Center for Education Policy Research
HARVARD UNIVERSITY

Trends in Student Achievement in WCPSS

Review of Preliminary Findings

June 21, 2011

Agenda

- Review results from analysis of student achievement data
- Discuss questions and additional analyses of interest

Results from analysis of student achievement data

Key Points

1. The implementation of the state retest policy in the 2008-09 school year distorts the picture of trends in student achievement.
2. Average achievement in WCPSS has trended upward over the past several years.
3. WCPSS outperforms North Carolina as a whole, but the gap in average achievement between the district and the state has narrowed somewhat.
4. In general, achievement gaps by race / ethnicity and free and reduced lunch (F&R) status are large and have remained relatively stable over the past several years.
5. However, conclusions regarding trends in achievement gaps by race / ethnicity and by F&R status are sensitive to test score metric.
6. F&R status is related to extent of year-to-year growth in achievement.

Analysis of student achievement trends

- Analytic decisions and rationale
- Overall district performance
- Achievement gaps and trends
- Growth in student achievement over time
- Schools and Performance

Analysis of student achievement trends

- **Analytic decisions and rationale**
- Overall district performance
- Achievement gaps and trends
- Growth in student achievement over time
- Schools and Performance

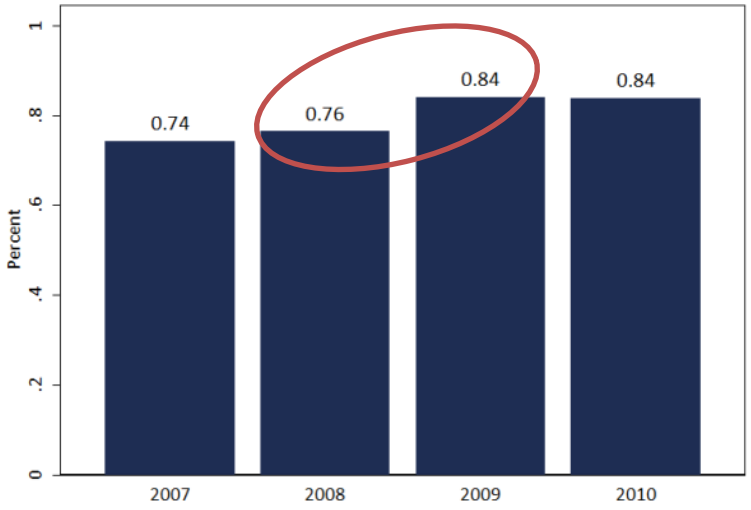
Analytic decisions and rationale

Analytic focus	Rationale
Student performance on EOG exams in reading and mathematics, grades 3 – 8.	Test scores are comparable across grades and across time. Data consistently available for large majority of students. Results not sensitive to drop out.
4 most recent years of data in math.	Math EOG exams rescaled in 2005-06 & modified tests consistent from 2006-07.
3 most recent years of data in reading.	Reading EOG exams rescaled in 2007-08 & modified tests consistent from 2007-08.
Performance for students taking unmodified tests only.	96% of students. Modified tests scored on different scales.
Performance on first administration of test (except for those missing test score information from first administration).	Retest policy implemented in 2008-09. NC DPI notes that performance results before and after implementation of retest policy are not comparable.

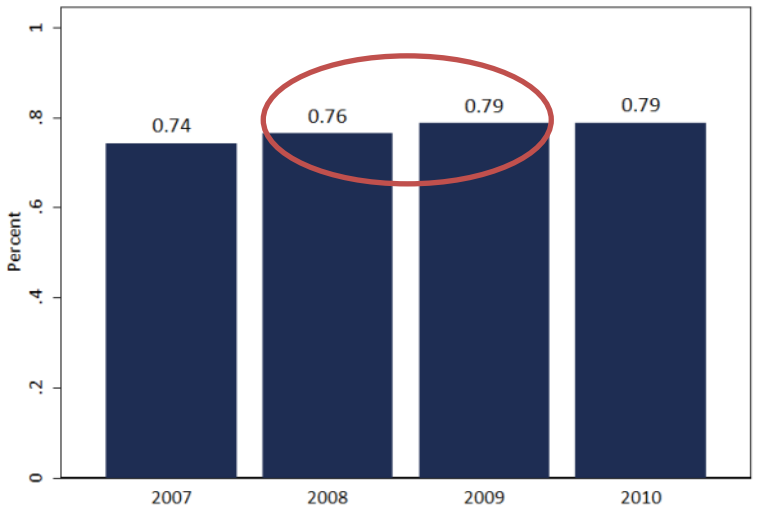
Retest policy increases the share of students achieving proficiency and disrupts comparability of proficiency rates across years

Percent proficient on grade 6 EOG mathematics assessment, by year

With retest data



Without retest data

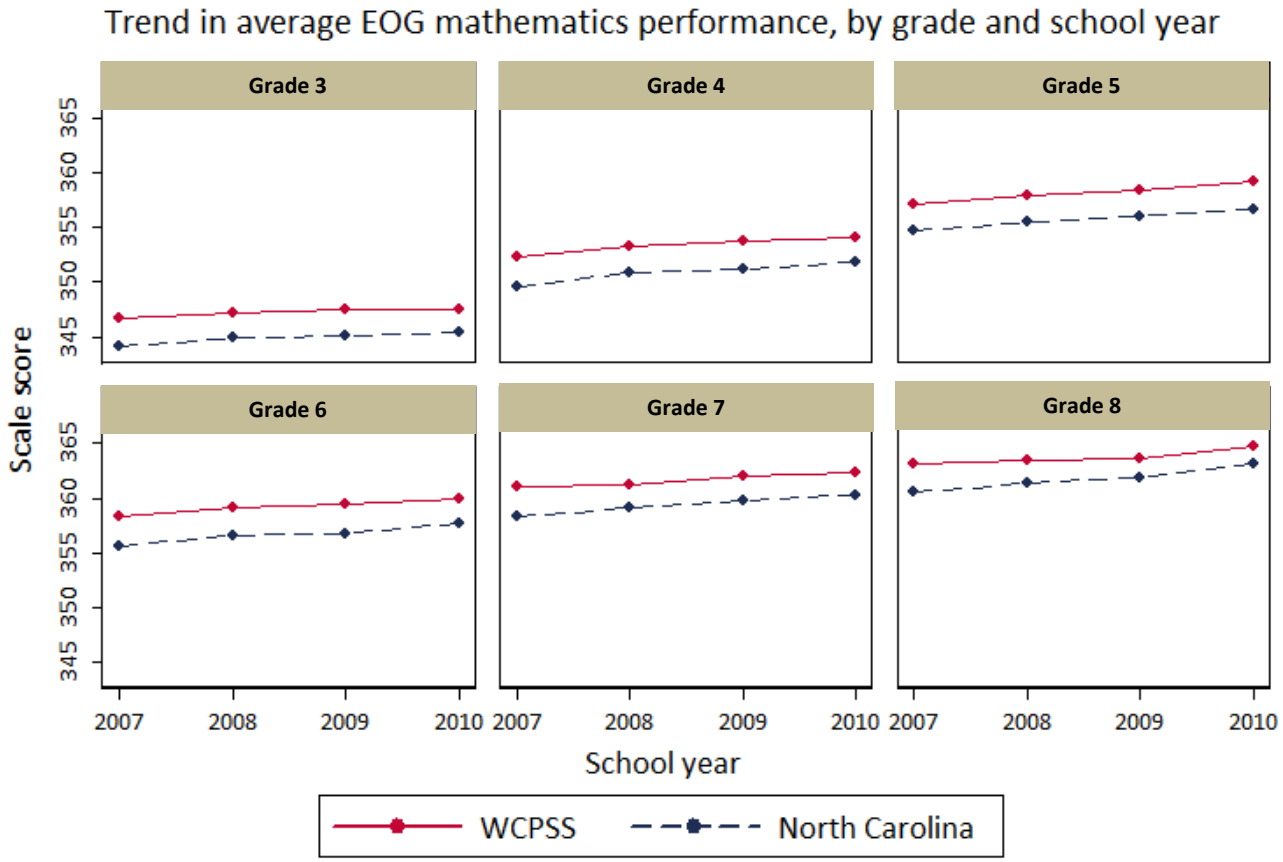


Therefore, we focus on scores from the first administration of each exam, except for those students for whom a valid first administration score is missing.

