MLDS CENTER
Maryland Longitudinal Data System

Better Data • Informed Choices • Improved Results

Poverty and Long-Term Educational Outcomes: Variation by Level of School Poverty, Student Poverty, and Local School System

Commission on Innovation and Excellence in Education

August 15, 2018

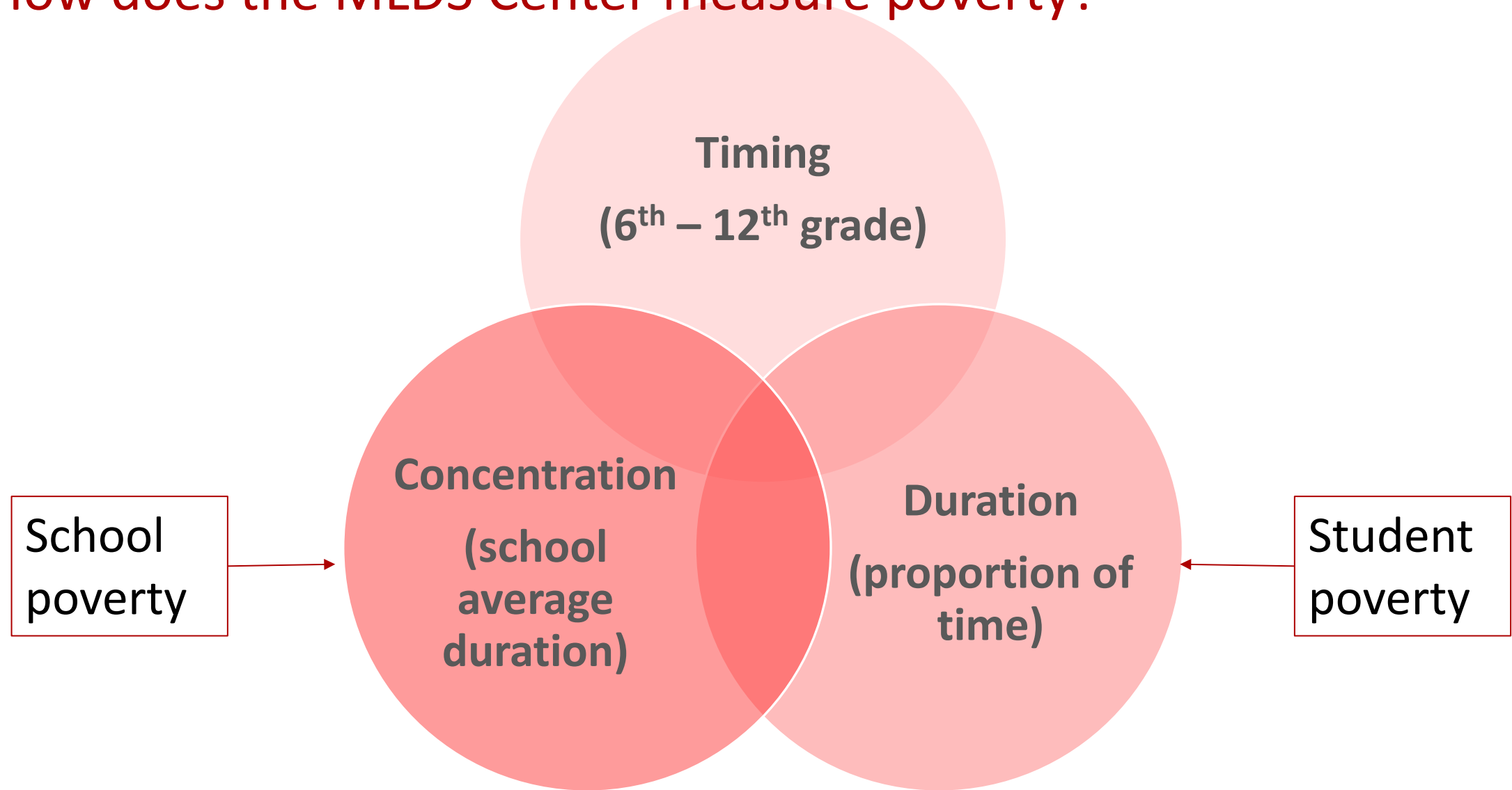https://mldscenter.maryland.gov

Introductions and Acknowledgements

- About the presenters:
  - *Angela K. Henneberger*, Ph.D., is director of the Research Branch at the MLDS Center and Research Assistant Professor at the University of Maryland School of Social Work (SSW).
  - *Bess A. Rose*, Ed.D., is a member of the Research Branch at the MLDS Center and statistician at the SSW.
- Acknowledgements:
  - Thanks to the MLDSC Research Team and Research and Policy Advisory Board, participants at the MLDS Research Series and MD Connections Summit, and MSDE staff for helpful input.
  - Thanks to Dr. Dawnsha Mushonga (SSW), Dr. Laura Stapleton, Yi Feng, and Tessa Johnson (University of Maryland, College Park) for expert consulting on statistical questions, and Alison Preston (SSW) for assistance with literature reviews.

Overview

- Recap of July 13 presentation and questions/requests
- New findings
  1. Threshold analyses
  2. Variation in role of school poverty across local school systems
- Q & A

Recap of July 13 presentation

How does the MLDS Center measure poverty?

Timing
(6th – 12th grade)

Concentration
(school average duration)

Duration
(proportion of time)

School poverty

Student poverty

Summary of previous findings

- Students who experienced poverty for longer periods of time have worse educational outcomes
- School concentration of poverty, regardless of individual experience, usually predicts worse educational outcomes
- Racial and ethnic gaps in standardized test scores persist regardless of poverty
- Racial and ethnic gaps in dropout, graduation, and postsecondary enrollment disappear or are reversed when controlling for poverty and school composition

Questions and requests

- Thresholds for school poverty
  - At what level of school poverty does school poverty begin to make a difference for student outcomes?
- Variation by local school system
  - How do student and school poverty vary across local school systems?
  - How do the roles of student and school poverty in long-term educational outcomes vary across local school systems?

1. Threshold analyses

At what level of school poverty does school poverty begin to make a difference for student outcomes?
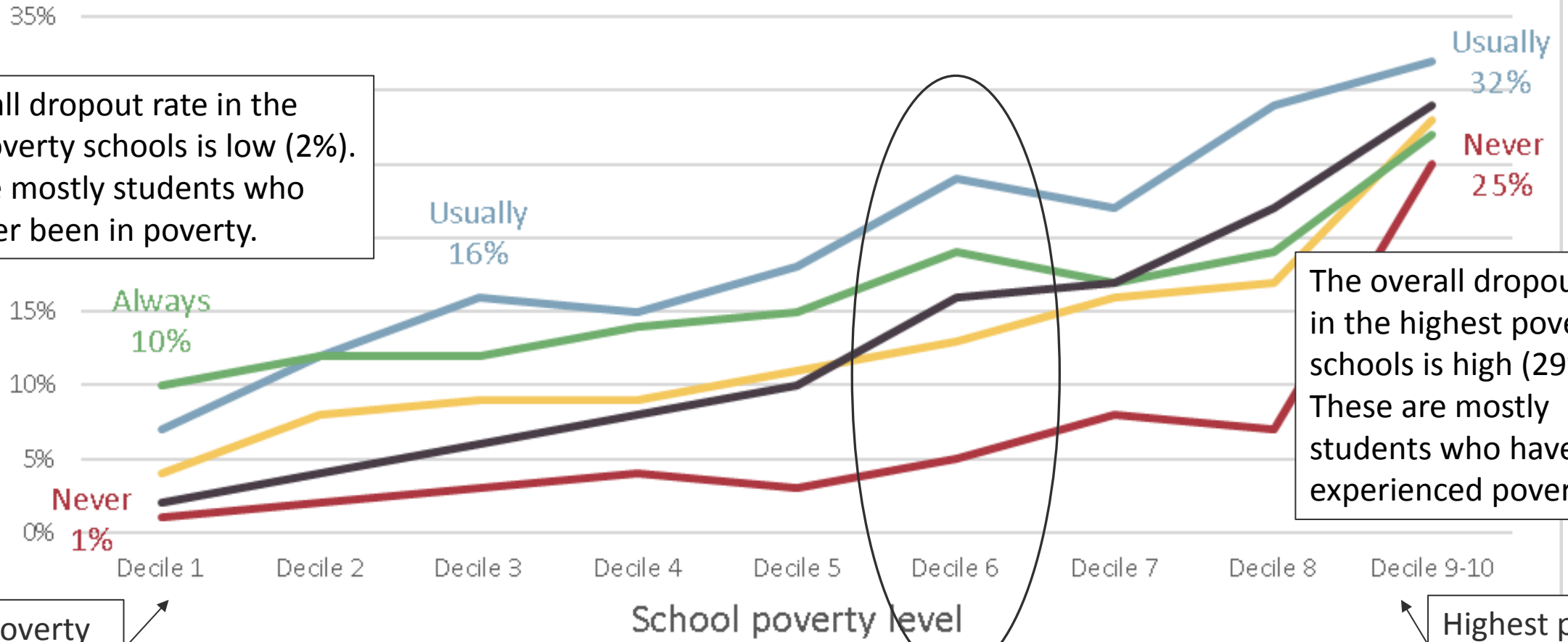
How do results differ from the results we previously presented?

