

Exhibit 3.5 and 3.6: Trends in the Comprehension Processes

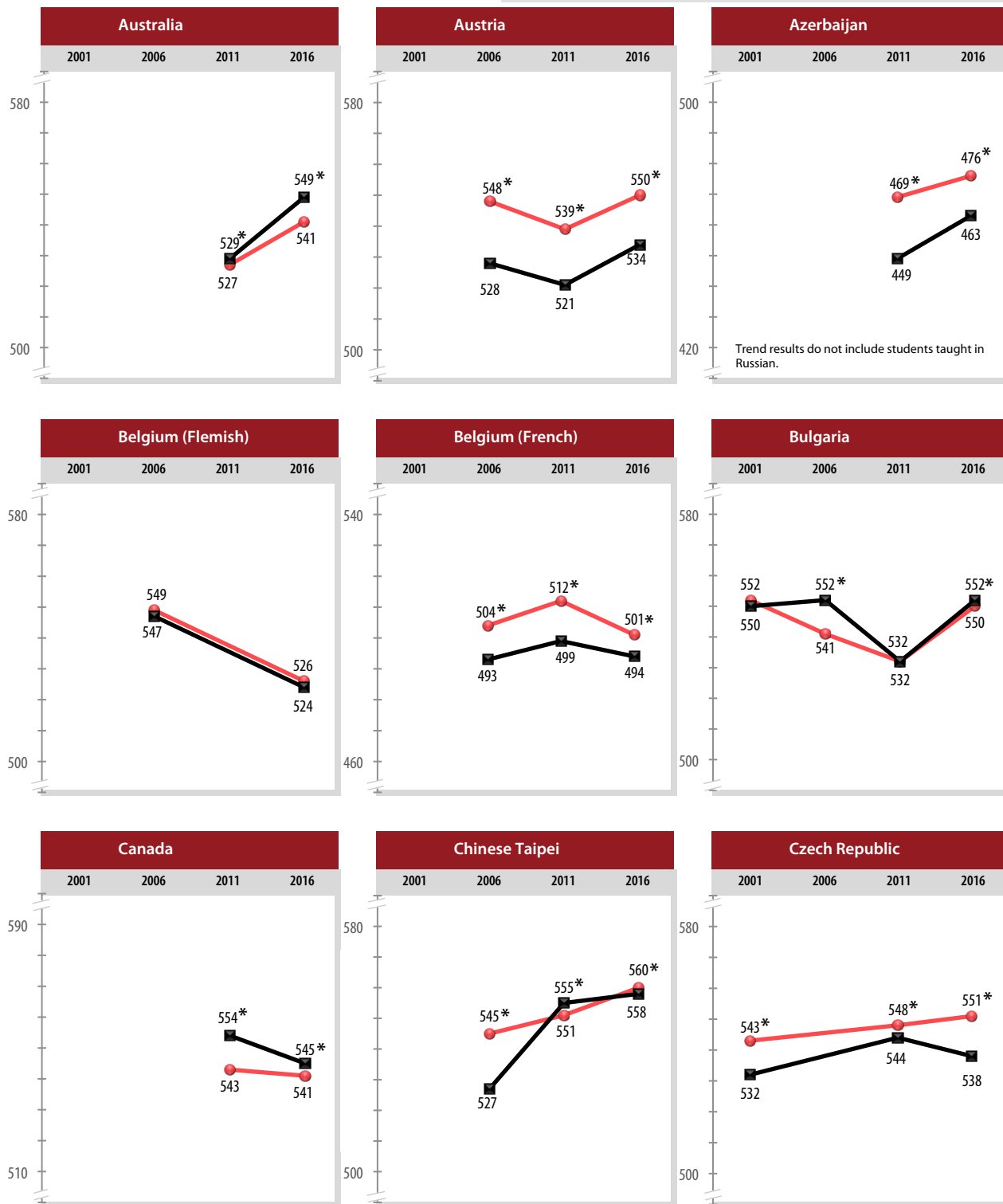
Trends in average reading achievement for the retrieving and straightforward inferencing and the interpreting, integrating, and evaluating reading comprehension processes are presented for the countries that have comparable data from previous PIRLS assessments. Exhibit 3.5 depicts the results graphically for the countries in alphabetical order, while Exhibit 3.6 provides the detailed results from assessment to assessment. Mirroring the overall results, the trends in reading achievement for both process scales show more gains than losses. Twenty countries have data for the 15 year period between 2001 and 2016, with 10 showing increases in retrieving and straightforward inferencing and 2 decreases. Similarly, 10 had increases in interpreting, integrating, and evaluating and 3 had decreases. Of the 20 countries, 15 had the same trend result for both processes.

Forty of the countries participated in both 2011 and 2016, with 18 showing improvements in the retrieving and straightforward inferencing comprehension process and 8 showing decreases. Compared to five years earlier, 18 countries had higher achievement in 2016 in the interpreting, integrating, and evaluating process and 10 had lower achievement. The within country trends were the same for the two processes in 29 of the 40 countries.

