# BMJ Open Global, regional and national burden of inflammatory bowel disease in 204 countries and territories from 1990 to 2019: a systematic analysis based on the Global Burden of Disease Study 2019

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#### **ABSTRACT**

**Objectives** We aimed to provide the most updated estimates on the global burden of inflammatory bowel disease (IBD) to improve management strategies. **Design** We extracted data from the Global Burden of

Disease (GBD) 2019 database to evaluate IBD burden with different measures in 204 countries and territories from 1990 to 2019.

Setting Studies from the GBD 2019 database generated by population-representative data sources identified through a literature review and research collaborations were included.

Participants Patients with an IBD diagnosis. Outcomes Total numbers, age-standardised rates of prevalence, mortality and disability-adjusted life-years (DALYs), and their estimated annual percentage changes (EAPCs) were the main outcomes.

Results In 2019, there were approximately 4.9 million cases of IBD worldwide, with China and the USA having the highest number of cases (911 405 and 762 890 (66.9 and 245.3 cases per 100 000 people, respectively)). Between 1990 and 2019, the global age-standardised rates of prevalence, deaths and DALYs decreased (EAPCs=-0.66,-0.69 and -1.04, respectively). However, the age-standardised prevalence rate increased in 13 out of 21 GBD regions. A total of 147 out of 204 countries or territories experienced an increase in the age-standardised prevalence rate. From 1990 to 2019, IBD prevalent cases, deaths and DALYs were higher among females than among males. A higher Socio-demographic Index was associated with higher age-standardised prevalence rates.

Conclusions IBD will continue to be a major public health burden due to increasing numbers of prevalent cases, deaths and DALYs. The epidemiological trends and disease burden of IBD have changed dramatically at the regional and national levels, so understanding these changes would be beneficial for policy makers to tackle IBD.

# INTRODUCTION

bowel diseases Inflammatory (IBDs), including Crohn's disease and ulcerative colitis, are debilitating and chronic inflammatory disorders of the gastrointestinal tract that have no cure. IBD is characterised by

# STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This is the most updated estimate on inflammatory bowel disease epidemiology worldwide and included 204 countries, some of which have not been assessed before.
- ⇒ Global Burden of Disease 2019 incorporated more studies, adjusted diagnostic criteria and further improved data reliability, hence presenting data more representative of individuals.
- ⇒ One of the limitations was heterogeneity in population and location between the studies included.
- ⇒ Another limitation is that the variability in study design and data collection methods also affected the precision of the estimates, which is only partially compensated for in our analysis model.
- ⇒ The third limitation is that the results for some geographical regions were severely limited by the paucity of data (not just variability in study design but lack of studies) and should be treated with caution.

a relapsing-remitting course and a heterogeneous clinical presentation that includes episodes of abdominal pain, chronic diarrhoea, rectal bleeding and weight loss, which are often associated with systemic symptoms such as fatigue and occasionally fever. <sup>2</sup>Because IBD can cause significant morbidity and lead to complications such as strictures, fistulas, infections and cancer, this disorder leads to substantial healthcare costs and places great stress on healthcare systems.<sup>3 4</sup> Although the cause of IBD remains unknown, the pathogenesis of IBD is suggested to be associated with genetic susceptibility of the host, intestinal microbiota, other environmental factors (eg, diet, smoking and physiological stress), and immunological abnormalities.<sup>5</sup>

Traditionally, IBD has been regarded as a disease of the Western world; however, studies over the last two decades have shown a rapidly increasing incidence in newly industrialised



countries in the Middle East, Asia and South America.<sup>6</sup> Conversely, IBD incidence rates appeared to plateau in the Western world in the 21st century.<sup>7</sup> These substantial changes highlight the need for a comparable, consistent and systematic analysis of disease burden and trends concerning IBD in different regions and countries, which can be used to provide convincing evidence for rational allocation of resources and heathcare planning in reducing the global burden of IBD.

The Global Burden of Disease (GBD) Study 2019, a systematic worldwide epidemiological study, assessed the prevalence, morbidity, mortality and disability of 369 diseases by location, sex, age and year, which provides a unique opportunity to understand the state of IBD. The purpose of this study was to use data from the GBD 2019 study to determine the global, regional and national burden of IBD across 204 countries and territories from 1990 to 2019 by age, sex and Socio-demographic Index (SDI). Our study provides updated estimates on global IBD epidemiology and provides data on some regions not assessed previously or data-scarce locations, of which estimates mainly rely on predictive covariates or global trends with consideration of SDI level and data from a single country.

# **METHODS**

The general methodology of GBD 2019 has been reported in detail in previous publications.<sup>8-11</sup> In brief, the GBD Study collected data from censuses, household surveys, civil registration and vital statistics, disease registries, health service use, satellite imaging, disease notifications and other sources.<sup>9</sup> A Bayesian meta-regression modelling tool, DisMod-MR 2.1, was used to model and derive estimates of the burden under several conditions in 204 countries and territories from 1990 to 2019. The model included all of the above available information for each disease and applied a correcting process for known bias to derive country-specific estimates of prevalence and burden of diseases, which have been described in previous studies. Uncertainty intervals (UIs) were generated for every metric using the 25th and 75th ordered 1000 draw values of the posterior distribution.

We extracted yearly crude and age-standardised estimates of different measures of the burden of IBD from the GBD database from 1990 to 2019 and the respective 95% UIs via the Global Health Data Exchange query tool (http://ghdx.healt hdata.org/gbd-results-tool). For the GBD 2019 assessment, IBD was defined according to the 10<sup>th</sup> revision of the International Classification of Diseases (ICD-10 codes: K50–K51.319, K51.5–K52, K52.8–K52.9). The variables obtained from the database included prevalent cases, number of deaths, number of disability-adjusted life-years (DALYs), number of years of life lost (YLL), number of years lived with disability (YLD) and their corresponding age-standardised rates (ASRs) at the global, regional and national levels. The prevalence rate (per 100 000 people) was defined as aggregated cases

(including new cases and previously diagnosed cases) divided by the population size; the mortality rate (per 100 000 people) was defined as the number of annual deaths divided by the total population size and DALYs were calculated as the sum of YLL and YLD. These data were stratified by age (1-4, 5-9, every 5-year age group up to 95 years and 95 years and older), calendar year (1990-2019), region and country (or territory). Geographically, the world was classified into 21 regions. Moreover, 204 countries and territories were divided into five categories according to the SDI. The SDI was constructed based on the geometric mean of three indicators: the total fertility rate, income per capita and average years of schooling among people aged 15 years or older, ranging from zero to one. 12 The larger the SDI, the more developed the country. 13

Estimated average percentage changes (EAPCs) were used to evaluate trends in the ASRs of prevalence, deaths and DALYs over a specific period. The natural logarithm of the ASR was assumed to be linear along with time; that is,  $y = \alpha + \beta x + \varepsilon$ , where  $y=\ln$  (rate), x=calendaryear and  $\varepsilon$ =error term. Based on this formula,  $\beta$  represents the positive or negative ASR trends. The EAPC was calculated as  $100 \times (\exp (\beta) - 1)$ , and its 95% CI could also be calculated from this model.<sup>14</sup> The age-standardised indicator was recognised to be experiencing an upward trend if the 95% CI of the corresponding EAPC estimation was >0, to be experiencing a downward trend if the 95% CI was <0 and to be stable if the 95% CI included 0. All statistical analyses and visualisations were conducted using the R statistical software program (V.4.1.0). A p<0.05 was considered statistically significant.

This study followed the guidelines for a cross-sectional study described in the Guidelines for Accurate and Transparent Health Estimates Reporting.<sup>15</sup>

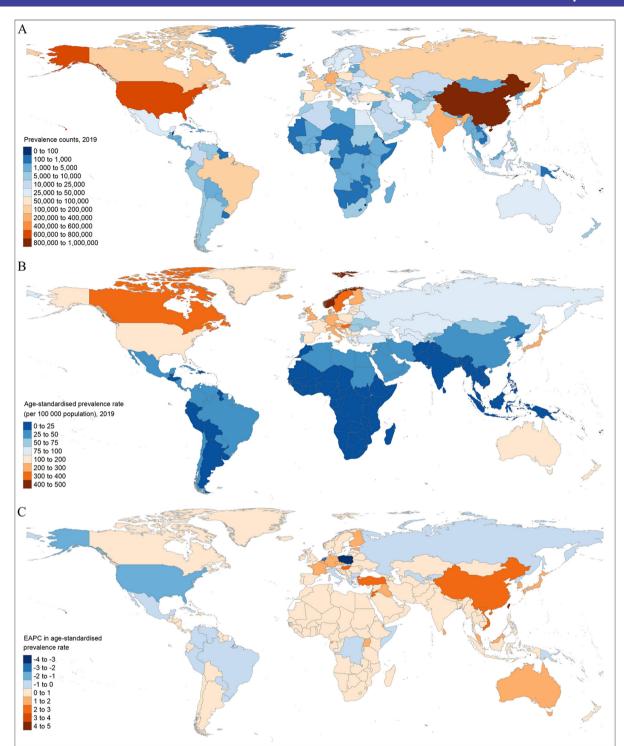
# Patient and public involvement

Patients and/or the public were not involved in the study design, data interpretation, manuscript drafting or dissemination plans of this research.

## **RESULTS**

# **Prevalence of IBD**

Globally, IBD accounted for 3.32 million estimated cases (95% UI 2.90 to 3.79) in 1990 and 4.90 million cases (4.35 to 5.50) in 2019, corresponding to an increase of 47.45% between 1990 and 2019 (online supplemental table 1 and figure 1A). The global age-standardised prevalence rate of IBD decreased from 73.23 per 100 000 people (63.86 to 83.63) in 1990 to 59.25 per 100 000 people (52.78 to 66.47) in 2019, with an EAPC of -0.66 (95% CI -0.75 to -0.57) (table 1; figure 1B,C; and figure 2A). Although graphical representation suggested homogeneity of data quality across the globe, this was not the case, and estimates were based on extremely limited data and should be treated with caution in some regions.



**Figure 1** The global prevalence burden of IBD in 204 countries and territories. (A) The absolute number of IBD prevalent cases in 2019. (B) The age-standardised prevalence rate (per 100 000 population) of IBD in 2019. (C) The EAPC of age-standardised prevalence rate for IBD between 1990 and 2019. EAPC, estimated annual percentage change; IBD, inflammatory bowel disease.

At the regional level in 2019, the largest number of prevalent cases was observed in Western Europe (1.03 million (95% UI 0.93 to 1.13)) (online supplemental table 1), and the highest age-standardised prevalence rate was observed in the high-income Asia Pacific region (210.54 per 100 000 people (183.69 to 239.68)) (figure 3A). From 1990 to 2019, an increase in total prevalent cases was seen across most GBD regions, as shown in figure 4A. However,

the age-standardised prevalence rate increased in 13 GBD regions and decreased in 5 regions, with the highest upward trend in East Asia (EAPC=2.79 (95% CI 2.41 to 3.18)) and the largest decrease in high-income North America (EAPC=-1.32 (-1.75 to -0.89)) (figure 2B).

At the national and territorial levels in 2019, China and the USA had the highest number of prevalent cases (911 405) (95% UI 776 347 to 1 069 533) and 762 890