Analysis of student achievement trends

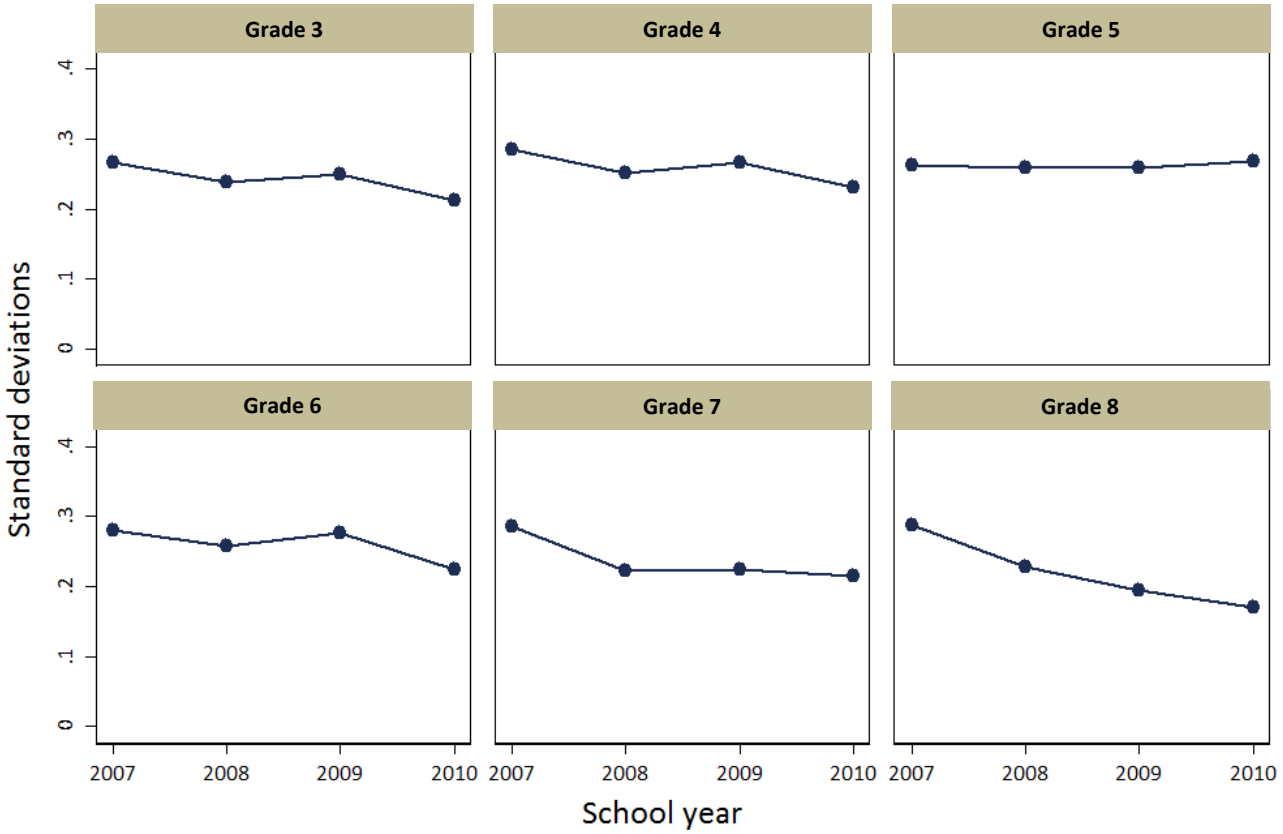
- Analytic decisions and rationale
- **Overall district performance**
- Achievement gaps and trends
- Growth in student achievement over time
- Schools and Performance

WCPSS students score higher in mathematics than students in NC as a whole

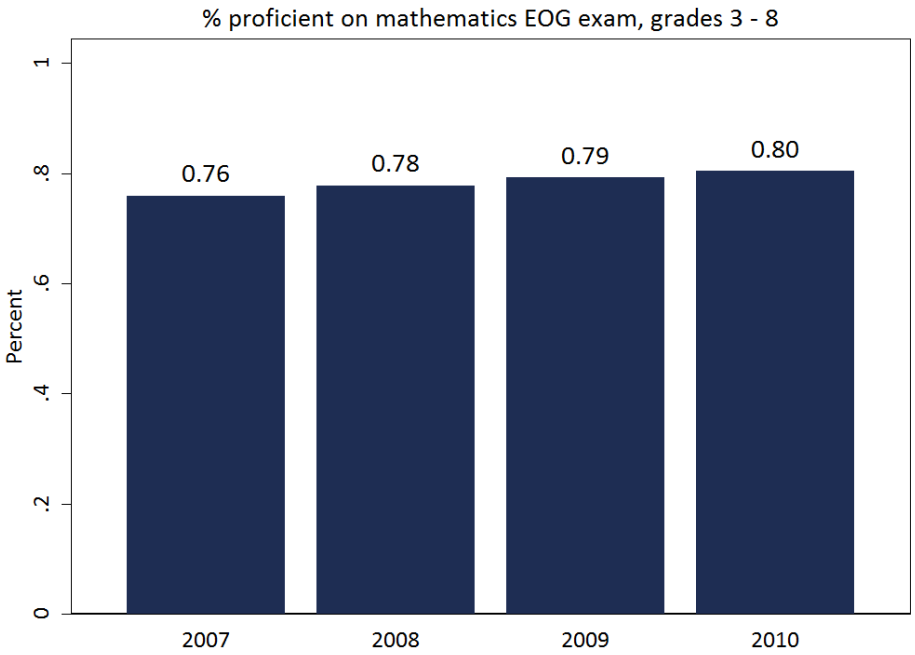


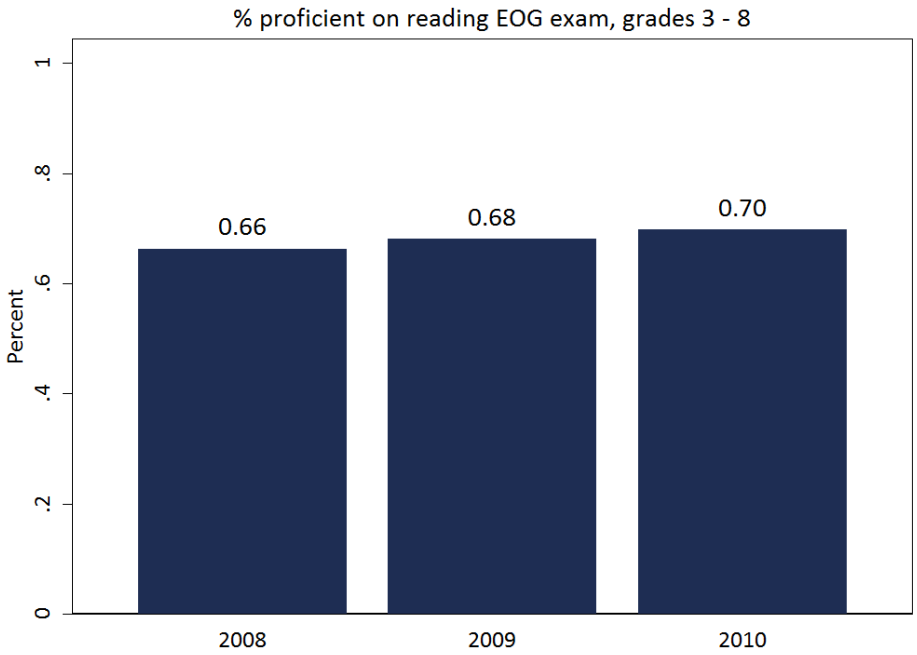
However, the WCPSS-NC mathematics performance differential has narrowed somewhat over past several years

Trend in district-state differential in EOG mathematics performance, by grade and school year



Modest improvements in overall percent proficient over time



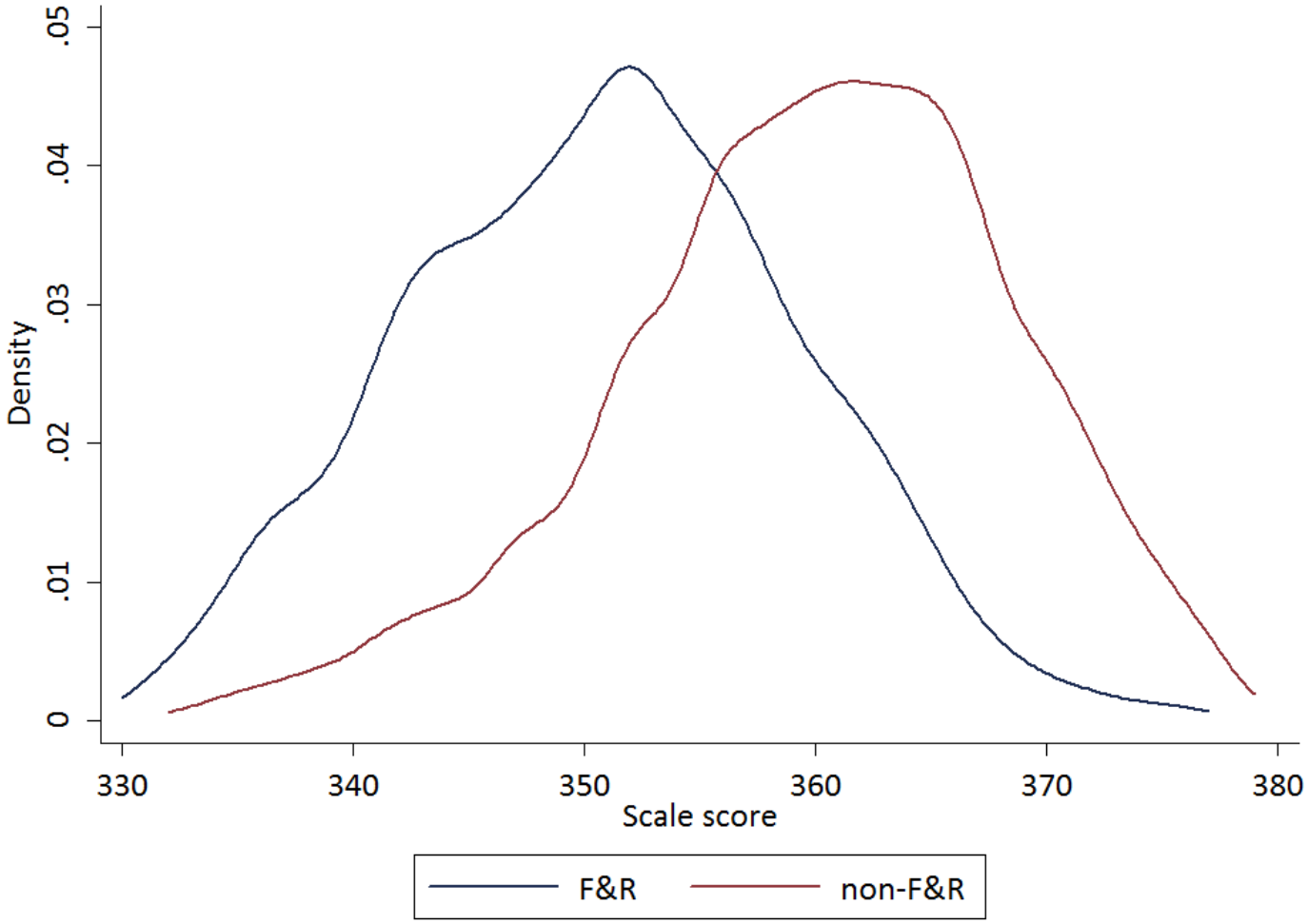


Analysis of student achievement trends

- Analytic decisions and rationale
- Overall district performance
- **Achievement gaps and trends**
- Growth in student achievement over time
- Schools and Performance

