

Results from the 2009 Programme for International Student Assessment (PISA):

How does the United States
compare to other nations?



How has U.S. performance on PISA
changed?

Performance Among the 26 OECD Countries Continuously Participating in PISA Since 2000

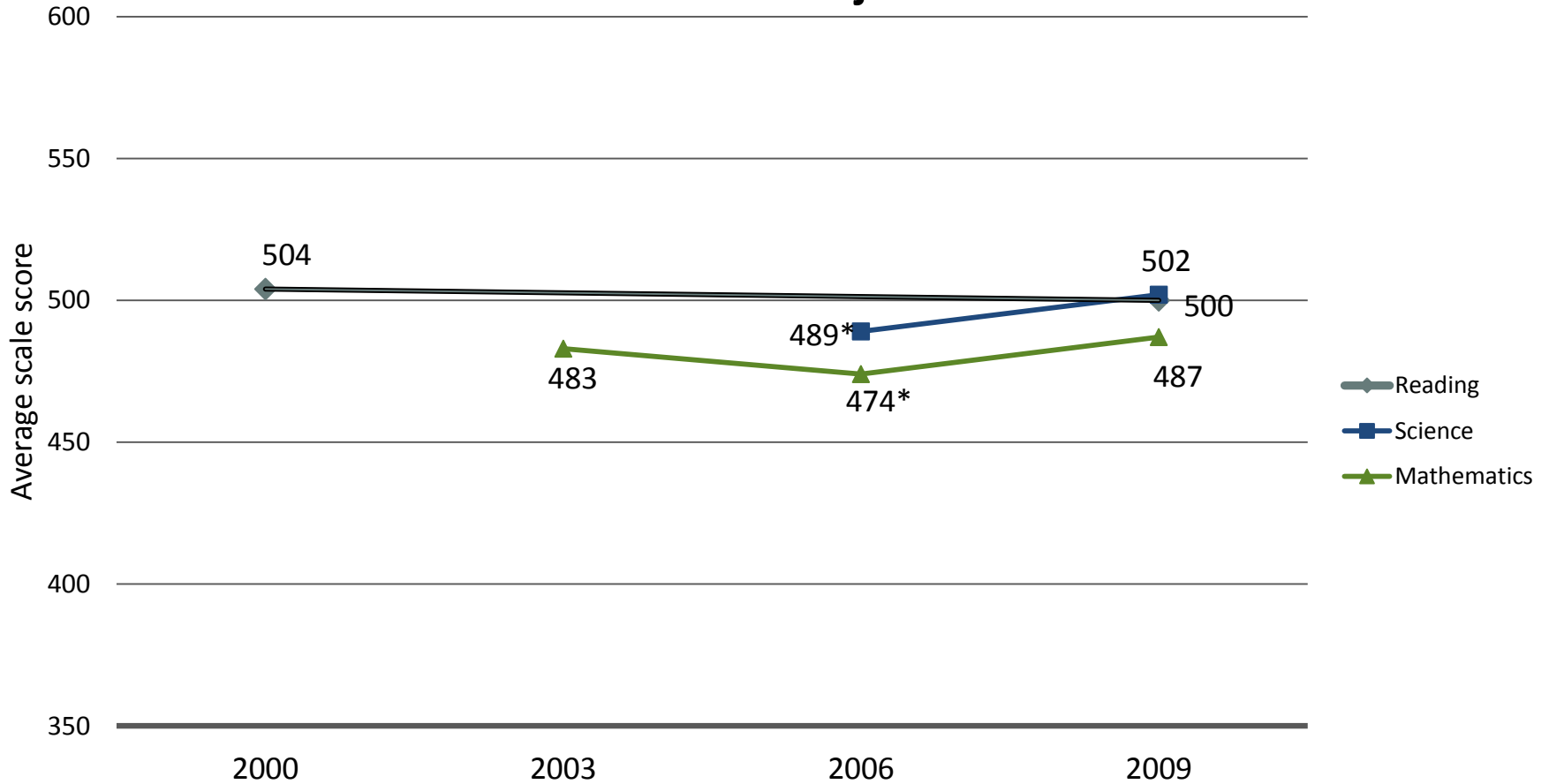
U.S. Ranks Low but has Risen Since 2006

| Subject | 2000 Rank (out of 26) | 2003 Rank (out of 26) | 2006 Rank (out of 26) | 2009 Rank (out of 26) |
|----------------|--|--|--|--|
| Reading | 14 th | 14 th | n/a | Tied 10 th |
| Mathematics | 17 th | 22 nd | 22 nd | Tied 20 th |
| Science | 13 th | Tied 17 th | 19 th | 13 th |

Note: Rankings are for the 26 countries that were members of the OECD and participated in PISA in 2000, 2003, 2006, and 2009. 2006 results for U.S. reading performance are not available.
Source: PISA 2009 Results, OECD

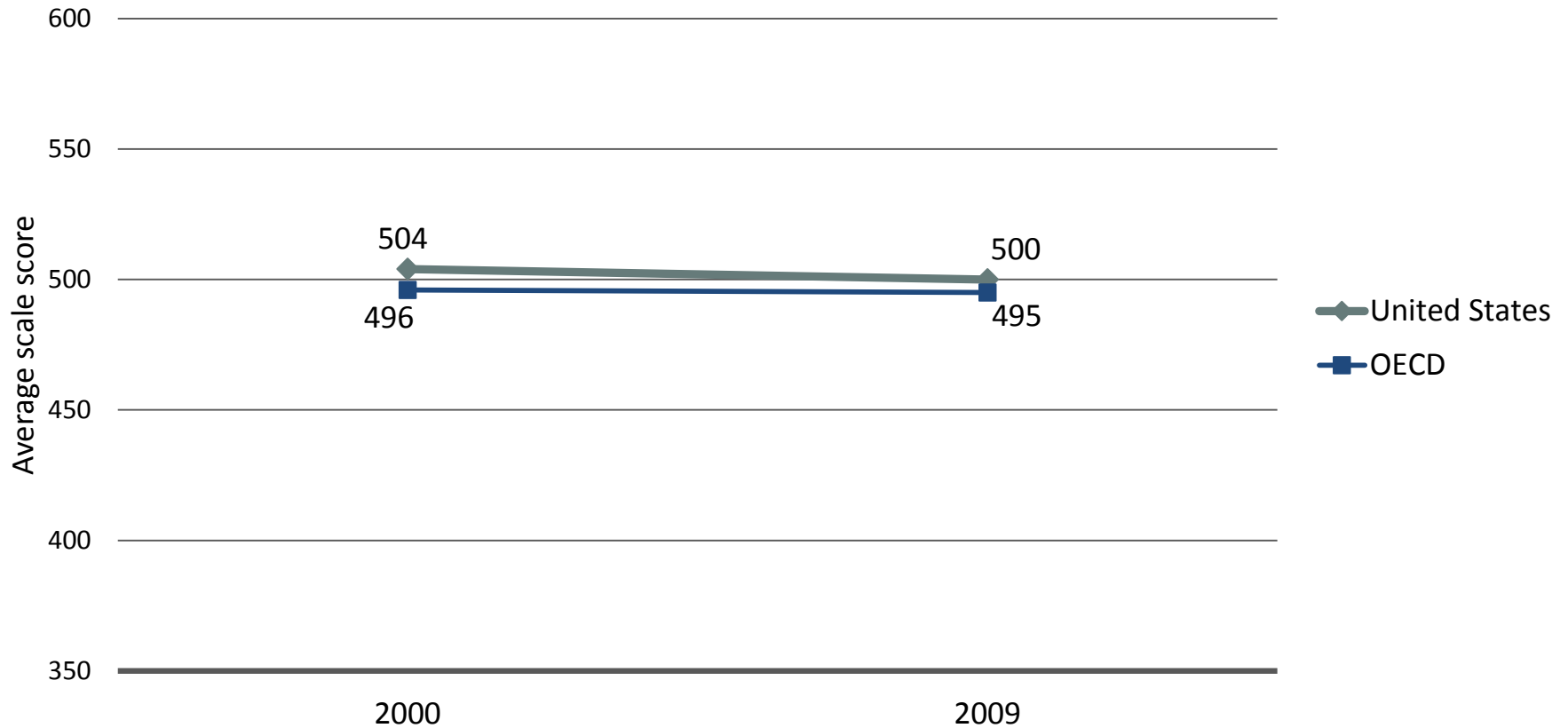
U.S. Performance Over Time

PISA – All Subjects



Note: Possible scores range from 0 to 1,000. Trends are not available from 2000 for all subjects due to revised assessment frameworks. * indicates score is significantly different from 2009 score at the $p < .05$ level.
Source: "Highlights from PISA 2009," NCES, 2010

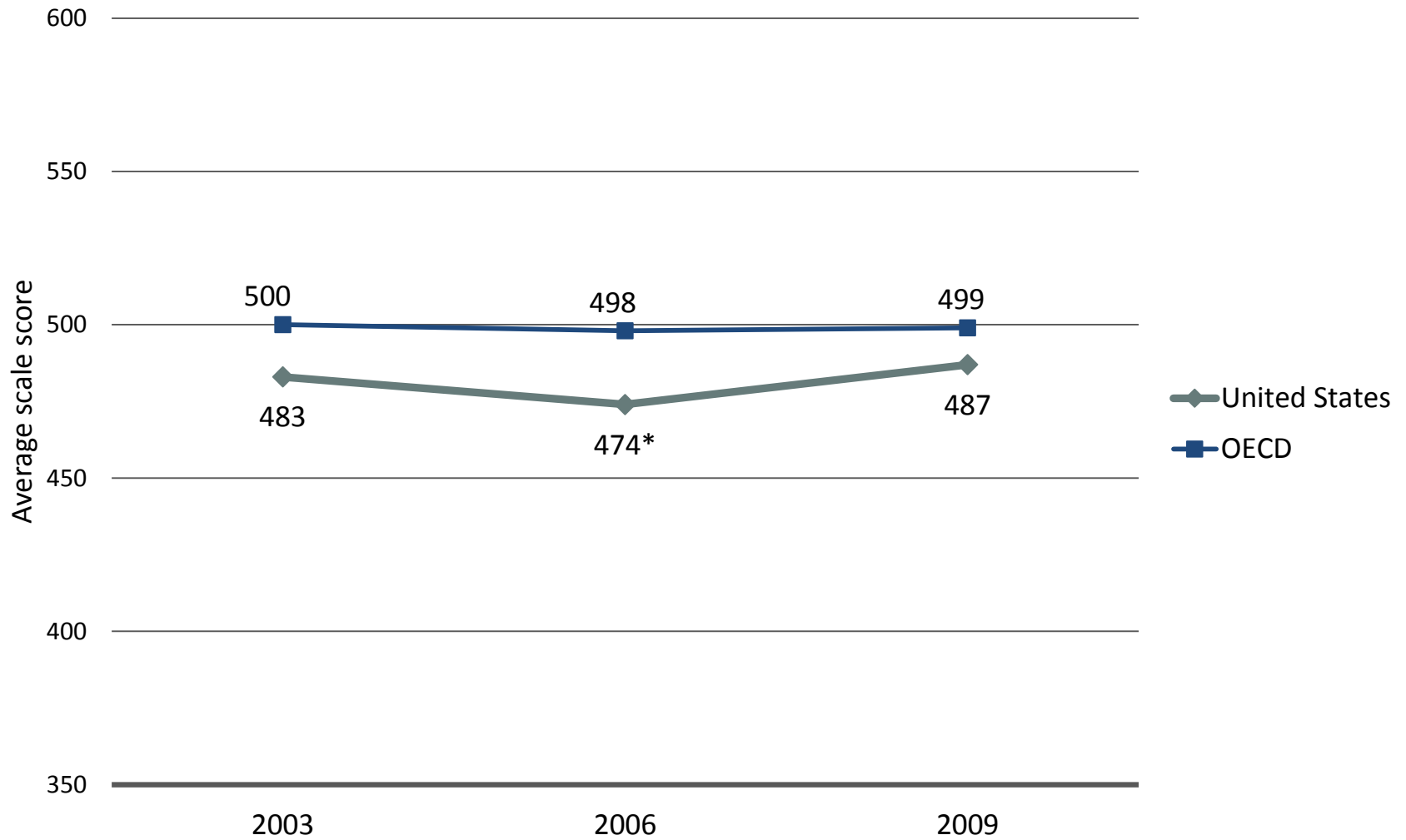
Reading Performance on PISA



Note: Possible scores range from 0 to 1,000.

Source: "Highlights from PISA 2009," NCES, 2010

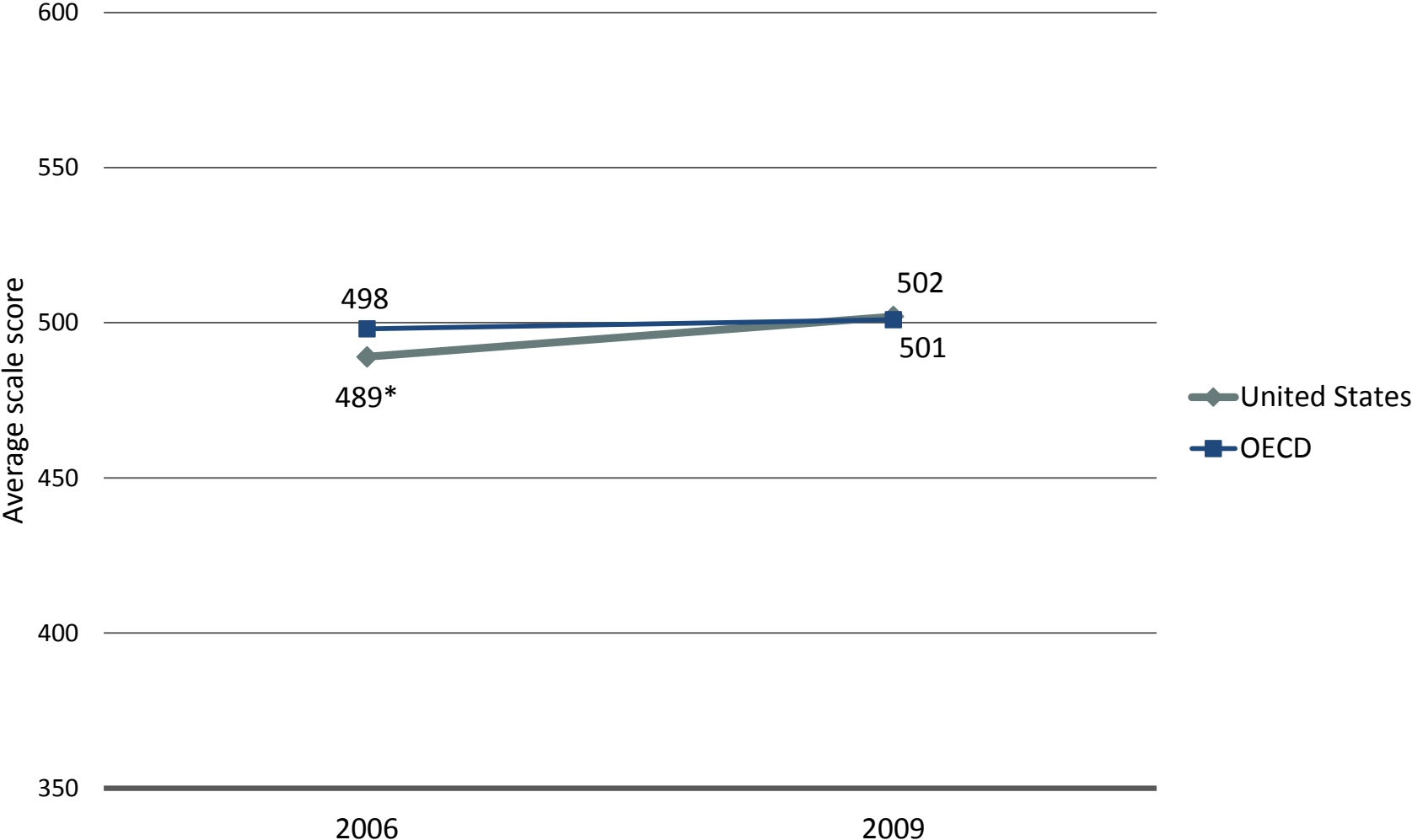
Math Performance on PISA



Note: Possible scores range from 0 to 1,000. * indicates score is significantly different from the 2009 score at the $p < .05$ level

Source: "Highlights from PISA 2009," NCES, 2010

Science Performance on PISA



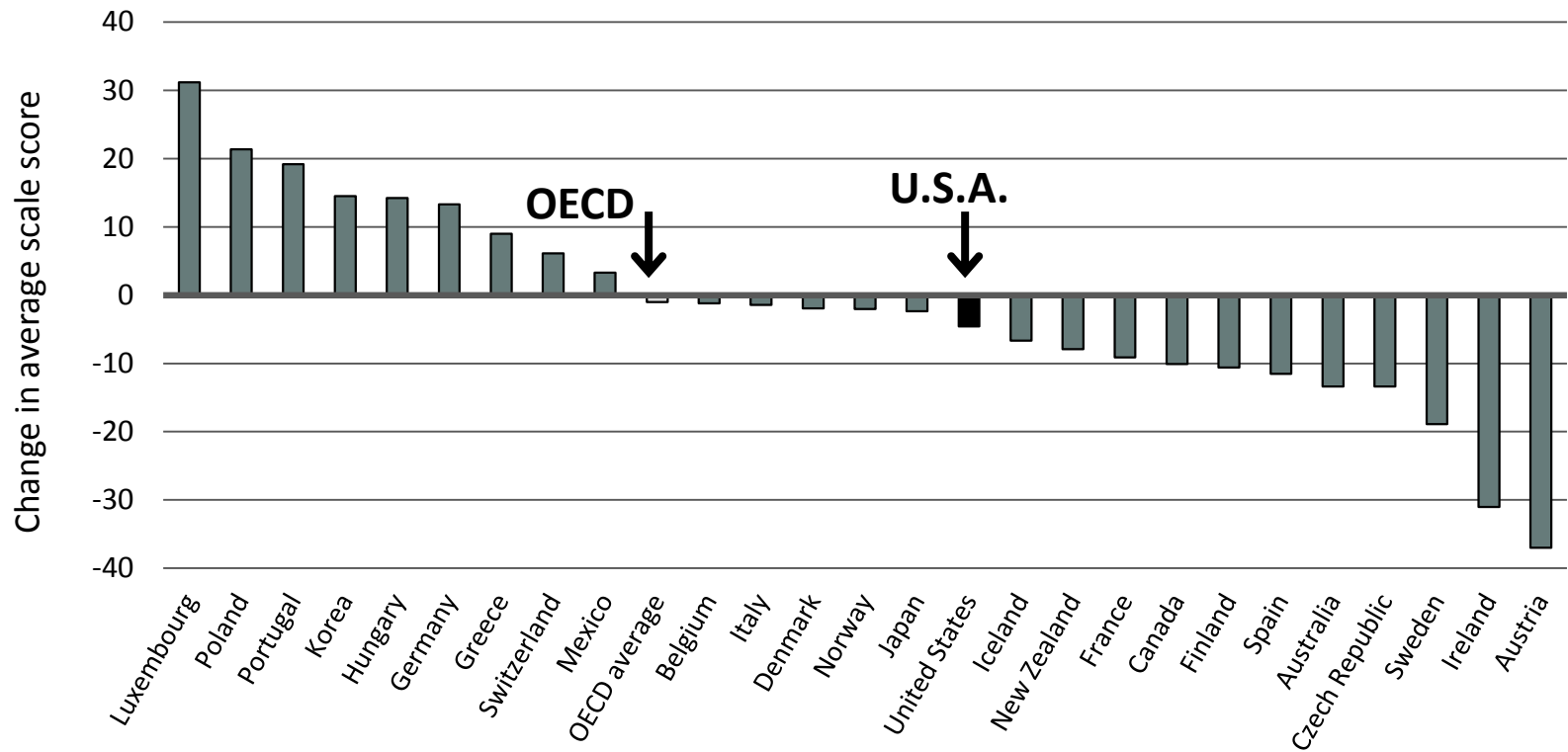
Note: Possible scores range from 0 to 1,000. * indicates score is significantly different from the 2009 score at the p<.05 level

Source: "Highlights from PISA 2009," NCES, 2010

How do these changes compare to those of other countries?