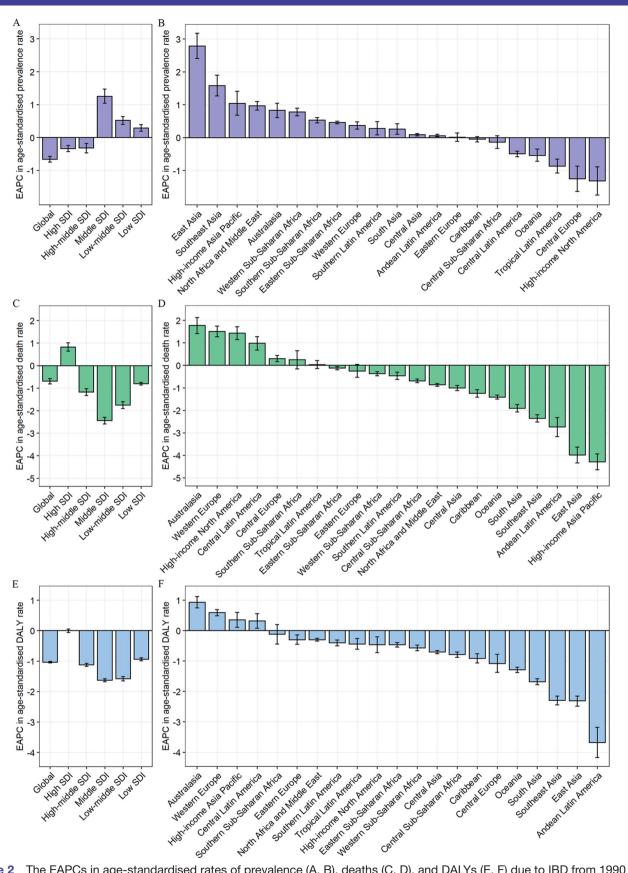
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Table 1 Age-sta	Age-standardised prevalence, death and DALY rates	ence, death and D		ammatory bowe	for inflammatory bower disease (IBD) in 1990 and 2019 and their temporal trends from 1990 to 2019	1990 and 2019 a	nd their temporal	trends from 1990	0 to 2019
	Age-standardise population	Age-standardised prevalence rate per 100000 population	per 100000	Age-standardis	Age-standardised death rate per 100000 population	00000 population	Age-standardise	Age-standardised DALY rate per 100 000 population	00 000 population
Characteristics	1990 no (95% UI)	) 2019no (95% UI)	EAPC no (95% CI)	1990 no (95% UI)	l) 2019no (95% UI)	EAPC no ) (95% CI)	1990no (95% UI)	2019 no (95% UI)	EAPC no (95% CI)
Global	73.23 (63.86 to 83.63)	59.25 (52.78 to 66.47)	-0.66 (-0.75 to -0.57)	0.67 (0.57 to 0.78)	0.54 (0.46 to 0.59)	-0.69 (-0.81 to	27.20 (21.70 to 32.39)	20.15 (16.86 to 23.71)	-1.04 (-1.06 to -1.01)
Sex									
Male	71.52 (62.12 to 81.89)	59.30 (52.60 to 66.91)	-0.56 (-0.64 to -0.49)	0.69 (0.56 to 0.88)	0.56 (0.45 to 0.62)	-0.78 (-0.83 to -0.72)	27.40 (21.78 to 33.22)	20.64 (17.16 to 24.31)	-0.99 (-1.01 to
Female	75.01 (65.67 to 85.45)	59.33 (52.89 to 66.18)	-0.74 (-0.85 to -0.64)	0.63 (0.50 to 0.74)	0.52 (0.43 to 0.58)	-0.64 (-0.80 to -0.47)	27.09 (20.30 to 32.42)	19.70 (16.16 to 23.49)	-1.09 (-1.12 to -1.06)
SDI quintile									
High	200.83 (176.43 to 226.92)	183.14 (166.58 to 201.17)	-0.34 (-0.43 to -0.24)	0.72 (0.65 to 0.85)	0.84 (0.69 to 0.92)	0.82 (0.64 to 1.01)	43.95 (34.13 to 55.06)	42.93 (33.66 to 53.08)	0.00 (-0.06 to 0.05)
High middle	82.41 (71.42 to 95.06)	73.85 (65.38 to 83.09)	-0.32 (-0.47 to -0.18)	0.52 (0.46 to 0.60)	0.38 (0.34 to 0.43)	-1.17 (-1.32 to -1.02)	25.92 (21.34 to 30.93)	19.34 (15.59 to 23.73)	-1.12 (-1.17 to -1.07)
Middle	22.50 (19.00 to 26.62)	30.57 (25.70 to 36.01)	1.25 (1.04 to 1.47)	0.57 (0.40 to 0.74)	0.31 (0.26 to 0.34)	-2.44 (-2.59 to -2.29)	18.11 (14.29 to 21.72)	11.61 (9.70 to 13.71)	-1.63 (-1.68 to -1.58)
Low middle	19.02 (15.75 to 22.93)	20.94 (17.41 to 25.11)	0.52 (0.40 to 0.64)	0.74 (0.47 to 1.06)	0.48 (0.38 to 0.58)	-1.75 (-1.90 to -1.60)	23.29 (16.18 to 30.53)	15.37 (12.47 to 18.32)	-1.58 (-1.65 to -1.51)
Low	12.40 (10.21 to 15.06)	12.85 (10.64 to 15.81)	0.29 (0.19 to 0.39)	0.67 (0.48 to 0.99)	0.55 (0.43 to 0.70)	-0.80 (-0.86 to -0.74)	22.19 (14.49 to 29.80)	17.19 (13.57 to 21.70)	-0.94 (-0.99 to -0.89)
GBD region									
Andean Latin America	16.55 (14.08 to 19.39)	17.09 (14.60 to 19.88)	0.06 (0.03 to 0.10)	0.54 (0.36 to 0.71)	0.26 (0.20 to 0.32)	-2.74 (-3.16 to -2.32)	26.36 (15.78 to 38.96)	9.83 (7.75 to 12.19)	-3.68 (-4.17 to -3.18)
Australasia	108.86 (92.21 to 126.63)	156.30 (137.65 to 177.07)	0.83 (0.61 to 1.05)	0.54 (0.47 to 0.64)	0.72 (0.53 to 0.83)	1.77 (1.41 to 2.13)	26.19 (20.48 to 32.91)	34.98 (26.87 to 44.64)	0.93 (0.75 to 1.12)
Caribbean	27.93 (23.96 to 32.85)	26.31 (22.13 to 31.28)	-0.05 (-0.13 to 0.03)	0.56 (0.44 to 0.69)	0.42 (0.31 to 0.53)	-1.24 (-1.41 to -1.08)	23.38 (16.68 to 34.05)	18.21 (13.08 to 24.76)	-0.91 (-1.06 to -0.76)
Central Asia	76.86 (64.98 to 91.56)	78.72 (66.39 to 93.40)	0.09 (0.05 to 0.12)	0.39 (0.30 to 0.46)	0.32 (0.28 to 0.37)	-1.00 (-1.12 to -0.89)	26.11 (21.03 to 31.71)	22.26 (18.04 to 27.31)	-0.70 (-0.76 to -0.65)
Central Europe	208.99 (179.90 to 243.75)	160.49 (145.58 to 176.95)	-1.25 (-1.64 to -0.87)	0.46 (0.43 to 0.52)	0.47 (0.40 to 0.55)	0.30 (0.17 to 0.44)	46.28 (36.16 to 57.91)	35.84 (27.66 to 44.67)	-1.08 (-1.37 to -0.78)
Central Latin America	37.84 (32.42 to 44.16)	32.59 (27.93 to 38.07)	-0.49 (-0.58 to -0.41)	0.32 (0.28 to 0.35)	0.37 (0.30 to 0.43)	0.98 (0.68 to 1.28)	14.84 (12.69 to 17.31)	14.68 (12.25 to 17.41)	0.32 (0.08 to 0.56)
Central sub- Saharan Africa	8.22 (6.76 to 10.11)	8.21 (6.80 to 10.11)	-0.14 (-0.33 to 0.06)	0.72 (0.51 to 1.03)	0.60 (0.45 to 0.83)	-0.69 (-0.77 to -0.60)	22.26 (14.75 to 32.74)	17.77 (12.98 to 24.27)	-0.79 (-0.88 to -0.70)
East Asia	22.51 (18.72 to 26.72)	46.22 (39.36 to 53.98)	2.79 (2.41 to 3.18)	0.86 (0.59 to 1.14)	0.31 (0.25 to 0.35)	-3.98 (-4.33 to -3.63)	24.23 (17.74 to 29.83)	13.08 (10.31 to 16.19)	-2.31 (-2.48 to -2.15)
Eastern Europe	88.07 (75.40 to 103.25)	82.82 (70.77 to 96.45)	0.01 (-0.11 to 0.14)	0.49 (0.38 to 0.56)	0.51 (0.43 to 0.58)	-0.25 (-0.53 to 0.04)	27.68 (21.86 to 33.71)	26.67 (21.96 to 32.46)	-0.30 (-0.45 to -0.14)
									Continued

Table 1 Continued	pe								
	Age-standardise population	Age-standardised prevalence rate per 100000 population	per 100 000	Age-standardise	Age-standardised death rate per 100000 population Age-standardised DALY rate per 100000 population	0000 population	Age-standardised	d DALY rate per 10	00 000 population
Characteristics	1990 no (95% UI)	1990 no (95% UI) 2019 no (95% UI) (95% CI)	EAPC no (95% CI)	1990 no (95% UI)	1990 no (95% UI) 2019 no (95% UI)	EAPC no (95% CI)	1990no (95% UI)	1990no (95% UI) 2019 no (95% UI)	EAPC no (95% CI)
Eastern sub- Saharan Africa	6.27 (5.25 to 7.68)	7.21 (6.01 to 8.82)	0.46 (0.42 to 0.50)	0.72 (0.52 to 1.01)	0.69 (0.50 to 0.93)	-0.12 (-0.20 to -0.05)	22.58 (16.13 to 33.35)	19.44 (14.69 to 25.63)	-0.46 (-0.54 to -0.39)
High-income Asia Pacific	126.18 (105.73 to 149.32)	239.68) 1.41)	1.04 (0.68 to 1.41)	0.40 (0.24 to 0.47)	0.13 (0.11 to 0.18)	-4.29 (-4.64 to -3.93)	26.43 (19.87 to 33.86)	34.55 (23.75 to 46.76)	0.35 (0.11 to 0.60)
High-income North America	346.93 (303.63 to 392.66)	209.60 (195.48 to -1.32 (-1.75 to 224.46) -0.89)	-1.32 (-1.75 to -0.89)	0.68 (0.61 to 0.83)	0.97 (0.79 to 1.05)	1.43 (1.15 to 1.72)	65.62 (48.61 to 84.95)	51.27 (40.90 to 62.35)	-0.46 (-0.72 to -0.20)
North Africa and Middle East	36.27 (31.06 to 41.91)	48.26 (40.98 to 56.94)	0.97 (0.84 to 1.10)	0.34 (0.24 to 0.49)	0.26 (0.22 to 0.30)	-0.86 (-0.93 to -0.80)	14.36 (10.79 to 18.73)	13.26 (10.60 to 16.47)	-0.30 (-0.34 to -0.25)
Oceania	4.34 (3.51 to 5.20)	3.87 (3.16 to 4.71)	-0.54 (-0.72 to -0.35)	0.63 (0.42 to 0.86)	0.44 (0.33 to 0.60)	-1.41 (-1.50 to -1.32)	20.60 (13.34 to 28.78)	14.93 (10.45 to 21.01)	-1.29 (-1.38 to -1.20)
South Asia	19.68 (15.98 to 24.40)	20.11 (16.38 to 24.81)	0.26 (0.10 to 0.42)	0.69 (0.47 to 1.06)	0.44 (0.33 to 0.57)	-1.91 (-2.07 to -1.74)	21.48 (14.77 to 29.47)	14.00 (10.70 to 17.52)	-1.68 (-1.78 to -1.58)
Southeast Asia	4.40 (3.55 to 5.35)	6.69 (5.52 to 8.04)	1.58 (1.27 to 1.90)	0.50 (0.27 to 0.66)	0.28 (0.21 to 0.33)	-2.36 (-2.52 to -2.19)	13.16 (8.47 to 15.9)	7.45 (6.06 to 8.76)	-2.29 (-2.44 to -2.15)
Southern Latin America	19.22 (15.96 to 22.60)	20.53 (17.36 to 24.24)	0.28 (0.08 to 0.49)	0.31 (0.27 to 0.34)	0.28 (0.25 to 0.34)	-0.46 (-0.62 to -0.30)	11.10 (9.69 to 12.66)	10.06 (8.61 to 11.94)	-0.40 (-0.50 to -0.31)
Southern sub- Saharan Africa	10.44 (8.67 to 12.74)	11.78 (9.83 to 14.31)	0.53 (0.45 to 0.61)	0.42 (0.33 to 0.53)	0.44 (0.36 to 0.51)	0.25 (-0.16 to 0.65)	15.11 (10.88 to 18.87)	13.66 (11.37 to 15.90)	-0.12 (-0.44 to 0.20)
Tropical Latin America	65.14 (57.26 to 74.08)	47.34 (41.21 to 54.02)	-0.87 (-1.08 to -0.65)	0.47 (0.41 to 0.51)	0.44 (0.40 to 0.51)	0.03 (-0.14 to 0.21)	23.37 (19.94 to 27.30)	19.26 (16.53 to 22.44)	-0.44 (-0.61 to -0.26)
Western Europe	156.46 (139.89 to 173.69)	188.22 (169.47 to 0.37 (0.26 to 207.48) 0.48)	0.37 (0.26 to 0.48)	0.82 (0.73 to 1.04)	1.11 (0.87 to 1.23)	1.51 (1.27 to 1.75)	39.24 (31.18 to 48.16)	46.79 (36.98 to 57.57)	0.59 (0.49 to 0.69)
Western sub- Saharan Africa	8.49 (7.03 to 10.33)	10.09 (8.38 to 12.23)	0.78 (0.66 to 0.90)	0.56 (0.33 to 0.91)	0.5 (0.35 to 0.67)	-0.37 (-0.46 to -0.28)	19.69 (11.64 to 30.47)	16.77 (11.61 to 22.73)	-0.57 (-0.66 to -0.48)

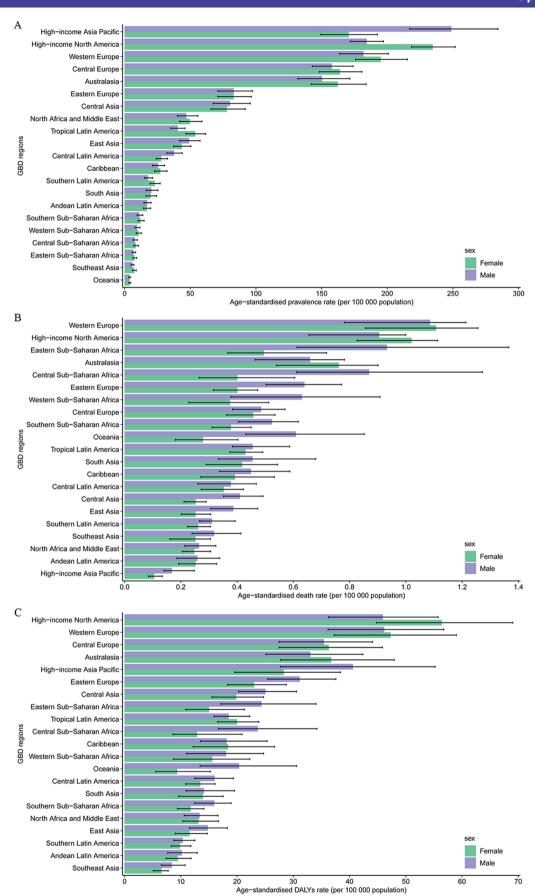
DALY, disability-adjusted life-year; EAPC, estimated annual percentage change; GBD, Global Burden of Disease; SDI, Socio-demographic Index; UI, uncertainty interval.

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**Figure 2** The EAPCs in age-standardised rates of prevalence (A, B), deaths (C, D), and DALYs (E, F) due to IBD from 1990 to 2019, both sexes, by GBD region and by SDI quintile. DALYs, disability-adjusted life-years; EAPC, estimated annual percentage change; GBD, Global Burden of Disease; IBD, inflammatory bowel disease; SDI, Socio-demographic Index.





**Figure 3** The age-standardised rates of prevalence (A), deaths (B), and DALYs (C) due to IBD by sex, across 21 regions, in 2019. Error bars indicate the 95% uncertainty interval (UI) for the age-standardised rates. DALYs, disability-adjusted life-years; GBD, Global Burden of Disease; IBD, inflammatory bowel disease.

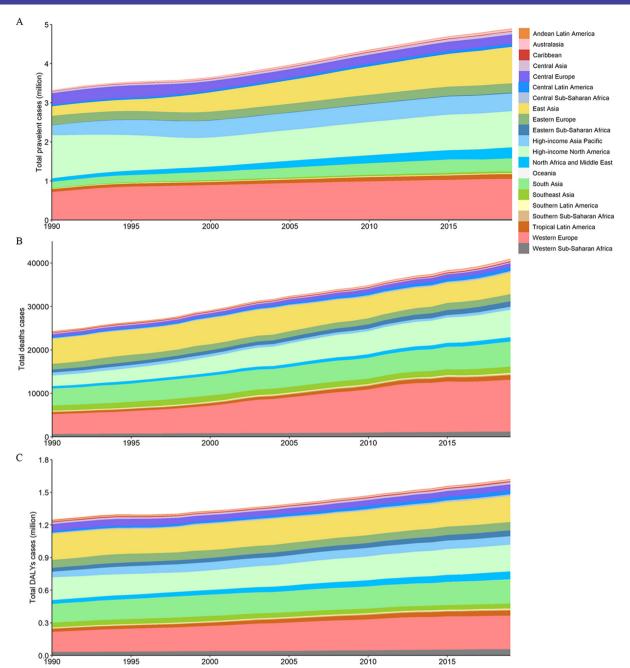


Figure 4 The absolute number of prevalent cases (A), deaths (B), and DALYs (C) due to IBD for all GBD regions from 1990 to 2019. DALYs, disability-adjusted life-years; GBD, Global Burden of Disease; IBD, inflammatory bowel disease.

(712357 to 813654), respectively) (online supplemental table 2 and figure 1A). In 2019, the highest agestandardised prevalence rates of IBD were observed in Norway (498.95 (429.41 to 570.55)) (online supplemental table 3 and figure 1B). Between 1990 and 2019, agestandardised prevalence rates showed an upward trend in 147 countries or territories, with the greatest increase in Taiwan (Province of China) (EAPC=4.29 (95% CI 3.71 to 4.86)) (figure 1C).