- Previous results showed a linear relationship between school poverty and outcomes
- New results show a more nuanced relationship between school poverty and outcomes that allow us to analyze where the outcomes get better or worse at each level of school poverty
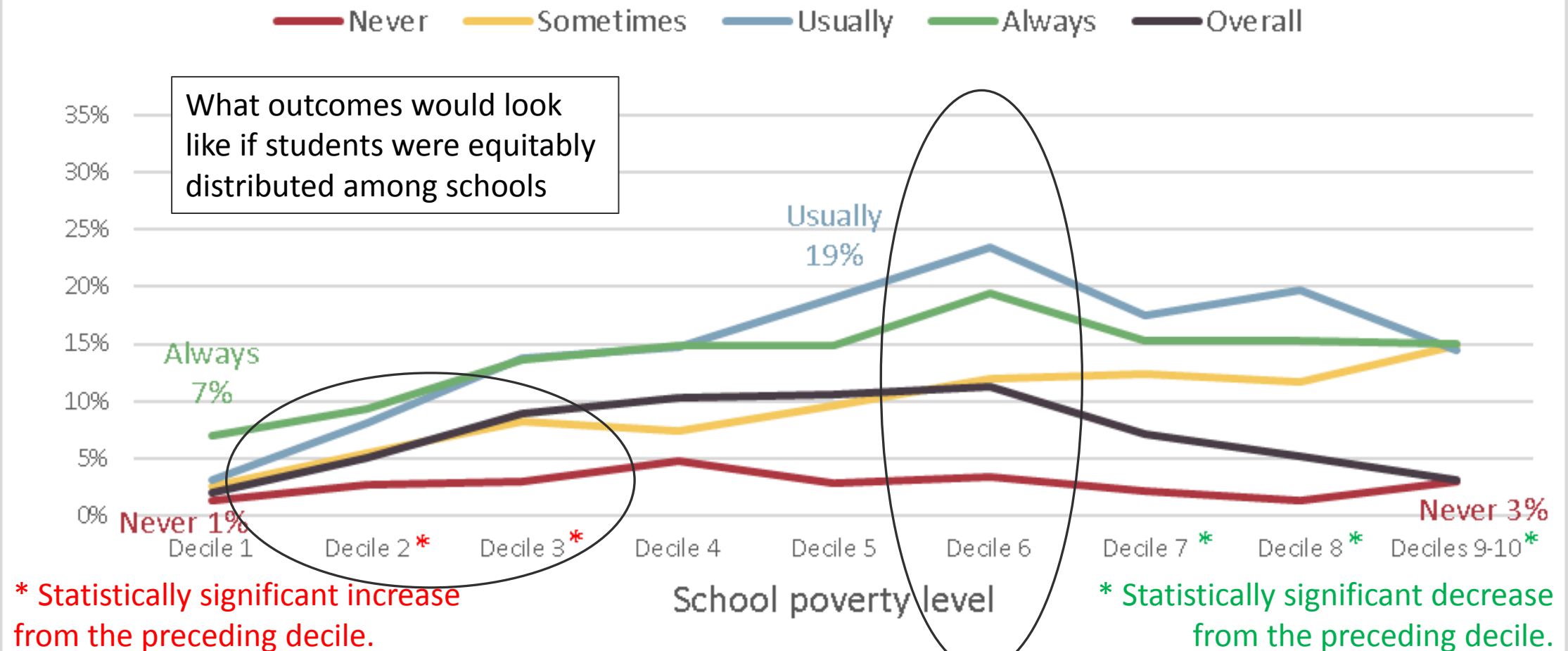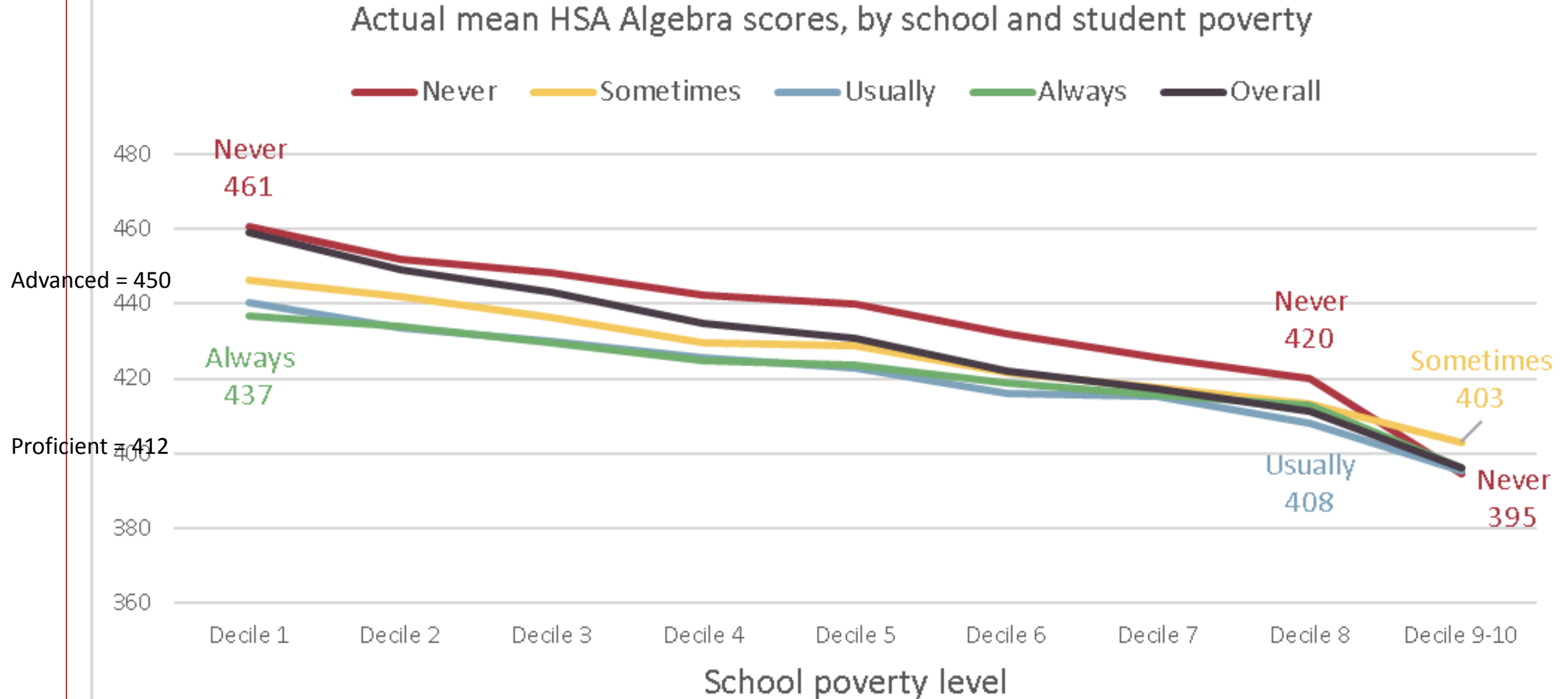
Actual dropout rates, by school and student poverty

Based on the 2007-08 6th grade cohort (N = 54,465).

Predicted likelihood of dropping out of school, by school poverty level and student poverty history

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N = 54,465).

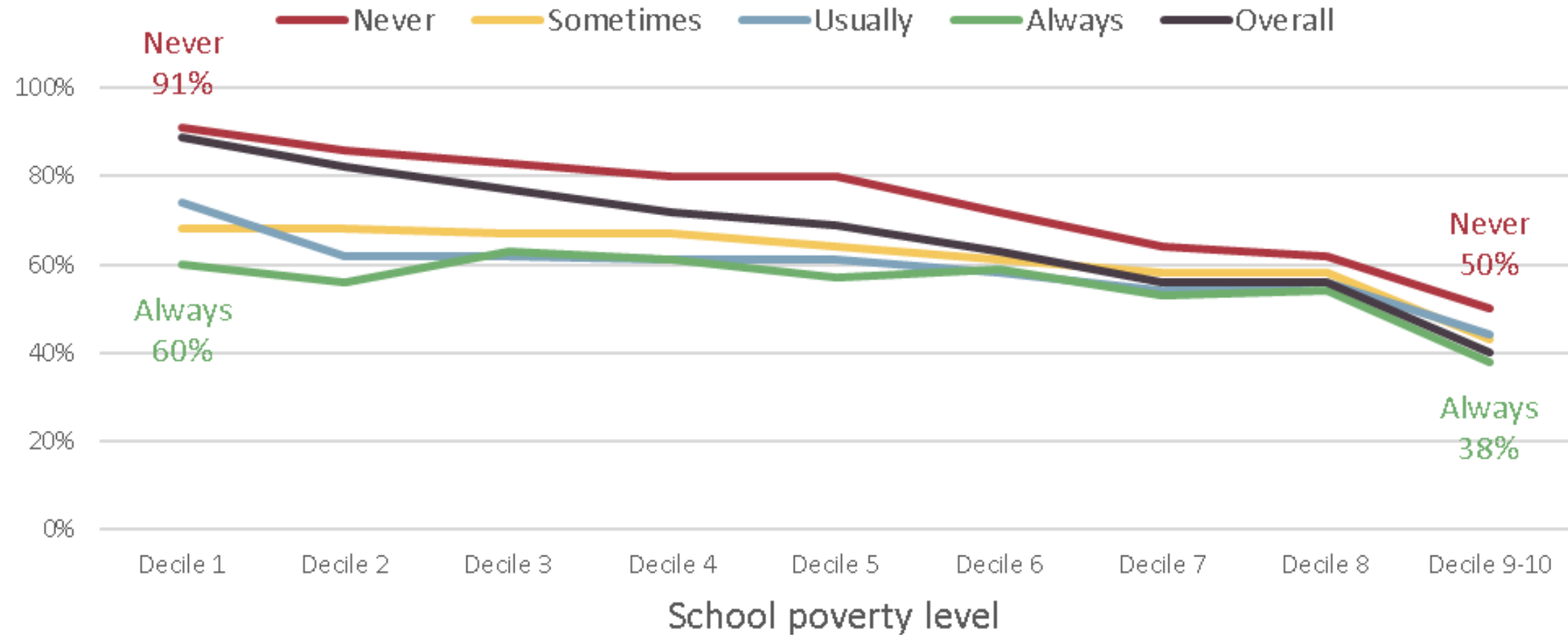Actual mean HSA Algebra scores, by school and student poverty

Based on the 2007-08 6th grade cohort (N = 52,261 of 54,465). Highest score.

