SECTION 4

Performance at International Benchmarks

To implement meaningful policy and curriculum reform, it is important to understand the differences in students' reading competencies associated with higher or lower scores on the PIRLS reading achievement scale. For example, in terms of students' reading comprehension skills and strategies, what does it mean for a country to have an average achievement of 513 or 426? Looking at additional data analyses can help a country determine if its students have gained the reading comprehension skills covered in the reading curriculum.

To provide an interpretation of the PIRLS 2021 average results summarized on the PIRLS achievement scale for reading comprehension in the fourth grade, this section of the report describes achievement at four points along the scale as International Benchmarks: Advanced International Benchmark (625), High International Benchmark (550), Intermediate International Benchmark (475), and Low International Benchmark (400). To develop the descriptions of the reading comprehension skills and strategies demonstrated by fourth grade students reaching each International Benchmark, the TIMSS & PIRLS International Study Center conducted a scale anchoring exercise together with the PIRLS 2021 Reading Development Group (RDG). With the PIRLS 2021 transition to a digital assessment, the scale anchoring was based on digital data. Further detail about the scale anchoring methodology is provided in Chapter 14 of *Methods and Procedures: PIRLS 2021 Technical Report*.

Descriptions of the PIRLS 2021 Texts

To reflect the PIRLS 2021 Reading Assessment Framework (Chapter 1 in *PIRLS 2021 Assessment Frameworks*), the International Benchmark descriptions were developed separately for the two overall reading purposes—Literary and Informational. The texts for the two purposes are described below because the benchmark descriptions consider the difficulty of the texts the students are asked to read in PIRLS. Students use somewhat similar reading comprehension skills and strategies with each higher benchmark, but the complexity and difficulty of the texts increases. Average text difficulty has been estimated by the average percent correct across items based on digital data.

Literary Texts

The PIRLS 2021 literary assessment included nine texts presented in the PIRLS 2021 digital format. The texts were complete short stories or episodes accompanied by supportive illustrations. The texts included contemporary and traditional stories with one or two main characters, a plot with one or two central events, and an overall theme or message. Taken as a whole, the literary texts included a range of styles designed to encourage students to engage with the events, settings, actions, consequences, characters, atmosphere, feelings, and ideas in the stories.

In accordance with the group adaptive assessment design, the texts represented three levels of difficulty—easy, medium, and difficult. The easy texts (76% correct on associated items, on average) were relatively accessible, approximately 500 words in length, with a clear linear structure, explicit meanings, and simply described characters. The language featured everyday vocabulary and straightforward sentence structures. The difficult texts (56% correct on associated items, on average) were relatively complex, approximately 850 words in length, with scope for exploring layers of meaning, such as plot twists, development of complicated ambivalent characters, and abstract ideas. They included a range of vocabulary, imagery, and figurative language. The medium texts (66% correct on associated items, on average) were of intermediate complexity, approximately 700 words in length, with a narrative structure and a clear message.

Informational Texts

The PIRLS 2021 assessment of informational reading included nine texts presented in the PIRLS 2021 digital format. The informational texts included a variety of continuous as well as non-continuous texts with charts and graphs. The texts had presentational features such as diagrams, maps, illustrations, photographs, or tables. The range of material covered scientific, biographical, and historical information and ideas. Texts were structured in a number of ways, including by logic, argument, chronology, and topic. Several included organizational features such as subheadings or text boxes.

In accordance with the group adaptive assessment design, the nine texts represented three levels of difficulty—easy, medium, and difficult. The easy texts (74% correct on associated items, on average) were approximately 500 words in length with a clear structure, explicit meanings, and straightforward sentence structures. The difficult texts (51% correct on associated items, on average) were approximately 850 words in length and conceptually more demanding, based on abstract or technical ideas and with a substantial number of embedded details, some complex sentences, and topic-specific vocabulary. The medium texts (60% correct

on associated items, on average) were of intermediate complexity, approximately 700 words in length.

The PIRLS 2021 assessment also included five tasks specifically designed to assess online informational reading based on simulated websites about scientific and historical subject matter. Each task was structured as a class project or report, with an avatar teacher who introduced the questions and guided the students through the task. Each task involved students working across approximately three different websites with an average of 1,000 words of text per task and as many as 10 web pages. In addition to the text, the tasks included different kinds of visual information, such as photos, charts, and maps, as well as many navigational and dynamic features, such as animations, hyperlinks, tabs, and pop-up boxes. The five tasks were either difficult or medium (60% correct on associated items, on average).

Examples of the PIRLS 2021 Texts and Items

Video examples of one Literary text, *The Empty Pot*, and two Informational texts, *The Amazing Octopus* and *Oceans* (ePIRLS task), can be viewed below. The videos show each text in its entirety, together with its associated items.

Video Examples of the PIRLS 2021 Texts

THE EMPTY POT

Digital PIRLS Literary

THE AMAZING OCTOPUS

Digital PIRLS Informational

OCEANS

ePIRLS Online Informational

- *The Empty Pot* is a literary story with a message. The Emperor passes out seeds for a contest to see who will be the next Emperor. Jun is ridiculed when his seed does not grow and is ashamed to face the Emperor. However, Jun's empty pot indicates his honesty because the seeds were boiled.
- *The Amazing Octopus* is an informational article about the characteristics of octopuses and some behaviors they display when they are in aquariums. Newly developed in PIRLS 2021, it has some animation to indicate the direction possible in future assessments.

- *Oceans* is an ePIRLS task consisting of three simulated websites about 1) the benefits of oceans, 2) ocean habitats, and 3) the problem of plastic pollution. Across the colorful web pages, there are a variety of navigational features, pop-ups, links, a video, and advertisements.

Descriptions of Reading Achievement at the PIRLS 2021 International Benchmarks

The PIRLS 2021 International Benchmarks build on each other, representing increasingly demanding reading comprehension skills and strategies with each higher benchmark—Low, Intermediate, High, and Advanced. The students who reached a benchmark also reached all previous benchmark(s). For example, students who reached the Advanced Benchmark also reached the Low, Intermediate, and High Benchmarks. Consistent with the two reading purposes that provide the foundation of the PIRLS 2021 Reading Assessment Framework, the scale anchoring analysis was conducted separately for the literary and informational texts and items. Within each reading purpose, the progression in reading comprehension processes can be seen from the description of the different benchmarks.

Advanced International Benchmark (625)

Literary

When reading predominately difficult literary texts, students can:

- Interpret and integrate story events and character actions to describe reasons, motivations, feelings, and character development
- Evaluate the intended effect of the author's language, style, and composition choices

Informational

When reading predominately difficult informational texts or online tasks, students can:

- Make inferences about complex information across different web pages and parts of text to recognize the relevant information in a list and use evidence in the text to support ideas
- Interpret and integrate multiple pieces of different information across text and web pages to present an overview of ideas in the text and provide comparisons and explanations
- Evaluate textual, visual, and interactive elements to explain their purpose, and identify the writer's point of view and provide supporting evidence

High International Benchmark (550)

Literary

When reading medium and difficult literary texts, students can:

- Locate and identify significant actions and details embedded across the text
- Make inferences about relationships between intentions, actions, events, and feelings
- Interpret and integrate story events to give reasons for character actions and feelings
- Recognize the meaning of some figurative language (e.g., metaphor, imagery)

Informational

When reading informational texts or online tasks of medium or high difficulty, students can:

- Locate and identify relevant information in texts with a variety of features, such as diagrams and illustrations
- Make inferences to provide comparisons, descriptions, explanations, predictions, and choose a relevant website
- Interpret and integrate textual and visual information across texts and web pages to connect ideas, sequence events, identify characteristics, and provide explanations
- Evaluate the content to take and justify a position; describe how illustrations, diagrams, photographs, and maps convey and support content; and recognize the contribution of word choice in conveying the writer's point of view

Intermediate International Benchmark (475)

Literary

When reading literary texts of easy or medium difficulty, students can:

- Locate, recognize, and reproduce explicitly stated actions, events, and feelings
- Make straightforward inferences about events and characters' actions
- Interpret reasons for characters' feelings or actions and identify supporting evidence

Informational

When reading informational texts or online tasks of easy or medium difficulty, students can:

- Locate, recognize, and reproduce explicitly stated information across texts
- Make straightforward inferences to provide comparisons, descriptions, and explanations
- Interpret and integrate to provide information about central ideas and reasons for actions, events, and outcomes

Low International Benchmark (400)

Literary

When reading predominantly easy literary texts, students can:

- Locate, retrieve, and reproduce explicitly stated information, actions, or ideas
- Make simple, straightforward inferences about characters' actions

Informational

When reading predominantly easy informational texts, students can:

- Locate, retrieve, and reproduce explicitly stated information
- Make simple, straightforward inferences to provide a reason for an outcome

Percentages of Students Reaching the International Benchmarks

This section presents the PIRLS 2021 reading achievement results through the lens of the reading comprehension skills and strategies demonstrated by the students reaching each of the four International Benchmarks. The descriptions of students' reading competencies at the four benchmarks, together with the percentages of students reaching the successive benchmarks, provide a profile of reading achievement in each country.

Exhibit 4.1 presents the percentages of students reaching each of the PIRLS 2021 International Benchmarks of Reading Achievement for the 43 countries and 5 benchmarking entities that assessed their fourth grade students at the end of the school year. The countries are presented in descending order according to the percentage of students reaching the Advanced International Benchmark, with the results shown graphically and the percentage reaching each benchmark provided.

