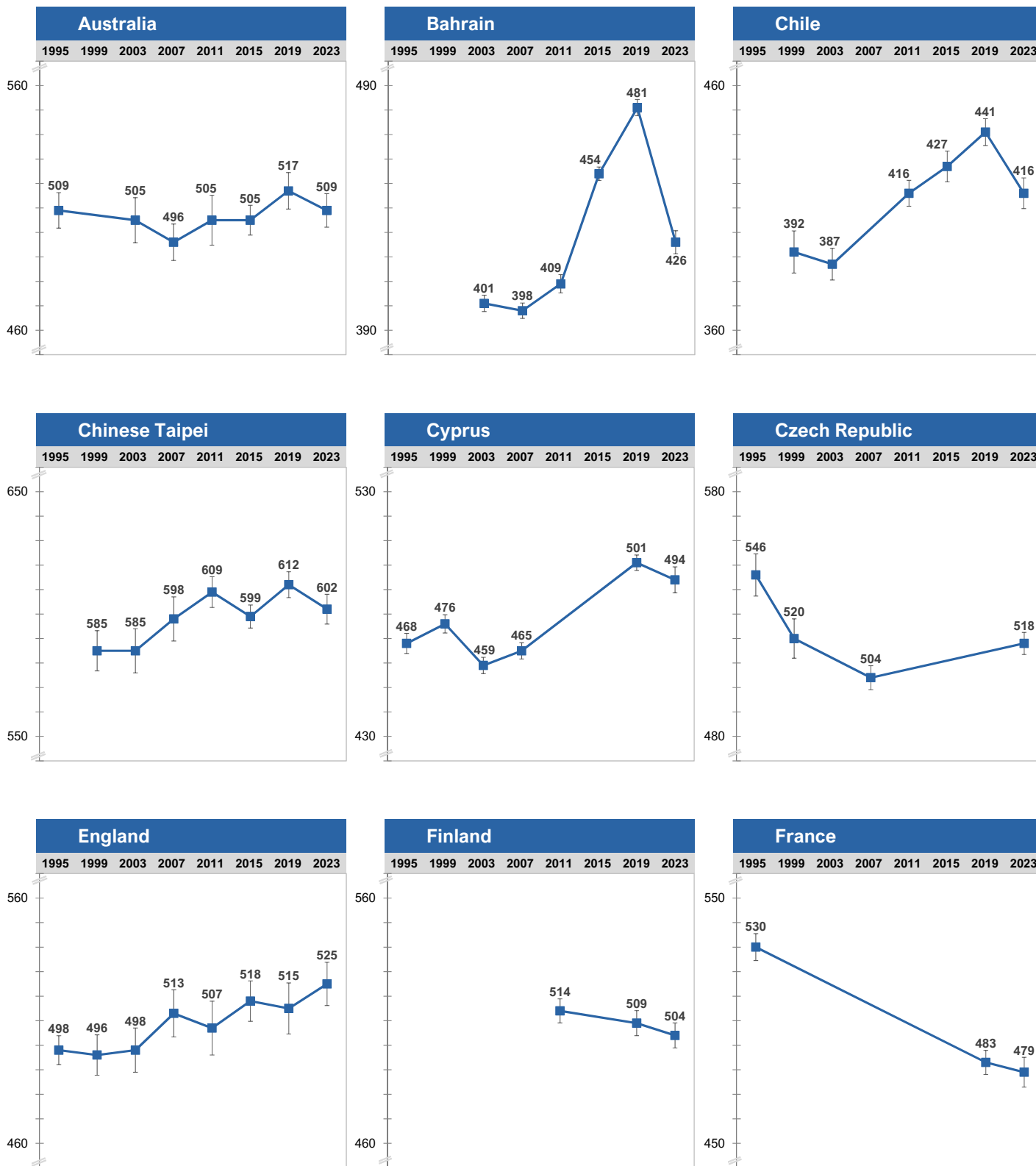


Exhibit 1.2.9: Trend Plots of Average Mathematics Achievement

This exhibit displays changes in achievement across assessment years for the countries and benchmarking participants that have comparable data from previous TIMSS assessments. The accompanying table (Exhibit 1.2.10) provides details. The scale interval is 10 points for each country, but a different part of the scale is shown according to each country's average achievement. See Appendix A for country participation in previous assessments.