Predicted HSA Algebra score, by school poverty level and student poverty history

Legend: Never, Sometimes, Usually, Always, Overall

Advanced = 450

Proficient = 412

Never 446
Sometimes 415
Usually 432
Always 409

School poverty level: Decile 1, Decile 2 *, Decile 3, Decile 4 *, Decile 5, Decile 6 *, Decile 7, Decile 8, Deciles 9-10 *

* Statistically significant decrease from the preceding decile.

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N = 52,261 of 54,465). Highest score.
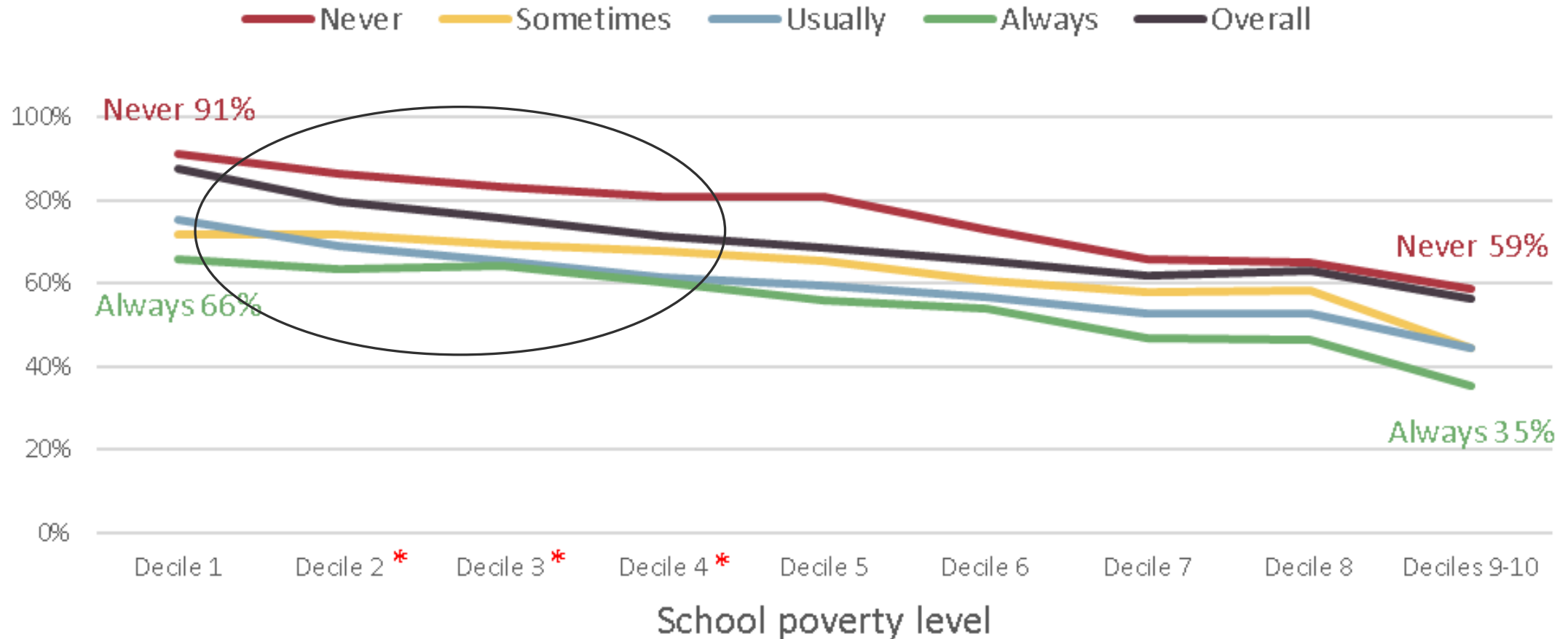
Actual rates of enrolling in postsecondary within 1 year of on-time HS graduation, by school and student poverty

Based on the 2007-08 6th grade cohort (N = 46,581 of 54,465).

Predicted likelihood of enrolling in postsecondary within 1 year of on-time HS graduation, by school poverty level and student poverty history

* Statistically significant decrease from the preceding decile.

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N=46,581 of 54,465).

Summary of findings from threshold analyses

- Actual outcomes worsen at higher levels of school poverty.
  - Actual outcomes reflect combined effects of school membership, student poverty, school average poverty, student race/ethnicity, and school racial/ethnic composition.
- Model-based predictions disentangle the role of school poverty from these other factors.
  - Predictions show steepest declines at Deciles 2-3 for dropout and Deciles 2-4 for postsecondary enrollment.
  - For HSA, significant thresholds across the spectrum of school poverty (Deciles 2, 4, 6, 9-10).
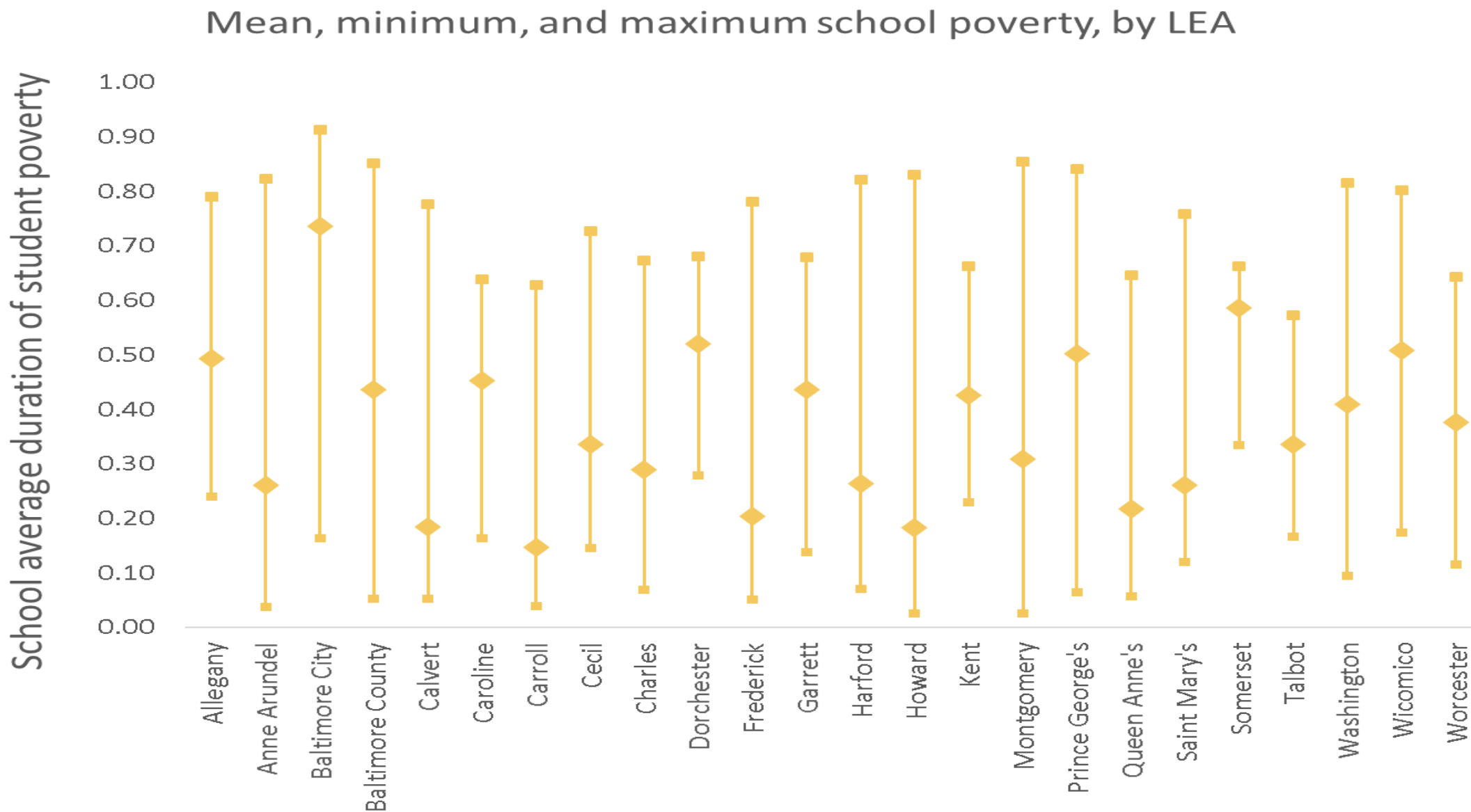- Students who are usually, but not always, in poverty often experience worst outcomes

2. Role of school poverty varies across local school systems

How do student and school poverty vary across local school systems?

