

## Supplementary Materials

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**Supplementary Figure 1.** Global burden of thyroid cancer incidence, mortality, and DALYs across 204 countries or territories in 2021. (A) ASIR; (B) ASMR; (C) ASDR. DALYs: disability-adjusted life years; ASIR: age-standardized incidence rate; ASMR: age-standardized mortality rate; ASDR: age-standardized DALYs rate.

Supplementary Table 1 The incidence and ASIR of thyroid cancer in 1990 and 2021, changes and EAPC from 1990 to 2021 at the global level and different regions

Characteristics	1990		2021		1990-2021	1990-2021
	Incident case No. (95% UI)	ASIR per 100,000, No. (95% UI)	Incident case No. (95% UI)	ASIR per 100,000 No. (95% UI)	Change (%)	EAPC (95% CI)
<b>Global</b>	89885 (84681-96999)	2.06 (1.95-2.22)	249538 (223290-274638)	2.91 (2.61-3.21)	177.62	1.25 (1.14-1.37)
<b>Sex</b>						
Female	64579 (59813-71524)	2.86 (2.66-3.16)	167237 (147083-195647)	3.83 (3.36-4.49)	158.96	1.03 (0.92-1.14)
Male	25306 (24146-27282)	1.22 (1.17-1.31)	82301 (71575-91093)	1.98 (1.72-2.19)	225.22	1.78 (1.64-1.92)
<b>Socio-demographic index</b>						
High SDI	36533 (35292-37708)	3.55 (3.43-3.66)	72996 (68514-76747)	4.49 (4.25-4.75)	99.81	1.01 (0.75-1.28)
High-middle SDI	24411 (22753-25920)	2.35 (2.19-2.49)	55158 (49518-62489)	3.07 (2.75-3.49)	125.96	1.05 (0.89-1.21)
Middle SDI	17155 (15283-19997)	1.35 (1.21-1.6)	75357 (62756-84675)	2.71 (2.26-3.05)	339.27	2.37 (2.28-2.46)
Low-middle SDI	8234 (7035-10302)	1.05 (0.91-1.31)	33464 (27896-40293)	1.96 (1.65-2.34)	306.41	2.09 (2.07-2.12)
Low SDI	3431 (2759-4296)	1.13 (0.91-1.42)	12358 (9599-16515)	1.69 (1.33-2.2)	260.19	1.23 (1.12-1.34)
<b>Region</b>						
Andean Latin America	422 (354-495)	1.76 (1.47-2.05)	2424 (1907-3044)	3.87 (3.05-4.85)	474.41	2.6 (2.44-2.77)
Australasia	586 (522-660)	2.61 (2.32-2.94)	1949 (1570-2343)	4.57 (3.7-5.54)	232.59	2.61 (2.06-3.16)

Caribbean	443 (411-479)	1.56 (1.45-1.69)	1245 (1086-1427)	2.36 (2.06-2.7)	181.04	1.5 (1.32-1.69)
Central Asia	914 (841-996)	1.73 (1.6-1.89)	1631 (1432-1845)	1.75 (1.54-1.97)	78.45	0.01 (-0.73-0.75)
Central Europe	4655 (4429-4884)	3.2 (3.04-3.36)	4876 (4407-5323)	2.71 (2.44-2.95)	4.75	-0.65 (-0.86--0.45)
Central Latin America	1712 (1651-1775)	1.71 (1.65-1.78)	7753 (6907-8701)	2.96 (2.64-3.32)	352.86	1.66 (1.52-1.8)
Central Sub-Saharan Africa	154 (112-226)	0.57 (0.41-0.82)	496 (319-771)	0.69 (0.45-1.09)	222.08	0.63 (0.42-0.83)
East Asia	13203 (10809-15461)	1.3 (1.07-1.52)	50885 (41562-63162)	2.53 (2.07-3.14)	285.40	2.43 (2.26-2.6)
Eastern Europe	6468 (6164-6831)	2.43 (2.31-2.56)	9617 (8698-10650)	3.2 (2.9-3.55)	48.69	1.27 (0.8-1.75)
Eastern Sub-Saharan Africa	1908 (1517-2388)	1.81 (1.46-2.24)	6384 (4630-9479)	2.41 (1.77-3.45)	234.59	0.76 (0.6-0.92)
High-income Asia Pacific	6950 (6496-7654)	3.42 (3.19-3.77)	14278 (12630-16477)	4.4 (3.94-5.15)	105.44	1.15 (0.68-1.61)
High-income North America	12130 (11695-12450)	3.81 (3.68-3.91)	28289 (26783-29536)	5.3 (5.07-5.53)	133.22	1.15 (0.97-1.33)
North Africa and Middle East	3792 (3151-5143)	1.69 (1.41-2.3)	21222 (17602-24975)	3.65 (3.05-4.27)	459.65	2.89 (2.72-3.06)
Oceania	45 (30-60)	1.19 (0.83-1.59)	131 (80-185)	1.36 (0.85-1.87)	191.11	0.33 (0.24-0.42)
South Asia	7853 (6476-10285)	1.01 (0.84-1.32)	37336 (30263-44931)	2.14 (1.74-2.56)	375.44	2.54 (2.46-2.62)
Southeast Asia	6441 (5206-7277)	2.02 (1.68-2.32)	26559 (20899-31184)	3.61 (2.86-4.24)	312.34	1.82 (1.74-1.9)
Southern Latin America	1000 (896-1119)	2.13 (1.91-2.38)	2047 (1787-2334)	2.54 (2.22-2.9)	104.70	0.7 (0.48-0.92)
Southern Sub-Saharan Africa	377 (318-448)	1.09 (0.91-1.3)	1117 (935-1316)	1.61 (1.34-1.88)	196.29	1.54 (1.3-1.79)

Tropical Latin America	1372 (1299-1443)	1.28 (1.22-1.35)	4491 (4198-4758)	1.73 (1.61-1.83)	227.33	0.76 (0.6-0.91)
Western Europe	19206 (18292-20159)	3.88 (3.69-4.08)	26005 (23788-28201)	3.84 (3.51-4.18)	35.40	0.28 (-0.1-0.67)
Western Sub-Saharan Africa	254 (186-312)	0.22 (0.16-0.26)	804 (598-1069)	0.26 (0.2-0.34)	216.54	0.52 (0.45-0.58)

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ASIR: age-standardized incidence rate; SDI: socio-demographic index; EAPC: estimated annual percentage change; UI: uncertainty interval; CI: confidence interval.

Supplementary Table 2 The mortality and ASMR of thyroid cancer in 1990 and 2021, changes and EAPC from 1990 to 2021 at the global level and different regions.

Characteristics	1990		2021		1990-2021	1990-2021
	Mortality case No. (95% UI)	ASMR per 100,000, No. (95% UI)	Mortality case No. (95% UI)	ASMR per 100,000 No. (95% UI)	Change (%)	EAPC (95% CI)
<b>Global</b>	21893 (20437-24108)	0.57 (0.53-0.63)	44799 (39925-48541)	0.53 (0.47-0.57)	104.63	-0.24 (-0.27--0.21)
<b>Sex</b>						
Female	14531 (13201-16693)	0.69 (0.62-0.78)	26768 (23015-30905)	0.58 (0.5-0.68)	84.21	-0.58 (-0.61--0.55)
Male	7362 (6917-8197)	0.42 (0.4-0.47)	18031 (15238-19895)	0.47 (0.4-0.52)	144.92	0.41 (0.35-0.46)
<b>Socio-demographic index</b>						
High SDI	6505 (6098-6798)	0.59 (0.55-0.61)	9730 (8466-10437)	0.44 (0.39-0.47)	49.58	-0.91 (-0.96--0.86)
High-middle SDI	5609 (5201-5935)	0.59 (0.54-0.62)	8437 (7553-9304)	0.43 (0.39-0.48)	50.42	-1.03 (-1.09--0.97)
Middle SDI	5276 (4815-6145)	0.53 (0.49-0.63)	14667 (12467-16171)	0.57 (0.48-0.63)	177.99	0.21 (0.16-0.26)
Low-middle SDI	3015 (2624-3757)	0.48 (0.42-0.6)	8531 (7411-9772)	0.6 (0.52-0.68)	182.95	0.74 (0.71-0.78)
Low SDI	1455 (1199-1778)	0.6 (0.49-0.74)	3392 (2688-4329)	0.64 (0.52-0.8)	133.13	0.19 (0.11-0.28)
<b>Region</b>						
Andean Latin America	182 (153-211)	0.9 (0.76-1.04)	641 (508-794)	1.1 (0.87-1.36)	252.20	0.66 (0.54-0.77)
Australasia	98 (87-109)	0.42 (0.37-0.47)	199 (161-237)	0.36 (0.3-0.43)	103.06	0.14 (-0.13-0.41)

Caribbean	143 (132-156)	0.55 (0.51-0.6)	321 (281-368)	0.6 (0.52-0.68)	124.48	0.42 (0.2-0.65)
Central Asia	253 (236-274)	0.53 (0.5-0.58)	339 (302-379)	0.43 (0.38-0.48)	33.99	-0.81 (-1.43--0.18)
Central Europe	1266 (1213-1317)	0.86 (0.83-0.9)	986 (898-1065)	0.44 (0.4-0.48)	-22.12	-2.37 (-2.65--2.1)
Central Latin America	636 (614-658)	0.79 (0.75-0.81)	1965 (1749-2165)	0.8 (0.71-0.88)	208.96	-0.07 (-0.26-0.11)
Central Sub-Saharan Africa	78 (58-113)	0.36 (0.27-0.52)	183 (118-284)	0.35 (0.23-0.56)	134.62	-0.11 (-0.23-0.01)
East Asia	3781 (3212-4380)	0.48 (0.41-0.55)	8064 (6456-9800)	0.39 (0.31-0.47)	113.28	-0.65 (-0.74--0.55)
Eastern Europe	1349 (1274-1423)	0.5 (0.47-0.52)	1651 (1508-1807)	0.47 (0.43-0.52)	22.39	-0.25 (-0.6-0.09)
Eastern Sub-Saharan Africa	839 (686-1015)	1.01 (0.82-1.21)	1801 (1338-2486)	0.99 (0.74-1.32)	114.66	-0.18 (-0.29--0.07)
High-income Asia Pacific	1236 (1126-1404)	0.64 (0.58-0.73)	2844 (2309-3186)	0.5 (0.43-0.56)	130.10	-0.82 (-0.98--0.65)
High-income North America	1392 (1285-1450)	0.39 (0.36-0.41)	2766 (2473-2949)	0.41 (0.37-0.44)	98.71	0.15 (0.06-0.23)
North Africa and Middle East	658 (546-937)	0.4 (0.33-0.58)	1935 (1676-2236)	0.45 (0.39-0.52)	194.07	0.64 (0.49-0.79)
Oceania	15 (10-19)	0.56 (0.41-0.73)	37 (23-50)	0.54 (0.35-0.73)	146.67	-0.13 (-0.16--0.1)
South Asia	2915 (2454-3700)	0.48 (0.41-0.61)	9324 (7794-10741)	0.63 (0.53-0.73)	219.86	0.92 (0.88-0.97)
Southeast Asia	2008 (1698-2303)	0.81 (0.69-0.96)	5643 (4565-6451)	0.9 (0.74-1.02)	181.03	0.32 (0.24-0.4)
Southern Latin America	359 (325-395)	0.79 (0.71-0.86)	485 (426-554)	0.55 (0.48-0.63)	35.10	-1.01 (-1.26--0.77)
Southern Sub-Saharan Africa	124 (102-148)	0.45 (0.37-0.55)	324 (264-372)	0.57 (0.46-0.65)	161.29	0.92 (0.65-1.18)
Tropical Latin America	509 (480-537)	0.58 (0.54-0.61)	1253 (1142-1332)	0.5 (0.45-0.53)	146.17	-0.6 (-0.69--0.5)
Western Europe	3951 (3667-4174)	0.68 (0.63-0.71)	3829 (3319-4191)	0.39 (0.34-0.42)	-3.09	-1.7 (-1.77--1.64)
Western Sub-Saharan Africa	103 (78-123)	0.11 (0.08-0.13)	210 (165-264)	0.1 (0.08-0.12)	103.88	-0.51 (-0.59--0.43)

Africa

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ASR: Age-standardized rate; SDI: socio-demographic index; EAPC: estimated annual percentage change; UI: uncertainty interval; CI: confidence interval.



Supplementary Table 3 The DALYs and ASDR of thyroid cancer in 1990 and 2021, changes and EAPC from 1990 to 2021 at the global level and different regions.

Characteristics	1990		2021		1990-2021	1990-2021
	DALY case No. (95% UI)	ASDR per 100,000, (95% UI)	DALY case No. (95% UI)	ASDR per 100,000 (95% UI)	Change (%)	EAPC (95% UI)
<b>Global</b>	646741 (599119-717357)	15.21 (14.18-16.83)	1246485 (1094416-1375853)	14.57 (12.78-16.11)	92.73	-0.14 (-0.17--0.11)
<b>Sex</b>						
Female	421139 (375418-489860)	18.82 (16.87-21.84)	742044 (627065-865021)	16.7 (14.09-19.59)	76.20	-0.45 (-0.47--0.42)
Male	225602 (210319-250806)	11.19 (10.45-12.46)	504440 (421688-563175)	12.34 (10.34-13.77)	123.60	0.41 (0.35-0.46)
<b>Socio-demographic index</b>						
High SDI	164382 (155871-173718)	15.38 (14.59-16.28)	220136 (201450-237835)	11.76 (10.79-12.77)	33.92	-0.77 (-0.86--0.68)
High-middle SDI	158942 (146717-170153)	15.57 (14.4-16.65)	218961 (196635-244418)	11.63 (10.44-13.02)	37.76	-0.99 (-1.05--0.92)
Middle SDI	166177 (149966-190691)	14.02 (12.76-16.18)	416218 (350751-460889)	15.22 (12.81-16.81)	150.47	0.28 (0.22-0.34)
Low-middle SDI	103648 (90343-129887)	13.75 (11.99-17.15)	269914 (229089-316826)	16.75 (14.35-19.42)	160.41	0.67 (0.63-0.7)
Low SDI	52662 (43472-63948)	17.75 (14.57-21.62)	120143 (93673-157131)	17.98 (14.18-23.06)	128.14	-0.05 (-0.12-0.02)
<b>Region</b>						

Andean Latin America	5274 (4419-6186)	23.02 (19.33-26.97)	16690 (13208-20767)	27.53 (21.72-34.25)	216.46	0.54 (0.43-0.65)
Australasia	2544 (2273-2868)	11.05 (9.87-12.46)	5041 (4104-6033)	10.61 (8.67-12.78)	98.15	0.51 (0.21-0.82)
Caribbean	4117 (3769-4556)	14.92 (13.67-16.46)	8690 (7533-10099)	16.34 (14.15-18.98)	111.08	0.46 (0.25-0.68)
Central Asia	8145 (7568-8817)	15.87 (14.74-17.22)	10273 (9056-11543)	11.66 (10.33-13.03)	26.13	-1.19 (-1.81--0.57)
Central Europe	34786 (33224-36474)	23.49 (22.42-24.62)	23434 (21250-25475)	11.6 (10.5-12.65)	-32.63	-2.47 (-2.76--2.17)
Central Latin America	18293 (17666-18921)	19.54 (18.87-20.23)	52187 (47013-58083)	20.39 (18.36-22.67)	185.28	0 (-0.2-0.2)
Central Sub-Saharan Africa	2545 (1889-3610)	9.44 (6.94-13.66)	5956 (3863-9188)	8.92 (5.75-13.93)	134.03	-0.19 (-0.31--0.06)
East Asia	116582 (98062-136721)	12.25 (10.38-14.2)	213609 (173066-262362)	10.25 (8.34-12.52)	83.23	-0.56 (-0.67--0.46)
Eastern Europe	37930 (35923-40329)	13.86 (13.11-14.73)	42086 (38218-46388)	12.87 (11.66-14.15)	10.96	-0.29 (-0.68-0.11)
Eastern Sub-Saharan Africa	31046 (25044-38047)	30.05 (24.54-36.69)	66491 (48520-94804)	27.76 (20.55-38.36)	114.17	-0.43 (-0.55--0.32)
High-income Asia Pacific	30856 (28505-35131)	15.36 (14.15-17.48)	50783 (43704-57571)	11.81 (10.45-13.68)	64.58	-0.75 (-0.99--0.5)
High-income North America	37316 (34968-39721)	11.23 (10.51-11.97)	70642 (65004-76457)	11.96 (11.04-13.03)	89.31	0.21 (0.11-0.31)
North Africa and Middle East	480 (325-641)	10.99 (9.07-15.49)	65316 (55454-76496)	12.68 (10.87-14.8)	197.65	0.76 (0.62-0.9)
Oceania	105303 (88400-135793)	13.9 (9.85-18.46)	1174 (725-1642)	13.55 (8.61-18.63)	144.58	-0.1 (-0.14--0.06)

South Asia	62695 (51465-70375)	14.21 (11.98-18.18)	302257 (249828-356789)	18.22 (15.09-21.35)	187.04	0.85 (0.81-0.88)
Southeast Asia	9492 (8618-10470)	21.41 (17.91-24.29)	164547 (130333-189174)	23.6 (18.8-27.01)	162.46	0.27 (0.21-0.34)
Southern Latin America	4035 (3399-4776)	20.25 (18.38-22.34)	11960 (10465-13594)	14.26 (12.48-16.21)	26.00	-1.02 (-1.28--0.75)
Southern Sub-Saharan Africa	15021 (14259-15823)	12.4 (10.31-14.79)	10253 (8481-11926)	15.67 (12.84-18.14)	154.10	1 (0.72-1.27)
Tropical Latin America	94707 (89027-100543)	14.78 (14.02-15.58)	32680 (30547-34741)	12.68 (11.83-13.49)	117.56	-0.65 (-0.75--0.55)
Western Europe	3629 (2762-4379)	17.6 (16.6-18.76)	84465 (75823-92550)	10.46 (9.44-11.54)	-10.81	-1.5 (-1.64--1.36)
Western Sub-Saharan Africa	480 (325-641)	3.18 (2.41-3.82)	7951 (6109-10289)	2.82 (2.21-3.55)	119.10	-0.49 (-0.56--0.42)

ASR: Age-standardized rate; SDI: socio-demographic index; EAPC: estimated annual percentage change; UI: uncertainty interval; CI: confidence interval.

Supplementary Table 4 The incidence and ASIR of thyroid cancer in 1990 and 2021, changes and EAPC from 1990 to 2021 at the 204 countries.