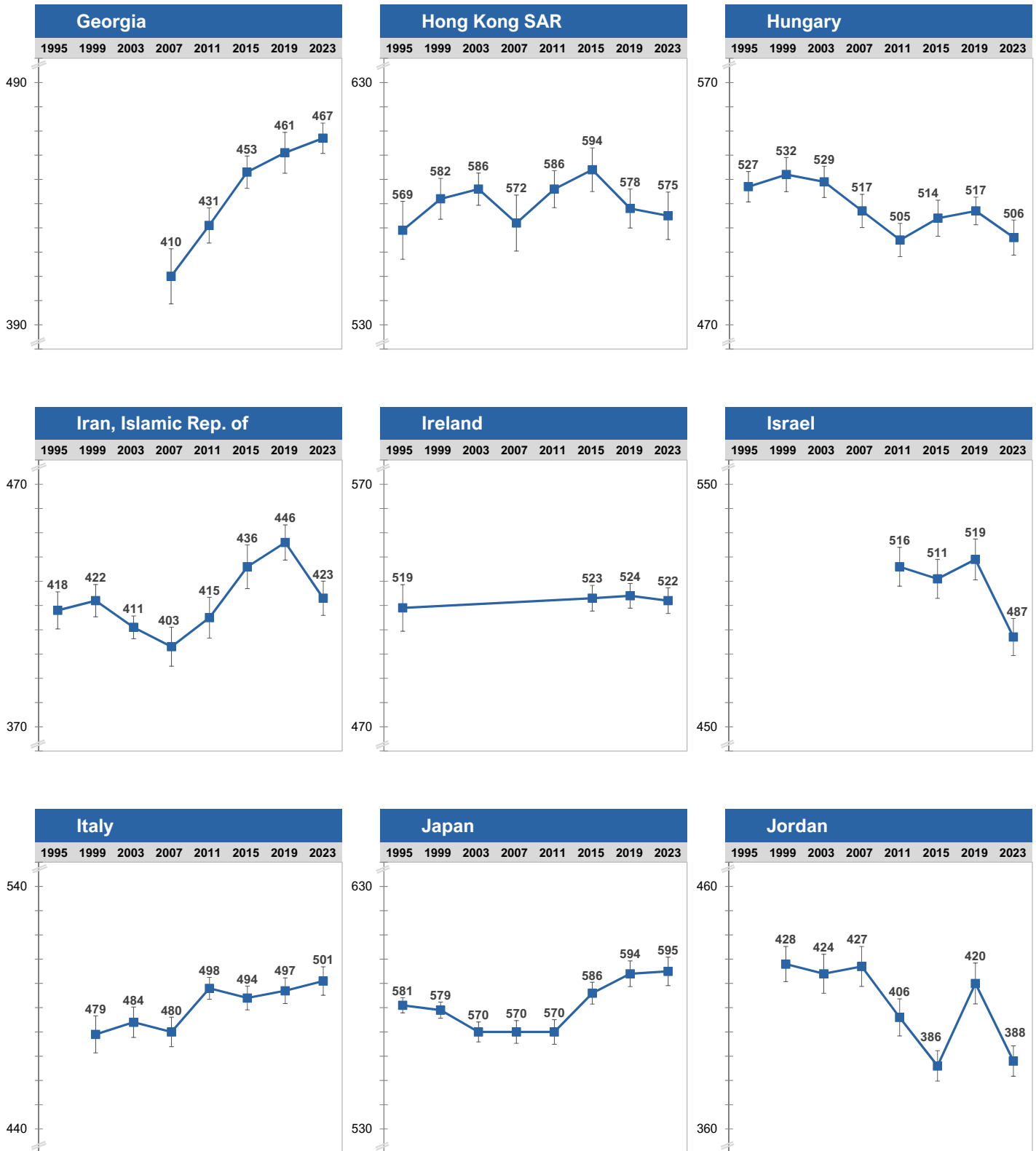


See Appendix A for country participation in previous TIMSS assessments. The scale interval is 10 points for each country, but a different part of the scale is shown according to each country's average achievement. I. The black bars represent the 95% confidence interval.

Exhibit 1.2.9: Trend Plots of Average Mathematics Achievement

(Continued)

This exhibit displays changes in achievement across assessment years for the countries and benchmarking participants that have comparable data from previous TIMSS assessments. The accompanying table (Exhibit 1.2.10) provides details. The scale interval is 10 points for each country, but a different part of the scale is shown according to each country's average achievement. See Appendix A for country participation in previous assessments.