Reading Scores in Most Countries – Including the U.S. – Have Dropped

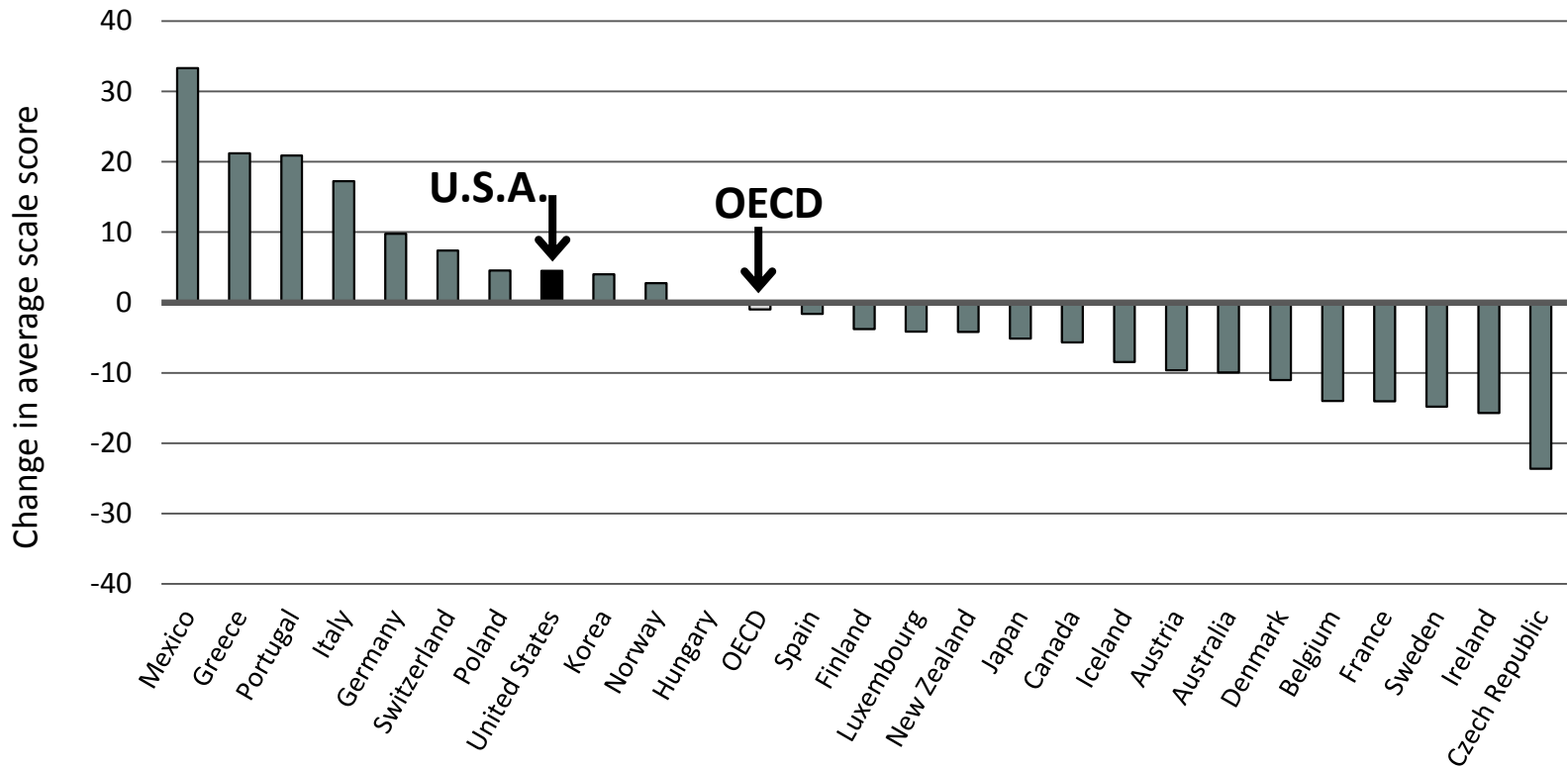
PISA 2000 and 2009 - Reading



Source: PISA 2009 Results, OECD, Table V.2.1

U.S. Math Scores Have Risen Slightly While Many Other Countries' Scores Have Fallen

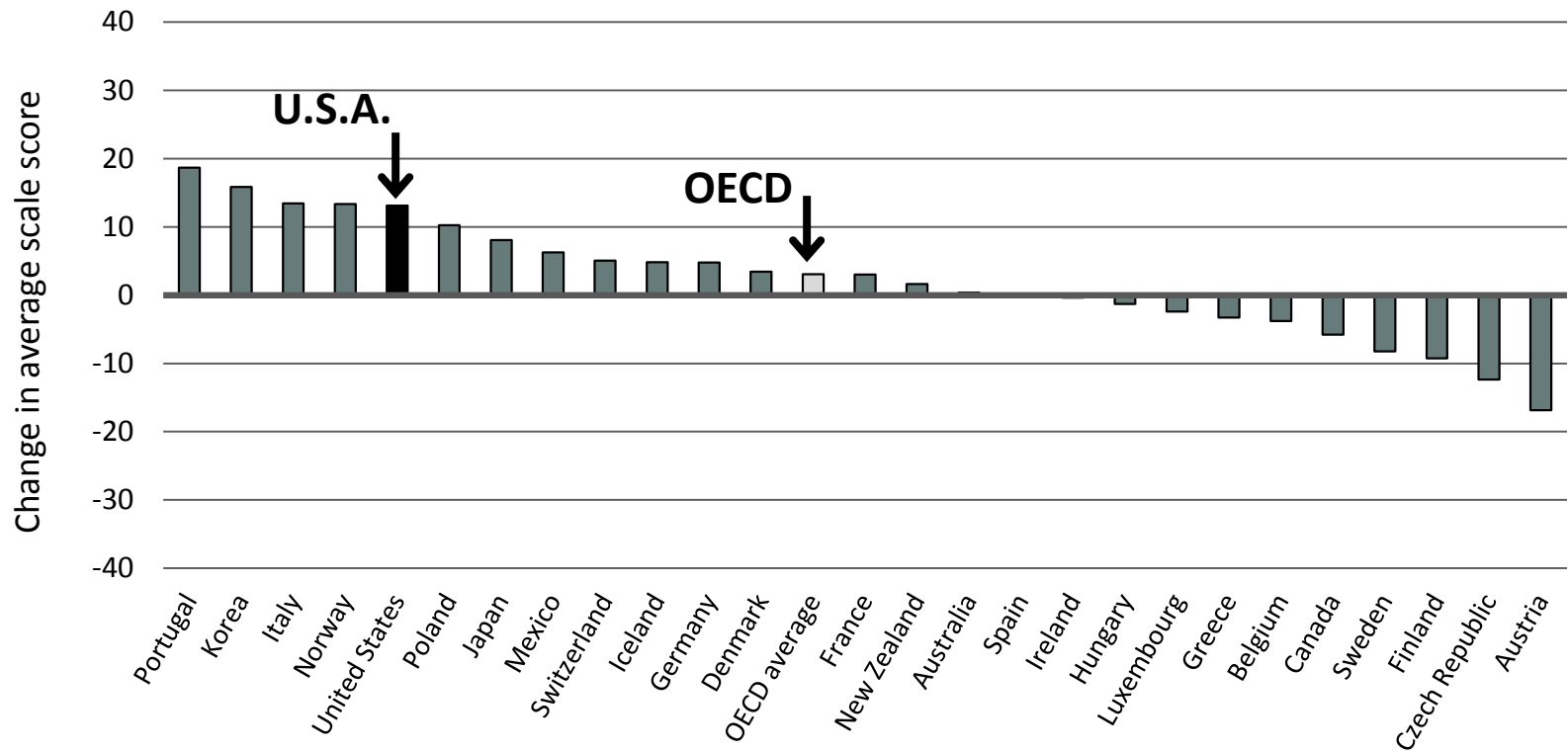
PISA 2003 and 2009 – Math



Source: PISA 2009 Results, OECD, Table V.3.1

U.S. Students' Science Scores Have Risen Faster than in Most Other OECD Countries

PISA 2006 and 2009 – Science

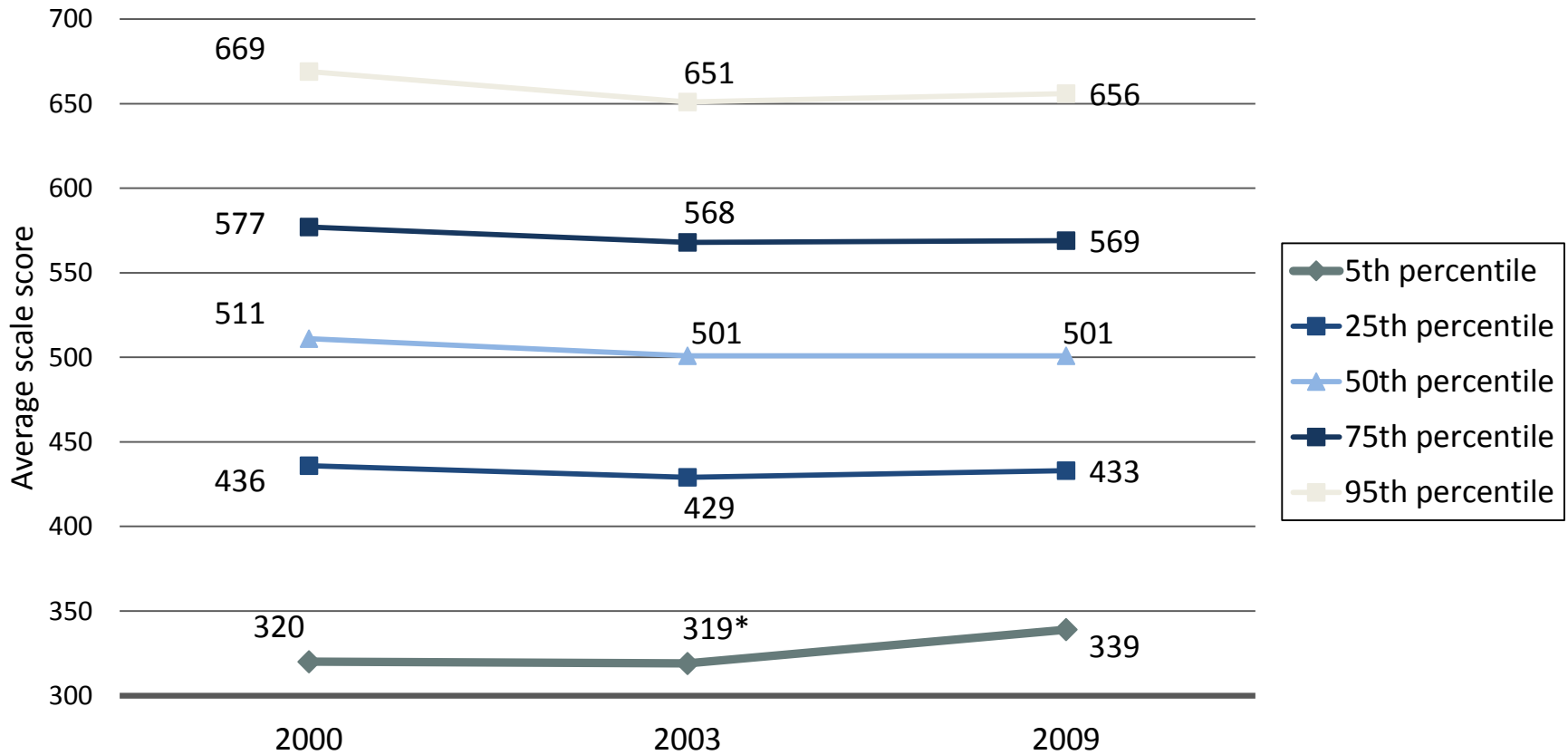


Source: PISA 2009 Results, OECD, Table V.3.4

Improvements since 2000 have been concentrated among low-performing and average students.

Improvement Only Among the Lowest Performing Students

PISA – Reading

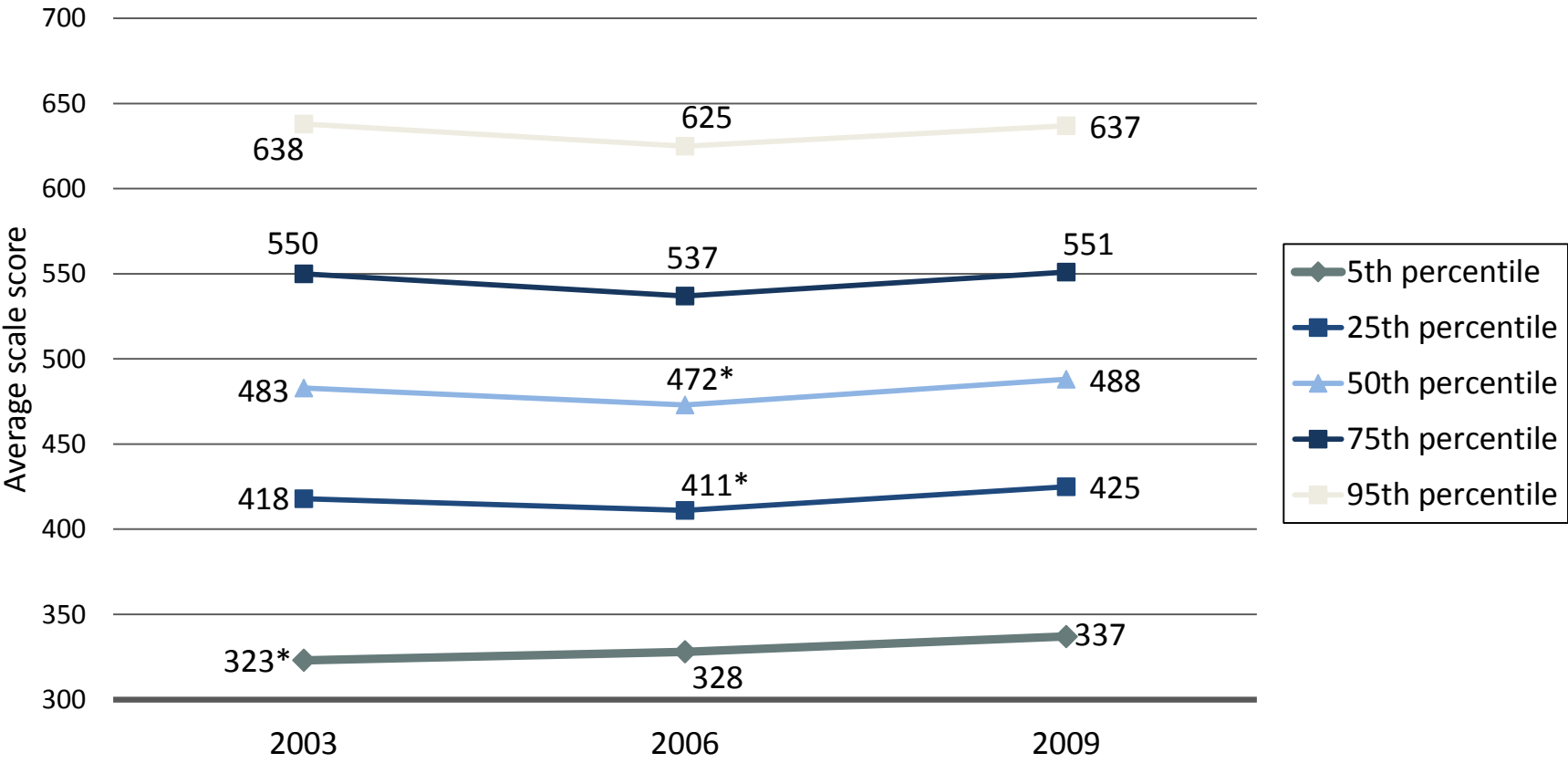


* Indicates score is significantly different from 2009 score at the $p < .05$ level

Source: PISA 2009 results, NCES, Table R6A

Improvement Among Average and Lower Performing Students

PISA – Math

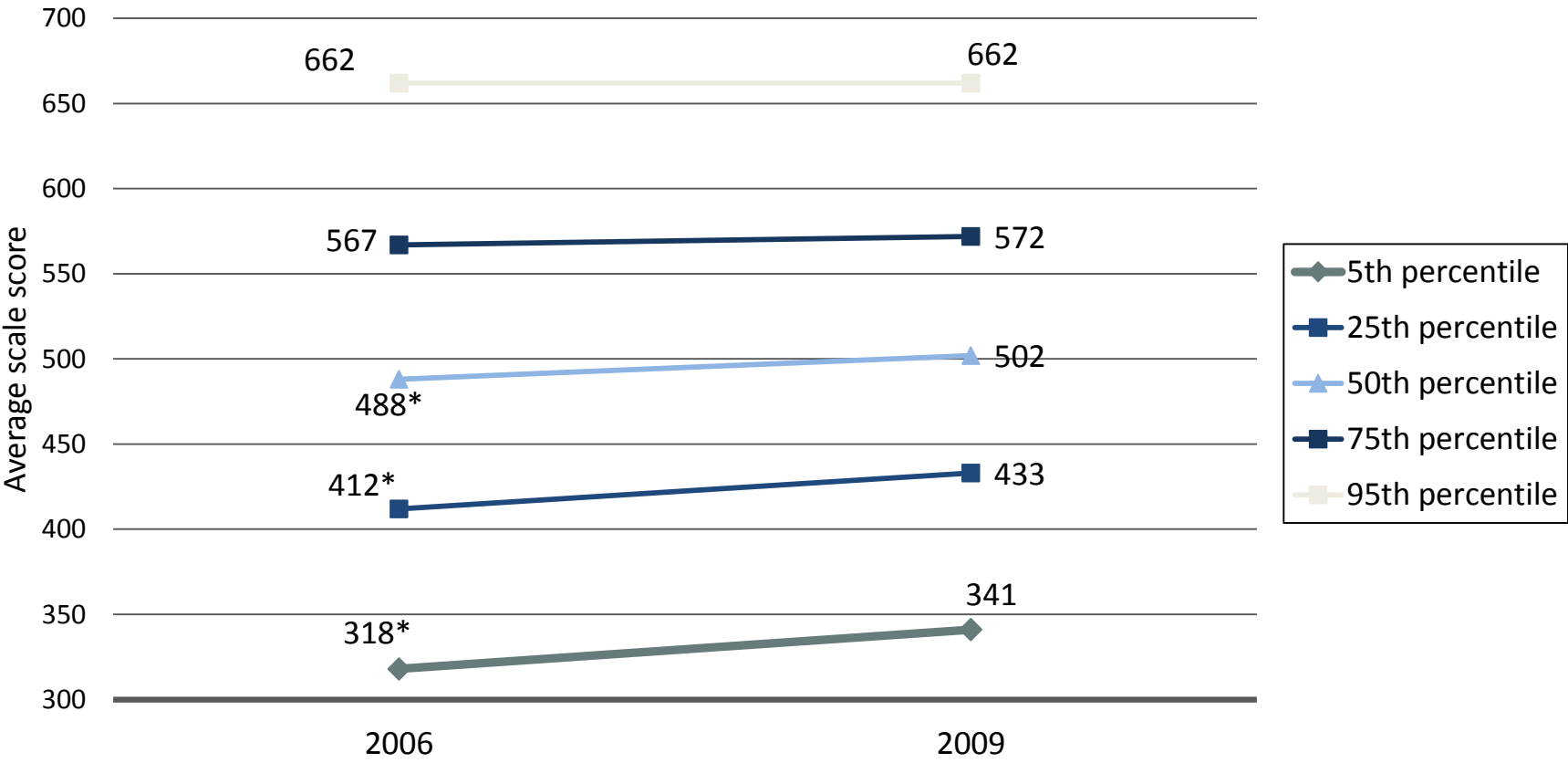


* Indicates score is significantly different from 2009 score at the $p < .05$ level

Source: PISA 2009 results, NCES, Table M3A

Improvement Among Average and Lower Performing Students

PISA – Science



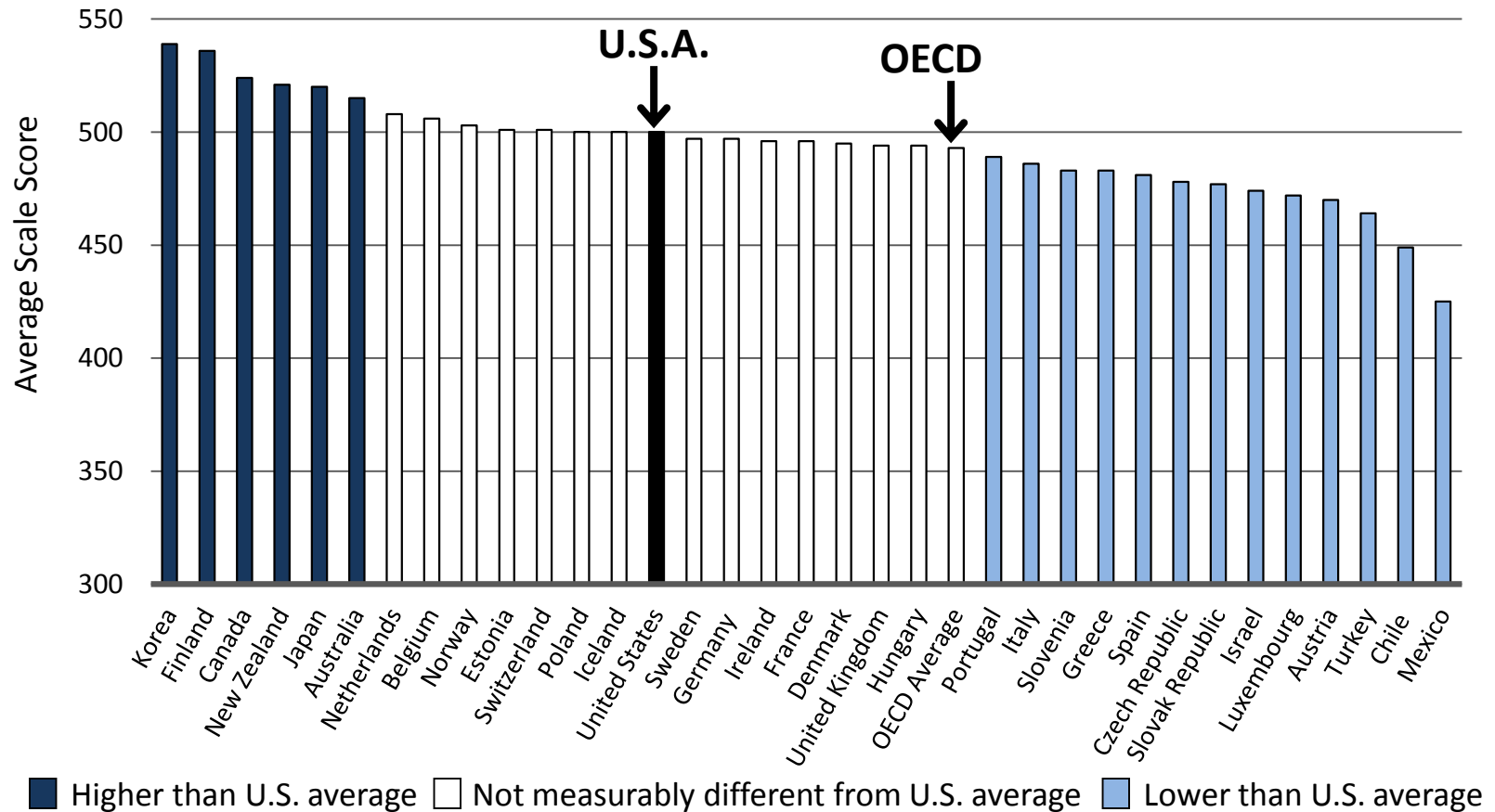
* Indicates score is significantly different from 2009 score at the p<.05 level

Source: PISA 2009 results, NCES, Table S3A

A closer look at reading

Of 34 OECD Countries, U.S.A. Ranks 12th in Reading Literacy

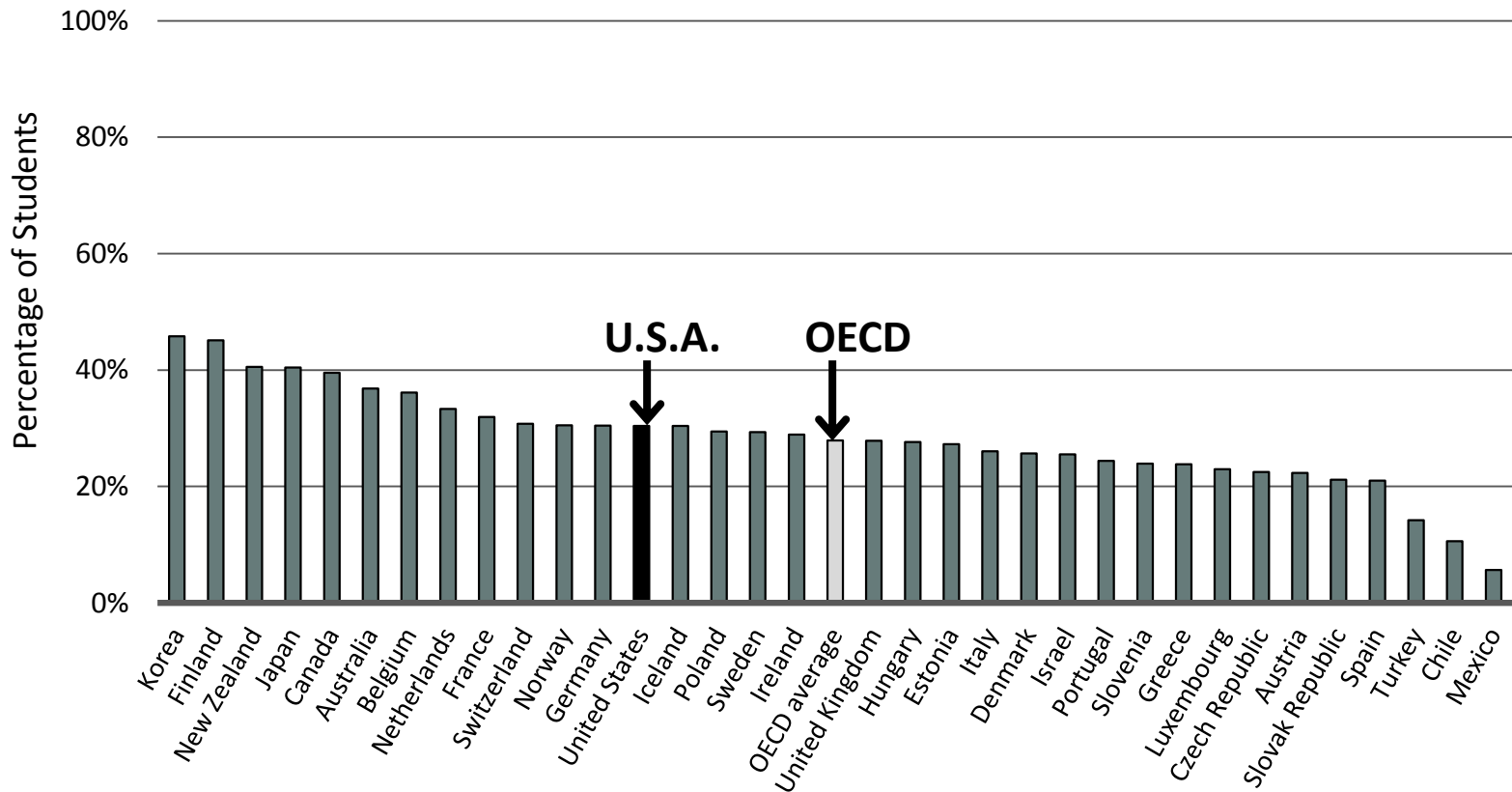
2009 PISA - Reading



Source: "Highlights from PISA 2009," NCES, 2010

U.S.A. Ranks 12th out of 34 OECD Countries on Students Scoring at the Highest Achievement Levels