Characteristics	1990		2021		1990-2021	1990-2021
	Incident case No. (95% UI)	ASIR per 100,000, No. (95% UI)	Incident case No. (95% UI)	ASIR per 100,000 No. (95% UI)	Change (%)	EAPC (95% CI)
China	12157 (9714-14406)	1.25 (1.01-1.47)	48105 (38695-60068)	2.47 (1.99-3.09)	295.70	2.47 (2.29-2.65)
North Korea	302 (211-414)	1.61 (1.14-2.2)	776 (532-1105)	2.36 (1.63-3.39)	156.95	1.44 (1.32-1.57)
Taiwan	744 (675-828)	3.84 (3.5-4.23)	2004 (1727-2264)	5.86 (5.03-6.66)	169.35	1.98 (1.61-2.34)
Kingdom of Cambodia	105 (67-139)	1.9 (1.24-2.49)	544 (341-772)	3.77 (2.39-5.28)	418.10	2.17 (2.03-2.31)
Indonesia	2004 (1395-2417)	1.61 (1.15-1.91)	7343 (4749-9783)	2.57 (1.68-3.4)	266.42	1.37 (1.27-1.48)
Lao	44 (25-63)	1.82 (1.08-2.6)	154 (99-213)	2.68 (1.73-3.69)	250.00	1.17 (1.1-1.24)
Malaysia	288 (231-345)	2.4 (1.96-2.88)	1280 (1061-1548)	3.99 (3.35-4.83)	344.44	1.62 (1.52-1.73)
Maldives	1 (1-2)	1.23 (0.72-1.67)	6 (5-8)	1.32 (1.01-1.71)	500.00	0.12 (-0.15-0.38)
Republic of the Union of Myanmar	497 (314-660)	1.79 (1.18-2.37)	1400 (941-1860)	2.58 (1.75-3.41)	181.69	0.94 (0.83-1.05)
Philippines	1123 (839-1384)	2.84 (2.12-3.55)	4113 (3321-5120)	4.22 (3.4-5.24)	266.25	1.2 (1.12-1.27)
Sri Lanka	289 (227-344)	2.23 (1.72-2.66)	835 (508-1203)	3.19 (1.95-4.57)	188.93	1.08 (0.9-1.27)
Kingdom of Thailand	1036 (829-1409)	2.34 (1.89-3.2)	3801 (2727-5757)	3.95 (2.83-5.93)	266.89	1.14 (0.77-1.51)
Democratic Republic of Timor-Leste	5 (3-7)	1.31 (0.84-1.84)	20 (13-28)	2.06 (1.31-3)	300.00	1.68 (1.48-1.89)
Socialist Republic of Viet Nam	1025 (756-1389)	2.17 (1.58-2.99)	6996 (4791-9263)	6.33 (4.41-8.25)	582.54	4.1 (3.88-4.32)
Republic of Fiji	16 (10-21)	3.35 (2.11-4.4)	34 (20-48)	3.9 (2.42-5.52)	112.50	0.31 (0.19-0.42)
Republic of Kiribati	0 (0-0)	0.04 (0.03-0.08)	0 (0-0)	0.05 (0.03-0.1)	0.00	0.27 (0.06-0.48)
Republic of the Marshall Islands	0 (0-0)	0.95 (0.76-1.21)	1 (0-1)	1.49 (0.98-2.12)	100.00	1.38 (1.22-1.54)

Federated States of Micronesia	1 (0-1)	1.14 (0.85-1.51)	1 (1-2)	1.67 (1.11-2.3)	0.00	1.26 (1.18-1.35)
Independent State of Papua New Guinea	18 (10-28)	0.77 (0.45-1.2)	67 (36-119)	0.97 (0.53-1.7)	272.22	0.59 (0.49-0.69)
Independent State of Samoa	2 (2-3)	2.13 (1.58-3.1)	6 (4-8)	3.29 (2.32-4.66)	200.00	1.27 (1.16-1.38)
Solomon Islands	1 (1-2)	0.75 (0.4-1.15)	6 (3-9)	1.26 (0.77-1.92)	500.00	1.59 (1.5-1.69)
Kingdom of Tonga	1 (0-1)	0.98 (0.72-1.35)	1 (1-2)	1.51 (0.93-2.17)	0.00	1.22 (1.04-1.4)
Republic of Vanuatu	1 (0-1)	0.81 (0.55-1.15)	3 (2-4)	1.22 (0.81-1.64)	200.00	1.14 (1.05-1.22)
Republic of Armenia	50 (37-64)	1.64 (1.22-2.12)	145 (109-190)	3.6 (2.7-4.73)	190.00	3.09 (2.65-3.53)
Republic of Azerbaijan	60 (44-84)	1.06 (0.78-1.45)	151 (105-212)	1.28 (0.9-1.76)	151.67	0.68 (0.44-0.91)
Georgia	117 (92-146)	1.91 (1.51-2.41)	208 (169-258)	4.1 (3.29-5.1)	77.78	2.75 (1.54-3.96)
Republic of Kazakhstan	509 (447-576)	3.57 (3.13-4.05)	590 (480-705)	2.97 (2.42-3.54)	15.91	-0.86 (-1.63--0.08)
Kyrgyz Republic	80 (62-105)	2.35 (1.84-3.04)	148 (105-200)	2.5 (1.8-3.34)	85.00	0.58 (-0.38-1.55)
Mongolia	17 (12-25)	1.38 (1.01-1.98)	57 (42-78)	1.89 (1.42-2.58)	235.29	0.91 (0.43-1.39)
Republic of Tajikistan	1 (0-1)	0.02 (0.01-0.02)	1 (1-2)	0.01 (0.01-0.02)	0.00	-1.23 (-1.42--1.03)
Turkmenistan	40 (36-45)	1.72 (1.54-1.93)	86 (66-116)	1.78 (1.37-2.39)	115.00	0.04 (-0.94-1.02)
Republic of Uzbekistan	40 (29-52)	0.29 (0.22-0.38)	245 (179-334)	0.76 (0.56-1.03)	512.50	3.24 (2.53-3.96)
Republic of Albania	39 (28-53)	1.62 (1.17-2.13)	77 (53-111)	2.04 (1.39-2.95)	97.44	1.21 (1-1.41)
Bosnia and Herzegovina	81 (58-97)	1.78 (1.29-2.13)	104 (76-140)	1.93 (1.41-2.62)	28.40	0.25 (0.14-0.37)
Republic of Bulgaria	246 (208-292)	2.14 (1.81-2.52)	251 (195-318)	2.2 (1.72-2.79)	2.03	0.49 (0.15-0.82)
Republic of Croatia	282 (243-327)	4.59 (3.98-5.29)	249 (202-302)	3.48 (2.79-4.25)	-11.70	1.25 (1.13-1.36)
Czech Republic	559 (472-663)	4.38 (3.71-5.2)	640 (487-828)	3.81 (2.88-5.02)	14.49	-0.03 (-0.38-0.32)
Hungary	504 (436-574)	3.77 (3.25-4.26)	449 (365-535)	2.92 (2.38-3.46)	-10.91	-1.19 (-1.42--0.97)

North Macedonia	40 (30-47)	2.01 (1.5-2.35)	70 (53-89)	2.18 (1.65-2.78)	75.00	0.23 (0.04-0.42)
Montenegro	21 (16-27)	3.16 (2.5-4.08)	34 (26-43)	3.82 (3-4.8)	61.90	0.98 (0.86-1.1)
Republic of Poland	1859 (1739-1975)	4.35 (4.07-4.63)	1632 (1450-1830)	2.83 (2.49-3.13)	-12.21	-1.59 (-2.04--1.13)
Romania	532 (458-621)	1.97 (1.68-2.3)	675 (525-871)	2.23 (1.72-2.88)	26.88	0.02 (-0.26-0.3)
Republic of Serbia	183 (138-246)	1.65 (1.24-2.22)	308 (220-425)	2.21 (1.57-3.04)	68.31	0.86 (0.7-1.02)
Slovak Republic	162 (128-200)	2.79 (2.21-3.46)	235 (179-318)	2.83 (2.15-3.87)	45.06	0.06 (-0.03-0.16)
Republic of Slovenia	74 (63-87)	3.09 (2.62-3.64)	84 (61-113)	2.3 (1.66-3.08)	13.51	-0.51 (-0.88--0.13)
Republic of Belarus	300 (250-363)	2.5 (2.05-3.04)	546 (427-698)	3.83 (2.98-4.93)	82.00	0.88 (0.38-1.38)
Republic of Estonia	58 (45-74)	3.12 (2.41-3.96)	80 (61-103)	3.81 (2.88-4.88)	37.93	0.82 (0.27-1.37)
Republic of Latvia	83 (64-106)	2.57 (1.97-3.29)	125 (94-161)	3.96 (3-5.18)	50.60	1 (0.66-1.34)
Republic of Lithuania	131 (104-163)	3.14 (2.48-3.91)	166 (132-205)	3.75 (2.91-4.64)	26.72	0.28 (-0.22-0.79)
Republic of Moldova	80 (72-89)	1.76 (1.58-1.95)	126 (106-151)	2.31 (1.96-2.76)	57.50	0.87 (0.65-1.1)
Russian Federation	4393 (4249-4543)	2.51 (2.43-2.6)	6782 (6175-7461)	3.28 (2.98-3.61)	54.38	1.47 (0.93-2.01)
Ukraine	1422 (1182-1752)	2.17 (1.82-2.66)	1792 (1235-2540)	2.8 (1.9-3.97)	26.02	0.7 (0.28-1.12)
Brunei Darussalam	5 (3-7)	3.24 (2.35-4.55)	17 (13-23)	3.85 (2.91-5.03)	240.00	1.11 (0.96-1.26)
Japan	5941 (5619-6250)	3.61 (3.42-3.79)	10067 (9099-10910)	4.26 (3.95-4.58)	69.45	0.6 (0.36-0.86)
Republic of Korea	921 (660-1593)	2.5 (1.81-4.45)	3923 (2980-5824)	4.84 (3.61-7.1)	325.95	2.85 (1.8-3.91)
Republic of Singapore	83 (72-96)	3.03 (2.61-3.5)	271 (225-335)	3.22 (2.68-3.96)	226.51	0.51 (0.05-0.97)
Australia	481 (419-550)	2.57 (2.24-2.93)	1725 (1384-2106)	4.84 (3.86-5.97)	258.63	2.88 (2.3-3.46)
New Zealand	105 (89-125)	2.81 (2.38-3.32)	224 (185-263)	3.18 (2.61-3.74)	113.33	0.99 (0.53-1.46)
Principality of Andorra	2 (1-2)	2.89 (2-4.06)	4 (3-6)	3.05 (2.01-4.29)	100.00	0.55 (0.25-0.85)
Republic of Austria	534 (477-597)	5.27 (4.67-5.91)	690 (570-826)	4.84 (3.98-5.81)	29.21	-0.15 (-0.37-0.07)
Kingdom of Belgium	434 (374-509)	3.26 (2.8-3.82)	590 (479-717)	3.42 (2.78-4.15)	35.94	0.36 (0.07-0.65)
Republic of Cyprus	22 (17-28)	2.9 (2.21-3.66)	52 (39-73)	2.78 (2.09-3.87)	136.36	2.01 (1.67-2.35)
Kingdom of Denmark	119 (103-137)	1.75 (1.5-2.03)	150 (127-180)	1.59 (1.34-1.92)	26.05	0.15 (-0.38-0.69)

Republic of Finland	216 (189-250)	3.33 (2.91-3.85)	270 (221-329)	3.01 (2.45-3.68)	25.00	0.21 (-0.44-0.87)
French Republic	3779 (3360-4227)	5.44 (4.83-6.1)	6261 (5175-7463)	6.67 (5.48-8.04)	65.68	1.09 (0.37-1.82)
Federal Republic of Germany	4225 (3716-4851)	3.9 (3.43-4.51)	4969 (4104-5936)	3.71 (3.03-4.43)	17.61	0.28 (-0.12-0.68)
Hellenic Republic	325 (296-355)	2.37 (2.17-2.58)	452 (399-509)	2.67 (2.36-3.01)	39.08	0.38 (0.17-0.59)
Republic of Iceland	21 (18-24)	8 (6.94-9.19)	31 (25-38)	6.52 (5.35-8.09)	47.62	-0.12 (-0.77-0.53)
Ireland	104 (91-118)	2.73 (2.38-3.08)	188 (157-226)	2.77 (2.29-3.34)	80.77	1.03 (0.68-1.39)
State of Israel	149 (128-176)	3.19 (2.73-3.77)	355 (293-431)	3.28 (2.7-4)	138.26	0.31 (-0.23-0.86)
Republic of Italy	4878 (4511-5318)	6.4 (5.94-6.97)	5312 (4772-5870)	5.26 (4.77-5.84)	8.90	-0.6 (-0.94--0.25)
Grand Duchy of Luxembourg	21 (19-23)	4.22 (3.84-4.63)	33 (28-38)	3.44 (3-3.98)	57.14	-0.39 (-0.7--0.07)
Republic of Malta	13 (11-15)	3 (2.55-3.56)	23 (18-28)	3.23 (2.59-4.02)	76.92	0.45 (-0.03-0.94)
Kingdom of the Netherlands	322 (287-363)	1.75 (1.56-1.98)	586 (490-688)	2.17 (1.8-2.56)	81.99	1.31 (1.04-1.59)
Kingdom of Norway	138 (127-148)	2.4 (2.22-2.59)	229 (201-255)	2.73 (2.4-3.04)	65.94	0.88 (0.38-1.38)
Portuguese Republic	419 (359-482)	3.27 (2.81-3.77)	645 (513-800)	3.56 (2.84-4.42)	53.94	0.37 (0.01-0.73)
Kingdom of Spain	1265 (1136-1400)	2.65 (2.38-2.95)	1939 (1620-2302)	2.54 (2.13-3.04)	53.28	0.14 (-0.21-0.49)
Kingdom of Sweden	272 (234-318)	2.15 (1.86-2.51)	329 (269-397)	1.94 (1.61-2.35)	20.96	0.37 (0.03-0.7)
Swiss Confederation	230 (204-257)	2.53 (2.25-2.84)	278 (231-328)	1.89 (1.58-2.25)	20.87	-0.55 (-1.32-0.22)
United Kingdom of Great Britain and Northern Ireland	1700 (1647-1749)	2.24 (2.17-2.3)	2593 (2464-2695)	2.56 (2.44-2.65)	52.53	1.02 (0.81-1.22)
Argentine Republic	659 (582-752)	2.04 (1.8-2.33)	1170 (964-1414)	2.24 (1.84-2.71)	77.54	0.41 (0.16-0.65)
Republic of Chile	259 (215-305)	2.34 (1.95-2.75)	726 (620-869)	3.07 (2.61-3.69)	180.31	1.05 (0.81-1.29)
Eastern Republic of Uruguay	82 (67-99)	2.32 (1.89-2.82)	150 (125-183)	3.37 (2.78-4.13)	82.93	1.3 (1.13-1.46)

Canada	933 (804-1076)	3.01 (2.59-3.47)	1891 (1549-2289)	3.43 (2.79-4.17)	102.68	0.21 (-0.05-0.47)
United States of America	11196 (10784-11509)	3.9 (3.78-4)	26396 (25052-27472)	5.53 (5.29-5.75)	135.76	1.23 (1.05-1.42)
Antigua and Barbuda	1 (1-1)	1.83 (1.65-2.04)	3 (3-4)	3.09 (2.83-3.37)	200.00	2.01 (1.58-2.44)
Commonwealth of the Bahamas	4 (3-4)	1.99 (1.78-2.22)	14 (11-17)	3.08 (2.43-3.93)	250.00	1.97 (1.69-2.24)
Barbados	5 (4-5)	1.87 (1.71-2.05)	12 (10-15)	2.75 (2.16-3.52)	140.00	1.53 (1.32-1.74)
Belize	1 (1-1)	0.66 (0.61-0.72)	5 (4-6)	1.4 (1.22-1.6)	400.00	2.67 (2.46-2.88)
Republic of Cuba	189 (173-208)	1.79 (1.64-1.97)	559 (466-662)	3.29 (2.73-3.9)	195.77	-0.74 (-1.04--0.44)
Commonwealth of Dominica	1 (1-1)	1.31 (1.1-1.58)	1 (1-2)	1.65 (1.28-2.1)	0.00	0.93 (0.81-1.06)
Dominican Republic	47 (38-56)	1.02 (0.81-1.21)	173 (128-231)	1.61 (1.21-2.14)	268.09	1.76 (1.63-1.89)
Grenada	2 (1-2)	2.22 (1.91-2.57)	3 (3-4)	2.9 (2.43-3.45)	50.00	1.27 (0.88-1.66)
Republic of Guyana	5 (4-6)	1.07 (0.93-1.21)	13 (10-17)	1.78 (1.34-2.38)	160.00	1.92 (1.74-2.1)
Republic of Haiti	51 (33-72)	1.33 (0.9-1.85)	131 (88-189)	1.43 (0.98-2.02)	156.86	0.43 (0.35-0.52)
Jamaica	24 (22-27)	1.37 (1.22-1.52)	80 (59-108)	2.61 (1.91-3.52)	233.33	2.14 (1.78-2.5)
Saint Lucia	2 (2-2)	2.34 (2.15-2.54)	7 (6-9)	3.1 (2.49-3.82)	250.00	0.82 (0.38-1.27)
Saint Vincent and the Grenadines	2 (2-2)	2.47 (2.21-2.7)	5 (5-6)	3.91 (3.36-4.55)	150.00	1.73 (1.3-2.16)
Republic of Suriname	4 (3-4)	1.24 (0.98-1.47)	10 (7-12)	1.5 (1.1-1.9)	150.00	1.01 (0.8-1.22)
Republic of Trinidad and Tobago	15 (14-16)	1.66 (1.55-1.79)	45 (34-59)	2.49 (1.88-3.26)	200.00	1.44 (1.16-1.71)
Plurinational State of Bolivia	95 (60-129)	2.55 (1.62-3.47)	380 (251-542)	3.79 (2.51-5.41)	300.00	1.26 (1.21-1.31)
Republic of Ecuador	88 (80-96)	1.39 (1.26-1.52)	714 (550-900)	4.18 (3.23-5.27)	711.36	3.73 (3.1-4.37)
Republic of Peru	240 (194-294)	1.72 (1.36-2.11)	1330 (928-1840)	3.75 (2.61-5.21)	454.17	2.53 (2.34-2.73)



Republic of Colombia	516 (470-565)	2.4 (2.19-2.62)	2087 (1687-2599)	3.81 (3.08-4.74)	304.46	1.37 (1.06-1.68)
Republic of Costa Rica	55 (49-62)	2.59 (2.34-2.88)	189 (159-220)	3.46 (2.91-4.04)	243.64	0.4 (0.07-0.74)
Republic of El Salvador	57 (45-64)	1.71 (1.33-1.92)	201 (156-253)	3.28 (2.54-4.14)	252.63	2.2 (2.1-2.3)
Republic of Guatemala	59 (55-63)	1.4 (1.31-1.49)	265 (223-311)	2.14 (1.81-2.5)	349.15	0.88 (0.6-1.17)
Republic of Honduras	13 (10-16)	0.52 (0.4-0.65)	70 (49-96)	0.98 (0.68-1.33)	438.46	1.97 (1.74-2.19)
United Mexican States	809 (784-834)	1.61 (1.56-1.66)	3988 (3478-4536)	2.97 (2.6-3.37)	392.95	1.91 (1.81-2.02)
Republic of Nicaragua	20 (17-25)	1.03 (0.86-1.29)	102 (76-130)	1.84 (1.36-2.31)	410.00	2.29 (2.08-2.49)
Republic of Panama	38 (33-44)	2.02 (1.77-2.3)	127 (101-159)	2.88 (2.29-3.6)	234.21	0.84 (0.41-1.28)
Bolivarian Republic of Venezuela	145 (133-156)	1.25 (1.15-1.34)	724 (542-942)	2.38 (1.79-3.08)	399.31	1.98 (1.83-2.13)
Federative Republic of Brazil	1329 (1256-1402)	1.28 (1.21-1.34)	4324 (4025-4580)	1.71 (1.59-1.81)	225.36	0.73 (0.57-0.89)
Republic of Paraguay	43 (36-54)	1.66 (1.38-2.08)	167 (123-219)	2.62 (1.92-3.42)	288.37	1.57 (1.5-1.64)
People's Democratic Republic of Algeria	294 (224-378)	1.74 (1.33-2.25)	1597 (1105-2117)	3.64 (2.56-4.83)	443.20	2.75 (2.59-2.92)
Kingdom of Bahrain	11 (9-15)	4.02 (3.18-5.29)	80 (59-109)	5.72 (4.15-7.46)	627.27	1.3 (1.15-1.45)
Arab Republic of Egypt	447 (369-604)	1.23 (1.02-1.71)	2055 (1530-2710)	2.48 (1.88-3.21)	359.73	2.34 (2.21-2.47)
Islamic Republic of Iran	359 (236-463)	1.01 (0.64-1.3)	3291 (1398-4116)	3.5 (1.5-4.37)	816.71	5.2 (4.7-5.7)
Republic of Iraq	258 (186-387)	2.31 (1.64-3.55)	1545 (1111-2119)	4.57 (3.31-6.17)	498.84	2.68 (2.41-2.94)
Hashemite Kingdom of Jordan	63 (48-83)	2.99 (2.29-3.97)	451 (327-631)	4.27 (3.12-5.91)	615.87	1.44 (1.09-1.79)
State of Kuwait	54 (47-62)	4.23 (3.71-4.83)	275 (219-327)	5.37 (4.33-6.37)	409.26	1.29 (0.32-2.27)
Lebanese Republic	73 (53-98)	2.93 (2.11-3.92)	261 (198-348)	4.33 (3.28-5.79)	257.53	1.55 (1.39-1.7)