How do the roles of student and school poverty in long-term educational outcomes vary across local school systems?
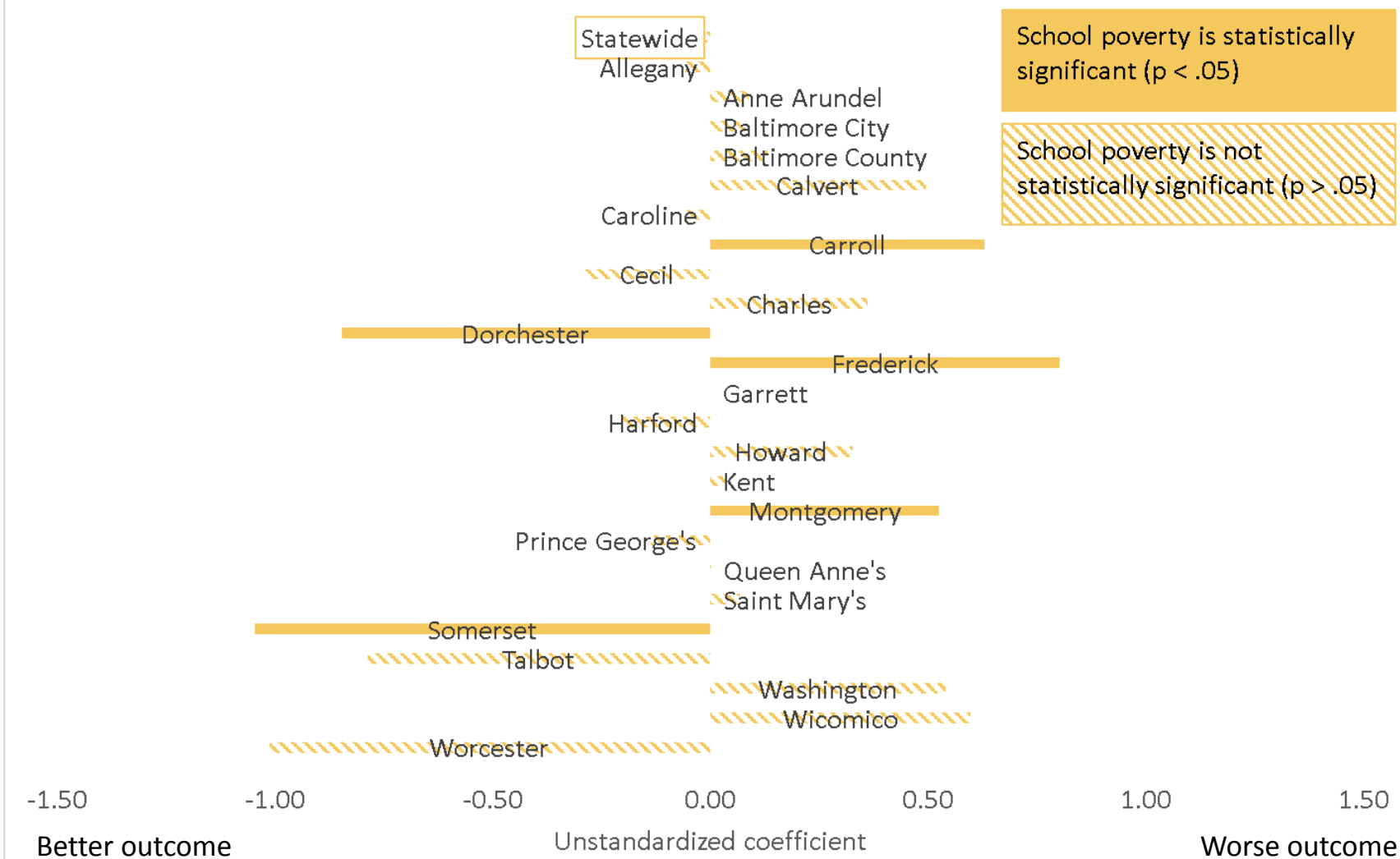
How does school poverty vary across local school systems?

- *Average* school poverty varies
  - Carroll County has lowest average (0.15)
  - Baltimore City has highest average (0.74)
- The *range* of school poverty varies
  - Montgomery County has largest range (from 0.02 to 0.85)
  - Somerset County has smallest range (from 0.33 to 0.66)

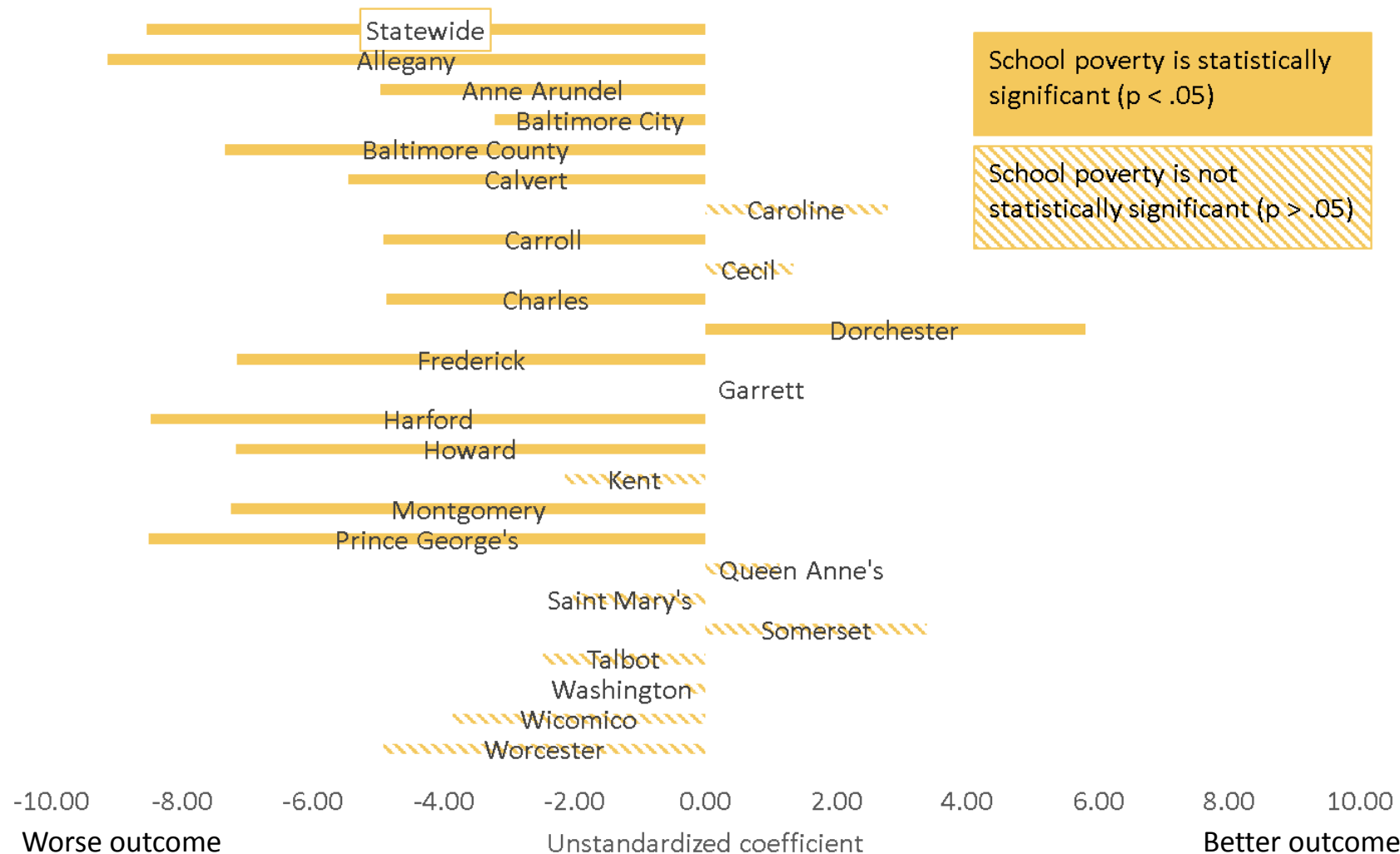Mean, minimum, and maximum school poverty, by LEA

Based on the 2007-08 6th grade cohort (N = 54,465).

Role of school poverty in likelihood of dropping out of school, by LEA

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N = 54,465).