PISA 2009 – Reading

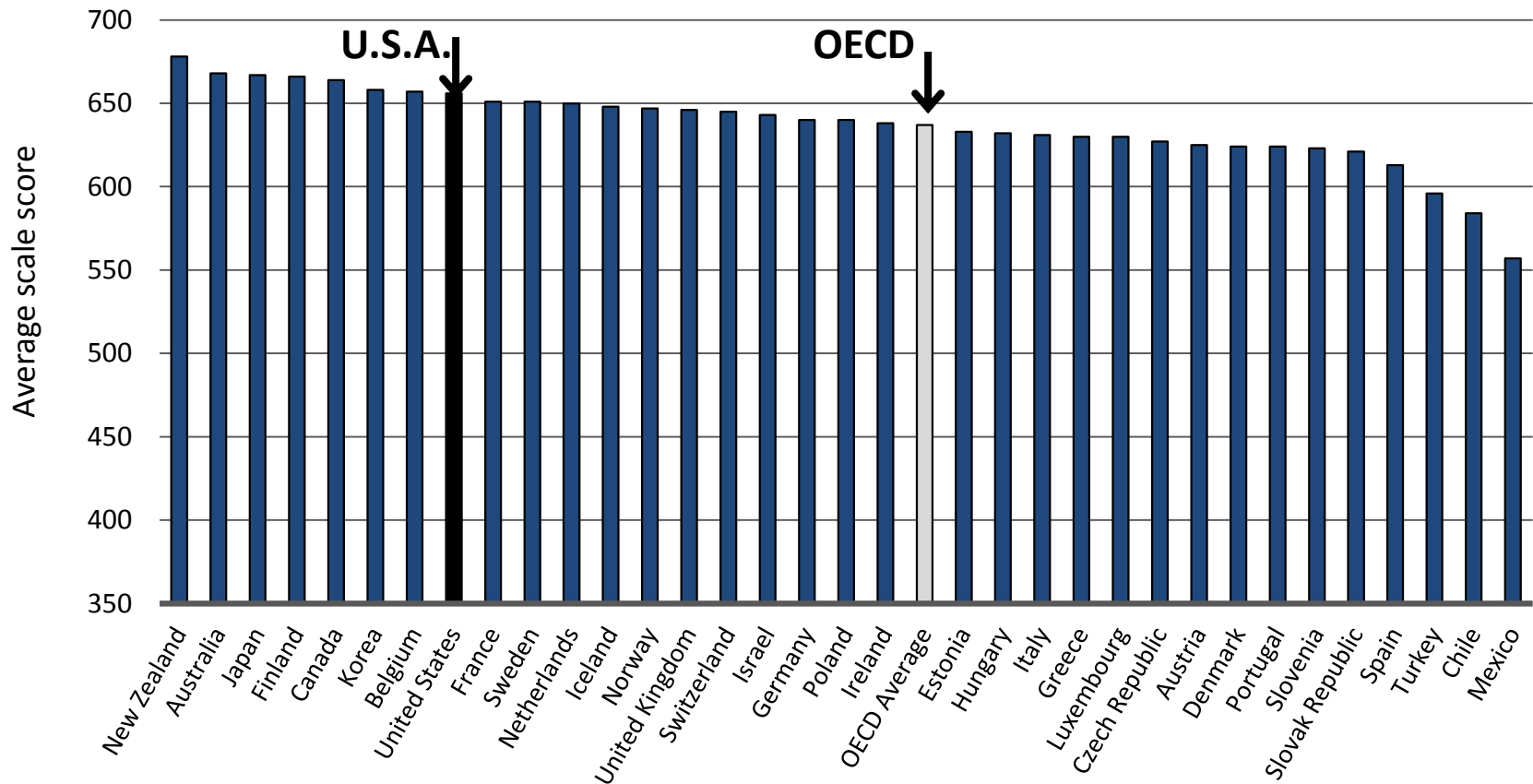


Note: Highest achievement levels are Levels 4 and above.

Source: PISA 2009 Results, OECD, Table I.2.1

U.S.A. Ranks 8th out of 34 OECD Countries in the Reading Achievement of the Highest-Performing Students

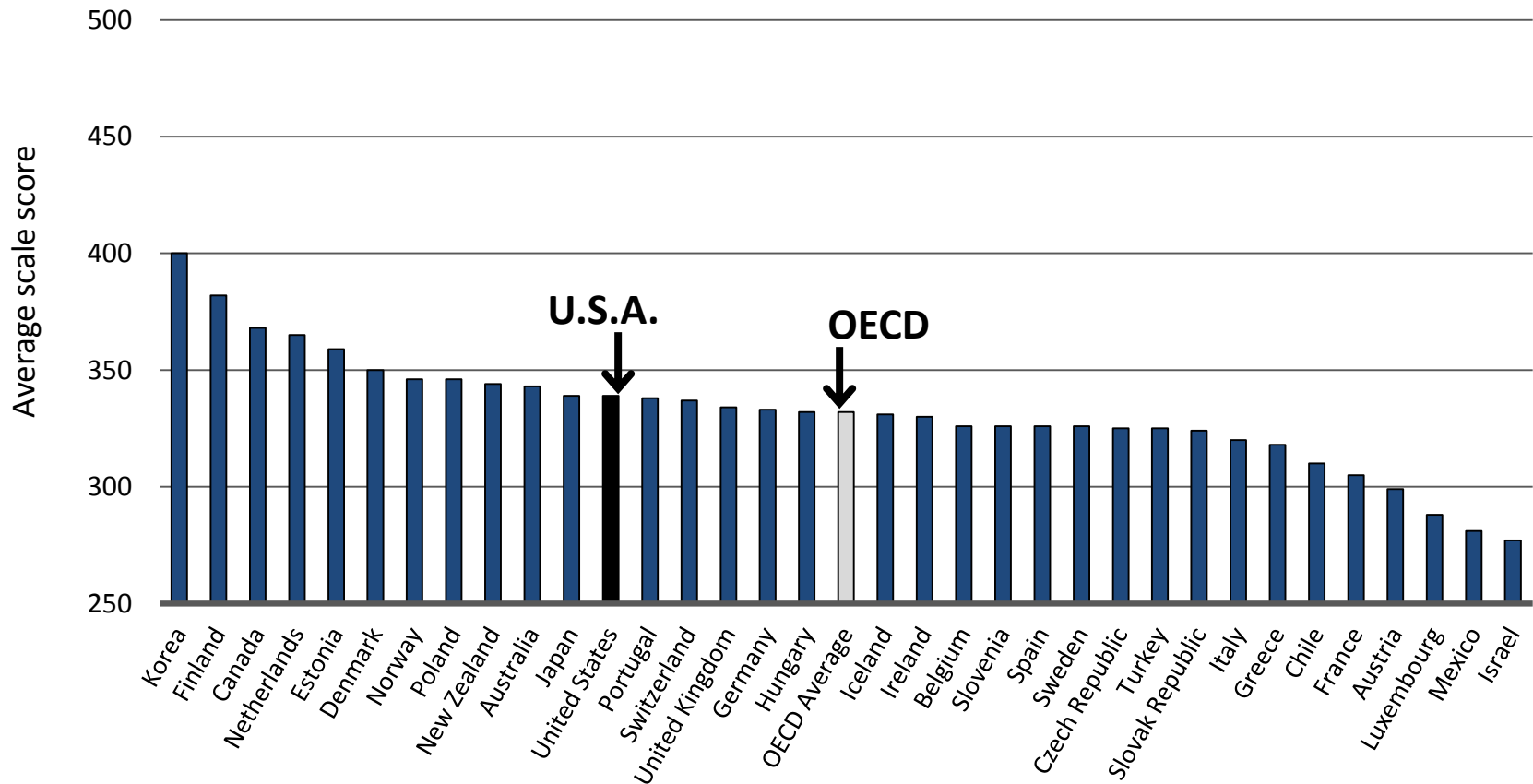
2009 PISA – Reading



Note: Highest-performing students are those at the 95th Percentile
Source: PISA 2009 results, NCES, Table R6

U.S.A. Ranks 11th out of 34 OECD Countries in the Reading Achievement of the Lowest-Performing Students

2009 PISA – Reading

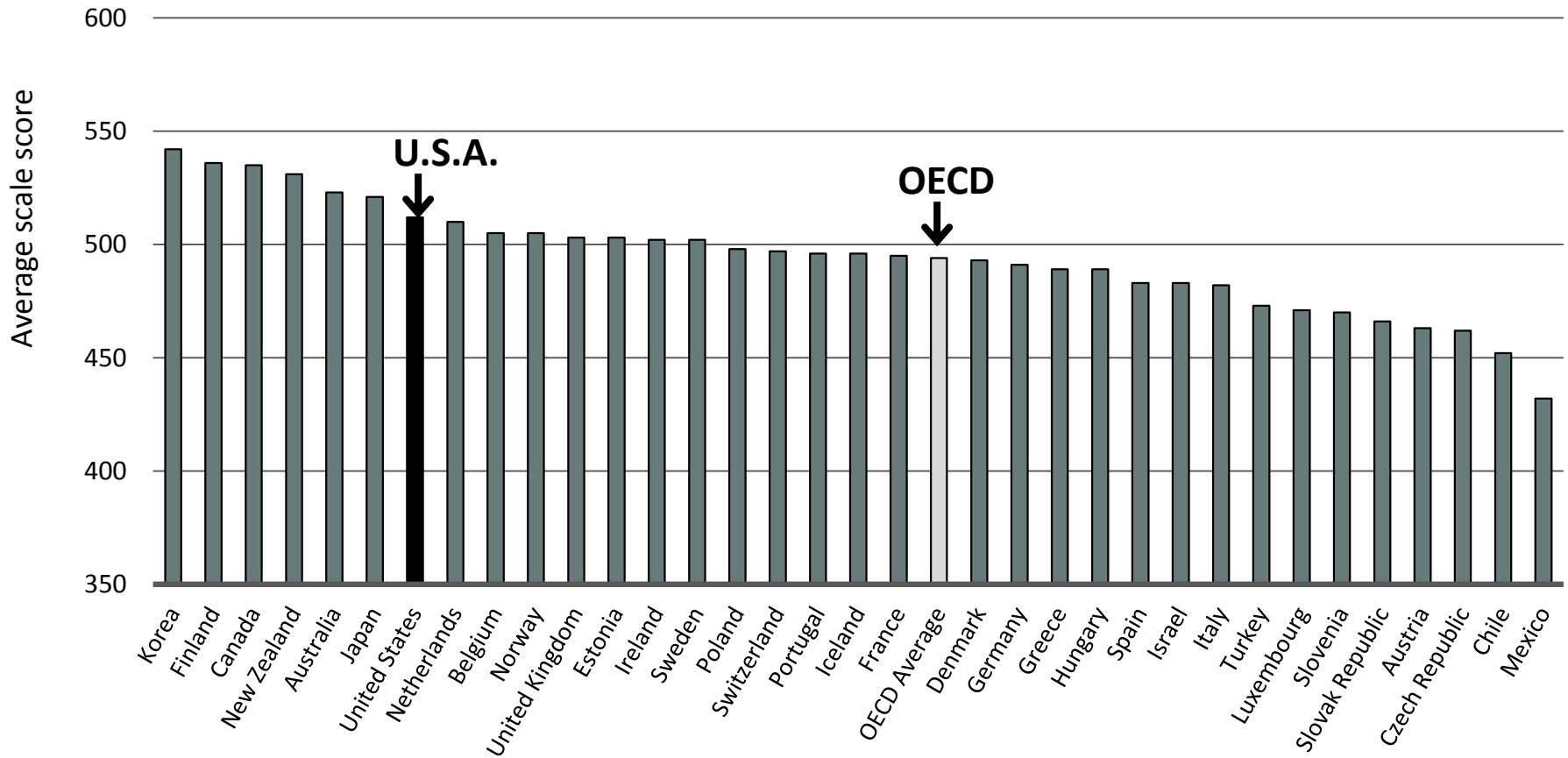


Note: Highest-performing students are those at the 5th Percentile
Source: PISA 2009 results, NCES, Table R6

U.S. students perform better
on some reading skills
than on others

U.S.A. Ranks 7th Out of 34 OECD Countries in Reflecting on and Evaluating Information

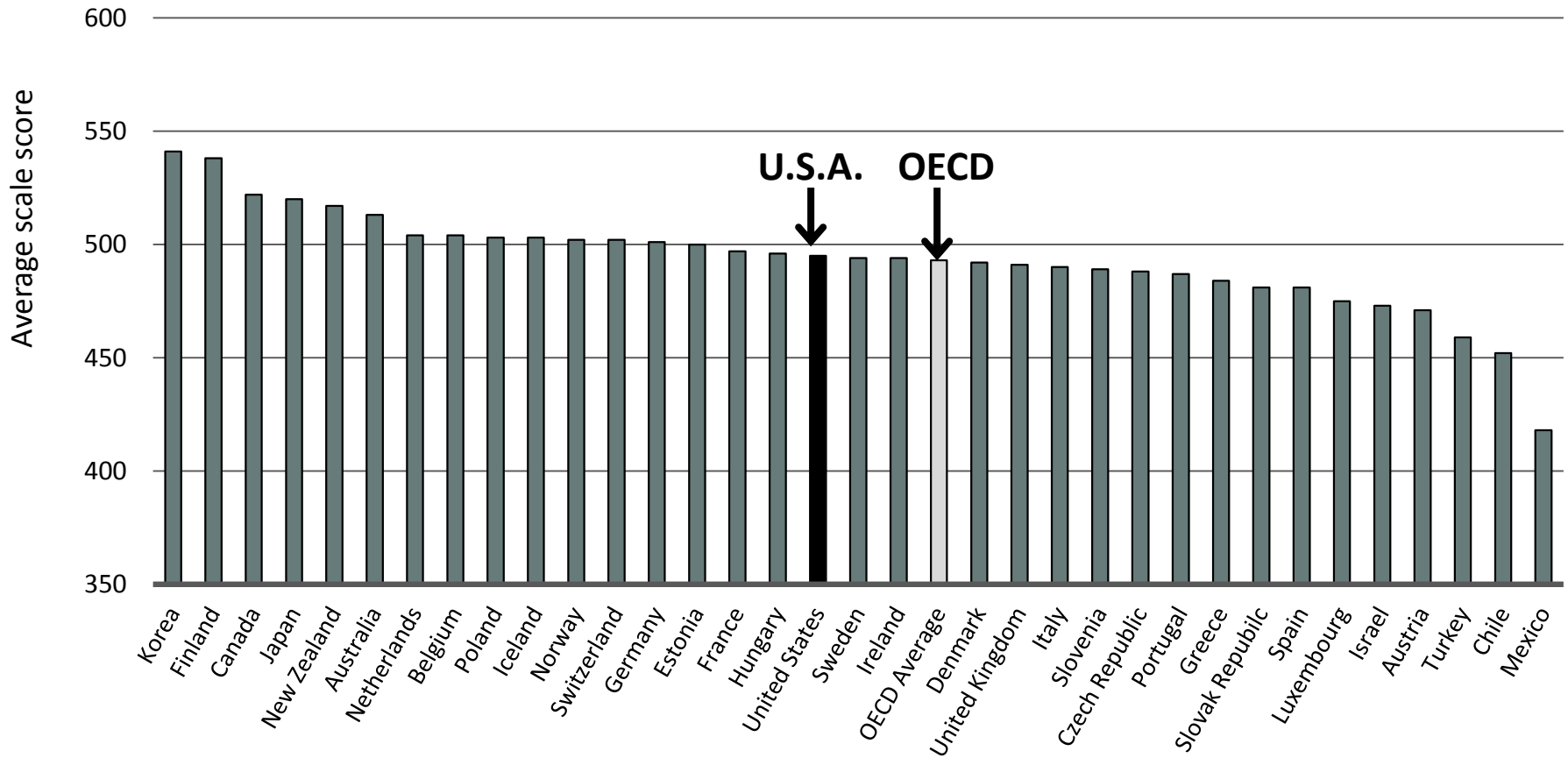
2009 PISA – Reading



Source: PISA 2009 results, NCES, Table R1

U.S.A. Ranks 17th Out of 34 OECD Countries in Integrating and Interpreting Information

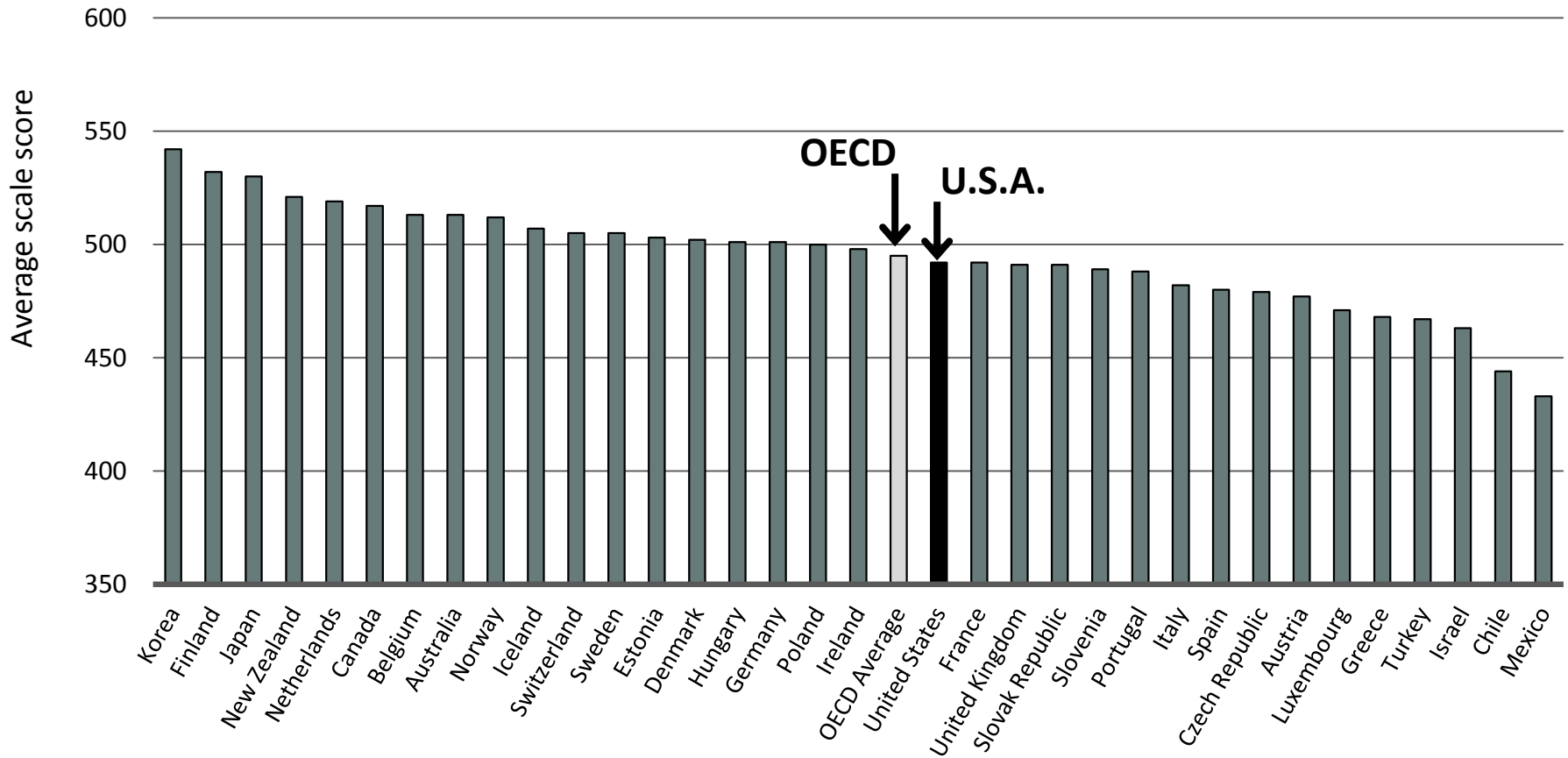
2009 PISA – Reading



Source: PISA 2009 results, NCES, Table R1

U.S.A. Ranks 19th Out of 34 OECD Countries in Accessing and Retrieving Information

2009 PISA – Reading

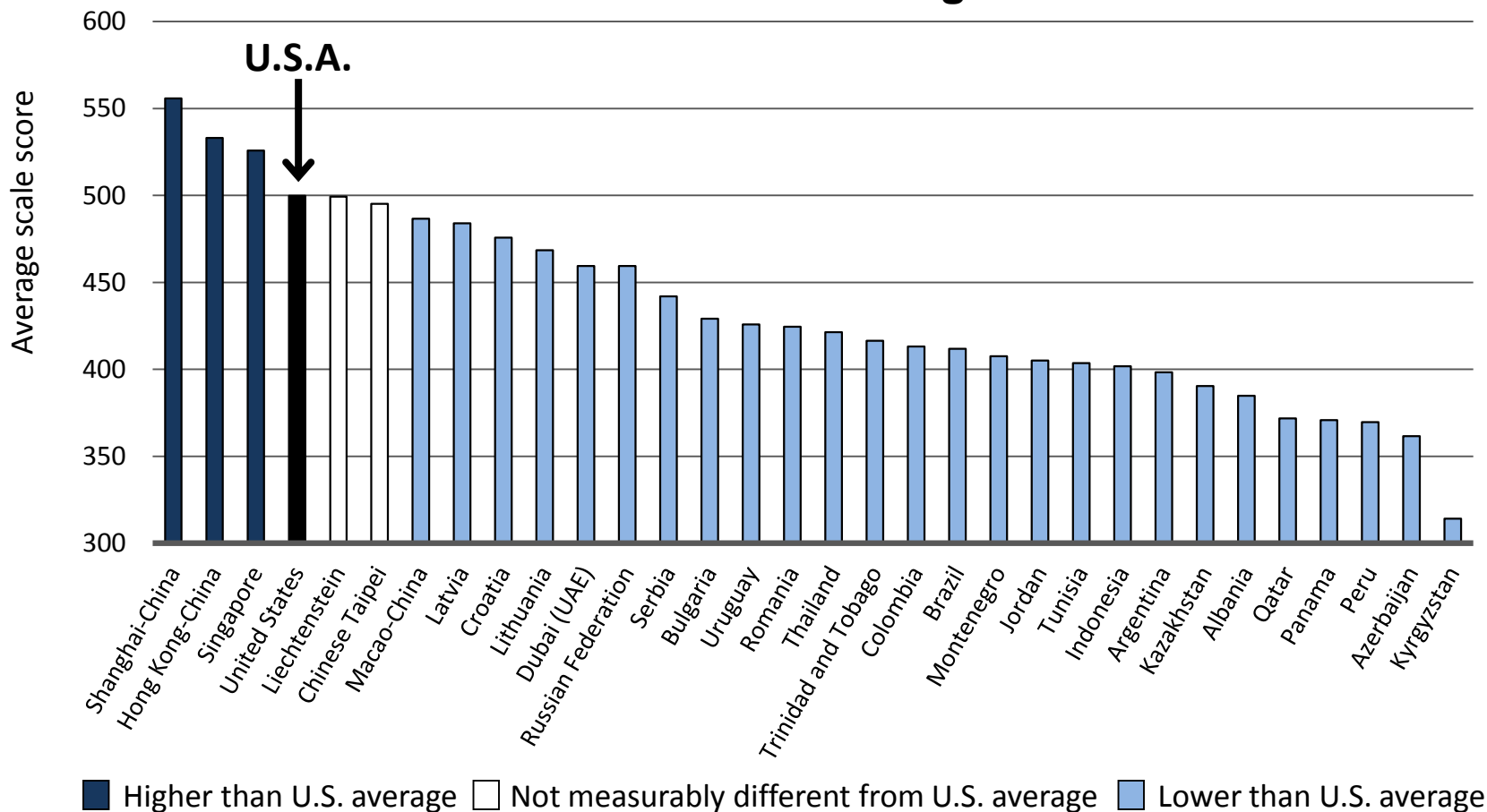


Source: PISA 2009 results, NCES, Table R1

The U.S. fares well compared to most non-OECD partner economies

Compared with the 31 Participating Non-OECD Economies, the U.S.A. Ranks 4th in Reading Literacy