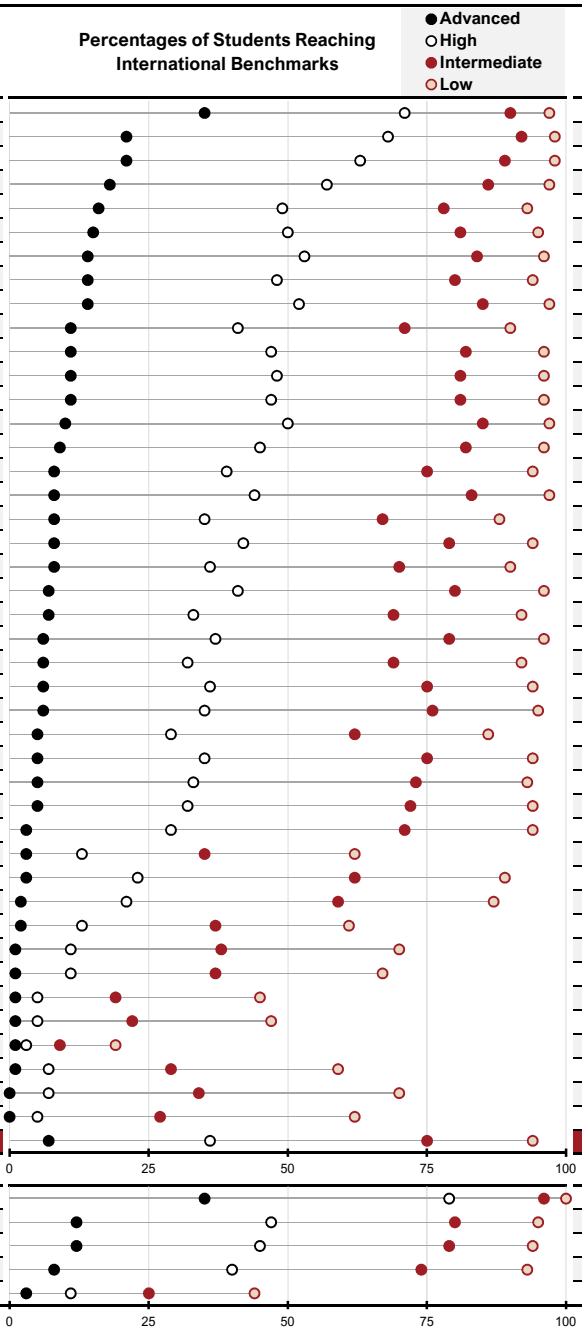
The Advanced International Benchmark is a very high target and, as has been shown in previous PIRLS assessments, only small percentages of students reach the advanced level. Remarkably, Singapore had more than one-third (35%) of its fourth grade students reaching the advanced level. Then, after a gap, Hong Kong SAR and the Russian Federation each had 21 percent followed by England (18%), Bulgaria (16%), and Sweden (15%). The median percent reaching the Advanced International Benchmark was 7, so of the countries that assessed students at the end of the fourth grade year, half had 7 percent or fewer students reaching the advanced level.

Exhibit 4.1: Percentages of Students Reaching the PIRLS International Benchmarks

Assessed Fourth Grade Students at the End of the School Year

⋈ Assessed one year later than originally scheduled

Country	Advanced Benchmark (625)	High Benchmark (550)	Intermediate Benchmark (475)	Low Benchmark (400)
[3] Singapore	35 (1.4)	71 (1.6)	90 (0.9)	97 (0.5)
[2 †] Hong Kong SAR	21 (1.4)	68 (1.8)	92 (1.0)	98 (0.4)
Russian Federation	21 (1.3)	63 (2.0)	89 (1.4)	98 (0.4)
England ⋈	18 (1.2)	57 (1.3)	86 (0.9)	97 (0.4)
Bulgaria	16 (0.8)	49 (1.4)	78 (1.4)	93 (0.9)
[2] Sweden	15 (0.9)	50 (1.2)	81 (0.9)	95 (0.6)
Finland	14 (1.0)	53 (1.4)	84 (1.0)	96 (0.5)
Australia ⋈	14 (0.7)	48 (1.3)	80 (1.0)	94 (0.5)
Poland	14 (0.8)	52 (1.5)	85 (1.0)	97 (0.5)
† New Zealand	11 (0.8)	41 (1.1)	71 (1.0)	90 (0.6)
Czech Republic	11 (0.8)	47 (1.3)	82 (1.0)	96 (0.5)
[2 †] Denmark	11 (0.8)	48 (1.3)	81 (0.9)	96 (0.6)
Norway (5)	11 (0.6)	47 (1.3)	81 (1.0)	96 (0.6)
Chinese Taipei	10 (0.6)	50 (1.4)	85 (1.0)	97 (0.4)
Macao SAR	9 (0.7)	45 (0.7)	82 (0.6)	96 (0.4)
Germany	8 (0.7)	39 (1.2)	75 (1.1)	94 (0.5)
[2] Italy	8 (0.6)	44 (1.5)	83 (1.0)	97 (0.3)
[3] Israel ⋈	8 (0.7)	35 (1.1)	67 (1.1)	88 (0.8)
† Slovak Republic	8 (0.8)	42 (1.7)	79 (1.2)	94 (0.8)
Malta	8 (0.6)	36 (1.3)	70 (1.4)	90 (0.9)
Austria	7 (0.7)	41 (1.6)	80 (1.2)	96 (0.4)
[2] Albania	7 (0.7)	33 (1.6)	69 (1.7)	92 (0.9)
≡ Netherlands	6 (0.7)	37 (1.4)	79 (1.3)	96 (0.7)
Cyprus	6 (0.6)	32 (1.4)	69 (1.5)	92 (0.7)
[2] Portugal	6 (0.6)	36 (1.4)	75 (1.0)	94 (0.6)
Spain	6 (0.6)	35 (1.3)	76 (1.2)	95 (0.6)
[2] Turkiye	5 (0.5)	29 (1.3)	62 (1.7)	86 (1.2)
Slovenia	5 (0.5)	35 (1.1)	75 (1.1)	94 (0.5)
[3] Serbia	5 (0.5)	33 (1.6)	73 (1.7)	93 (0.8)
France	5 (0.6)	32 (1.5)	72 (1.4)	94 (0.7)
Belgium (Flemish)	3 (0.5)	29 (1.5)	71 (1.4)	94 (0.5)
Oman	3 (0.4)	13 (1.0)	35 (1.4)	62 (1.4)
[2] Belgium (French)	3 (0.5)	23 (1.1)	62 (1.6)	89 (0.9)
[3] Montenegro	2 (0.3)	21 (0.8)	59 (1.2)	87 (0.7)
[2 †] Brazil ⋈	2 (0.3)	13 (1.0)	37 (1.6)	61 (1.9)
North Macedonia	1 (0.3)	11 (1.1)	38 (2.5)	70 (2.2)
Azerbaijan	1 (0.2)	11 (0.9)	37 (1.7)	67 (1.5)
[2 Ψ] Egypt	1 (0.2)	5 (0.7)	19 (1.4)	45 (2.0)
Jordan	1 (0.2)	5 (0.8)	22 (1.6)	47 (2.0)
Ж South Africa ⋈	1 (0.2)	3 (0.5)	9 (0.9)	19 (1.2)
Iran, Islamic Rep. of ⋈	1 (0.2)	7 (0.6)	29 (1.5)	59 (2.0)
Uzbekistan	0 (0.1)	7 (0.7)	34 (1.3)	70 (1.4)
[2] Kosovo	0 (0.1)	5 (0.7)	27 (1.3)	62 (1.5)
International Median	**7**	**36**	**75**	**94**
Benchmarking Participants				
Moscow City, Russian Federation	35 (1.6)	79 (1.1)	96 (0.4)	100 (0.1)
[3 ≡] Alberta, Canada	12 (1.1)	47 (1.9)	80 (1.5)	95 (0.8)
[2] British Columbia, Canada	12 (1.1)	45 (1.9)	79 (1.5)	94 (0.8)
[2] Newfoundland & Labrador, Canada	8 (1.0)	40 (1.8)	74 (1.6)	93 (0.7)
South Africa (6) ⋈	3 (0.5)	11 (1.0)	25 (1.3)	44 (1.5)



( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.
See Appendix A.2 for population coverage notes 1, 2, and 3. See Appendix A.5 for sampling guidelines and sampling participation notes †, ‡, and ≡.
Ψ Reservations about reliability because the percentage of students with achievement too low for estimation exceeds 15% but does not exceed 25%.
Ж Reservations about reliability because the percentage of students with achievement too low for estimation exceeds 25%.
Issues identified in Albania's data quality led to reduced comparability and framework coverage.

SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2021
Downloaded from https://pirls2021.org/results

The fourth grade students reaching the High International Benchmark are relatively competent readers, able to interpret, integrate, and evaluate a variety of text and visual elements in medium and difficult reading materials. The median cumulative percentage (including the percentage reaching the Advanced Benchmark) of students reaching the High Benchmark was 36 percent. However, the range was very large, from a high of 71 percent to a low of 5 percent. In 10 countries, fewer than 20 percent of the fourth grade students reached the High International Benchmark. Similarly, although at least three-fourths of the fourth grade students reached the Intermediate International Benchmark in half the countries (cumulative median percentage of 75), the results ranged from 92 to 9 percent.