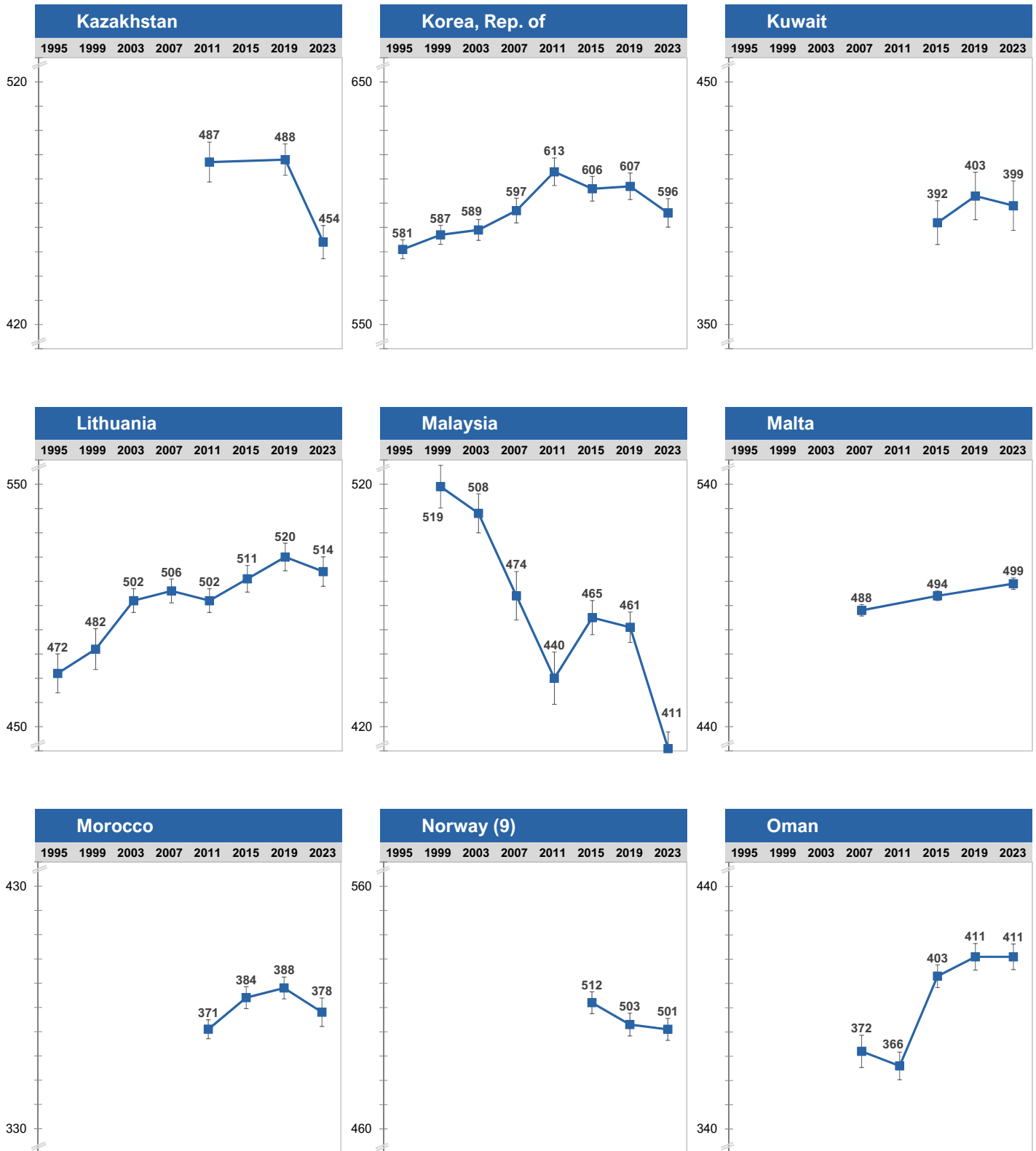


See Appendix A for country participation in previous TIMSS assessments. The scale interval is 10 points for each country, but a different part of the scale is shown according to each country's average achievement. I The black bars represent the 95% confidence interval.

Exhibit 1.2.9: Trend Plots of Average Mathematics Achievement

(Continued)

This exhibit displays changes in achievement across assessment years for the countries and benchmarking participants that have comparable data from previous TIMSS assessments. The accompanying table (Exhibit 1.2.10) provides details. The scale interval is 10 points for each country, but a different part of the scale is shown according to each country's average achievement. See Appendix A for country participation in previous assessments.