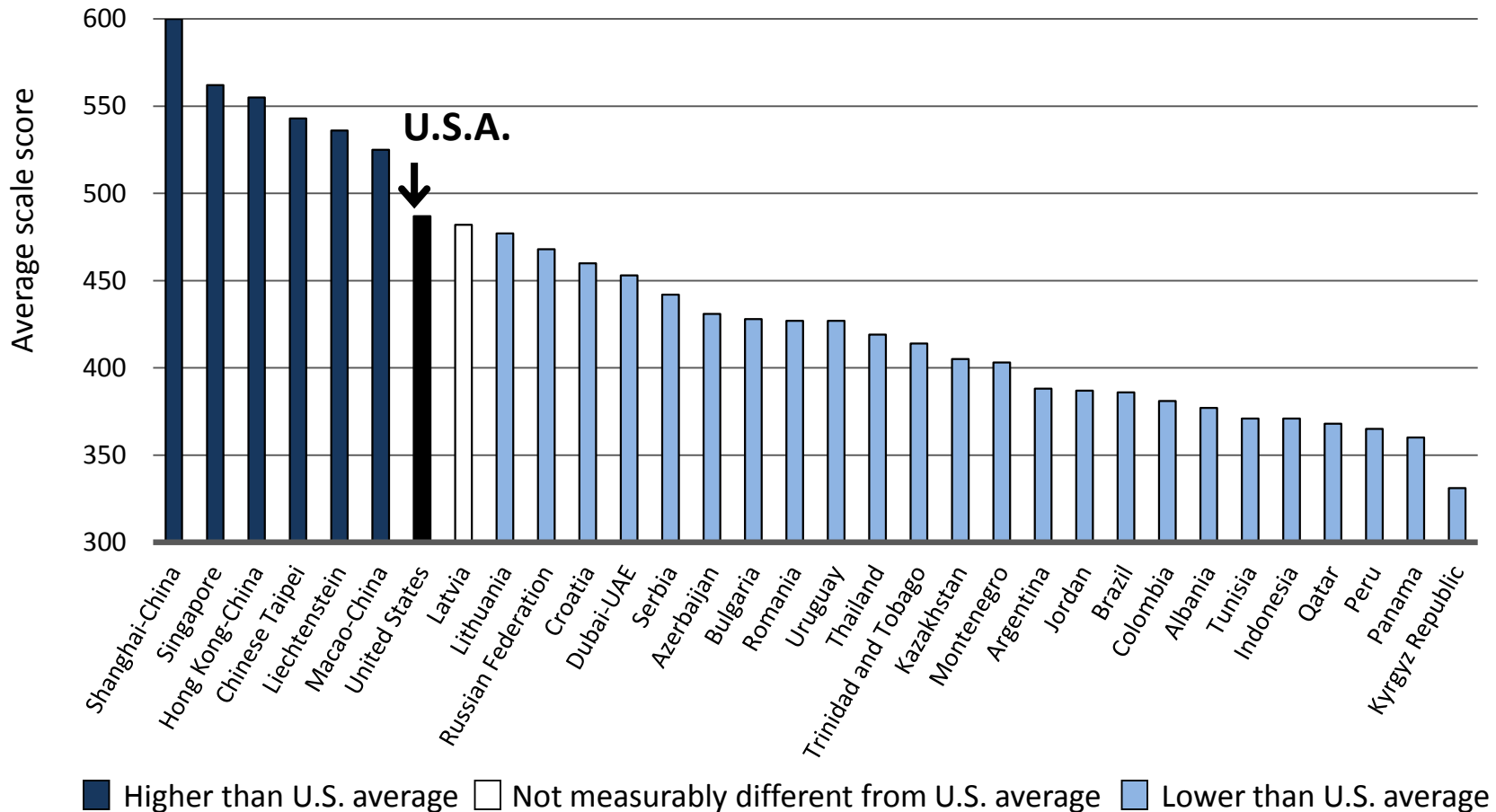
PISA 2009 – Reading



Source: PISA 2009 Results, NCES, Table R1

Compared with the 31 Participating Non-OECD Economies, the U.S.A. Ranks 7th in Math

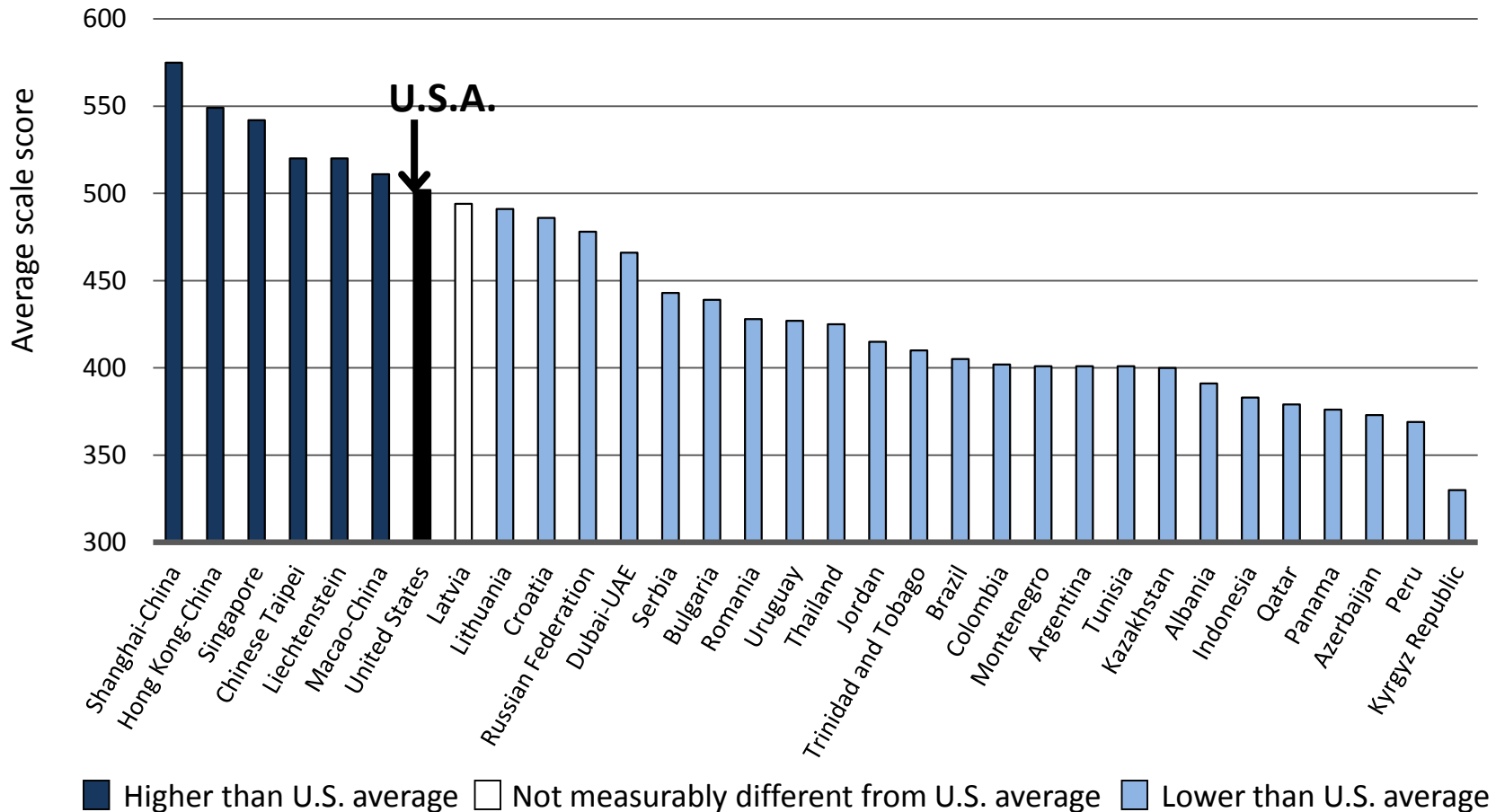
PISA 2009 – Math



Source: PISA 2009 Results, NCES, Table M1

Compared with the 31 Participating Non-OECD Economies, the U.S.A. Ranks 7th in Science

PISA 2009 – Science



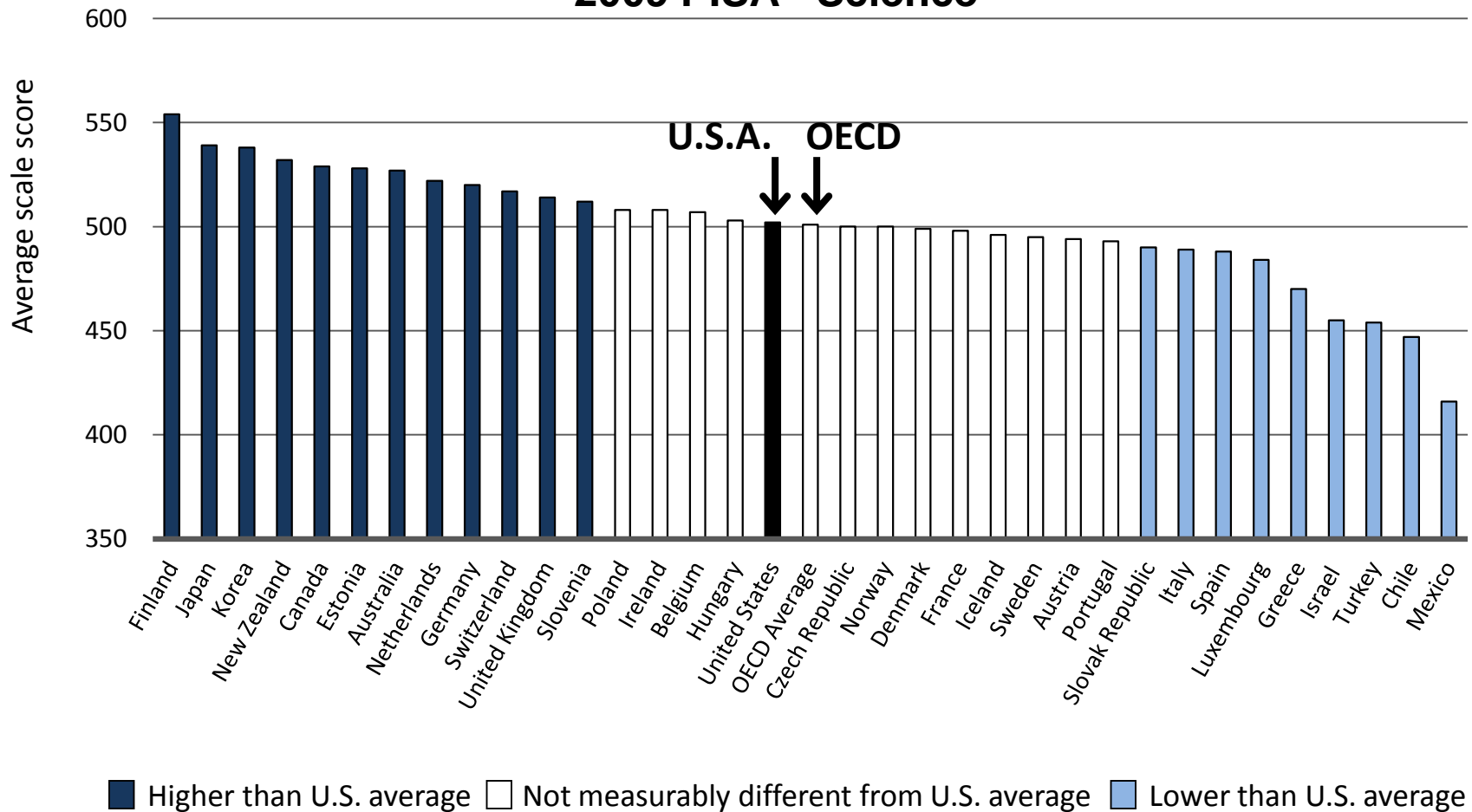
Source: PISA 2009 Results, NCES, Table S1

Despite some improvements, the
U.S. has a long way to go.

Math and science performance
remains lower relative to other
OECD countries . . .

Of 34 OECD Countries, U.S.A. Ranks 17th in Science

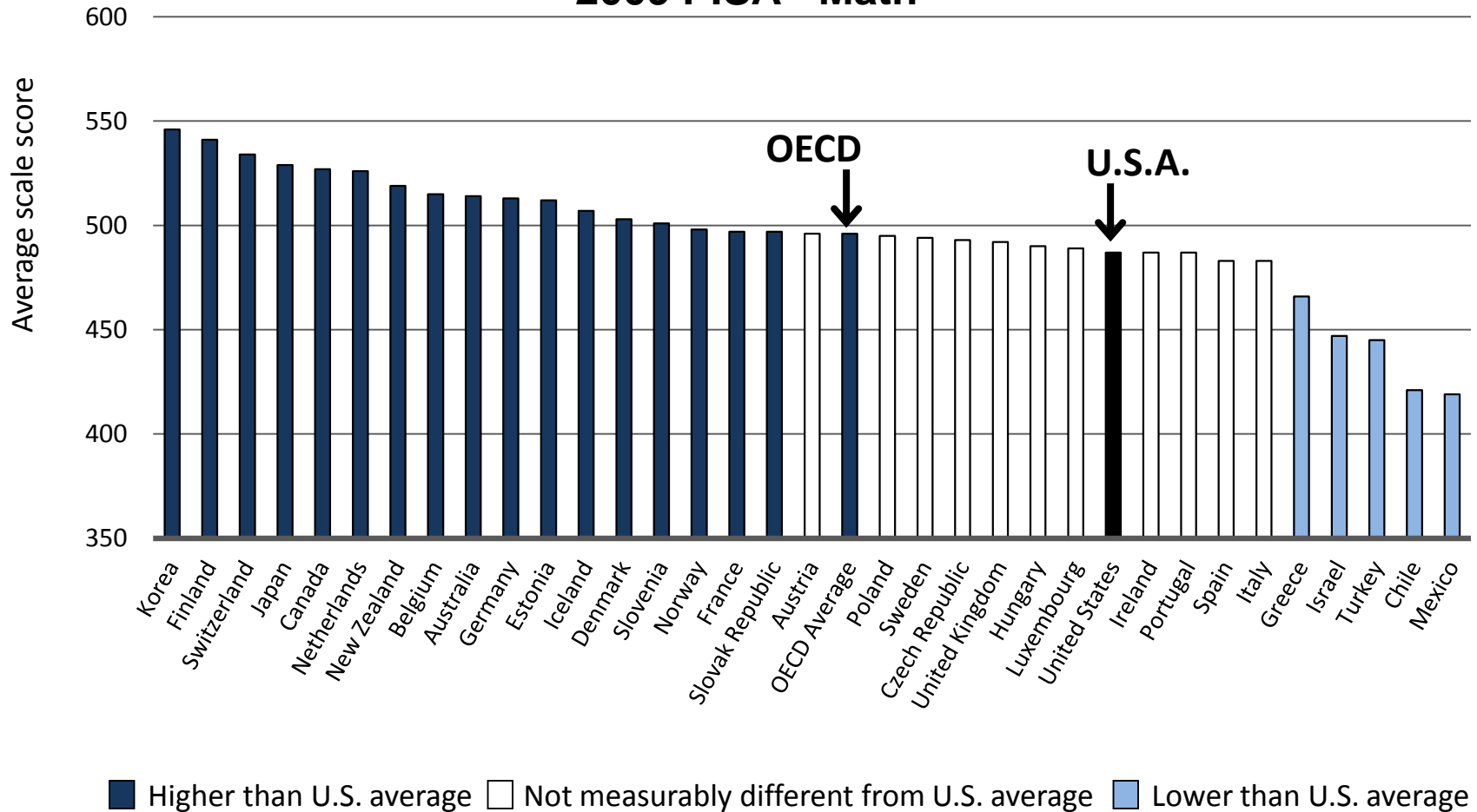
2009 PISA - Science



Source: "Highlights from PISA 2009," NCES, 2010

Of 34 OECD Countries, U.S.A. Ranks 25th in Math

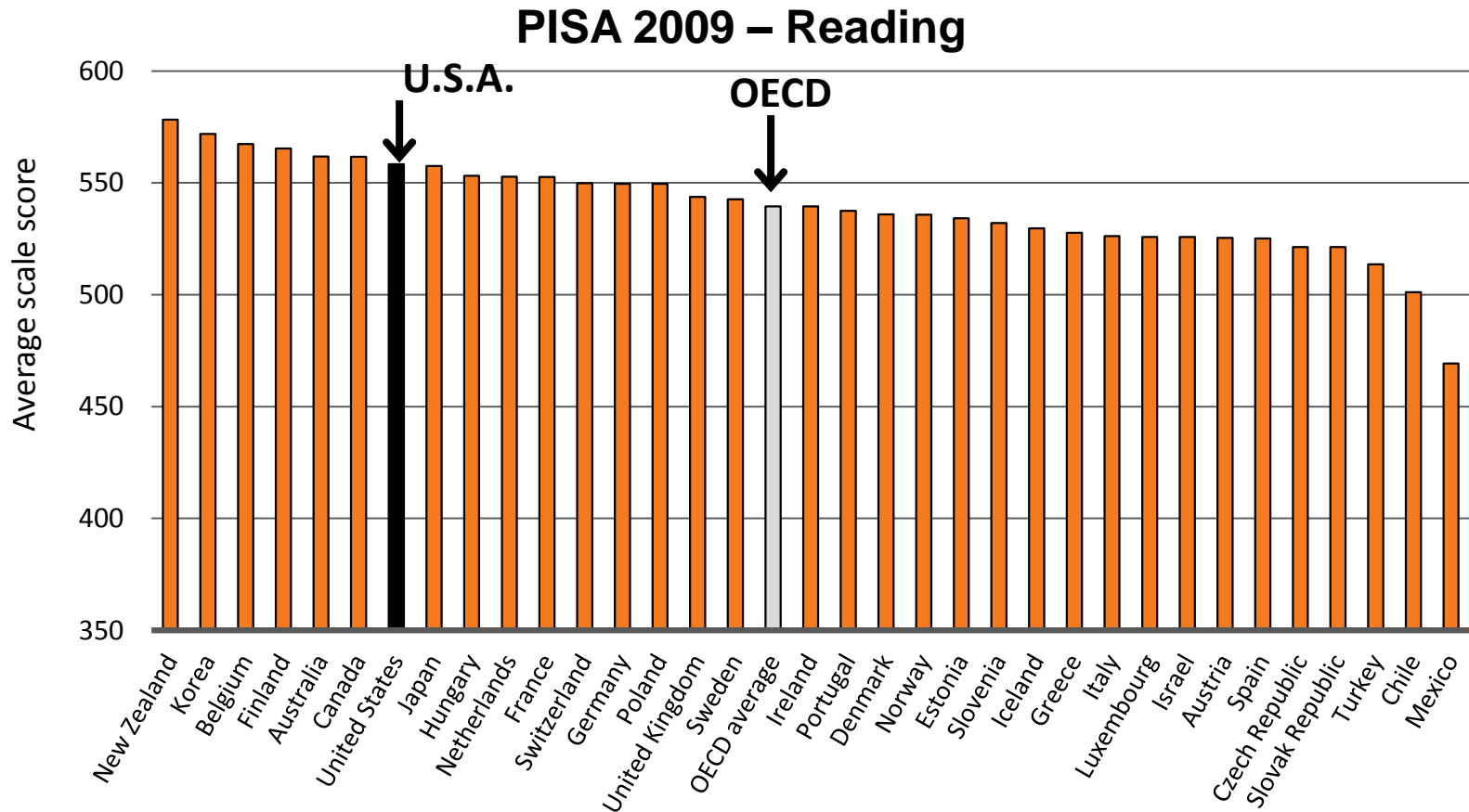
2009 PISA - Math



Source: "Highlights from PISA 2009," NCES, 2010

Low SES students in the U.S. do not compare as well to their international counterparts as high SES students do . . .