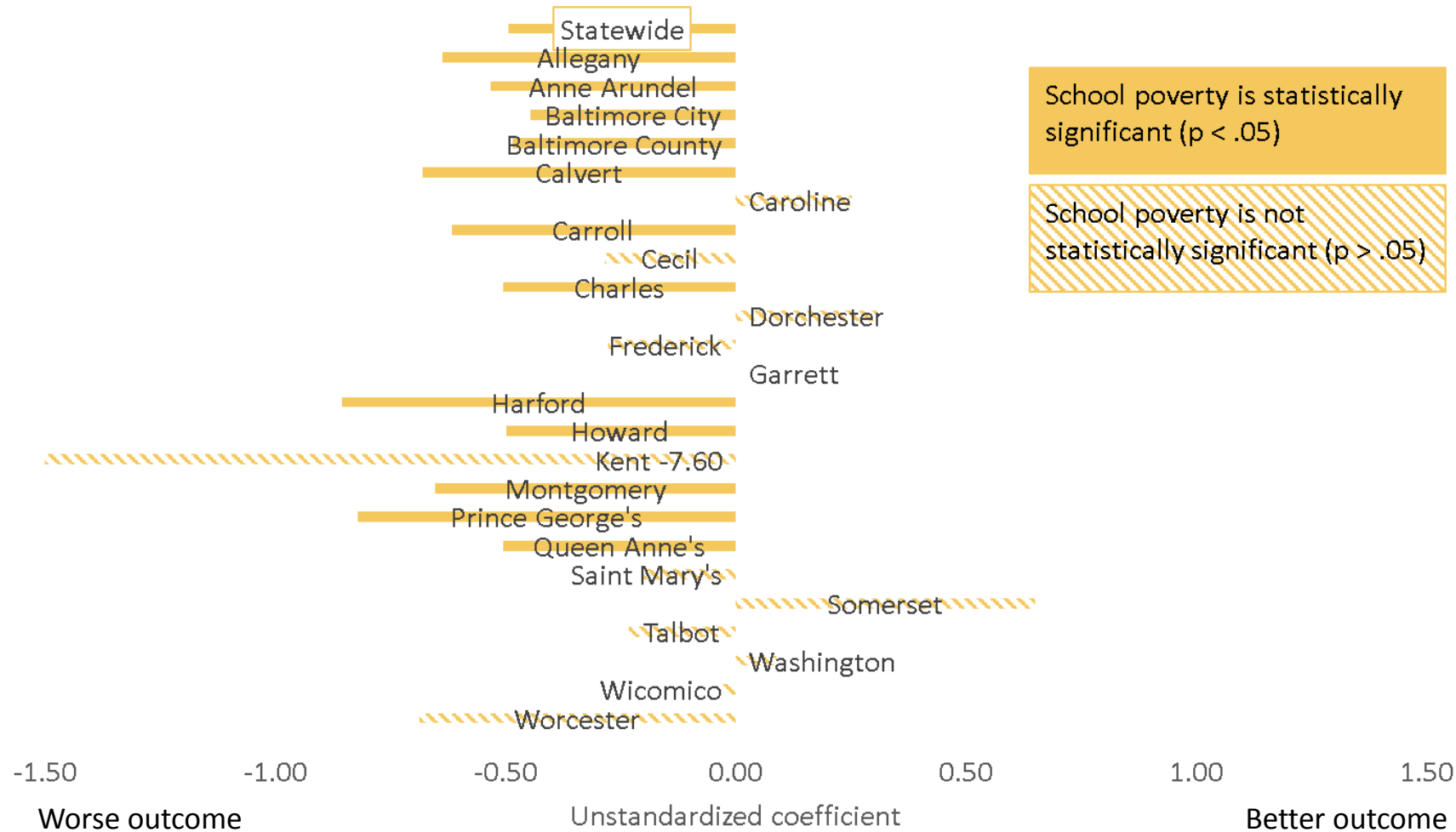Role of school poverty in predicted HSA Algebra score, by LEA

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N = 52,261 of 54,465). Highest score.

Role of school poverty in likelihood of enrolling in postsecondary within 1 year of graduating from high school on time, by LEA

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N=46,581 of 54,465).

Summary of local school system results

- There is extensive variation across local school systems in the roles of student and school poverty

- For HSA Algebra and postsecondary enrollment, school poverty is associated with worse outcomes in most, but not all, local school systems

- In some local school systems, school poverty is associated with some *improved* outcomes
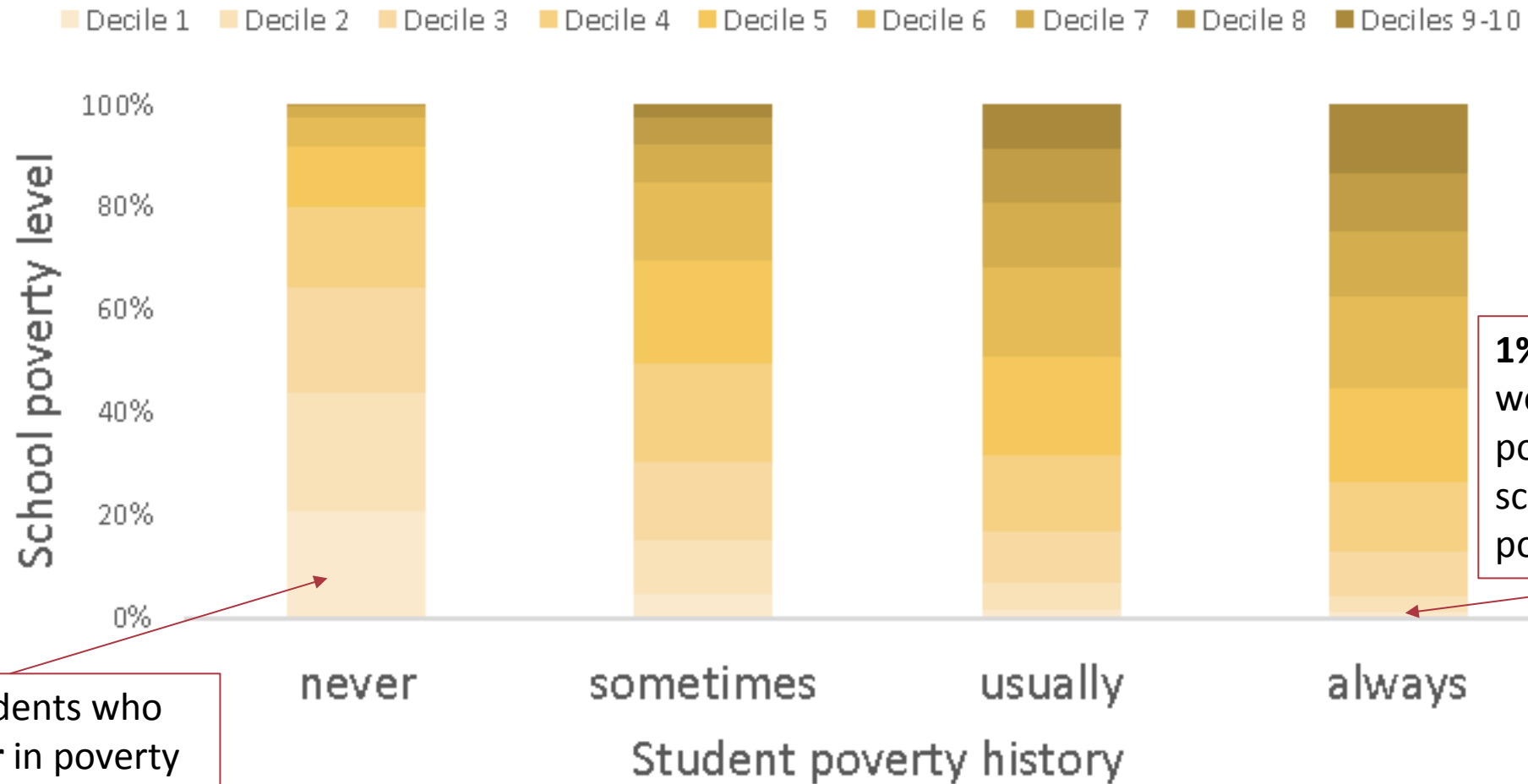
Summary

Summary

- *All* concentrations of poverty above the lowest decile have statistically significant negative relationships with student outcomes (dropout, graduation, HSA scores, postsecondary enrollment) compared to the lowest-poverty schools

- The steepest declines occur most consistently at Deciles 2-4 of school poverty

- Students who are usually, but not always, in poverty often experience worst outcomes

- The role of school poverty varies extensively across local school systems

Questions?