On a very positive note, the median percentage of fourth grade students reaching the Low International Benchmark was 94 percent indicating close to universal basic literacy at the fourth grade in the majority of the PIRLS 2021 countries. In all but 10 of the countries, at least 85 percent of the fourth grade students reached the Low International Benchmark.

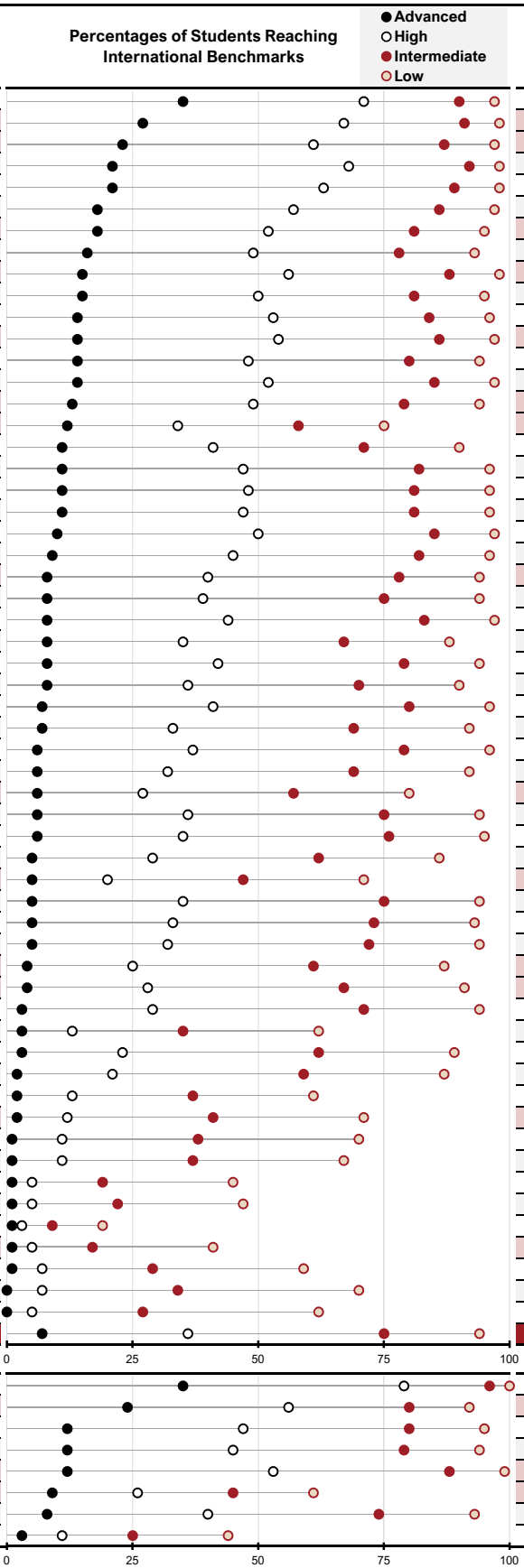
Exhibit 4.2 shows the percentages of students reaching the PIRLS 2021 International Benchmarks for all 57 countries and 8 benchmarking entities, including the 14 Northern Hemisphere countries that necessarily delayed assessing the fourth grade cohort of students until after the summer at the beginning of fifth grade (shown in pink). As described earlier, the students in these 14 countries were 6 months older on average than the students in the other countries, which may have contributed to higher average achievement (see previous subsection: Impacts of Modifying the Assessment Schedule on Students' Achievement). Exhibit 4.2 shows that, in addition to the 6 countries in Exhibit 4.1 that had 15 percent or more of their students reaching the Advanced International Benchmark, 4 of these 14 countries also had 15 percent or more of their students reaching the advanced level—Ireland (27%), Northern Ireland (23%), United States (18%), and Croatia (15%). Looking at the Low International Benchmark, 9 of the 14 countries had at least 85 percent of their students reaching this level of basic literacy.

Exhibit 4.2: Percentages of Students Reaching the PIRLS International Benchmarks

Assessed Fourth Grade Students at the End of the School Year

⋈ Assessed one year later than originally scheduled

Delayed Assessment of Fourth Grade Cohort at the Beginning of Fifth Grade



Country	Advanced Benchmark (625)	High Benchmark (550)	Intermediate Benchmark (475)	Low Benchmark (400)
[3] Singapore	35 (1.4)	71 (1.6)	90 (0.9)	97 (0.5)
Ireland	27 (1.3)	67 (1.5)	91 (0.7)	98 (0.4)
[2 †] Northern Ireland	23 (1.2)	61 (1.5)	87 (1.0)	97 (0.5)
[2 †] Hong Kong SAR	21 (1.4)	68 (1.8)	92 (1.0)	98 (0.4)
Russian Federation	21 (1.3)	63 (2.0)	89 (1.4)	98 (0.4)
England ⋈	18 (1.2)	57 (1.3)	86 (0.9)	97 (0.4)
[2 ≡] United States	18 (2.1)	52 (3.2)	81 (2.9)	95 (1.5)
Bulgaria	16 (0.8)	49 (1.4)	78 (1.4)	93 (0.9)
[†] Croatia	15 (1.0)	56 (1.5)	88 (1.0)	98 (0.4)
[2] Sweden	15 (0.9)	50 (1.2)	81 (0.9)	95 (0.6)
Finland	14 (1.0)	53 (1.4)	84 (1.0)	96 (0.5)
Lithuania	14 (1.1)	54 (1.4)	86 (0.8)	97 (0.4)
Australia ⋈	14 (0.7)	48 (1.3)	80 (1.0)	94 (0.5)
Poland	14 (0.8)	52 (1.5)	85 (1.0)	97 (0.5)
Hungary	13 (0.9)	49 (1.6)	79 (1.5)	94 (1.0)
United Arab Emirates	12 (0.4)	34 (0.6)	58 (0.7)	75 (0.7)
[†] New Zealand	11 (0.8)	41 (1.1)	71 (1.0)	90 (0.6)
Czech Republic	11 (0.8)	47 (1.3)	82 (1.0)	96 (0.5)
[2 †] Denmark	11 (0.8)	48 (1.3)	81 (0.9)	96 (0.6)
Norway (5)	11 (0.6)	47 (1.3)	81 (1.0)	96 (0.6)
Chinese Taipei	10 (0.6)	50 (1.4)	85 (1.0)	97 (0.4)
Macao SAR	9 (0.7)	45 (0.7)	82 (0.6)	96 (0.4)
Latvia	8 (0.7)	40 (1.4)	78 (1.4)	94 (0.7)
Germany	8 (0.7)	39 (1.2)	75 (1.1)	94 (0.5)
[2] Italy	8 (0.6)	44 (1.5)	83 (1.0)	97 (0.3)
[3] Israel ⋈	8 (0.7)	35 (1.1)	67 (1.1)	88 (0.8)
[†] Slovak Republic	8 (0.8)	42 (1.7)	79 (1.2)	94 (0.8)
Malta	8 (0.6)	36 (1.3)	70 (1.4)	90 (0.9)
Austria	7 (0.7)	41 (1.6)	80 (1.2)	96 (0.4)
[2] Albania	7 (0.7)	33 (1.6)	69 (1.7)	92 (0.9)
[≡] Netherlands	6 (0.7)	37 (1.4)	79 (1.3)	96 (0.7)
Cyprus	6 (0.6)	32 (1.4)	69 (1.5)	92 (0.7)
Qatar	6 (0.8)	27 (1.6)	57 (1.7)	80 (1.2)
[2] Portugal	6 (0.6)	36 (1.4)	75 (1.0)	94 (0.6)
Spain	6 (0.6)	35 (1.3)	76 (1.2)	95 (0.6)
[2] Turkiye	5 (0.5)	29 (1.3)	62 (1.7)	86 (1.2)
Bahrain	5 (0.7)	20 (1.1)	47 (1.2)	71 (0.9)
Slovenia	5 (0.5)	35 (1.1)	75 (1.1)	94 (0.5)
[3] Serbia	5 (0.5)	33 (1.6)	73 (1.7)	93 (0.8)
France	5 (0.6)	32 (1.5)	72 (1.4)	94 (0.7)
[1] Georgia	4 (0.5)	25 (1.1)	61 (1.5)	87 (1.0)
Kazakhstan	4 (0.5)	28 (1.3)	67 (1.4)	91 (0.8)
Belgium (Flemish)	3 (0.5)	29 (1.5)	71 (1.4)	94 (0.5)
Oman	3 (0.4)	13 (1.0)	35 (1.4)	62 (1.4)
[2] Belgium (French)	3 (0.5)	23 (1.1)	62 (1.6)	89 (0.9)
[3] Montenegro	2 (0.3)	21 (0.8)	59 (1.2)	87 (0.7)
[2 †] Brazil ⋈	2 (0.3)	13 (1.0)	37 (1.6)	61 (1.9)
[3] Saudi Arabia	2 (0.3)	12 (0.9)	41 (1.8)	71 (1.6)
North Macedonia	1 (0.3)	11 (1.1)	38 (2.5)	70 (2.2)
Azerbaijan	1 (0.2)	11 (0.9)	37 (1.7)	67 (1.5)
[2 Ψ] Egypt	1 (0.2)	5 (0.7)	19 (1.4)	45 (2.0)
Jordan	1 (0.2)	5 (0.8)	22 (1.6)	47 (2.0)
[Ж] South Africa ⋈	1 (0.2)	3 (0.5)	9 (0.9)	19 (1.2)
Morocco	1 (0.4)	5 (1.0)	17 (1.4)	41 (1.6)
Iran, Islamic Rep. of ⋈	1 (0.2)	7 (0.6)	29 (1.5)	59 (2.0)
Uzbekistan	0 (0.1)	7 (0.7)	34 (1.3)	70 (1.4)
[2] Kosovo	0 (0.1)	5 (0.7)	27 (1.3)	62 (1.5)
International Median	**7**	**36**	**75**	**94**
Benchmarking Participants				
Moscow City, Russian Federation	35 (1.6)	79 (1.1)	96 (0.4)	100 (0.1)
[2] Dubai, UAE	24 (0.8)	56 (0.7)	80 (0.6)	92 (0.4)
[3 ≡] Alberta, Canada	12 (1.1)	47 (1.9)	80 (1.5)	95 (0.8)
[2] British Columbia, Canada	12 (1.1)	45 (1.9)	79 (1.5)	94 (0.8)
[≡] Quebec, Canada	12 (1.3)	53 (1.9)	88 (1.0)	99 (0.3)
Abu Dhabi, UAE	9 (0.6)	26 (1.0)	45 (1.2)	61 (1.2)
[2] Newfoundland & Labrador, Canada	8 (1.0)	40 (1.8)	74 (1.6)	93 (0.7)
South Africa (6) ⋈	3 (0.5)	11 (1.0)	25 (1.3)	44 (1.5)