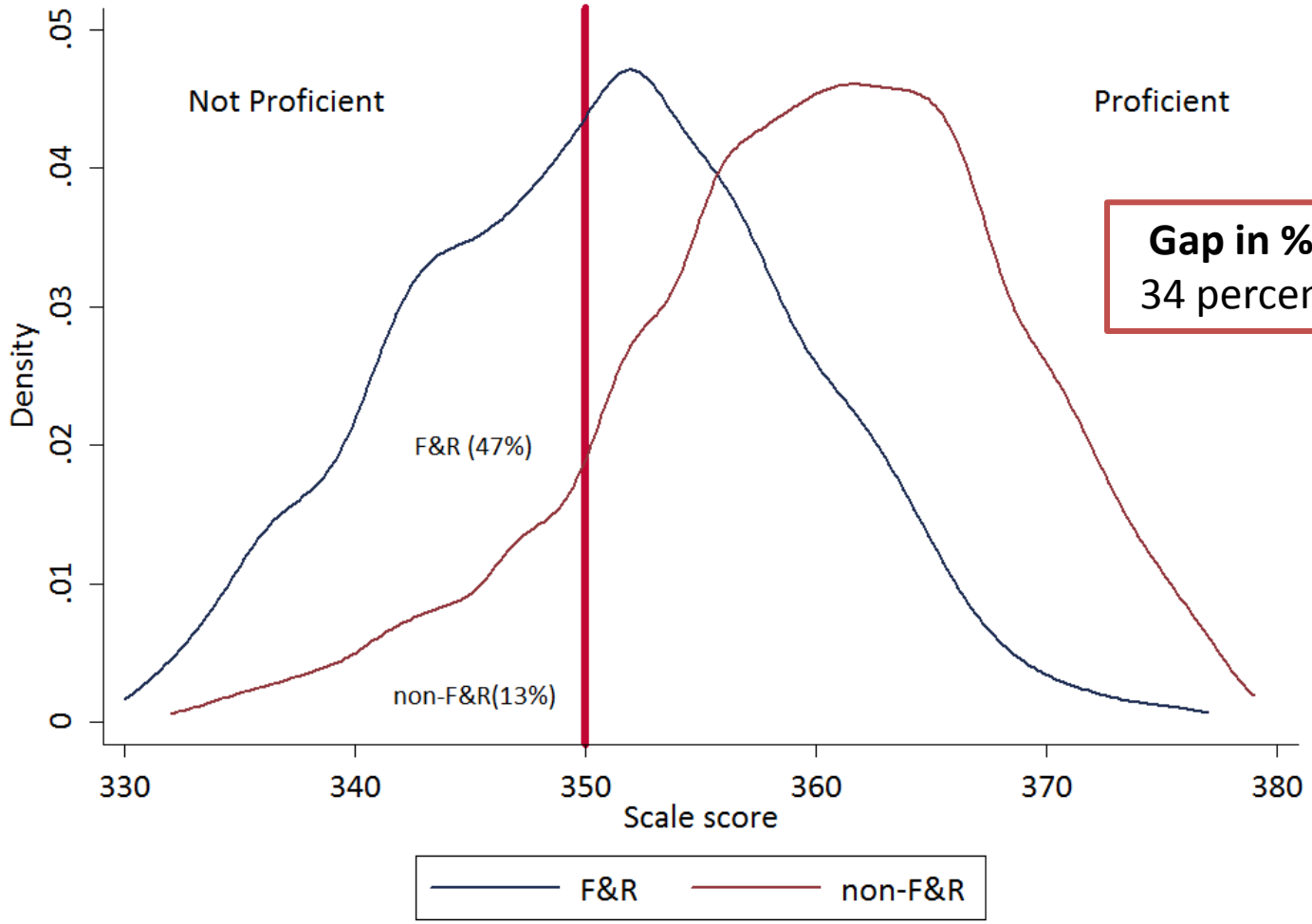
Measuring achievement gaps

Distribution of performance on grade 5 mathematics EOG assessment, by F&R status in 2006-07



Measuring achievement gaps: proficiency measure

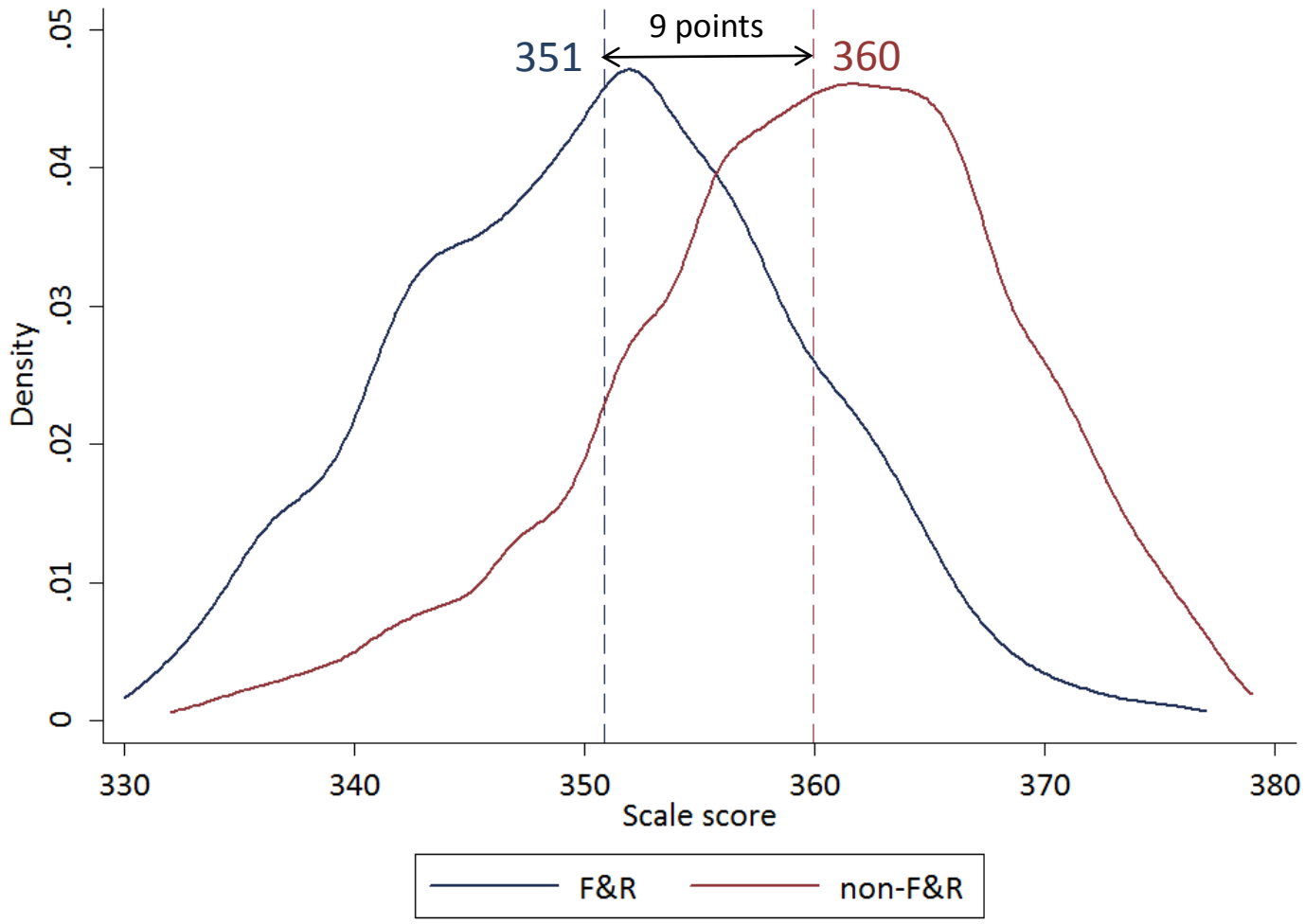
Distribution of performance on grade 5 mathematics EOG assessment, by F&R status in 2006-07



Gap in % proficient:
34 percentage points

Measuring achievement gaps: difference in means measure

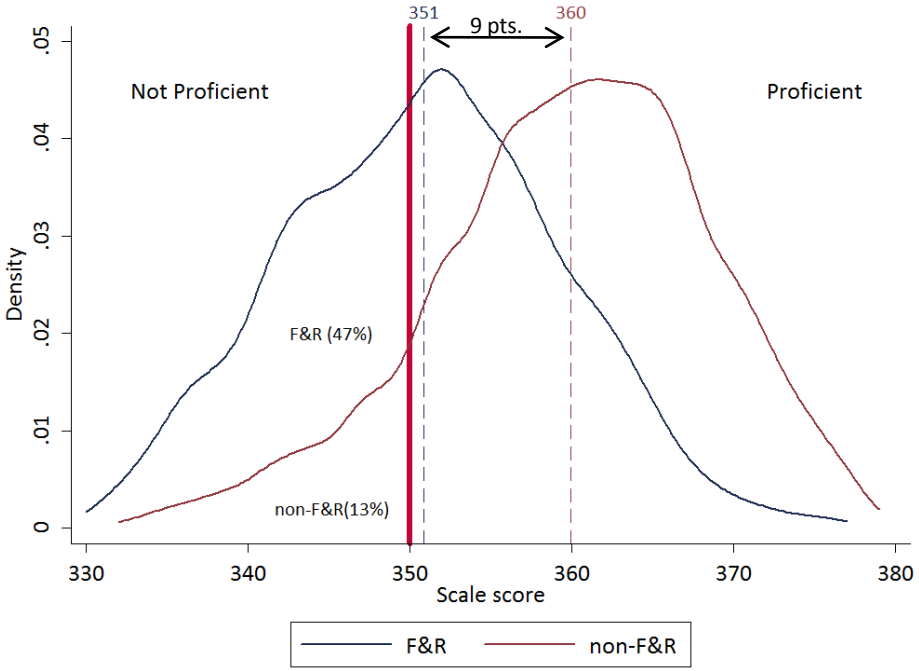
Distribution of performance on grade 5 mathematics EOG assessment, by F&R status in 2006-07