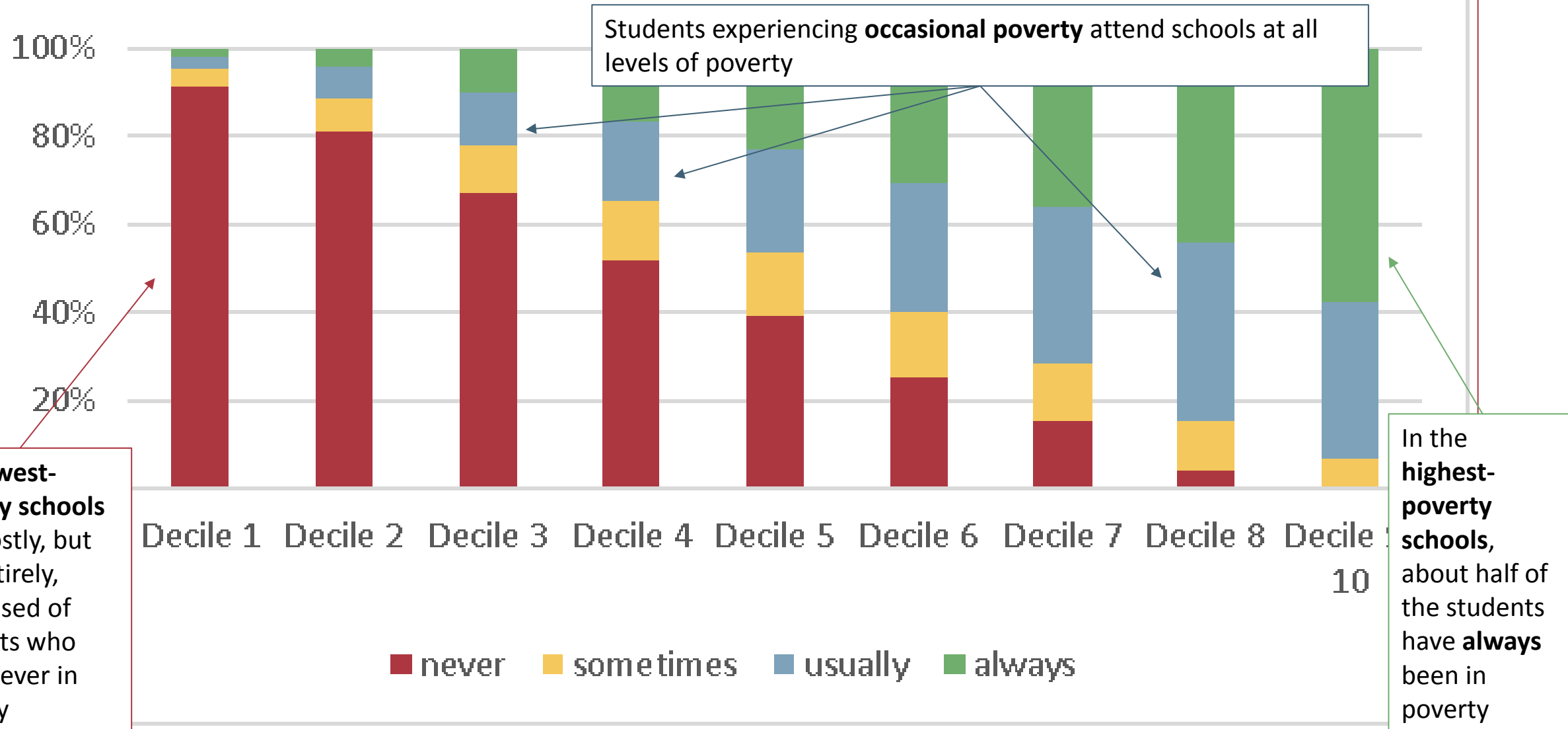- Contact us: MLDS.Center@Maryland.gov

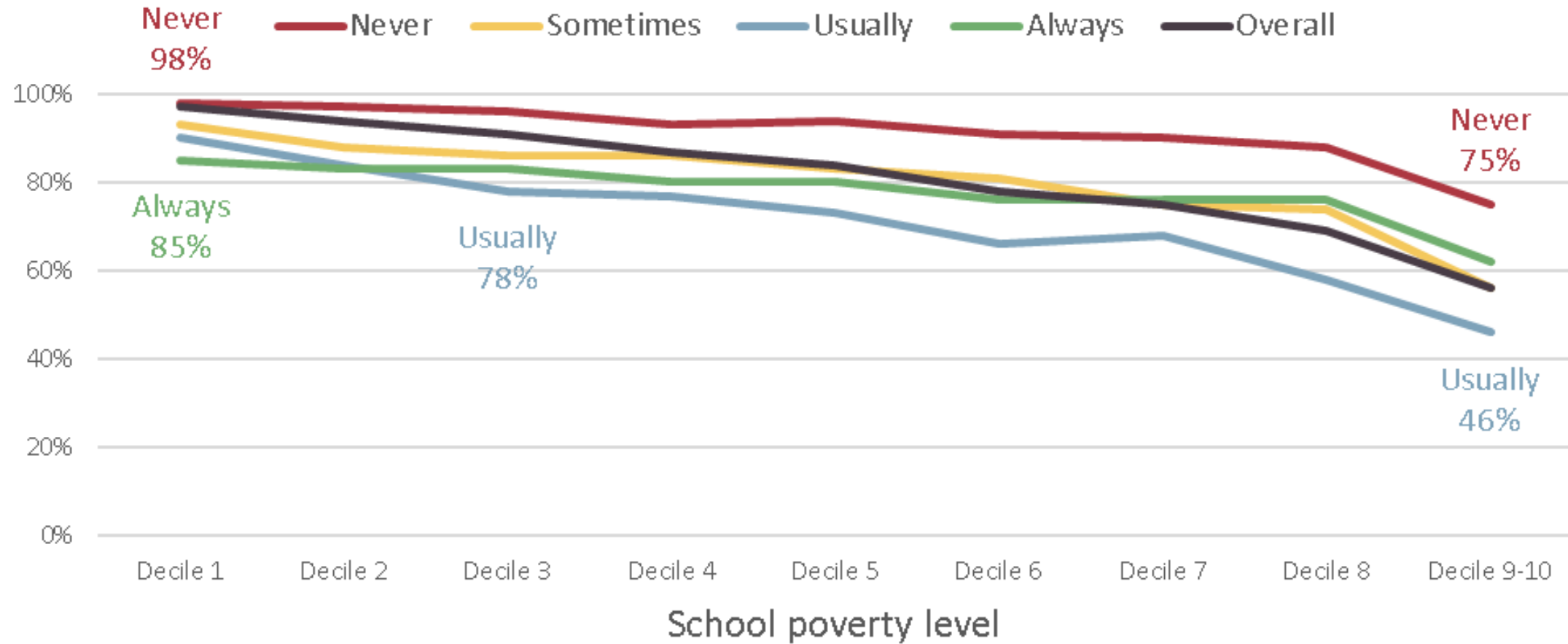# Appendix

School poverty levels by student poverty history

Legend: Decile 1, Decile 2, Decile 3, Decile 4, Decile 5, Decile 6, Decile 7, Decile 8, Deciles 9-10

1% of students who were **always** in poverty attended schools in the lowest poverty decile

20% of students who were **never** in poverty attended schools in the lowest poverty decile

Based on the 2007-08 6th grade cohort (N = 54,465).

Student poverty by school poverty

Students experiencing **occasional poverty** attend schools at all levels of poverty

The **lowest-poverty schools** are mostly, but not entirely, comprised of students who were never in poverty

In the **highest-poverty schools**, about half of the students have **always** been in poverty

never sometimes usually always

Based on the 2007-08 6th grade cohort (N = 54,465).

Actual rates of graduating from high school on time, by school and student poverty

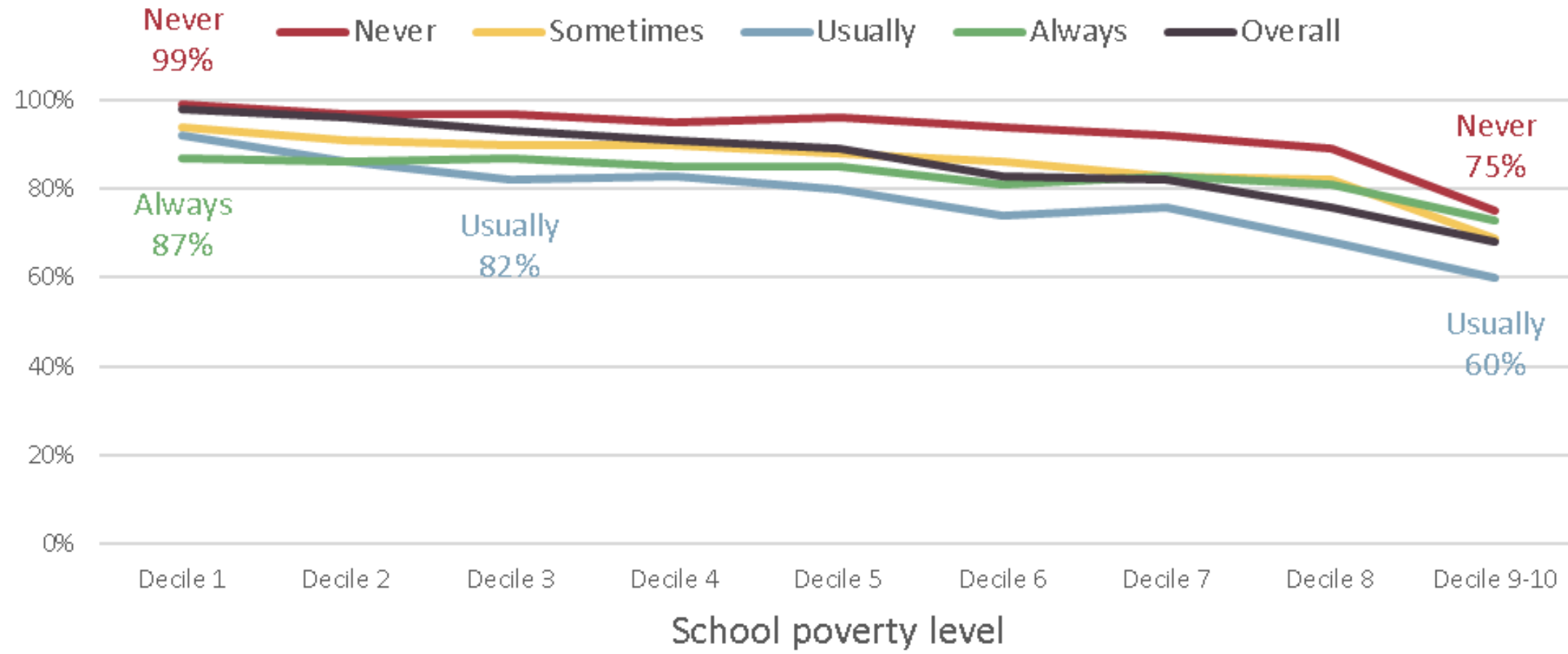Based on the 2007-08 6th grade cohort (N = 54,465).