Exhibit 3.5: Trends in Achievement by Comprehension Process

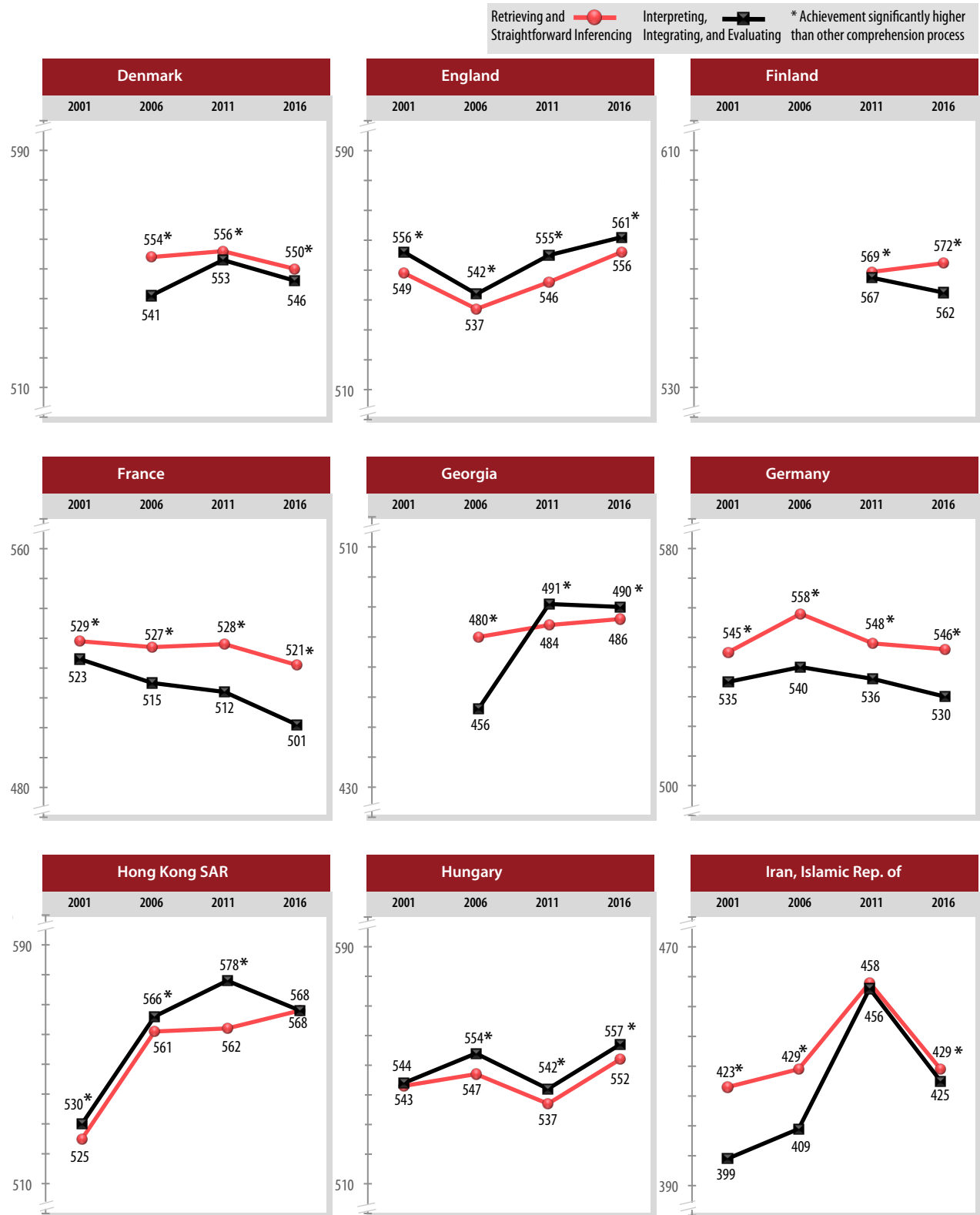
Scale interval is 10 points for each country, but the part of the scale shown differs according to each country's average achievement.

Retrieving and Straightforward Inferencing (red line with circles) Interpreting, Integrating, and Evaluating (black line with squares) * Achievement significantly higher than other comprehension process



SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

Exhibit 3.5: Trends in Achievement by Comprehension Process (Continued)



SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2016

Exhibit 3.5: Trends in Achievement by Comprehension Process (Continued)