Overall, the global number of prevalent cases was higher among females than among males in 2019 (online supplemental table 1). The age-standardised prevalence rate was similar between males and females in 2019 (table 1). The highest peak IBD prevalence and

age-specific prevalence rates occurred at ages 50–54 years and 60–64 years, respectively, among females and males in 2019 (figure 5A). From 1990 to 2019, the number of prevalent cases continued to increase for both sexes and was higher among females than among males in all years. The age-standardised prevalence rate decreased for both sexes during the same period (online supplemental figure 1).

# **Deaths related to IBD**

In 2019, there were 40 998 deaths (95% UI 34 933 to 44 661) due to IBD worldwide, which increased by 68.75% (47.12% to 94.62%) from 24 295 (20 258 to 28376) in 1990 (online supplemental table 1 and online supplemental

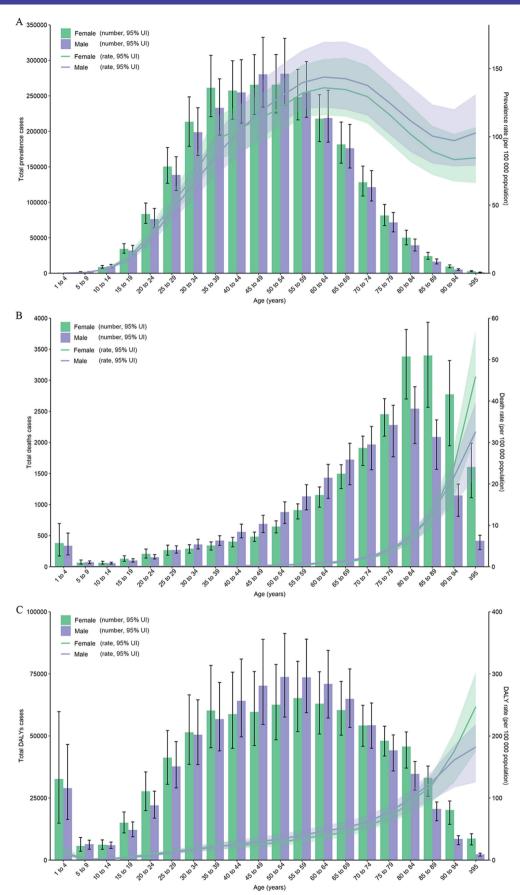


Figure 5 Age patterns by sex of the total number and age-standardised rates of prevalent cases (A), deaths (B) and DALYs (C) due to IBD at the global level in 2019. Error bars indicate the 95% uncertainty interval (UI) for the number of cases. Shading indicates the 95% UI for the rates. DALYs, disability-adjusted life-years; IBD, inflammatory bowel disease.

figure 2). The global age-standardised death rate was 0.54 per 100~000 people (0.46 to 0.59) in 2019, which decreased from 0.67 per 100~000 people (0.57 to 0.78) in 1990, with an EAPC of -0.69~(95% CI -0.81 to -0.57) (table 1, figure 2C and online supplemental figure 3-4).

At the regional level, Western Europe was also the region with the largest number of deaths (11981 (95% UI 9244 to 13 315)) and the highest age-standardised death rate (1.11 per 100 000 people (0.87 to 1.23)) in 2019 (online supplemental table 1 and figure 3B). From 1990 to 2019, most GBD regions experienced an increase in total deaths from IBD (figure 4B). However, the age-standardised death rate declined in more than 60% of GBD regions, such as the high-income Asia Pacific region (EAPC=-4.29 (95% CI -4.64 to -3.93)), East Asia (EAPC = -3.98 (-4.33 to -3.63)) and Andean Latin America (EAPC=-2.74 (-3.16 to -2.32)) (figure 2D).

At the national and territorial levels in 2019, China and the USA also had the highest number of deaths (4676 (95% UI 3774 to 5461) and 5910 (4622 to 6464), respectively) (online supplemental table 2 and online supplemental figure 2). The Netherlands had the highest age-standardised death rate in 2019 (2.08 per 100 000 people (1.58 to 2.40)) (online supplemental table 3) and online supplemental figure 3). Between 1990 and 2019, more than 60% of countries or territories experienced a decrease in the age-standardised death rate of IBD, and the largest decrease was noted in the Republic of Korea (EAPC=-7.96 (-8.67 to -7.25)) (online supplemental figure 4).

Globally, the number of deaths was higher among females than among males in 2019 (online supplemental table 3). The age-standardised death rate was 0.56 per 100 000 people (95% UI 0.45 to 0.62) among males and 0.52 per 100 000 people (0.43 to 0.58) among females (table 1). In 2019, the highest number of deaths was observed among males aged 80–84 years and females aged 85–89 years, and the highest age-specific death rate was observed in the oldest age group (≥95 years) for both sexes (figure 5B). Between 1990 and 2019, deaths related to IBD also continued to increase for both sexes and were higher among females than among males in all years. However, the age-standardised death rate decreased for both sexes from 1990 to 2019 (online supplemental figure 5).

# **DALYs of IBD**

Globally, 1.62 million (95% UI 1.36 to 1.92) DALYs, 0.73 million (0.49 to 0.99) YLD and 0.90 million (0.78 to 1.00) YLL were due to IBD in 2019, which increased from 1990 by 29.98%, 47.96% and 18.31%, respectively (online supplemental table 1), online supplemental table 4 and online supplemental figures 6–9). The global age-standardised DALY rate decreased from 27.20 per 100 000 people (21.70 to 32.39) in 1990 to 20.15 per 100 000 people (16.86 to 23.71) in 2019, with an EAPC of –1.04 (95% CI –1.06 to –1.01) (table 1, figure 2E and online supplemental figures 10–11). The same downward trend

was found in the age-standardised YLL rate (EAPC=-1.33 (-1.37 to -1.30)) and the age-standardised YLD rate (EAPC=-0.62 (-0.70 to -0.53)) (online supplemental table 5 and online supplemental figures 12-14).

At the regional level, Western Europe had the greatest number of DALYs (310691 (95% UI 255911 to 371106)) in 2019 (online supplemental table 1). The highest agestandardised DALY rates in 2019 were observed in high-income North America (51.27 per 100 000 people (95% UI 40.90 to 62.35)) (figure 3C). As shown in figure 4C, an increase in total DALYs was found across most GBD regions from 1990 to 2019. Most of the GBD regions had a downward trend in the age-standardised DALY rate, with the largest decrease in Andean Latin America (EAPC=-3.68 (95% CI -4.17 to -3.18)) (figure 2F).

At the national and territorial levels in 2019, China and the USA had the highest number of DALYs (232 464 (95% UI 179 903 to 291 090) and 215 289 (175 991 to 256 059), respectively) (online supplemental table 2 and online supplemental figure 6). The highest age-standardised DALY rate was observed in Norway in 2019 (80.37 per 100 000 people (56.25 to 108.56)) (online supplemental table 3 and online supplemental figure 10). From 1990 to 2019, more than 65% of countries or territories experienced a decrease in the age-standardised DALY rate of IBD, and the largest decrease was found in Peru (EAPC=–5.08 (95% CI –5.69 to –4.47)) (online supplemental figure 11).

In 2019, the global number of DALYs was also higher among females than among males (online supplemental table 1). The age-standardised DALY rate was 20.6 per 100 000 people (95% UI 17.2 to 24.3) among males and 19.7 per 100 000 people (16.2 to 23.5) among females (table 1). The number of DALYs was highest among males aged 50-54 years and females aged 55-59 years (figure 5C). The highest number of YLL occurred in the group aged 65-69 years (75 234, (63 865 to 83 022)), while the highest number of YLD occurred in the group aged 45-49 years (80 776, (53 187 to 113688)) (online supplemental figure 15). As with prevalent cases and deaths, the DALYs continued to increase for both sexes and were higher among females than among males in all years from 1990 to 2019. The age-standardised DALY rate decreased for both sexes between 1990 and 2019 (online supplemental figure 16).

# **Burden of IBD by SDI**

A higher SDI was associated with higher age-standardised prevalence rates of IBD, with values that were higher than the global rate in high and high-middle SDI quintiles and lower than the global rate in the other three SDI quintiles (table 1). The high-SDI quintile had the highest age-standardised prevalence rate, death rate and DALY rate in 2019. Between 1990 and 2019, the age-standardised death rate and age-standardised DALY rate decreased in all SDI quintiles except the high-SDI quintile, where they increased (EAPC=0.82 (95% CI 0.64 to 1.01)) and remained stable (EAPC=0.00 (-0.06 to 0.05)), respectively (table 1 and figure 2C,E). However,

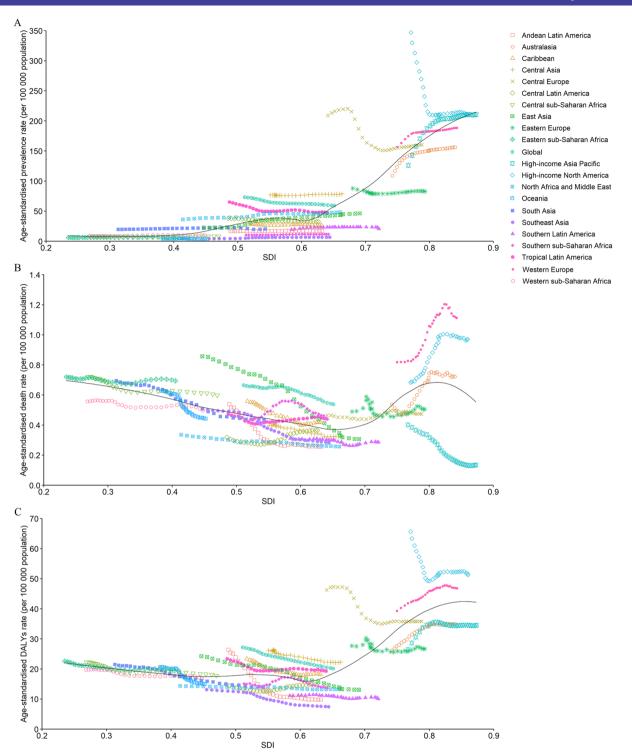


Figure 6 The age-standardised rates of IBD prevalence (A), deaths (B), and DALYs globally and for 21 GBD regions by SDI from 1990 to 2019. The expected age-standardised rates in 2019 based solely on SDI were represented by the black line. For each region, points from left to right depict estimates from each year from 1990 to 2019. DALYs, disability-adjusted life-years; GBD, Global Burden of Disease; IBD, inflammatory bowel disease; SDI, Socio-demographic Index.

the age-standardised prevalence rate decreased in the high and high-middle SDI quintiles and increased in the other three SDI quintiles during the observation period (table 1 and figure 2A).

6

The observed global and regional age-standardised prevalence, death, and DALY rates in relation to SDI are shown in figure 6, expressed in the annual time series from 1990

to 2019. Regions generally followed the trend of increased death and DALY rates with a higher SDI. However, more than 60% of the regions showed an upward trend in the age-standardised prevalence rate during the study period. At the global level, the age-standardised prevalence, death, and DALY rates dropped with increasing SDI values but were above the expected levels during the past 30 years.



# **DISCUSSION**

In this study, we comprehensively analysed the temporal trend in IBD burden at the global, regional and national levels. GBD 2019 reported 4.90 million IBD cases worldwide in 2019 and 4.79 million in 2017, while GBD 2017 reported 6.85 million in 2017. This discrepancy could be partly attributed to the improved specificity of case definition since GBD 2019 adjusted administrative data inputs towards expected stringent diagnosis using previously published IBD data with ICD codes. 11 In addition, GBD 2019 improved model fit prevalence and incidence by setting more plausible bounds on excess mortality rate and passing less-informative priors to lower levels of the geographical hierarchy in DisMod-MR 2.1.<sup>11</sup> Indeed, the GBD 2019 study provides the most current overview of the burden of IBD. It incorporates more data sources, with some from regions not previously assessed, providing updated estimates on global IBD epidemiology. II In addition, GBD 2019 updated the bias adjustment, which further improved data reliability.<sup>11</sup> After these adjustments, our study confirmed two epidemiological shifts in IBD since 1990. The number of prevalent cases has increased globally since 1990, with China and the USA having the highest number of cases. The ASR of death and DALYs decreased, implying substantial improvements in IBD management. The changing trends and geographical patterns have implications for policy-makers to prioritise IBD management, especially in newly industrialised countries.

The highest age-standardised prevalence rates were observed in high-income North America, Western Europe and the high-income Asia Pacific region. This pattern was also shown in high-SDI countries such as Norway and Canada. This is consistent with several previous meta-analyses <sup>6 17</sup> and might correlate with several risk factors for IBD. <sup>18 19</sup> Heavily processed foods with low fibre and high fat content and sugar are a risk factor for decreased microbial species. <sup>20–22</sup> Other risk factors include smoking, hygiene and latitude resulting in vitamin D/sun exposure. <sup>23 24</sup> The largest reduction in the age-standardised prevalence rate was also observed in high-income North America, which was consistent with the results of some previous reports, <sup>6 25</sup> indicating the shift in the epidemiological stages of IBD in Western countries. <sup>26 27</sup>

Despite increasing numbers of prevalent cases, the global age-standardised prevalence rate showed a downward trend. This discrepancy reflects the denominator effects of an increasing global population and age-specific effects. <sup>28</sup> Coward *et al* <sup>29</sup> reported that the prevalence rate among elderly individuals and adults was ten times greater than that among paediatric patients in Canada. The trend in the age-standardised prevalence rate differed substantially between GBD regions. The greatest upward trend was observed in East Asia. At the national level, China, with a total number of 911 405 IBD patients, was a prominent contributor to the total number of global IBD cases. This pattern is consistent with several previous reports, <sup>6 30</sup> which is related mainly to urbanisation, industrialisation

and cultural Westernisation in some areas of China.<sup>31</sup> With epidemiological surveillance strategies shifting from paper records to electronic healthcare databases using ICD codes, advances in healthcare facilities such as the implementation of endoscopy<sup>32</sup> and the detection and diagnosis of IBD have also increased.

IBD causes body disability. 33 34 Consistent with a previous study, 4 the age-standardised DALY and mortality rates showed a downward trend globally, especially in East Asia, likely resulting from improved treatment strategies, such as the early use of biological agents and patient support programmes. The introduction of biological agents improved quality of life and reduced the surgery rate. Unfortunately, the cost of biological therapy is considerable, estimated at more than US\$25 000 per year. More attention should be given to optimising patient selection, dosing and withdrawal.

