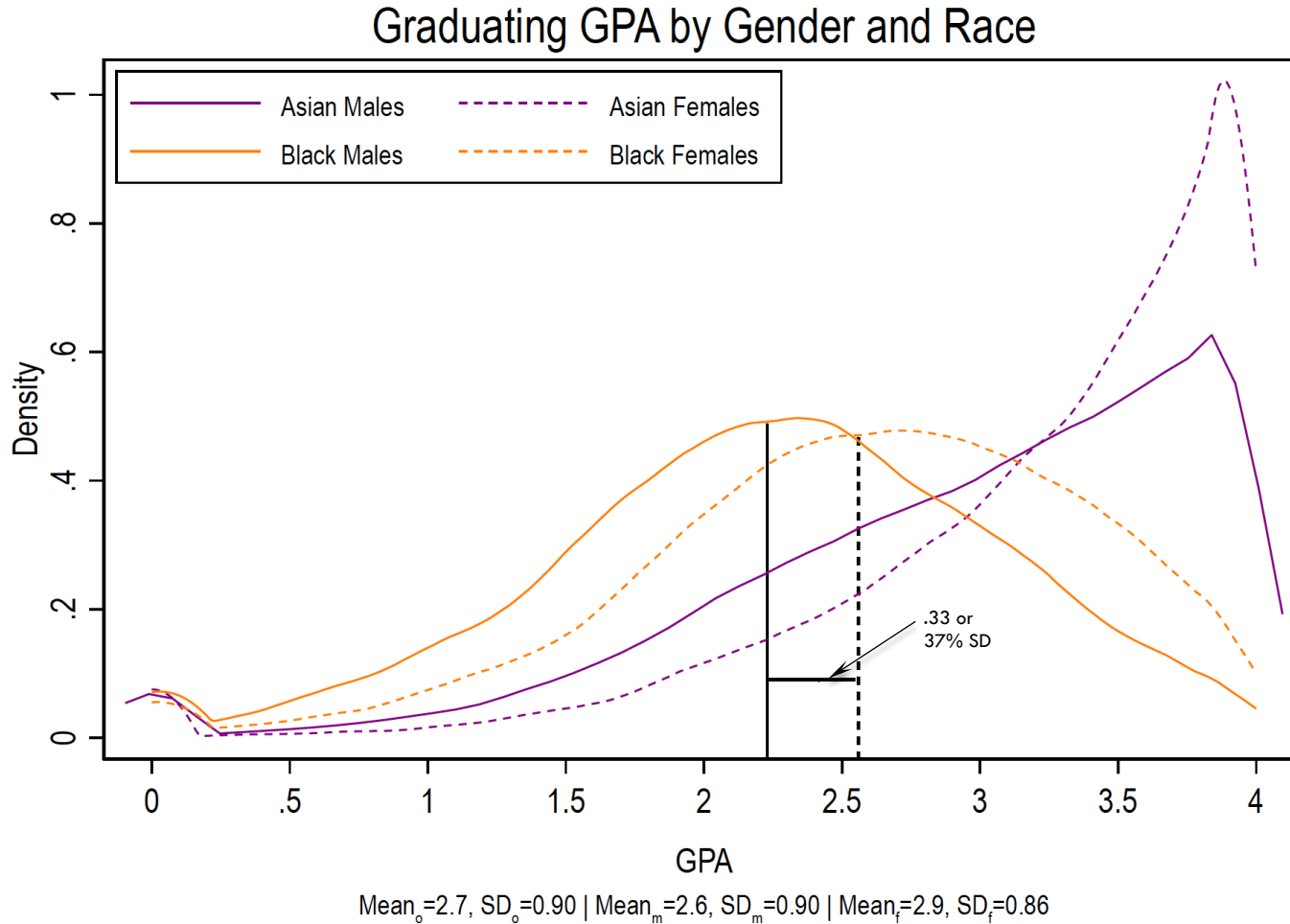
16



Asian students have the smallest gender gap

GPA Gender Gaps Largely Consistent Across Race/Ethnicity

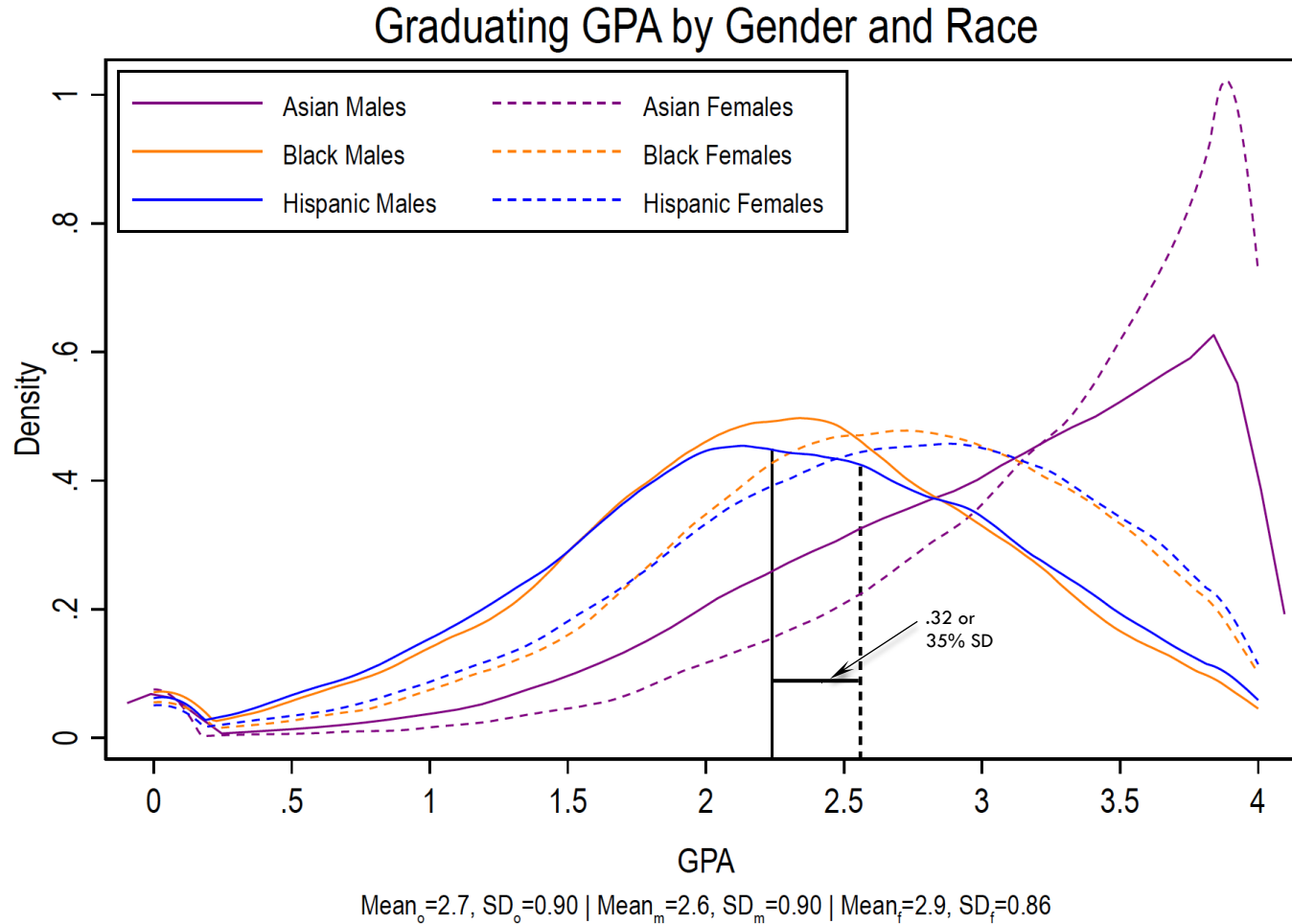
17



Black students have the largest gender gap