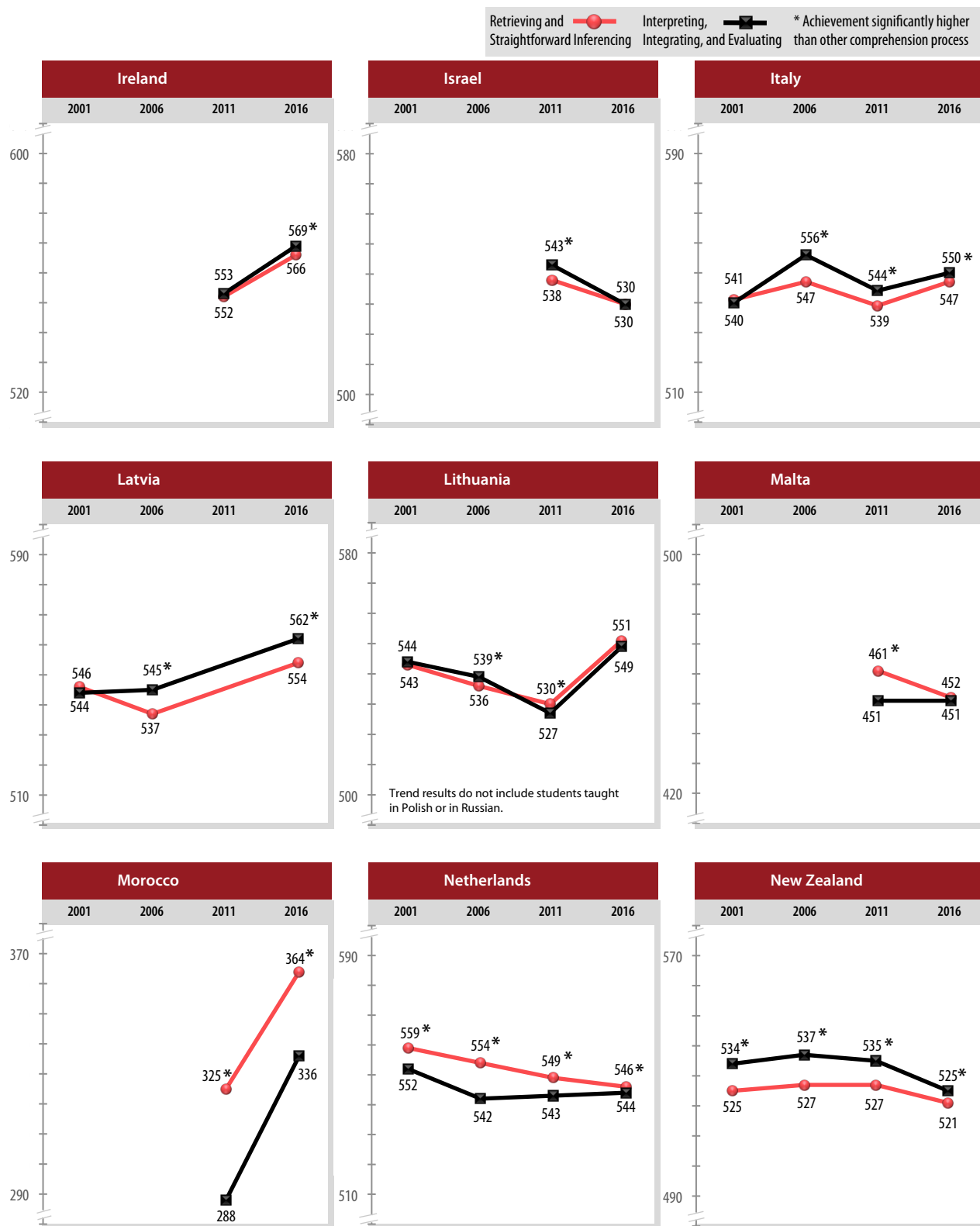
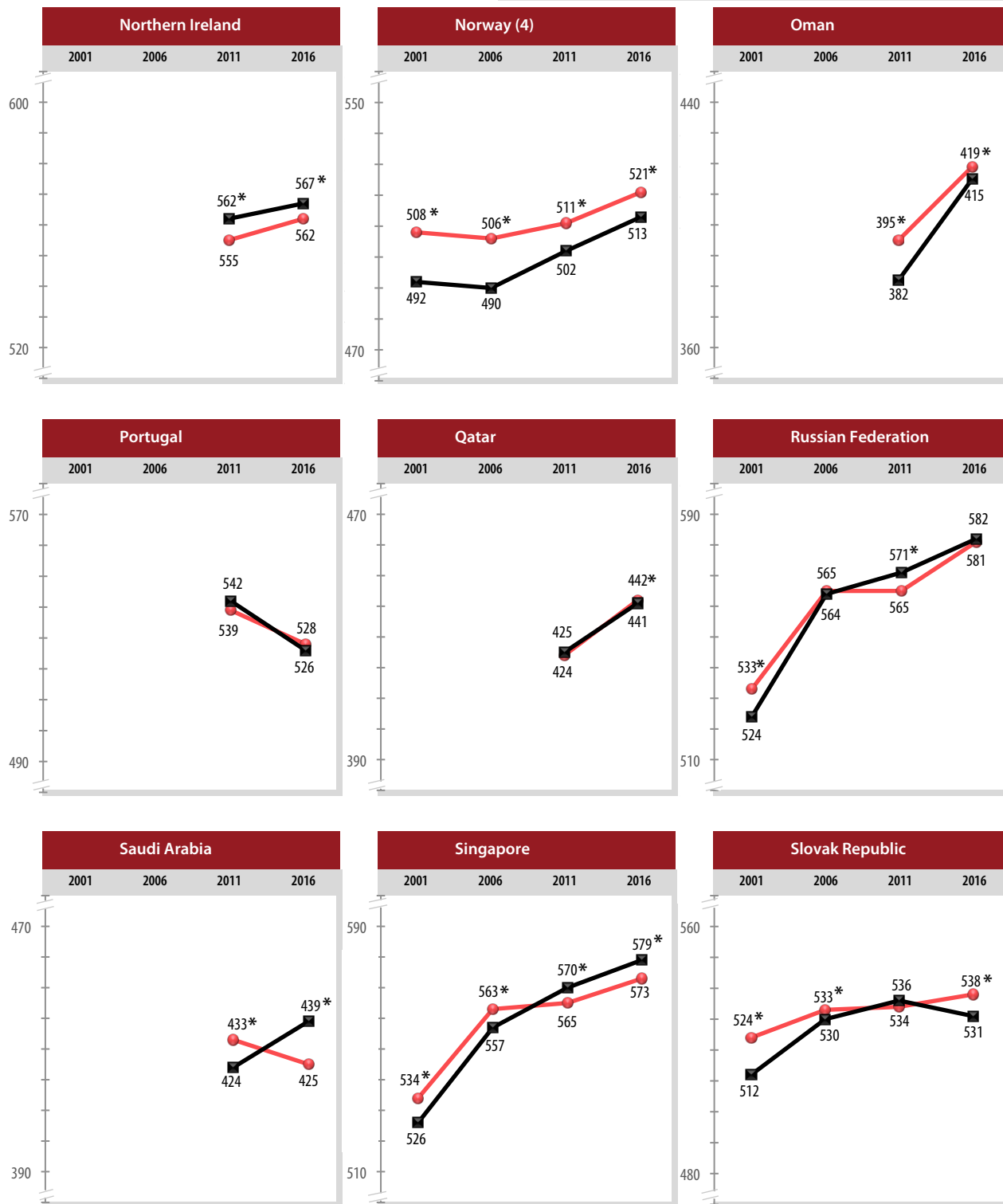