State of Libya	87 (64-116)	3.22 (2.35-4.44)	446 (307-630)	5.95 (4.16-8.2)	412.64	2.54 (2.19-2.9)
Kingdom of Morocco	212 (162-277)	1.15 (0.88-1.49)	834 (564-1204)	2.17 (1.48-3.1)	293.40	2.12 (2.05-2.18)
Palestine	32 (22-44)	3.07 (2.01-4.2)	139 (90-175)	4.04 (2.53-5.13)	334.38	1 (0.89-1.12)
Sultanate of Oman	15 (10-20)	1.28 (0.91-1.71)	103 (69-138)	2.67 (1.83-3.46)	586.67	2.88 (2.57-3.19)
State of Qatar	10 (7-13)	4.1 (3.1-5.17)	135 (95-186)	5.96 (4.34-7.93)	1250.00	1.64 (1.28-2)
Kingdom of Saudi Arabia	208 (136-335)	2.1 (1.4-3.53)	2943 (2098-3917)	7.13 (5.39-9.33)	1314.90	4.67 (4.38-4.97)
Syrian Arab Republic	77 (41-186)	1.05 (0.55-2.5)	445 (275-702)	2.99 (1.85-4.76)	477.92	3.62 (3.46-3.78)
Republic of Tunisia	127 (95-163)	2.01 (1.51-2.62)	522 (351-708)	3.84 (2.57-5.19)	311.02	2.13 (2.02-2.25)
Republic of Turkey	1162 (854-1594)	2.72 (2.03-3.7)	4240 (3189-5746)	4.39 (3.31-5.98)	264.89	1.72 (1.55-1.89)
United Arab Emirates	38 (25-55)	4.48 (2.91-6.27)	372 (283-509)	5.21 (4.07-6.67)	878.95	1.68 (1.28-2.08)
Republic of Yemen	47 (25-107)	0.72 (0.37-1.65)	334 (226-483)	1.62 (1.07-2.41)	610.64	3.13 (2.86-3.4)
Islamic Republic of Afghanistan	98 (33-276)	1.35 (0.46-3.78)	509 (227-855)	3.08 (1.39-5.19)	419.39	3.07 (2.86-3.28)
People's Republic of Bangladesh	684 (490-973)	1.01 (0.75-1.42)	2983 (1875-5393)	1.87 (1.19-3.32)	336.11	2.24 (2.12-2.36)
Kingdom of Bhutan	4 (2-5)	1.04 (0.66-1.5)	14 (9-23)	1.88 (1.2-3.1)	250.00	1.81 (1.73-1.88)
Republic of India	5856 (4761-7739)	0.94 (0.77-1.23)	28334 (22851-34107)	2.06 (1.67-2.46)	383.85	2.73 (2.62-2.85)
Federal Democratic Republic of Nepal	120 (81-178)	0.94 (0.64-1.38)	529 (351-823)	1.9 (1.28-2.9)	340.83	2.46 (2.29-2.63)
Islamic Republic of Pakistan	1190 (948-1556)	1.64 (1.32-2.08)	5476 (3849-7662)	2.97 (2.14-4.03)	360.17	1.68 (1.52-1.85)
Republic of Angola	25 (17-37)	0.51 (0.35-0.76)	118 (71-192)	0.73 (0.45-1.18)	372.00	1.28 (1.13-1.43)
Central African Republic	9 (6-12)	0.64 (0.48-0.9)	17 (11-26)	0.6 (0.39-0.91)	88.89	-0.29 (-0.34--0.24)

Republic of the Congo	10 (7-14)	0.78 (0.58-1.12)	36 (22-58)	0.99 (0.62-1.52)	260.00	0.67 (0.5-0.85)
Democratic Republic of the Congo	103 (71-159)	0.55 (0.37-0.86)	302 (182-499)	0.64 (0.39-1.07)	193.20	0.47 (0.21-0.72)
Republic of Equatorial Guinea	1 (1-2)	0.58 (0.4-0.85)	8 (4-14)	1.1 (0.6-1.82)	700.00	2.45 (2.25-2.64)
Gabonese Republic	5 (4-8)	0.87 (0.65-1.23)	14 (9-22)	1.12 (0.74-1.67)	180.00	0.6 (0.49-0.71)
Republic of Burundi	50 (34-73)	1.57 (1.08-2.21)	115 (74-185)	1.47 (0.96-2.26)	130.00	-0.54 (-0.71--0.36)
Union of the Comoros	4 (2-6)	1.36 (0.89-2.06)	12 (8-20)	1.93 (1.23-3.15)	200.00	1 (0.79-1.21)
Republic of Djibouti	3 (2-4)	1.13 (0.78-1.71)	17 (10-30)	1.76 (1.08-2.99)	466.67	1.52 (1.43-1.61)
State of Eritrea	23 (19-31)	1.36 (1.11-1.74)	81 (52-131)	1.94 (1.31-2.92)	252.17	1.26 (1.19-1.32)
Federal Democratic Republic of Ethiopia	971 (711-1321)	3.53 (2.64-4.71)	2701 (1775-4540)	3.95 (2.64-6.45)	178.17	-0.01 (-0.26-0.24)
Republic of Kenya	51 (34-79)	0.41 (0.28-0.63)	253 (179-397)	0.74 (0.54-1.13)	396.08	2.29 (2.1-2.48)
Republic of Madagascar	87 (68-115)	1.21 (0.95-1.56)	296 (199-411)	1.57 (1.07-2.15)	240.23	0.85 (0.71-1)
Republic of Malawi	66 (48-90)	1.16 (0.86-1.49)	231 (141-382)	1.91 (1.22-2.88)	250.00	1.73 (1.57-1.89)
Republic of Mauritius	15 (14-16)	1.78 (1.63-1.92)	28 (25-31)	1.61 (1.41-1.78)	86.67	0.14 (-0.76-1.05)
Republic of Mozambique	92 (61-151)	1.14 (0.78-1.77)	329 (198-608)	1.88 (1.16-3.29)	257.61	1.93 (1.8-2.07)
Republic of Rwanda	76 (57-103)	1.84 (1.39-2.47)	187 (125-290)	2.02 (1.39-3.01)	146.05	-0.23 (-0.51-0.05)
Republic of Seychelles	1 (0-1)	0.9 (0.73-1.1)	1 (1-2)	1.14 (0.94-1.39)	0.00	0.76 (0.44-1.07)
Federal Republic of Somalia	46 (29-64)	1.2 (0.79-1.68)	145 (91-214)	1.44 (0.93-2.06)	215.22	0.69 (0.65-0.74)
United Republic of Tanzania	215 (157-310)	1.44 (1.07-2.02)	749 (497-1150)	1.98 (1.37-2.87)	248.37	1.01 (0.88-1.14)
Republic of Uganda	125 (90-172)	1.43 (1.06-1.95)	804 (536-1128)	3.3 (2.28-4.5)	543.20	2.59 (2.42-2.75)

Republic of Zambia	63 (49-80)	1.42 (1.12-1.78)	353 (168-721)	2.92 (1.49-5.49)	460.32	2.52 (2.07-2.98)
Republic of Botswana	6 (4-10)	0.91 (0.58-1.42)	20 (12-32)	1.06 (0.68-1.7)	233.33	0.97 (0.55-1.4)
Kingdom of Lesotho	6 (4-10)	0.7 (0.48-1.13)	16 (11-25)	1.31 (0.89-1.98)	166.67	2.85 (2.42-3.28)
Republic of Namibia	6 (4-8)	0.71 (0.55-0.93)	24 (16-36)	1.33 (0.9-1.88)	300.00	2.11 (1.99-2.22)
Republic of South Africa	254 (214-304)	0.96 (0.8-1.16)	716 (615-880)	1.35 (1.15-1.62)	181.89	1.33 (1.16-1.5)
Kingdom of Eswatini	4 (3-6)	1.09 (0.8-1.58)	12 (7-19)	1.66 (1.01-2.53)	200.00	1.53 (1.18-1.89)
Republic of Zimbabwe	100 (74-128)	1.91 (1.47-2.42)	328 (206-457)	3.3 (2.22-4.42)	228.00	2.25 (1.58-2.93)
Republic of Benin	7 (4-10)	0.28 (0.15-0.4)	20 (13-32)	0.25 (0.16-0.38)	185.71	-0.69 (-0.85--0.53)
Burkina Faso	18 (9-26)	0.34 (0.17-0.48)	39 (23-54)	0.28 (0.18-0.39)	116.67	-0.83 (-0.99--0.67)
Republic of Cameroon	24 (13-32)	0.4 (0.21-0.53)	74 (47-110)	0.37 (0.23-0.54)	208.33	-0.63 (-0.77--0.48)
Republic of Cabo Verde	0 (0-0)	0.1 (0.08-0.15)	3 (1-6)	0.57 (0.12-1.07)	300.00	5.65 (4.77-6.54)
Republic of Chad	8 (4-12)	0.24 (0.13-0.35)	22 (15-31)	0.24 (0.17-0.32)	175.00	-0.28 (-0.39--0.18)
Republic of Côte d'Ivoire	41 (29-55)	0.62 (0.46-0.8)	163 (110-239)	0.86 (0.6-1.2)	297.56	-0.37 (-0.71--0.02)
Republic of the Gambia	2 (1-2)	0.31 (0.23-0.42)	8 (5-11)	0.5 (0.35-0.71)	300.00	1.29 (1.07-1.51)
Republic of Ghana	6 (4-9)	0.07 (0.04-0.1)	25 (16-36)	0.1 (0.07-0.14)	316.67	1.02 (0.9-1.13)
Republic of Guinea	19 (15-25)	0.49 (0.38-0.63)	51 (35-75)	0.62 (0.44-0.9)	168.42	0.72 (0.69-0.76)
Republic of Guinea-Bissau	2 (1-3)	0.39 (0.21-0.54)	4 (3-6)	0.36 (0.25-0.49)	100.00	-0.53 (-0.64--0.43)
Republic of Liberia	4 (2-6)	0.29 (0.14-0.4)	13 (8-18)	0.34 (0.22-0.48)	225.00	0.25 (0.11-0.39)
Republic of Mali	56 (44-70)	1.07 (0.85-1.31)	161 (107-244)	1.18 (0.82-1.74)	187.50	0.28 (0.21-0.36)
Islamic Republic of Mauritania	4 (2-5)	0.33 (0.18-0.44)	10 (7-15)	0.36 (0.24-0.53)	150.00	-0.27 (-0.47--0.07)

Republic of the Niger	10 (5-14)	0.24 (0.13-0.34)	26 (16-39)	0.2 (0.13-0.31)	160.00	-0.87 (-0.99--0.75)
Federal Republic of Nigeria	28 (18-50)	0.05 (0.03-0.09)	119 (73-207)	0.08 (0.05-0.15)	325.00	1.85 (1.69-2.02)
Democratic Republic of Sao Tome and Principe	0 (0-0)	0.12 (0.05-0.19)	0 (0-1)	0.2 (0.1-0.33)	0.00	1.8 (1.69-1.91)
Republic of Senegal	13 (6-20)	0.3 (0.15-0.44)	32 (21-51)	0.3 (0.19-0.47)	146.15	-0.41 (-0.56--0.26)
Republic of Sierra Leone	6 (3-9)	0.25 (0.12-0.36)	16 (9-24)	0.27 (0.16-0.39)	166.67	0.03 (-0.09-0.14)
Togolese Republic	6 (3-9)	0.33 (0.17-0.48)	19 (11-30)	0.32 (0.2-0.5)	216.67	-0.35 (-0.47--0.22)
American Samoa	1 (0-1)	2.36 (1.75-3.14)	2 (1-2)	3.57 (2.45-4.65)	100.00	1.5 (1.18-1.83)
Bermuda	2 (2-2)	2.84 (2.55-3.19)	5 (4-6)	4.55 (3.65-5.72)	150.00	1.51 (1.19-1.83)
Cook Islands	0 (0-0)	1.75 (1.33-2.22)	0 (0-1)	2.19 (1.62-3.22)	0.00	0.09 (-0.25-0.43)
Greenland	1 (1-1)	1.8 (1.31-2.38)	1 (1-2)	1.85 (1.28-2.53)	0.00	1.15 (0.58-1.72)
Guam	1 (1-1)	0.9 (0.72-1.52)	4 (3-4)	1.83 (1.38-2.15)	300.00	3.31 (2.3-4.33)
Principality of Monaco	2 (1-2)	3.02 (2.3-3.94)	3 (2-4)	4.32 (3.05-5.88)	50.00	1.34 (1.19-1.49)
Republic of Nauru	0 (0-0)	1.39 (0.95-1.88)	0 (0-0)	2.28 (1.35-3.33)	0.00	1.57 (1.51-1.62)
Republic of Niue	0 (0-0)	1.27 (0.91-1.67)	0 (0-0)	2.33 (1.54-3.04)	0.00	1.45 (1.3-1.6)
Northern Mariana Islands	0 (0-0)	1.06 (0.79-1.47)	1 (1-1)	1.65 (1.26-1.97)	100.00	1.63 (1.01-2.25)
Republic of Palau	0 (0-0)	1.64 (1.19-2.24)	0 (0-1)	2.05 (1.5-2.66)	0.00	0.7 (0.6-0.8)
Puerto Rico	73 (65-81)	2.02 (1.8-2.26)	134 (107-163)	2.81 (2.24-3.46)	83.56	1.5 (1.17-1.84)
Saint Kitts and Nevis	0 (0-1)	1.36 (1.23-1.49)	1 (1-2)	1.7 (1.39-2.05)	100.00	0.93 (0.59-1.27)
Republic of San Marino	2 (1-2)	5.19 (4.19-6.44)	2 (1-3)	4.24 (2.44-6.22)	0.00	0.24 (-0.17-0.65)
Tokelau	0 (0-0)	1.17 (0.81-1.62)	0 (0-0)	2.16 (1.44-2.9)	0.00	1.6 (1.45-1.76)

Tuvalu	0 (0-0)	1.08 (0.82-1.46)	0 (0-0)	1.58 (1.03-2.14)	0.00	1.12 (0.97-1.27)
United States Virgin Islands	1 (1-1)	1.07 (0.85-1.33)	1 (1-2)	1.09 (0.79-1.51)	0.00	0.39 (0.25-0.54)
Republic of South Sudan	37 (25-54)	1.09 (0.76-1.53)	106 (69-165)	1.8 (1.2-2.73)	186.49	1.66 (1.38-1.94)
Republic of Sudan	117 (46-305)	0.95 (0.39-2.36)	626 (360-998)	2.07 (1.25-3.23)	435.04	2.79 (2.62-2.96)

ASIR: age-standardized incidence rate; SDI: socio-demographic index; EAPC: estimated annual percentage change; UI: uncertainty interval; CI: confidence interval.

Supplementary Table 5 The mortality and ASMR of thyroid cancer in 1990 and 2021, changes and EAPC from 1990 to 2021 at the 204 countries.

Characteristics	1990		2021		1990-2021	1990-2021
	Mortality case No. (95% UI)	ASMR per 100,000, No. (95% UI)	Mortality case No. (95% UI)	ASMR per 100,000 No. (95% UI)	Change (%)	EAPC (95% CI)
China	3599 (3038-4182)	0.47 (0.4-0.55)	7692 (6123-9429)	0.39 (0.31-0.47)	113.73	-0.66 (-0.76--0.57)
North Korea	77 (55-101)	0.51 (0.37-0.68)	149 (107-203)	0.46 (0.33-0.63)	93.51	-0.18 (-0.27--0.08)
Taiwan	105 (97-113)	0.69 (0.64-0.75)	222 (191-247)	0.54 (0.46-0.59)	111.43	-0.39 (-0.57--0.2)
Kingdom of Cambodia	45 (31-59)	1.01 (0.72-1.28)	154 (99-210)	1.3 (0.86-1.73)	242.22	0.69 (0.56-0.83)
Indonesia	682 (502-800)	0.7 (0.54-0.82)	1845 (1231-2421)	0.81 (0.56-1.05)	170.53	0.42 (0.29-0.55)
Lao	21 (13-30)	1.04 (0.66-1.45)	45 (30-62)	1.02 (0.68-1.38)	114.29	-0.19 (-0.24--0.15)
Malaysia	80 (67-98)	0.87 (0.72-1.1)	229 (195-287)	0.85 (0.72-1.06)	186.25	-0.23 (-0.39--0.08)
Maldives	0 (0-1)	0.57 (0.38-0.75)	1 (1-1)	0.32 (0.24-0.41)	100.00	-2.23 (-2.36--2.09)
Republic of the Union of Myanmar	205 (142-270)	0.89 (0.64-1.15)	402 (282-531)	0.85 (0.61-1.12)	96.10	-0.38 (-0.49--0.26)
Philippines	309 (236-382)	1.06 (0.83-1.34)	1019 (827-1227)	1.27 (1.05-1.55)	229.77	0.75 (0.71-0.79)
Sri Lanka	85 (66-100)	0.84 (0.65-0.99)	152 (98-214)	0.58 (0.38-0.8)	78.82	-1.43 (-1.63--1.23)
Kingdom of Thailand	262 (215-357)	0.79 (0.65-1.06)	689 (512-967)	0.64 (0.48-0.9)	162.98	-1.14 (-1.36--0.92)
Democratic Republic of Timor-Leste	2 (1-3)	0.71 (0.47-0.98)	7 (4-10)	0.79 (0.52-1.14)	250.00	0.47 (0.34-0.61)
Socialist Republic of Viet Nam	308 (229-465)	0.77 (0.57-1.2)	1085 (817-1422)	1.15 (0.87-1.54)	252.27	1.78 (1.59-1.98)
Republic of Fiji	5 (3-6)	1.42 (0.95-1.84)	9 (6-13)	1.4 (0.95-1.85)	80.00	-0.23 (-0.36--0.09)
Republic of Kiribati	0 (0-0)	0.03 (0.02-0.05)	0 (0-0)	0.03 (0.02-0.06)	0	-0.13 (-0.29-0.04)
Republic of the Marshall Islands	0 (0-0)	0.52 (0.43-0.66)	0 (0-0)	0.6 (0.41-0.8)	0	0.36 (0.2-0.52)
Federated States of	0 (0-0)	0.61 (0.46-0.8)	0 (0-1)	0.65 (0.42-0.86)	0	0.13 (0.08-0.19)

Micronesia

Independent State of Papua New Guinea	6 (4-9)	0.38 (0.24-0.57)	19 (11-32)	0.41 (0.24-0.68)	216.67	0.25 (0.19-0.32)
Independent State of Samoa	1 (0-1)	0.8 (0.57-1.4)	1 (1-2)	0.76 (0.55-1.3)	0	-0.21 (-0.26--0.16)
Solomon Islands	1 (0-1)	0.42 (0.26-0.61)	2 (1-2)	0.53 (0.34-0.78)	100.00	0.74 (0.68-0.8)
Kingdom of Tonga	0 (0-0)	0.39 (0.28-0.56)	0 (0-1)	0.46 (0.3-0.67)	0	0.62 (0.45-0.8)
Republic of Vanuatu	0 (0-0)	0.42 (0.3-0.59)	1 (1-1)	0.53 (0.36-0.71)	100.00	0.64 (0.57-0.72)
Republic of Armenia	13 (10-17)	0.5 (0.38-0.63)	35 (27-45)	0.8 (0.61-1.04)	169.23	1.81 (1.4-2.21)
Republic of Azerbaijan	19 (14-25)	0.38 (0.29-0.52)	34 (25-44)	0.34 (0.25-0.44)	78.95	-0.36 (-0.47--0.26)
Georgia	31 (25-38)	0.5 (0.41-0.61)	53 (43-65)	0.9 (0.74-1.11)	70.97	2.4 (1.21-3.61)
Republic of Kazakhstan	136 (121-154)	1.06 (0.94-1.2)	105 (87-125)	0.6 (0.5-0.71)	-22.79	-2.33 (-2.91--1.75)
Kyrgyz Republic	22 (18-28)	0.75 (0.59-0.94)	26 (20-34)	0.54 (0.42-0.69)	18.18	-0.67 (-1.54-0.21)
Mongolia	7 (5-10)	0.66 (0.49-0.9)	13 (10-17)	0.56 (0.43-0.74)	85.71	-0.95 (-1.38--0.53)
Republic of Tajikistan	0 (0-0)	0.01 (0-0.01)	0 (0-0)	0 (0-0.01)	0.00	-1.72 (-1.9--1.54)
Turkmenistan	13 (12-14)	0.64 (0.59-0.71)	19 (15-25)	0.46 (0.36-0.59)	46.15	-1.3 (-2.26--0.33)
Republic of Uzbekistan	11 (8-15)	0.09 (0.07-0.12)	54 (40-71)	0.2 (0.15-0.27)	390.91	2.55 (1.93-3.18)
Republic of Albania	13 (10-16)	0.66 (0.49-0.82)	19 (13-26)	0.43 (0.31-0.6)	46.15	-1.28 (-1.53--1.04)
Bosnia and Herzegovina	23 (16-26)	0.57 (0.41-0.67)	24 (18-31)	0.38 (0.28-0.49)	4.35	-1.72 (-2--1.44)
Republic of Bulgaria	86 (73-100)	0.74 (0.63-0.87)	67 (53-85)	0.48 (0.38-0.61)	-22.09	-1.02 (-1.28--0.76)
Republic of Croatia	51 (46-57)	0.88 (0.79-0.99)	38 (32-44)	0.41 (0.35-0.48)	-25.49	-2.39 (-2.51--2.27)
Czech Republic	116 (98-136)	0.84 (0.71-0.98)	83 (66-102)	0.38 (0.3-0.47)	-28.45	1.11 (0.72-1.49)
Hungary	137 (119-156)	0.95 (0.83-1.08)	82 (67-100)	0.42 (0.35-0.52)	-40.15	-2.71 (-2.97--2.45)
North Macedonia	12 (9-14)	0.67 (0.51-0.78)	16 (12-19)	0.5 (0.4-0.62)	33.33	-1.25 (-1.39--1.11)