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.
See Appendix A.2 for population coverage notes 1, 2, and 3. See Appendix A.5 for sampling guidelines and sampling participation notes †, ‡, and ≡.
Ψ Reservations about reliability because the percentage of students with achievement too low for estimation exceeds 15% but does not exceed 25%.
Ж Reservations about reliability because the percentage of students with achievement too low for estimation exceeds 25%.
Issues identified in Albania's data quality led to reduced comparability and framework coverage.

SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2021
Downloaded from https://pirls2021.org/results

Trends in the Distributions of Achievement at the International Benchmarks

From PIRLS assessment cycle to assessment cycle, many countries work to improve levels of reading achievement such that increasingly higher percentages of fourth grade students reach successively higher International Benchmarks on the PIRLS achievement scale. Of course, the amount of progress and at which benchmarks this is feasible depends on the contexts for teaching and learning within each country. For example, a literacy initiative targeted to improve reading achievement for lower-performing students may be reflected in increased percentages of students reaching the Low and Intermediate Benchmarks with little change at higher benchmarks. Raising the level of reading achievement for all students across the achievement distribution is challenging and has not occurred in many PIRLS countries.

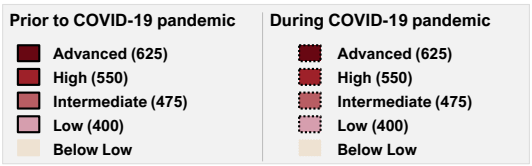
Exhibit 4.3 provides bar graphs of the trend results across the benchmarks for the 35 countries and 3 benchmarking entities that assessed students at the end of the school year and have data from previous cycles, with the countries that assessed students a year later than originally planned annotated with a bowtie (⋈) after their names. The bar graphs for each country present the distribution of achievement at the PIRLS International Benchmarks with a bar for each cycle from 2001 to 2021. The bar for 2021 has dashed lines to indicate that the 2021 results are based on data collected during the time of COVID-19 and may or may not be impacted by the pandemic. The bar graphs of the trend results are presented in alphabetical order country by country.

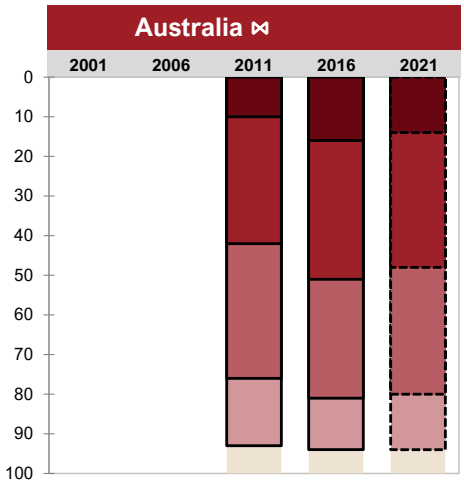
Exhibit 4.3: Trends in the Distribution of Students Reaching the PIRLS International Benchmarks

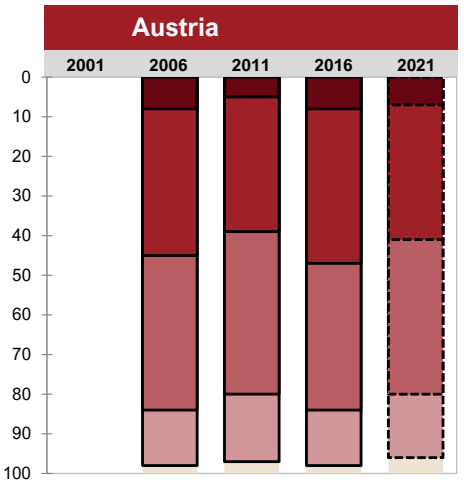
Assessed Fourth Grade Students at the End of the School Year

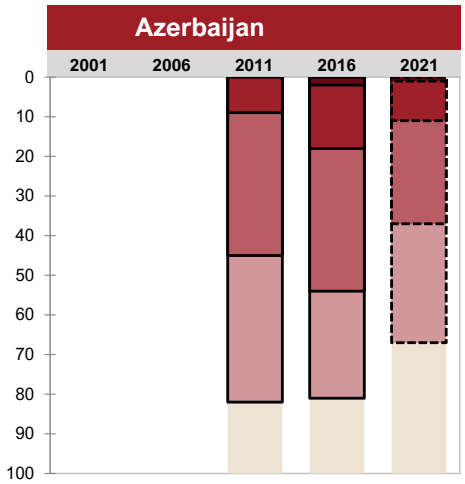
⋈ Assessed one year later than originally scheduled – six year trend from PIRLS 2016

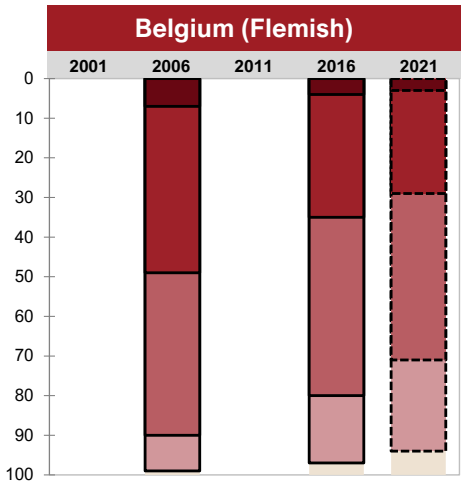
This exhibit displays changes in percentages of students reaching the PIRLS International Benchmarks in each country and benchmarking participant that assessed fourth grade students at the end of the school year and have comparable data from previous assessments. See Appendix A for country participation in previous assessments.