Exhibit 3.5: Trends in Achievement by Comprehension Process (Continued)

Retrieving and Straightforward Inferencing (red line with circles) Interpreting, Integrating, and Evaluating (black line with squares) * Achievement significantly higher than other comprehension process



SOURCE: IEA's Progress in International Reading Literacy Study—PIRLS 2016

Exhibit 3.5: Trends in Achievement by Comprehension Process (Continued)

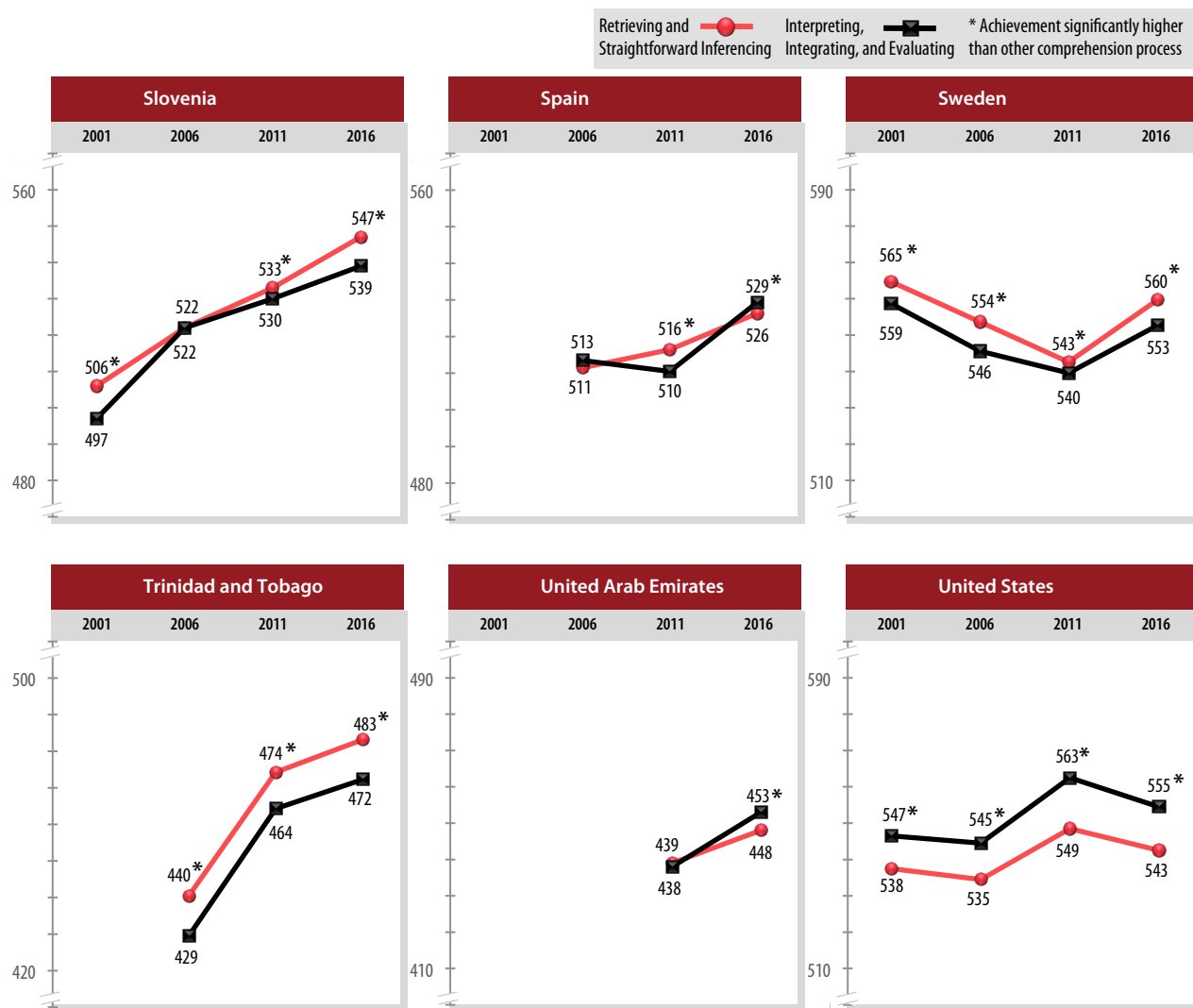
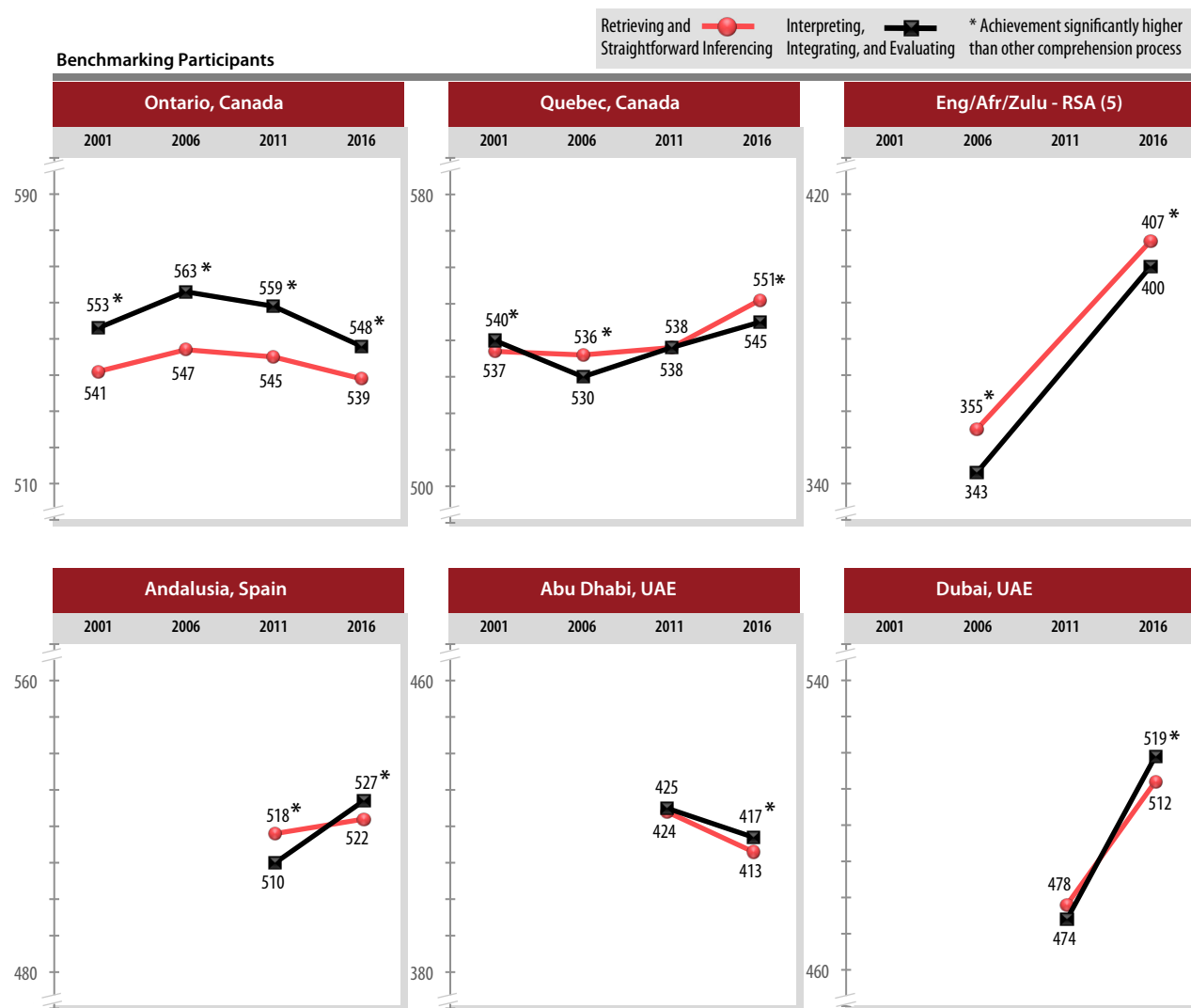


Exhibit 3.5: Trends in Achievement by Comprehension Process (Continued)



SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2016

Exhibit 3.6: Differences in Achievement for Comprehension Processes Across Assessment Years

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.