Assessment of achievement gap trends is sensitive to metric

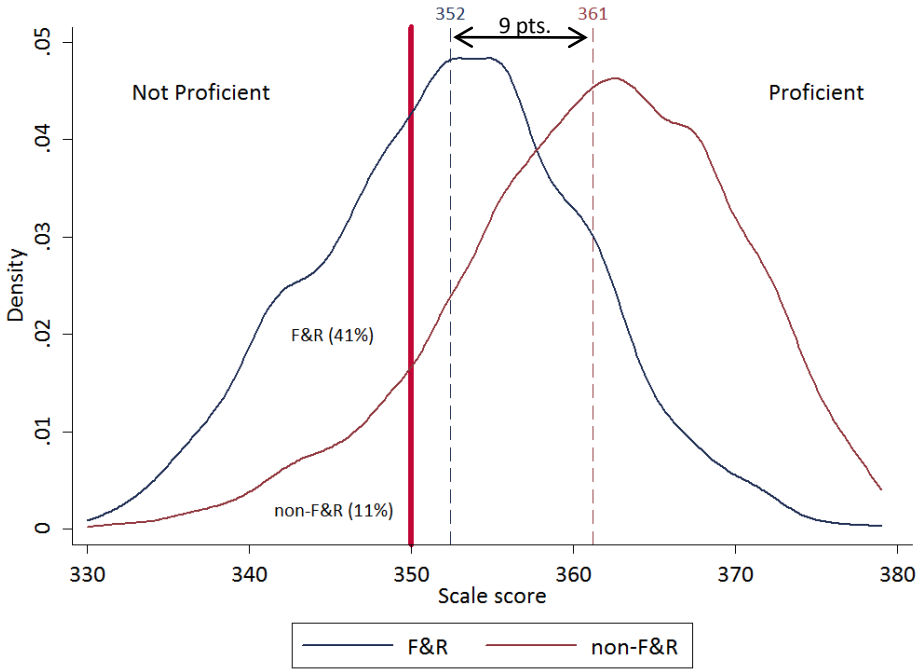
2006-07

Distribution of grade 5 mathematics EOG scores, by F&R status



2008-09

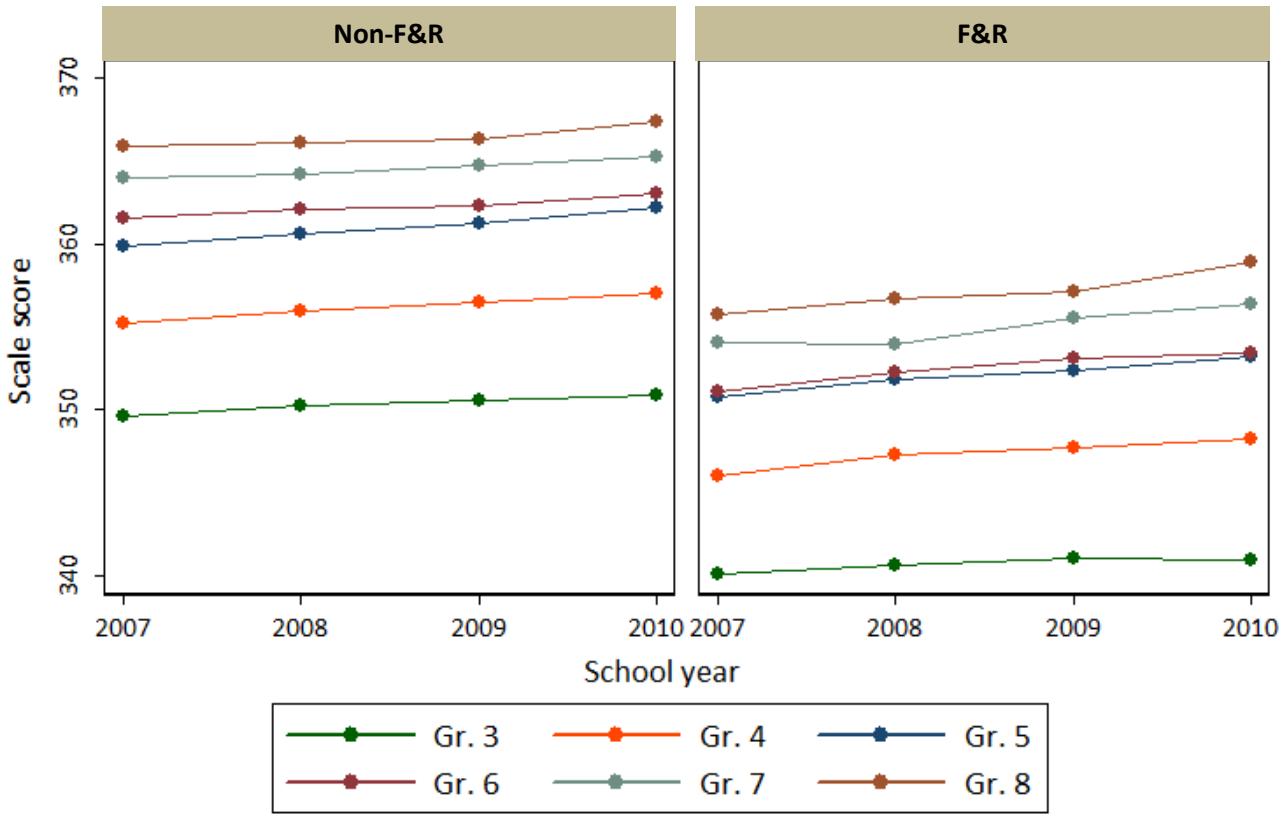
Distribution of grade 5 mathematics EOG scores, by F&R status



Gap metrics	2006-07	2008-09	Change
Gap in scale score points	9 points	9 points	0 points
Gap in % Proficient	34 percentage points	30 percentage points	4 percentage points

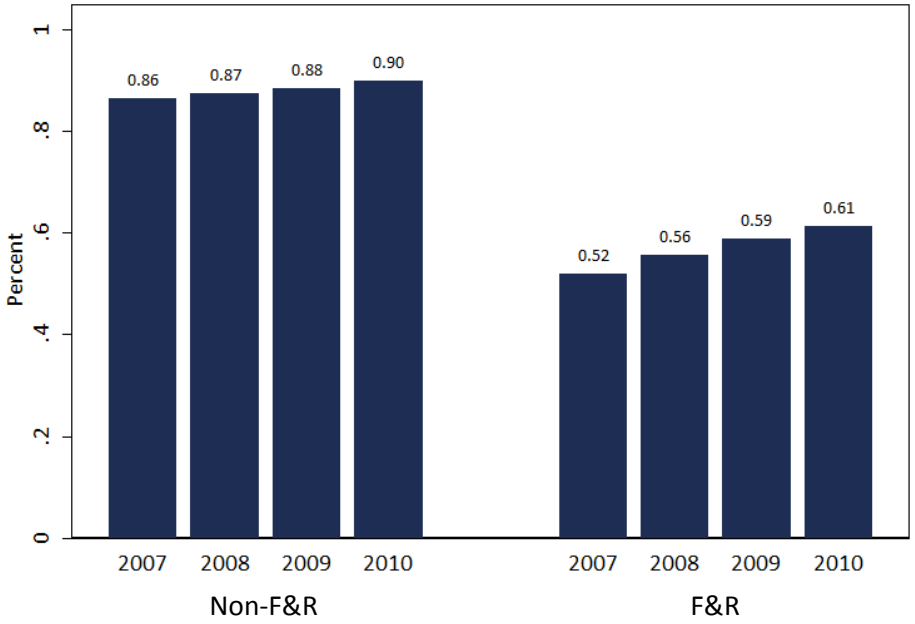
In all grades, substantial gaps in average scale score between F&R and non-F&R students persist over time