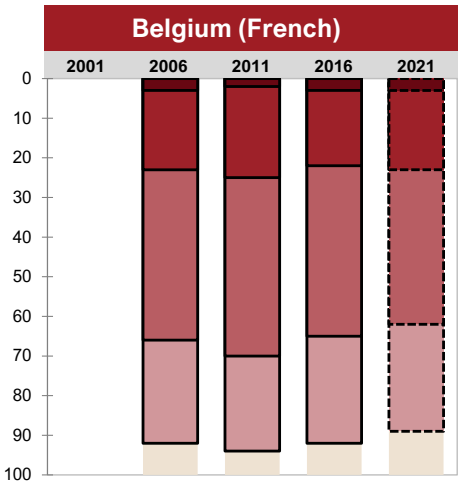


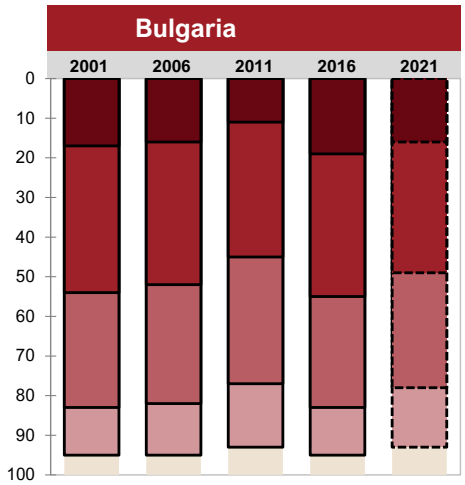


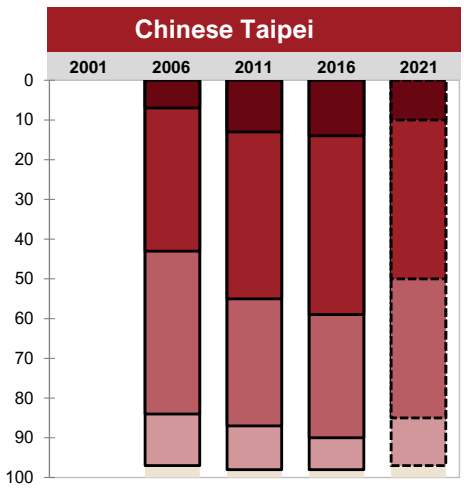


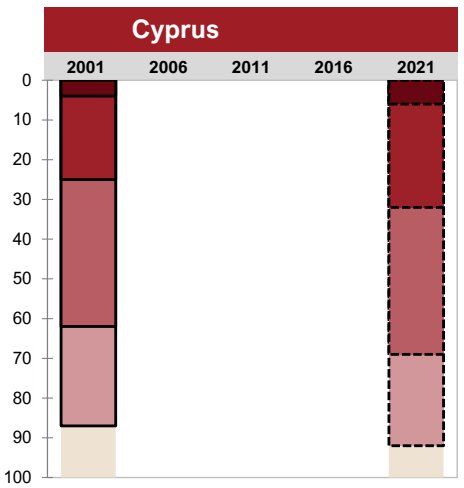


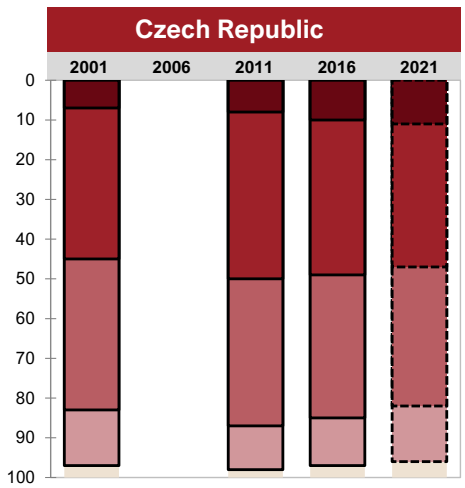












See Appendix A for country participation in previous PIRLS assessments.

Exhibit 4.3: Trends in the Distribution of Students Reaching the PIRLS International Benchmarks

Assessed Fourth Grade Students at the End of the School Year

⋈ Assessed one year later than originally scheduled – six year trend from PIRLS 2016

(Continued)

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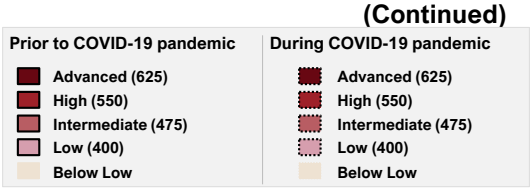

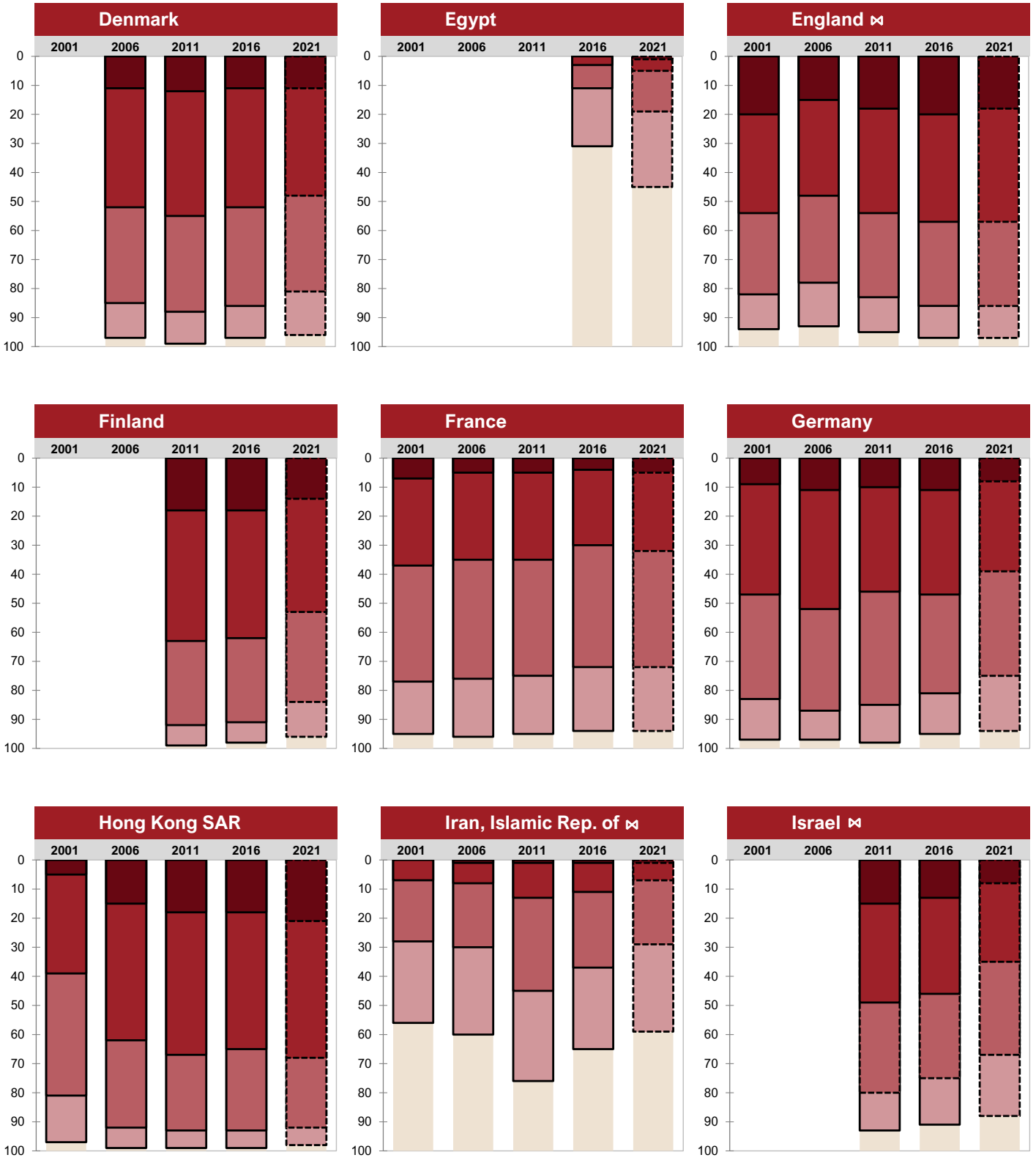

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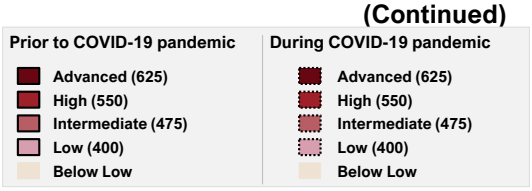

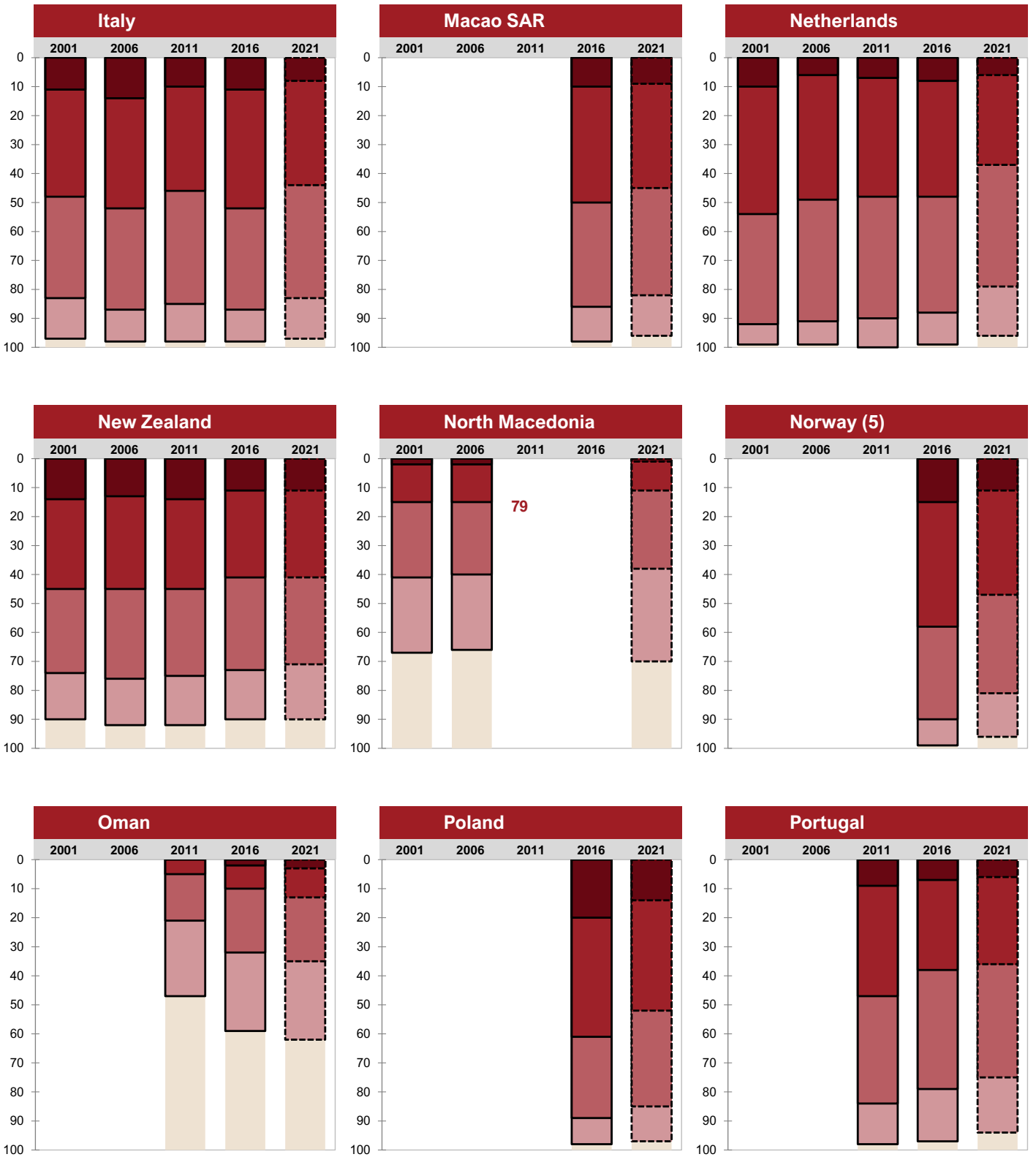

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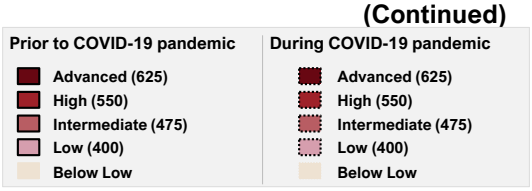