There are some limitations of our study. First, the accuracy of the estimated IBD burden largely depends on the availability and quality of data acquired, which could be partially compensated by statistical methods. However, in regions with scarce data, especially in low-SDI countries, estimates could only rely on predictive covariates or global trends with consideration of SDI level and data from a single country, which is less representative. Extra caution should be taken when interpreting data from these areas. Additional high-quality population-based studies should be performed, especially in countries with scarce data. Second, estimate discrepancies compared with the results of some of the previously published studies could be further improved, although GBD 2019 has improved model fit for prevalence and incidence, partly overcoming the discrepancies. For example, the prevalence rate in Canada was only 46-57 per 100 000 people in GBD 2017. However, a rate of approximately 520 per 100 000 people was reported by a previous large population-based study in Canada.<sup>38</sup> GBD 2019 reported a rate of 357.73 per 100000 people after adjustment. Third, UC-specific and CD-specific trends were not assessed due to the lack of relevant data. The association between IBD and certain risk factors should also be included in the future. Nevertheless, GBD 2019 provides the most up-to-date global IBD epidemiology estimates for the last three decades and implications for new hypotheses. It covers 204 countries. Therefore, GBD 2019 generates more representative data and can compensate for biases in individual studies.

# **CONCLUSIONS**

Despite the reduction in ASRs of prevalence, deaths and DALYs, IBD will continue to be a major public health burden due to increasing numbers of prevalent cases worldwide. However, the trend has shifted substantially since 1990. Although the age-standardised prevalence rate has increased rapidly in newly industrialised countries, especially in East Asia, the incidence has stabilised or even decreased in Western countries such as those in high-income North America. The prevalence of IBD in



newly industrialised countries is quickly approaching that in Western countries. More systematic epidemiological monitoring strategies, especially in low-SDI countries, and the integration of risk factors into the estimate model of the GBD Study would further facilitate IBD management. Our findings might help some policy makers justify medical resource allocation, especially in low-SDI countries.

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Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Ethics approval Because the study was based on publicly available dataset, this study was exempted by the ethics committee of the Third Xiangya Hospital of Central South University.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as online supplemental information.

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Supplement to: The global, regional and national burden of inflammatory bowel disease in 204 countries and territories from 1990 to 2019, based on Global Burden Disease Study 2019

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# **Supplementary Tables**

Supplementary Table 1: Prevalent cases, deaths and disability adjusted life years (DALYs) of inflammatory bower disease (IBD) in 1990 and 2019 and their percentage change from 1990 to 2019

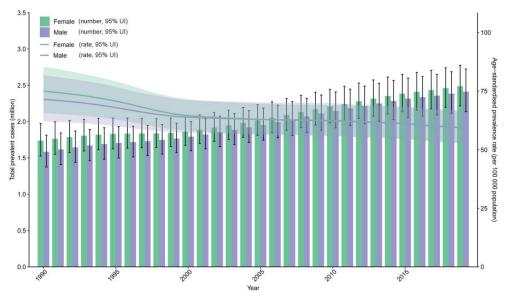
Supplementary Table 2: Prevalent cases, deaths and disability adjusted life years (DALYs) for inflammatory bower disease (IBD) by 204 countries or territories in 2019 and 2019, and their percentage change from 1990 to 2019.

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Supplementary Table 4: Incident cases, YLLs and YLDs of inflammatory bower disease (IBD) in 1990 and 2019 and their percentage change from 1990 to 2019.

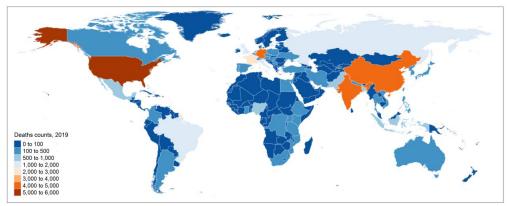
Supplementary Table 5: Age-standardised incidence, YLL and YLD rates for inflammatory bower disease (IBD) in 1990 and 2019 and their temporal trends from 1990 to 2019.

**Supplementary Figure 1.** Trends from 1990 to 2019 in number and age-standardised prevalence rate of IBD at the global level.



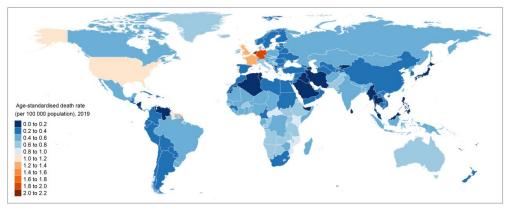
Error bars indicate the 95% uncertainty interval (UI) for number of prevalent cases. Shading indicates the 95% UI for the age-standardised prevalence rate. IBD, inflammatory bowel disease.

**Supplementary Figure 2.** The absolute number of deaths due to IBD for 204 countries and territories in 2019.



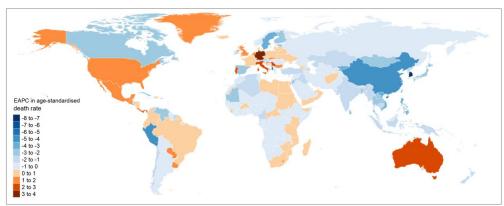
IBD, inflammatory bowel disease.

**Supplementary Figure 3.** The age-standardised death rate (per 100 000 population) of IBD for 204 countries and territories in 2019.



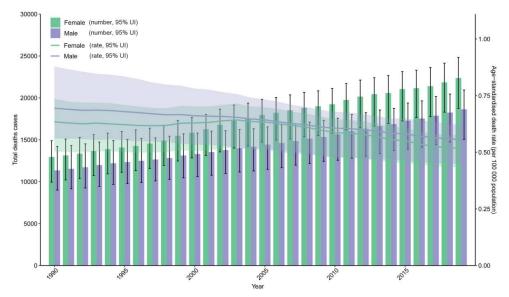
IBD, inflammatory bowel disease.

**Supplementary Figure 4.** The EAPC of age-standardised death rate for IBD in 204 countries and territories between 1990 and 2019.



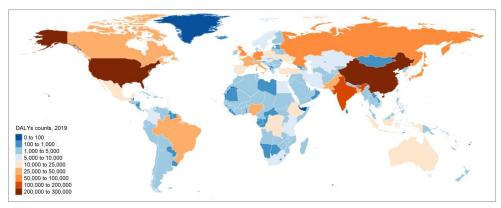
EAPC, estimated annual percentage change; IBD, inflammatory bowel disease.

**Supplementary Figure 5.** Trends from 1990 to 2019 in number and age-standardised death rate of IBD at the global level.



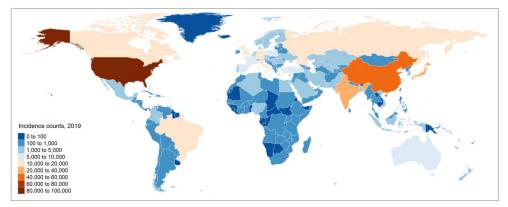
Error bars indicate the 95% uncertainty interval (UI) for number of death cases. Shading indicates the 95% UI for the age-standardised death rate. IBD, inflammatory bowel disease.

**Supplementary Figure 6.** The absolute number of DALYs due to IBD for 204 countries and territories in 2019.



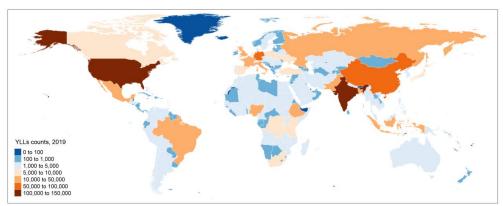
DALYs, disability adjusted life years; IBD, inflammatory bowel disease.

**Supplementary Figure 7.** The absolute number of incident cases due to IBD for 204 countries and territories in 2019.



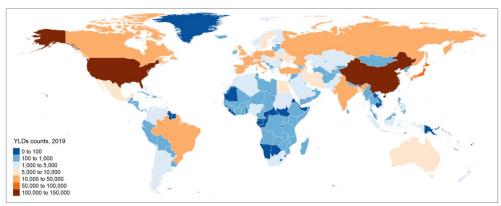
IBD, inflammatory bowel disease.

**Supplementary Figure 8.** The absolute number of YLLs due to IBD for 204 countries and territories in 2019.



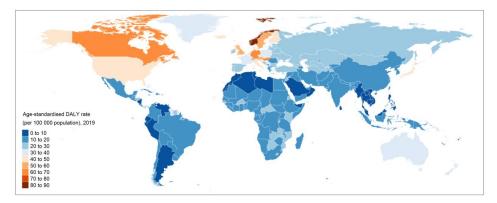
IBD, inflammatory bowel disease; YLLs, years of life lost.

**Supplementary Figure 9.** The absolute number of YLDs due to IBD for 204 countries and territories in 2019.



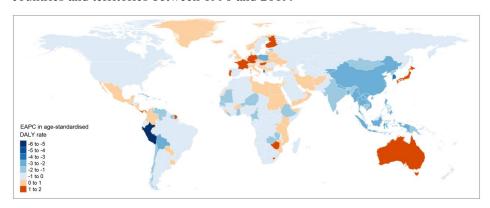
IBD, inflammatory bowel disease; YLDs, years of life lived with disability.

**Supplementary Figure 10.** The age-standardised DALY rate (per 100 000 population) of IBD for 204 countries and territories in 2019.



DALY, disability adjusted life year; IBD, inflammatory bowel disease.

**Supplementary Figure 11.** The EAPC of age-standardised DALY rate for IBD in 204 countries and territories between 1990 and 2019.



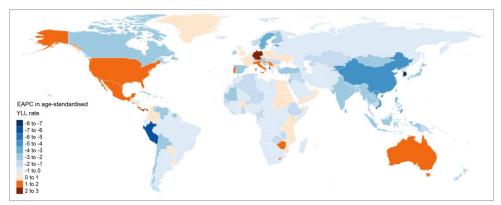
DALY, disability adjusted life year; EAPC, estimated annual percentage change; IBD, inflammatory bowel disease.

**Supplementary Figure 12.** The EAPC of age-standardised incidence rate for IBD in 204 countries and territories between 1990 and 2019.



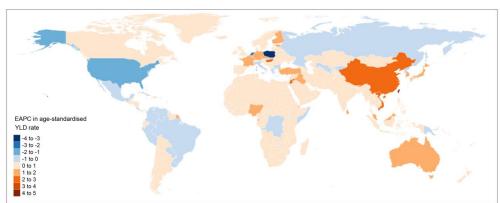
EAPC, estimated annual percentage change; IBD, inflammatory bowel disease.

**Supplementary Figure 13.** The EAPC of age-standardised YLL rate for IBD in 204 countries and territories between 1990 and 2019.



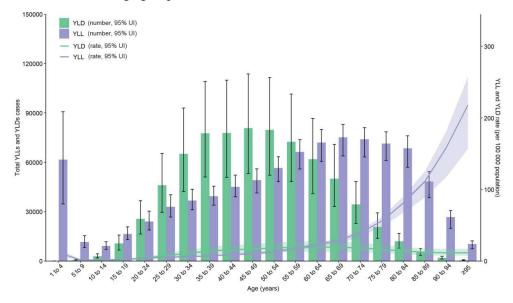
EAPC, estimated annual percentage change; IBD, inflammatory bowel disease; YLL, years of life lost.

**Supplementary Figure 14.** The EAPC of age-standardised YLD rate for IBD in 204 countries and territories between 1990 and 2019.



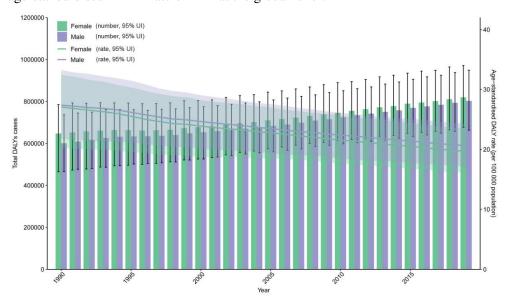
EAPC, estimated annual percentage change; IBD, inflammatory bowel disease; YLD, years of life lived with disability.

**Supplementary Figure 15.** Global counts and age-specific rates of YLLs and YLDs due to IBD across age group in 2019.



Error bars indicate the 95% uncertainty interval (UI) for YLLs and YLDs. Shading indicates the 95% UI for the rates. IBD, inflammatory bowel disease; YLDs, years of life lived with disability; YLLs, years of life lost.

**Supplementary Figure 16.** Trends from 1990 to 2019 in number and age-standardised DALY rate of IBD at the global level.



Error bars indicate the 95% uncertainty interval (UI) for number of DALYs cases. Shading indicates the 95% UI for the age-standardised DALY rate. DALY, disability adjusted life year; IBD, inflammatory bowel disease.

**Supplementary Table 1** Prevalent cases, deaths and disability adjusted life years (DALYs) of inflammatory bower disease (IBD) in 1990 and 2019 and their percentage change from 1990 to 2019

		Prevalent case	es		Deaths			DALYs	
Characteristics	1990 No. (95%UI)	2019 No. (95%UI)	Percentage change (%) (95%UI)	1990 No. (95%UI)	2019 No. (95%UI)	Percentage change (%) (95%UI)	1990 No. (95%UI)	2019 No. (95%UI)	Percentage change (%) (95%UI)
Global	3322132 (2903627 to 3790430)	4898558 (4353233 to 5499296)	47.45 (43.76 to 51.43)	24295 (20258 to 28376)	40998 (34933 to 44661)	68.75 (47.12 to 94.62)	1248275 (963014 to 1503174)	1622498 (1356296 to 1915042)	29.98 (14.83 to 50.21)
Sex									
Male	1584462 (1374414 to 1814399)	2411840 (2136219 to 2724369)	52.22 (48.47 to 56.34)	11347 (9002 to 14218)	18633 (15060 to 20938)	64.21 (37.52 to 90.74)	600963 (466033 to 736983)	802748 (663563 to 949342)	33.58 (15.75 to 53.92)
Female	1737670 (1523309 to 1974864)	2486718 (2216240 to 2775262)	43.11 (39.03 to 47.31)	12947 (9953 to 14888)	22365 (18759 to 24838)	72.74 (47.65 to 115.99)	647311 (465166 to 785221)	819751 (676700 to 971584)	26.64 (10.70 to 54.99)
SDI quintile									
High	1883348 (1654416 to	2283717 (2079286 to 2493360)	21.26 (15.68 to 27.38)	7386 (6656 to 8731)	17801 (14215 to 19552)	141.02 (73.28 to 161.46)	415485 (323781 to 520634)	603330 (489511 to 729627)	45.21 (26.78 to 56.21)
High-middle	2128434) 942961 (817123 to 1086707)	1362491 (1206918 to 1538822)	44.49 (40.70 to 48.74)	5045 (4476 to 5782)	7272 (6519 to 8110)	44.13 (24.31 to 65.11)	288336 (236216 to 344578)	352794 (285252 to 432623)	22.36 (12.11 to 32.44)
Middle	301457 (252149 to 355140)	818871 (688348 to 968484)	171.64 (163.13 to 181.21)	5425 (4146 to 6768)	6598 (5602 to 7341)	21.61 (-2.11 to 58.92)	248139 (184995 to 297495)	291088 (240412 to 345833)	17.31 (-3.67 to 60.14)
Low-middle	152118 (124851 to 184061)	335789 (278324 to 403122)	120.74 (115.27 to 126.61)	4533 (3018 to 6152)	6180 (4994 to 7392)	36.34 (9.54 to 81.14)	203020 (126472 to 268417)	236584 (189248 to 283804)	16.53 (-9.40 to 65.68)
Low	41264 (33866 to 50406)	95941 (78454 to 116802)	132.51 (127.59 to 136.94)	1893 (1144 to 2626)	3125 (2442 to 4016)	65.06 (21.70 to 141.90)	92718 (45634 to 147570)	137867 (100264 to 180825)	48.69 (1.39 to 148.81)
GBD region									
Andean Latin America	4294 (3643 to 5026)	10380 (8875 to 12027)	141.73 (131.47 to 153.82)	168 (99 to 249)	144 (111 to 182)	-14.37 (-45.71 to 56.11)	10768 (5527 to 17349)	5942 (4666 to 7395)	-44.82 (-67.80 to 12.24)
Australasia	24135 (20445 to 28083)	53225 (47167 to 59881)	120.53 (104.13 to 137.71)	117 (103 to 139)	400 (291 to 465)	241.68 (120.09 to 298.29)	5802 (4531 to 7299)	13328 (10488 to 16560)	129.69 (92.95 to 151.94)