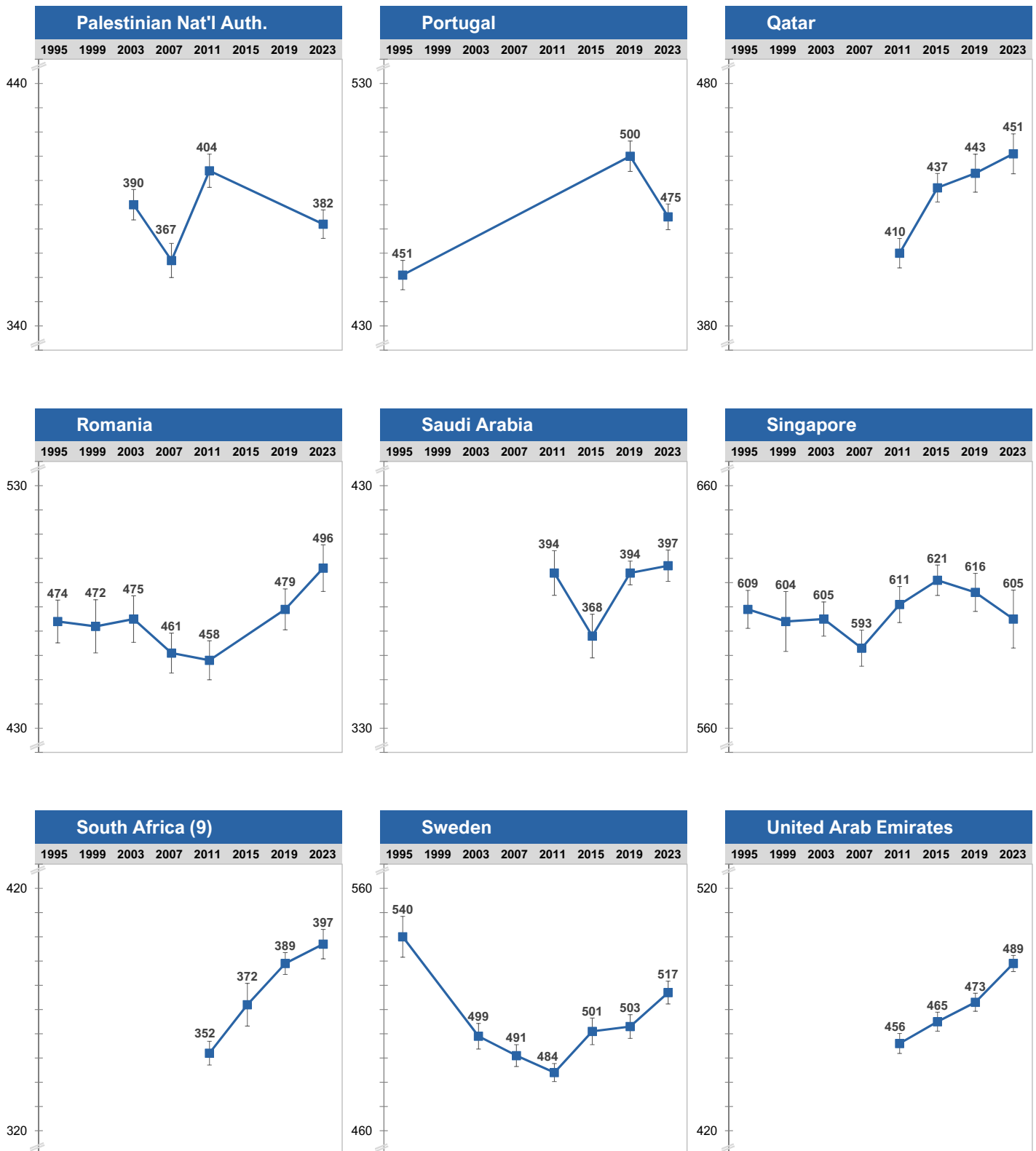


See Appendix A for country participation in previous TIMSS assessments. The scale interval is 10 points for each country, but a different part of the scale is shown according to each country's average achievement. I The black bars represent the 95% confidence interval.

Exhibit 1.2.9: Trend Plots of Average Mathematics Achievement

(Continued)

This exhibit displays changes in achievement across assessment years for the countries and benchmarking participants that have comparable data from previous TIMSS assessments. The accompanying table (Exhibit 1.2.10) provides details. The scale interval is 10 points for each country, but a different part of the scale is shown according to each country's average achievement. See Appendix A for country participation in previous assessments.

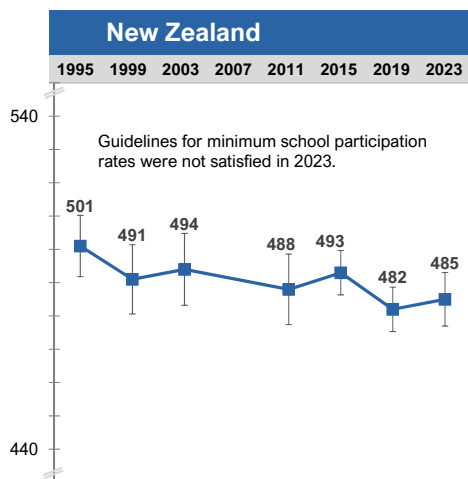
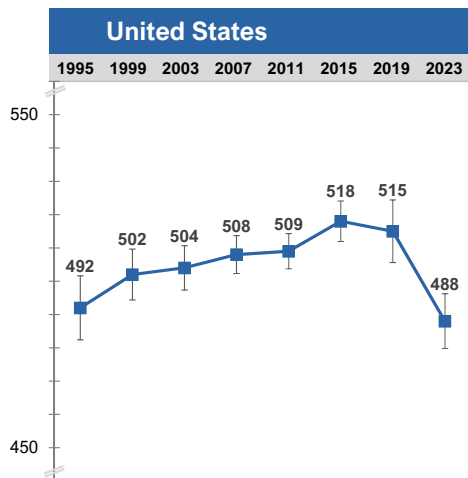


See Appendix A for country participation in previous TIMSS assessments.  
 The scale interval is 10 points for each country, but a different part of the scale is shown according to each country's average achievement.  
 I. The black bars represent the 95% confidence interval.

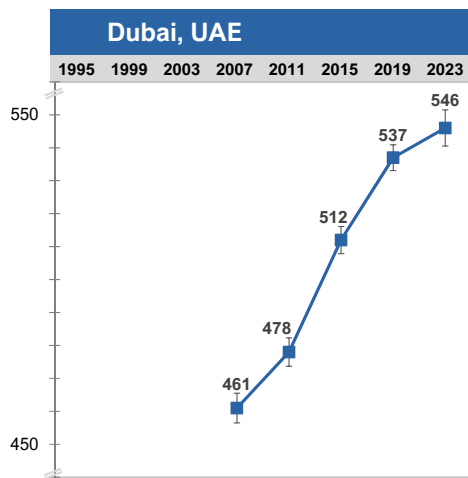
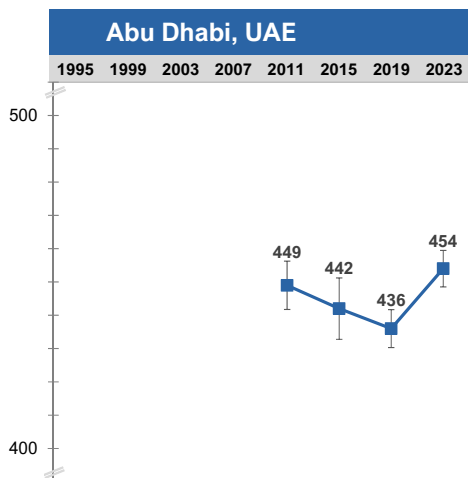
Exhibit 1.2.9: Trend Plots of Average Mathematics Achievement

(Continued)

This exhibit displays changes in achievement across assessment years for the countries and benchmarking participants that have comparable data from previous TIMSS assessments. The accompanying table (Exhibit 1.2.10) provides details. The scale interval is 10 points for each country, but a different part of the scale is shown according to each country's average achievement. See Appendix A for country participation in previous assessments.