Country	Retrieving and Straightforward Inferencing				Interpreting, Integrating, and Evaluating			
	Average Scale Score	Differences Between Years			Average Scale Score	Differences Between Years		
		2011	2006	2001		2011	2006	2001
Australia								
2016	541 (2.6)	14 ▲			549 (2.4)	20 ▲		
2011	527 (2.6)				529 (2.2)			
Austria								
² 2016	550 (2.8)	11 ▲	2		534 (2.5)	14 ▲	6	
2011	539 (2.3)		-9 ▼		521 (2.1)		-8 ▼	
2006	548 (2.2)				528 (2.5)			
Azerbaijan								
2016	476 (4.4)	7			463 (4.6)	14 ▲		
² 2011	469 (3.2)				449 (3.7)			
Belgium (Flemish)								
2016	526 (2.1)		-23 ▼		524 (2.2)		-22 ▼	
² † 2006	549 (2.1)				547 (1.9)			
Belgium (French)								
² 2016	501 (2.3)	-11 ▼	-4		494 (2.4)	-5	1	
² † 2011	512 (2.9)		8 ▲		499 (3.2)		6	
2006	504 (2.5)				493 (2.7)			
Bulgaria								
2016	550 (4.0)	18 ▲	10	-2	552 (4.3)	20 ▲	0	2
2011	532 (4.2)		-9	-20 ▼	532 (4.1)		-20 ▼	-18 ▼
² 2006	541 (4.1)			-11	552 (4.7)			1
2001	552 (4.0)				550 (3.7)			
Canada								
¹ ² 2016	541 (1.8)	-2			545 (1.8)	-8 ▼		
² 2011	543 (1.5)				554 (1.5)			
Chinese Taipei								
2016	560 (1.9)	8 ▲	15 ▲		558 (2.2)	3	31 ▲	
2011	551 (1.8)		7 ▲		555 (1.8)		27 ▲	
2006	545 (1.9)				527 (2.0)			
Czech Republic								
2016	551 (2.4)	3		8 ▲	538 (2.2)	-6 ▼		5
2011	548 (2.4)			5	544 (2.0)			12 ▲
² 2001	543 (2.7)				532 (2.4)			
Denmark								
² 2016	550 (2.1)	-7 ▼	-4		546 (2.2)	-7 ▼	5	
² 2011	556 (1.9)		3		553 (1.7)		12 ▲	
² 2006	554 (2.7)				541 (2.4)			
England								
2016	556 (2.0)	10 ▲	19 ▲	7	561 (1.9)	6	19 ▲	5
† 2011	546 (2.6)		9 ▲	-3	555 (2.7)		13 ▲	-1
2006	537 (2.7)			-12 ▼	542 (2.6)			-14 ▼
² † 2001	549 (3.4)				556 (3.6)			
Finland								
2016	572 (2.0)	3			562 (1.8)	-5		
2011	569 (2.0)				567 (1.8)			
France								
2016	521 (2.3)	-7 ▼	-6 ▼	-8 ▼	501 (2.4)	-10 ▼	-14 ▼	-22 ▼
2011	528 (2.5)		1	-1	512 (2.8)		-4	-11 ▼
2006	527 (2.1)			-2	515 (2.3)			-7 ▼
2001	529 (2.7)				523 (2.5)			

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

- ▲ More recent year significantly higher
- ▼ More recent year significantly lower

Trend results for Azerbaijan do not include students taught in Russian. Trend results for Lithuania do not include students taught in Polish or in Russian. See Appendix C.1 for target population coverage notes 1, 2, and 3. See Appendix C.4 for sampling guidelines and sampling participation notes †, ‡, and ≡. () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit 3.6: Differences in Achievement for Comprehension Processes Across Assessment Years (Continued)

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.