Trend in average mathematics EOG performance, by F&R status and grade

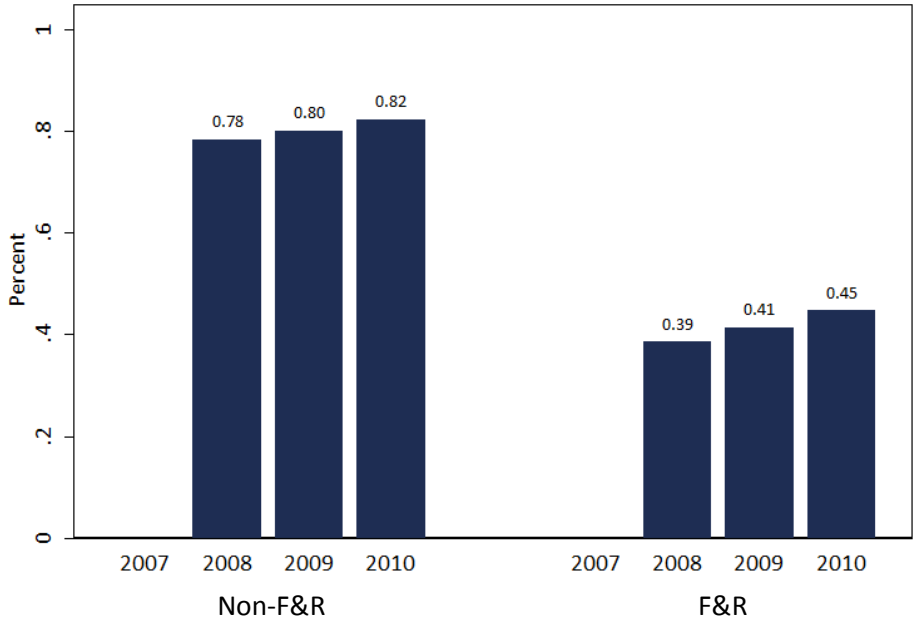


While gaps in *proficiency* between F&R and non-F&R students have narrowed

% proficient on EOG mathematics assessment, by F&R status

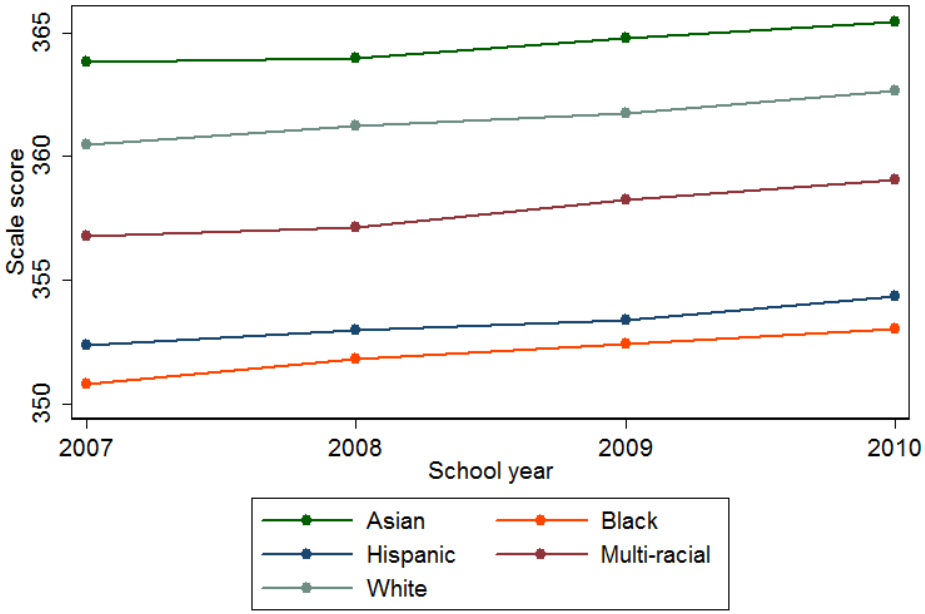


% proficient on EOG reading assessment, by F&R status

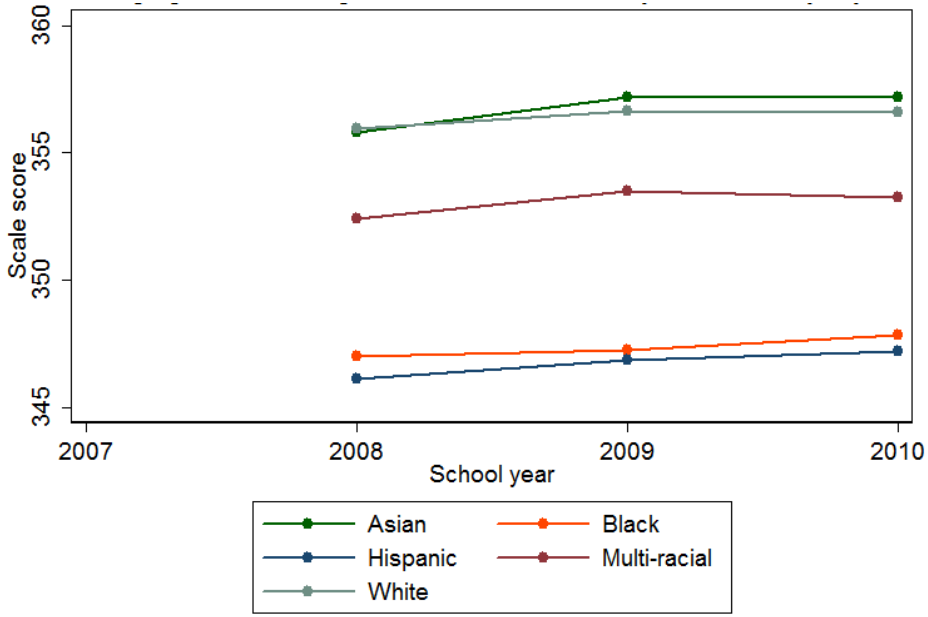


In all grades, substantial gaps in average scale score by student race / ethnicity persist over time

Avg. grade 5 EOG mathematics performance, by race / ethnicity

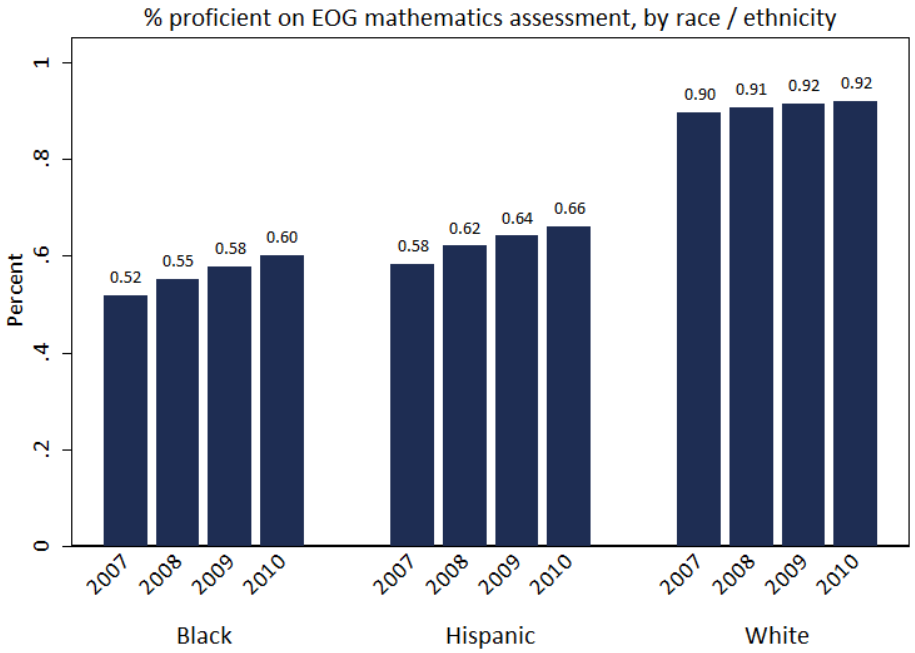


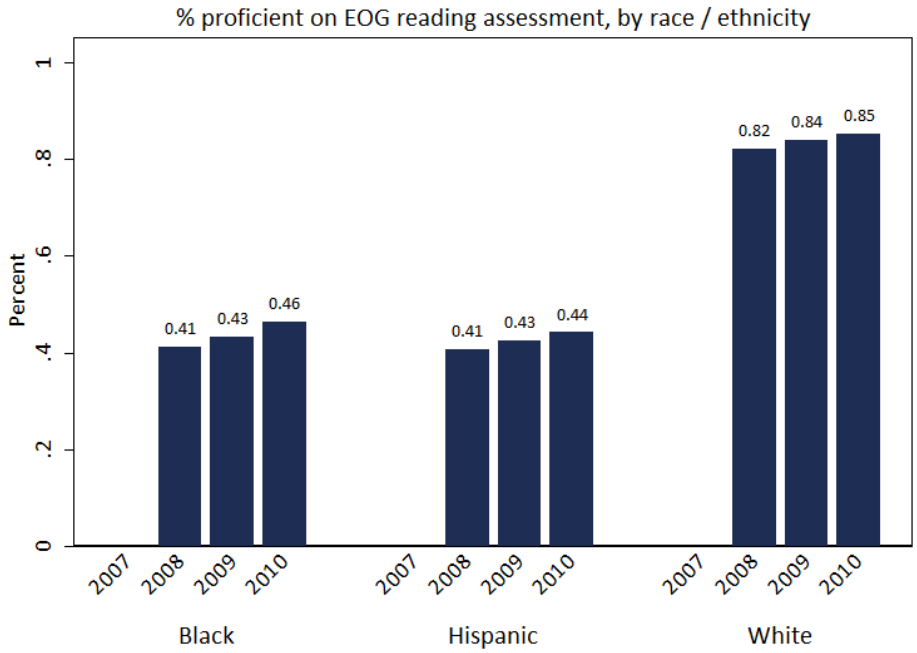
Avg. grade 5 EOG reading performance, by race / ethnicity



Patterns are similar across grades 3-8.

While black-white and Hispanic-white gaps in *proficiency* have narrowed





Summary of achievement gap trends

Based on performance on grade 5 mathematics EOG assessment

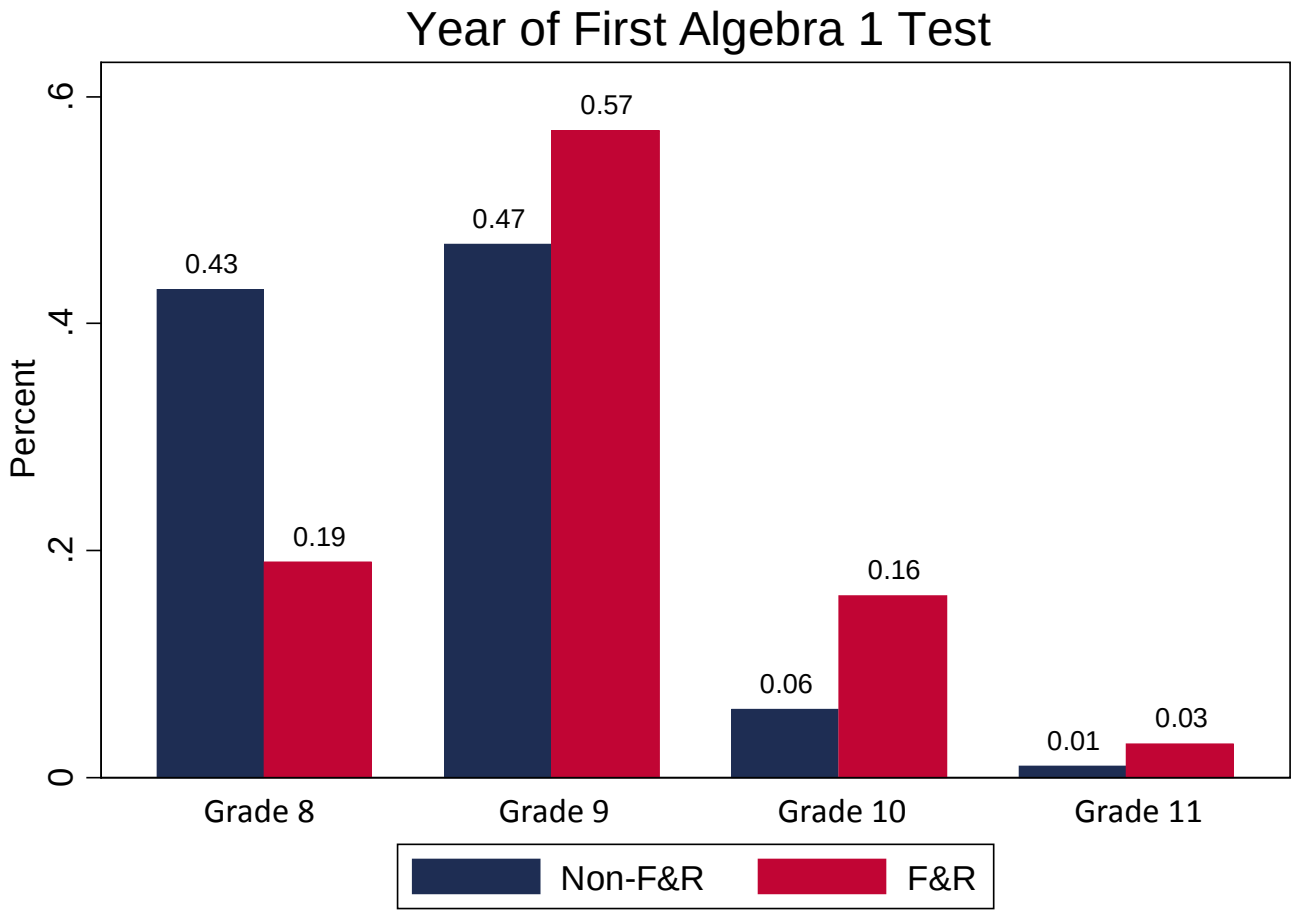
Black – White Gap	2006-07	2007-08	2008-09	2009-10	Trend in Gap
Gap in scale score points	-10 points	-9 points	-9 points	-10 points	→
Gap in % proficient	-37 %age points	-34 %age points	-31 %age points	-31 %age points	↓