Benchmarking Participants

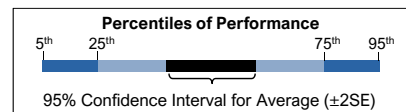


See Appendix A for country participation in previous TIMSS assessments. The scale interval is 10 points for each country, but a different part of the scale is shown according to each country's average achievement. I. The black bars represent the 95% confidence interval.

Exhibit 1.2.10: Trends in Average Mathematics Achievement and Scale Score Distributions

This exhibit reports differences in achievement across assessment years for the countries and benchmarking participants that have comparable data from previous TIMSS assessments. Symbols indicate if the row year is significantly higher (▲) or significantly lower (▼) than the performance in TIMSS 2023. See Appendix A for country participation in previous TIMSS assessments.

Country	Average Scale Score	95% Confidence Interval for Average	Difference from TIMSS 2023	Mathematics Achievement Distribution
<b>Australia</b>				
2023	509 (3.5)	502 - 516		
2019	517 (3.8)	510 - 525	9 (5.1)	
2015	505 (3.1)	499 - 511	-4 (4.7)	
2011	505 (5.2)	495 - 515	-4 (6.2)	
2007	496 (3.8)	489 - 504	-12 (5.1) ▼	
2003	505 (4.7)	495 - 514	-4 (5.9)	
‡ 1995	509 (3.7)	502 - 516	0 (5.1)	
<b>Bahrain</b>				
2023	426 (2.4)	422 - 431		
2019	481 (1.7)	478 - 484	55 (3.0) ▲	
2015	454 (1.4)	451 - 457	28 (2.8) ▲	
ψ 2011	409 (1.9)	405 - 413	-17 (3.1) ▼	
2007	398 (1.6)	395 - 401	-28 (2.9) ▼	
2003	401 (1.7)	398 - 404	-25 (2.9) ▼	
<b>Chile</b>				
† 2023	416 (3.2)	410 - 422		
ψ 2019	441 (2.8)	435 - 446	25 (4.3) ▲	
ψ 2015	427 (3.2)	421 - 434	11 (4.5) ▲	
2011	416 (2.7)	411 - 422	0 (4.2)	
2003	387 (3.3)	380 - 393	-29 (4.6) ▼	
1999	392 (4.4)	384 - 401	-23 (5.4) ▼	
<b>Chinese Taipei</b>				
2023	602 (3.1)	596 - 608		
2019	612 (2.7)	607 - 618	10 (4.1) ▲	
2015	599 (2.4)	594 - 604	-3 (3.9)	
2011	609 (3.2)	603 - 616	7 (4.5)	
2007	598 (4.6)	589 - 607	-4 (5.5)	
2003	585 (4.6)	576 - 594	-17 (5.6) ▼	
1999	585 (4.2)	577 - 593	-17 (5.2) ▼	
<b>Cyprus</b>				
2023	494 (2.7)	489 - 499		
2019	501 (1.6)	498 - 504	7 (3.1) ▲	
2007	465 (1.7)	462 - 469	-28 (3.2) ▼	
2003	459 (1.7)	456 - 463	-34 (3.2) ▼	
1999	476 (1.9)	473 - 480	-17 (3.3) ▼	
1995	468 (2.1)	463 - 472	-26 (3.4) ▼	
<b>Czech Republic</b>				
<sup>2</sup> 2023	518 (2.3)	514 - 523		
2007	504 (2.5)	499 - 509	-14 (3.4) ▼	
1999	520 (4.1)	512 - 528	2 (4.7)	
1995	546 (4.4)	537 - 554	27 (5.0) ▲	
<b>England</b>				
<sup>2</sup> 2023	525 (4.5)	516 - 534		
2019	515 (5.3)	505 - 525	-10 (6.9)	
2015	518 (4.2)	510 - 526	-7 (6.2)	
‡ 2011	507 (5.6)	496 - 518	-18 (7.2) ▼	
† 2007	513 (4.9)	504 - 523	-11 (6.7)	
≡ 2003	498 (4.6)	489 - 508	-26 (6.5) ▼	
† 1999	496 (4.2)	488 - 505	-28 (6.2) ▼	
<sup>3</sup> † 1995	498 (3.0)	492 - 503	-27 (5.4) ▼	
<b>Finland</b>				
2023	504 (2.6)	499 - 509		
2019	509 (2.6)	504 - 514	5 (3.6)	
2011	514 (2.5)	509 - 519	10 (3.6) ▲	
<b>France</b>				
2023	479 (3.1)	473 - 485		
2019	483 (2.5)	478 - 487	4 (4.0)	
1995	530 (2.8)	524 - 535	51 (4.2) ▲	



See Appendix A for country participation in previous TIMSS assessments.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.  
 See Appendix B.7 for population coverage notes 1, 2, and 3. See Appendix B.10 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%.