U.S.A. Ranks 7th out of 34 OECD Countries in the Math Achievement of High-SES Students

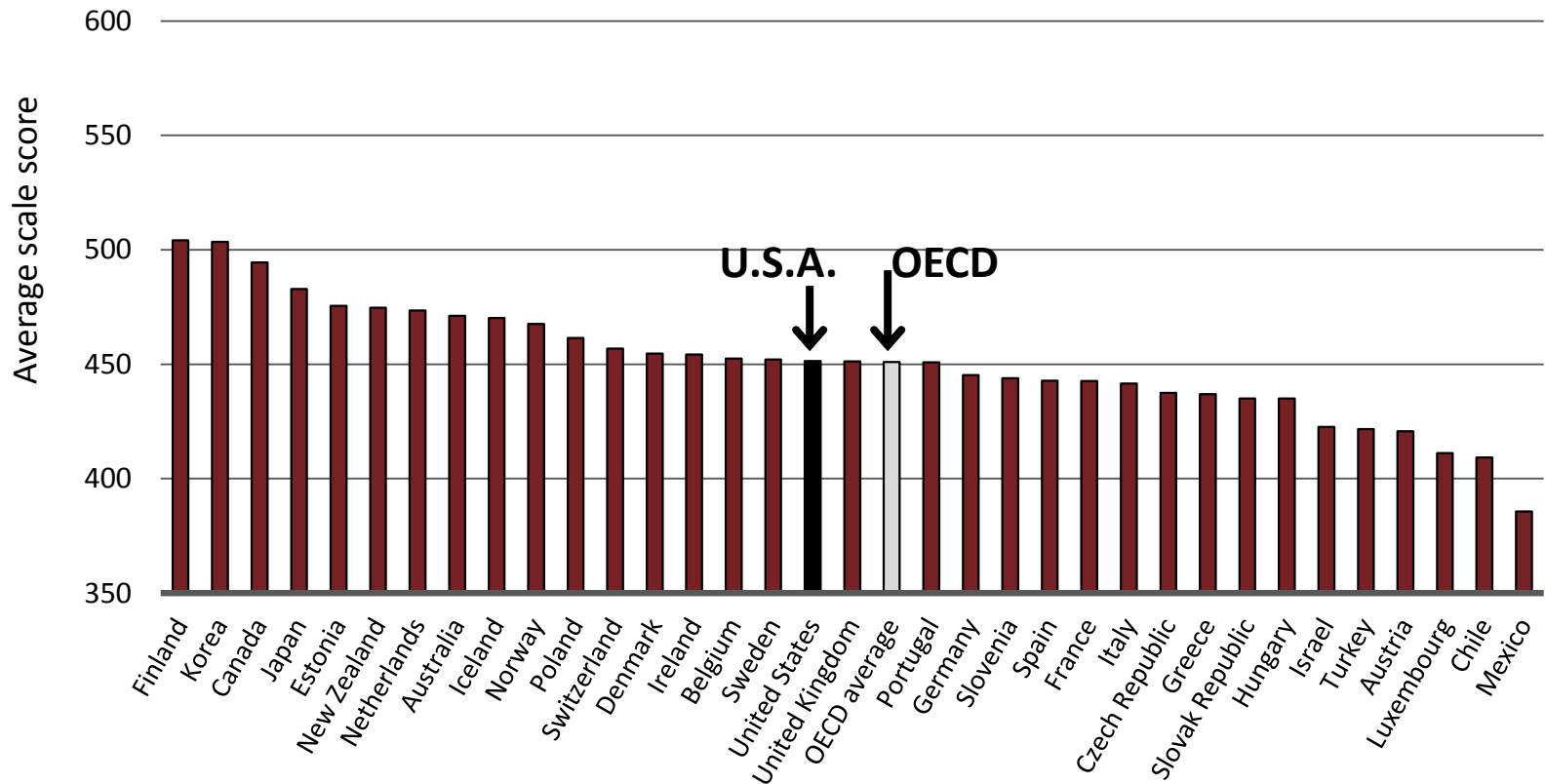


Note: High SES students are those in the top quartile on the ESCS. The ESCS (Index of Economic, Social, and Cultural Status) is comprised of information related to parents' occupational status, parents' educational attainment, family wealth, home educational resources, and possessions related to "classical" culture in the home.

Source: PISA 2009 Results, OECD, Table II.3.1

U.S.A. Ranks 17th out of 34 OECD Countries in the Math Achievement of Low-SES Students

PISA 2009 – Reading



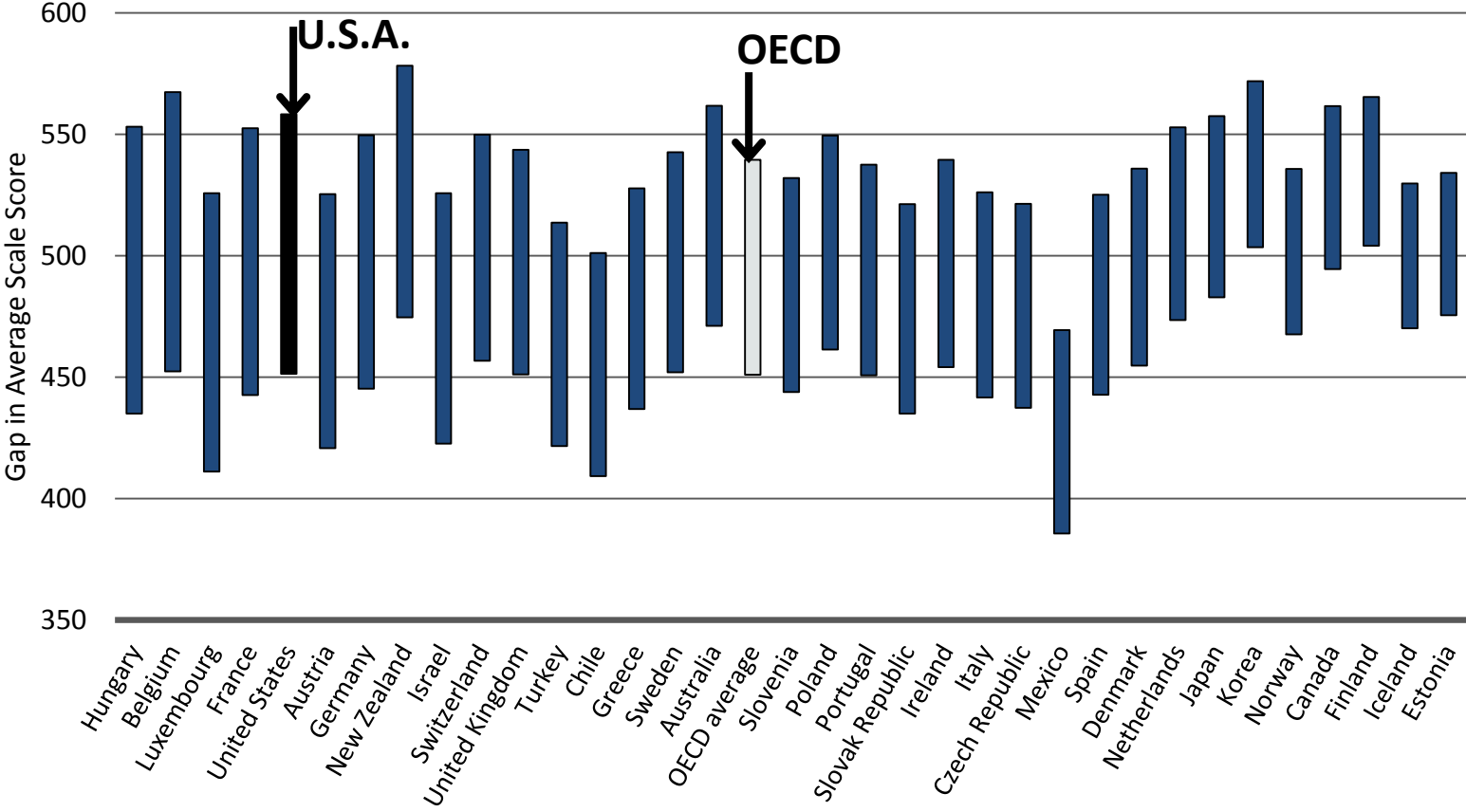
Note: Low SES students are those in the bottom quartile on the ESCS. The ESCS (Index of Economic, Social, and Cultural Status) is comprised of information related to parents' occupational status, parents' educational attainment, family wealth, home educational resources, and possessions related to "classical" culture in the home.

Source: PISA 2009 Results, OECD, Table II.3.1

Gaps between low-SES and high-SES students are large . . .

Among OECD Countries, U.S.A. has the 5th Largest Gap Between High-SES and Low-SES Students

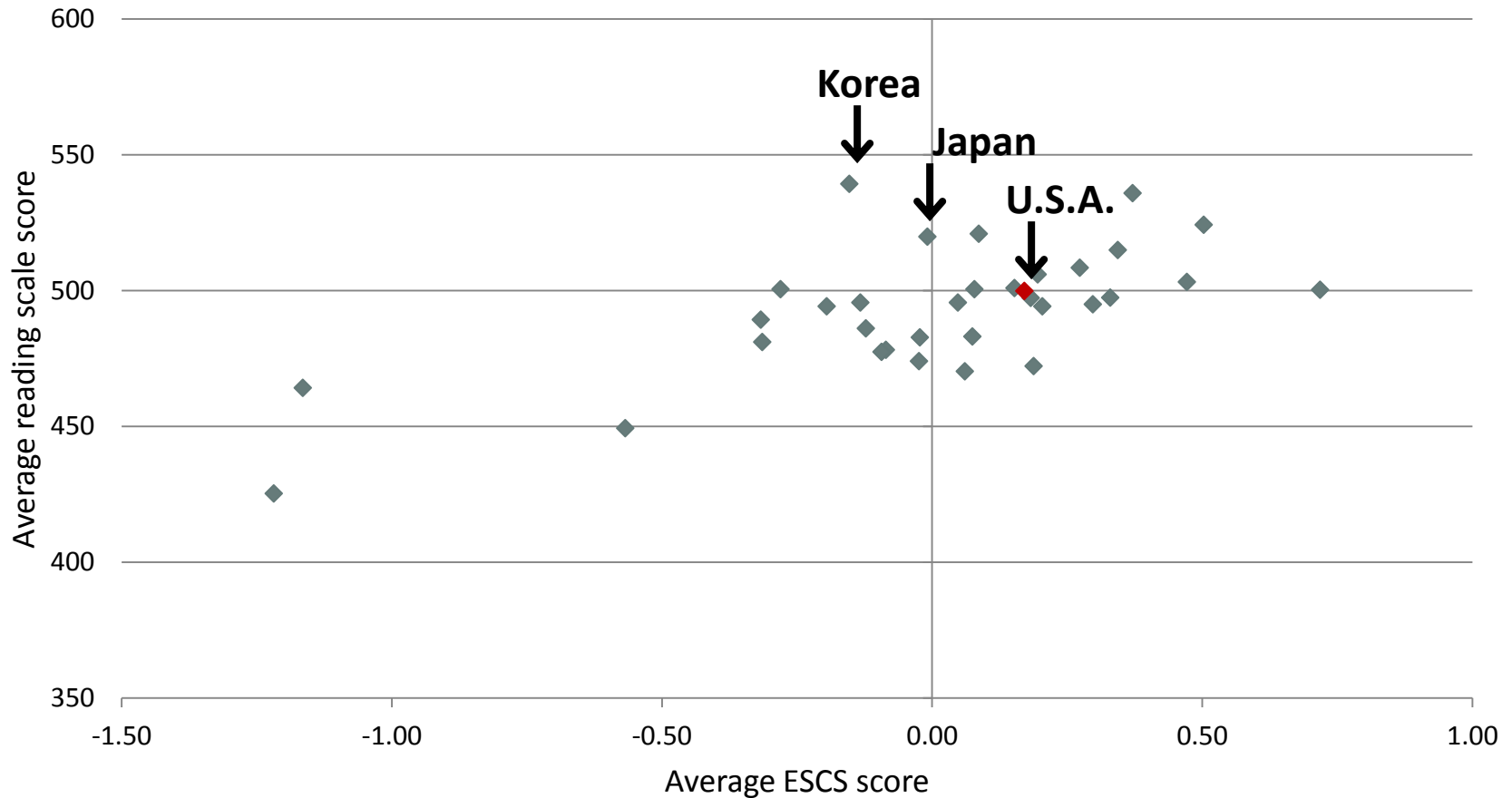
2009 PISA – Reading



Source: PISA 2009 Results, OECD, Table II.3.1

SES alone does not explain
performance . . .

Some students in countries with lower SES perform at higher levels



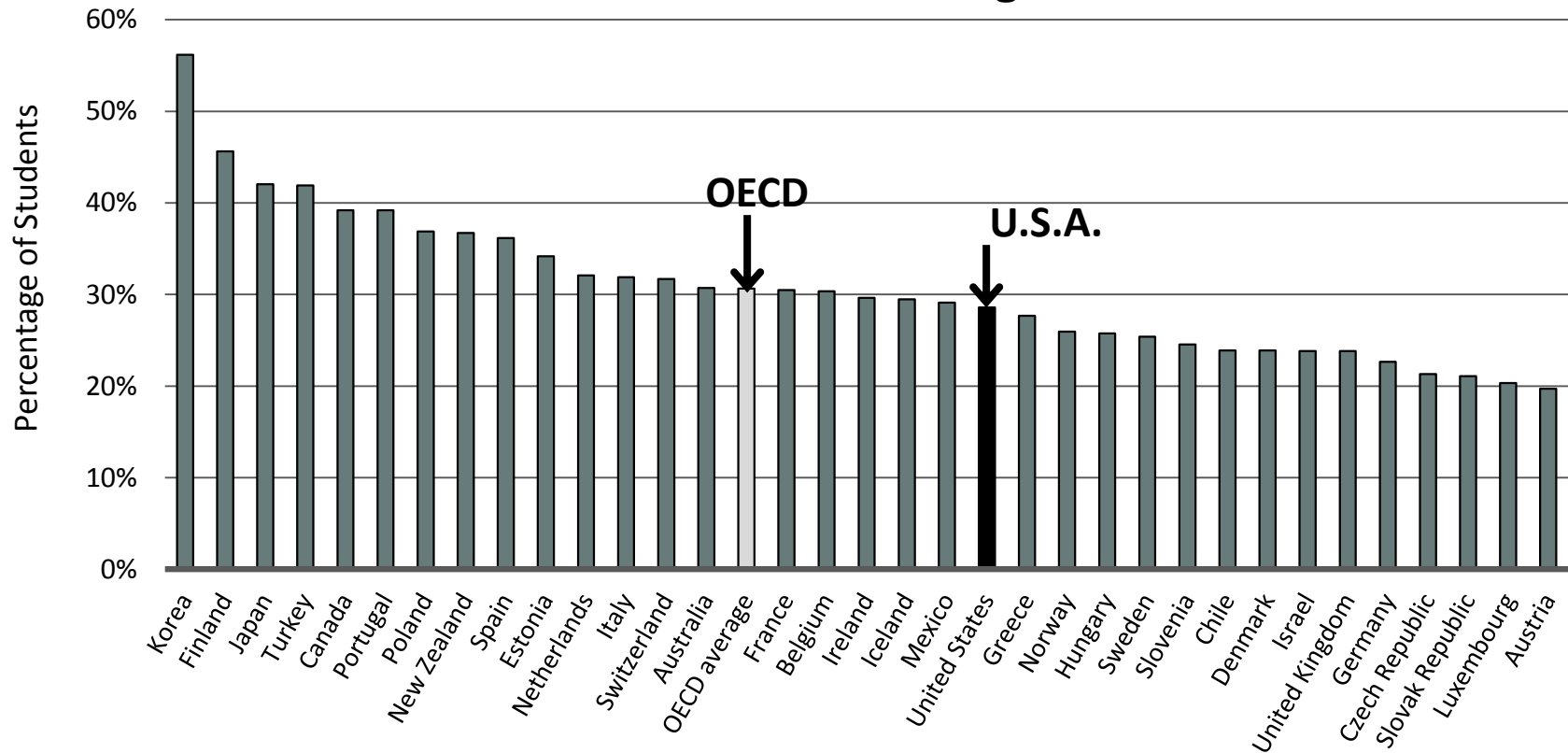
The U.S. would rank lower on reading performance if all 34 OECD countries had the same average socioeconomic status

| | Actual Rank | Rank if SES were equalized across countries |
|---------------|---------------------------|--|
| United States | Tied for 12 th | Tied for 17 th |
| France | Tied for 17 th | 7 th |
| Hungary | Tied for 20 th | 8 th |
| Portugal | 22 nd | Tied for 10 th |
| Turkey | 32 nd | Tied for 10 th |

Low-SES students in the U.S. are less likely to be high performing than low-SES students in many other countries . . .

The U.S. is tied for 17th among 34 OECD Countries on the Percentage of Low-SES Students who are High-Performing

PISA 2009 - Reading

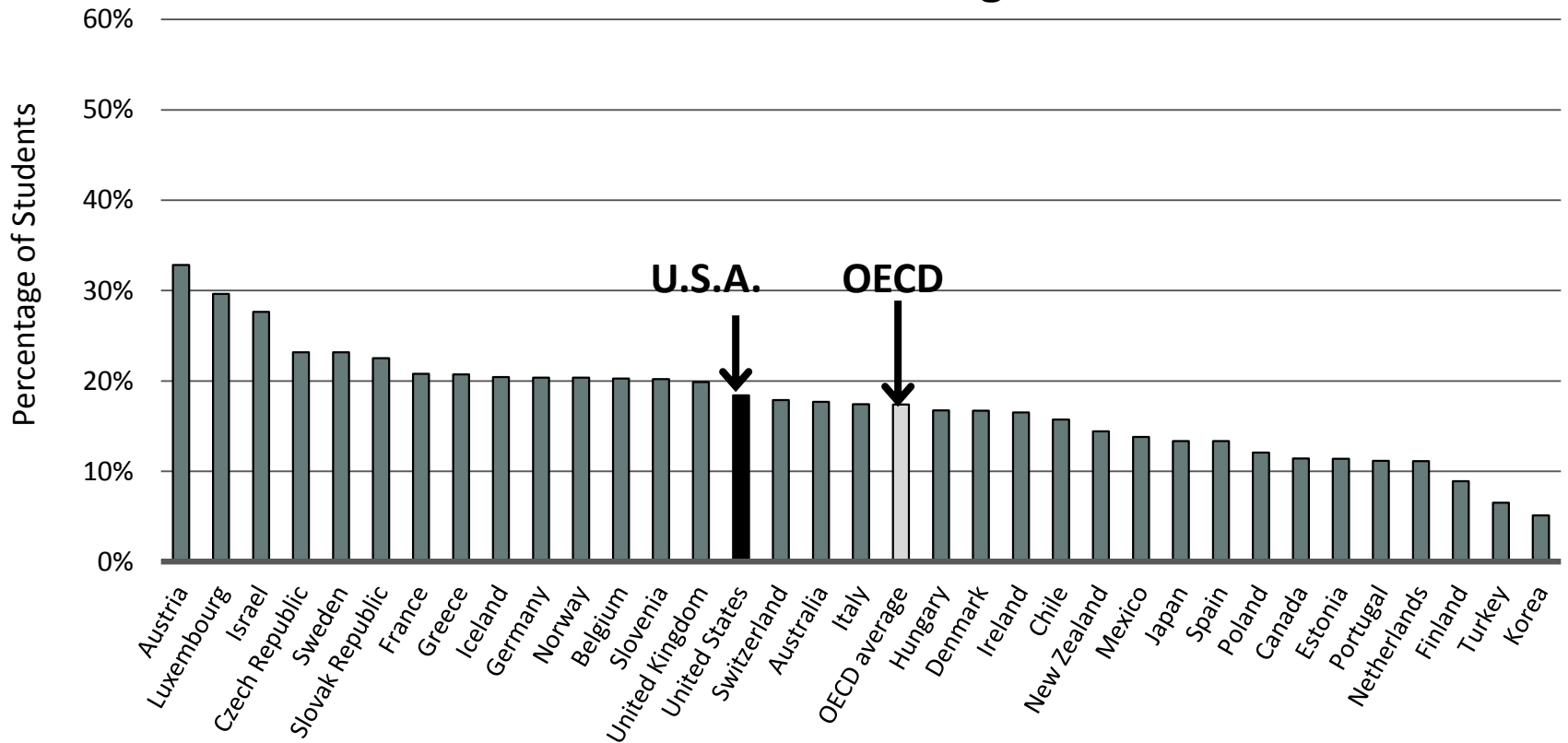


Note: High-performing, low-SES students are those who are in the bottom quarter of the ESCS in their country but perform in the top quarter across students from all countries after accounting for socioeconomic background.

Source: PISA 2009 Results, OECD, Table II.3.3

The U.S. is tied for 7th among the 34 OECD Countries on the Percentage of Low-SES Students who are Low-Performing

PISA 2009 - Reading

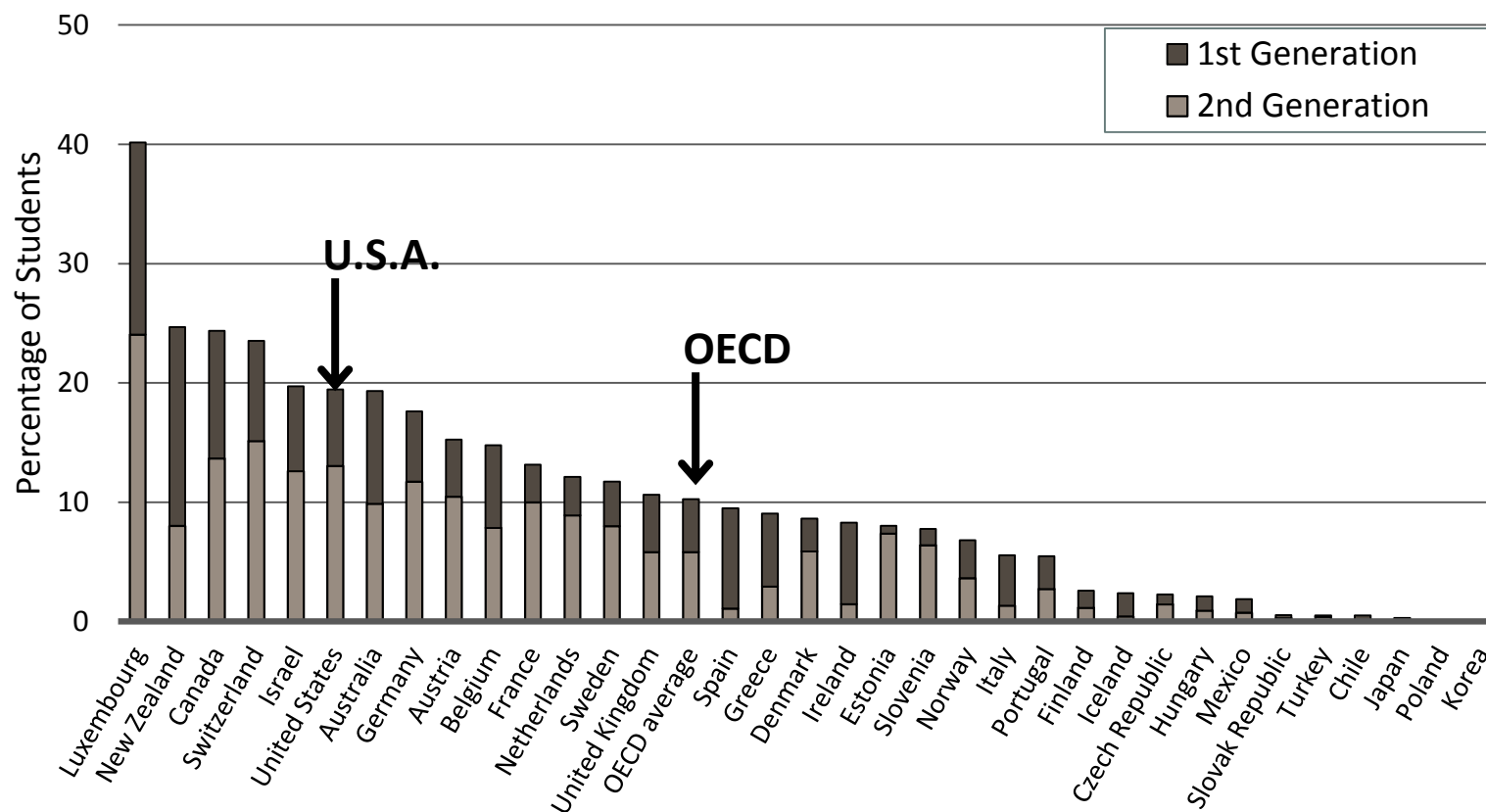


Note: Low-performing, low-SES students are those who are in the bottom quarter of the ESCS in their country and perform in the bottom quarter across students from all countries after accounting for socioeconomic background.