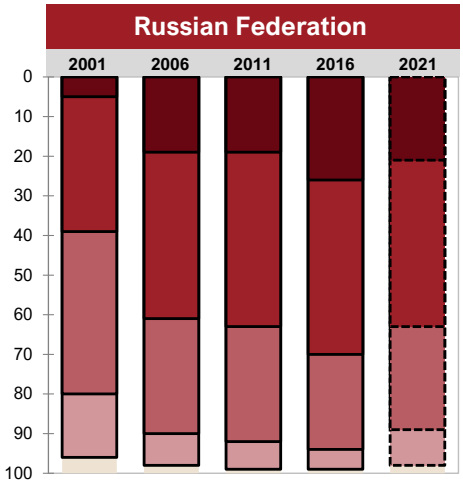

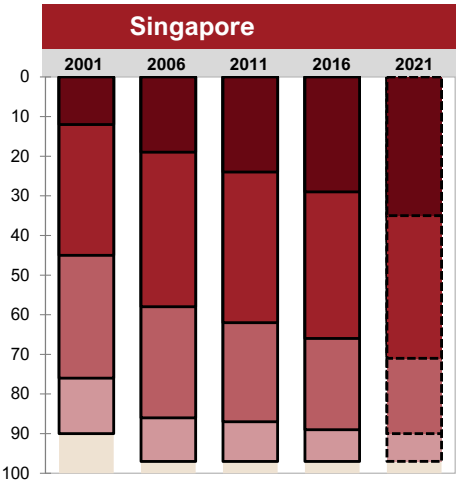

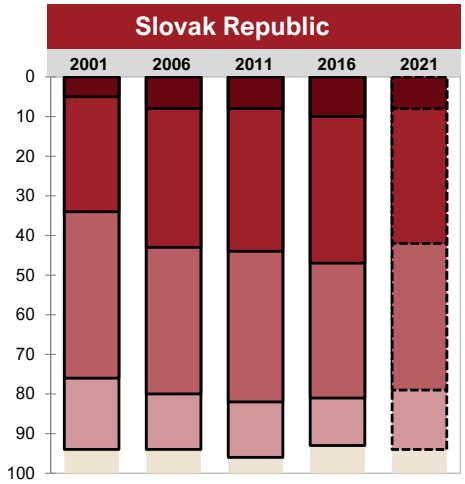

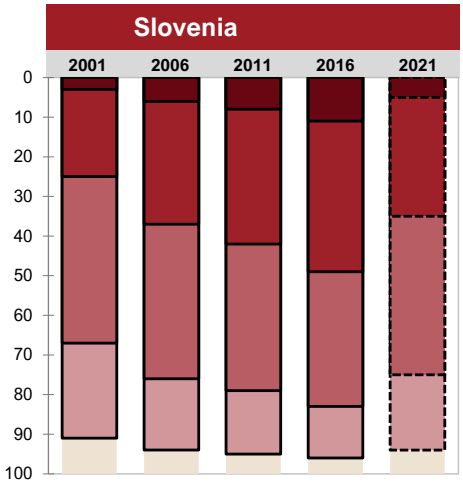

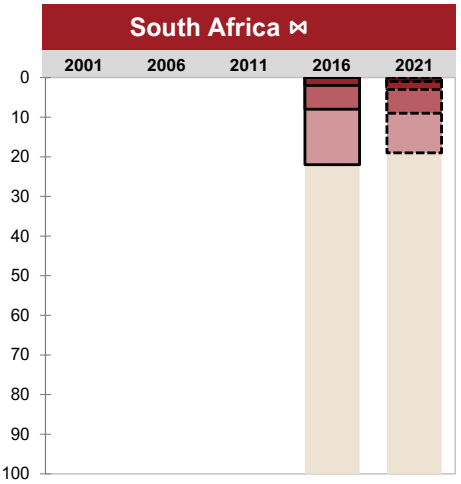

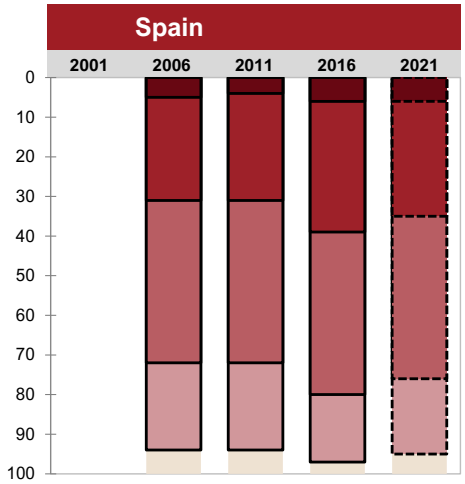

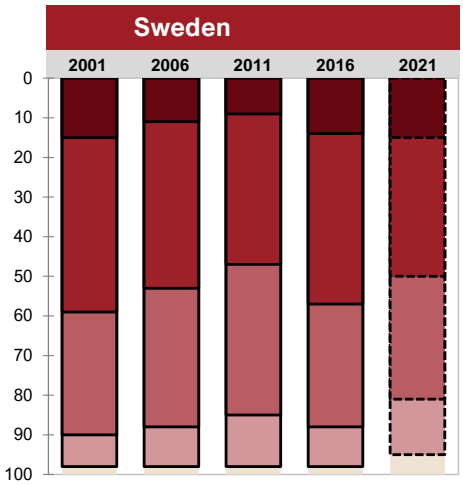

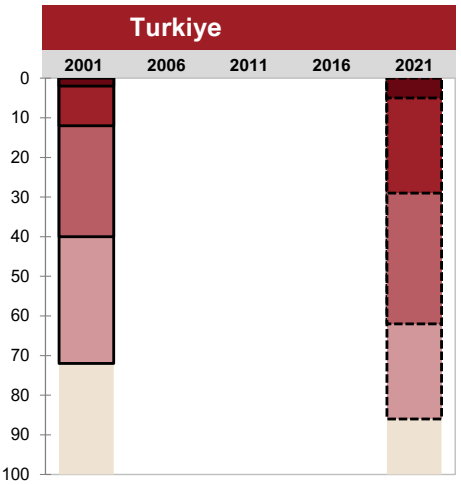

See Appendix A for country participation in previous PIRLS assessments.

Exhibit 4.3: Trends in the Distribution of Students Reaching the PIRLS International Benchmarks

Assessed Fourth Grade Students at the End of the School Year

⋈ Assessed one year later than originally scheduled – six year trend from PIRLS 2016

(Continued)

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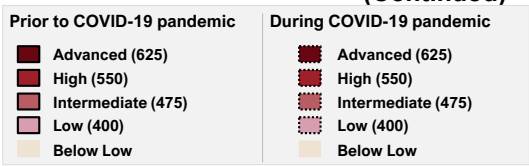
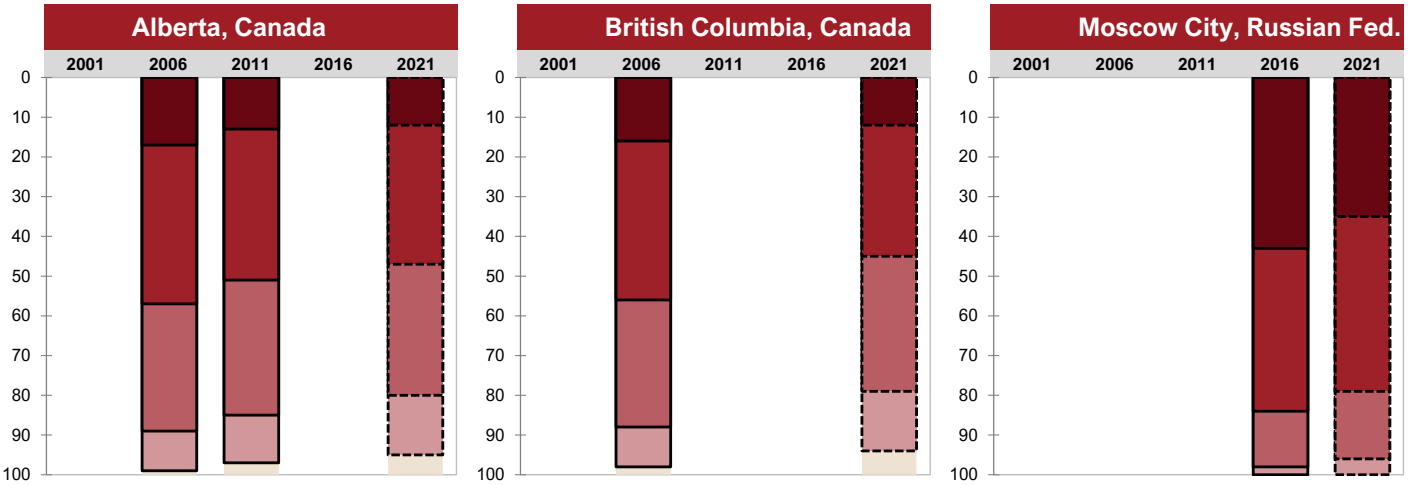