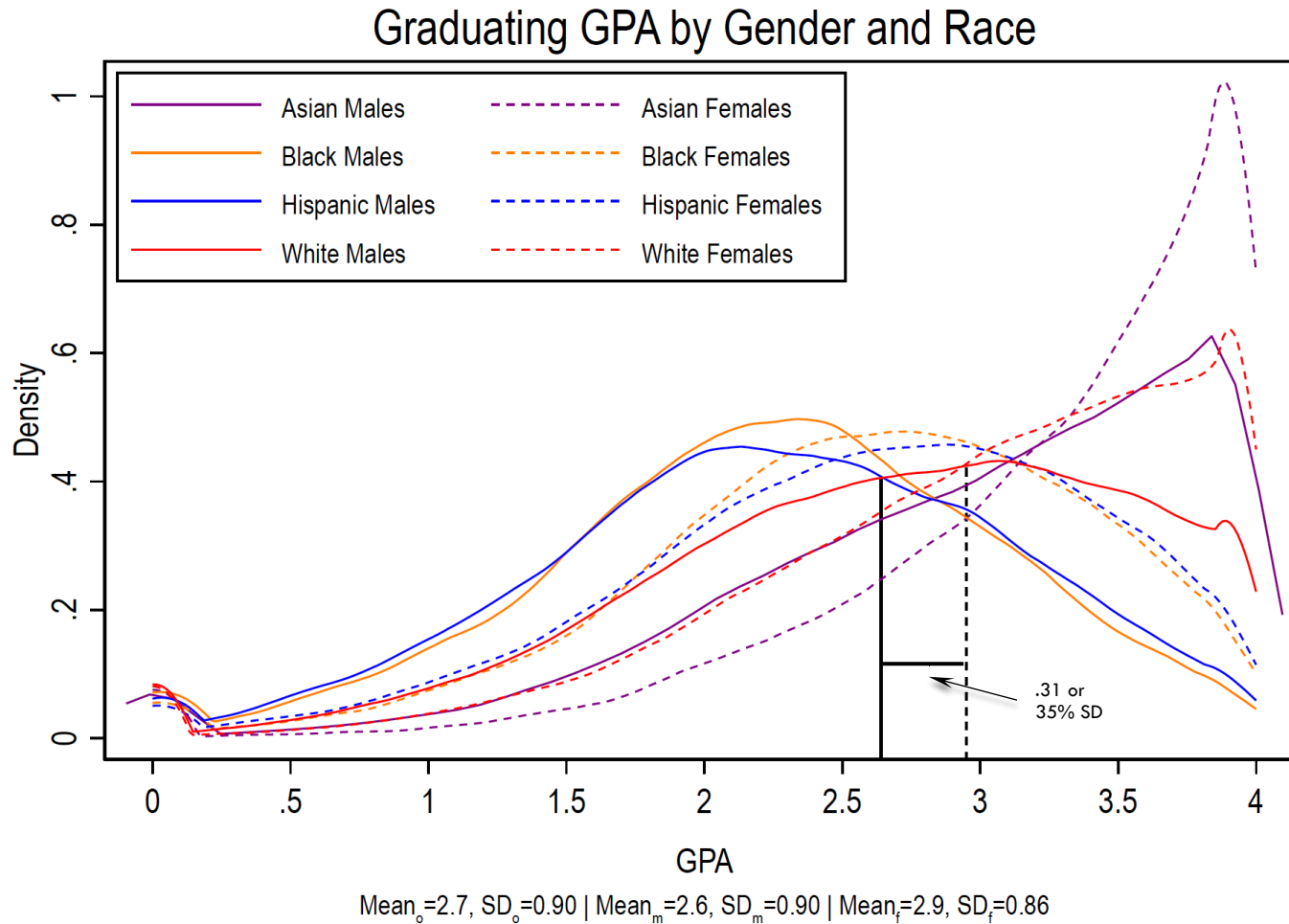
GPA Gender Gaps Largely Consistent Across Race/Ethnicity

18



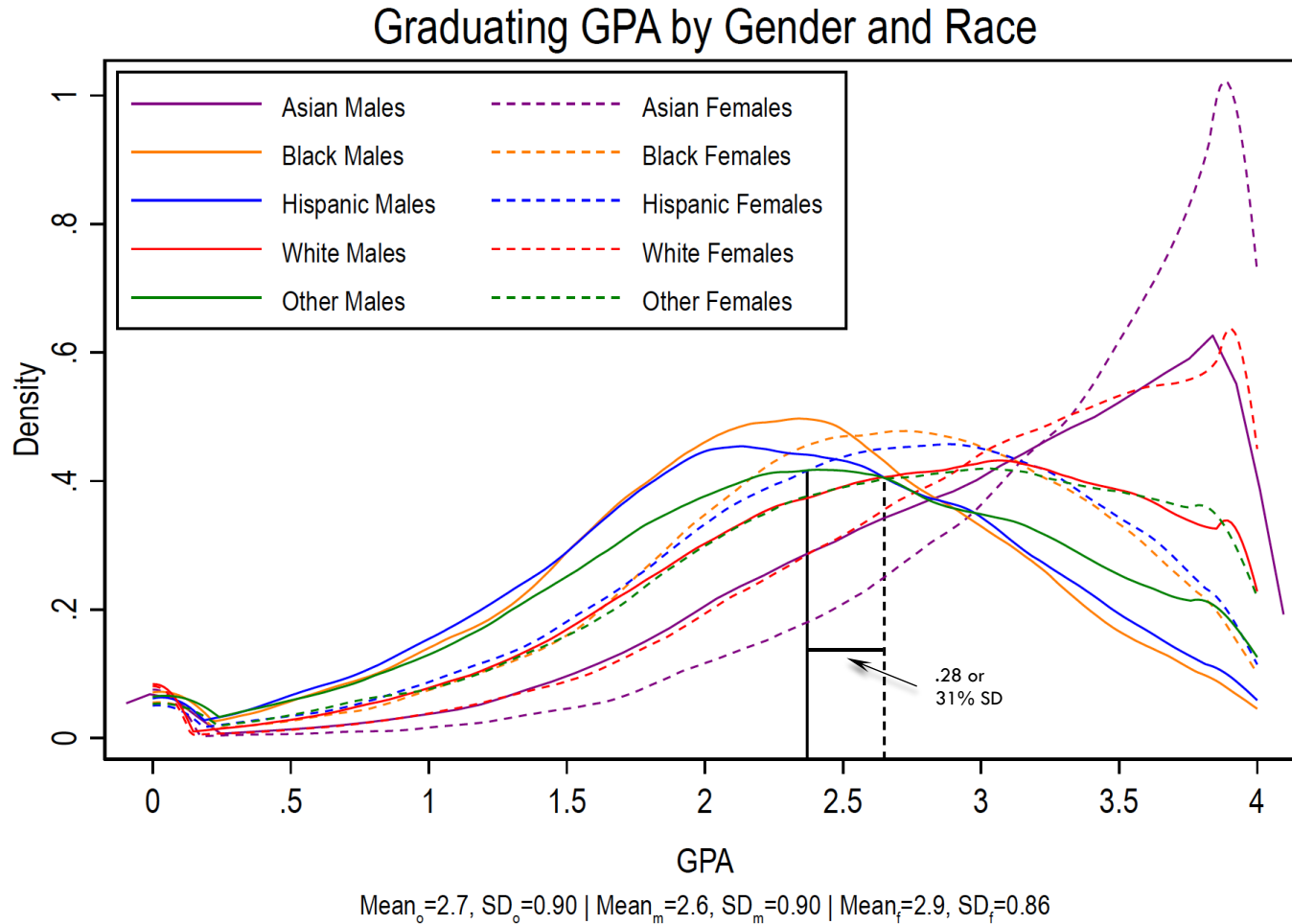
GPA Gender Gaps Largely Consistent Across Race/Ethnicity