Source: PISA 2009 Results, OECD, Table II.3.3

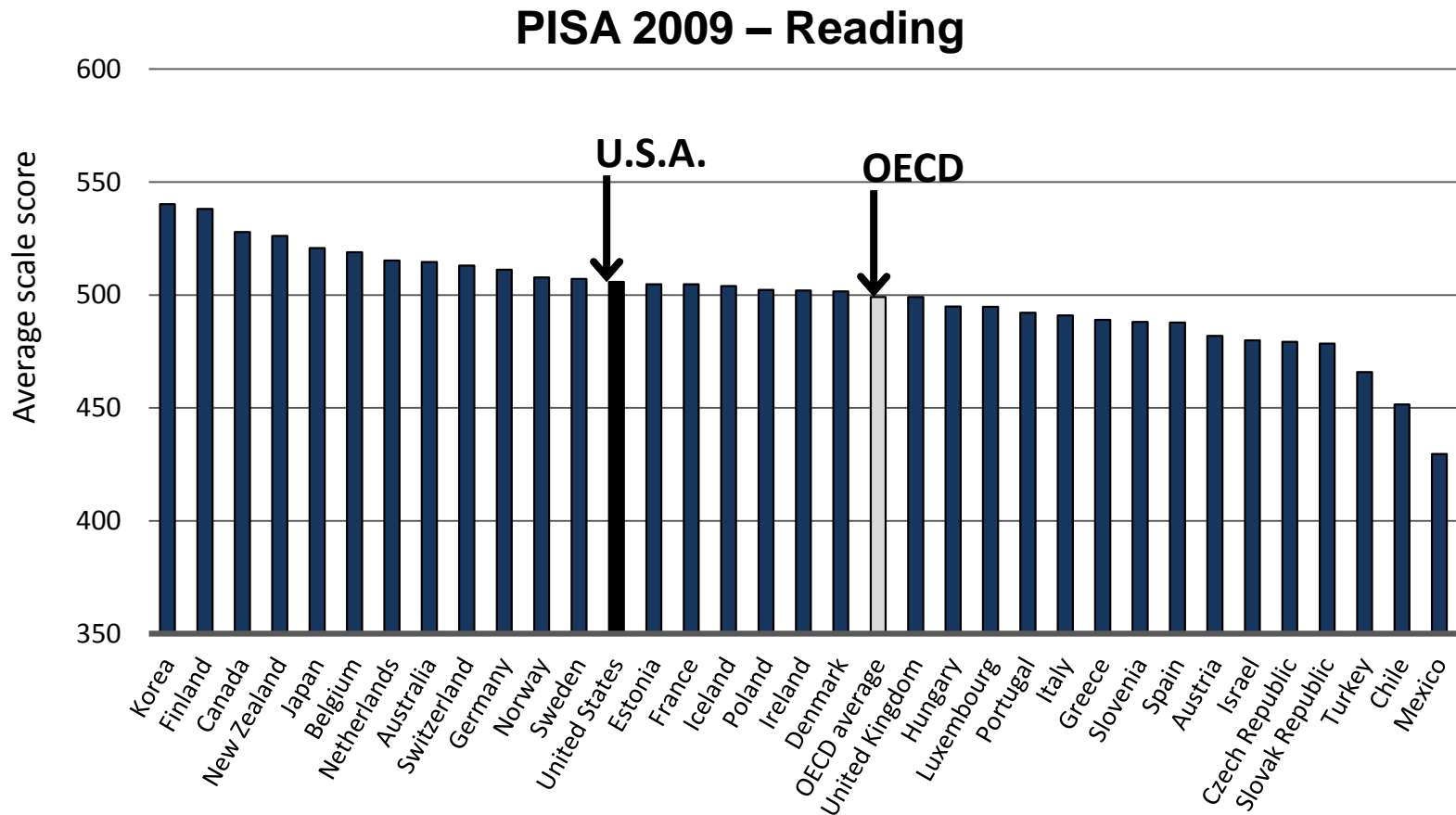
U.S. performance doesn't improve if
we consider only native-born
students . . .

The U.S.A. has a larger percentage of immigrants and children of immigrants than most OECD countries



Source: PISA 200 Results, OECD, Table II.4.1

U.S. ranks 13th out of 34 OECD countries when only taking into account native student* scores

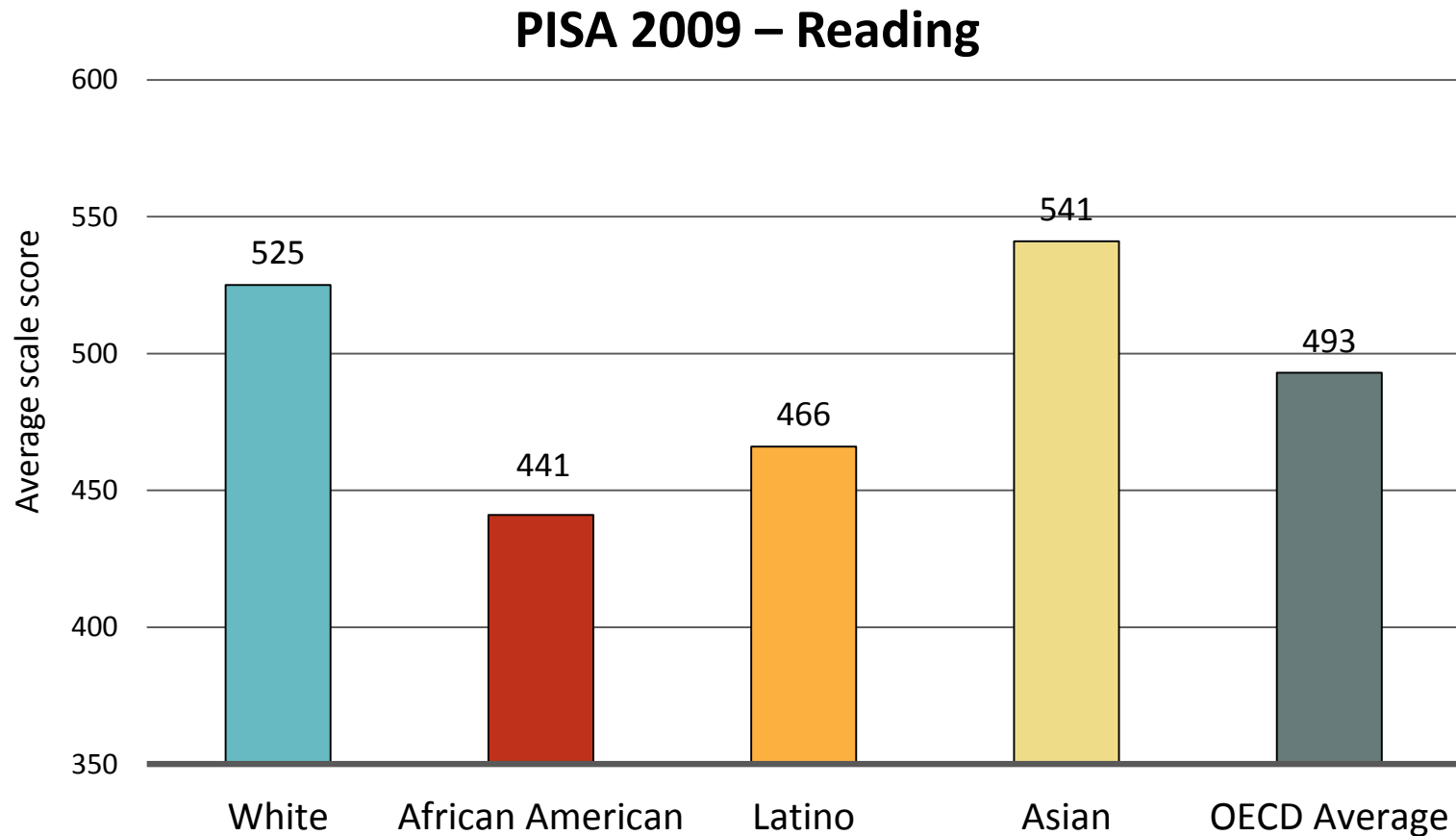


*Students born in the country of assessment with at least one parent born in the same country

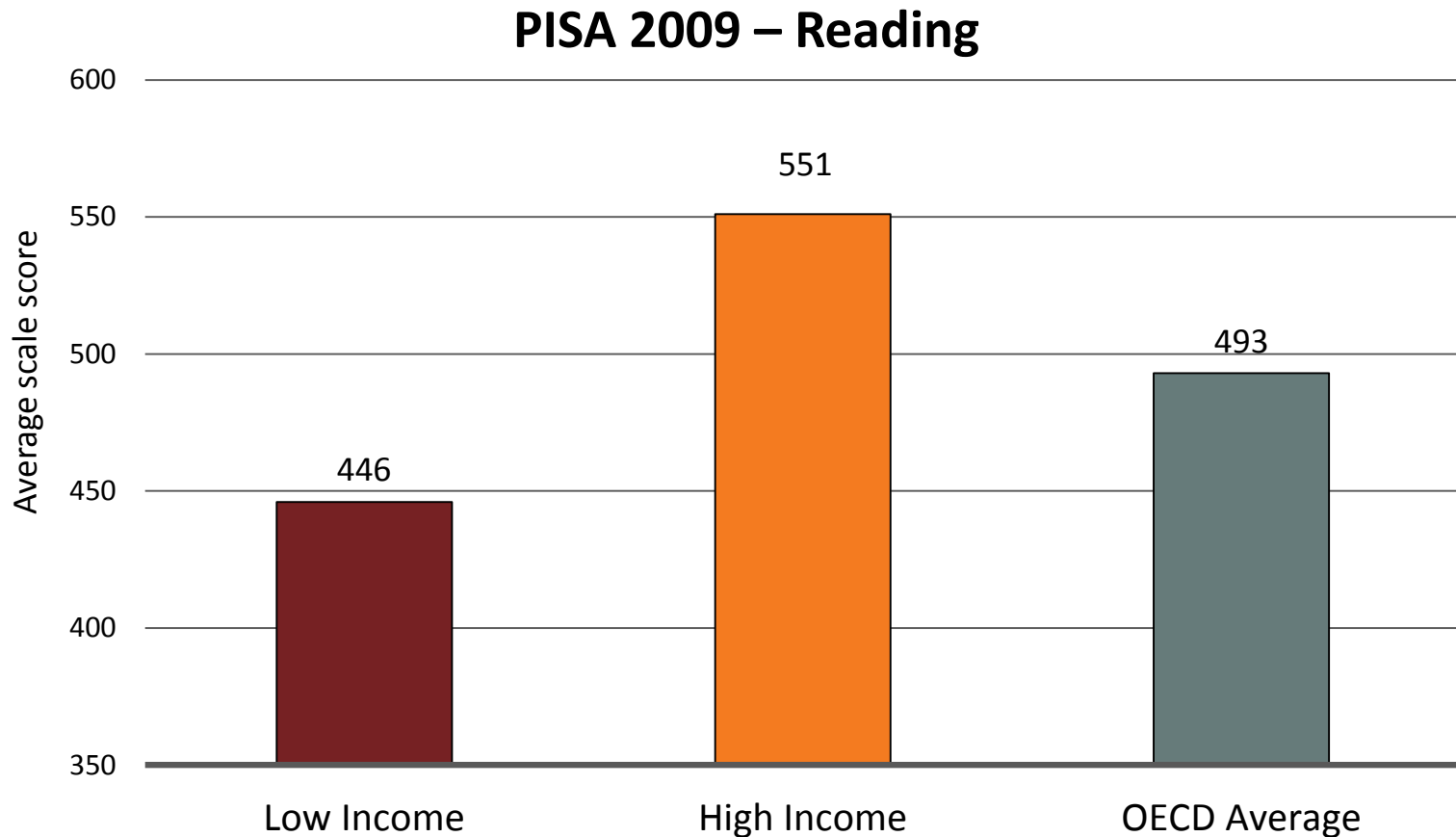
Source: PISA 2009 results, OECD, Table II.4.1

Within the United States,
performance varies widely
across groups of students . . .

African American and Latino Students Score Far Below White and Asian Counterparts



Students in Low Income Schools Score Far Below Students in Higher Income Schools



Note: Low income schools are those in which 75% or more of students are eligible for free or reduced price lunch; high income schools are those in which less than 10% are eligible
Source: International Data Explorer, NCES

PISA Reading Literacy Levels: Higher-Level Skills

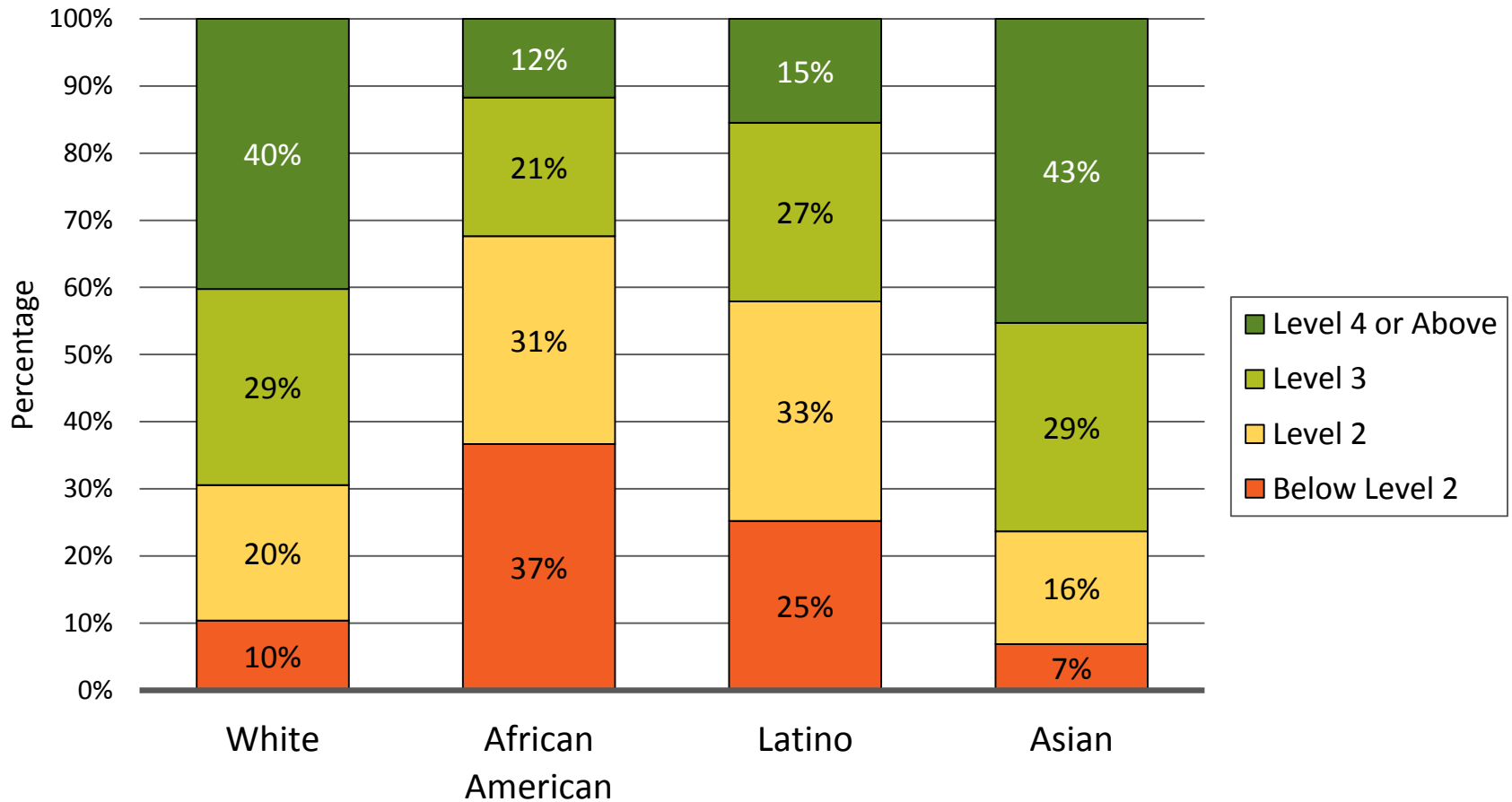
- Level 6: Make multiple inferences, comparisons, and contrasts that are detailed, precise, and relating to unfamiliar topics
- Level 5: Locate and organize information on unfamiliar content, drawing on specialized knowledge
- Level 4: Locate and organize embedded information, interpret linguistic nuance, and draw on public knowledge

PISA Reading Literacy Levels: Lower-Level Skills

- Level 3: Locate several pieces of information to identify a main idea, understand relationships, or draw connections between pieces of information
- Level 2: Locate at least one piece of information to recognize main ideas or compare and contrast the text with outside knowledge
- Level 1A: Locate at least one piece of explicitly-stated information, recognize a theme, or make connections with everyday knowledge
- Level 1B: Locate one piece of explicitly-stated, prominently-featured information in a simple text

Students of Color Far Less Likely to Have Higher Order Reading Skills

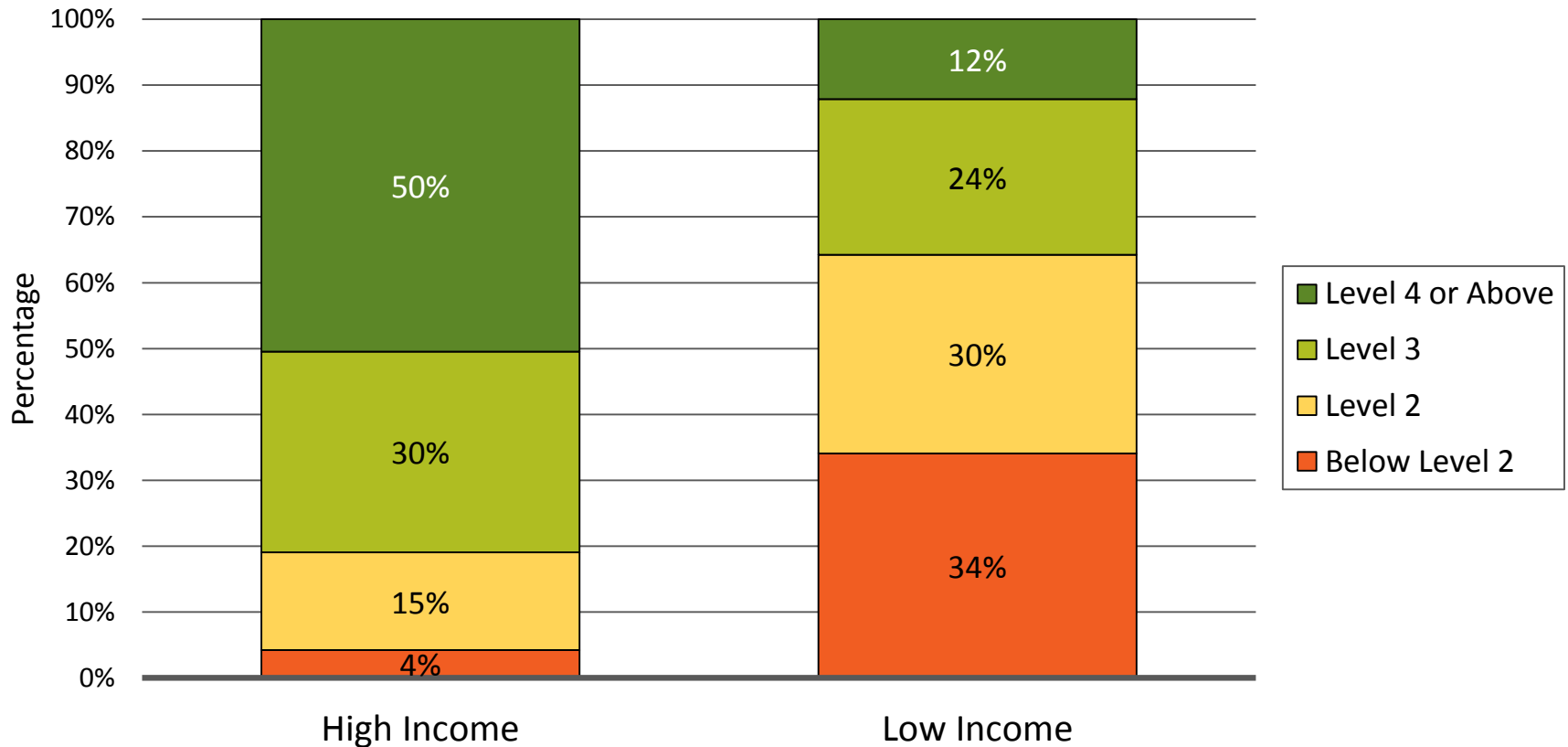
2009 PISA – Reading



Source: PISA 2009 results, NCES, Table R11

Students in Low Income Schools Far Less Likely to Have Higher Order Reading Skills