Exhibit 1.2.10: Trends in Average Mathematics Achievement and Scale Score Distributions

(Continued)

Country	Average Scale Score	95% Confidence Interval for Average	Difference from TIMSS 2023	Mathematics Achievement Distribution
<b>Georgia</b>				
<sup>1</sup> 2023	467 (3.2)	460 - 473		
<sup>1</sup> 2019	461 (4.3)	453 - 470	-5 (5.4)	
<sup>1,2</sup> 2015	453 (3.4)	446 - 460	-14 (4.7) ▼	
<sup>1</sup> 2011	431 (3.7)	424 - 438	-36 (4.9) ▼	
<sup>1</sup> 2007	410 (5.8)	398 - 421	-57 (6.6) ▼	
<b>Hong Kong SAR</b>				
<sup>†</sup> 2023	575 (5.0)	565 - 585		
<sup>†</sup> 2019	578 (4.1)	570 - 586	4 (6.5)	
2015	594 (4.6)	585 - 603	20 (6.8) ▲	
2011	586 (3.9)	578 - 593	11 (6.4)	
<sup>†</sup> 2007	572 (5.9)	561 - 584	-2 (7.8)	
<sup>†</sup> 2003	586 (3.4)	579 - 593	11 (6.1)	
<sup>†</sup> 1999	582 (4.3)	574 - 590	7 (6.6)	
1995	569 (6.1)	557 - 581	-6 (7.9)	
<b>Hungary</b>				
2023	506 (3.7)	499 - 513		
2019	517 (2.9)	511 - 522	10 (4.7) ▲	
2015	514 (3.8)	507 - 522	8 (5.3)	
2011	505 (3.5)	498 - 512	-1 (5.2)	
2007	517 (3.5)	510 - 524	11 (5.1) ▲	
<sup>2</sup> 2003	529 (3.3)	523 - 536	23 (5.0) ▲	
1999	532 (3.6)	525 - 539	25 (5.2) ▲	
1995	527 (3.2)	520 - 533	21 (4.9) ▲	
<b>Iran, Islamic Rep. of</b>				
<sup>ψ</sup> 2023	423 (3.6)	416 - 430		
2019	446 (3.7)	439 - 453	23 (5.2) ▲	
<sup>ψ</sup> 2015	436 (4.6)	427 - 445	13 (5.9) ▲	
<sup>ψ</sup> 2011	415 (4.3)	407 - 423	-8 (5.6)	
2007	403 (4.1)	395 - 411	-20 (5.4) ▼	
<sup>2</sup> 2003	411 (2.4)	407 - 416	-12 (4.3) ▼	
1999	422 (3.4)	415 - 429	-1 (4.9)	
1995	418 (3.9)	411 - 426	-5 (5.3)	
<b>Ireland</b>				
2023	522 (2.7)	516 - 527		
2019	524 (2.6)	519 - 529	2 (3.8)	
2015	523 (2.7)	518 - 529	2 (3.9)	
1995	519 (4.9)	509 - 528	-3 (5.6)	
<b>Israel</b>				
<sup>3</sup> 2023	487 (3.9)	480 - 495		
<sup>3</sup> 2019	519 (4.3)	511 - 527	32 (5.8) ▲	
<sup>3</sup> 2015	511 (4.1)	503 - 519	24 (5.6) ▲	
<sup>3</sup> 2011	516 (4.1)	508 - 524	29 (5.7) ▲	
<b>Italy</b>				
2023	501 (3.0)	495 - 506		
2019	497 (2.7)	492 - 503	-3 (4.1)	
<sup>2</sup> 2015	494 (2.5)	489 - 499	-6 (3.9)	
2011	498 (2.3)	494 - 503	-2 (3.8)	
2007	480 (3.1)	474 - 486	-21 (4.3) ▼	
2003	484 (3.2)	477 - 490	-17 (4.4) ▼	
<sup>2</sup> 1999	479 (3.9)	472 - 487	-21 (4.9) ▼	
<b>Japan</b>				
<sup>†</sup> 2023	595 (3.0)	589 - 601		
2019	594 (2.7)	589 - 600	0 (4.1)	
2015	586 (2.3)	582 - 591	-8 (3.8) ▼	
2011	570 (2.6)	565 - 575	-25 (4.0) ▼	
2007	570 (2.4)	565 - 575	-25 (3.9) ▼	
2003	570 (2.1)	566 - 574	-25 (3.7) ▼	
1999	579 (1.7)	575 - 582	-16 (3.5) ▼	
1995	581 (1.6)	578 - 584	-14 (3.4) ▼	
<b>Jordan</b>				
2023	388 (3.2)	382 - 395		
<sup>ψ</sup> 2019	420 (4.3)	412 - 429	32 (5.3) ▲	
<sup>✳</sup> 2015	386 (3.2)	379 - 392	-3 (4.6)	
<sup>ψ</sup> 2011	406 (3.9)	398 - 413	18 (5.0) ▲	
2007	427 (4.2)	419 - 435	39 (5.3) ▲	
2003	424 (4.1)	416 - 432	36 (5.2) ▲	
1999	428 (3.7)	420 - 435	39 (4.9) ▲	
<b>Kazakhstan</b>				
2023	454 (3.5)	447 - 461		
<sup>2</sup> 2019	488 (3.3)	481 - 494	33 (4.8) ▲	
2011	487 (4.2)	479 - 495	33 (5.5) ▲	

<sup>ψ</sup> Reservations about reliability because the percentage of students with achievement too low for estimation exceeds 15% but does not exceed 25%.  
<sup>✳</sup> Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.