19



GPA Gender Gaps Largely Consistent Across Race/Ethnicity

20



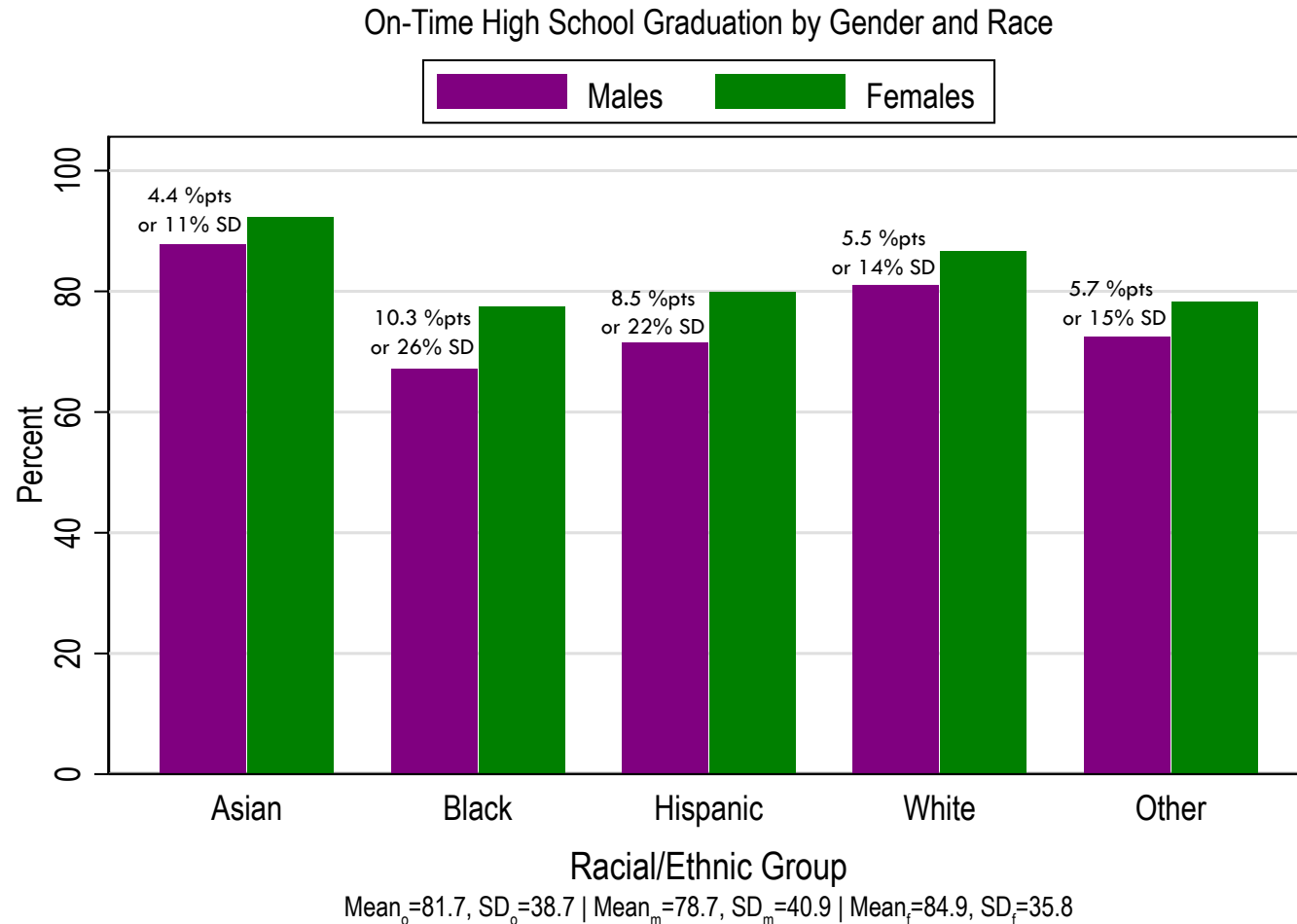
A Tabular Look at GPA Gender Gaps, by Race

21

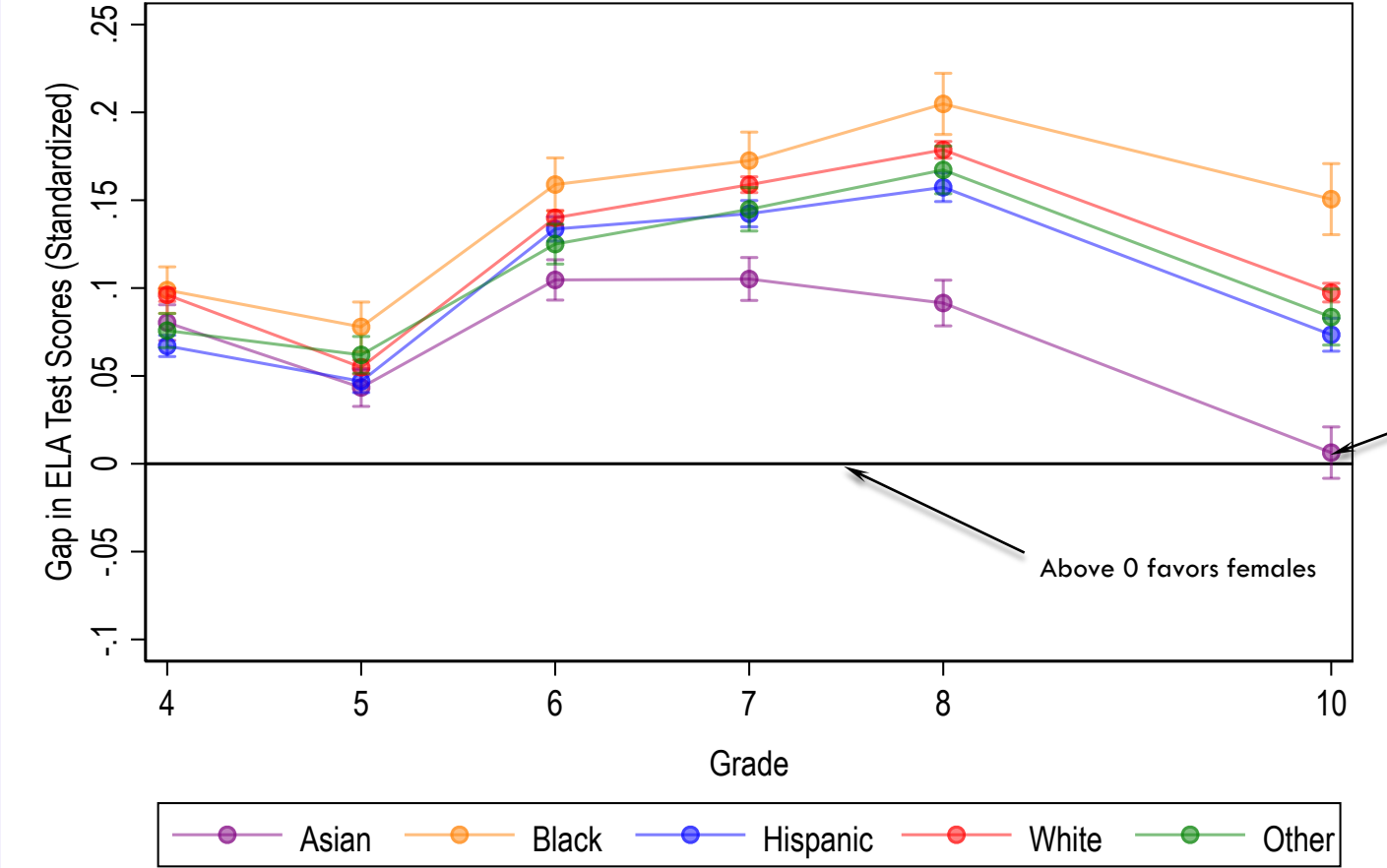
Summary Statistics by Race and Gender for High School GPA					
		N	Mean	F-M Gap	%>3.5
Asian	Females	36,054	3.21	0.27	46.5
	Males	37,037	2.94		32.0
	Both	73,091	3.07		39.3
Black	Females	22,033	2.56	0.33	12.2
	Males	23,599	2.23		5.8
	Both	45,632	2.39		9.0
Hispanic	Females	69,119	2.56	0.32	13.4
	Males	71,696	2.24		6.8
	Both	140,815	2.40		10.1
White	Females	266,524	2.95	0.31	31.0
	Males	280,337	2.64		18.5
	Both	546,861	2.80		24.8
Other	Females	26,216	2.65	0.28	19.4
	Males	26,926	2.37		11.5
	Both	53,142	2.51		15.4