Montenegro	4 (3-5)	0.58 (0.47-0.75)	6 (5-8)	0.64 (0.52-0.79)	50.00	0.22 (0.05-0.38)
Republic of Poland	517 (493-538)	1.2 (1.14-1.24)	348 (311-381)	0.48 (0.43-0.52)	-32.69	-3.27 (-3.81--2.74)
Romania	165 (146-185)	0.61 (0.54-0.68)	152 (121-186)	0.41 (0.32-0.5)	-7.88	-1.76 (-2.06--1.47)
Republic of Serbia	61 (47-80)	0.61 (0.47-0.81)	78 (57-102)	0.46 (0.34-0.61)	27.87	-1.26 (-1.43--1.1)
Slovak Republic	45 (37-54)	0.76 (0.62-0.91)	47 (37-60)	0.49 (0.39-0.64)	4.44	-1.59 (-1.69--1.48)
Republic of Slovenia	17 (14-20)	0.69 (0.58-0.79)	15 (11-19)	0.32 (0.23-0.41)	-11.76	-2.32 (-2.54--2.11)
Republic of Belarus	58 (47-70)	0.46 (0.38-0.55)	84 (66-107)	0.52 (0.41-0.67)	44.83	0.06 (-0.39-0.52)
Republic of Estonia	12 (9-15)	0.58 (0.46-0.73)	15 (12-20)	0.54 (0.41-0.69)	25.00	-0.42 (-0.79--0.05)
Republic of Latvia	17 (14-21)	0.49 (0.39-0.61)	28 (21-35)	0.67 (0.52-0.84)	64.71	0.85 (0.47-1.23)
Republic of Lithuania	20 (17-23)	0.44 (0.37-0.52)	31 (25-37)	0.52 (0.43-0.63)	55.00	0.33 (-0.11-0.77)
Republic of Moldova	20 (18-23)	0.48 (0.43-0.54)	25 (21-29)	0.41 (0.35-0.49)	25.00	-0.51 (-0.72--0.31)
Russian Federation	921 (880-953)	0.53 (0.5-0.55)	1142 (1050-1244)	0.48 (0.44-0.52)	24.00	-0.35 (-0.73-0.03)
Ukraine	302 (249-373)	0.43 (0.35-0.52)	326 (236-438)	0.43 (0.31-0.57)	7.95	-0.21 (-0.52-0.11)
Brunei Darussalam	1 (1-1)	1.21 (0.93-1.57)	3 (2-4)	0.98 (0.76-1.24)	200.00	-0.14 (-0.33-0.05)
Japan	1034 (951-1080)	0.63 (0.57-0.66)	2292 (1816-2572)	0.49 (0.41-0.54)	121.66	-0.87 (-0.96--0.77)
Republic of Korea	186 (138-339)	0.73 (0.54-1.38)	512 (407-689)	0.55 (0.44-0.74)	175.27	-0.9 (-1.47--0.33)
Republic of Singapore	14 (12-17)	0.7 (0.6-0.8)	37 (30-44)	0.44 (0.36-0.53)	164.29	-1.33 (-1.56--1.1)
Australia	78 (68-88)	0.4 (0.35-0.45)	170 (136-206)	0.37 (0.29-0.45)	117.95	0.34 (0.09-0.6)
New Zealand	20 (17-23)	0.51 (0.43-0.59)	29 (23-34)	0.34 (0.28-0.41)	45.00	-0.78 (-1.17--0.4)
Principality of Andorra	0 (0-0)	0.57 (0.41-0.78)	1 (0-1)	0.36 (0.25-0.5)	100.00	-1.18 (-1.34--1.02)
Republic of Austria	112 (100-123)	0.93 (0.83-1.01)	98 (82-117)	0.52 (0.44-0.62)	-12.50	-1.92 (-2.04--1.8)
Kingdom of Belgium	118 (101-138)	0.76 (0.65-0.88)	108 (87-131)	0.45 (0.36-0.54)	-8.47	-1.47 (-1.68--1.25)
Republic of Cyprus	7 (6-9)	1.1 (0.84-1.37)	9 (7-11)	0.45 (0.35-0.57)	28.57	-2.48 (-2.8--2.16)
Kingdom of Denmark	34 (30-38)	0.42 (0.36-0.47)	35 (29-42)	0.28 (0.24-0.33)	2.94	-1.12 (-1.47--0.78)
Republic of Finland	51 (45-57)	0.71 (0.63-0.8)	48 (39-58)	0.37 (0.3-0.44)	-5.88	-1.86 (-2.22--1.5)
French Republic	570 (509-625)	0.68 (0.62-0.75)	528 (423-630)	0.35 (0.28-0.42)	-7.37	-2.04 (-2.43--1.66)

Federal Republic of Germany	1062 (940-1198)	0.82 (0.72-0.92)	861 (716-1014)	0.42 (0.35-0.5)	-18.93	-2.16 (-2.37--1.96)
Hellenic Republic	80 (74-86)	0.53 (0.49-0.57)	100 (87-110)	0.39 (0.34-0.43)	25.00	-1.2 (-1.29--1.11)
Republic of Iceland	4 (4-5)	1.44 (1.27-1.63)	4 (4-5)	0.73 (0.6-0.88)	0	-1.53 (-2.06--0.99)
Ireland	30 (26-34)	0.72 (0.64-0.81)	27 (22-32)	0.33 (0.27-0.4)	-10.00	-1.68 (-2.01--1.36)
State of Israel	45 (38-52)	0.93 (0.79-1.08)	68 (57-82)	0.54 (0.45-0.64)	51.11	-1.84 (-2.17--1.5)
Republic of Italy	694 (638-740)	0.78 (0.72-0.83)	653 (557-723)	0.42 (0.37-0.46)	-5.91	-1.99 (-2.07--1.91)
Grand Duchy of Luxembourg	6 (5-6)	1.07 (0.97-1.16)	6 (5-6)	0.51 (0.45-0.59)	0	-2.19 (-2.29--2.1)
Republic of Malta	3 (3-4)	0.83 (0.71-0.95)	4 (3-5)	0.43 (0.35-0.51)	33.33	-2.06 (-2.4--1.71)
Kingdom of the Netherlands	102 (91-113)	0.5 (0.45-0.56)	138 (114-158)	0.38 (0.32-0.43)	35.29	-0.61 (-0.74--0.48)
Kingdom of Norway	39 (35-42)	0.55 (0.5-0.58)	44 (37-49)	0.41 (0.35-0.45)	12.82	-0.63 (-0.89--0.37)
Portuguese Republic	101 (89-115)	0.75 (0.66-0.85)	97 (79-118)	0.37 (0.3-0.45)	-3.96	-2.07 (-2.22--1.93)
Kingdom of Spain	312 (282-341)	0.58 (0.52-0.63)	366 (299-441)	0.35 (0.29-0.41)	17.31	-1.45 (-1.54--1.37)
Kingdom of Sweden	90 (77-105)	0.57 (0.49-0.65)	92 (74-110)	0.38 (0.31-0.46)	2.22	-0.92 (-1.15--0.7)
Swiss Confederation	60 (54-67)	0.57 (0.51-0.63)	60 (49-72)	0.3 (0.25-0.36)	0	-1.9 (-2.33--1.48)
United Kingdom of Great Britain and Northern Ireland	427 (402-440)	0.47 (0.45-0.48)	478 (430-504)	0.36 (0.33-0.37)	11.94	-0.63 (-0.77--0.49)
Argentine Republic	248 (223-273)	0.78 (0.7-0.85)	306 (255-360)	0.54 (0.45-0.64)	23.39	-0.98 (-1.25--0.7)
Republic of Chile	82 (69-95)	0.83 (0.7-0.97)	140 (119-166)	0.54 (0.46-0.64)	70.73	-1.34 (-1.57--1.1)
Eastern Republic of Uruguay	29 (24-35)	0.75 (0.62-0.9)	40 (33-48)	0.71 (0.59-0.84)	37.93	-0.22 (-0.31--0.13)
Canada	141 (123-159)	0.44 (0.38-0.49)	270 (225-324)	0.36 (0.3-0.43)	91.49	-0.75 (-0.89--0.6)
United States of	1251 (1150-1303)	0.39 (0.36-0.4)	2495 (2237-2641)	0.42 (0.38-0.44)	99.44	0.24 (0.16-0.33)

America						
Antigua and Barbuda	0 (0-0)	0.61 (0.55-0.66)	1 (1-1)	0.78 (0.72-0.83)	100.00	0.91 (0.45-1.38)
Commonwealth of the Bahamas	1 (1-1)	0.66 (0.61-0.73)	3 (2-4)	0.75 (0.61-0.92)	200.00	0.81 (0.48-1.15)
Barbados	2 (2-2)	0.62 (0.57-0.66)	3 (3-4)	0.67 (0.53-0.81)	50.00	0.55 (0.35-0.74)
Belize	0 (0-0)	0.26 (0.24-0.28)	1 (1-1)	0.39 (0.34-0.44)	100.00	1.33 (1.1-1.57)
Republic of Cuba	48 (45-52)	0.47 (0.44-0.51)	128 (107-148)	0.65 (0.54-0.75)	166.67	-0.15 (-0.24--0.05)
Commonwealth of Dominica	0 (0-0)	0.6 (0.51-0.75)	0 (0-1)	0.6 (0.48-0.73)	0	0.15 (0.05-0.25)
Dominican Republic	17 (14-20)	0.46 (0.37-0.55)	48 (36-63)	0.48 (0.36-0.62)	182.35	0.51 (0.36-0.65)
Grenada	1 (1-1)	0.87 (0.76-0.99)	1 (1-1)	0.87 (0.74-1)	0	0.55 (0.15-0.94)
Republic of Guyana	2 (2-2)	0.57 (0.5-0.64)	4 (3-6)	0.66 (0.51-0.86)	100.00	0.86 (0.69-1.03)
Republic of Haiti	27 (19-38)	0.85 (0.61-1.16)	53 (37-72)	0.74 (0.53-0.99)	96.30	-0.28 (-0.35--0.22)
Jamaica	9 (8-10)	0.48 (0.43-0.53)	20 (15-26)	0.64 (0.49-0.82)	122.22	1.01 (0.66-1.36)
Saint Lucia	1 (1-1)	0.95 (0.89-1.02)	2 (2-2)	0.79 (0.66-0.95)	100.00	-1.04 (-1.61--0.47)
Saint Vincent and the Grenadines	1 (1-1)	1.03 (0.95-1.11)	2 (1-2)	1.09 (0.95-1.24)	100.00	0.54 (0.05-1.03)
Republic of Suriname	1 (1-2)	0.55 (0.45-0.65)	3 (2-4)	0.47 (0.35-0.62)	200.00	-0.01 (-0.19-0.17)
Republic of Trinidad and Tobago	6 (5-6)	0.68 (0.64-0.72)	12 (9-15)	0.61 (0.47-0.77)	100.00	-0.47 (-0.72--0.21)
Plurinational State of Bolivia	48 (31-66)	1.54 (0.99-2.1)	138 (90-192)	1.58 (1.03-2.16)	187.50	0.07 (0.03-0.11)
Republic of Ecuador	35 (32-38)	0.67 (0.62-0.73)	205 (161-254)	1.28 (1.01-1.58)	485.71	2.36 (1.85-2.87)
Republic of Peru	99 (80-119)	0.83 (0.67-1)	298 (205-401)	0.9 (0.61-1.21)	201.01	0.04 (-0.16-0.23)
Republic of Colombia	178 (164-194)	1.03 (0.94-1.11)	468 (384-573)	0.85 (0.7-1.04)	162.92	-0.88 (-1.22--0.54)
Republic of Costa Rica	13 (12-14)	0.75 (0.68-0.82)	38 (33-44)	0.7 (0.6-0.81)	192.31	-0.6 (-0.84--0.36)

Republic of El Salvador	24 (18-27)	0.81 (0.61-0.91)	49 (39-61)	0.79 (0.62-0.97)	104.17	-0.1 (-0.29-0.09)
Republic of Guatemala	27 (26-29)	0.83 (0.79-0.88)	80 (69-92)	0.74 (0.64-0.84)	196.30	-0.92 (-1.27--0.57)
Republic of Honduras	6 (4-7)	0.28 (0.21-0.33)	25 (18-34)	0.41 (0.29-0.56)	316.67	1.33 (1.13-1.53)
United Mexican States	318 (307-329)	0.79 (0.75-0.81)	1054 (936-1177)	0.85 (0.76-0.95)	231.45	0.25 (0.11-0.4)
Republic of Nicaragua	7 (6-9)	0.47 (0.38-0.56)	25 (19-31)	0.53 (0.39-0.66)	257.14	0.65 (0.47-0.83)
Republic of Panama	9 (8-10)	0.61 (0.54-0.67)	29 (23-36)	0.66 (0.52-0.81)	222.22	0.31 (0.14-0.49)
Bolivarian Republic of Venezuela	53 (49-56)	0.56 (0.52-0.59)	196 (150-253)	0.67 (0.52-0.86)	269.81	0.38 (0.24-0.52)
Federative Republic of Brazil	493 (464-521)	0.58 (0.54-0.61)	1206 (1101-1281)	0.49 (0.44-0.52)	144.62	-0.63 (-0.73--0.53)
Republic of Paraguay	16 (13-19)	0.72 (0.6-0.87)	46 (34-60)	0.82 (0.59-1.06)	187.50	0.57 (0.49-0.65)
People's Democratic Republic of Algeria	42 (33-58)	0.36 (0.29-0.51)	136 (102-171)	0.41 (0.31-0.52)	223.81	0.9 (0.71-1.1)
Kingdom of Bahrain	1 (1-2)	1.02 (0.83-1.27)	5 (4-7)	0.79 (0.56-1.04)	400.00	-0.74 (-1--0.48)
Arab Republic of Egypt	94 (78-134)	0.38 (0.31-0.56)	253 (196-315)	0.44 (0.35-0.56)	169.15	1.01 (0.8-1.21)
Islamic Republic of Iran	38 (27-46)	0.16 (0.11-0.19)	230 (104-279)	0.31 (0.14-0.37)	505.26	3.55 (2.94-4.16)
Republic of Iraq	40 (29-61)	0.47 (0.34-0.75)	131 (96-171)	0.57 (0.42-0.74)	227.50	0.75 (0.56-0.94)
Hashemite Kingdom of Jordan	7 (6-10)	0.56 (0.44-0.75)	32 (24-44)	0.46 (0.35-0.62)	357.14	-0.52 (-0.79--0.26)
State of Kuwait	3 (3-4)	0.5 (0.44-0.56)	12 (10-15)	0.45 (0.37-0.54)	300.00	0.41 (-0.48-1.3)
Lebanese Republic	10 (8-13)	0.49 (0.37-0.64)	25 (20-32)	0.4 (0.33-0.52)	150.00	-0.31 (-0.48--0.15)
State of Libya	10 (8-14)	0.52 (0.39-0.76)	32 (24-42)	0.6 (0.46-0.8)	220.00	0.9 (0.72-1.08)
Kingdom of Morocco	41 (33-50)	0.28 (0.22-0.35)	110 (83-140)	0.33 (0.25-0.41)	168.29	0.67 (0.59-0.74)

Palestine	6 (4-8)	0.74 (0.47-1)	14 (9-17)	0.63 (0.38-0.79)	133.33	-0.35 (-0.53--0.16)
Sultanate of Oman	2 (1-2)	0.27 (0.2-0.36)	6 (4-7)	0.3 (0.21-0.38)	200.00	1.04 (0.78-1.31)
State of Qatar	1 (1-1)	1.02 (0.78-1.26)	6 (4-7)	0.74 (0.54-0.95)	500.00	-0.78 (-1.17--0.39)
Kingdom of Saudi Arabia	32 (23-52)	0.52 (0.37-0.88)	145 (111-184)	0.7 (0.56-0.88)	353.13	1.23 (0.99-1.48)
Syrian Arab Republic	12 (7-27)	0.22 (0.12-0.51)	43 (29-64)	0.35 (0.24-0.52)	258.33	1.63 (1.54-1.72)
Republic of Tunisia	17 (13-22)	0.35 (0.27-0.45)	46 (32-64)	0.36 (0.26-0.5)	170.59	0.21 (0.12-0.29)
Republic of Turkey	228 (182-290)	0.69 (0.55-0.88)	477 (376-603)	0.53 (0.42-0.67)	109.21	-0.8 (-1--0.6)
United Arab Emirates	5 (3-7)	1.24 (0.84-1.71)	28 (22-36)	1.13 (0.89-1.43)	460.00	1.77 (1.13-2.41)
Republic of Yemen	11 (6-26)	0.23 (0.12-0.56)	50 (34-73)	0.35 (0.24-0.54)	354.55	1.73 (1.54-1.92)
Islamic Republic of Afghanistan	31 (12-85)	0.45 (0.18-1.23)	81 (39-132)	0.76 (0.39-1.24)	161.29	2.06 (1.91-2.21)
People's Republic of Bangladesh	264 (206-358)	0.5 (0.39-0.69)	684 (452-1075)	0.5 (0.33-0.77)	159.09	-0.03 (-0.16-0.1)
Kingdom of Bhutan	1 (1-2)	0.54 (0.36-0.79)	4 (3-5)	0.59 (0.42-0.86)	300.00	0.13 (0.07-0.19)
Republic of India	2134 (1781-2785)	0.44 (0.36-0.57)	7156 (5976-8237)	0.61 (0.51-0.7)	235.33	1.17 (1.1-1.25)
Federal Democratic Republic of Nepal	48 (34-68)	0.48 (0.35-0.68)	137 (98-194)	0.59 (0.43-0.83)	185.42	0.81 (0.62-1)
Islamic Republic of Pakistan	467 (382-594)	0.79 (0.64-1.01)	1343 (1015-1752)	1.03 (0.8-1.3)	187.58	0.63 (0.41-0.85)
Republic of Angola	13 (9-18)	0.34 (0.24-0.49)	41 (25-64)	0.36 (0.22-0.56)	215.38	0.26 (0.17-0.34)
Central African Republic	5 (4-7)	0.44 (0.33-0.61)	8 (5-12)	0.38 (0.25-0.57)	60.00	-0.5 (-0.54--0.45)
Republic of the Congo	5 (4-7)	0.48 (0.36-0.66)	11 (7-17)	0.43 (0.29-0.64)	120.00	-0.46 (-0.58--0.35)
Democratic Republic of the Congo	52 (36-79)	0.35 (0.24-0.53)	116 (70-190)	0.34 (0.2-0.56)	123.08	-0.1 (-0.26-0.05)