Caribbean	8194 (7012 to 9634)	13360 (11262 to 15892)	63.04 (55.79 to 71.54)	157 (118 to 208)	210 (156 to 264)	33.66 (3.39 to 70.80)	7451 (5008 to 11792)	8900 (6523 to 11709)	19.44 (-16.93 to 53.06)
Central Asia	42100 (35493 to 49944)	72034 (60489 to 86073)	71.10 (65.37 to 77.74)	215 (167 to 251)	249 (218 to 288)	15.70 (-1.33 to 47.63)	15952 (12800 to 19230)	20237 (16357 to 24806)	26.86 (10.10 to 46.33)
Central Europe	290304 (249715 to 338920)	236196 (214732 to 259804)	-18.64 (-24.57 to -11.98)	604 (563 to 696)	958 (799 to 1104)	58.66 (24.18 to 83.87)	61546 (47417 to 77414)	54694 (42729 to 67570)	-11.13 (-18.70 to -3.30)
Central Latin America	40471 (34451 to 47294)	81606 (69904 to 95542)	101.64 (96.51 to 107.43)	301 (270 to 330)	854 (702 to 997)	183.85 (135.53 to 232.71)	18096 (15456 to 20849)	36178 (30219 to 43014)	99.92 (74.40 to 127.28)
Central Sub-Saharan Africa	2781 (2267 to 3400)	7015 (5690 to 8639)	152.29 (138.04 to 168.85)	193 (118 to 301)	355 (254 to 497)	84.05 (16.03 to 200.18)	9491 (4855 to 17734)	15574 (10733 to 22385)	64.1 (-9.96 to 213.74)
East Asia	244790 (202981 to 291054)	925074 (788347 to 1085238)	277.90 (260.33 to 300.79)	5734 (4169 to 7374)	4983 (4074 to 5769)	-13.11 (-36.64 to 22.31)	240231 (167510 to 299891)	239963 (187123 to 299808)	-0.11 (-25.58 to 54.11)
Eastern Europe	233969 (199922 to 274757)	237672 (203164 to 276577)	1.58 (-0.80 to 4.10)	1305 (992 to 1507)	1633 (1370 to 1865)	25.06 (5.75 to 56.78)	72932 (57526 to 88869)	77123 (63287 to 94008)	5.75 (-4.27 to 21.34)
Eastern Sub-Saharan Africa	7067 (5804 to 8596)	18830 (15395 to 22997)	166.43 (160.39 to 173.14)	697 (462 to 1111)	1253 (923 to 1678)	79.64 (7.37 to 192.58)	35480 (16916 to 68481)	52928 (39435 to 74044)	49.18 (-19.5 to 202.23)
High-income Asia Pacific	255028 (213480 to 302123)	459062 (403027 to 520418)	80.00 (65.57 to 95.92)	685 (439 to 789)	694 (556 to 912)	1.33 (-19.66 to 85.83)	51699 (38591 to 66563)	78601 (55261 to 105049)	52.04 (37.02 to 68.81)
High-income North America	1100006 (961428 to 1248970)	920750 (859032 to 982587)	-16.30 (-22.94 to -9.05)	2442 (2189 to 2964)	6314 (5076 to 6886)	158.55 (83.64 to 182.08)	209072 (155328 to 270983)	245234 (200564 to 294018)	17.30 (2.00 to 33.02)
North Africa and Middle East	89159 (76544 to 102596)	282534 (239506 to 334478)	216.89 (196.52 to 234.98)	592 (407 to 836)	1033 (866 to 1226)	74.43 (20.30 to 164.45)	35438 (25569 to 46318)	72755 (56928 to 91112)	105.30 (56.49 to 171.10)
Oceania	199 (159 to 240)	417 (338 to 509)	109.69 (96.12 to 124.69)	22 (14 to 31)	36 (26 to 51)	65.38 (12.06 to 142.01)	1036 (602 to 1625)	1696 (1107 to 2576)	63.81 (3.61 to 170.09)
South Asia	157942 (127077 to 195839)	335746 (272330 to 413946)	112.58 (106.64 to 120.13)	3864 (2533 to 5504)	5702 (4286 to 7410)	47.58 (16.55 to 93.31)	171448 (105178 to 227334)	221978 (166881 to 278494)	29.47 (1.12 to 76.01)
Southeast Asia	16557 (13040 to 20323)	48152 (39527 to 58063)	190.83 (174.97 to 212.05)	1230 (741 to 1536)	1498 (1139 to 1771)	21.79 (-3.10 to 72.54)	45316 (30762 to 56838)	46686 (38847 to 55186)	3.02 (-20.10 to 46.45)
Southern Latin America	9153 (7618 to 10754)	15243 (12896 to	66.53 (58.55 to 74.68)	139 (123 to 151)	236 (210 to 280)	69.36 (46.49 to 101.01)	5248 (4578 to 5993)	7740 (6670 to 9152)	47.49 (32.63 to 65.73)

		18023)							
Southern Sub-Saharan Africa	3760 (3109 to 4581)	8141 (6736 to 9864)	116.54 (109.70 to 124.72)	138 (99 to 169)	240 (198 to 278)	74.44 (31.74 to 161.11)	6615 (4279 to 9518)	9230 (7542 to 10926)	39.54 (-0.67 to 121.74)
Tropical Latin America	74856 (65373 to 85425)	117653 (102012 to 134397)	57.17 (51.82 to 63.44)	455 (400 to 492)	1047 (950 to 1217)	129.84 (109.36 to 167.46)	27724 (23589 to 32357)	46997 (40115 to 54972)	69.52 (59.16 to 83.74)
Western Europe	707145 (634121 to 786986)	1026504 (925440 to 1127578)	45.16 (41.37 to 48.78)	4600 (4132 to 5864)	11981 (9244 to 13315)	160.46 (66.17 to 190.17)	185733 (149509 to 227830)	310691 (255911 to 371106)	67.28 (34.40 to 79.72)
Western Sub-Saharan Africa	10222 (8432 to 12421)	28965 (23820 to 35133)	183.36 (178.45 to 188.56)	634 (365 to 996)	1178 (805 to 1610)	85.67 (40.49 to 177.24)	31197 (14381 to 47867)	56026 (35327 to 78051)	79.59 (30.21 to 198.66)

Abbreviations: GBD=Global Burden of Disease. SDI=Socio-demographic Index. UI=uncertainty interval.

**Supplementary Table 2** Prevalent cases, deaths and disability adjusted life years (DALYs) for inflammatory bower disease (IBD) by 204 countries or territories in 2019 and 2019, and their percentage change from 1990 to 2019

		Prevalent ca	ses		Deatl	hs		DALYs	
Characteristics	1990 No. (95%UI)	2019 No. (95%UI)	Percentage change (%) (95%UI)	1990 No. (95%UI)	2019 No. (95%UI)	Percentage change (%) (95%UI)	1990 No. (95%UI)	2019 No. (95%UI)	Percentage change (%) (95%UI)
Afghanistan	1738 (1410 to 2120)	5699 (4548 to 7113)	228.01 (200.09 to 258.61)	31 (14 to 55)	58 (31 to 89)	88.34 (29.82 to 190.04)	1237 (627 to 2377)	3017 (1879 to 4660)	143.91 (72.00 to 244.29)
Albania	3324 (2792 to 3928)	3896 (3286 to 4630)	17.22 (7.74 to 27.7)	50 (21 to 65)	13 (9 to 19)	-74.70 (-84.65 to -32.21)	3904 (1399 to 5200)	991 (727 to 1300)	-74.62 (-83.28 to -33.39)
Algeria	5982 (5169 to 6928)	16875 (13593 to 20871)	182.11 (149.55 to 221.44)	28 (18 to 44)	53 (38 to 70)	90.14 (11.64 to 209.90)	1826 (1320 to 2675)	4021 (2997 to 5295)	120.18 (51.51 to 190.24)
American Samoa	2 (2 to 3)	3 (3 to 4)	48.88 (37.37 to 61.93)	0 (0 to 1)	0 (0 to 0)	-37.72 (-65.35 to 47.30)	15 (9 to 21)	8 (5 to 14)	-47.39 (-70.61 to 25.25)
Andorra	69 (58 to 81)	133 (111 to 159)	93.79 (79.63 to 110.16)	0 (0 to 0)	1 (1 to 2)	266.11 (124.63 to 467.38)	17 (13 to 23)	36 (26 to 47)	111.42 (66.64 to 167.41)
Angola	460 (373 to 573)	1648 (1338 to 2017)	258.10 (233.16 to 285.26)	37 (17 to 76)	78 (52 to 117)	112.25 (2.89 to 349.24)	1913 (713 to 4719)	3662 (2249 to 5786)	91.46 (-19.81 to 397.70)
Antigua and Barbuda	17 (14 to 20)	34 (28 to 41)	102.06 (85.45 to 119.33)	1 (0 to 1)	1 (0 to 1)	17.47 (-15.05 to 92.04)	18 (13 to 20)	22 (18 to 28)	25.07 (-4.44 to 87.07)
Argentina	4828 (3926 to 5756)	7825 (6413 to 9484)	62.10 (49.74 to 73.10)	84 (74 to 93)	143 (124 to 169)	71.49 (45.04 to 102.47)	2981 (2577 to 3433)	4556 (3904 to 5373)	52.84 (34.77 to 71.30)
Armenia	2547 (2109 to 3013)	3263 (2744 to 3956)	28.11 (18.76 to 37.72)	7 (5 to 9)	11 (8 to 13)	51.30 (17.69 to 101.11)	637 (492 to 805)	764 (593 to 979)	19.86 (4.07 to 38.21)
Australia	18262 (15282 to 21523)	44624 (39169 to 50438)	144.35 (122.23 to 167.82)	97 (85 to 120)	369 (259 to 430)	279.18 (123.37 to 350.95)	4536 (3533 to 5743)	11569 (9111 to 14334)	155.05 (104.34 to 184.94)
Austria	25345 (22242 to 28177)	33080 (29600 to 37293)	30.52 (19.87 to 42.12)	99 (88 to 133)	101 (80 to 165)	2.52 (-14.48 to 30.58)	5699 (4484 to 7140)	6463 (4736 to 8366)	13.41 (1.99 to 27.18)
Azerbaijan	4623 (3817 to 5491)	9463 (7886 to 11458)	104.71 (89.06 to 120.81)	12 (9 to 15)	13 (10 to 18)	12.27 (-26.26 to 63.36)	1080 (815 to 1410)	1829 (1289 to 2470)	69.47 (44.70 to 98.86)
Bahamas	65 (55 to 77)	123 (102 to 152)	88.60 (70.75 to 107.18)	1 (1 to 1)	2 (1 to 2)	82.56 (39.32 to 142.99)	49 (41 to 57)	78 (63 to 98)	60.27 (27.44 to 102.98)
Bahrain	179 (152 to	846 (688 to	373.26	0 (0 to 1)	1 (1 to 2)	178.61	44 (32 to	167 (116 to	283.01

	206)	1035)	(309.51 to 442.36)			(82.33 to 326.1)	57)	229)	(204.71 to 374.48)
Bangladesh	11786 (9494 to 14655)	33018 (26285 to 41258)	180.14 (157.01 to 203.31)	544 (333 to 805)	713 (431 to 1068)	30.90 (-18.82 to 117.77)	23781 (13440 to 35324)	26354 (17363 to 37248)	10.82 (-35.76 to 104.55)
Barbados	183 (153 to 218)	282 (238 to 340)	54.27 (41.76 to 69.09)	1 (1 to 1)	2 (1 to 2)	48.15 (12.33 to 96.63)	58 (47 to 71)	81 (62 to 101)	39.17 (18.58 to 61.35)
Belarus	9910 (8453 to 11723)	11335 (9509 to 13529)	14.38 (6.51 to 23.58)	45 (32 to 60)	58 (42 to 77)	29.88 (-8.49 to 97.40)	2690 (2011 to 3484)	3063 (2364 to 3923)	13.87 (-6.13 to 41.64)
Belgium	9661 (8871 to 10430)	20093 (17518 to 22821)	107.97 (87.58 to 131.05)	113 (99 to 134)	273 (206 to 319)	141.39 (64.63 to 188.06)	3307 (2755 to 3921)	6370 (5236 to 7678)	92.63 (55.31 to 116.01)
Belize	26 (22 to 32)	87 (71 to 106)	230.96 (204.21 to 258.71)	1 (1 to 1)	2 (1 to 2)	117.53 (55.55 to 286.06)	40 (29 to 50)	77 (64 to 97)	91.51 (43.10 to 212.80)
Benin	209 (171 to 253)	685 (549 to 838)	227.98 (203.9 to 255.4)	14 (6 to 24)	30 (18 to 44)	116.13 (28.68 to 334.23)	694 (232 to 1320)	1437 (773 to 2281)	107.25 (11.24 to 374.73)
Bermuda	23 (19 to 28)	33 (27 to 39)	42.79 (30.81 to 55.62)	1 (0 to 1)	0 (0 to 1)	-15.72 (-38.69 to 37.20)	18 (14 to 21)	14 (11 to 18)	-22.33 (-40.21 to 11.58)
Bhutan	66 (52 to 83)	158 (128 to 197)	140.27 (120.87 to 162.46)	2 (1 to 4)	3 (2 to 7)	57.00 (-6.75 to 195.84)	86 (38 to 160)	102 (67 to 202)	18.91 (-35.13 to 133.49)
Bolivia (Plurinational State of)	569 (473 to 694)	1400 (1171 to 1693)	145.90 (129.42 to 165.45)	25 (10 to 48)	34 (26 to 45)	39.57 (-28.99 to 217.03)	1552 (546 to 3375)	1348 (986 to 1772)	-13.09 (-59.56 to 134.61)
Bosnia and Herzegovina	4910 (4225 to 5717)	5387 (4726 to 6247)	9.73 (1.15 to 17.87)	18 (12 to 23)	26 (13 to 35)	40.25 (-11.49 to 108.03)	1285 (987 to 1644)	1372 (949 to 1778)	6.80 (-13.90 to 28.67)
Botswana	70 (58 to 86)	221 (179 to 276)	214.79 (189.25 to 244.24)	4 (3 to 6)	9 (6 to 13)	104.82 (14.62 to 221.73)	188 (121 to 269)	388 (241 to 620)	106.67 (18.10 to 226.68)
Brazil	73860 (64511 to 84264)	115697 (100339 to 132222)	56.64 (51.18 to 62.94)	451 (396 to 488)	1035 (939 to 1207)	129.44 (108.60 to 167.01)	27396 (23325 to 31992)	46350 (39647 to 54190)	69.18 (58.65 to 83.50)
Brunei Darussalam	126 (100 to 155)	295 (237 to 361)	134.79 (114.54 to 156.55)	1 (1 to 2)	3 (2 to 3)	127.20 (58.12 to 237.13)	57 (40 to 85)	114 (89 to 147)	99.44 (53.62 to 164.86)
Bulgaria	13507 (11443 to 15898)	11275 (9602 to 13477)	-16.53 (-23.08 to -9.27)	25 (22 to 32)	41 (32 to 51)	65.55 (22.25 to 118.70)	2779 (2081 to 3597)	2569 (1937 to 3319)	-7.55 (-19.78 to 6.98)
Burkina Faso	392 (318 to 485)	1098 (901 to 1347)	180.10 (158.26 to	35 (16 to 58)	81 (41 to 129)	130.36 (25.65 to	1781 (607 to 3594)	3942 (1729 to 7006)	121.28 (15.32 to