On-time Graduation by Gender and Race

22



Gender Gaps in *ELA Test Scores* by Race and Grade



Large gender gaps disappear for Asian students by 10th grade

Above 0 favors females

Overarching Takeaways

24

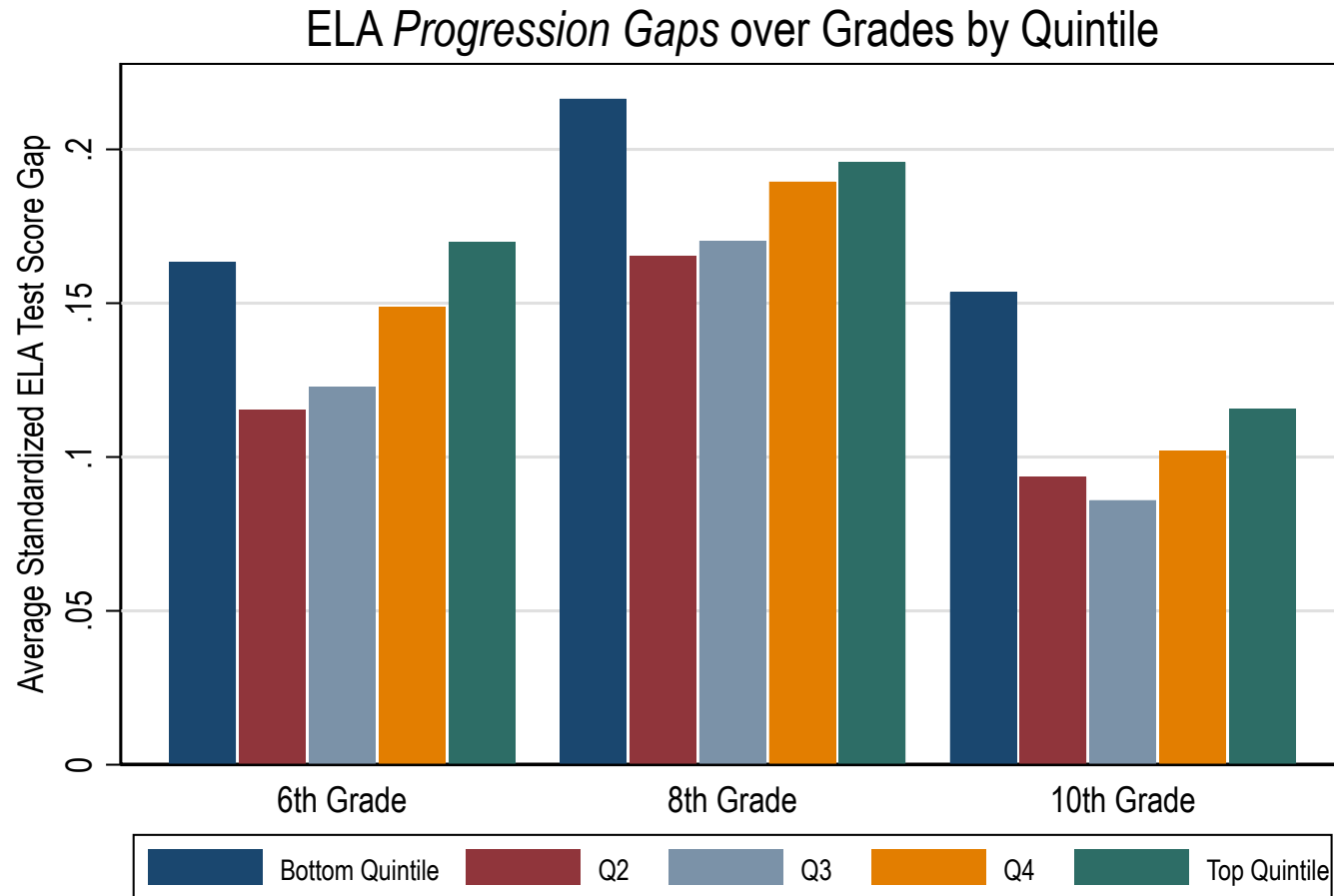
- Gender gaps favoring females exist across all outcomes except for math test scores and absences
- For reading test scores there is relatively large widening through middle schools and shrinking into high school
 - (see slide 27 in backup slides)
- Gaps are largely *not* explained by 3rd grade test achievement
- Gender gaps are largely consistent across racial categories with the exception of:
 - Asian students who have relatively small differentials for most outcomes (but not advanced coursework)
 - Graduation gaps are especially large for Black students

BACKUP SLIDES

Indicators and Outcomes by Years

Indicators and Outcomes		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		
	Indicators	Demographics and Student Classification	15 cohorts of student's data can be linked to 14 cohort of test data, 8 cohort of absences data, 7 cohorts of disciplinary incidences, 11 cohort of advanced course taking, and 10 cohorts of HS GPA and graduation															
		Kindergarten Readiness Indicators											2 cohorts of WA Kids' KRA data can be linked to 3 rd Grade Scores					
Outcomes	✓	Test Scores	3rd grade Standardized Math and Reading test scores can be linked to 1 cohort of students' HS GPA and Graduation and Fifth grade scores can be linked to 3 cohorts of students' HS GPA and Graduation															
	✓	Course Taking					Number of Advanced courses and probability of taking advanced courses through middle and high school											
	✓	HS GPA					High School GPA on a 4.0 scale											
	✓	HS Graduation					Probability of HS Graduation, Graduation within 4 years, Graduation within 5 years											
	✓	Absences							Full time and part time excused and unexcused absences; chronic absenteeism defined as greater than 18 absent days; pathways from grade 5 to grade 10 can be linked for 2 cohort									
	✓	Disciplinary Incidences								Expulsion and suspensions as well as an index of total disciplinary actions; pathways from grade 5 to grade 10 can be linked to 1 cohort								