Republic of Equatorial Guinea	1 (1-1)	0.39 (0.27-0.56)	2 (1-3)	0.41 (0.24-0.64)	100.00	0.27 (0.1-0.43)
Gabonese Republic	3 (2-4)	0.5 (0.38-0.69)	4 (3-6)	0.45 (0.31-0.66)	33.33	-0.51 (-0.61--0.42)
Republic of Burundi	22 (16-31)	0.87 (0.63-1.2)	38 (25-56)	0.69 (0.47-1.01)	72.73	-1.08 (-1.24--0.92)
Union of the Comoros	1 (1-2)	0.68 (0.49-0.94)	4 (3-6)	0.76 (0.52-1.14)	300.00	0.28 (0.15-0.4)
Republic of Djibouti	1 (1-1)	0.6 (0.43-0.85)	5 (3-8)	0.73 (0.49-1.12)	400.00	0.71 (0.65-0.77)
State of Eritrea	10 (8-12)	0.79 (0.65-0.99)	27 (19-39)	0.92 (0.67-1.29)	170.00	0.63 (0.58-0.69)
Federal Democratic Republic of Ethiopia	460 (348-608)	2.14 (1.63-2.78)	754 (511-1130)	1.6 (1.1-2.36)	63.91	-1.28 (-1.47--1.1)
Republic of Kenya	17 (11-25)	0.19 (0.13-0.28)	66 (49-97)	0.28 (0.21-0.4)	288.24	1.83 (1.59-2.06)
Republic of Madagascar	34 (27-42)	0.6 (0.48-0.76)	79 (55-107)	0.62 (0.43-0.83)	132.35	0.18 (0.04-0.31)
Republic of Malawi	25 (19-32)	0.59 (0.45-0.75)	61 (41-89)	0.75 (0.52-1.04)	144.00	0.87 (0.68-1.07)
Republic of Mauritius	4 (4-4)	0.62 (0.57-0.66)	6 (6-7)	0.35 (0.31-0.38)	50.00	-1.21 (-2.03--0.38)
Republic of Mozambique	40 (28-60)	0.63 (0.46-0.91)	106 (69-178)	0.86 (0.57-1.38)	165.00	1.44 (1.26-1.62)
Republic of Rwanda	32 (25-43)	1.01 (0.78-1.34)	53 (38-75)	0.8 (0.58-1.1)	65.63	-1.34 (-1.58--1.09)
Republic of Seychelles	0 (0-0)	0.33 (0.26-0.4)	0 (0-0)	0.29 (0.23-0.34)	0	-0.51 (-0.8--0.22)
Federal Republic of Somalia	19 (13-27)	0.71 (0.48-0.96)	55 (36-77)	0.79 (0.52-1.09)	189.47	0.49 (0.43-0.54)
United Republic of Tanzania	83 (62-111)	0.71 (0.53-0.93)	209 (149-290)	0.76 (0.56-1.05)	151.81	0.27 (0.18-0.36)
Republic of Uganda	54 (40-73)	0.8 (0.6-1.11)	218 (155-292)	1.34 (0.98-1.74)	303.70	1.63 (1.45-1.82)
Republic of Zambia	23 (19-29)	0.71 (0.58-0.88)	93 (47-167)	1.12 (0.63-1.86)	304.35	1.63 (1.34-1.93)
Republic of Botswana	3 (2-4)	0.5 (0.34-0.74)	6 (4-10)	0.46 (0.31-0.67)	100.00	0.05 (-0.22-0.33)
Kingdom of Lesotho	3 (2-5)	0.41 (0.29-0.65)	7 (5-10)	0.68 (0.48-0.98)	133.33	2.38 (1.97-2.79)

Republic of Namibia	2 (2-3)	0.35 (0.27-0.49)	6 (5-9)	0.47 (0.34-0.62)	200.00	0.97 (0.83-1.11)
Republic of South Africa	77 (63-96)	0.37 (0.29-0.47)	201 (165-227)	0.46 (0.36-0.51)	161.04	0.73 (0.5-0.95)
Kingdom of Eswatini	2 (1-2)	0.61 (0.46-0.83)	4 (3-6)	0.74 (0.5-1.07)	100.00	0.84 (0.48-1.21)
Republic of Zimbabwe	37 (29-45)	0.94 (0.76-1.17)	99 (70-129)	1.38 (1.04-1.76)	167.57	1.83 (1.35-2.31)
Republic of Benin	3 (2-4)	0.15 (0.08-0.2)	6 (4-8)	0.1 (0.07-0.14)	100.00	-1.76 (-1.94--1.59)
Burkina Faso	8 (4-11)	0.18 (0.09-0.24)	12 (8-16)	0.11 (0.08-0.15)	50.00	-1.75 (-1.95--1.56)
Republic of Cameroon	9 (5-12)	0.2 (0.11-0.26)	18 (13-26)	0.13 (0.09-0.18)	100.00	-1.7 (-1.87--1.54)
Republic of Cabo Verde	0 (0-0)	0.04 (0.03-0.05)	1 (0-1)	0.11 (0.03-0.2)	100.00	3.86 (3.3-4.41)
Republic of Chad	4 (2-5)	0.13 (0.07-0.18)	7 (5-9)	0.1 (0.08-0.14)	75.00	-1.15 (-1.34--0.95)
Republic of Cote d'Ivoire	13 (10-17)	0.31 (0.24-0.38)	35 (25-49)	0.29 (0.22-0.39)	169.23	-3.1 (-3.21--2.99)
Republic of the Gambia	1 (0-1)	0.15 (0.11-0.2)	2 (1-3)	0.18 (0.13-0.24)	100.00	0.31 (0.14-0.48)
Republic of Ghana	3 (1-4)	0.04 (0.02-0.06)	8 (5-11)	0.05 (0.03-0.06)	166.67	0.31 (0.22-0.4)
Republic of Guinea	9 (8-12)	0.28 (0.22-0.35)	17 (12-24)	0.28 (0.21-0.37)	88.89	0.02 (-0.04-0.07)
Republic of Guinea-Bissau	1 (0-1)	0.21 (0.11-0.29)	1 (1-2)	0.15 (0.11-0.19)	0.00	-1.49 (-1.65--1.33)
Republic of Liberia	2 (1-3)	0.16 (0.08-0.22)	3 (2-4)	0.11 (0.08-0.15)	50.00	-1.52 (-1.67--1.37)
Republic of Mali	22 (18-27)	0.53 (0.43-0.64)	44 (32-63)	0.45 (0.33-0.64)	100.00	-0.54 (-0.62--0.45)
Islamic Republic of Mauritania	2 (1-2)	0.18 (0.1-0.24)	2 (2-4)	0.11 (0.08-0.15)	0.00	-2.13 (-2.31--1.96)
Republic of the Niger	4 (2-6)	0.14 (0.08-0.19)	8 (6-12)	0.09 (0.06-0.13)	100.00	-1.86 (-2.04--1.69)
Federal Republic of Nigeria	11 (7-21)	0.02 (0.02-0.05)	28 (18-50)	0.03 (0.02-0.05)	154.55	0.52 (0.42-0.62)

Democratic Republic of Sao Tome and Principe	0 (0-0)	0.05 (0.03-0.07)	0 (0-0)	0.05 (0.03-0.07)	0.00	0.45 (0.37-0.54)
Republic of Senegal	5 (3-7)	0.15 (0.08-0.21)	9 (6-13)	0.11 (0.07-0.16)	80.00	-1.46 (-1.6--1.32)
Republic of Sierra Leone	3 (1-4)	0.14 (0.07-0.19)	4 (3-6)	0.1 (0.07-0.13)	33.33	-1.26 (-1.44--1.09)
Togolese Republic	2 (1-3)	0.16 (0.08-0.22)	5 (3-7)	0.11 (0.08-0.16)	150.00	-1.34 (-1.48--1.2)
American Samoa	0 (0-0)	1.04 (0.74-1.34)	0 (0-1)	1.11 (0.7-1.47)	0.00	0.48 (0.23-0.74)
Bermuda	1 (0-1)	0.86 (0.78-0.95)	1 (1-1)	0.65 (0.54-0.82)	0.00	-0.88 (-1.35--0.4)
Cook Islands	0 (0-0)	0.65 (0.49-0.82)	0 (0-0)	0.45 (0.35-0.62)	0.00	-1.91 (-2.3--1.51)
Greenland	0 (0-0)	0.65 (0.51-0.8)	0 (0-0)	0.46 (0.3-0.61)	0.00	-0.39 (-0.85-0.07)
Guam	0 (0-0)	0.33 (0.26-0.53)	1 (0-1)	0.31 (0.23-0.36)	100.00	0.87 (0.17-1.57)
Principality of Monaco	0 (0-1)	0.56 (0.42-0.71)	1 (0-1)	0.51 (0.39-0.64)	100.00	-0.25 (-0.27--0.22)
Republic of Nauru	0 (0-0)	0.64 (0.47-0.83)	0 (0-0)	0.82 (0.51-1.16)	0.00	0.83 (0.67-1)
Republic of Niue	0 (0-0)	0.55 (0.41-0.7)	0 (0-0)	0.63 (0.44-0.8)	0.00	0.22 (0.14-0.3)
Northern Mariana Islands	0 (0-0)	0.36 (0.27-0.47)	0 (0-0)	0.46 (0.33-0.55)	0.00	1.21 (0.66-1.77)
Republic of Palau	0 (0-0)	0.69 (0.51-0.95)	0 (0-0)	0.68 (0.49-0.86)	0.00	0.07 (0-0.14)
Puerto Rico	20 (19-22)	0.57 (0.52-0.62)	28 (23-33)	0.4 (0.33-0.48)	40.00	-0.79 (-1.09--0.48)
Saint Kitts and Nevis	0 (0-0)	0.65 (0.6-0.71)	0 (0-0)	0.58 (0.48-0.69)	0.00	0.02 (-0.33-0.38)
Republic of San Marino	0 (0-0)	1.04 (0.84-1.27)	0 (0-1)	0.52 (0.33-0.73)	0.00	-1.36 (-1.68--1.04)
Tokelau	0 (0-0)	0.55 (0.4-0.75)	0 (0-0)	0.56 (0.37-0.73)	0.00	-0.03 (-0.12-0.06)
Tuvalu	0 (0-0)	0.58 (0.45-0.78)	0 (0-0)	0.58 (0.39-0.76)	0.00	-0.03 (-0.11-0.04)
United States Virgin Islands	0 (0-0)	0.37 (0.29-0.45)	0 (0-0)	0.22 (0.17-0.28)	0.00	-1.42 (-1.59--1.26)



Republic of South Sudan	16 (12-23)	0.6 (0.43-0.81)	32 (22-47)	0.77 (0.55-1.06)	100.00	0.84 (0.64-1.04)
Republic of Sudan	26 (12-64)	0.26 (0.12-0.66)	72 (48-104)	0.35 (0.24-0.52)	176.92	1.23 (1.06-1.41)

ASMR: age-standardized mortality rate; SDI: socio-demographic index; EAPC: estimated annual percentage change; UI: uncertainty interval; CI: confidence interval.

Supplementary Table 6 The DALYs and ASDR of thyroid cancer in 1990 and 2021, changes and EAPC from 1990 to 2021 at the 204 countries.

Characteristics	1990		2021		1990-2021	1990-2021
	DALYs case No. (95% UI)	ASDR per 100,000, No. (95% UI)	DALYs case No. (95% UI)	ASDR per 100,000 No. (95% UI)	Change (%)	EAPC (95% CI)
China	110736 (92143-130509)	12.09 (10.14-14.08)	203325 (163131-251789)	10.1 (8.14-12.45)	83.61	-0.58 (-0.69--0.47)
North Korea	2450 (1722-3326)	13.86 (9.89-18.74)	4350 (3110-6010)	13.12 (9.47-18.11)	77.55	-0.08 (-0.15--0.01)
Taiwan	3396 (3118-3701)	19.31 (17.76-20.84)	5934 (5142-6741)	15.58 (13.54-17.79)	74.73	-0.13 (-0.36-0.1)
Kingdom of Cambodia	1431 (945-1874)	27.23 (18.27-35.43)	4459 (2844-6152)	33.14 (21.33-45.39)	211.60	0.49 (0.36-0.62)
Indonesia	21968 (15720-26123)	19.02 (13.94-22.43)	55407 (36366-72736)	20.96 (14.04-27.27)	152.22	0.23 (0.11-0.36)
Lao	665 (399-961)	28.18 (17.06-40.18)	1378 (889-1922)	26.43 (17.28-36.29)	107.22	-0.35 (-0.4--0.3)
Malaysia	2437 (2029-2867)	22.88 (19.13-28.03)	6609 (5601-8034)	22.05 (18.64-27.06)	171.19	-0.27 (-0.38--0.16)
Maldives	15 (9-20)	14.47 (9.01-19.23)	29 (22-37)	7.59 (5.73-9.68)	93.33	-2.43 (-2.55--2.3)
Republic of the Union of Myanmar	6520 (4318-8598)	24.48 (16.76-32.08)	11496 (7886-15296)	22.18 (15.42-29.46)	76.32	-0.61 (-0.74--0.48)
Philippines	9966 (7534-12203)	28.17 (21.39-34.97)	30428 (24389-36937)	33.7 (27.26-40.74)	205.32	0.68 (0.64-0.71)
Sri Lanka	2479 (1922-2922)	20.98 (16.07-24.73)	4044 (2524-5800)	15 (9.42-21.37)	63.13	-1.36 (-1.57--1.15)
Kingdom of Thailand	7828 (6437-10637)	19.78 (16.14-27.11)	17720 (13111-26321)	17.12 (12.66-25.43)	126.37	-0.99 (-1.24--0.74)
Democratic Republic of Timor-Leste	65 (40-92)	18.59 (11.94-26.1)	186 (120-266)	20.27 (13-29.18)	186.15	0.38 (0.21-0.54)
Socialist Republic of Viet Nam	9109 (6839-12595)	20.48 (15.17-29.5)	32388 (23961-42160)	31.06 (23.41-40.2)	255.56	1.9 (1.69-2.12)
Republic of Fiji	155 (100-202)	36.35 (23.68-47.25)	275 (174-384)	34.05 (21.94-46.67)	77.42	-0.36 (-0.48--0.24)

Republic of Kiribati	0 (0-1)	0.72 (0.51-1.29)	1 (0-1)	0.73 (0.48-1.33)	100.00	-0.27 (-0.44--0.09)
Republic of the Marshall Islands	2 (2-3)	12.57 (10.21-15.9)	6 (4-9)	15.41 (10.29-21.2)	200.00	0.57 (0.39-0.76)
Federated States of Micronesia	8 (6-11)	15.3 (11.43-20.05)	13 (9-18)	16.18 (10.63-22.19)	62.50	0.14 (0.07-0.2)
Independent State of Papua New Guinea	214 (125-323)	9.82 (5.98-14.65)	652 (353-1085)	10.59 (5.9-17.58)	204.67	0.23 (0.17-0.29)
Independent State of Samoa	21 (15-30)	21.17 (15.45-32.99)	34 (25-49)	21.52 (15.74-32.1)	61.90	-0.02 (-0.07-0.03)
Solomon Islands	17 (9-26)	10.61 (5.98-15.97)	56 (35-83)	13.65 (8.63-20.3)	229.41	0.8 (0.72-0.88)
Kingdom of Tonga	6 (4-8)	9.66 (7.16-13.25)	10 (6-14)	11.56 (7.29-16.31)	66.67	0.54 (0.36-0.71)
Republic of Vanuatu	8 (5-11)	10.46 (7.27-14.54)	26 (17-35)	13.31 (9.05-17.54)	225.00	0.67 (0.59-0.75)
Republic of Armenia	397 (300-510)	13.69 (10.35-17.5)	892 (676-1144)	21.17 (16-27.26)	124.69	1.71 (1.29-2.13)
Republic of Azerbaijan	611 (462-826)	11.01 (8.34-14.68)	1056 (768-1421)	9.4 (6.92-12.41)	72.83	-0.57 (-0.68--0.46)
Georgia	910 (749-1100)	14.6 (11.98-17.7)	1404 (1152-1700)	25.82 (21.3-31.46)	54.29	2.28 (1.09-3.48)
Republic of Kazakhstan	4486 (4001-5042)	32.33 (28.69-36.47)	3222 (2644-3826)	16.93 (13.88-20.07)	-28.18	-2.69 (-3.27--2.1)
Kyrgyz Republic	706 (553-885)	21.45 (16.85-26.79)	866 (655-1131)	15.73 (12.03-20.42)	22.66	-0.79 (-1.63-0.05)
Mongolia	233 (173-328)	19.13 (14.25-26.58)	436 (334-576)	15.88 (12.15-20.89)	87.12	-1.02 (-1.45--0.58)
Republic of Tajikistan	6 (4-8)	0.19 (0.13-0.27)	9 (6-12)	0.12 (0.09-0.17)	50.00	-1.69 (-1.83--1.56)
Turkmenistan	433 (391-479)	19.08 (17.28-21.12)	638 (488-832)	13.87 (10.72-17.88)	47.34	-1.23 (-2.17--0.27)
Republic of Uzbekistan	364 (275-478)	2.79 (2.12-3.67)	1750 (1291-2371)	5.83 (4.33-7.83)	380.77	2.39 (1.75-3.03)
Republic of Albania	386 (279-489)	16.77 (12.12-21.02)	444 (319-631)	10.85 (7.71-15.44)	15.03	-1.29 (-1.5--1.09)
Bosnia and Herzegovina	656 (470-776)	15.08 (10.79-17.73)	571 (428-739)	9.73 (7.3-12.68)	-12.96	-1.8 (-2.04--1.56)
Republic of Bulgaria	2325 (1968-2734)	19.64 (16.62-23.1)	1633 (1292-2071)	13.21 (10.41-16.66)	-29.76	-0.93 (-1.21--0.66)

Republic of Croatia	1410 (1256-1602)	23.21 (20.64-26.21)	878 (738-1041)	10.87 (9.09-13)	-37.73	-2.19 (-2.34--2.04)
Czech Republic	2935 (2495-3470)	22 (18.72-25.97)	2021 (1579-2538)	10.54 (8.15-13.35)	-31.14	1.01 (0.62-1.4)
Hungary	3700 (3246-4176)	26.51 (23.26-29.79)	2039 (1662-2491)	11.83 (9.7-14.24)	-44.89	-2.8 (-3.07--2.53)
North Macedonia	345 (261-402)	17.73 (13.45-20.61)	397 (310-504)	12.2 (9.61-15.4)	15.07	-1.49 (-1.61--1.36)
Montenegro	106 (85-135)	16.53 (13.31-20.99)	156 (123-195)	16.71 (13.34-20.93)	47.17	0 (-0.14-0.15)
Republic of Poland	14357 (13755-14939)	33.13 (31.72-34.52)	7939 (7126-8700)	12.01 (10.76-13.22)	-44.70	-3.52 (-4.09--2.94)
Romania	4717 (4142-5397)	17.12 (15.02-19.5)	3696 (2905-4596)	11.05 (8.6-13.84)	-21.65	-1.91 (-2.23--1.6)
Republic of Serbia	1639 (1255-2155)	14.92 (11.48-19.67)	1825 (1328-2426)	11.88 (8.63-15.81)	11.35	-1.04 (-1.2--0.88)
Slovak Republic	1205 (975-1457)	20.47 (16.55-24.86)	1168 (912-1529)	13.12 (10.21-17.2)	-3.07	-1.61 (-1.71--1.5)
Republic of Slovenia	447 (378-521)	18.46 (15.63-21.53)	326 (239-428)	8.06 (5.89-10.64)	-27.07	-2.47 (-2.71--2.22)
Republic of Belarus	1631 (1361-1958)	13.15 (11-15.71)	2160 (1693-2771)	14.17 (11.08-18.17)	32.43	-0.28 (-0.81-0.25)
Republic of Estonia	311 (244-396)	15.98 (12.55-20.34)	331 (253-421)	13.61 (10.34-17.3)	6.43	-0.72 (-1.13--0.3)
Republic of Latvia	469 (371-593)	13.96 (10.98-17.69)	614 (471-781)	17.34 (13.23-22.31)	30.92	0.41 (0.02-0.8)
Republic of Lithuania	569 (477-691)	13.2 (11.01-16.1)	720 (587-877)	14.31 (11.61-17.28)	26.54	0.01 (-0.48-0.49)
Republic of Moldova	584 (523-648)	12.97 (11.62-14.38)	661 (557-783)	11.54 (9.77-13.67)	13.18	-0.36 (-0.6--0.11)
Russian Federation	25897 (24804-27029)	14.57 (13.94-15.2)	28639 (26154-31382)	12.77 (11.67-14.03)	10.59	-0.37 (-0.8-0.07)
Ukraine	8468 (7069-10308)	12.25 (10.28-14.82)	8961 (6370-12155)	12.78 (9.03-17.2)	5.82	-0.14 (-0.49-0.2)
Brunei Darussalam	32 (24-43)	27.92 (20.84-36.49)	82 (64-104)	22.28 (17.38-28.15)	156.25	-0.24 (-0.39--0.09)
Japan	24889 (23406-26351)	14.82 (13.9-15.7)	38321 (32740-42214)	11.45 (10.21-12.54)	53.97	-0.87 (-0.98--0.75)
Republic of Korea	5529 (4125-9409)	17.28 (12.86-30.63)	11532 (9175-16858)	12.98 (10.35-18.94)	108.57	-0.66 (-1.31--0.01)
Republic of Singapore	406 (347-467)	17.13 (14.58-19.76)	848 (708-1036)	10.05 (8.38-12.27)	108.87	-1.52 (-1.76--1.29)
Australia	2037 (1785-2327)	10.62 (9.29-12.12)	4318 (3467-5259)	10.82 (8.7-13.31)	111.98	0.75 (0.45-1.06)
New Zealand	507 (435-596)	13.22 (11.35-15.53)	723 (590-844)	9.53 (7.81-11.11)	42.60	-0.62 (-0.99--0.24)