Benchmarking Participants



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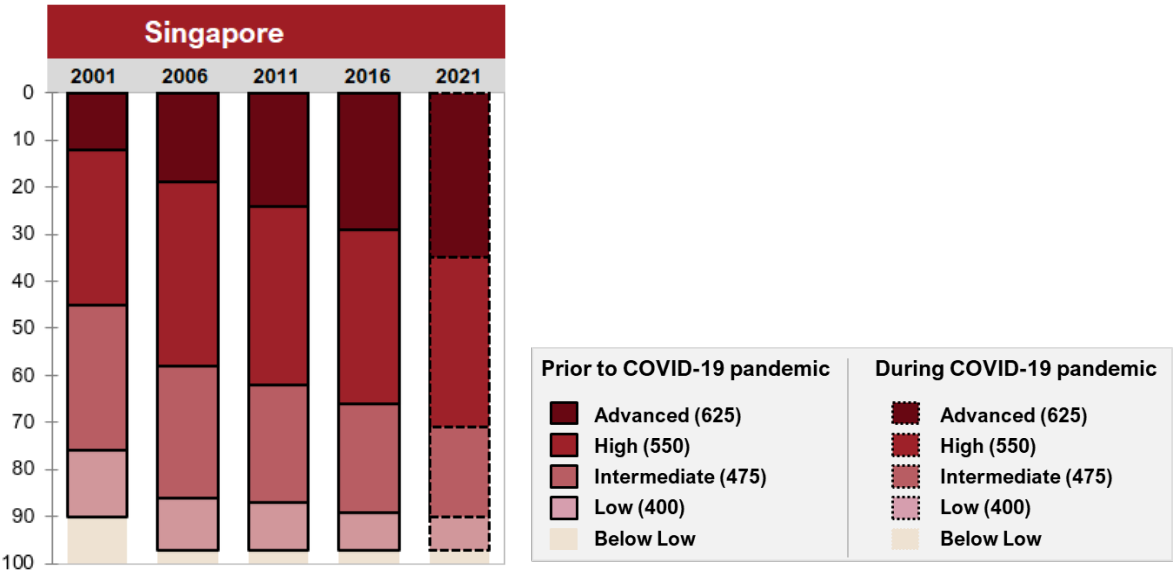
SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2021
Downloaded from https://pirls2021.org/results

Example of Singapore

Singapore's results provide a good example as a basis for discussion of how to read the graphs because this country has participated in all five cycles of PIRLS, had relatively high achievement in PIRLS 2001, and has increased the percentages of students reaching the higher PIRLS International Benchmarks with each successive assessment cycle.

Example of Singapore from Exhibit 4.3: Trends in the Distribution of Students Reaching the PIRLS International Benchmarks



Looking at the bars in Singapore's graph, it can be seen that Singapore has results for all five PIRLS assessments. Each bar in the graph shows the cumulative percentage of students reaching the benchmarks in that assessment cycle. The more of the bar that is shaded (no matter how dark), the larger the percentage of students that reached the Low International Benchmark.

Looking at the bottom of Singapore's first bar for 2001, reading down the 0 to 100 scale on the left of the graph shows that about 90 percent of the Singaporean fourth grade students reached the Low International Benchmark in the first assessment. Further, by subtraction from 100, the difference between the bottom of the bar and 100 indicates the percentage of students that did not reach the Low International Benchmark. Looking at Singapore's 2001 bar, it can be determined that 10 percent of the students did not reach the Low International Benchmark (were "below low") in the first PIRLS assessment.

Moving up Singapore's 2001 bar, 76 percent of the students reached the Intermediate Benchmark. Next, 45 percent of the students reached the High International Benchmark, and 12 percent of the students reached the Advanced International Benchmark. With each higher benchmark, the shading on the bar

becomes darker. Larger amounts of darker shading on a bar indicate higher percentages of students reaching the High and Advanced International Benchmarks. For the Intermediate, High, and Advanced International Benchmarks, it should be remembered that the students reaching those benchmarks demonstrated all the reading skills displayed by the students at the lower levels.

Moving to the right across the bars in Singapore's graph across the assessment cycles, between the first two 2001 and 2006 bars, Singapore increased the percentage of students reaching each of the four International Benchmarks in PIRLS 2006 to the extent that nearly all students (97%) reached the Low International Benchmark and 86 percent reached the Intermediate International Benchmark. Also, moving across the bars for 2001 through 2021 shows steady progress in increasing the percentages of more proficient readers with each subsequent assessment cycle. That is, a successively higher percentage of students reached the High International Benchmark with each assessment and a successively higher percentage of students reached the Advanced International Benchmark.

Although Singapore was the only country to achieve such positive trend results across the International Benchmarks, several other countries have made good progress. For example, Hong Kong SAR has a similar pattern, although with smaller changes from cycle to cycle. Also, several countries were making progress across their benchmark distributions until there were declines between PIRLS 2016 and 2021, including Chinese Taipei, the Russian Federation, the Slovak Republic, and Slovenia. The decreases between 2016 and 2021 are consistent with the apparent impact of COVID-19 observed in the PIRLS trends more generally (see Exhibits 2.1.1 and 2.1.2 in Trends in Reading Achievement). However, as explained in previous sections, no control groups in 2021 are available that can tell us what the distribution would have been without the pandemic.

For most of the countries that have participated in four or five PIRLS assessment cycles, the trend results in the benchmark distributions show relative stability in the percentages of students reaching each benchmark or minor fluctuations at one or two benchmarks.

Exhibit 4.4 shows trends across the benchmarks for the 14 Northern Hemisphere countries that necessarily delayed assessing the fourth grade cohort of students until after the summer at the beginning of fifth grade. As described earlier, the students in these 14 countries were half a year older on average than the students in the other countries, which may have contributed to higher average achievement (see previous subsection: Impacts of Modifying the Assessment Schedule on Students' Achievement). They also were 6 months older on average than the students from the same countries assessed in PIRLS 2016, which may also have contributed to increases in achievement between 2016 and 2021 (see Exhibits 2.2.1 and 2.2.2 in Trends in Reading Achievement). Once again, this lack of comparability and unavailability of control groups from the same 2021 cohort complicates interpreting the trends in achievement at the PIRLS International Benchmarks.

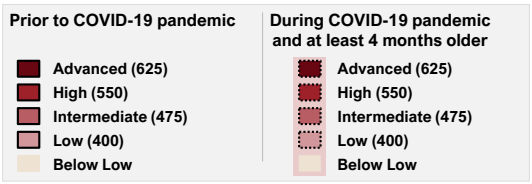
Although 5 of the countries with delayed assessment had increases in the percentage of students reaching the Advanced Benchmark between 2016 and 2021, considering questions about the comparability between 2016 and 2021 (COVID-19 and delayed testing), it is best to have data from 4 or 5 assessment cycles to interpret trends. Looking at the countries with data from at least 4 assessments, Georgia had increases at the Advanced and High Benchmarks, Lithuania and the United States have remained relatively stable, and Hungary and Latvia exhibited fluctuations with declines between 2016 and 2021.