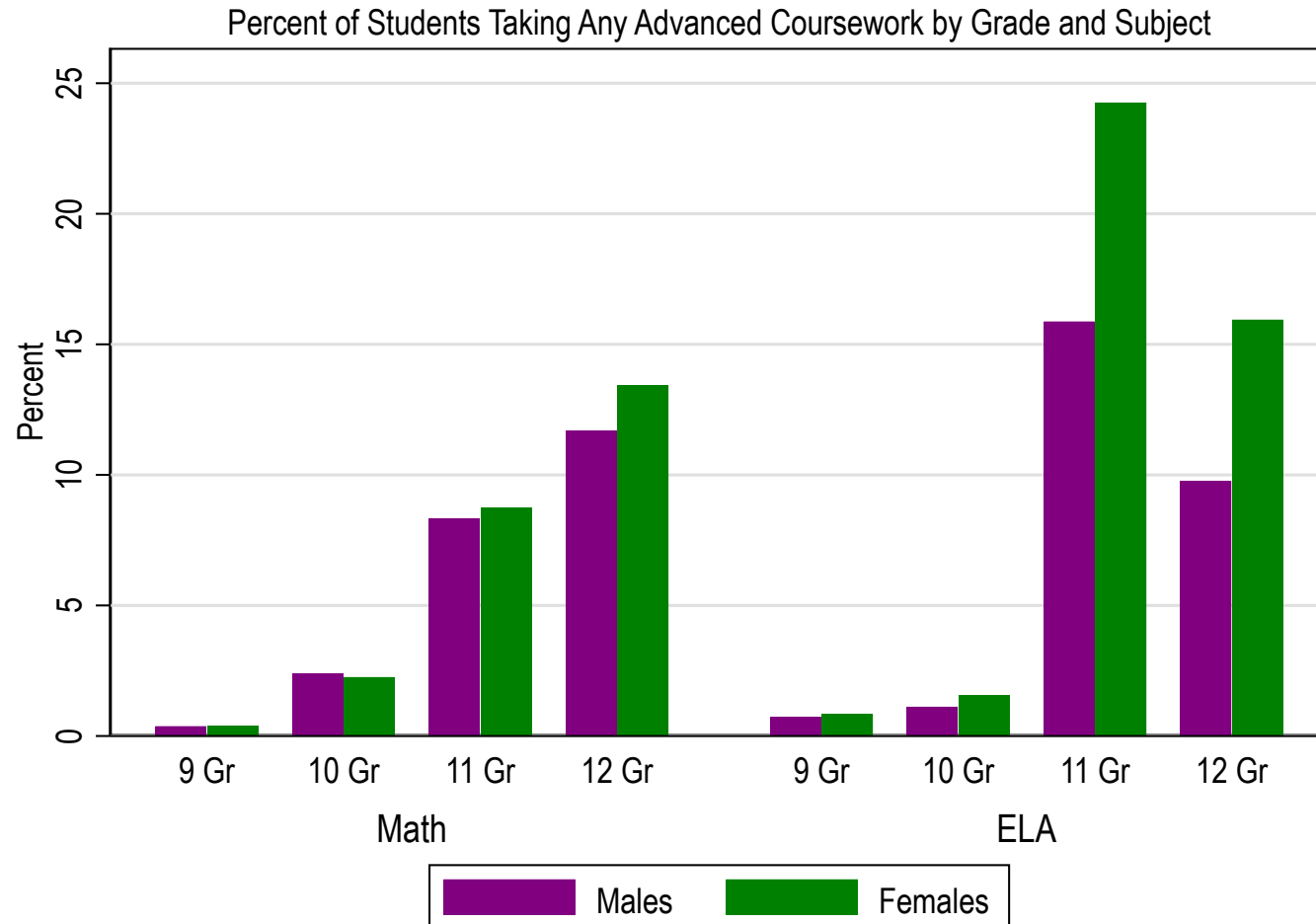
Largest Gaps at Tails of *ELA* Test Score Distributions



Notes. (1) Gaps > 0 Favor Females (2) Quintiles are of 3rd Grade ELA Test Scores

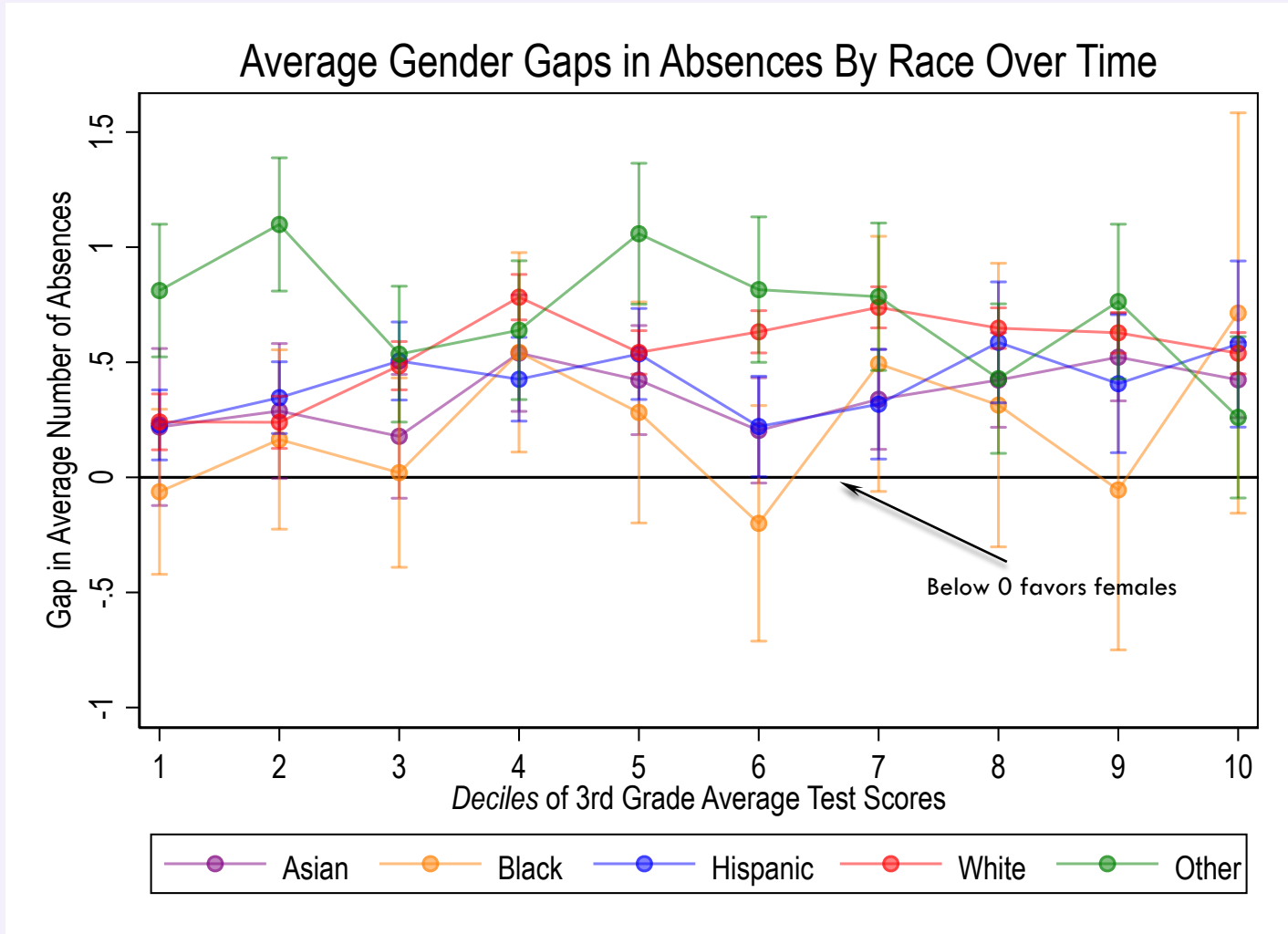
Advanced Course Taking by Subject and Grade