Hispanic – White Gap	2006-07	2007-08	2008-09	2009-10	Trend in Gap
Gap in scale score points	-8 points	-8 points	-8 points	-8 points	→
Gap in % proficient	-29 %age points	-28 %age points	-27 %age points	-25 %age points	↓

Asian – White Gap	2006-07	2007-08	2008-09	2009-10	Trend in Gap
Gap in scale score points	3 points	2 points	3 points	2 points	→
Gap in % proficient	4 %age points	1 %age point	2 %age points	2 %age points	↓

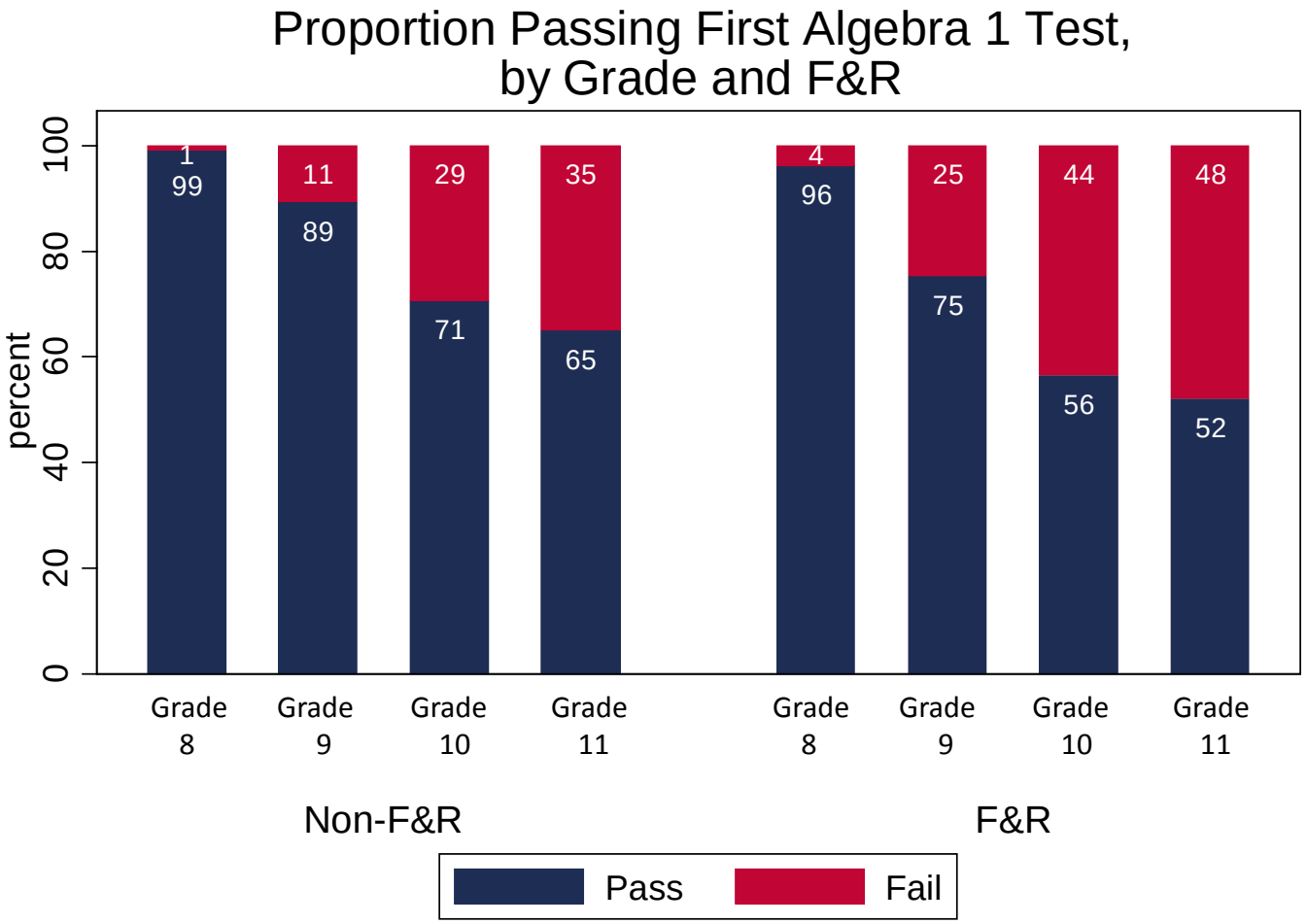
F&R – non-F&R Gap	2006-07	2007-08	2008-09	2009-10	Trend in Gap
Gap in scale score points	-9 points	-9 points	-9 points	-9 points	→
Gap in % proficient	-34 %age points	-30 %age points	-28 %age points	-29 %age points	↓

F&R students are less likely to take the Algebra 1 EOC Exam prior to HS

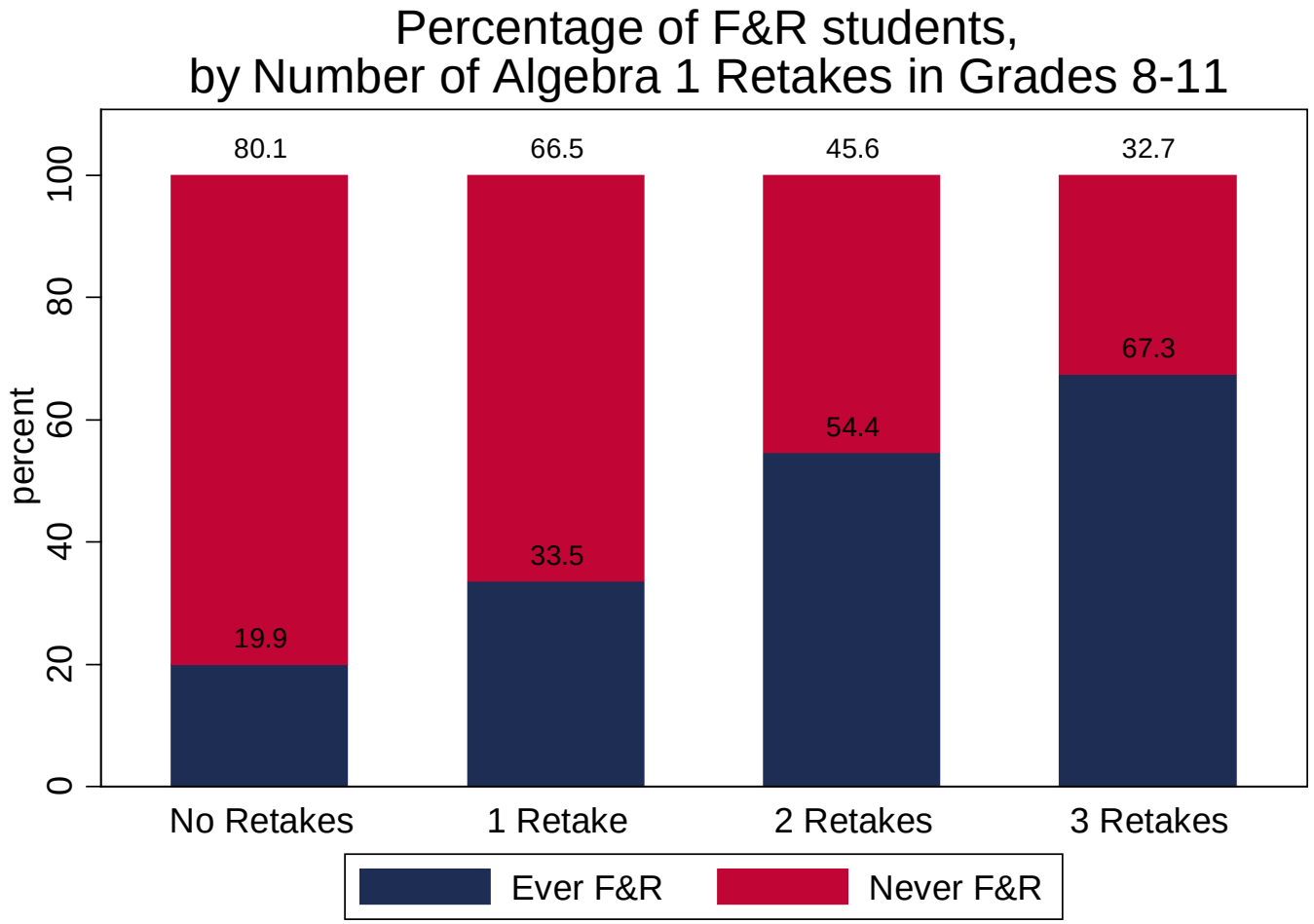


An additional 227 students took and passed the Algebra 1 EOC Exam in 6th or 7th grades. All but 2 were non-F&R.