Principality of Andorra	9 (6-12)	14.68 (10.38-20.19)	14 (10-20)	9.61 (6.48-13.85)	55.56	-1.03 (-1.2--0.87)
Republic of Austria	2606 (2347-2869)	23.65 (21.24-26.19)	2260 (1875-2671)	13.96 (11.55-16.63)	-13.28	-1.68 (-1.75--1.61)
Kingdom of Belgium	2722 (2345-3161)	18.87 (16.28-21.95)	2412 (1983-2910)	11.96 (9.82-14.53)	-11.39	-1.29 (-1.49--1.08)
Republic of Cyprus	169 (133-212)	22.34 (17.63-27.42)	206 (157-276)	10.48 (7.95-13.94)	21.89	-2.42 (-2.73--2.1)
Kingdom of Denmark	799 (696-907)	10.88 (9.48-12.35)	738 (617-876)	6.78 (5.63-8.04)	-7.63	-1.33 (-1.71--0.95)
Republic of Finland	1243 (1099-1408)	18.31 (16.13-20.81)	1042 (859-1255)	9.67 (7.99-11.78)	-16.17	-1.67 (-2.1--1.24)
French Republic	14236 (12841-15725)	18.86 (16.97-20.88)	12915 (10513-15390)	11.36 (9.22-13.7)	-9.28	-1.41 (-1.95--0.85)
Federal Republic of Germany	24312 (21483-27655)	20.33 (17.96-23.13)	18569 (15500-22065)	11.18 (9.28-13.35)	-23.62	-1.79 (-2.01--1.57)
Hellenic Republic	1855 (1715-2017)	12.69 (11.74-13.81)	2060 (1814-2306)	10.15 (8.99-11.41)	11.05	-0.82 (-0.89--0.75)
Republic of Iceland	103 (91-117)	37.56 (33.09-42.55)	103 (86-124)	19.51 (16.19-23.68)	0.00	-1.54 (-2.05--1.03)
Ireland	695 (616-779)	17.35 (15.39-19.49)	644 (533-773)	8.69 (7.22-10.43)	-7.34	-1.43 (-1.74--1.13)
State of Israel	1067 (924-1254)	22.34 (19.31-26.3)	1538 (1274-1856)	13.2 (10.95-15.93)	44.14	-1.72 (-2.08--1.36)
Republic of Italy	18163 (16824-19562)	22.02 (20.38-23.83)	14513 (12904-16260)	11.82 (10.57-13.33)	-20.10	-1.95 (-2.07--1.84)
Grand Duchy of Luxembourg	141 (129-154)	27.13 (24.74-29.64)	129 (113-146)	12.7 (11.11-14.49)	-8.51	-2.26 (-2.38--2.14)
Republic of Malta	84 (72-98)	19.71 (16.96-22.93)	94 (77-113)	11.17 (9.12-13.62)	11.90	-1.71 (-2.06--1.37)
Kingdom of the Netherlands	2330 (2092-2598)	12.13 (10.9-13.54)	2943 (2455-3413)	9.3 (7.75-10.9)	26.31	-0.51 (-0.66--0.36)
Kingdom of Norway	829 (773-885)	13.24 (12.33-14.13)	897 (791-999)	9.53 (8.46-10.62)	8.20	-0.73 (-1.04--0.42)
Portuguese Republic	2431 (2140-2815)	18.35 (16.18-21.15)	2128 (1721-2631)	10.08 (8.04-12.47)	-12.46	-1.78 (-1.95--1.61)
Kingdom of Spain	7640 (6940-8375)	15 (13.64-16.47)	7707 (6510-9240)	8.78 (7.47-10.53)	0.88	-1.52 (-1.66--1.38)
Kingdom of Sweden	1853 (1599-2139)	13.22 (11.42-15.16)	1724 (1405-2081)	8.68 (7.15-10.36)	-6.96	-0.86 (-1.11--0.6)
Swiss Confederation	1403 (1262-1558)	14.62 (13.15-16.23)	1207 (1010-1424)	7.21 (6.06-8.48)	-13.97	-2.09 (-2.58--1.6)

United Kingdom of Great Britain and Northern Ireland	9922 (9516-10281)	12.11 (11.64-12.57)	10527 (9828- 11130)	9.18 (8.66-9.72)	6.10	-0.51 (-0.66--0.35)
Argentine Republic	6509 (5852-7259)	20.02 (17.98-22.35)	7616 (6431-8935)	14.11 (11.9-16.58)	17.01	-0.98 (-1.27--0.68)
Republic of Chile	2262 (1916-2622)	21.29 (18.06-24.61)	3431 (2962-4039)	13.86 (11.98-16.33)	51.68	-1.34 (-1.62--1.07)
Eastern Republic of Uruguay	721 (601-864)	19.36 (16.04-23.33)	912 (764-1096)	18.47 (15.5-22.26)	26.49	-0.14 (-0.23--0.04)
Canada	3676 (3191-4193)	11.6 (10.05-13.25)	6156 (5054-7395)	9.56 (7.82-11.63)	67.46	-0.81 (-1--0.63)
United States of America	33632 (31573-35774)	11.2 (10.5-11.94)	64477 (59384- 69967)	12.25 (11.32-13.38)	91.71	0.31 (0.21-0.42)
Antigua and Barbuda	8 (8-9)	15.55 (14.22-16.85)	21 (20-22)	19.3 (17.98-20.55)	162.50	0.87 (0.4-1.33)
Commonwealth of the Bahamas	34 (31-37)	18.96 (17.21-20.76)	92 (73-115)	21.22 (17.11-26.47)	170.59	0.78 (0.45-1.12)
Barbados	43 (40-47)	15.93 (14.76-17.13)	81 (63-100)	16.74 (13.18-20.9)	88.37	0.45 (0.25-0.65)
Belize	7 (7-8)	7.01 (6.55-7.6)	37 (33-42)	10.84 (9.53-12.22)	428.57	1.49 (1.26-1.72)
Republic of Cuba	1340 (1234-1449)	12.87 (11.83-13.9)	3156 (2663-3717)	17.16 (14.41-20.24)	135.52	0.01 (-0.08-0.1)
Commonwealth of Dominica	9 (7-11)	14.97 (12.64-18.13)	13 (10-16)	15.49 (12.27-19.26)	44.44	0.3 (0.18-0.42)
Dominican Republic	538 (439-634)	12.28 (9.95-14.54)	1401 (1058-1823)	13.43 (10.12-17.5)	160.41	0.63 (0.5-0.76)
Grenada	16 (14-18)	23.65 (20.65-26.69)	25 (22-30)	21.93 (18.74-25.65)	56.25	0.28 (-0.13-0.7)
Republic of Guyana	69 (60-78)	15.56 (13.71-17.47)	133 (99-175)	18.8 (14.1-24.64)	92.75	1.01 (0.82-1.19)
Republic of Haiti	886 (589-1233)	23.09 (15.97-31.89)	1711 (1179-2385)	19.82 (13.88-27.16)	93.12	-0.32 (-0.39--0.25)
Jamaica	219 (197-242)	12.26 (11.04-13.52)	523 (391-689)	16.99 (12.74-22.34)	138.81	1.08 (0.72-1.45)
Saint Lucia	22 (20-23)	23.94 (22.28-25.7)	49 (40-59)	20.68 (17.1-24.9)	122.73	-0.71 (-1.26--0.17)
Saint Vincent and the Grenadines	19 (18-21)	25.78 (23.72-27.8)	42 (36-48)	29.81 (26.07-34.34)	121.05	0.72 (0.26-1.19)

Republic of Suriname	41 (33-49)	14.77 (11.95-17.22)	84 (63-108)	13.08 (9.69-16.8)	104.88	-0.01 (-0.19-0.17)
Republic of Trinidad and Tobago	157 (149-167)	17.65 (16.73-18.71)	320 (242-416)	17.15 (13.04-22.26)	103.82	-0.21 (-0.45-0.04)
Plurinational State of Bolivia	1427 (937-1921)	39.43 (25.3-53.59)	3696 (2427-5129)	38.44 (25.3-53.29)	159.00	-0.15 (-0.19--0.11)
Republic of Ecuador	1019 (940-1108)	17.01 (15.62-18.55)	5195 (4038-6572)	31.14 (24.18-39.39)	409.81	2.14 (1.64-2.65)
Republic of Peru	2828 (2290-3467)	21.26 (16.97-25.89)	7799 (5517-10575)	22.79 (16.03-30.92)	175.78	0.03 (-0.17-0.22)
Republic of Colombia	5305 (4898-5759)	26.49 (24.41-28.75)	12032 (9856-14969)	21.87 (17.9-27.21)	126.80	-0.86 (-1.22--0.49)
Republic of Costa Rica	375 (342-410)	19.33 (17.63-21.07)	996 (852-1160)	18.14 (15.55-21.07)	165.60	-0.71 (-0.99--0.42)
Republic of El Salvador	682 (531-758)	21.21 (16.27-23.63)	1290 (1004-1605)	21.06 (16.34-26.22)	89.15	-0.02 (-0.22-0.18)
Republic of Guatemala	847 (809-889)	20.63 (19.63-21.66)	2262 (1942-2614)	19.16 (16.49-22.1)	167.06	-0.74 (-1.12--0.37)
Republic of Honduras	177 (140-217)	7.3 (5.61-8.85)	693 (491-945)	10.2 (7.2-13.85)	291.53	1.09 (0.92-1.25)
United Mexican States	8879 (8596-9172)	18.74 (18.12-19.32)	28243 (25014-31949)	21.66 (19.22-24.46)	218.09	0.42 (0.27-0.57)
Republic of Nicaragua	219 (187-265)	11.98 (10.09-14.36)	706 (533-886)	13.56 (10.17-16.99)	222.37	0.66 (0.5-0.82)
Republic of Panama	298 (264-335)	17.09 (15.14-19.08)	754 (591-939)	17.09 (13.4-21.28)	153.02	-0.05 (-0.36-0.26)
Bolivarian Republic of Venezuela	1511 (1422-1613)	14.07 (13.1-15.03)	5210 (3929-6793)	17.23 (13.04-22.39)	244.80	0.42 (0.27-0.58)
Federative Republic of Brazil	14582 (13822-15388)	14.7 (13.93-15.51)	31442 (29327-33410)	12.5 (11.64-13.27)	115.62	-0.69 (-0.79--0.58)
Republic of Paraguay	439 (375-539)	17.89 (15.22-21.8)	1239 (917-1607)	20.37 (15.02-26.35)	182.23	0.52 (0.45-0.59)
People's Democratic Republic of Algeria	1497 (1187-1898)	9.94 (7.86-13.16)	4579 (3315-5894)	11.64 (8.56-14.82)	205.88	0.87 (0.71-1.03)
Kingdom of Bahrain	49 (40-63)	23.82 (19.43-29.74)	192 (139-257)	18.71 (13.35-24.44)	291.84	-0.77 (-0.94--0.6)

Arab Republic of Egypt	3140 (2666-4264)	9.79 (8.23-13.84)	8330 (6475-10542)	11.67 (9.15-14.57)	165.29	0.89 (0.73-1.06)
Islamic Republic of Iran	1384 (1003-1668)	4.44 (3.1-5.42)	7843 (3433-9780)	9.25 (4.1-11.5)	466.69	3.8 (3.19-4.41)
Republic of Iraq	1415 (1039-2153)	14.16 (10.26-21.98)	4748 (3483-6435)	16.41 (12.03-21.58)	235.55	0.69 (0.52-0.87)
Hashemite Kingdom of Jordan	277 (217-364)	15.6 (12.39-20.62)	1171 (850-1612)	13.1 (9.78-17.77)	322.74	-0.53 (-0.8--0.26)
State of Kuwait	138 (122-158)	14.56 (12.99-16.51)	498 (400-621)	12.78 (10.43-15.68)	260.87	0.28 (-0.62-1.19)
Lebanese Republic	327 (246-430)	13.91 (10.49-18.23)	696 (551-915)	11.55 (9.15-15.27)	112.84	-0.33 (-0.48--0.18)
State of Libya	369 (275-495)	15.49 (11.38-21.64)	1214 (866-1658)	18.84 (13.79-25.12)	229.00	1.04 (0.86-1.22)
Kingdom of Morocco	1387 (1106-1730)	8.16 (6.57-10.03)	3472 (2536-4660)	9.48 (6.99-12.62)	150.32	0.61 (0.54-0.68)
Palestine	179 (119-243)	18.7 (12.1-25.39)	453 (285-561)	15.78 (9.76-19.57)	153.07	-0.39 (-0.53--0.25)
Sultanate of Oman	67 (48-90)	7.37 (5.37-9.76)	240 (160-315)	8.44 (5.76-10.7)	258.21	1.08 (0.81-1.35)
State of Qatar	35 (26-45)	23.08 (17.71-28.34)	256 (173-362)	18.08 (13.01-24.33)	631.43	-0.43 (-0.75--0.11)
Kingdom of Saudi Arabia	1168 (807-1809)	14.35 (10.12-23.55)	6726 (4969-8948)	21.57 (16.58-27.41)	475.86	1.67 (1.43-1.9)
Syrian Arab Republic	406 (226-945)	6.22 (3.49-14.32)	1392 (928-2093)	9.86 (6.67-14.87)	242.86	1.65 (1.55-1.75)
Republic of Tunisia	559 (428-722)	9.68 (7.43-12.62)	1429 (997-1964)	10.69 (7.49-14.54)	155.64	0.36 (0.29-0.44)
Republic of Turkey	7070 (5523-9242)	18.17 (14.36-23.51)	13414 (10490-17275)	14.15 (11.11-18.25)	89.73	-0.82 (-0.98--0.67)
United Arab Emirates	192 (132-267)	31.4 (21.27-43.6)	1117 (844-1470)	25.39 (19.97-32.27)	481.77	0.94 (0.44-1.44)
Republic of Yemen	375 (205-839)	6.3 (3.36-14.52)	1730 (1181-2456)	9.81 (6.62-14.24)	361.33	1.78 (1.58-1.99)
Islamic Republic of Afghanistan	1015 (366-2818)	13.71 (5.04-38.24)	3097 (1459-5106)	22.4 (10.66-36.19)	205.12	1.92 (1.78-2.06)
People's Republic of Bangladesh	9753 (7403-13331)	15.05 (11.67-20.44)	22092 (13982-37366)	14.52 (9.31-23.99)	126.51	-0.01 (-0.09-0.08)



Kingdom of Bhutan	54 (35-75)	15.54 (10.34-22.22)	111 (73-173)	16.31 (10.91-24.8)	105.56	-0.03 (-0.1-0.04)
Republic of India	77650 (64371-102706)	13.04 (10.89-17.06)	225288 (186617-264478)	17.18 (14.23-20.03)	190.13	1 (0.94-1.05)
Federal Democratic Republic of Nepal	1744 (1215-2470)	14.16 (10.09-20.24)	4465 (3038-6631)	16.91 (11.7-24.57)	156.02	0.72 (0.53-0.91)
Islamic Republic of Pakistan	16101 (12902-20531)	22.88 (18.83-29.03)	50302 (36509-67210)	30.24 (22.56-39.58)	212.42	0.63 (0.39-0.86)
Republic of Angola	439 (313-613)	8.93 (6.24-12.83)	1363 (835-2151)	9.18 (5.62-14.52)	210.48	0.18 (0.09-0.28)
Central African Republic	160 (119-228)	11.63 (8.8-16.3)	274 (181-412)	9.91 (6.57-14.75)	71.25	-0.59 (-0.64--0.53)
Republic of the Congo	155 (117-219)	12.66 (9.4-17.54)	377 (237-570)	11.41 (7.42-16.92)	143.23	-0.49 (-0.62--0.36)
Democratic Republic of the Congo	1689 (1187-2524)	9.04 (6.33-13.78)	3735 (2320-6051)	8.48 (5.11-13.87)	121.14	-0.21 (-0.37--0.04)
Republic of Equatorial Guinea	23 (16-33)	10.23 (7.15-14.76)	70 (39-113)	10.51 (6.03-16.64)	204.35	0.16 (-0.01-0.34)
Gabonese Republic	79 (59-107)	12.92 (9.75-17.54)	137 (94-199)	11.51 (7.97-16.55)	73.42	-0.57 (-0.67--0.46)
Republic of Burundi	809 (579-1135)	26.01 (18.59-35.94)	1441 (922-2229)	19.87 (12.99-29.54)	78.12	-1.22 (-1.4--1.05)
Union of the Comoros	54 (34-82)	20.21 (13.69-29.54)	129 (85-205)	21.93 (14.61-34.31)	138.89	0.08 (-0.12-0.28)
Republic of Djibouti	35 (23-52)	16.76 (11.54-24.62)	174 (105-292)	20.23 (12.87-32.11)	397.14	0.66 (0.58-0.74)
State of Eritrea	385 (311-493)	22.91 (18.99-28.9)	993 (661-1519)	25.66 (17.91-37.05)	157.92	0.5 (0.44-0.55)
Federal Democratic Republic of Ethiopia	17175 (12843-23141)	62.86 (47.63-83.42)	27067 (18222-42992)	44.18 (29.77-67.38)	57.60	-1.54 (-1.73--1.34)
Republic of Kenya	597 (404-889)	5.23 (3.56-7.83)	2343 (1703-3531)	7.67 (5.67-11.34)	292.46	1.78 (1.55-2.02)
Republic of Madagascar	1258 (1006-1595)	18.2 (14.57-22.86)	3181 (2163-4358)	18.54 (12.74-25.28)	152.86	0.13 (-0.01-0.27)
Republic of Malawi	961 (716-1263)	17.43 (13.21-22.06)	2326 (1484-3629)	21.44 (14.15-30.95)	142.04	0.73 (0.53-0.92)