28

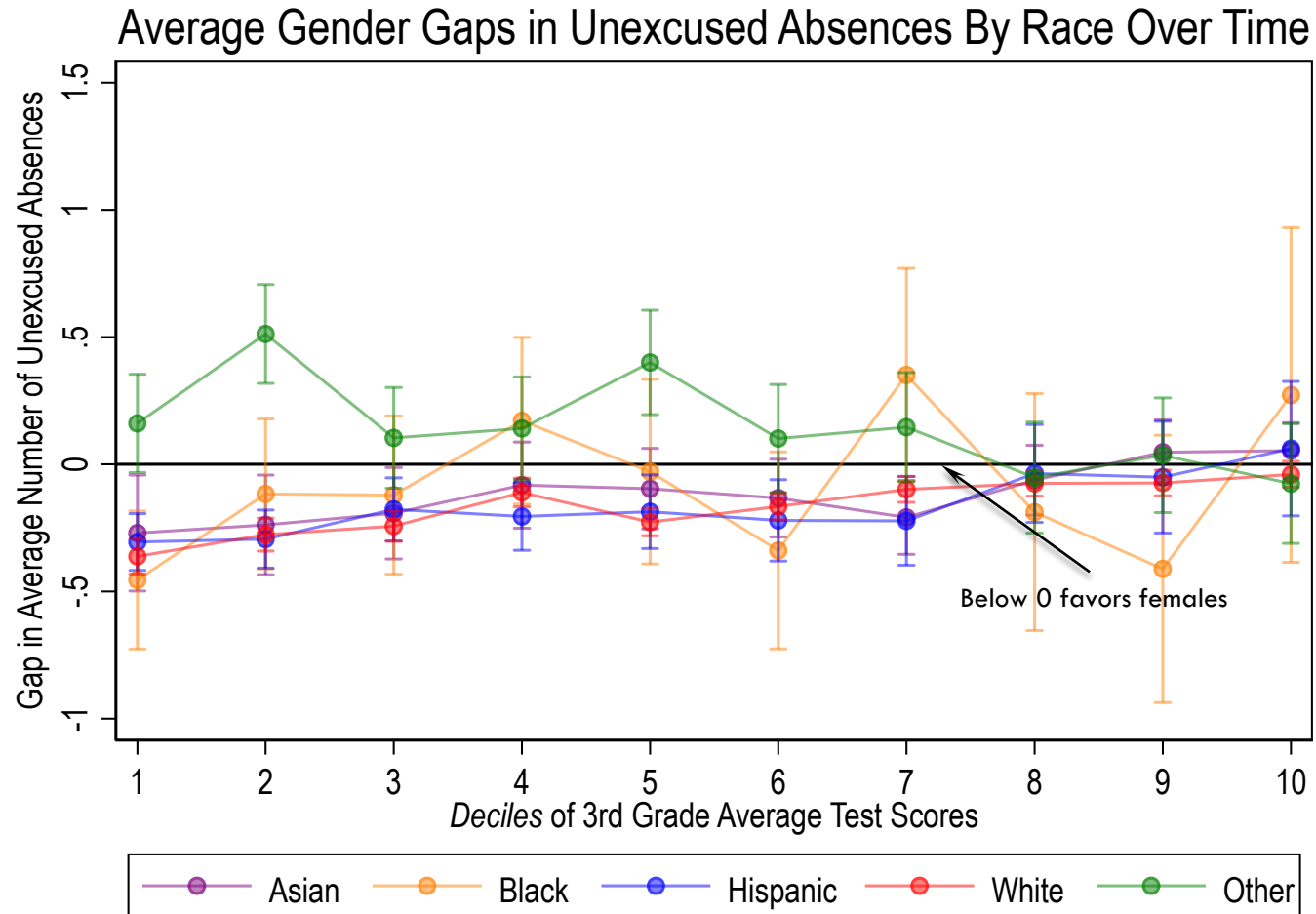


Gaps in Absences

Across Test Score Deciles by Race

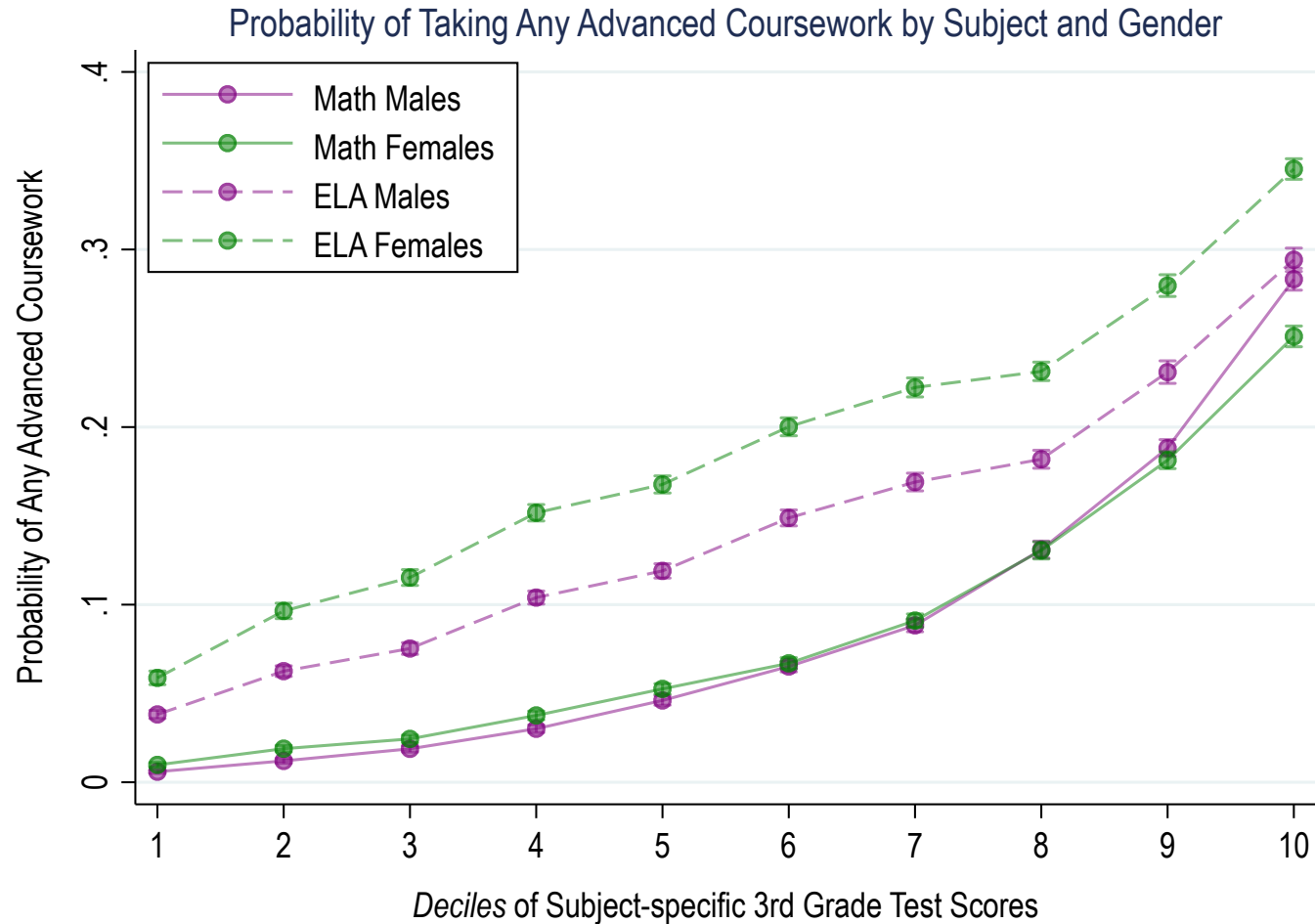


Gaps in *Unexcused Absences* Across Test Score Deciles by Race

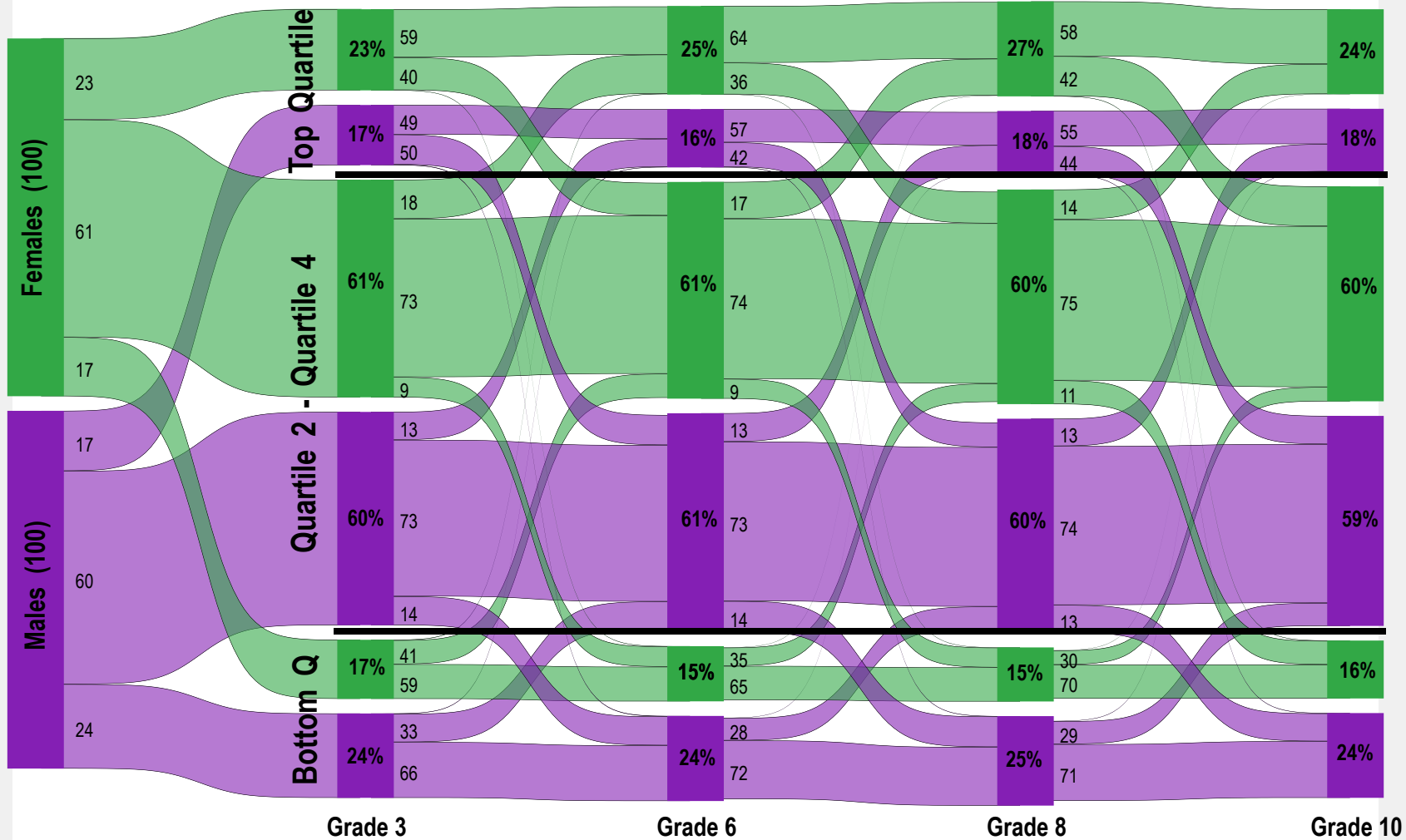