Students who took the Algebra 1 EOC Exam after grade 9 passed at lower rates; this was especially true for F&R students



Those who retake the Algebra 1 EOC Exam are more likely to be F&R students

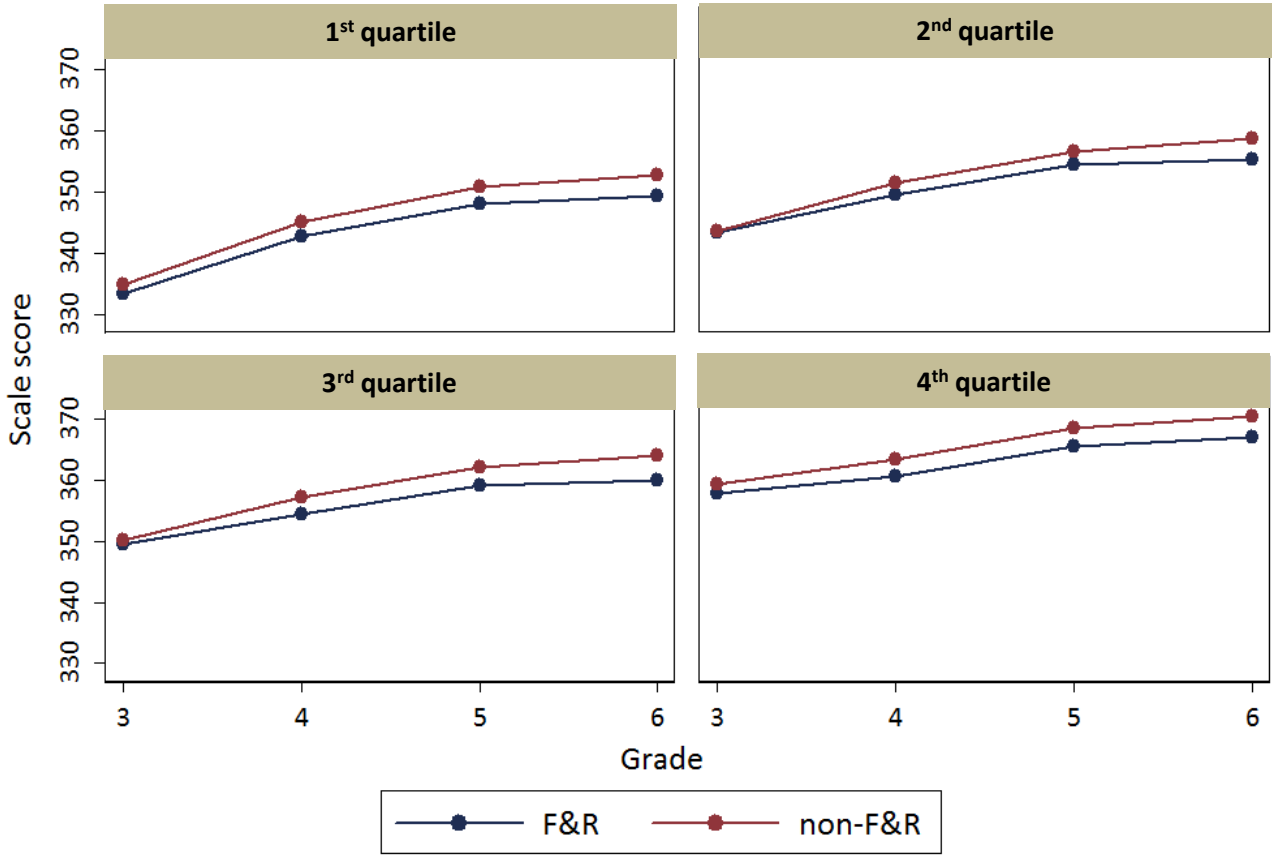


Analysis of student achievement trends

- Analytic decisions and rationale
- Overall district performance
- Achievement gaps and trends
- **Growth in student achievement over time**
- Schools and Performance

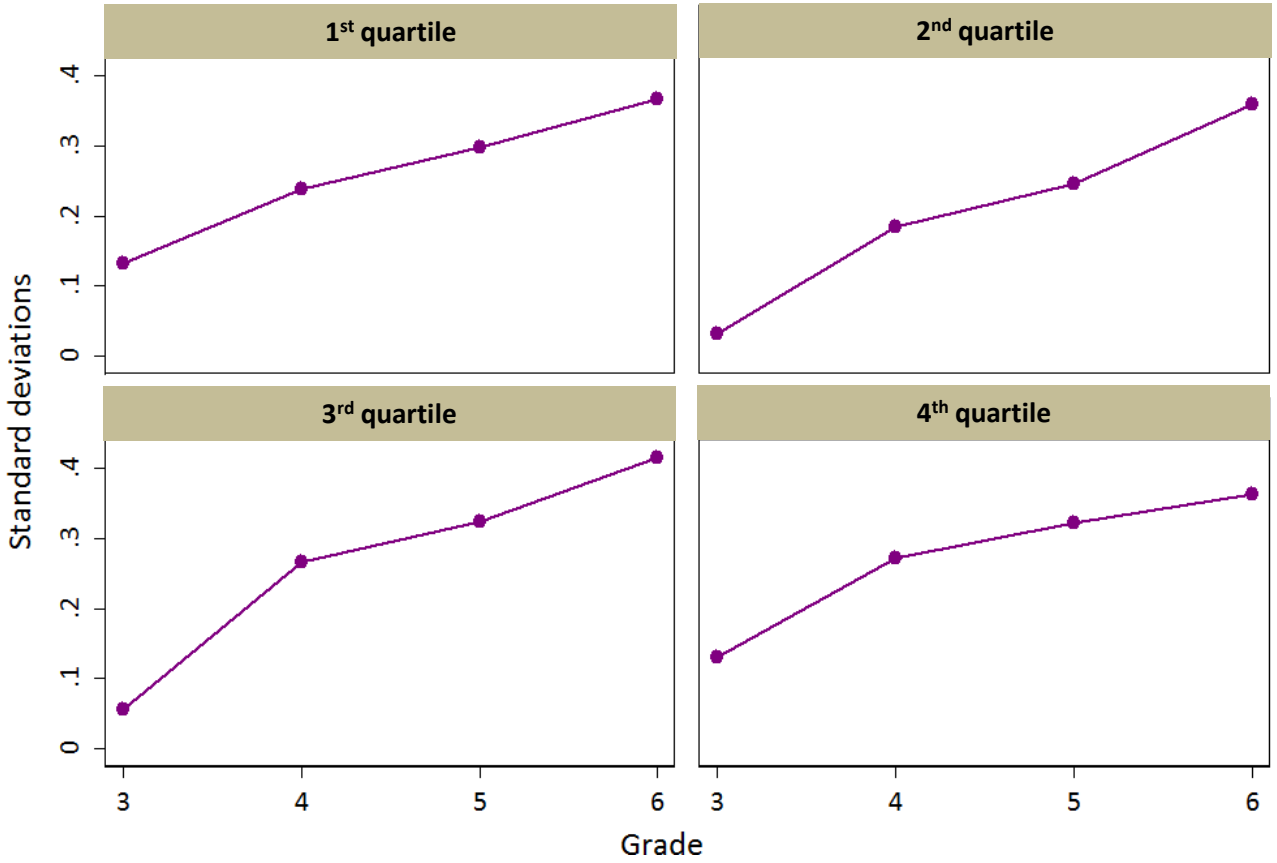
F&R students improve at slower rates than their non-F&R peers at the same initial achievement level

Average scale score trajectory on mathematics EOG assessment for cohort in grade 3 in 2006-07, by F&R status and initial performance quartiles



F&R students improve at slower rates than their non-F&R peers at the same initial achievement level

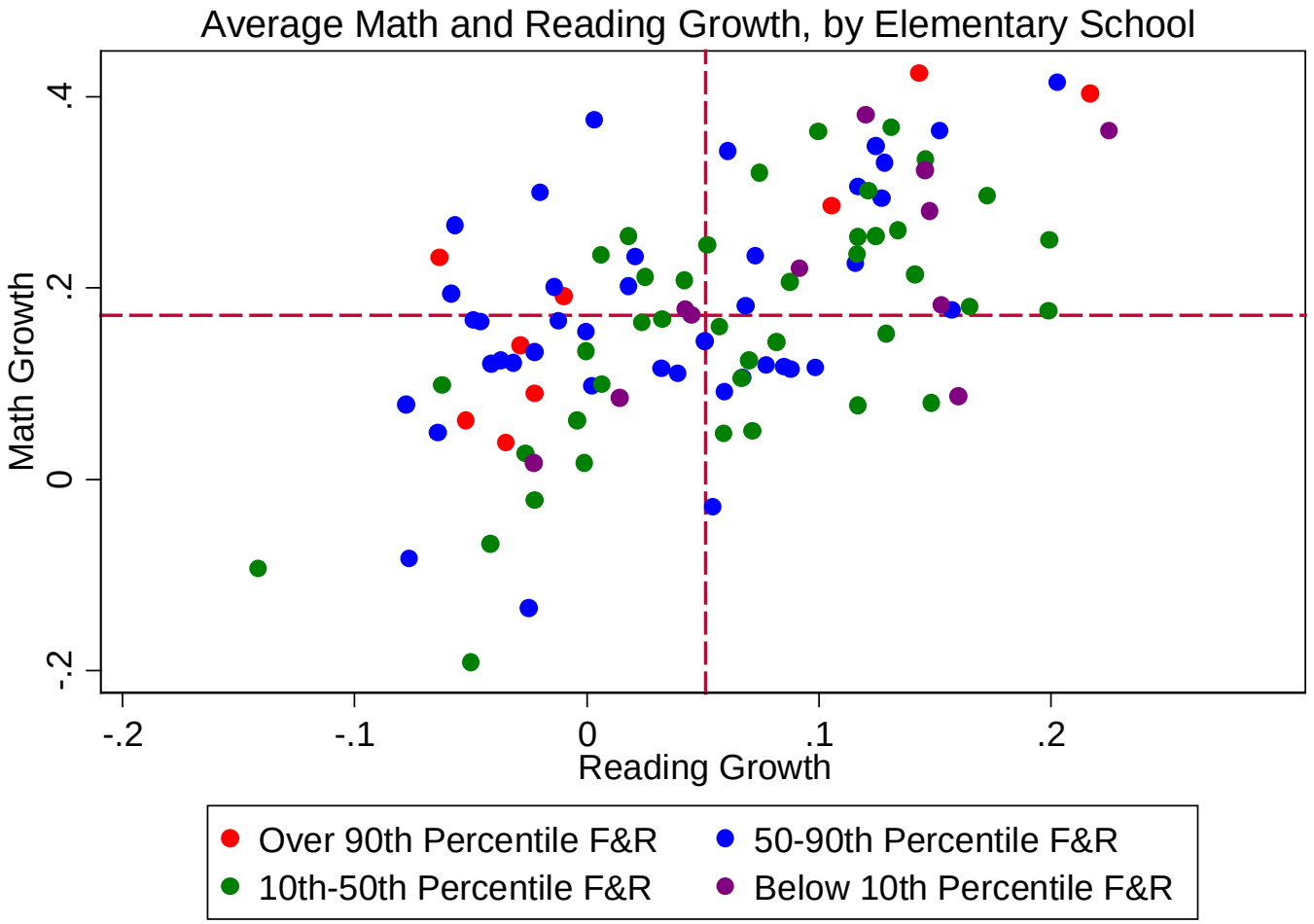
Difference over time in performance on mathematics EOG assessment for cohort in grade 3 in 2006-07, by F&R status and initial performance quartiles (standard deviation units)