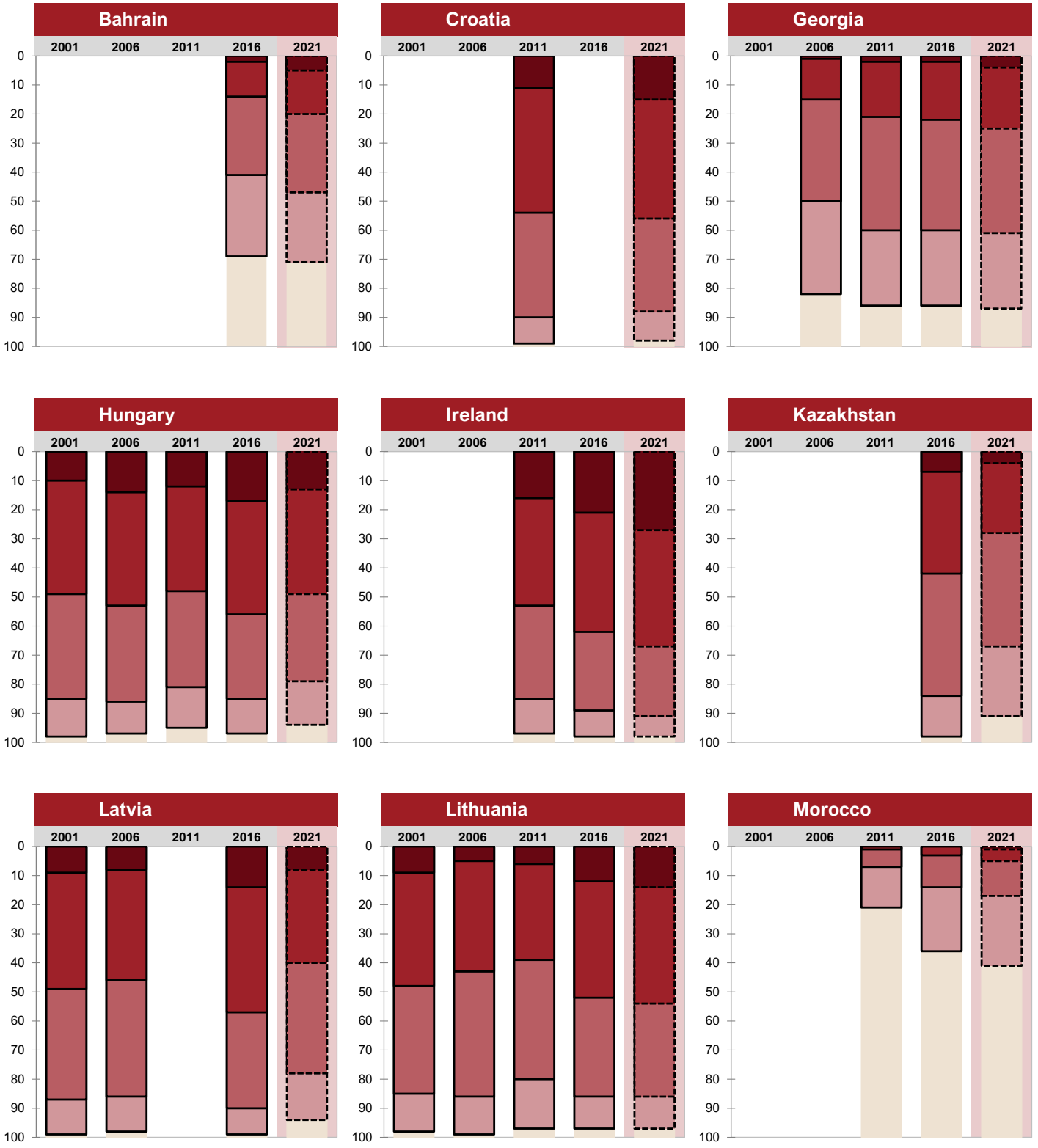
For these 14 countries, it is interesting to consider trends in the percentages of students not reaching the Low Benchmark ("below low"). Several countries, including Morocco, Qatar, and the United Arab Emirates appear to have made steady progress toward more students reaching the Low Benchmark over the last 3 assessments.

Exhibit 4.4: Trends in the Distribution of Students Reaching the PIRLS International Benchmarks

Delayed Assessment of Fourth Grade Cohort at the Beginning of Fifth Grade

This exhibit displays changes in percentages of students reaching the PIRLS International Benchmarks in each country and benchmarking participant that assessed fourth grade cohort at the beginning of the fifth grade school year and have data from previous assessments. See Appendix A for country participation in previous assessments.





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Delayed Assessment of Fourth Grade Cohort at the Beginning of Fifth Grade

(Continued)

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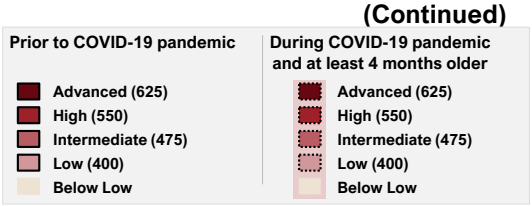
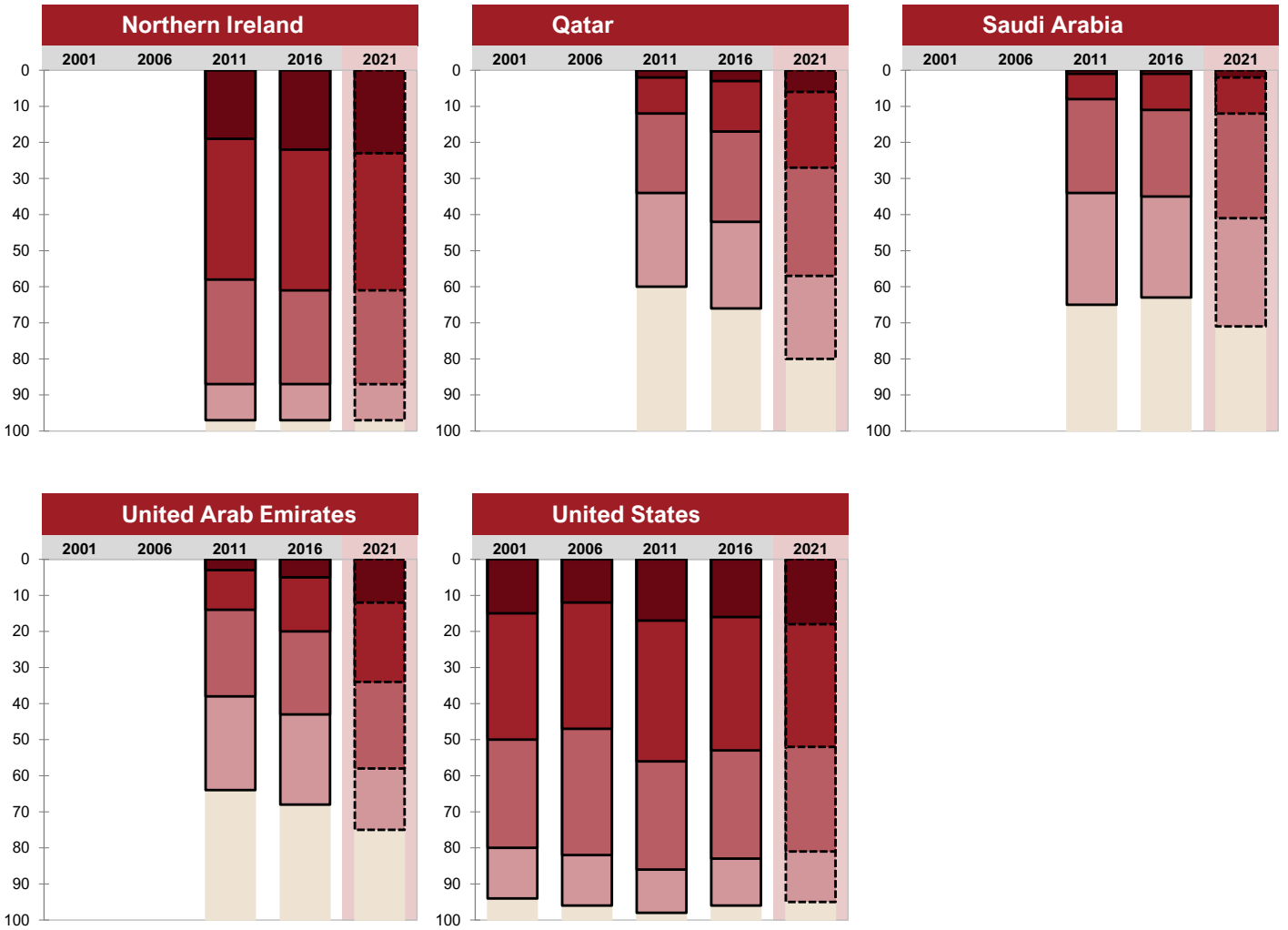
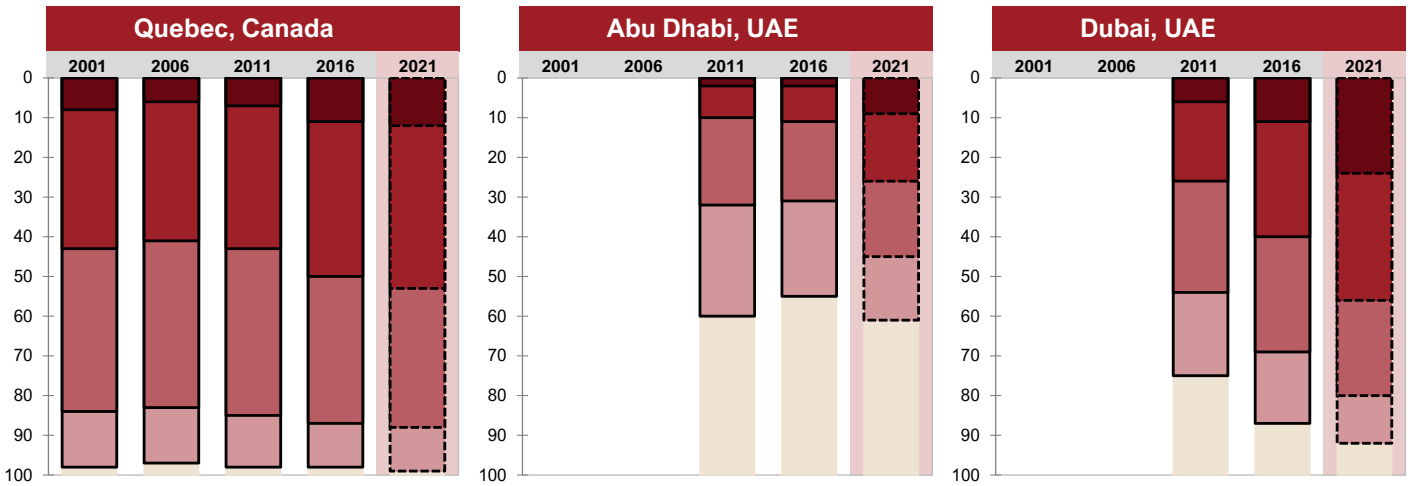




Benchmarking Participants



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