Marginal Effects—Advanced Coursework

31

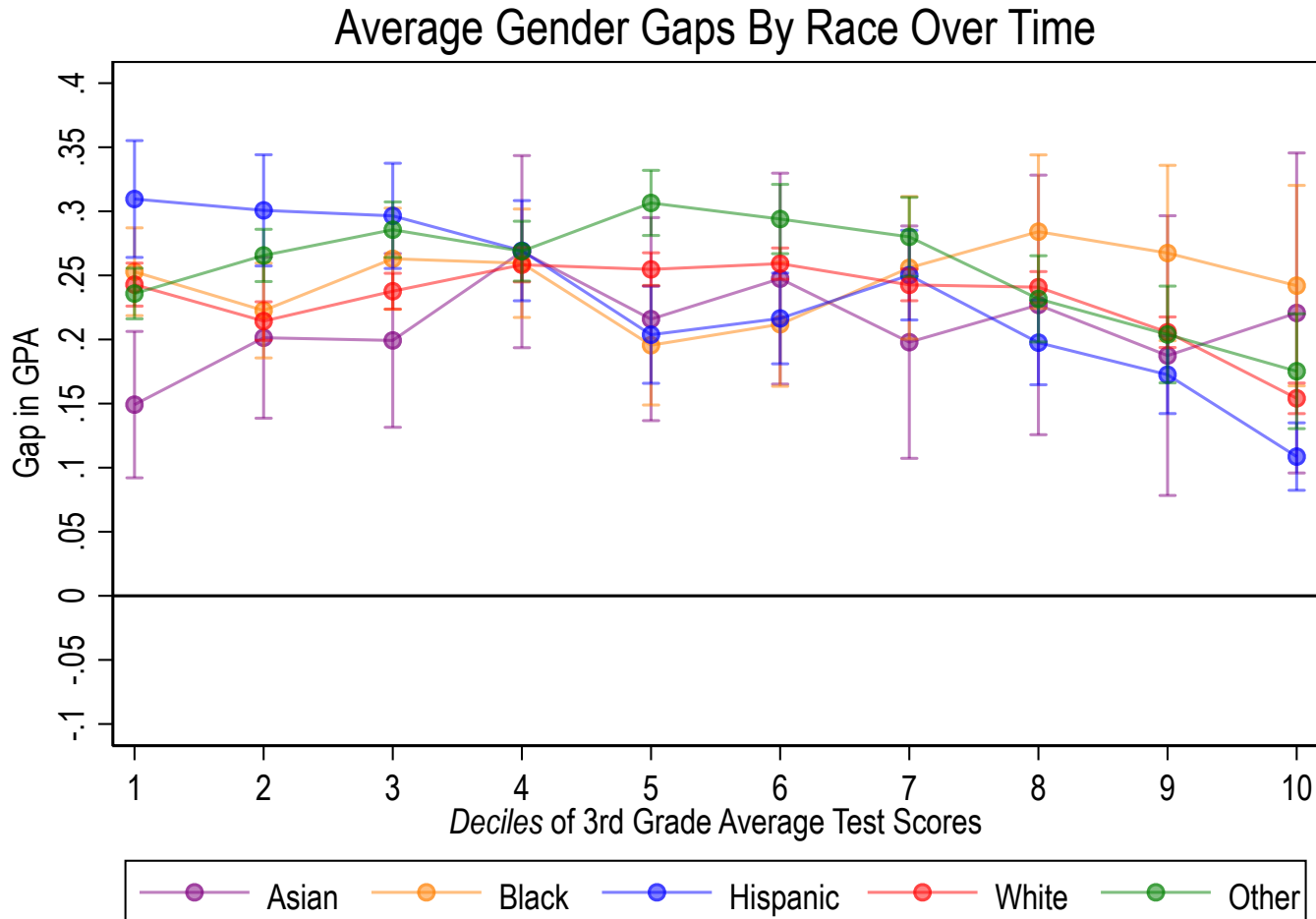


Transitions by Quintiles in Reading across Grades and by Gender



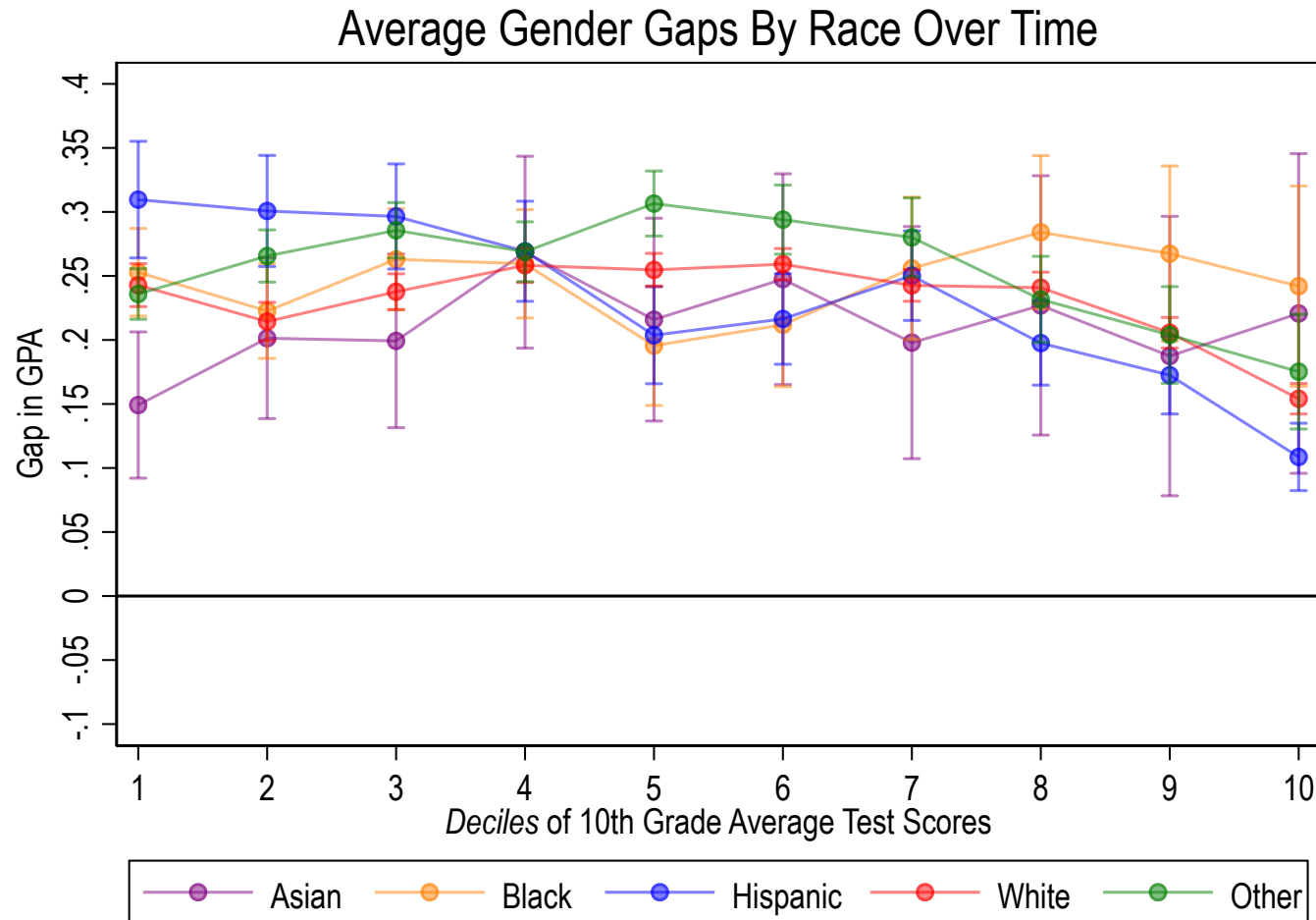
Gaps in GPA by Gender and Race (with 3rd grade test score as predictor)