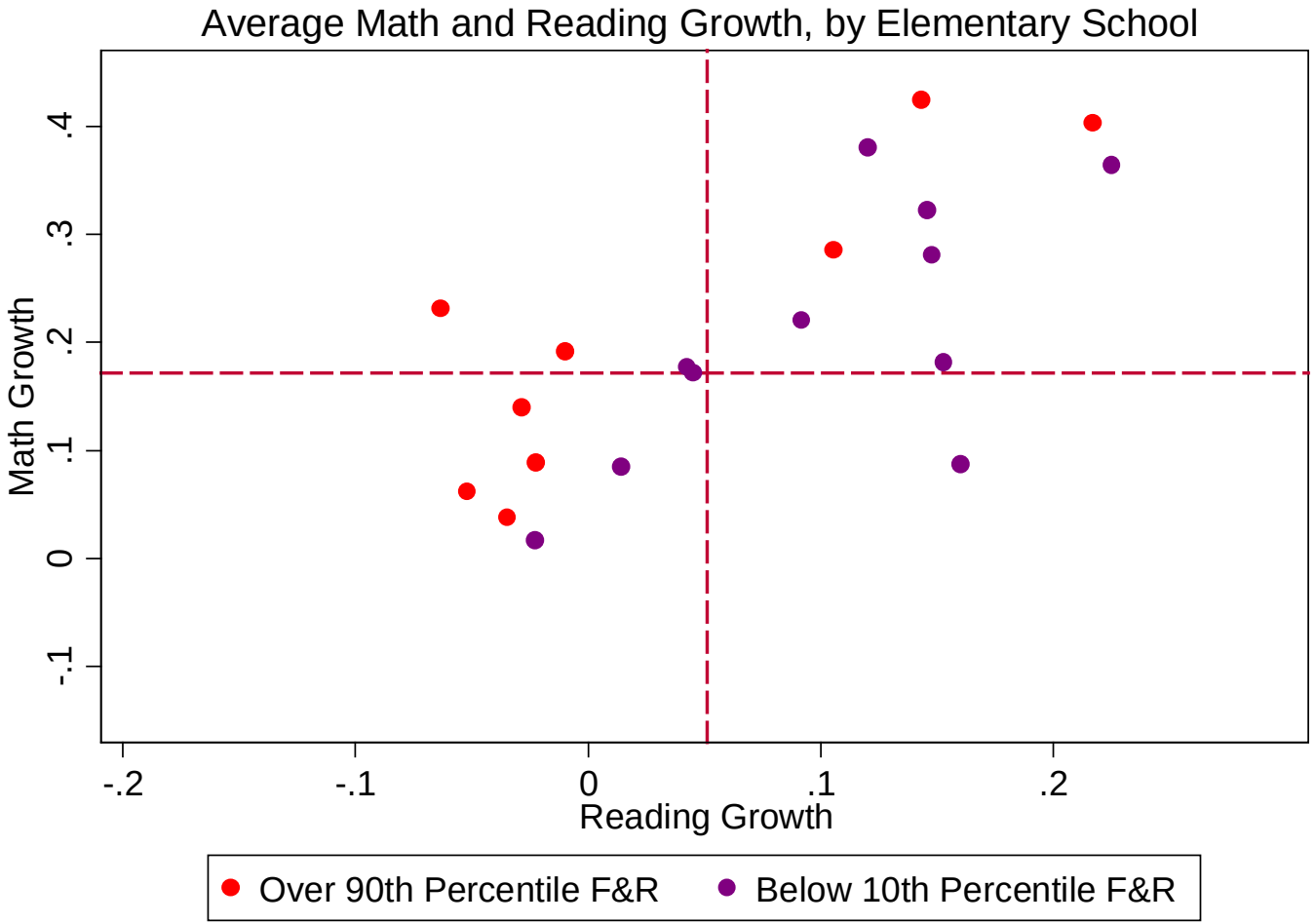
Analysis of student achievement trends

- Analytic decisions and rationale
- Overall district performance
- Achievement gaps and trends
- Growth in student achievement over time
- **Schools and Performance**

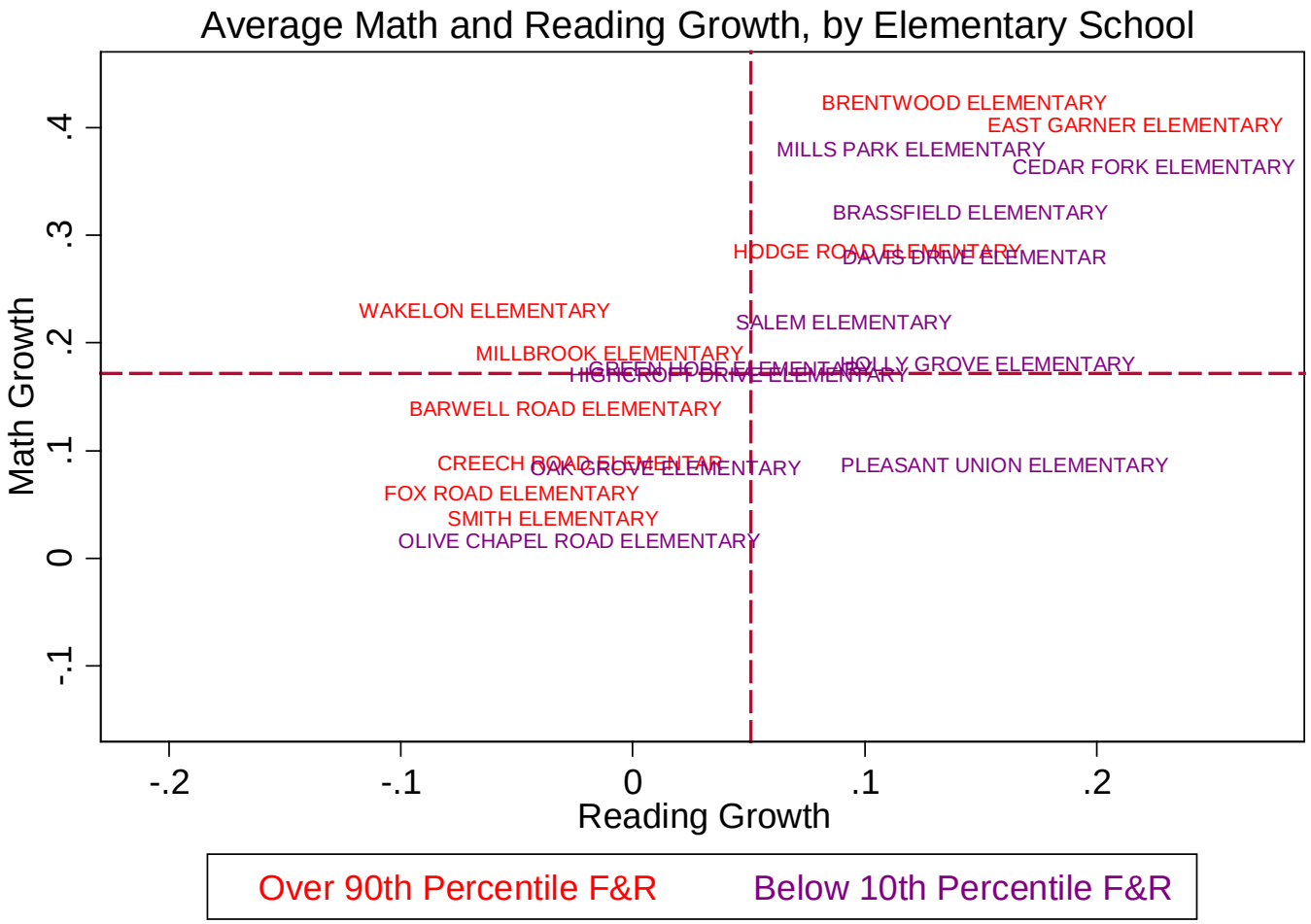
Schools that demonstrate high levels of growth in reading generally demonstrate high levels of growth in math



Schools with a high proportion of F&R students exhibit less growth than schools with a low proportion of F&R students, though there are exceptions



Schools with a high proportion of F&R students exhibit less growth than schools with a low proportion of F&R students, though there are exceptions



Questions and Discussion

- What questions emerge from the results presented?
- What additional analyses would be helpful?