Burundi	207 (169 to 255)	459 (369 to 561)	200.27) 121.41 (105.47 to 137.36)	21 (13 to 37)	38 (24 to 58)	350.02) 76.44 (-8.52 to 253.21)	1064 (461 to 2387)	1608 (1001 to 2527)	380.59) 51.13 (-33.49 to 272.32)
Cabo Verde	23 (19 to 28)	63 (51 to 78)	176.77 (156.29 to 198.45)	1 (0 to 1)	1 (1 to 1)	37.26 (-16.62 to 131.63)	34 (21 to 47)	43 (35 to 54)	28.23 (-15.29 to 118.40)
Cambodia	218 (168 to 273)	595 (467 to 730)	172.54 (148.48 to 197.52)	26 (14 to 39)	38 (26 to 48)	46.42 (-4.73 to 167.94)	1175 (547 to 2166)	1222 (890 to 1546)	3.97 (-44.25 to 128.29)
Cameroon	538 (438 to 666)	1938 (1576 to 2393)	259.93 (232.74 to 288.04)	30 (14 to 46)	58 (30 to 95)	95.05 (-1.81 to 218.33)	1367 (583 to 2134)	2830 (1520 to 4639)	107.06 (11.41 to 245.01)
Canada	116922 (112352 to 121655)	157737 (142113 to 173888)	34.91 (23.15 to 47.18)	270 (241 to 302)	403 (323 to 605)	49.15 (24.68 to 106.93)	22694 (17260 to 29101)	29915 (21904 to 38441)	31.82 (19.21 to 46.22)
Central African Republic	116 (95 to 145)	243 (199 to 299)	109.71 (91.54 to 126.84)	12 (7 to 19)	21 (12 to 35)	80.23 (18.71 to 166.11)	510 (273 to 935)	890 (475 to 1568)	74.48 (9.24 to 167.75)
Chad	251 (205 to 306)	713 (580 to 881)	184.44 (162.13 to 208.28)	21 (10 to 35)	44 (25 to 64)	108.90 (42.17 to 222.10)	960 (360 to 1689)	2084 (1020 to 3460)	117.09 (31.20 to 260.72)
Chile	3739 (3165 to 4369)	6732 (5813 to 7788)	80.06 (68.43 to 93.27)	46 (36 to 51)	70 (59 to 89)	53.60 (25.60 to 123.36)	1928 (1573 to 2244)	2612 (2169 to 3169)	35.45 (14.76 to 72.90)
China	239473 (198363 to 285024)	911045 (776347 to 1069533)	280.44 (262.77 to 303.34)	5560 (4048 to 7203)	4676 (3774 to 5461)	-15.89 (-39.57 to 19.52)	234245 (162916 to 293663)	232464 (179903 to 291090)	-0.76 (-26.71 to 54.23)
Colombia	6732 (5626 to 7997)	15348 (13025 to 18234)	127.99 (113.25 to 144.58)	56 (48 to 61)	154 (116 to 202)	175.73 (106.78 to 258.47)	3215 (2689 to 3798)	6419 (4991 to 7986)	99.66 (64.35 to 143.95)
Comoros	21 (17 to 26)	48 (39 to 60)	123.01 (106.31 to 142.32)	2 (1 to 3)	4 (2 to 6)	81.66 (13.33 to 277.77)	77 (29 to 137)	119 (75 to 174)	54.58 (-16.19 to 298.98)
Congo	145 (120 to 178)	421 (343 to 518)	189.59 (170.45 to 215.68)	9 (6 to 14)	17 (12 to 25)	87.61 (15.68 to 196.61)	396 (237 to 645)	681 (463 to 980)	72.21 (-4.05 to 195.14)
Cook Islands	1 (1 to 1)	1 (1 to 2)	28.57 (18.27 to 40.87)	0 (0 to 0)	0 (0 to 0)	-14.75 (-42.49 to 32.51)	8 (5 to 11)	5 (3 to 7)	-33.66 (-57.85 to 4.48)
Costa Rica	670 (560 to 796)	1637 (1380 to 1937)	144.55 (127.55 to 162.48)	3 (2 to 3)	10 (7 to 13)	270.81 (169.90 to 398.49)	190 (150 to 238)	524 (399 to 669)	176.16 (128 to 235.84)
Côte d'Ivoire	578 (465 to 714)	1562 (1251 to 1950)	170.18 (151.08 to	25 (11 to 42)	54 (32 to 79)	111.95 (32.09 to	1324 (535 to 2260)	2583 (1501 to 3952)	95.11 (14.75 to 276.09)

			190.01)			290.61)			
Croatia	9449 (8823 to 10129)	10780 (9980 to 11592)	14.09 (9.79 to 18.67)	16 (14 to 24)	33 (25 to 42)	106.49 (18.11 to 180.74)	1866 (1411 to 2410)	2288 (1717 to 2898)	22.61 (2.99 to 39.06)
Cuba	3240 (2702 to 3901)	4574 (3750 to 5525)	41.18 (29.72 to 54.70)	36 (23 to 43)	42 (33 to 53)	16.33 (-11.71 to 79.06)	1518 (1151 to 1818)	1682 (1335 to 2085)	10.76 (-8.18 to 38.33)
Cyprus	344 (292 to 400)	962 (870 to 1050)	179.86 (151.26 to 216.30)	12 (7 to 16)	16 (12 to 20)	35.72 (-8.18 to 121.22)	257 (180 to 333)	370 (303 to 444)	43.92 (7.35 to 105.55)
Czechia	10218 (8616 to 12269)	20802 (19084 to 22519)	103.57 (74.68 to 138.01)	71 (64 to 82)	114 (87 to 141)	59.45 (13.25 to 100.62)	3246 (2697 to 3932)	5259 (4127 to 6597)	62.01 (34.95 to 90.03)
Democratic People's Republic of	3097 (2554 to 3714)	4965 (4120 to 5978)	60.33 (48.19 to 72.89)	74 (41 to 114)	108 (75 to	45.76 (-9.28 to 166.1)	3363 (1697 to 6033)	3161 (2323 to 4117)	-5.99 (-46.37 to
Korea Democratic Republic of the Congo	1975 (1605 to 2418)	4445 (3597 to 5502)	125.06 (107.08 to 145.69)	130 (79 to 207)	231 (159 to 336)	77.23 (4.65 to 194.58)	6456 (3284 to 12595)	10018 (6738 to 15367)	81.39) 55.18 (-21.39 to 209.02)
Denmark	13729 (12468 to 15154)	15310 (13920 to 16882)	11.51 (5.37 to 17.43)	43 (38 to 50)	70 (60 to 83)	65.35 (42.63 to 92.58)	2893 (2227 to 3654)	3391 (2644 to 4239)	17.21 (8.04 to 27.16)
Djibouti	20 (16 to 25)	90 (72 to 111)	342.41 (307.26 to 378.51)	1 (1 to 2)	3 (2 to 5)	190.20 (72.46 to 408.23)	60 (27 to 121)	144 (88 to 236)	138.93 (25.91 to 367.14)
Dominica	19 (16 to 23)	22 (18 to 27)	17.43 (7.09 to 28.52)	1 (1 to 1)	1 (0 to 1)	-9.08 (-35.39 to 27.05)	23 (19 to 28)	21 (16 to 27)	-11.16 (-34.54 to 19.86)
Dominican Republic	1239 (1022 to 1507)	2521 (2070 to 3084)	103.40 (87.28 to 121.86)	11 (9 to 16)	22 (16 to 30)	99.41 (29.65 to 202.38)	732 (527 to 1060)	1109 (821 to 1450)	51.44 (0.42 to 118.17)
Ecuador	1159 (1021 to 1302)	3315 (2981 to 3667)	186.04 (172.00 to 200.27)	16 (12 to 21)	34 (24 to 44)	107.95 (37.86 to 223.02)	982 (705 to 1302)	1475 (1120 to 1823)	50.25 (3.59 to 124.68)
Egypt	17107 (14592 to 19726)	39271 (31782 to 48388)	129.56 (97.49 to 159.21)	59 (35 to 119)	119 (70 to 186)	100.85 (5.49 to 238.69)	4521 (3160 to 6354)	9453 (6709 to 12613)	109.10 (57.59 to 171.14)
El Salvador	842 (701 to 998)	1478 (1239 to 1741)	75.42 (62.88 to 87.97)	13 (8 to 16)	9 (7 to 12)	-28.67 (-54.13 to 18.21)	661 (461 to 881)	437 (329 to 574)	-33.83 (-55.24 to -1.58)
Equatorial Guinea	19 (16 to 24)	95 (79 to 117)	397.19 (353.40 to 443.01)	2 (1 to 3)	3 (2 to 4)	66.29 (-6.86 to 195.01)	73 (37 to 135)	119 (73 to 184)	63.28 (-22.44 to 233.97)

Eritrea	114 (93 to 141)	327 (263 to 398)	186.49 (164.83 to 210.17)	9 (4 to 17)	23 (15 to 34)	165.47 (22.99 to 516.12)	474 (168 to 1107)	1017 (645 to 1643)	114.61 (-12.62 to 493.09)
Estonia	1311 (1148 to 1494)	1821 (1593 to 2066)	38.90 (26.62 to 51.17)	10 (9 to 12)	9 (6 to 11)	-17.88 (-40.41 to 15.88)	511 (425 to 601)	448 (341 to 573)	-12.32 (-28.71 to 9.89)
Eswatini	38 (31 to 47)	80 (65 to 98)	109.48 (95.32 to 125.52)	2 (1 to 3)	4 (2 to 5)	72.30 (1.22 to 254.21)	106 (47 to 206)	153 (101 to 227)	44.21 (-27.03 to 242.69)
Ethiopia	1763 (1447 to 2135)	4457 (3634 to 5454)	152.76 (143.58 to 162.31)	219 (128 to 398)	325 (197 to 489)	48.24 (-33.27 to 200.06)	11296 (4911 to 25054)	12866 (8426 to 19913)	13.90 (-51.97 to 197.17)
Fiji	28 (23 to 34)	42 (35 to 52)	50.29 (36.12 to 66.63)	1 (1 to 2)	2 (1 to 2)	27.79 (-16.31 to 91.11)	59 (45 to 80)	68 (49 to 91)	14.67 (-24.77 to 72.54)
Finland	9450 (8777 to 10150)	19960 (17972 to 22078)	111.22 (94.08 to 127.73)	33 (24 to 39)	39 (33 to 46)	18.82 (-5.40 to 68.55)	2012 (1537 to 2571)	3465 (2517 to 4569)	72.24 (51.93 to 93.91)
France	60982 (55563 to 66348)	101092 (91225 to 111418)	65.77 (54.06 to 77.24)	943 (807 to 1043)	2181 (1253 to 2615)	131.25 (51.63 to 168.76)	23073 (19741 to 26699)	40856 (30081 to 48291)	77.07 (34.58 to 97.82)
Gabon	65 (54 to 80)	163 (134 to 201)	150.81 (132.67 to 173.19)	4 (2 to 6)	5 (4 to 8)	52.52 (-4.74 to 134.04)	144 (85 to 223)	205 (137 to 294)	42.02 (-13.99 to 140.73)
Gambia	49 (39 to 60)	130 (105 to 161)	162.91 (142.17 to 186.15)	3 (1 to 5)	5 (3 to 7)	85.18 (3.78 to 214.51)	132 (63 to 243)	215 (140 to 298)	62.69 (-6.86 to 192.83)
Georgia	5100 (4308 to 6037)	4210 (3545 to 5060)	-17.45 (-22.85 to -11.71)	16 (10 to 22)	17 (10 to 22)	3.41 (-22.82 to 40.33)	1222 (911 to 1581)	991 (741 to 1269)	-18.96 (-30.33 to -5.81)
Germany	101153 (87240 to 117946)	236048 (208508 to 266966)	133.36 (115.87 to 150.36)	1201 (987 to 2011)	4286 (3156 to 4903)	256.72 (63.30 to 351.66)	37493 (30500 to 51704)	92002 (74718 to 107721)	145.38 (51.12 to 187.04)
Ghana	982 (800 to 1189)	2894 (2355 to 3533)	194.61 (176.45 to 216.26)	56 (24 to 95)	103 (57 to 155)	84.24 (5.66 to 242.87)	2633 (1097 to 4201)	4506 (2554 to 6654)	71.16 (2.12 to 227.26)
Greece	12180 (10236 to 14240)	10403 (9422 to 11537)	-14.59 (-23.98 to -3.38)	35 (30 to 40)	66 (54 to 80)	86.77 (51.57 to 131.14)	2407 (1790 to 3170)	2424 (1911 to 3027)	0.69 (-13.02 to 15.85)
Greenland	78 (64 to 92)	108 (92 to 125)	39.24 (25.78 to 55.52)	0 (0 to 0)	0 (0 to 1)	147.84 (18.45 to 275.98)	17 (13 to 23)	25 (19 to 33)	49.12 (13.65 to 82.39)
Grenada	16 (13 to 19)	28 (23 to 35)	76.27 (60.87 to 93.49)	1 (1 to 1)	1 (1 to 2)	29.20 (-4.73 to 79.53)	33 (27 to 39)	43 (36 to 52)	30.86 (1.58 to 68.87)