Lowest poverty schools

Highest poverty schools

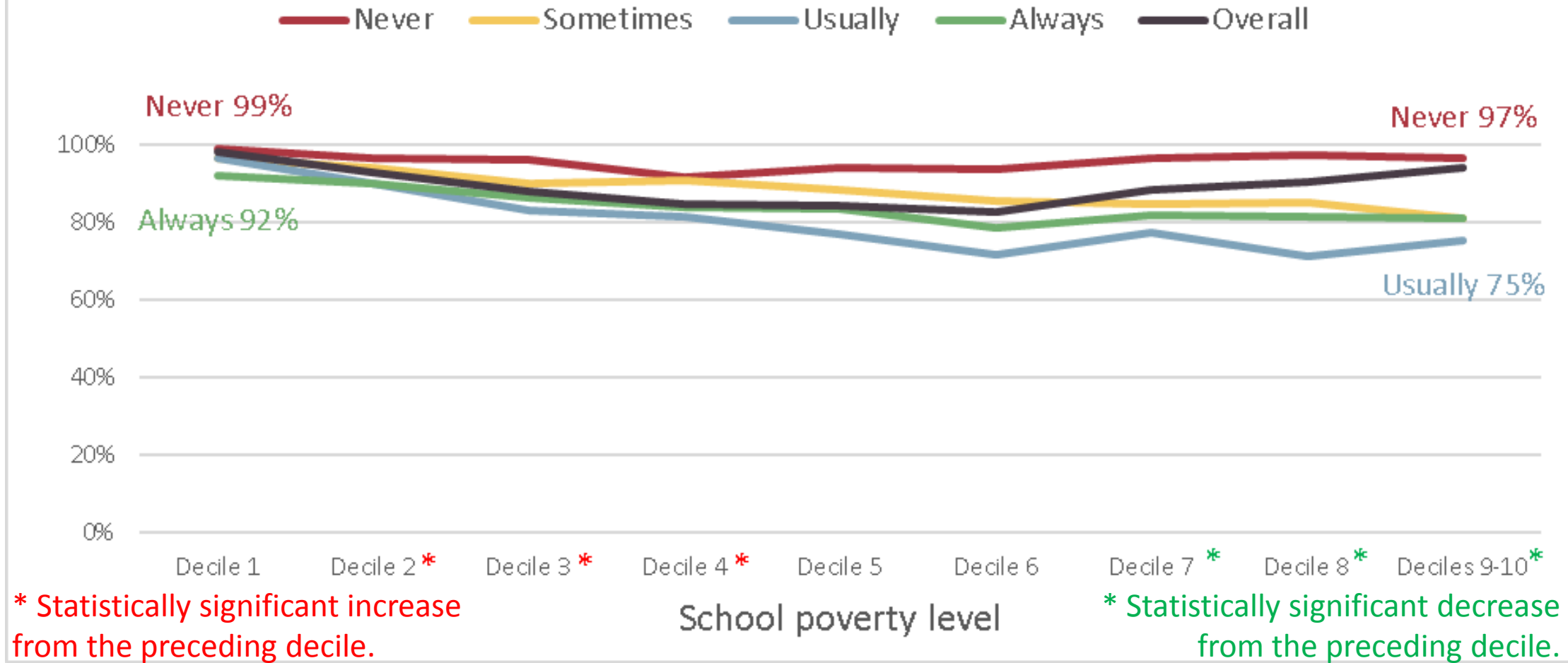Predicted likelihood of graduating from high school on time, by school poverty level and student poverty history

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N = 54,465).
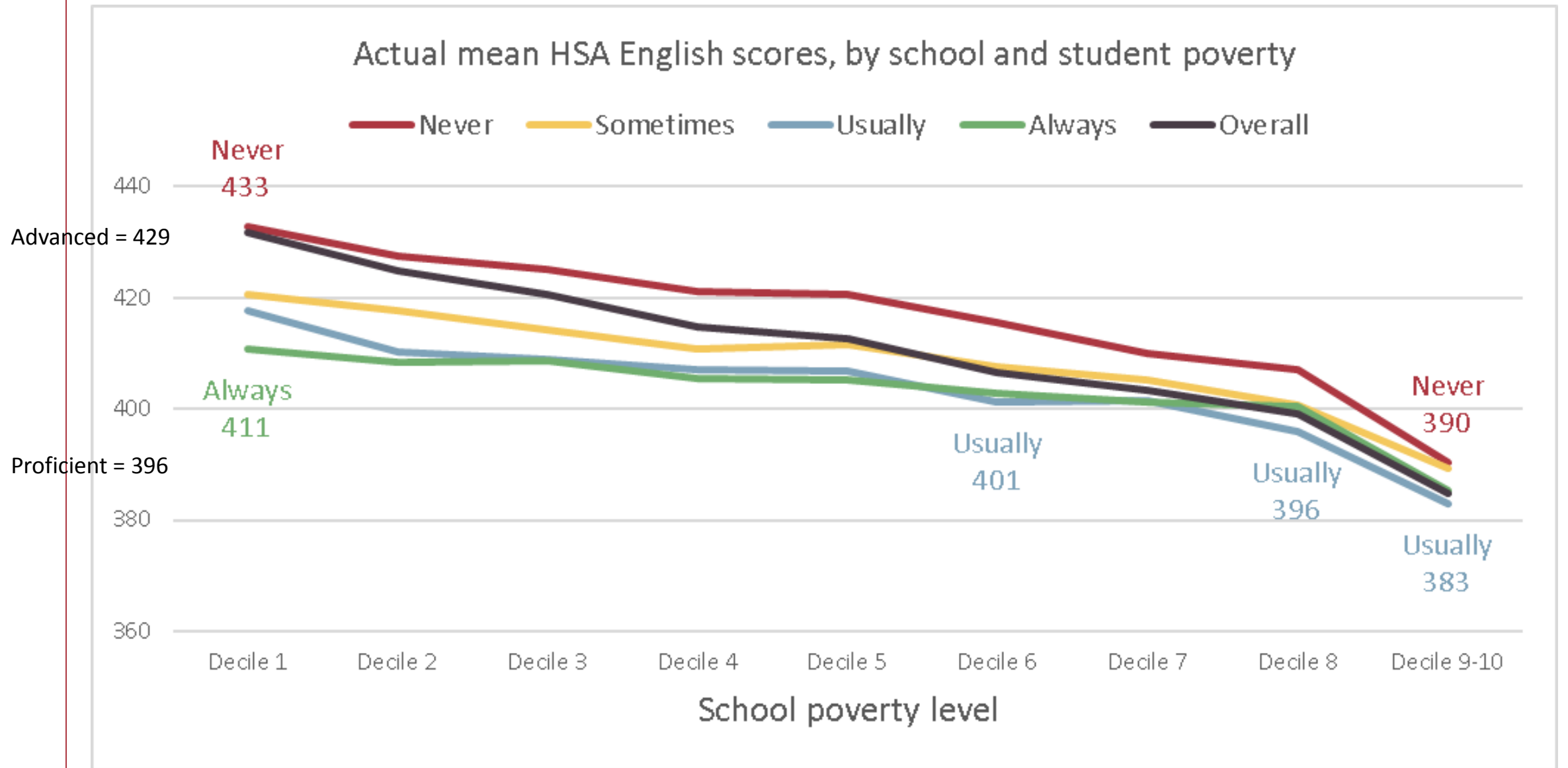
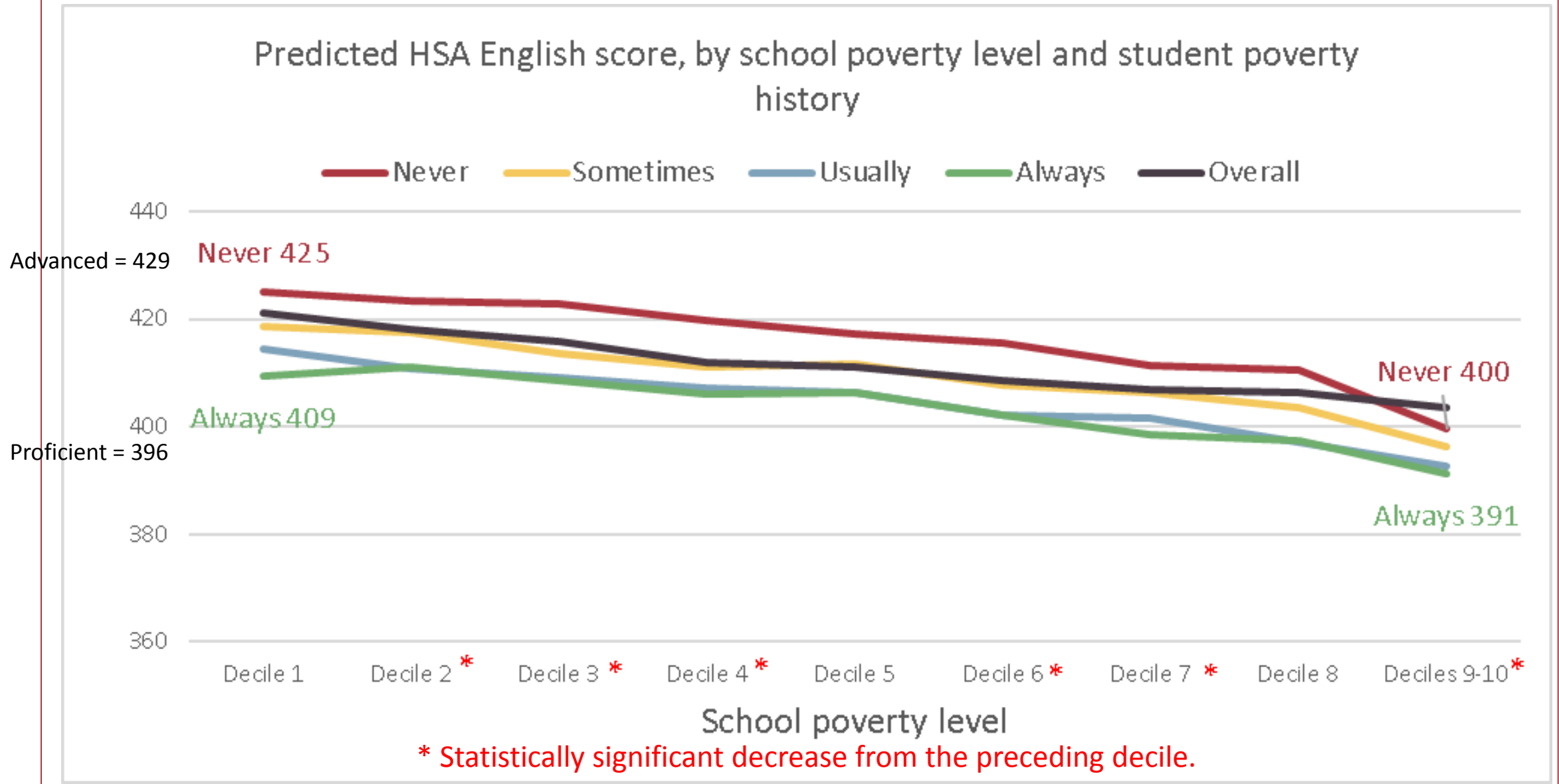Actual rates of ever graduating from high school, by school and student poverty

Based on the 2007-08 6th grade cohort (N = 54,465).