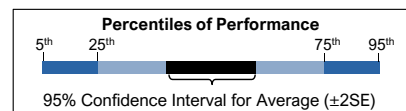
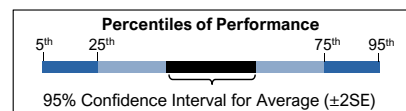


Exhibit 1.2.10: Trends in Average Mathematics Achievement and Scale Score Distributions

(Continued)

Country	Average Scale Score	95% Confidence Interval for Average	Difference from TIMSS 2023	Mathematics Achievement Distribution
<b>Korea, Rep. of</b>				
2023	596 (3.0)	590 - 602		
2019	607 (2.8)	601 - 612	11 (4.1) ▲	
2015	606 (2.6)	601 - 611	10 (4.0) ▲	
2011	613 (2.9)	607 - 618	17 (4.2) ▲	
2007	597 (2.6)	592 - 602	1 (4.0)	
2003	589 (2.2)	585 - 593	-7 (3.8)	
1999	587 (2.0)	583 - 591	-9 (3.7) ▼	
1995	581 (2.0)	577 - 585	-15 (3.7) ▼	
<b>Kuwait</b>				
Ψ 2023	399 (5.2)	388 - 409		
Ψ 2019	403 (5.0)	393 - 413	4 (7.2)	
Ψ 2015	392 (4.6)	383 - 402	-6 (7.0)	
<b>Lithuania</b>				
<sup>2</sup> 2023	514 (3.1)	507 - 520		
2019	520 (2.9)	515 - 526	7 (4.3)	
<sup>2</sup> 2015	511 (2.8)	506 - 517	-2 (4.2)	
<sup>1</sup> 2011	502 (2.5)	497 - 507	-11 (4.0) ▼	
<sup>1</sup> 2007	506 (2.5)	501 - 511	-8 (4.0)	
<sup>1</sup> 2003	502 (2.5)	497 - 507	-12 (4.0) ▼	
<sup>1</sup> 1999	482 (4.3)	473 - 490	-32 (5.3) ▼	
<sup>1,2</sup> 1995	472 (4.1)	464 - 480	-42 (5.1) ▼	
<b>Malaysia</b>				
2023	411 (3.5)	404 - 418		
2019	461 (3.2)	454 - 467	50 (4.7) ▲	
2015	465 (3.6)	458 - 472	55 (5.0) ▲	
2011	440 (5.5)	429 - 451	29 (6.5) ▲	
2007	474 (5.1)	464 - 484	63 (6.2) ▲	
2003	508 (4.1)	500 - 516	98 (5.4) ▲	
1999	519 (4.5)	511 - 528	109 (5.7) ▲	
<b>Malta</b>				
2023	499 (1.2)	497 - 502		
2015	494 (1.0)	492 - 495	-6 (1.6) ▼	
2007	488 (1.2)	485 - 490	-12 (1.7) ▼	
<b>Morocco</b>				
2023	378 (3.0)	372 - 384		
Ψ 2019	388 (2.3)	384 - 393	10 (3.8) ▲	
✱ 2015	384 (2.3)	380 - 389	7 (3.8)	
✱ 2011	371 (2.0)	367 - 375	-7 (3.6)	
<b>Norway (9)</b>				
<sup>2</sup> 2023	501 (2.3)	496 - 505		
<sup>†</sup> 2019	503 (2.4)	498 - 508	2 (3.3)	
2015	512 (2.3)	507 - 516	11 (3.2) ▲	
<b>Oman</b>				
2023	411 (2.7)	406 - 416		
Ψ 2019	411 (2.8)	405 - 416	0 (3.9)	
Ψ 2015	403 (2.4)	398 - 408	-8 (3.6) ▼	
Ψ 2011	366 (2.9)	361 - 372	-45 (3.9) ▼	
2007	372 (3.4)	366 - 379	-38 (4.4) ▼	
<b>Palestinian Nat'l Auth.</b>				
Ψ 2023	382 (3.0)	376 - 387		
Ψ 2011	404 (3.5)	397 - 411	23 (4.6) ▲	
2007	367 (3.6)	360 - 374	-15 (4.7) ▼	
2003	390 (3.2)	384 - 397	9 (4.3) ▲	
<b>Portugal</b>				
2023	475 (2.7)	470 - 481		
2019	500 (3.2)	494 - 507	25 (4.2) ▲	
1995	451 (3.1)	445 - 457	-24 (4.1) ▼	
<b>Qatar</b>				
2023	451 (4.2)	443 - 460		
Ψ 2019	443 (4.0)	436 - 451	-8 (5.8)	
Ψ 2015	437 (3.0)	431 - 443	-14 (5.2) ▼	
Ψ 2011	410 (3.1)	404 - 416	-42 (5.2) ▼	
<b>Romania</b>				
≡ 2023	496 (4.9)	486 - 505		
2019	479 (4.3)	471 - 487	-17 (6.5) ▼	
2011	458 (4.1)	450 - 466	-38 (6.3) ▼	
2007	461 (4.2)	453 - 469	-34 (6.4) ▼	
2003	475 (4.9)	466 - 485	-20 (6.9) ▼	
1999	472 (5.6)	461 - 484	-23 (7.4) ▼	
1995	474 (4.5)	465 - 483	-22 (6.6) ▼	



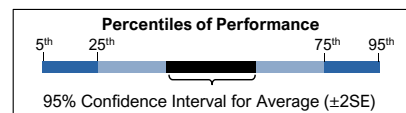
Ψ Reservations about reliability because the percentage of students with achievement too low for estimation exceeds 15% but does not exceed 25%.  
 ✱ Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.