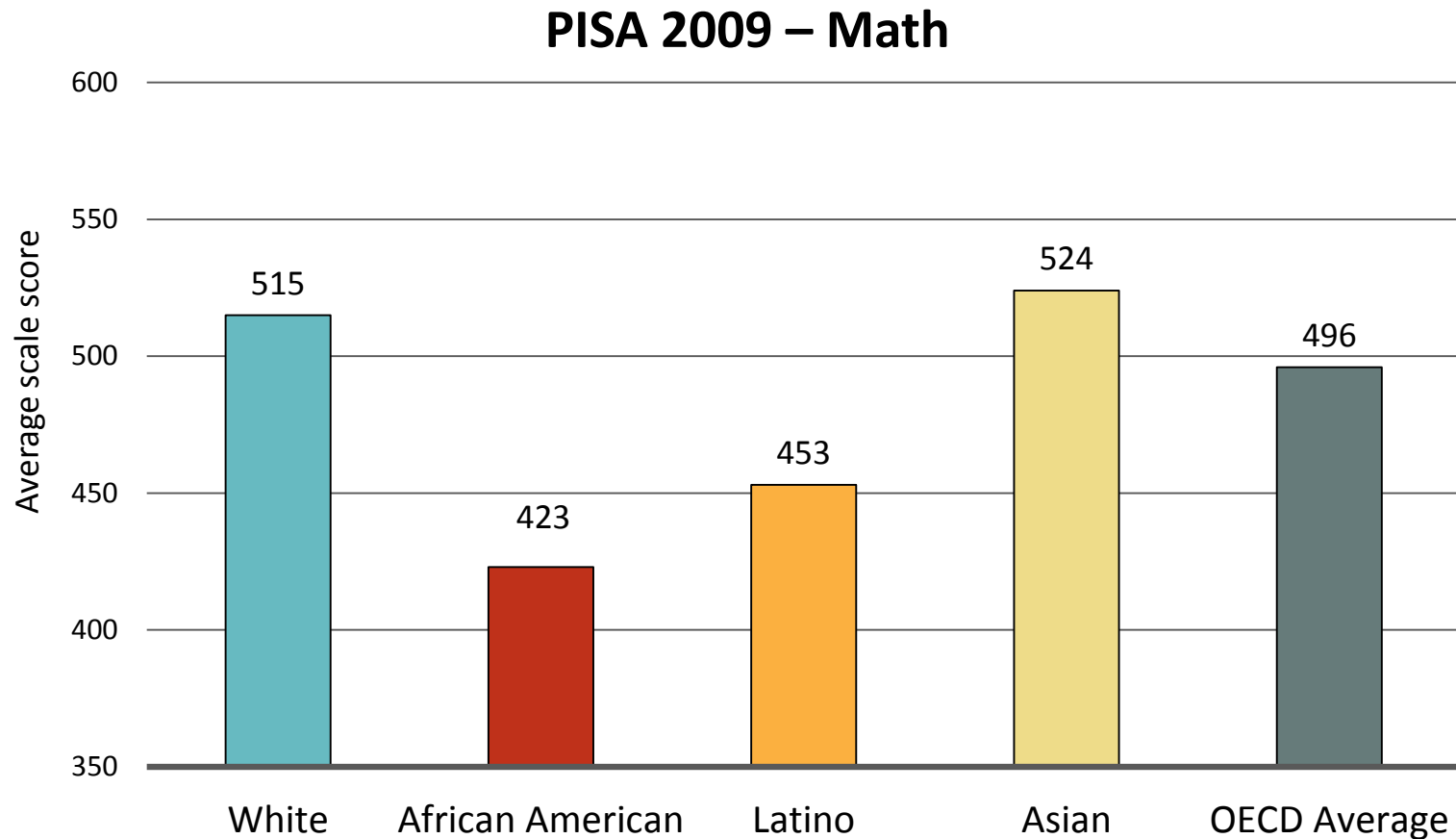
2009 PISA – Reading



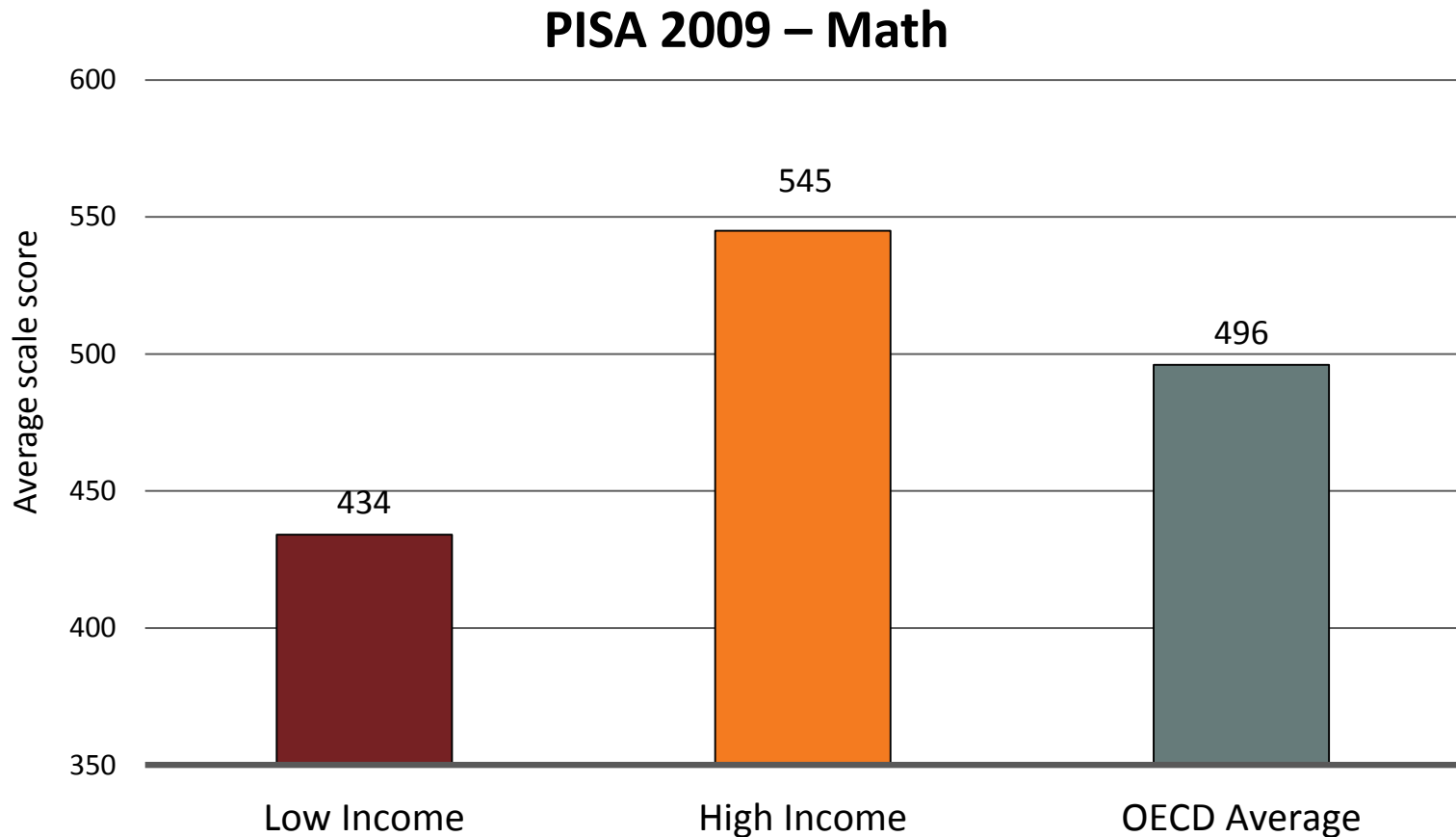
Note: Low poverty schools are those in which less than 10 percent of students are eligible for free or reduced price lunch; high poverty schools are those in which 75 percent or more are eligible for free or reduced price lunch

Source: PISA 2009 results, NCES, Table R12

African American and Latino Students Score Far Below White and Asian Counterparts



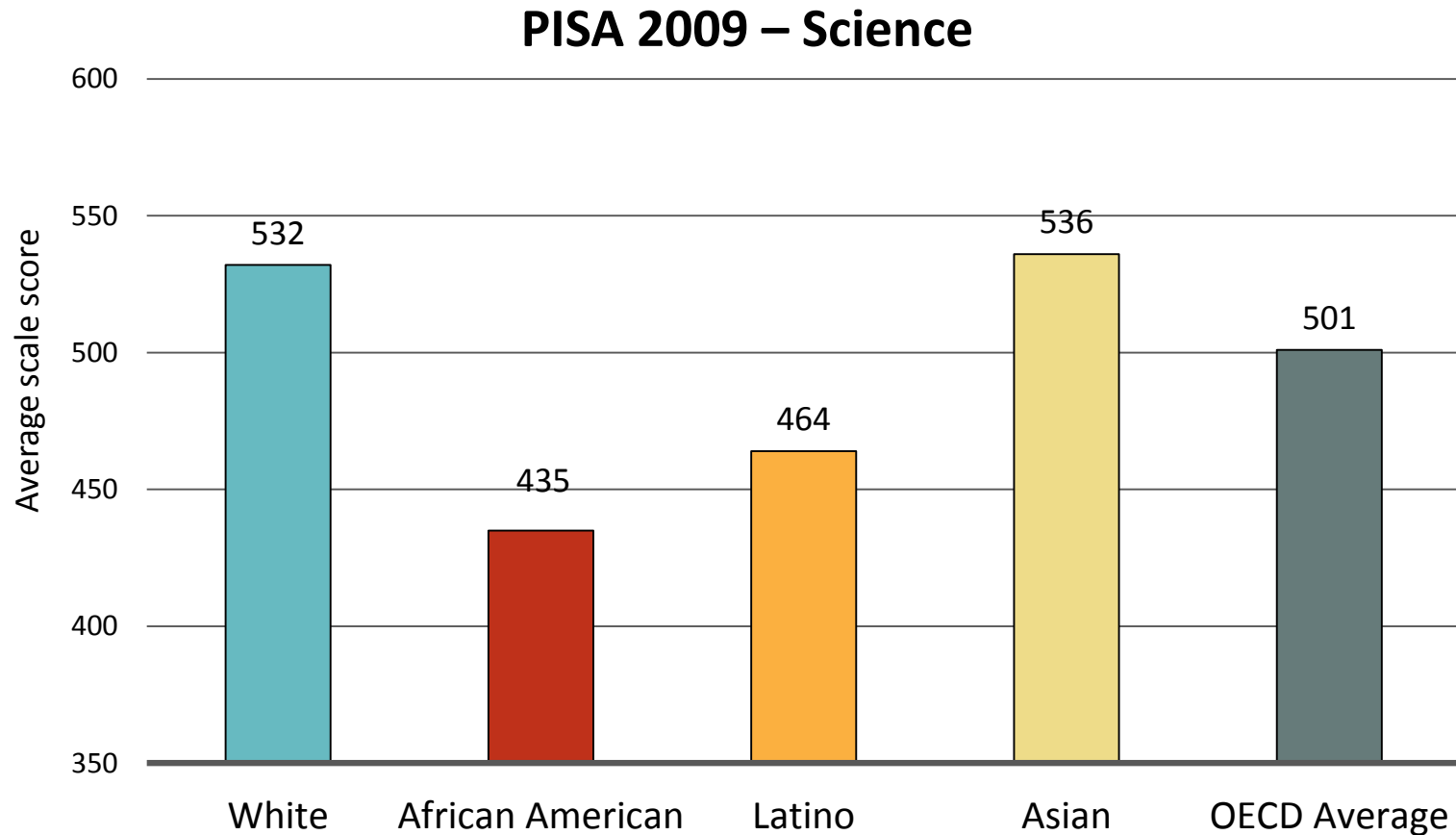
Students in Low Income Schools Score Far Below Students in Higher Income Schools



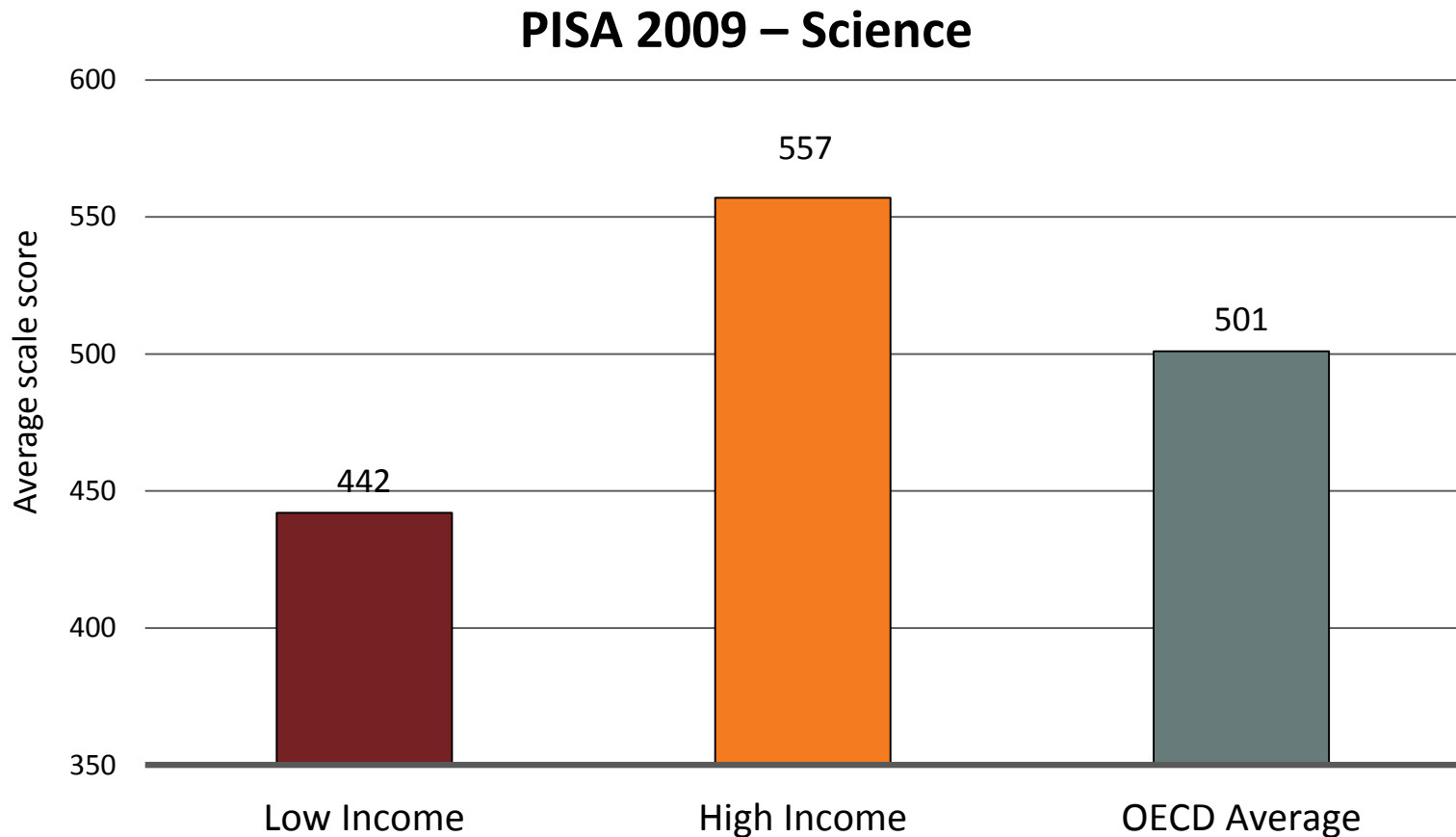
Note: Low income schools are those in which 75% or more of students are eligible for free or reduced price lunch; high income schools are those in which less than 10% are eligible

Source: International Data Explorer, NCES

African American and Latino Students Score Far Below White and Asian Counterparts



Students in Low Income Schools Score Far Below Students in Higher Income Schools



Note: Low income schools are those in which 75% or more of students are eligible for free or reduced price lunch; high income schools are those in which less than 10% are eligible
Source: International Data Explorer, NCES

White and Asian students in the U.S. perform near the national averages of several high-performing economies, but African American and Latino students do not . . .

White Students in the U.S. Perform at about the Same Level as the National Average in Some of the Highest-Achieving Countries

| | Reading | Math | Science |
|---------------------|----------------|-------------|----------------|
| White U.S. Students | 525 | 515 | 532 |
| Canada | 524 | 527 | 529 |
| Estonia | 501 | 512 | 528 |
| Australia | 515 | 514 | 527 |
| New Zealand | 521 | 519 | 532 |
| Japan | 520 | 529 | 539 |

Source: PISA 2009 Results, NCES

Asian Students in the U.S. Perform at About the Same Level as the National Average in Some of the Highest-Achieving Economies

| | Reading | Math | Science |
|---------------------|----------------|-------------|----------------|
| Asian U.S. Students | 541 | 524 | 536 |
| Korea | 539 | 546 | 538 |
| Finland | 536 | 541 | 554 |
| Singapore | 526 | 562 | 542 |

African American Students in the U.S. Perform at About the National Average of Several Lower-Performing Countries

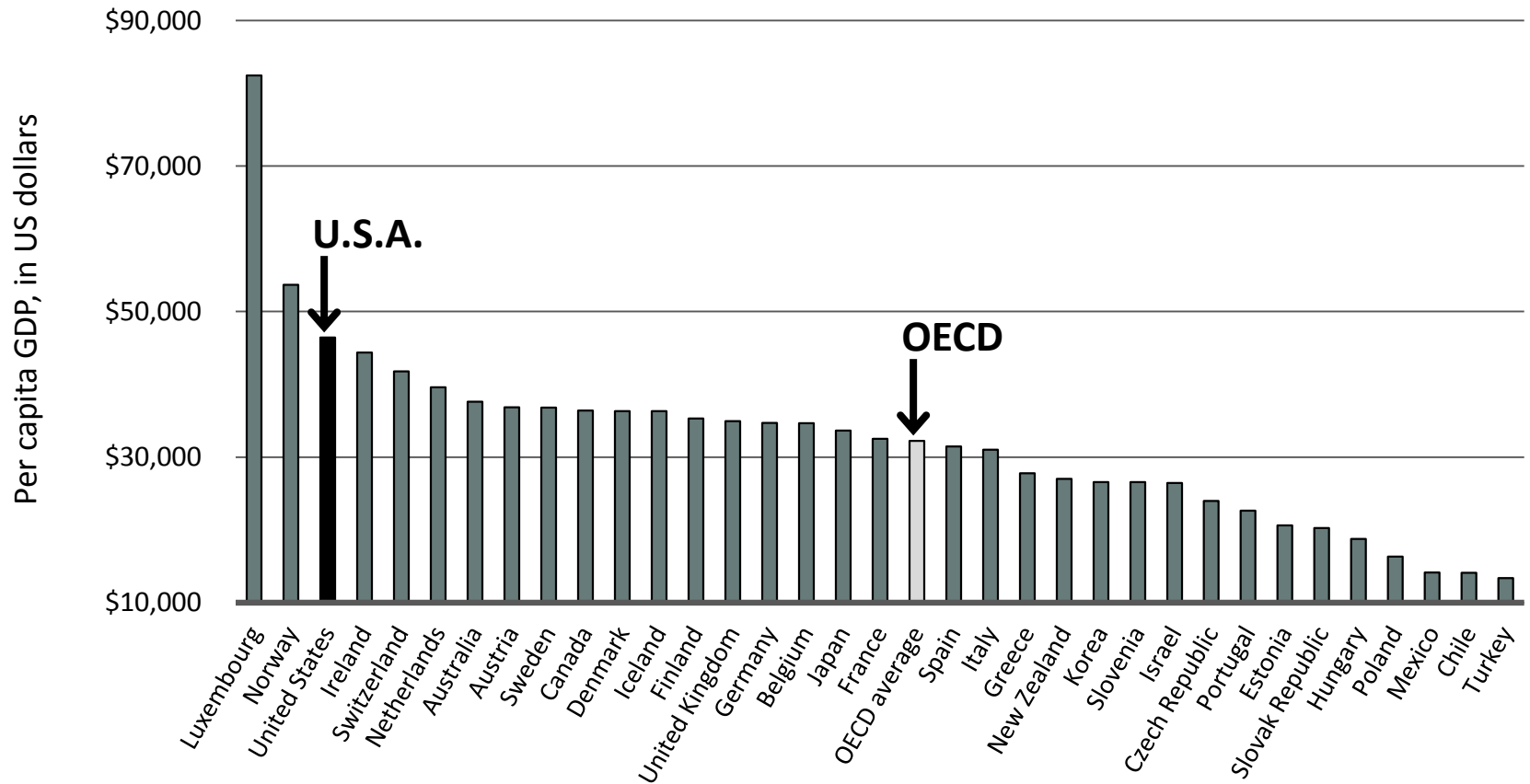
| | Reading | Math | Science |
|--------------------------------|----------------|-------------|----------------|
| African American U.S. Students | 441 | 423 | 435 |
| Serbia | 442 | 442 | 443 |
| Bulgaria | 429 | 428 | 439 |

Latino students in the U.S. Perform at About the Same Level as the National Average of Several Lower-Performing Countries

| | Reading | Math | Science |
|----------------------|----------------|-------------|----------------|
| Latino U.S. Students | 466 | 453 | 464 |
| Lithuania | 468 | 477 | 491 |
| Turkey | 464 | 445 | 454 |
| Dubai | 459 | 453 | 466 |

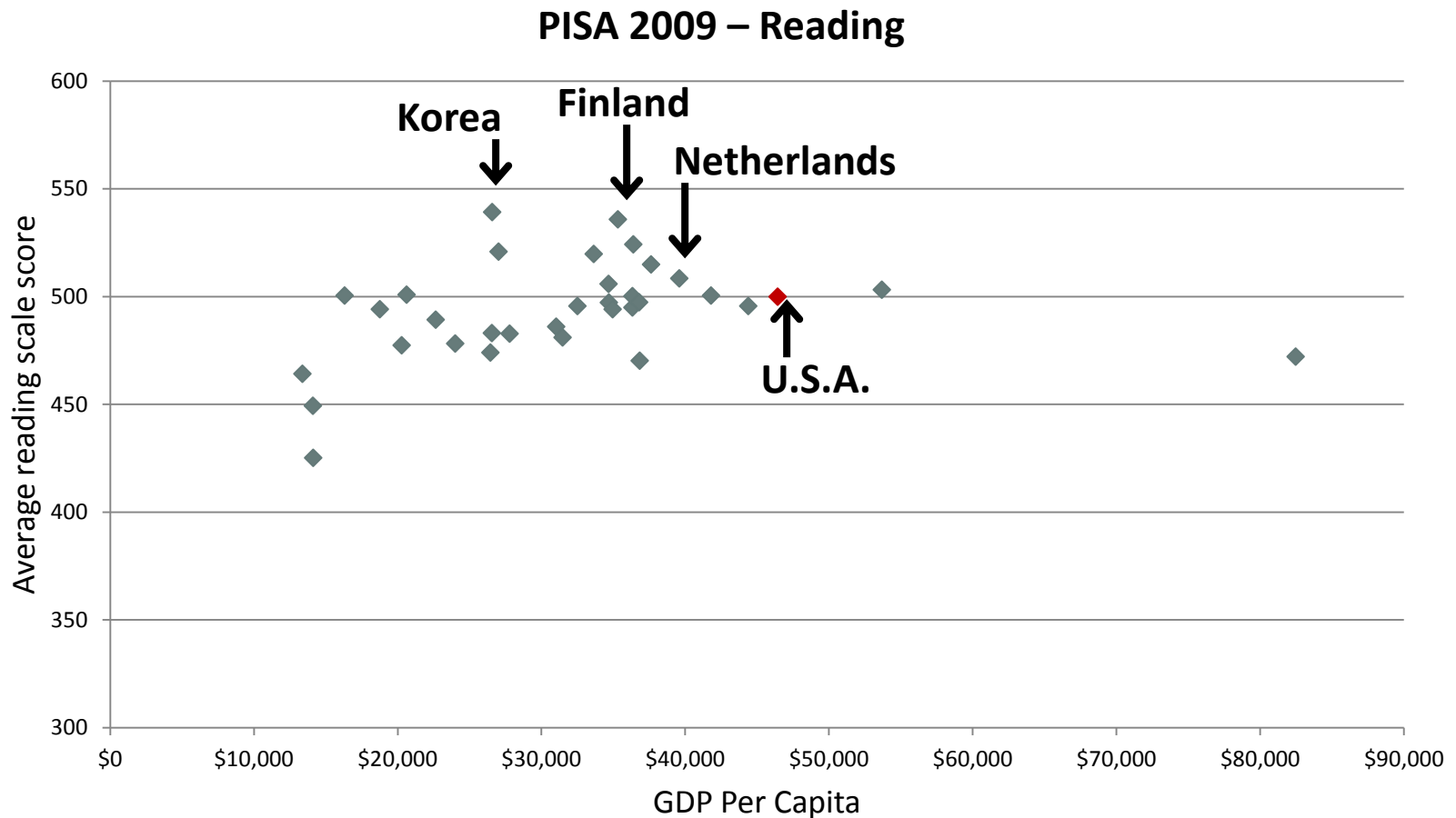
The U.S. is wealthier than and spends more money per pupil than most other countries, but this spending doesn't translate into higher performance . . .