Predicted likelihood of ever graduating from high school, by school poverty level and student poverty history

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N = 54,465).

Actual mean HSA English scores, by school and student poverty

Based on the 2007-08 6th grade cohort (N = 50,681 of 54,465). Highest score.

Predicted HSA English score, by school poverty level and student poverty history

Advanced = 429

Proficient = 396

* Statistically significant decrease from the preceding decile.

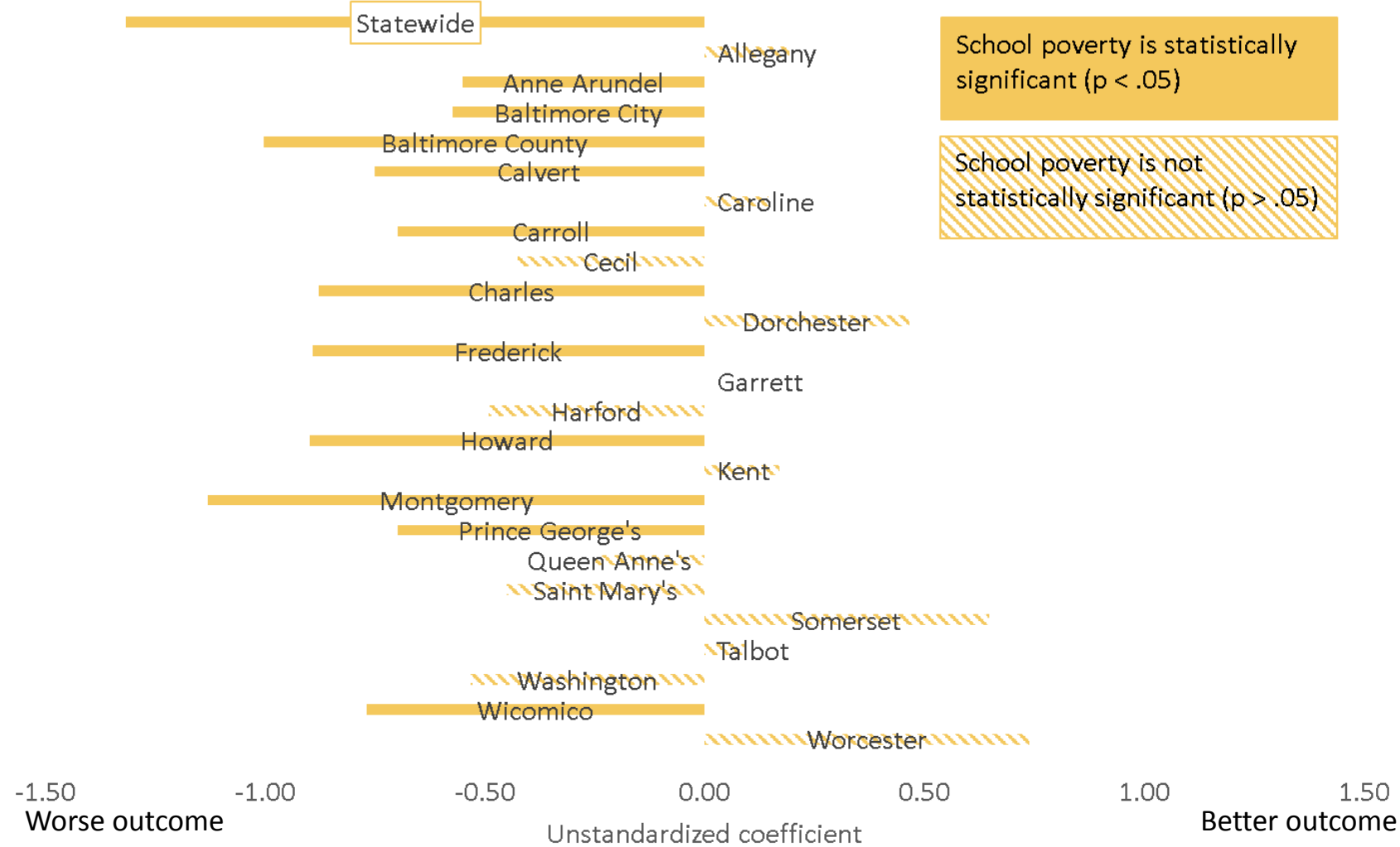Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N = 50,681 of 54,465). Highest score.
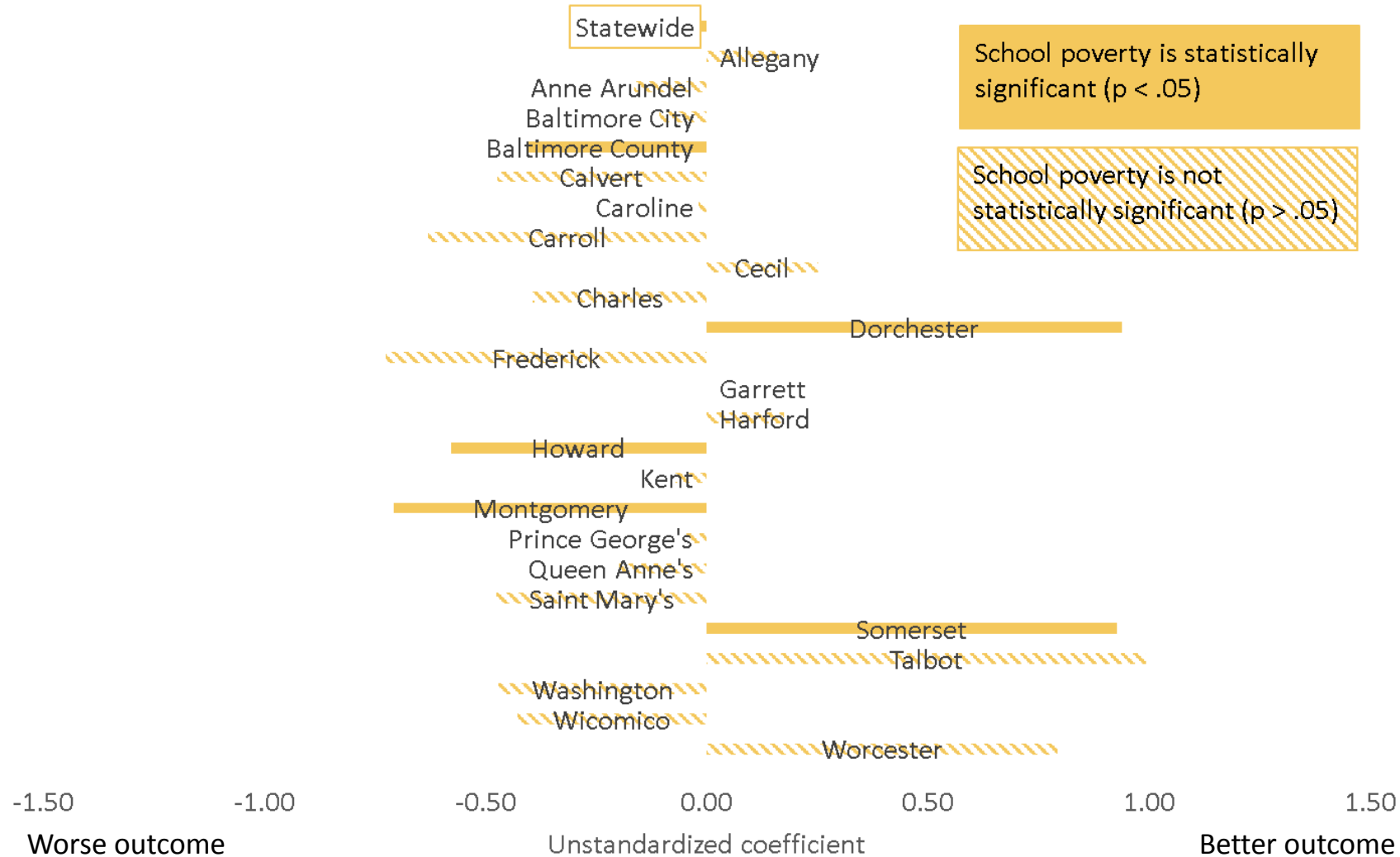
Role of school poverty in likelihood of graduating from high school on time, by LEA

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N = 54,465).

Role of school poverty in likelihood of ever graduating from high school, by LEA

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N = 54,465).

Role of school poverty in predicted HSA English score, by LEA

Controlling for school membership, student poverty, student race/ethnicity, and school racial/ethnic composition, for the 2007-08 6th grade cohort (N = 50,681 of 54,465). Highest score.