Country	Retrieving and Straightforward Inferencing				Interpreting, Integrating, and Evaluating			
	Average Scale Score	Differences Between Years			Average Scale Score	Differences Between Years		
		2011	2006	2001		2011	2006	2001
Georgia								
¹ 2016	486 (2.6)	2	6		490 (2.9)	-1	34 ▲	
¹ 2011	484 (2.9)		4		491 (3.0)		35 ▲	
^{1 2} 2006	480 (3.2)				456 (3.5)			
Germany								
2016	546 (3.3)	-3	-13 ▼	0	530 (3.2)	-6	-9 ▼	-5
2011	548 (2.4)		-10 ▼	3	536 (2.2)		-4	1
2006	558 (2.6)			13 ▲	540 (2.3)			5
2001	545 (1.8)				535 (2.0)			
Hong Kong SAR								
^{2 †} 2016	568 (2.7)	5	6	43 ▲	568 (2.9)	-9 ▼	2	38 ▲
³ 2011	562 (2.1)		1	37 ▲	578 (2.4)		12 ▲	48 ▲
2006	561 (2.5)			37 ▲	566 (2.5)			36 ▲
2001	525 (3.1)				530 (3.3)			
Hungary								
2016	552 (3.3)	14 ▲	4	8 ▲	557 (3.0)	15 ▲	3	12 ▲
2011	537 (2.7)		-10 ▼	-6	542 (2.7)		-12 ▼	-2
2006	547 (2.9)			4	554 (3.2)			10 ▲
2001	543 (2.1)				544 (2.2)			
Iran, Islamic Rep. of								
2016	429 (4.0)	-28 ▼	1	7	425 (4.1)	-32 ▼	16 ▲	26 ▲
2011	458 (3.0)		29 ▲	35 ▲	456 (3.0)		48 ▲	58 ▲
2006	429 (3.4)			6	409 (3.4)			10
2001	423 (4.5)				399 (4.9)			
Ireland								
2016	566 (2.6)	14 ▲			569 (2.9)	16 ▲		
2011	552 (2.8)				553 (2.3)			
Israel								
³ 2016	530 (2.4)	-8 ▼			530 (2.7)	-13 ▼		
³ 2011	538 (2.8)				543 (2.9)			
Italy								
2016	547 (2.1)	7 ▲	-1	5	550 (2.1)	6 ▲	-6	9 ▲
2011	539 (2.0)		-8 ▼	-2	544 (2.0)		-12 ▼	3
2006	547 (3.0)			6	556 (3.0)			16 ▲
2001	541 (2.5)				540 (2.6)			
Latvia								
² 2016	554 (1.9)		17 ▲	8 ▲	562 (1.7)		17 ▲	18 ▲
2006	537 (2.3)			-9 ▼	545 (2.1)			1
2001	546 (2.5)				544 (2.3)			
Lithuania								
2016	551 (2.8)	21 ▲	16 ▲	8 ▲	549 (2.8)	22 ▲	10 ▲	5
^{1 2} 2011	530 (1.9)		-5 ▼	-13 ▼	527 (2.0)		-11 ▼	-16 ▼
¹ 2006	536 (1.8)			-8 ▼	539 (1.8)			-5
¹ 2001	543 (3.0)				544 (2.7)			
Malta								
² 2016	452 (1.7)	-9 ▼			451 (1.9)	0		
2011	461 (2.4)				451 (1.7)			
Morocco								
2016	364 (3.9)	39 ▲			336 (4.5)	48 ▲		
✱ 2011	325 (3.1)				288 (4.3)			

▲ More recent year significantly higher
▼ More recent year significantly lower

✱ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation exceeds 25%.

SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2016

Exhibit 3.6: Differences in Achievement for Comprehension Processes Across Assessment Years (Continued)

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.

Country	Retrieving and Straightforward Inferencing				Interpreting, Integrating, and Evaluating			
	Average Scale Score	Differences Between Years			Average Scale Score	Differences Between Years		
		2011	2006	2001		2011	2006	2001
Netherlands								
† 2016	546 (2.0)	-2	-8 ▼	-13 ▼	544 (1.7)	1	3	-7 ▼
† 2011	549 (2.1)		-5 ▼	-10 ▼	543 (1.9)		1	-8 ▼
† 2006	554 (1.7)			-5	542 (1.7)			-10 ▼
† 2001	559 (2.6)				552 (2.5)			
New Zealand								
2016	521 (2.3)	-6 ▼	-6	-3	525 (2.4)	-11 ▼	-12 ▼	-10 ▼
2011	527 (2.0)		0	3	535 (1.9)		-1	1
2006	527 (2.3)			2	537 (2.3)			2
2001	525 (3.9)				534 (3.9)			
Northern Ireland								
2016	562 (2.1)	6			567 (2.2)	5		
† 2011	555 (2.5)				562 (2.4)			
Norway (4)								
2016	521 (2.0)	10 ▲	15 ▲	14 ▲	513 (1.9)	11 ▲	23 ▲	21 ▲
‡ 2011	511 (1.8)		5	4	502 (2.6)		11 ▲	10 ▲
‡ 2006	506 (2.6)			-1	490 (2.8)			-2
2001	508 (2.9)				492 (3.0)			
Oman								
2016	419 (3.2)	25 ▲			415 (3.6)	33 ▲		
ψ 2011	395 (2.4)				382 (3.0)			
Portugal								
² 2016	528 (2.2)	-11 ▼			526 (2.4)	-16 ▼		
2011	539 (2.8)				542 (2.6)			
Qatar								
2016	442 (1.8)	18 ▲			441 (1.9)	15 ▲		
² 2011	424 (3.5)				425 (3.6)			
Russian Federation								
2016	581 (2.3)	16 ▲	16 ▲	48 ▲	582 (2.2)	11 ▲	18 ▲	58 ▲
2011	565 (2.8)		0	32 ▲	571 (2.7)		7	47 ▲
² 2006	565 (3.4)			32 ▲	564 (3.4)			40 ▲
² 2001	533 (4.3)				524 (4.8)			
Saudi Arabia								
2016	425 (4.1)	-8			439 (4.1)	15 ▲		
2011	433 (4.5)				424 (4.6)			
Singapore								
³ 2016	573 (3.1)	8	10 ▲	39 ▲	579 (3.2)	9	22 ▲	53 ▲
² 2011	565 (3.4)		2	31 ▲	570 (3.4)		14 ▲	44 ▲
2006	563 (3.2)			29 ▲	557 (2.8)			31 ▲
2001	534 (5.6)				526 (5.1)			
Slovak Republic								
2016	538 (3.1)	3	5	13 ▲	531 (3.2)	-4	2	19 ▲
2011	534 (2.9)		2	10 ▲	536 (2.7)		6	24 ▲
2006	533 (2.8)			8 ▲	530 (2.9)			18 ▲
2001	524 (2.8)				512 (3.1)			
Slovenia								
2016	547 (2.3)	14 ▲	25 ▲	40 ▲	539 (2.5)	10 ▲	17 ▲	42 ▲
2011	533 (2.0)		11 ▲	26 ▲	530 (2.1)		8 ▲	32 ▲
2006	522 (2.2)			15 ▲	522 (2.2)			25 ▲
2001	506 (2.2)				497 (2.2)			