Guam	8 (6 to 9)	12 (10 to 14)	49.19 (36.21 to 64.35)	0 (0 to 0)	0 (0 to 0)	21.60 (-20.17 to 84.57)	9 (7 to 12)	9 (7 to 13)	2.91 (-31.52 to 53.3)
Guatemala	1041 (867 to 1243)	3192 (2680 to 3791)	206.76 (185.26 to 227.66)	13 (8 to 22)	35 (27 to 45)	180.16 (34.43 to 377.94)	866 (522 to 1506)	1761 (1381 to 2210)	103.35 (6.31 to 246.71)
Guinea	309 (251 to 384)	677 (543 to 826)	119.23 (103.12 to 138.21)	19 (6 to 34)	29 (14 to 46)	49.62 (-7.31 to 159.78)	1008 (272 to 2032)	1414 (609 to 2445)	40.38 (-20.12 to 170.29)
Guinea-Bissau	44 (36 to 54)	103 (83 to 126)	134.63 (116.21 to 153.25)	4 (2 to 7)	6 (3 to 8)	39.91 (-18.84 to 175.43)	201 (66 to 403)	265 (152 to 392)	31.85 (-30.36 to 186.15)
Guyana	126 (103 to 152)	170 (139 to 210)	35.00 (24.45 to 45.80)	5 (4 to 6)	6 (5 to 9)	20.04 (-18.42 to 74.53)	239 (189 to 291)	257 (191 to 336)	7.22 (-25.07 to 53.03)
Haiti	860 (708 to 1057)	1916 (1570 to 2384)	122.68 (105.23 to 142.3)	58 (24 to 105)	85 (45 to 125)	45.78 (-11 to 148.4)	3030 (946 to 6879)	3782 (1875 to 6104)	24.85 (-33.53 to 156.75)
Honduras	619 (513 to 734)	1803 (1499 to 2141)	191.20 (171.74 to 211.20)	22 (14 to 31)	50 (31 to 69)	128.99 (47.94 to 251.69)	1240 (712 to 1929)	1816 (1191 to 2508)	46.37 (-11.95 to 139.27)
Hungary	24215 (21977 to 26809)	42233 (39099 to 45377)	74.41 (64.26 to 86.04)	84 (76 to 109)	100 (80 to 128)	19.27 (-4.55 to 45.83)	5849 (4647 to 7201)	8339 (6257 to 10544)	42.56 (25.99 to 56.19)
Iceland	357 (301 to 420)	872 (752 to 1007)	144.33 (123.25 to 167.58)	2 (2 to 2)	4 (3 to 5)	107.81 (52.43 to 151.5)	90 (71 to 113)	187 (142 to 239)	107.79 (81.26 to 131.98)
India	133927 (107800 to 166434)	270719 (219873 to 332264)	102.14 (95.94 to 110.29)	2770 (1783 to 3802)	4214 (2950 to 5531)	52.13 (19.29 to 98.65)	127568 (77798 to 169843)	164416 (117527 to 208276)	28.89 (1.40 to 72.21)
Indonesia	5025 (3974 to 6141)	11410 (9158 to 13704)	127.09 (115.15 to 141.04)	704 (401 to 910)	913 (582 to 1179)	29.58 (2.63 to 76.95)	26026 (16965 to 34445)	24943 (18268 to 32252)	-4.16 (-31.91 to 42.06)
Iran (Islamic Republic of)	14964 (12153 to 18513)	40493 (32952 to 49751)	170.60 (160.28 to 181.00)	51 (33 to 68)	132 (55 to 164)	158.02 (43.67 to 247.65)	4022 (3121 to 5103)	9481 (6679 to 12439)	135.71 (84.19 to 177.03)
Iraq	2270 (1890 to 2694)	10029 (8221 to 12199)	341.76 (303.6 to 377.49)	34 (21 to 51)	51 (38 to 67)	52.37 (-14.19 to 162.33)	2135 (1267 to 3447)	3719 (2808 to 4931)	74.13 (2.20 to 190.75)
Ireland	3253 (2736 to 3869)	5762 (4988 to 6655)	77.13 (58.69 to 97.43)	33 (29 to 37)	51 (41 to 65)	53.61 (25.28 to 93.62)	1106 (922 to 1332)	1623 (1294 to 2033)	46.76 (29.96 to 67.57)
Israel	3274 (2767 to 3882)	6640 (5924 to 7451)	102.78 (76.8 to 132.02)	22 (18 to 24)	46 (38 to 63)	111.01 (70.80 to 199.17)	1000 (812 to 1229)	1851 (1484 to 2306)	85.14 (61.05 to 116.46)

Italy	183929 (159353 to 209220)	186447 (165268 to 209019)	1.37 (-2.84 to 6.10)	351 (310 to 581)	1305 (944 to 1468)	272.23 (70.52 to 339.63)	33890 (24913 to 43884)	44427 (34629 to 54814)	31.09 (5.26 to 46.90)
Jamaica	543 (455 to 648)	884 (737 to 1059)	62.81 (49.97 to 76.46)	6 (4 to 7)	7 (5 to 10)	21.88 (-16.58 to 110.45)	304 (231 to 367)	343 (264 to 432)	12.67 (-13.90 to 66.78)
Japan	236120 (196281 to 281825)	408632 (353858 to 468152)	73.06 (59.11 to 88.73)	367 (270 to 394)	452 (350 to 629)	23.32 (1.39 to 112.57)	41769 (30062 to 56026)	67424 (46877 to 91495)	61.42 (48.32 to 75.54)
Jordan	1611 (1394 to 1851)	11508 (9646 to 13565)	614.12 (540.91 to 683.77)	6 (4 to 8)	13 (10 to 17)	135.70 (49.91 to 281.75)	452 (339 to 570)	2155 (1536 to 2953)	376.81 (274.79 to 495.45)
Kazakhstan	11689 (9797 to 14063)	15823 (13219 to 18930)	35.36 (26.10 to 46.10)	76 (56 to 95)	82 (66 to 100)	7.52 (-17.29 to 48.48)	4458 (3567 to 5515)	5172 (4164 to 6466)	16.03 (-1.28 to 37.13)
Kenya	868 (711 to 1056)	2870 (2364 to 3474)	230.72 (219.85 to 242.5)	74 (46 to 125)	180 (111 to 265)	144.03 (82.74 to 228.15)	3011 (1930 to 4593)	6453 (4376 to 9370)	114.3 (40.66 to 213.60)
Kiribati	2 (2 to 3)	4 (3 to 4)	60.33 (46.38 to 76.77)	1 (0 to 1)	1 (0 to 1)	5.25 (-33.24 to 73.45)	28 (11 to 58)	30 (14 to 55)	4.10 (-35.53 to 92.08)
Kuwait	863 (798 to 937)	2857 (2338 to 3483)	230.91 (174.37 to 298.63)	1 (1 to 2)	4 (3 to 5)	195.71 (125.48 to 314.39)	188 (140 to 241)	558 (391 to 755)	197.49 (143.44 to 262.68)
Kyrgyzstan	2526 (2126 to 3008)	4283 (3592 to 5083)	69.58 (59.46 to 81.49)	15 (10 to 19)	10 (8 to 12)	-36.11 (-51.26 to 14.99)	1109 (784 to 1376)	1031 (789 to 1325)	-7.05 (-27.91 to 29.99)
Lao People's Democratic Republic	90 (70 to 113)	241 (191 to 300)	167.27 (144.93 to 193.03)	10 (5 to 15)	11 (6 to 17)	8.81 (-34.31 to 91.32)	385 (177 to 639)	387 (234 to 610)	0.50 (-45.77 to 106.92)
Latvia	3273 (2810 to 3770)	3226 (2843 to 3623)	-1.44 (-8.09 to 5.70)	12 (10 to 14)	14 (11 to 17)	18.35 (-5.77 to 47.79)	811 (632 to 1017)	779 (605 to 981)	-4.01 (-15.43 to 8.10)
Lebanon	881 (721 to 1091)	2494 (2037 to 3050)	182.89 (160.10 to 205.97)	3 (2 to 4)	8 (4 to 12)	146.92 (25.25 to 359.10)	220 (161 to 297)	545 (394 to 737)	148.06 (90.21 to 219.00)
Lesotho	95 (78 to 115)	150 (122 to 185)	58.00 (46.76 to 69.06)	6 (4 to 8)	9 (6 to 12)	51.75 (-12.69 to 142.65)	222 (137 to 323)	326 (210 to 480)	46.51 (-15.14 to 129.83)
Liberia	104 (85 to 129)	288 (233 to 354)	176.51 (154.41 to 199.50)	7 (3 to 12)	11 (6 to 17)	46.34 (-18.23 to 235.23)	360 (108 to 705)	490 (271 to 833)	35.96 (-36.97 to 268.26)
Libya	629 (514 to 759)	1910 (1557 to 2333)	203.80 (175.90 to 233.83)	4 (3 to 7)	11 (7 to 15)	159.15 (33.45 to 345.08)	229 (166 to 324)	595 (436 to 782)	160.02 (65.02 to 262.55)

Lithuania	4535 (3980 to 5145)	4848 (4481 to 5210)	6.90 (-3.51 to 20.95)	14 (10 to 16)	18 (14 to 23)	26.29 (-2.24 to 67.72)	1054 (817 to 1321)	1105 (861 to 1375)	4.77 (-8.66 to 20.85)
Luxembourg	775 (680 to 879)	1503 (1318 to 1707)	93.98 (81.65 to 107.23)	5 (4 to 6)	11 (8 to 13)	124.41 (55.78 to 172.33)	202 (162 to 247)	376 (297 to 471)	85.81 (59.15 to 105.40)
Madagascar	490 (401 to 604)	1330 (1089 to 1651)	171.16 (153.22 to 190.88)	36 (17 to 60)	69 (48 to 103)	92.10 (5.72 to 331.04)	1875 (646 to 3722)	3000 (2035 to 4374)	60.01 (-23.07 to 329.63)
Malawi	336 (273 to 415)	741 (603 to 910)	120.33 (105.3 to 136.64)	39 (19 to 76)	55 (38 to 78)	39.48 (-33.91 to 218.89)	2236 (716 to 5491)	2323 (1541 to 3545)	3.89 (-57.34 to 225.03)
Malaysia	638 (533 to 747)	2165 (1879 to 2498)	239.19 (213.74 to 272.55)	16 (13 to 20)	41 (30 to 56)	157.56 (64.69 to 265.74)	612 (503 to 742)	1434 (1090 to 1814)	134.26 (68.55 to 208.48)
Maldives	6 (5 to 7)	27 (21 to 33)	357.26 (319.05 to 402.53)	0 (0 to 1)	1 (1 to 1)	97.39 (13.04 to 268.14)	19 (10 to 33)	29 (23 to 38)	58.10 (-20.10 to 218.81)
Mali	396 (321 to 489)	1033 (841 to 1256)	161.12 (141.84 to 182.05)	29 (9 to 53)	55 (26 to 93)	90.14 (10.52 to 338.68)	1569 (384 to 3318)	2748 (1107 to 5138)	75.21 (-6.44 to 320.25)
Malta	275 (237 to 318)	390 (346 to 441)	42.03 (32.40 to 52.30)	2 (2 to 2)	6 (5 to 7)	182.23 (117.73 to 248.53)	84 (68 to 102)	149 (123 to 178)	77.16 (51.73 to 106.18)
Marshall Islands	1 (1 to 1)	2 (2 to 3)	81.58 (65.63 to 99.90)	0 (0 to 0)	0 (0 to 0)	14.19 (-33.41 to 79.45)	10 (6 to 17)	12 (6 to 20)	15.49 (-36.36 to 90.92)
Mauritania	118 (96 to 144)	330 (270 to 405)	179.57 (158.4 to 202.27)	8 (4 to 11)	9 (6 to 13)	19.95 (-22.88 to 109.37)	322 (167 to 487)	376 (245 to 543)	16.93 (-28.24 to 120.07)
Mauritius	47 (37 to 58)	86 (69 to 102)	81.67 (65.36 to 99.25)	1 (1 to 1)	3 (3 to 4)	176.18 (101.94 to 258.21)	50 (43 to 61)	117 (90 to 147)	134.12 (70.2 to 198.45)
Mexico	25697 (21937 to 30082)	46570 (40040 to 53889)	81.22 (75.62 to 87.02)	157 (142 to 176)	519 (408 to 622)	229.87 (156.16 to 297.06)	9626 (8180 to 11411)	21132 (17386 to 25318)	119.55 (86.73 to 154.33)
Micronesia (Federated States of)	3 (2 to 4)	4 (3 to 5)	26.76 (16.02 to 38.96)	1 (0 to 1)	1 (0 to 1)	-23.01 (-59.09 to 31.38)	28 (16 to 49)	20 (10 to 38)	-27.22 (-62.97 to 22.93)
Monaco	43 (36 to 51)	59 (50 to 69)	37.31 (28.37 to 47.29)	0 (0 to 0)	0 (0 to 1)	37.96 (-4.38 to 94.10)	11 (8 to 14)	14 (11 to 18)	30.63 (10.51 to 53.62)
Mongolia	961 (801 to 1153)	2328 (1907 to 2810)	142.14 (124.80 to 161.08)	11 (6 to 15)	12 (9 to 16)	11.41 (-26.46 to 89.38)	690 (380 to 1073)	814 (620 to 1028)	17.92 (-26.45 to 100.76)
Montenegro	879 (744 to	1051 (890 to	19.54 (12.1	2 (1 to 2)	3 (2 to 3)	48.81 (1.77	191 (145 to	221 (165 to	15.74 (1.68