Republic of Mauritius	119 (111-127)	15.34 (14.38-16.42)	166 (150-181)	9.02 (8.2-9.82)	39.50	-1.14 (-1.94--0.33)
Republic of Mozambique	1439 (973-2248)	18.37 (12.82-27.82)	4051 (2551-7149)	24.84 (16.06-41.73)	181.51	1.42 (1.24-1.59)
Republic of Rwanda	1252 (952-1658)	30.98 (23.65-41.16)	1900 (1295-2834)	22.54 (15.76-32.31)	51.76	-1.7 (-1.97--1.43)
Republic of Seychelles	5 (4-6)	8.31 (6.85-10.11)	9 (7-10)	7.09 (5.76-8.48)	80.00	-0.55 (-0.83--0.27)
Federal Republic of Somalia	765 (507-1073)	20.71 (13.91-28.87)	2148 (1384-3069)	22.46 (14.84-31.56)	180.78	0.36 (0.31-0.41)
United Republic of Tanzania	2964 (2183-4094)	20.63 (15.39-28)	7527 (5071-10971)	21.75 (15.16-30.68)	153.95	0.22 (0.12-0.32)
Republic of Uganda	1851 (1344-2515)	21.92 (16.13-29.53)	8250 (5658-11489)	37.64 (26.66-50.76)	345.71	1.6 (1.39-1.82)
Republic of Zambia	921 (741-1147)	21.77 (17.64-26.94)	3696 (1725-7111)	34.06 (17.29-60.99)	301.30	1.62 (1.29-1.96)
Republic of Botswana	84 (55-131)	12.63 (8.43-19.35)	196 (124-310)	11.54 (7.59-17.64)	133.33	0.02 (-0.26-0.31)
Kingdom of Lesotho	95 (66-147)	10.28 (7.16-16.16)	215 (146-320)	17.72 (12.22-26.13)	126.32	2.58 (2.14-3.02)
Republic of Namibia	78 (61-100)	9.76 (7.65-12.82)	216 (147-304)	12.93 (9.05-17.74)	176.92	0.91 (0.75-1.07)
Republic of South Africa	2554 (2150-3097)	10.25 (8.46-12.69)	5941 (5046-6947)	11.87 (9.91-13.62)	132.62	0.55 (0.36-0.73)
Kingdom of Eswatini	55 (41-76)	15.44 (11.6-21.42)	133 (82-196)	19.6 (12.48-28.9)	141.82	0.97 (0.55-1.39)
Republic of Zimbabwe	1169 (892-1464)	23.87 (18.71-29.83)	3552 (2372-4763)	38.88 (27.41-50.69)	203.85	2.29 (1.69-2.89)
Republic of Benin	108 (63-151)	4.24 (2.37-5.91)	219 (144-320)	2.87 (1.96-4.12)	102.78	-1.63 (-1.81--1.46)
Burkina Faso	261 (137-362)	4.94 (2.52-6.9)	430 (272-597)	3.3 (2.17-4.48)	64.75	-1.58 (-1.77--1.4)
Republic of Cameroon	321 (178-425)	5.62 (3.05-7.34)	715 (473-1035)	3.86 (2.63-5.53)	122.74	-1.54 (-1.69--1.39)
Republic of Cabo Verde	2 (2-3)	1.03 (0.8-1.4)	20 (4-41)	3.82 (0.84-7.51)	900.00	4.4 (3.62-5.18)
Republic of Chad	128 (73-180)	3.77 (2.1-5.28)	288 (203-397)	3.12 (2.25-4.14)	125.00	-0.9 (-1.07--0.72)
Republic of Côte d'Ivoire	522 (381-672)	8.58 (6.5-10.8)	1391 (962-1981)	8.33 (5.93-11.46)	166.48	-2.63 (-2.78--2.48)

Republic of the Gambia	21 (15-27)	4.18 (3.11-5.54)	69 (48-94)	5.09 (3.62-6.88)	228.57	0.37 (0.16-0.58)
Republic of Ghana	113 (56-170)	1.2 (0.63-1.71)	302 (184-459)	1.32 (0.83-1.85)	167.26	0.21 (0.11-0.32)
Republic of Guinea	309 (242-393)	7.9 (6.27-10.03)	625 (438-893)	8.12 (5.79-11.23)	102.27	0.06 (0.02-0.1)
Republic of Guinea-Bissau	35 (19-49)	6.4 (3.43-8.87)	52 (38-73)	4.5 (3.23-6.03)	48.57	-1.43 (-1.56--1.29)
Republic of Liberia	66 (35-89)	4.6 (2.31-6.27)	113 (73-160)	3.39 (2.32-4.72)	71.21	-1.24 (-1.4--1.07)
Republic of Mali	799 (641-969)	15.66 (12.73-18.88)	1657 (1138-2416)	13.22 (9.33-18.87)	107.38	-0.58 (-0.67--0.48)
Islamic Republic of Mauritania	57 (32-76)	4.88 (2.62-6.53)	84 (58-120)	3.1 (2.14-4.47)	47.37	-1.94 (-2.1--1.78)
Republic of the Niger	160 (89-218)	3.99 (2.14-5.38)	324 (203-472)	2.59 (1.71-3.74)	102.50	-1.78 (-1.95--1.6)
Federal Republic of Nigeria	372 (242-670)	0.67 (0.43-1.25)	1006 (646-1797)	0.8 (0.52-1.45)	170.43	0.59 (0.47-0.71)
Democratic Republic of Sao Tome and Principe	2 (1-4)	1.97 (0.76-3.25)	4 (1-7)	2.04 (1.03-3.29)	100.00	0.24 (0.15-0.34)
Republic of Senegal	180 (96-265)	4.29 (2.22-6.16)	315 (210-475)	3.1 (2.09-4.65)	75.00	-1.32 (-1.45--1.19)
Republic of Sierra Leone	93 (47-132)	3.73 (1.84-5.32)	161 (98-237)	2.95 (1.86-4.22)	73.12	-0.93 (-1.07--0.78)
Togolese Republic	80 (45-116)	4.46 (2.33-6.28)	177 (113-271)	3.31 (2.16-4.97)	121.25	-1.24 (-1.36--1.12)
American Samoa	5 (4-7)	22.57 (16.87-29.1)	12 (8-16)	25.54 (16.96-32.93)	140.00	0.67 (0.4-0.95)
Bermuda	14 (12-15)	21.39 (19.4-23.57)	21 (17-26)	17.36 (14.23-21.83)	50.00	-0.68 (-1.15--0.2)
Cook Islands	2 (2-3)	16.5 (12.32-20.59)	3 (2-4)	11.84 (9.02-16.99)	50.00	-1.78 (-2.16--1.39)
Greenland	7 (5-9)	16.48 (12.69-20.92)	8 (5-11)	11.05 (7.6-14.82)	14.29	-0.51 (-1--0.02)
Guam	5 (4-9)	6.95 (5.55-11.51)	19 (15-23)	9.62 (7.31-11.28)	280.00	2.01 (1.26-2.76)
Principality of Monaco	9 (7-11)	14.39 (10.97-18.39)	11 (8-14)	13.72 (10.09-17.8)	22.22	-0.09 (-0.13--0.05)

Republic of Nauru	1 (1-1)	16.77 (11.72-22.4)	1 (1-2)	21.11 (12.91-30.25)	0.00	0.75 (0.58-0.93)
Republic of Niue	0 (0-0)	12.87 (9.56-16.73)	0 (0-0)	16.08 (10.92-20.69)	0.00	0.34 (0.24-0.44)
Northern Mariana Islands	2 (1-3)	8.23 (6.19-11.54)	6 (4-6)	10.3 (7.98-12.01)	200.00	1.24 (0.66-1.83)
Republic of Palau	2 (1-2)	15.98 (11.9-21.74)	3 (2-5)	15.58 (11.11-19.88)	50.00	-0.01 (-0.07-0.05)
Puerto Rico	539 (494-587)	14.96 (13.68-16.29)	668 (545-811)	11.82 (9.59-14.45)	23.93	-0.48 (-0.78--0.17)
Saint Kitts and Nevis	6 (6-7)	17.18 (15.62-18.72)	10 (8-13)	14.35 (11.8-17.23)	66.67	-0.3 (-0.69-0.11)
Republic of San Marino	8 (7-10)	25.4 (20.44-31.07)	9 (5-13)	13.93 (8.41-20.08)	12.50	-1.07 (-1.39--0.76)
Tokelau	0 (0-0)	13.44 (9.5-18.79)	0 (0-0)	15.15 (9.96-19.99)	0.00	0.11 (0-0.23)
Tuvalu	1 (1-1)	14.43 (11.11-19.18)	2 (1-2)	14.47 (9.73-19.24)	100.00	-0.02 (-0.1-0.06)
United States Virgin Islands	9 (7-11)	9.6 (7.65-11.87)	9 (7-12)	6.61 (4.91-8.7)	0.00	-0.86 (-1--0.73)
Republic of South Sudan	558 (388-796)	17.11 (12.19-23.96)	1208 (819-1791)	22.37 (15.4-32.27)	116.49	0.88 (0.64-1.13)
Republic of Sudan	883 (385-2238)	7.73 (3.49-19.21)	2659 (1707-4050)	10.31 (6.85-15.3)	201.13	1.24 (1.08-1.41)

DALYs: disability-adjusted life years; ASDR: age-standardized DALYs rate; SDI: socio-demographic index; EAPC: estimated annual percentage change; UI: uncertainty interval; CI: confidence interval.

Supplementary Table 7 Global incidence of thyroid cancer in different age groups in 1990 and 2021

Age	Metric	1990			2021		
		Val	Upper	Lower	Val	Upper	Lower
<5 years	Number	0	0	0	0	0	0
<5 years	Rate	0	0	0	0	0	0
5-9 years	Number	578.6696	672.7678	487.6262	664.5258	829.606	530.2463
5-9 years	Rate	0.099167	0.115293	0.083565	0.096721	0.120748	0.077177
10-14 years	Number	888.2755	993.4365	766.9221	1393.638	1642.726	1124.977
10-14 years	Rate	0.165821	0.185452	0.143167	0.209055	0.24642	0.168754
15-19 years	Number	1514.454	1780.463	1346.41	2847.806	3807.82	2300.654
15-19 years	Rate	0.291564	0.342777	0.259212	0.456394	0.610247	0.368706
20-24 years	Number	2336.912	2733.941	2039.788	5230.91	6995.205	4272.3
20-24 years	Rate	0.474897	0.55558	0.414517	0.875967	1.171416	0.715439
25-29 years	Number	3468.526	4167.757	3054.652	8424.128	10459.47	7046.593
25-29 years	Rate	0.783636	0.941611	0.69013	1.431839	1.777783	1.197701
30-34 years	Number	5021.8	5718.033	4525.795	13746.64	16483.65	11565.52
30-34 years	Rate	1.302934	1.483575	1.174243	2.274126	2.726913	1.9133
35-39 years	Number	6926.484	7658.095	6278.088	17953.77	20607.32	15590.74
35-39 years	Rate	1.966385	2.174085	1.78231	3.201079	3.674195	2.779762
40-44 years	Number	8060.929	8855.849	7418.809	22292.14	25265.7	19476.65
40-44 years	Rate	2.813768	3.091245	2.589628	4.456193	5.050606	3.893378
45-49 years	Number	8433.314	9106.192	7936.333	25792.41	28605.94	22822.18
45-49 years	Rate	3.631989	3.921778	3.417953	5.447129	6.041322	4.819844
50-54 years	Number	9965.692	10721.82	9459.519	29598.75	32544.88	26505.21
50-54 years	Rate	4.688161	5.043866	4.450042	6.652556	7.314722	5.957258
55-59 years	Number	10395.43	11218.22	9824.641	31041.73	33899.69	28006.8

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55-59 years	Rate	5.613082	6.057355	5.304883	7.844209	8.566411	7.077285
60-64 years	Number	9617.786	10318.65	9116.05	24819.65	27024.74	22334.5
60-64 years	Rate	5.988314	6.424692	5.675919	7.75498	8.44397	6.978489
65-69 years	Number	8154.946	8757.852	7682.278	22525.5	24574.37	20380.85
65-69 years	Rate	6.597348	7.085098	6.21496	8.166081	8.908851	7.388592
70-74 years	Number	5678.387	6187.755	5344.369	17754.98	19474.04	16072.65
70-74 years	Rate	6.707192	7.308848	6.312658	8.625654	9.460799	7.808351
75-79 years	Number	4782.612	5134.346	4453.935	12396.08	13425.79	11094.31
75-79 years	Rate	7.769592	8.341001	7.235639	9.399198	10.17997	8.412148
80-84 years	Number	2567.305	2798.309	2260.858	7176.968	7876.769	6185.319
80-84 years	Rate	7.257208	7.910206	6.39095	8.19447	8.993485	7.062233
85-89 years	Number	1165.349	1276.142	994.3927	4111.011	4574.436	3316.161
85-89 years	Rate	7.711888	8.445079	6.580557	8.991361	10.00494	7.252911
90-94 years	Number	270.3931	300.0885	224.3085	1329.28	1498.397	1036.608
90-94 years	Rate	6.309948	7.002925	5.234508	7.430559	8.375906	5.794545
95+ years	Number	58.19164	65.97765	43.87578	438.1165	510.8802	308.0974
95+ years	Rate	5.715786	6.480555	4.309632	8.03838	9.373417	5.652844

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Supplementary Table 8 Global mortality of thyroid cancer in different age groups in 1990 and 2021

Age	Metric	1990			2021		
		Val	Upper	Lower	Val	Upper	Lower
5-9 years	Number	67.55087	81.47928	54.55336	48.65642	60.49054	36.63219
5-9 years	Rate	0.011576	0.013963	0.009349	0.007082	0.008804	0.005332
10-14 years	Number	104.6125	120.1928	89.37995	102.6176	122.1263	80.01292
10-14 years	Rate	0.019529	0.022437	0.016685	0.015393	0.01832	0.012002
15-19 years	Number	176.6119	213.6605	156.3323	220.3677	302.1577	172.6705
15-19 years	Rate	0.034002	0.041134	0.030097	0.035316	0.048424	0.027672
20-24 years	Number	278.0515	332.04	236.4392	399.4416	543.8994	312.2237
20-24 years	Rate	0.056504	0.067476	0.048048	0.06689	0.091081	0.052285
25-29 years	Number	367.0108	460.9299	310.0738	561.9865	719.641	456.4891
25-29 years	Rate	0.082918	0.104137	0.070054	0.09552	0.122317	0.077589
30-34 years	Number	387.821	461.6691	338.4547	645.3229	788.1931	536.5553
30-34 years	Rate	0.100622	0.119783	0.087814	0.106757	0.130392	0.088763
35-39 years	Number	528.6553	603.0773	465.5188	825.1424	960.6011	700.7161
35-39 years	Rate	0.150082	0.17121	0.132158	0.147119	0.171271	0.124935
40-44 years	Number	703.6947	788.0097	633.6658	1171.002	1329.945	1001.133
40-44 years	Rate	0.245633	0.275065	0.221189	0.234083	0.265856	0.200126
45-49 years	Number	897.3935	997.3964	821.8975	1676.094	1874.87	1436.864
45-49 years	Rate	0.386482	0.42955	0.353968	0.353976	0.395956	0.303453
50-54 years	Number	1490.545	1643.545	1375.697	2705.866	2989.864	2318.825
50-54 years	Rate	0.701197	0.773173	0.647169	0.608165	0.671996	0.521174
55-59 years	Number	2052.229	2291.773	1901.139	3874.599	4233.475	3382.811
55-59 years	Rate	1.108115	1.237458	1.026533	0.979107	1.069794	0.854832
60-64 years	Number	2569.702	2833.05	2388.023	4482.394	4893.465	3910.497

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60-64 years	Rate	1.599972	1.763939	1.486853	1.400539	1.528979	1.221848
65-69 years	Number	2852.868	3160.915	2646.602	5510.544	6028.269	4823.245
65-69 years	Rate	2.307969	2.557179	2.1411	1.997716	2.185405	1.748553
70-74 years	Number	2706.864	3045.394	2519.116	5903.54	6542.517	5316.259
70-74 years	Rate	3.197291	3.597157	2.975528	2.868034	3.17846	2.582724
75-79 years	Number	2971.307	3255.841	2757.801	5870.968	6395.595	5225.014
75-79 years	Rate	4.827036	5.289275	4.480186	4.451601	4.849395	3.961813
80-84 years	Number	2171.408	2417.182	1940.421	5082.886	5565.152	4375.985
80-84 years	Rate	6.138096	6.832845	5.485146	5.803503	6.354142	4.996383
85-89 years	Number	1112.79	1228.214	958.5558	3380.226	3733.724	2765.242
85-89 years	Rate	7.364072	8.127909	6.3434	7.39303	8.166182	6.047975
90-94 years	Number	367.7803	407.1748	306.5406	1724.873	1936.055	1348.633
90-94 years	Rate	8.582595	9.501913	7.153494	9.641884	10.82237	7.538736
95+ years	Number	86.1445	97.56113	65.39061	612.0145	712.8497	428.9027
95+ years	Rate	8.461412	9.582793	6.422894	11.22899	13.07907	7.869328

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Supplementary Table 9 Global DALYs of thyroid cancer in different age groups in 1990 and 2021

Age	Metric	1990			2021		
		Val	Upper	Lower	Val	Upper	Lower
<5 years	Number	0	0	0	0	0	0
<5 years	Rate	0	0	0	0	0	0
5-9 years	Number	5895.458	7092.582	4801.54	4373.147	5464.42	3324.321
5-9 years	Rate	1.010308	1.21546	0.822843	0.636507	0.795341	0.483852
10-14 years	Number	8573.199	9841.192	7305.008	8681.427	10396.46	6763.244
10-14 years	Rate	1.600425	1.837131	1.363682	1.302274	1.559541	1.014533
15-19 years	Number	13589	16325.42	12003.99	17445.37	23856.36	13843.21
15-19 years	Rate	2.616169	3.142988	2.311021	2.795822	3.823258	2.218534
20-24 years	Number	20010.52	23847.58	16933.34	29684.91	40767.05	23236.77
20-24 years	Rate	4.066452	4.846204	3.441121	4.971029	6.826844	3.891225
25-29 years	Number	24799.19	30704.88	20933.97	39516.85	50905.05	32161.2
25-29 years	Rate	5.602823	6.937081	4.729561	6.716632	8.65227	5.466402
30-34 years	Number	24923.61	29770.87	21783.87	44197.88	54746.45	36679.08
30-34 years	Rate	6.466569	7.724217	5.651947	7.311717	9.056782	6.067871
35-39 years	Number	31399.98	36251.91	27538.16	52639.77	62026.03	43972.99
35-39 years	Rate	8.914259	10.29169	7.817912	9.385443	11.05897	7.840193
40-44 years	Number	37750.47	42695.08	33643.43	67282.84	77852.81	56736.52
40-44 years	Rate	13.17727	14.90325	11.74366	13.44982	15.56276	11.34162
45-49 years	Number	42784.68	47536.5	39187.29	85117.53	96823.82	72041.41
45-49 years	Rate	18.42615	20.47262	16.87685	17.97607	20.44834	15.21451
50-54 years	Number	61946.56	68231.57	56887.19	118457.1	132618	101552.2
50-54 years	Rate	29.14152	32.09818	26.76144	26.62419	29.80696	22.82467
55-59 years	Number	73868.99	82004.56	68218	145555	160459.7	126949.9

55-59 years	Rate	39.88607	44.27893	36.83478	36.78158	40.54798	32.08009
60-64 years	Number	78881.4	87155.4	73477.88	141977.3	155871.4	123330.3
60-64 years	Rate	49.11386	54.2655	45.74947	44.36128	48.70252	38.53497
65-69 years	Number	73161.51	80670.92	68287.66	144939.8	158749.9	126129
65-69 years	Rate	59.18763	65.26274	55.24469	52.54445	57.551	45.72507
70-74 years	Number	56616.92	63744.64	52833.07	126708.2	140107.5	114581.4
70-74 years	Rate	66.87473	75.29384	62.40533	61.55687	68.06646	55.66551
75-79 years	Number	49256.29	53964.02	45766.8	99111.36	107919.4	87893.32
75-79 years	Rate	80.01929	87.66724	74.35044	75.15018	81.82878	66.64421
80-84 years	Number	27958.98	31159.2	25044.94	65942.95	72317.19	56857.53
80-84 years	Rate	79.03392	88.08024	70.79656	75.2919	82.56983	64.91841
85-89 years	Number	11375.96	12583.24	9855.002	34685.17	38352.68	28510.57
85-89 years	Rate	75.2823	83.27166	65.21709	75.86135	83.88271	62.35664
90-94 years	Number	3234.018	3580.914	2681.045	15169.11	17033.83	11884.72
90-94 years	Rate	75.4697	83.56493	62.5654	84.79397	95.21759	66.43452
95+ years	Number	713.7766	807.7777	544.0948	4999.093	5814.288	3520.037
95+ years	Rate	70.10963	79.34274	53.44288	91.72127	106.6782	64.58417

Supplementary Table 10 Changes in the number and percentage of global thyroid cancer incidence by population-level determinants from 1990 to 2021