Exhibit 1.2.10: Trends in Average Mathematics Achievement and Scale Score Distributions

(Continued)

Country	Average Scale Score	95% Confidence Interval for Average	Difference from TIMSS 2023	Mathematics Achievement Distribution
<b>Saudi Arabia</b>				
<sup>2</sup> 2023	397 (3.3)	390 - 403		
<sup>2</sup> 2019	394 (2.5)	389 - 399	-3 (4.1)	
<sup>κ</sup> 2015	368 (4.6)	359 - 377	-29 (5.6) ▼	
<sup>ψ</sup> 2011	394 (4.7)	385 - 403	-3 (5.7)	
<b>Singapore</b>				
<sup>3</sup> 2023	605 (6.1)	593 - 617		
<sup>2</sup> 2019	616 (4.0)	608 - 624	10 (7.2)	
<sup>2</sup> 2015	621 (3.2)	615 - 627	16 (6.8) ▲	
<sup>2</sup> 2011	611 (3.8)	603 - 619	6 (7.2)	
2007	593 (3.8)	585 - 600	-13 (7.2)	
2003	605 (3.6)	598 - 613	0 (7.0)	
1999	604 (6.3)	592 - 617	-1 (8.7)	
1995	609 (4.0)	601 - 616	3 (7.2)	
<b>South Africa (9)</b>				
<sup>ψ</sup> 2023	397 (3.1)	390 - 403		
<sup>κ</sup> 2019	389 (2.3)	385 - 394	-7 (3.9)	
<sup>κ</sup> 2015	372 (4.5)	363 - 381	-24 (5.5) ▼	
<sup>κ</sup> 2011	352 (2.5)	347 - 357	-45 (4.0) ▼	
<b>Sweden</b>				
<sup>2</sup> 2023	517 (2.4)	513 - 522		
<sup>2</sup> 2019	503 (2.5)	498 - 508	-15 (3.5) ▼	
2015	501 (2.8)	495 - 506	-17 (3.7) ▼	
2011	484 (1.9)	481 - 488	-33 (3.1) ▼	
2007	491 (2.3)	487 - 496	-26 (3.3) ▼	
2003	499 (2.7)	494 - 504	-18 (3.6) ▼	
1995	540 (4.3)	531 - 548	22 (4.9) ▲	
<b>United Arab Emirates</b>				
2023	489 (1.7)	485 - 492		
2019	473 (1.9)	470 - 477	-15 (2.5) ▼	
2015	465 (2.0)	461 - 469	-24 (2.6) ▼	
2011	456 (2.1)	452 - 460	-33 (2.7) ▼	
<b>United States</b>				
<sup>≡</sup> 2023	488 (4.2)	480 - 496		
<sup>†</sup> 2019	515 (4.8)	506 - 525	27 (6.4) ▲	
<sup>†</sup> 2015	518 (3.1)	512 - 524	30 (5.2) ▲	
<sup>2</sup> 2011	509 (2.7)	504 - 515	21 (5.0) ▲	
<sup>2†</sup> 2007	508 (2.9)	503 - 514	20 (5.1) ▲	
<sup>‡</sup> 2003	504 (3.4)	498 - 511	16 (5.4) ▲	
1999	502 (3.9)	494 - 509	14 (5.8) ▲	
<sup>†</sup> 1995	492 (4.9)	483 - 502	4 (6.4)	
<b>New Zealand</b>				
<sup>≡</sup> 2023	485 (4.1)	478 - 493		
<sup>†</sup> 2019	482 (3.4)	475 - 488	-4 (5.3)	
<sup>†</sup> 2015	493 (3.4)	486 - 499	7 (5.3)	
2011	488 (5.4)	477 - 498	2 (6.8)	
2003	494 (5.5)	483 - 505	9 (6.8)	
1999	491 (5.3)	481 - 501	5 (6.7)	
1995	501 (4.7)	492 - 510	15 (6.2) ▲	
<b>Benchmarking Participants</b>				
<b>Abu Dhabi, UAE</b>				
2023	454 (2.8)	448 - 459		
<sup>ψ</sup> 2019	436 (2.9)	430 - 442	-18 (4.0) ▼	
2015	442 (4.7)	432 - 451	-12 (5.5) ▼	
2011	449 (3.7)	441 - 456	-5 (4.7)	
<b>Dubai, UAE</b>				
2023	546 (2.8)	540 - 551		
<sup>2</sup> 2019	537 (2.0)	533 - 541	-9 (3.4) ▼	
2015	512 (2.1)	508 - 516	-34 (3.5) ▼	
2011	478 (2.2)	473 - 482	-68 (3.5) ▼	
<sup>‡</sup> 2007	461 (2.3)	456 - 465	-85 (3.6) ▼	



New Zealand did not satisfy guidelines for minimum school participation rates in 2023.

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

<sup>κ</sup> Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.