The U.S. has the third highest per capita GDP among OECD countries



Source: PISA 2009 Results, OECD, Table IV.3.21

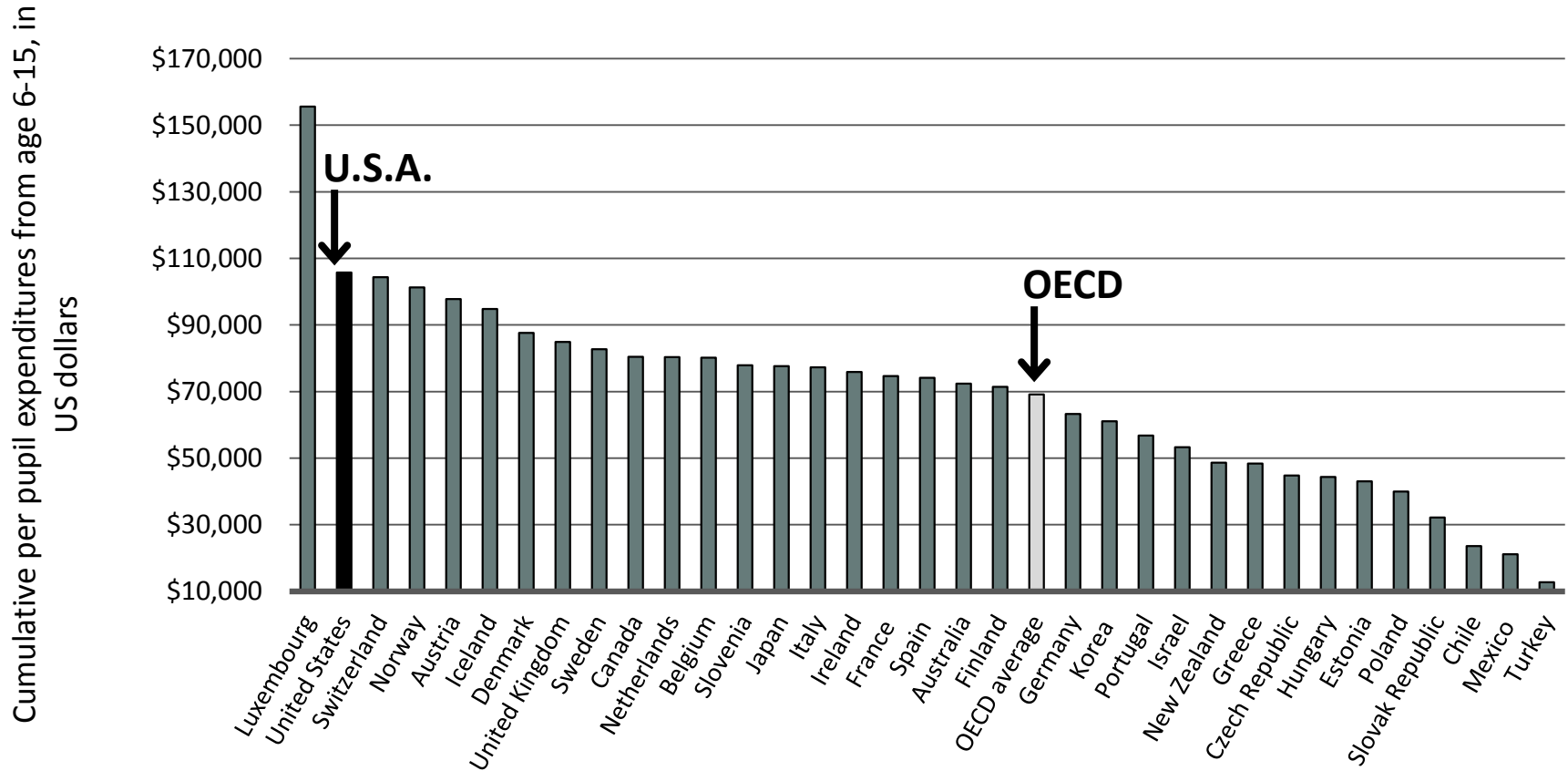
The U.S. is wealthier than other countries, but students perform at a lower level



Note: GDP per capita was converted into US dollars using purchasing power parities.

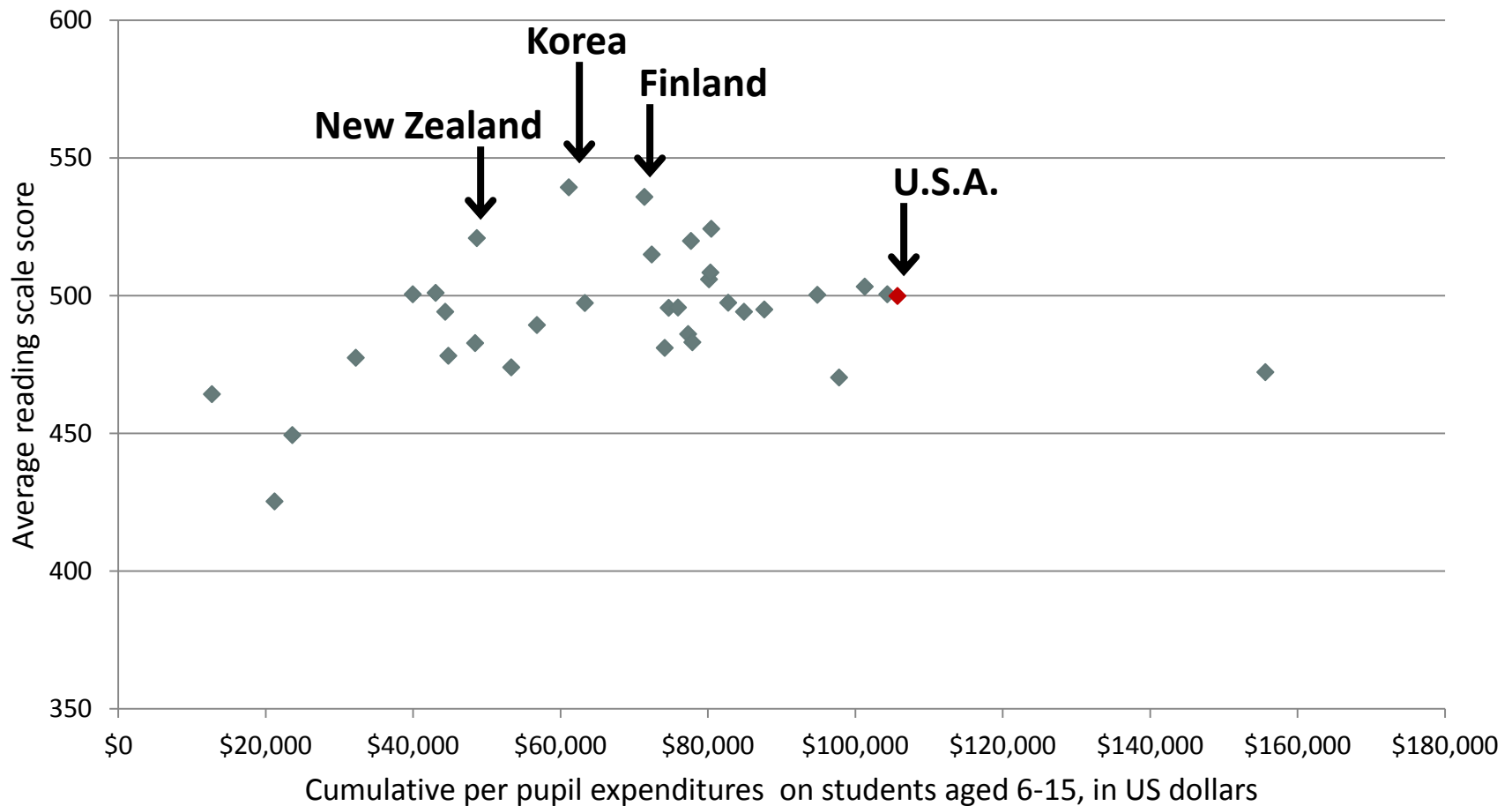
Source: PISA 2009 Results, OECD, Table IV.3.21

The U.S. spends more money per student than all but one other OECD country



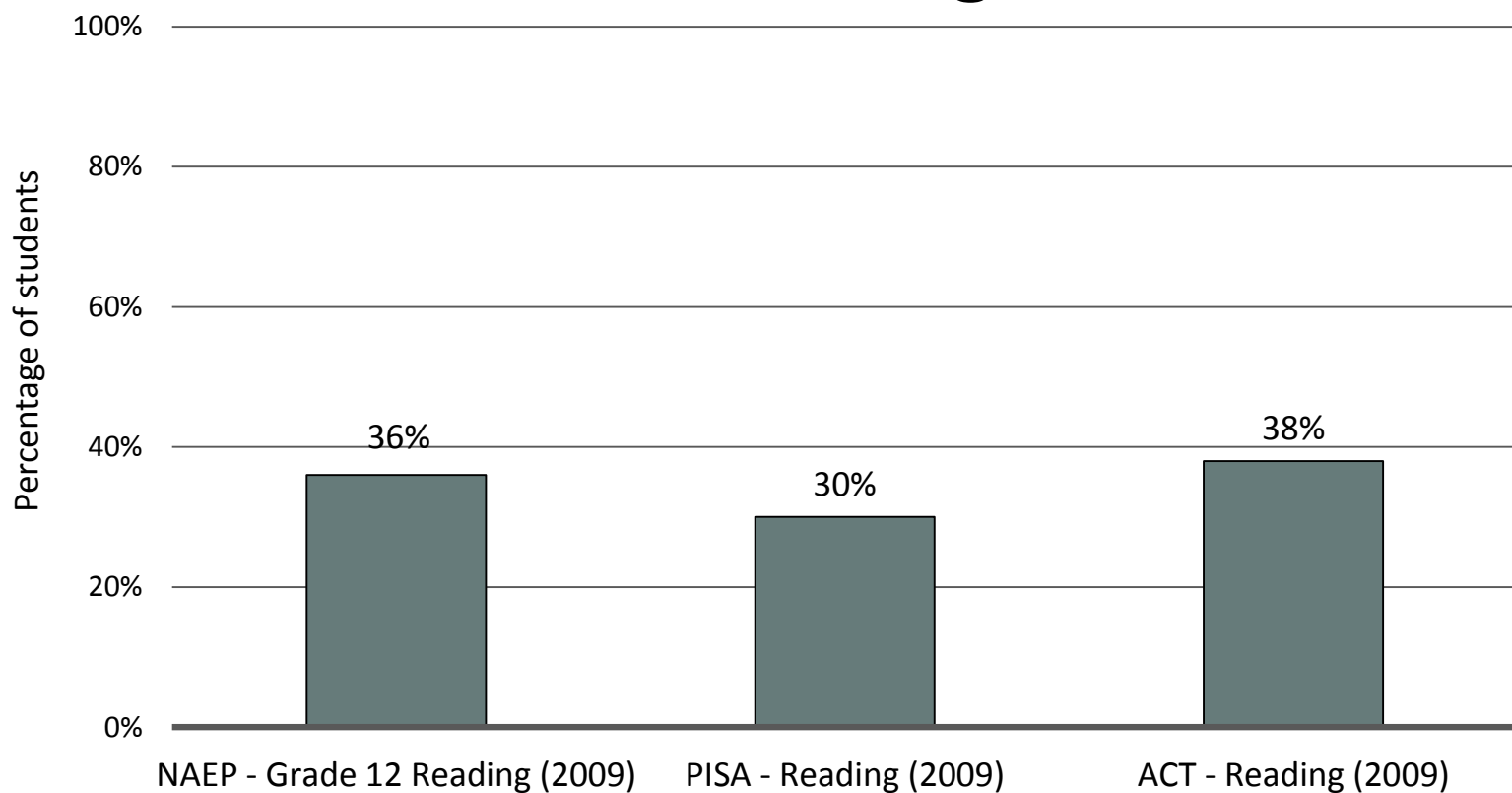
Source: PISA 2009 Results, OECD, Table IV.3.21

The U.S. spends more money per student than other countries, but students perform at a lower level



And only about a third of American students meet reading benchmarks that indicate readiness for higher-level work.

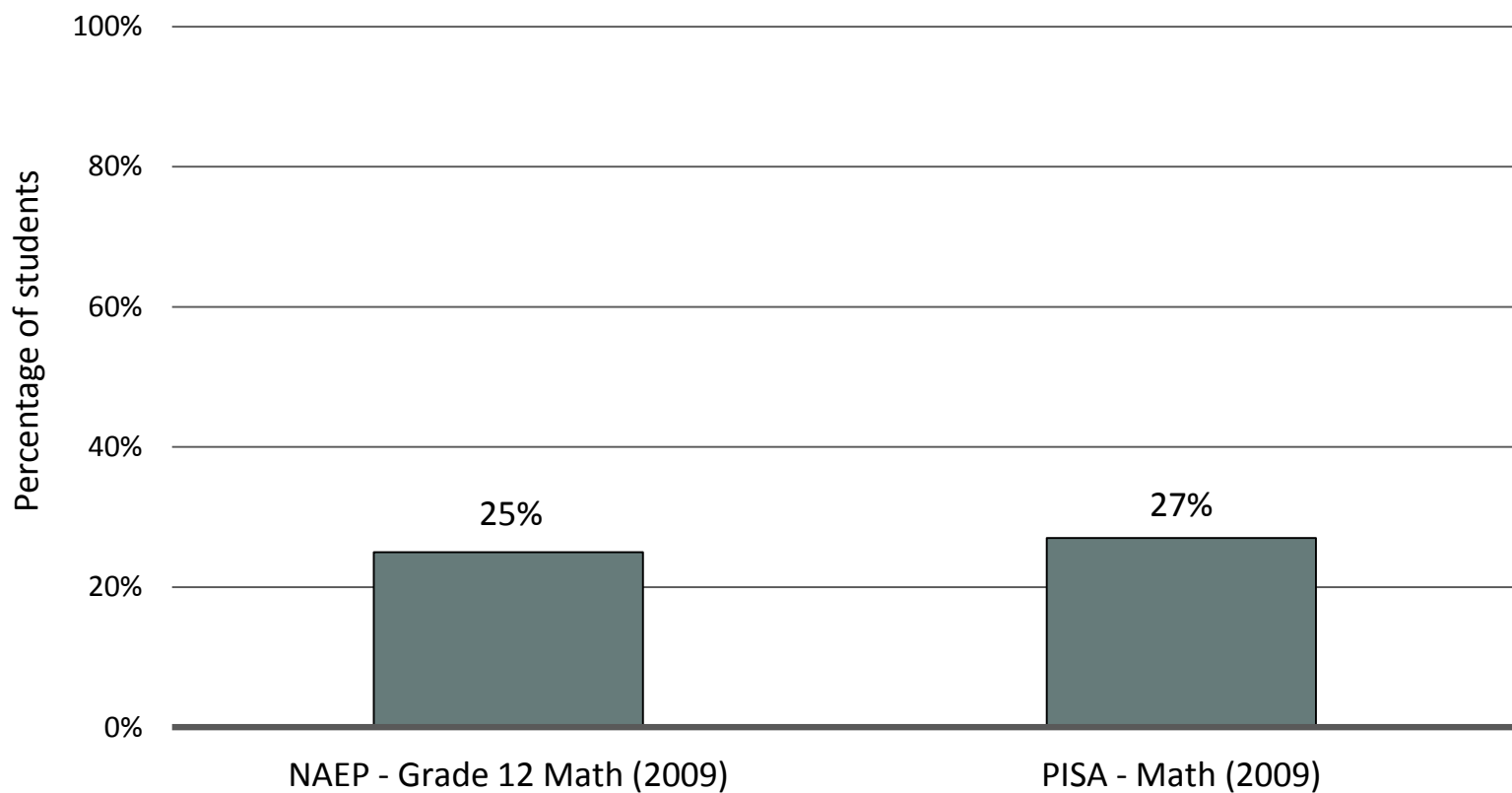
About one third of U.S. high school students meet cutoffs for higher-level work in reading



Note: NAEP results reflect percentage of students at the proficient or advanced level; PISA results reflect the percentage of students scoring at Level 4 or above; and ACT results reflect the percentage of students meeting college and career ready benchmarks according to the Common Core.

Source: NAEP Data Explorer, NCES, 2010; PISA 2009 Results, NCES, Table R7A; College Board, 2010.

About one quarter of U.S. high school students meet cutoffs for higher-level work in math



Note: NAEP results reflect percentage of students at the proficient or advanced level; PISA results reflect the percentage of students scoring at Level 4 or above.

Source: NAEP Data Explorer, NCES, 2010; PISA 2009 Results, NCES, Table M4A.

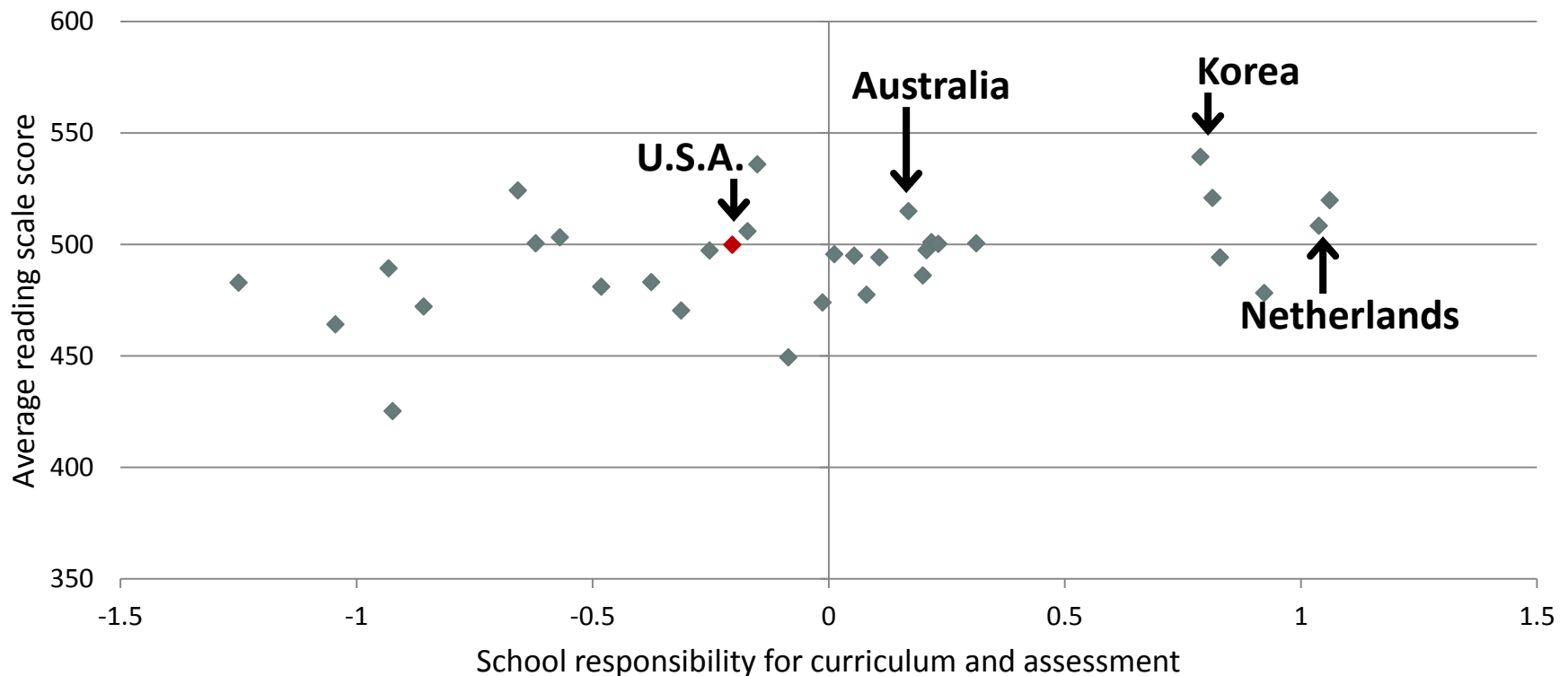
Do educational policies differ
across PISA economies?

In the U.S.A., schools with lower
SES tend to have larger classes

The only other OECD countries in
which this is true?

Israel, Slovenia, and Turkey

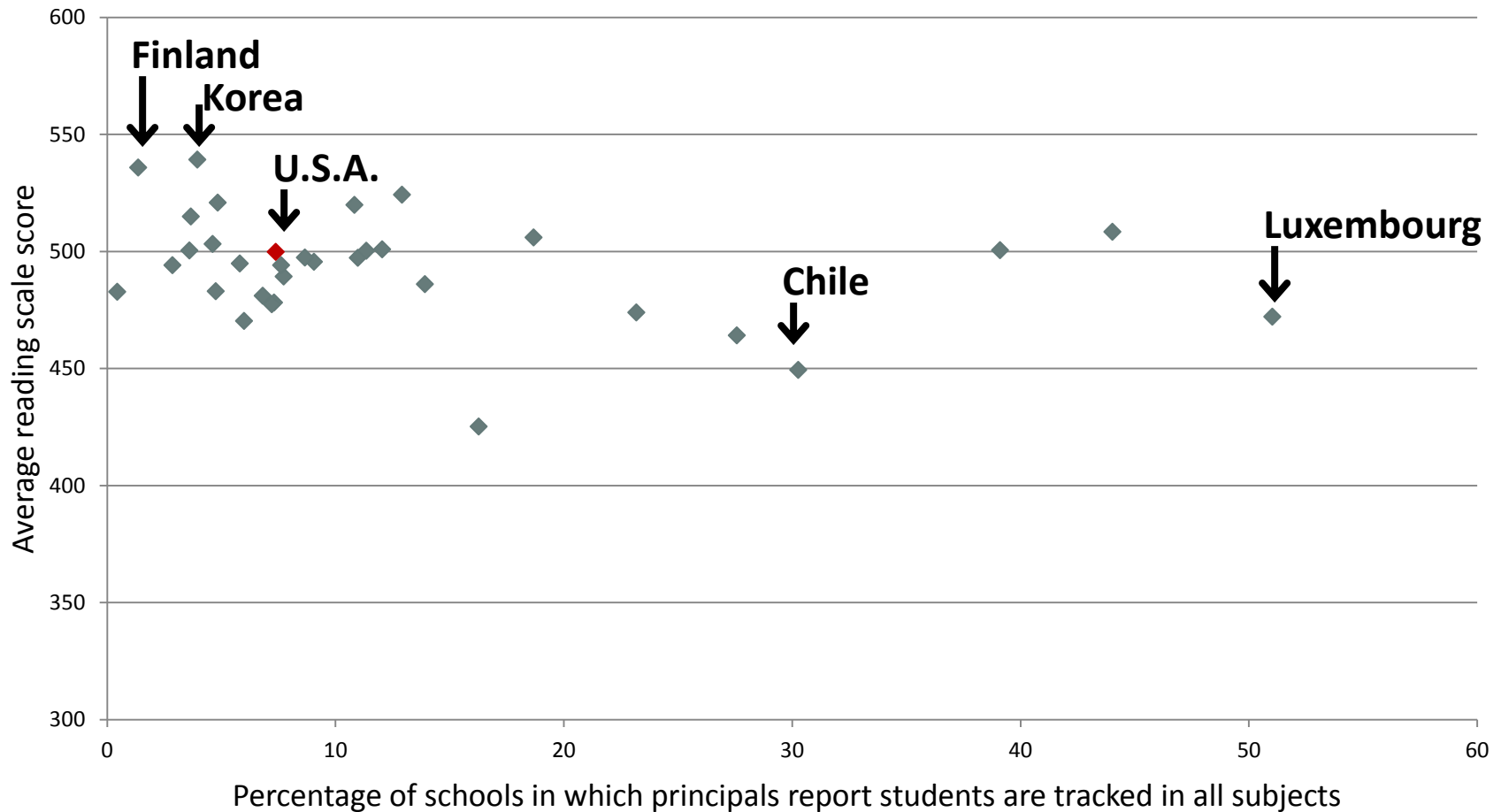
Countries with greater school responsibility over curriculum and assessment generally have higher performance



Note: School responsibility over the curriculum and assessment is measured by an index comprised of the principal's report of who has responsibility over establishing student assessment policies, determining which textbooks are used, determining course content, and deciding which courses are offered.

Source: PISA 2009 Results, OECD, Table IV.3.6

Countries in which fewer students are tracked tend to have higher reading performance



Source: PISA 2009 Results, OECD, Table IV.3.4