Location	Overall Change	Aging	Population Growth	Epidemiological Shifts	Aging (%)	Population Growth (%)	Epidemiological Shifts (%)
Global	159126.1	37395.25	61777.98	59952.88	23.5	38.82	37.68
South Asia	70125.64	5335.686	27162	37627.95	7.61	38.73	53.66
Central Latin America	4870.1	1055.324	1859.297	1955.483	21.67	38.18	40.15
Central Europe	8.44	1128.434	-366.904	-753.088	13370.07	-4347.2	-8922.84
High-income North America	15480.71	4278.436	5040.143	6162.128	27.64	32.56	39.81
North Africa and Middle East	43229.51	6139.447	17059.74	20030.33	14.2	39.46	46.33
East Asia	30672.69	9590.411	5541.323	15540.96	31.27	18.07	50.67
High-income Asia Pacific	6198.91	2751.797	722.957	2724.159	44.39	11.66	43.95
Central Asia	565.9	-390.186	841.11	114.979	-68.95	148.63	20.32
Tropical Latin America	2525.19	655.008	1238.34	631.838	25.94	49.04	25.02
Eastern Europe	2394.7	1233.464	-679.409	1840.64	51.51	-28.37	76.86
Caribbean	770.85	239.979	224.203	306.667	31.13	29.09	39.78
Oceania	118.82	4.252	91.247	23.324	3.58	76.79	19.63
Southeast Asia	17239.34	3678.985	5981.563	7578.793	21.34	34.7	43.96
Eastern Sub-Saharan Africa	4427.48	315.586	2894.519	1217.38	7.13	65.38	27.5
Australasia	1394.05	193.586	516.277	684.19	13.89	37.03	49.08
Western Sub-Saharan Africa	545.82	-3.552	433.874	115.493	-0.65	79.49	21.16
Western Europe	6228.49	3529.406	2783.588	-84.508	56.67	44.69	-1.36
Central Sub-Saharan Africa	546.48	-77.175	539.212	84.443	-14.12	98.67	15.45
Southern Latin America	987.53	297.725	460.334	229.471	30.15	46.61	23.24
Southern Sub-Saharan Africa	637.64	33.912	381.071	222.656	5.32	59.76	34.92
Andean Latin America	1917.62	421.03	648.648	847.939	21.96	33.83	44.22

Supplementary Table 11 Changes in the number and percentage of global thyroid cancer mortality by population-level determinants from 1990 to 2021

Location	Overall Change	Aging	Population Growth	Epidemiological Shifts	Aging (%)	Population Growth (%)	Epidemiological Shifts (%)
Global	29079.86	13781.054	15971.33	-672.524	23.5	38.82	37.68
South Asia	25772.43	5847.082	12563.15	7362.197	7.61	38.73	53.66
Central Latin America	1503.99	860.124	604.777	39.089	21.67	38.18	40.15
Central Europe	-437.56	523.106	-110.846	-849.822	13370.07	-4347.2	-8922.84
High-income North America	2323.91	923.536	772.028	628.345	27.64	32.56	39.81
North Africa and Middle East	6731.6	2132.8	3738.314	860.484	14.2	39.46	46.33
East Asia	4543.07	5016.347	1440.339	-1913.613	31.27	18.07	50.67
High-income Asia Pacific	2060.26	1751.843	200.358	108.057	44.39	11.66	43.95
Central Asia	-106.03	-236.756	352.03	-221.308	-68.95	148.63	20.32
Tropical Latin America	843.17	595.022	424.105	-175.962	25.94	49.04	25.02
Eastern Europe	93.63	399.67	-159.909	-146.134	51.51	-28.37	76.86
Caribbean	191.34	99.207	78.167	13.964	31.13	29.09	39.78
Oceania	30.97	5.79	25.044	0.135	3.58	76.79	19.63
Southeast Asia	4502.13	2299.836	1819.746	382.551	21.34	34.7	43.96
Eastern Sub-Saharan Africa	1732.54	102.513	1748.838	-118.815	7.13	65.38	27.5
Australasia	143.62	64.15	87.546	-8.073	13.89	37.03	49.08
Western Sub-Saharan Africa	188.52	-13.67	237.565	-35.377	-0.65	79.49	21.16
Western Europe	-429.91	1022.959	589.535	-2042.405	56.67	44.69	-1.36
Central Sub-Saharan Africa	145.48	-1.216	157.953	-11.254	-14.12	98.67	15.45
Southern Latin America	126.38	143.405	163.948	-180.97	30.15	46.61	23.24
Southern Sub-Saharan Africa	252.56	84.43	112.218	55.91	5.32	59.76	34.92
Andean Latin America	536.26	208.731	242.052	85.477	21.96	33.83	44.22

Supplementary Table 12 Changes in the number and percentage of global thyroid cancer DALYs by population-level determinants from 1990 to 2019

Location	Overall Change	Aging	Population Growth	Epidemiological Shifts	Aging (%)	Population Growth (%)	Epidemiological Shifts (%)
Global	577886.3	257762.3	347045	-26921	44.6	60.05	-4.66
South Asia	518971.7	105018.6	277218.9	136734.2	20.24	53.42	26.35
Central Latin America	31686.01	17065.92	13244.59	1375.492	53.86	41.8	4.34
Central Europe	-11813.2	9732.81	-2333.62	-19212.3	-82.39	19.75	162.64
High-income North America	36473.59	14644.84	15560.44	6268.314	40.15	42.66	17.19
North Africa and Middle East	130588.3	36683.04	74272.22	19633.01	28.09	56.88	15.03
East Asia	86516.42	88412.21	30056.49	-31952.3	102.19	34.74	-36.93
High-income Asia Pacific	15268.65	20020.4	2983.05	-7734.8	131.12	19.54	-50.66
Central Asia	-2332.26	-4951.29	7653.196	-5034.16	212.3	-328.15	215.85
Tropical Latin America	16406.04	11188.16	8845.953	-3628.07	68.2	53.92	-22.11
Eastern Europe	2192.07	9117.347	-3497.85	-3427.42	415.92	-159.57	-156.36
Caribbean	4246.11	2015.733	1741.712	488.666	47.47	41.02	11.51
Oceania	684.04	124.204	575.453	-15.615	18.16	84.13	-2.28
Southeast Asia	97723.68	47898.03	41451.23	8374.426	49.01	42.42	8.57
Eastern Sub-Saharan Africa	44925.2	3909.648	47566.41	-6550.85	8.7	105.88	-14.58
Australasia	2577.3	968.527	1709.555	-100.783	37.58	66.33	-3.91
Western Sub-Saharan Africa	5476.29	-177.509	6514.163	-860.365	-3.24	118.95	-15.71
Western Europe	-11436	19010.07	11112.56	-41558.6	-166.23	-97.17	363.4
Central Sub-Saharan Africa	3348.4	70.269	3641.136	-363.007	2.1	108.74	-10.84
Southern Latin America	2131.11	2615.865	3260.401	-3745.15	122.75	152.99	-175.74
Southern Sub-Saharan Africa	18533.02	-1339.88	5339.88	14533.02	-7.23	28.81	78.42
Andean Latin America	10715.74	4055.687	5173.965	1486.089	37.85	48.28	13.87

Supplementary Table 13 Projected ASIR, ASMR, and ASDR of thyroid cancer in both sexes global from 2022 to 2050

Characteristics	ASIR per 100,000			ASMR per 100,000			ASDR per 100,000		
	val	lower	upper	val	lower	upper	val	lower	upper
2022	2.96	2.9	3.03	0.59	0.58	0.6	14.64	14.35	14.93
2023	2.98	2.88	3.09	0.59	0.57	0.6	14.61	14.20	15.03
2024	3	2.84	3.15	0.58	0.56	0.61	14.58	14.00	15.16
2025	3.02	2.8	3.23	0.58	0.55	0.61	14.55	13.78	15.33
2026	3.03	2.75	3.32	0.58	0.54	0.62	14.53	13.54	15.52
2027	3.05	2.69	3.41	0.58	0.53	0.63	14.50	13.27	15.73
2028	3.07	2.63	3.51	0.57	0.51	0.64	14.48	13.00	15.96
2029	3.09	2.56	3.62	0.57	0.5	0.64	14.45	12.70	16.20
2030	3.11	2.49	3.73	0.57	0.49	0.65	14.43	12.40	16.46
2031	3.12	2.4	3.84	0.57	0.47	0.66	14.40	12.07	16.73
2032	3.14	2.32	3.96	0.57	0.46	0.67	14.38	11.74	17.02
2033	3.16	2.23	4.09	0.56	0.44	0.68	14.36	11.39	17.32
2034	3.18	2.13	4.22	0.56	0.43	0.7	14.33	11.04	17.63
2035	3.19	2.02	4.36	0.56	0.41	0.71	14.31	10.67	17.95
2036	3.21	1.91	4.5	0.56	0.4	0.72	14.28	10.28	18.27
2037	3.22	1.8	4.64	0.56	0.38	0.73	14.25	9.89	18.61
2038	3.24	1.68	4.79	0.56	0.37	0.75	14.22	9.49	18.95
2039	3.25	1.56	4.95	0.56	0.35	0.76	14.19	9.07	19.30
2040	3.26	1.43	5.1	0.55	0.33	0.77	14.15	8.65	19.66
2041	3.28	1.29	5.26	0.55	0.32	0.79	14.12	8.22	20.01
2042	3.29	1.15	5.42	0.55	0.3	0.8	14.07	7.77	20.37
2043	3.3	1.01	5.58	0.55	0.28	0.82	14.03	7.32	20.74
2044	3.31	0.86	5.75	0.55	0.26	0.83	13.99	6.86	21.11

2045	3.31	0.71	5.92	0.55	0.24	0.85	13.94	6.40	21.48
2046	3.32	0.55	6.09	0.55	0.23	0.87	13.88	5.92	21.84
2047	3.33	0.39	6.26	0.54	0.21	0.88	13.83	5.44	22.21
2048	3.33	0.23	6.43	0.54	0.19	0.9	13.76	4.95	22.57
2049	3.33	0.06	6.61	0.54	0.17	0.92	13.70	4.46	22.94
2050	3.34	-0.11	6.78	0.54	0.15	0.93	13.63	3.97	23.30

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ASIR: age-standardized incidence rate; ASMR: age-standardized mortality rate; ASDR: age-standardized DALYs rate; DALYs: disability-adjusted life years

Supplementary Table 14 Projected ASIR, ASMR, and ASDR of thyroid cancer in female global from 2022 to 2050

Characteristics	ASIR per 100,000			ASMR per 100,000			ASDR per 100,000		
	val	lower	upper	val	lower	upper	val	lower	upper
2022	3.88	3.8	3.96	0.65	0.63	0.66	16.84	16.38	17.30
2023	3.91	3.77	4.04	0.64	0.62	0.66	16.8	16.19	17.42
2024	3.93	3.73	4.13	0.64	0.61	0.67	16.77	15.96	17.58
2025	3.96	3.68	4.24	0.64	0.6	0.67	16.73	15.69	17.78
2026	3.98	3.61	4.35	0.63	0.59	0.68	16.7	15.39	18.00
2027	4.01	3.54	4.47	0.63	0.57	0.69	16.66	15.06	18.26
2028	4.03	3.46	4.6	0.63	0.56	0.7	16.63	14.72	18.53
2029	4.05	3.37	4.74	0.62	0.54	0.7	16.59	14.36	18.82
2030	4.08	3.27	4.89	0.62	0.53	0.71	16.55	13.97	19.13
2031	4.1	3.16	5.04	0.62	0.51	0.72	16.52	13.57	19.46
2032	4.12	3.05	5.2	0.61	0.49	0.73	16.48	13.16	19.80
2033	4.15	2.93	5.36	0.61	0.48	0.75	16.44	12.73	20.15
2034	4.17	2.8	5.54	0.61	0.46	0.76	16.4	12.29	20.52
2035	4.19	2.67	5.71	0.61	0.44	0.77	16.36	11.83	20.90
2036	4.21	2.52	5.9	0.6	0.42	0.78	16.32	11.36	21.28
2037	4.23	2.37	6.08	0.6	0.41	0.79	16.28	10.88	21.68
2038	4.25	2.22	6.27	0.6	0.39	0.81	16.23	10.38	22.09
2039	4.26	2.06	6.47	0.6	0.37	0.82	16.19	9.88	22.50
2040	4.28	1.89	6.67	0.59	0.35	0.84	16.14	9.36	22.91
2041	4.29	1.71	6.87	0.59	0.33	0.85	16.08	8.83	23.33
2042	4.3	1.53	7.07	0.59	0.31	0.87	16.03	8.29	23.76
2043	4.31	1.34	7.28	0.59	0.29	0.88	15.97	7.75	24.18
2044	4.32	1.14	7.49	0.58	0.27	0.9	15.9	7.19	24.61



2045	4.32	0.95	7.7	0.58	0.25	0.91	15.83	6.62	25.04
2046	4.32	0.74	7.9	0.58	0.23	0.93	15.76	6.05	25.46
2047	4.32	0.53	8.11	0.58	0.21	0.95	15.67	5.47	25.88
2048	4.32	0.32	8.32	0.58	0.19	0.96	15.59	4.88	26.29
2049	4.32	0.11	8.53	0.57	0.17	0.98	15.49	4.29	26.69
2050	4.31	-0.11	8.73	0.57	0.15	1	15.39	3.69	27.09

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ASIR: age-standardized incidence rate; ASMR: age-standardized mortality rate; ASDR: age-standardized DALYs rate; DALYs: disability-adjusted life years

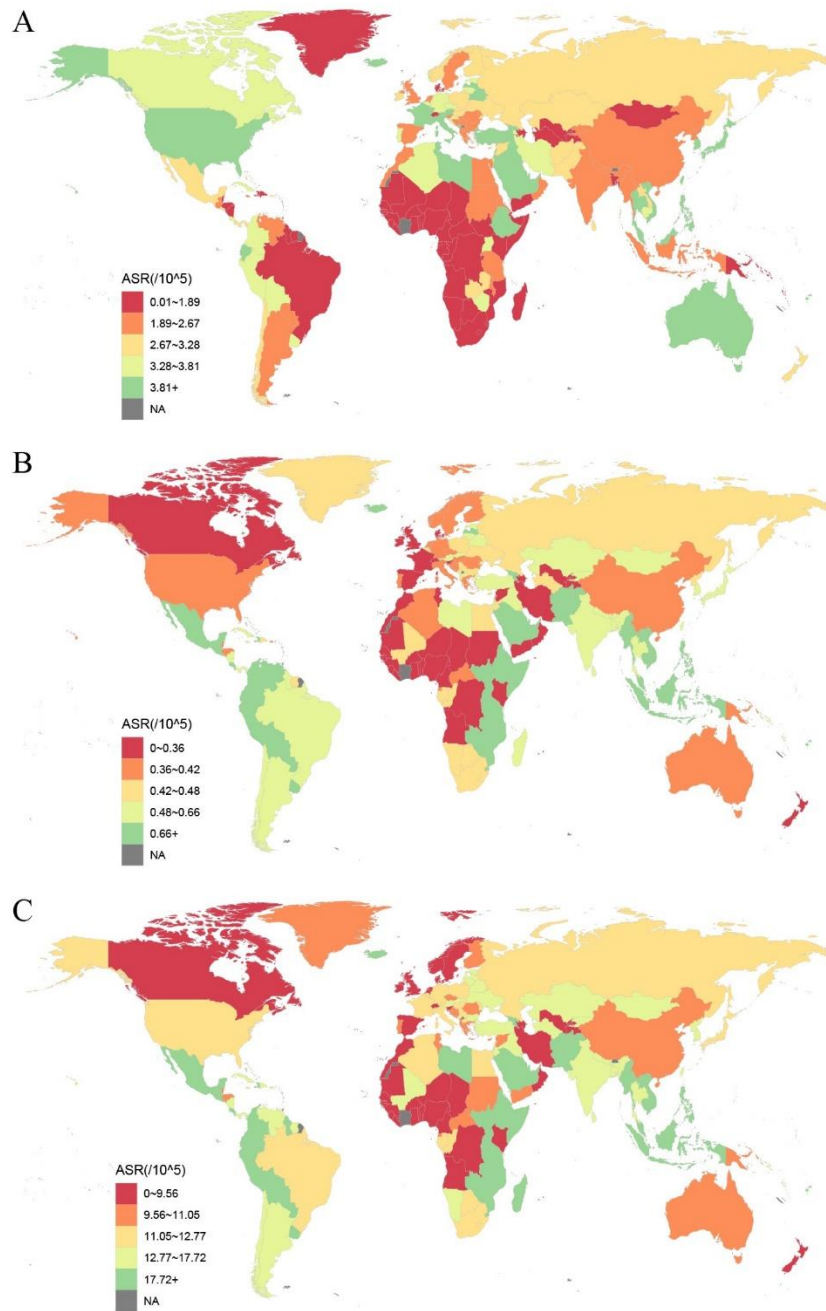
Supplementary Table 15 Projected ASIR, ASMR, and ASDR of thyroid cancer in male global from 2022 to 2050

Characteristics	ASIR per 100,000			ASMR per 100,000			ASDR per 100,000		
	val	lower	upper	val	lower	upper	val	lower	upper
2022	2	1.95	2.06	0.52	0.51	0.54	12.39	12.13	12.64
2023	2.01	1.92	2.11	0.52	0.5	0.54	12.36	11.98	12.75
2024	2.02	1.88	2.16	0.52	0.49	0.55	12.34	11.79	12.88
2025	2.03	1.84	2.22	0.52	0.48	0.55	12.31	11.57	13.05
2026	2.04	1.79	2.29	0.52	0.47	0.56	12.29	11.34	13.24
2027	2.05	1.73	2.36	0.52	0.46	0.57	12.27	11.09	13.45
2028	2.06	1.67	2.44	0.52	0.45	0.58	12.25	10.82	13.67
2029	2.07	1.6	2.53	0.51	0.43	0.59	12.23	10.53	13.92
2030	2.08	1.53	2.62	0.51	0.42	0.61	12.21	10.24	14.17
2031	2.09	1.46	2.72	0.51	0.41	0.62	12.18	9.92	14.44
2032	2.09	1.37	2.82	0.51	0.39	0.63	12.16	9.6	14.73
2033	2.1	1.29	2.92	0.51	0.38	0.64	12.14	9.26	15.02
2034	2.11	1.2	3.03	0.51	0.36	0.66	12.12	8.92	15.33
2035	2.12	1.1	3.14	0.51	0.35	0.67	12.1	8.56	15.64
2036	2.13	1.01	3.26	0.51	0.33	0.69	12.07	8.18	15.96
2037	2.14	0.9	3.38	0.51	0.31	0.7	12.04	7.8	16.29
2038	2.15	0.79	3.5	0.51	0.29	0.72	12.02	7.41	16.62
2039	2.16	0.68	3.63	0.51	0.28	0.74	11.99	7	16.97
2040	2.16	0.57	3.76	0.51	0.26	0.75	11.95	6.59	17.31
2041	2.17	0.45	3.89	0.51	0.24	0.77	11.92	6.17	17.66
2042	2.17	0.33	4.02	0.51	0.22	0.79	11.88	5.74	18.01
2043	2.18	0.2	4.16	0.5	0.2	0.81	11.84	5.31	18.37
2044	2.19	0.07	4.3	0.5	0.18	0.83	11.8	4.86	18.73

2045	2.19	-0.07	4.45	0.5	0.16	0.85	11.75	4.41	19.09
2046	2.2	-0.2	4.59	0.5	0.14	0.87	11.7	3.95	19.45
2047	2.2	-0.34	4.74	0.5	0.12	0.88	11.65	3.49	19.82
2048	2.2	-0.48	4.89	0.5	0.1	0.9	11.6	3.02	20.18
2049	2.21	-0.63	5.04	0.5	0.08	0.92	11.55	2.55	20.54
2050	2.21	-0.78	5.2	0.5	0.06	0.95	11.49	2.07	20.9

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ASIR: age-standardized incidence rate; ASMR: age-standardized mortality rate; ASDR: age-standardized DALYs rate; DALYs: disability-adjusted life years



**Supplementary Figure 1.** Global burden of thyroid cancer incidence, mortality, and DALYs across 204 countries or territories in 2021. (A) ASIR; (B) ASMR; (C) ASDR. DALYs: disability-adjusted life years; ASIR: age-standardized incidence rate; ASMR: age-standardized mortality rate; ASDR: age-standardized DALYs rate.