33



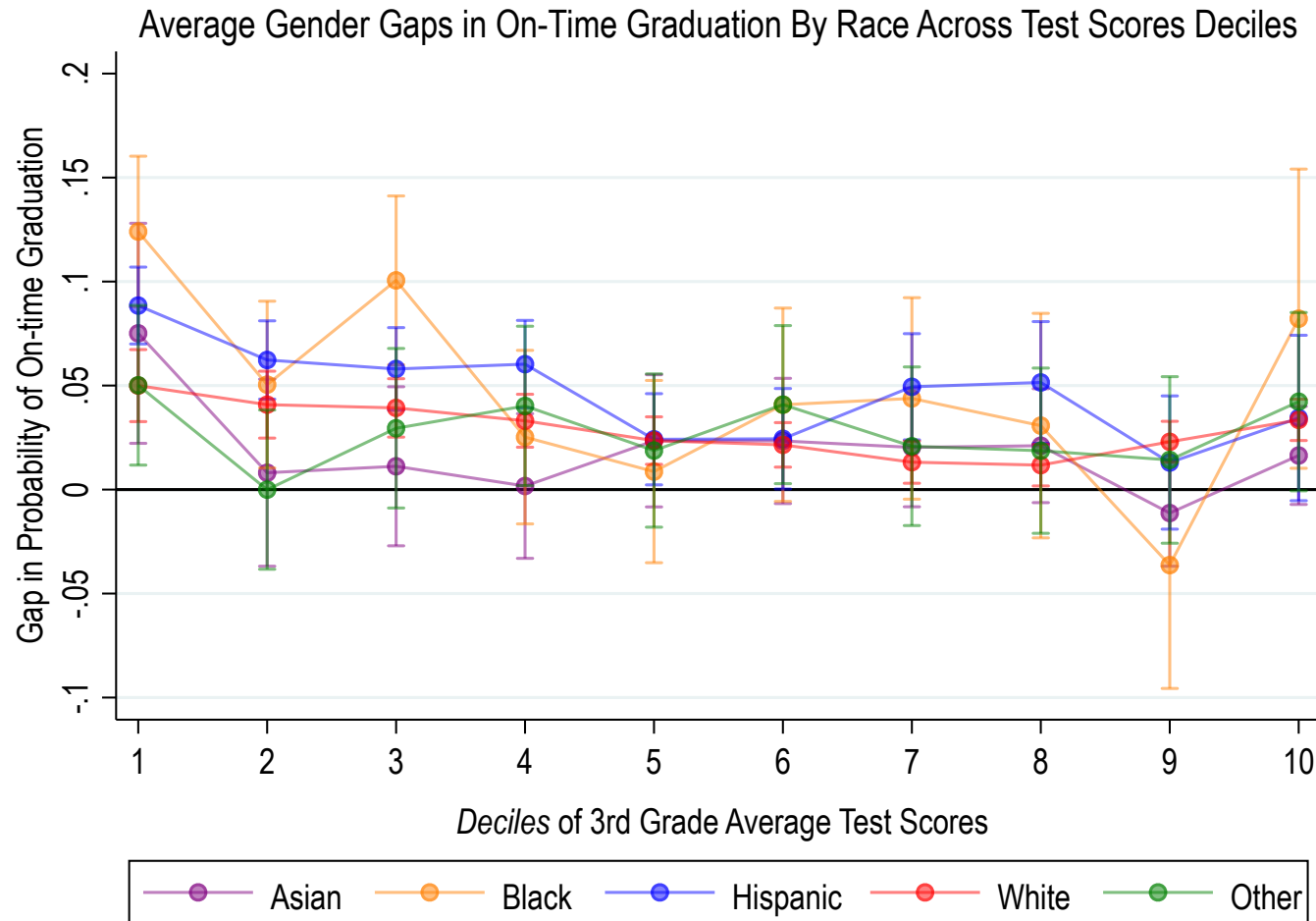
Gaps in GPA by Gender and Race (with 10th grade test score as predictor)

34



Gender Gaps in Graduation by Race

35



Gender Gaps in Math Test Scores by Race and Grade

Average Gender Gaps By Race Over Time