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

- ▲ More recent year significantly higher
- ▼ More recent year significantly lower

ψ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.

Exhibit 3.6: Differences in Achievement for Comprehension Processes Across Assessment Years (Continued)

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.

Country	Retrieving and Straightforward Inferencing				Interpreting, Integrating, and Evaluating			
	Average Scale Score	Differences Between Years			Average Scale Score	Differences Between Years		
		2011	2006	2001		2011	2006	2001
Spain								
2016	526 (1.7)	10 ▲	15 ▲		529 (1.7)	19 ▲	17 ▲	
2011	516 (2.2)		5		510 (2.3)		-3	
2006	511 (2.5)				513 (2.8)			
Sweden								
2016	560 (2.7)	17 ▲	6	-5	553 (2.5)	12 ▲	7 ▲	-6
2011	543 (2.1)		-11 ▼	-23 ▼	540 (2.2)		-6	-18 ▼
2006	554 (2.2)			-12 ▼	546 (2.3)			-13 ▼
2001	565 (2.6)				559 (2.2)			
Trinidad and Tobago								
2016	483 (3.6)	9	43 ▲		472 (3.6)	9	44 ▲	
2011	474 (3.8)		34 ▲		464 (4.1)		35 ▲	
2006	440 (4.9)				429 (5.3)			
United Arab Emirates								
2016	448 (3.2)	9 ▲			453 (3.3)	15 ▲		
2011	439 (2.3)				438 (2.3)			
United States								
[†] 2016	543 (3.0)	-6	8	5	555 (3.1)	-8 ▼	9 ▲	8
² 2011	549 (1.5)		14 ▲	11 ▲	563 (1.6)		17 ▲	16 ▲
^{2†} 2006	535 (3.5)			-3	545 (3.7)			-2
[†] 2001	538 (4.2)				547 (3.8)			

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

Benchmarking Participants

Ontario, Canada								
2016	539 (3.3)	-6	-8	-3	548 (3.2)	-11 ▼	-14 ▼	-5
² 2011	545 (2.4)		-3	3	559 (2.5)		-3	6
² 2006	547 (3.1)			6	563 (3.1)			9 ▲
2001	541 (3.4)				553 (3.1)			
Quebec, Canada								
≡ 2016	551 (3.0)	13 ▲	15 ▲	14 ▲	545 (3.0)	7	15 ▲	5
2011	538 (2.1)		2	1	538 (2.3)		8 ▲	-2
2006	536 (2.7)			0	530 (2.7)			-10 ▼
2001	537 (3.2)				540 (3.0)			
Eng/Afr/Zulu - RSA (5)								
2016	407 (6.1)		53 ▲		400 (6.2)		57 ▲	
2006	355 (8.4)				343 (8.8)			
Andalusia, Spain								
2016	522 (1.9)	4			527 (2.3)	17 ▲		
2011	518 (2.3)				510 (2.3)			
Abu Dhabi, UAE								
2016	413 (4.6)	-11			417 (4.7)	-8		
2011	424 (4.5)				425 (4.6)			
Dubai, UAE								
2016	512 (2.4)	34 ▲			519 (1.9)	45 ▲		
2011	478 (2.3)				474 (2.2)			

▲ More recent year significantly higher

▼ More recent year significantly lower