	1032)	1240)	to 27.53)			to 101.73)	247)	288)	to 30.37)
Morocco	3007 (2487 to 3582)	6614 (5488 to 7909)	119.98 (105.44 to 135.91)	31 (19 to 48)	59 (41 to 77)	91.82 (30.18 to 192.53)	1438 (989 to 2101)	2615 (1988 to 3373)	81.81 (30.04 to 139.60)
Mozambique	487 (397 to 601)	1111 (897 to 1347)	128.31 (112.18 to 146.62)	52 (30 to 88)	107 (71 to 154)	107.07 (16.28 to 270.37)	2567 (1058 to 5668)	4503 (2907 to 7196)	75.44 (-18.50 to 319.21)
Myanmar	1024 (797 to 1272)	2062 (1656 to 2558)	101.31 (83.73 to 120.83)	60 (34 to 95)	59 (44 to 82)	-0.68 (-40.07 to 64.77)	2820 (1386 to 5128)	2258 (1680 to 3215)	-19.94 (-57.94 to 48.65)
Namibia	87 (72 to 108)	217 (175 to 268)	148.34 (130.13 to 167.81)	6 (4 to 8)	9 (6 to 13)	61.81 (0.64 to 190.79)	218 (129 to 344)	333 (223 to 498)	52.64 (-12.57 to 213.41)
Nauru	0 (0 to 0)	0 (0 to 0)	12.57 (3.45 to 21.62)	0 (0 to 0)	0 (0 to 0)	-34.79 (-63.12 to 6.11)	3 (1 to 6)	2 (1 to 4)	-34.16 (-60.95 to 18.41)
Nepal	2180 (1726 to 2758)	5036 (4049 to 6194)	131.04 (112.62 to 151.30)	93 (56 to 165)	115 (71 to 190)	23.09 (-15.11 to 93.10)	3780 (2183 to 5903)	3819 (2683 to 5781)	1.05 (-34.25 to 65.01)
Netherlands	24401 (22175 to 26704)	16251 (13975 to 18987)	-33.4 (-41.14 to -24.18)	278 (240 to 344)	782 (582 to 906)	180.66 (78.32 to 230.31)	8234 (6818 to 9979)	12100 (10246 to 13731)	46.95 (10.86 to 70.21)
New Zealand	5873 (5089	8600 (7850	46.45 (37.95	20 (17 to	31 (26 to	58.14 (32.29	1267 (976 to	1758 (1327	38.84 (26.73
rew Zealand	to 6670)	to 9491)	to 57.06)	22)	39)	to 109.75)	1592)	to 2254)	to 54.82)
Nicaragua	500 (414 to 598)	1453 (1218 to 1720)	190.37 (167.53 to 212.17)	3 (2 to 3)	7 (6 to 9)	177.21 (99.51 to 267.74)	187 (149 to 245)	444 (340 to 555)	137.59 (85.21 to 192.36)
Niger	321 (256 to 395)	942 (760 to 1154)	193.63 (171.22 to 216.83)	27 (9 to 54)	55 (26 to 95)	106.00 (18.53 to 313.02)	1564 (379 to 3724)	2835 (1120 to 5521)	81.21 (-7.73 to 318.21)
Nigeria	5162 (4259 to 6269)	14578 (11955 to 17708)	182.41 (176.97 to 187.98)	314 (165 to 514)	560 (306 to 909)	78.53 (23.85 to 168.11)	15139 (7194 to 24017)	26794 (15017 to 42474)	76.98 (13.30 to 185.01)
Niue	0 (0 to 0)	0 (0 to 0)	-12.86 (-20.01 to -3.97)	0 (0 to 0)	0 (0 to 0)	-42.22 (-65.13 to -10.86)	1 (0 to 1)	0 (0 to 1)	-45.91 (-68.37 to -8.78)
North	2473 (2098	3374 (2855	36.41 (27.51			37.22 (1.2 to	490 (358 to	635 (459 to	29.55 (14.26
Macedonia	to 2927)	to 3973)	to 46.86)	4 (3 to 4)	5 (3 to 6)	83.42)	648)	844)	to 46.45)
Northern Mariana Islands	3 (2 to 3)	3 (3 to 4)	17.67 (3.72 to 33.96)	0 (0 to 0)	0 (0 to 0)	-44.77 (-70.47 to 26.41)	12 (8 to 19)	5 (4 to 9)	-57.52 (-77.38 to -4.80)
Norway	20686 (17395 to 24323)	33097 (28492 to 37859)	60.00 (50.85 to 68.77)	29 (26 to 41)	38 (32 to 55)	30.65 (17.07 to 54.59)	3551 (2585 to 4687)	5414 (3835 to 7244)	52.44 (44.12 to 61.59)

Oman	431 (347 to 517)	1575 (1266 to 1924)	265.15 (237.03 to 297.09)	2 (1 to 3)	4 (3 to 5)	135.73 (37.95 to 331.56)	122 (85 to 178)	375 (271 to 496)	206.46 (111.98 to 320.55)
Pakistan	9984 (7995 to 12369)	26815 (21768 to 33849)	168.59 (154.72 to 184.98)	454 (240 to 866)	657 (447 to 993)	44.84 (-2.73 to 133.76)	16234 (9791 to 26748)	27286 (18727 to 38379)	68.08 (19.36 to 148.68)
Palau	1 (1 to 1)	1 (1 to 1)	58.71 (43.16 to 76.15)	0 (0 to 0)	0 (0 to 0)	23.28 (-26.34 to 101.05)	3 (2 to 7)	4 (2 to 6)	14.99 (-29.80 to 103.99)
Palestine	374 (305 to 450)	1351 (1104 to 1621)	261.47 (229.04 to 293.11)	3 (2 to 4)	4 (3 to 6)	49.80 (-14.64 to 127.75)	132 (92 to 195)	320 (235 to 443)	142.19 (82.43 to 220.08)
Panama	553 (471 to 638)	1338 (1131 to 1560)	141.92 (123.11 to 161.72)	7 (6 to 10)	25 (19 to 32)	239.99 (135.70 to 373.74)	436 (347 to 538)	1002 (763 to 1297)	129.97 (65.87 to 224.87)
Papua New Guinea	116 (92 to 140)	285 (229 to 350)	145.64 (124.56 to 168.38)	13 (7 to 20)	25 (16 to 38)	95.85 (20.41 to 222.69)	661 (335 to 1140)	1258 (758 to 2034)	90.40 (5.88 to 270.52)
Paraguay	996 (853 to 1165)	1956 (1652 to 2324)	96.35 (82.38 to 111.71)	4 (4 to 5)	12 (8 to 16)	171.03 (73.55 to 302.03)	327 (263 to 404)	647 (481 to 831)	97.76 (55.83 to 147.82)
Peru	2566 (2121 to 3079)	5665 (4638 to 6822)	120.79 (105.66 to 138.38)	128 (74 to 194)	76 (54 to 105)	-40.28 (-66.32 to 19.96)	8234 (3972 to 13912)	3118 (2308 to 4194)	-62.13 (-79.74 to -11.96)
Philippines	2067 (1630 to 2519)	5073 (4044 to 6166)	145.40 (135.48 to 156.45)	98 (54 to 125)	117 (95 to 155)	19.59 (-15.39 to 149.06)	3743 (2419 to 4551)	4556 (3797 to 5981)	21.71 (-7.83 to 121.46)
Poland	177477 (149170 to 211629)	88307 (77909 to 99826)	-50.24 (-54.72 to -45.27)	180 (168 to 211)	361 (281 to 426)	99.98 (43.08 to 136.68)	30297 (21831 to 40254)	20081 (15602 to 25064)	-33.72 (-41.18 to -24.23)
Portugal	6035 (5365 to 6750)	9894 (8866 to 11003)	63.94 (50.98 to 79.42)	81 (72 to 90)	306 (158 to 363)	277.16 (96.34 to 355.45)	2425 (2073 to 2832)	5332 (3507 to 6256)	119.87 (37.89 to 153.53)
Puerto Rico	1123 (1058 to 1194)	1442 (1320 to 1565)	28.41 (21.63 to 35.32)	20 (15 to 22)	18 (13 to 28)	-9.54 (-38.39 to 73.14)	755 (589 to 869)	592 (456 to 801)	-21.63 (-40.46 to 23.39)
Qatar	154 (123 to 187)	1446 (1178 to 1746)	838.58 (770.76 to 916.51)	0 (0 to 1)	2 (1 to 3)	413.11 (169.07 to 853.64)	41 (29 to 57)	296 (205 to 412)	628.10 (423.39 to 857.49)
Republic of Korea	17167 (15174 to 19498)	46956 (44197 to 49997)	173.52 (147.67 to 206.09)	313 (143 to 399)	234 (183 to 313)	-25.35 (-46.63 to 58.97)	9498 (6903 to 11454)	10451 (7829 to 13343)	10.04 (-17.52 to 63.35)
Republic of Moldova	3098 (2561 to 3712)	3166 (2836 to 3521)	2.20 (-11.58 to 19.64)	17 (14 to 21)	18 (14 to 21)	4.75 (-16.20 to 31.59)	1046 (844 to 1266)	999 (820 to 1209)	-4.45 (-18.23 to

Romania	17947 (15104 to 21254)	17043 (15232 to 19020)	-5.04 (-15.24 to 7.37)	64 (55 to 76)	74 (59 to 93)	15.86 (-8.37 to 45.57)	5269 (4206 to 6540)	4364 (3404 to 5459)	13.21) -17.18 (-29.98 to -2.13)
Russian Federation	167371 (141580 to 195591)	170565 (145182 to 199143)	1.91 (-0.13 to 4.04)	977 (726 to 1128)	1257 (1021 to 1464)	28.65 (6.46 to 62.61)	53401 (41640 to 64977)	56533 (46127 to 69324)	5.86 (-5.94 to 23.29)
Rwanda	288 (237 to 355)	726 (584 to 888)	152.30 (132.10 to 172.65)	34 (20 to 59)	42 (27 to 62)	21.96 (-36.82 to 143.44)	1761 (735 to 3717)	1838 (1153 to 3012)	4.34 (-55.16 to 173.20)
Saint Kitts and Nevis	10 (8 to 12)	21 (17 to 26)	106.61 (90.32 to 126.13)	1 (1 to 1)	1 (1 to 1)	9.71 (-25.03 to 72.10)	25 (19 to 29)	28 (19 to 41)	14.61 (-24.18 to 78.38)
Saint Lucia	25 (21 to 31)	59 (48 to 72)	131.09 (113.96 to 149.59)	1 (1 to 1)	1 (1 to 2)	47.65 (10.86 to 116.72)	36 (29 to 41)	45 (36 to 56)	26.50 (-1.54 to 79.21)
Saint Vincent and the Grenadines	20 (16 to 24)	32 (26 to 39)	63.64 (48.19 to 80.82)	1 (1 to 1)	2 (1 to 2)	54.50 (13.27 to 112.91)	39 (32 to 45)	49 (40 to 62)	27.47 (-3.02 to 72.66)
Samoa	6 (5 to 8)	9 (7 to 10)	34.52 (23.82 to 45.98)	1 (1 to 1)	1 (1 to 1)	6.37 (-33.37 to 64.06)	31 (20 to 46)	30 (19 to 45)	-1.06 (-42.04 to 65.39)
San Marino	29 (25 to 35)	48 (41 to 57)	65.44 (55.11 to 76.39)	0 (0 to 0)	0 (0 to 0)	167.91 (65.76 to 328.84)	6 (4 to 8)	10 (8 to 14)	74.92 (47.44 to 111.54)
Sao Tome and Principe	8 (6 to 10)	18 (15 to 23)	135.19 (118.79 to 152.91)	0 (0 to 1)	0 (0 to 1)	3.87 (-41.14 to 89.85)	15 (8 to 24)	16 (11 to 24)	4.71 (-42.23 to 108.14)
Saudi Arabia	3748 (3112 to 4462)	13816 (11338 to 16751)	268.63 (237.42 to 301.72)	12 (7 to 20)	27 (18 to 38)	131.24 (9.23 to 337.69)	1012 (729 to 1405)	3181 (2284 to 4376)	214.41 (119.36 to 315.14)
Senegal	366 (298 to 449)	930 (756 to 1164)	153.93 (136.66 to 171.52)	23 (10 to 37)	37 (22 to 57)	61.95 (2.65 to 184.83)	1084 (420 to 1912)	1527 (911 to 2378)	40.90 (-20.02 to 185.33)
Serbia	12769 (10737 to 14873)	16638 (14322 to 19211)	30.30 (20.12 to 43.95)	49 (37 to 78)	113 (74 to 147)	128.93 (9.06 to 259.34)	3314 (2528 to 4479)	4741 (3595 to 5996)	43.04 (-2.81 to 78.90)
Seychelles	3 (2 to 4)	6 (5 to 8)	117.31 (99.80 to 136.88)	0 (0 to 0)	0 (0 to 0)	28.62 (-7.02 to 75.47)	5 (4 to 7)	7 (5 to 9)	31.52 (-0.75 to 71.15)
Sierra Leone	181 (149 to 220)	467 (379 to 582)	158.32 (138.65 to 178.83)	11 (4 to 19)	20 (10 to 32)	87.02 (3.04 to 331.6)	554 (164 to 1133)	981 (457 to 1656)	76.91 (-7.60 to 330.39)
Singapore	1615 (1305	3179 (2593	96.84 (78.98	4 (3 to 4)	5 (4 to 8)	39.94 (6.12	375 (279 to	612 (427 to	63.29 (34.14

	to 1934)	to 3962)	to 116.81)			to 150.34)	490)	838)	to 100.87)
	9361 (8373	10674 (9737	14.02 (8.30	31 (25 to	58 (41 to	88.23 (-3.03	2274 (1743	2856 (2175	25.60 (-5.11
Slovakia	to 10336)	to 11684)	to 20.14)	48)	76)	to 176.55)	to 2989)	to 3557)	to 53.77)
	3775 (3318	4739 (4282	25.55 (17.98		18 (13 to	86.00 (28.56	781 (579 to	977 (726 to	25.10 (7.66
Slovenia	to 4289)	to 5219)	to 33.07)	10 (8 to 13)	25)	to 165.93)	1011)	1253)	to 43.50)
Solomon Islands	8 (6 to 9)	17 (13 to 21)	124.02 (102.93 to 148.4)	1 (1 to 2)	2 (1 to 3)	64.34 (-3.76 to 176.72)	53 (24 to 101)	86 (48 to 156)	63.24 (-5.21 to 190.03)
Somalia	237 (190 to 293)	630 (502 to 786)	165.38 (145.60 to 187.38)	19 (7 to 40)	40 (21 to 71)	109.57 (26.24 to 263.84)	1021 (282 to 2543)	1986 (928 to 3988)	94.57 (2.46 to 316.32)
South Africa	2945 (2438 to 3586)	6542 (5423 to 7934)	122.12 (114.01 to 131.25)	98 (69 to 123)	166 (124 to 196)	69.87 (20.49 to 168.66)	4862 (3068 to 7236)	6143 (4966 to 7083)	26.34 (-18.56 to 117.23)
South Sudan	249 (202 to 307)	469 (383 to 576)	88.39 (73.80 to 103.53)	22 (9 to 43)	29 (16 to 61)	29.68 (-39.27 to 148.37)	1158 (325 to 2801)	1315 (637 to 2625)	13.58 (-53.56 to 178.43)
	39276	77822	98.14 (91.73	278 (237 to	377 (303 to	35.79 (8.43	11347 (9316	17466	53.93 (36.17
Spain	(37463 to 41127)	(74030 to 81685)	to 104.75)	304)	600)	to 121.33)	to 13673)	(13535 to 22106)	to 79.47)
Sri Lanka	909 (734 to 1119)	2295 (2003 to 2637)	152.54 (124.22 to 186.13)	19 (14 to 24)	21 (15 to 30)	13.97 (-25.92 to 74.18)	813 (609 to 1032)	895 (684 to 1147)	10.11 (-20.92 to 51.47)
Sudan	3315 (2684 to 4060)	9292 (7568 to 11371)	180.28 (157.81 to 205.52)	21 (10 to 44)	48 (28 to 78)	123.91 (3.53 to 380.84)	1310 (720 to 2866)	3003 (2102 to 4130)	129.31 (11.1 to 282.19)
Suriname	79 (66 to 96)	158 (129 to 194)	98.73 (81.35 to 117.62)	3 (2 to 3)	4 (3 to 5)	32.93 (-4.19 to 91.78)	118 (85 to 146)	138 (109 to 175)	16.97 (-14.68 to 66.50)
Sweden	30612 (26350 to 35136)	40244 (34733 to 46000)	31.46 (23.94 to 40.19)	107 (86 to 119)	95 (77 to 139)	-11.38 (-27.36 to 46.41)	6158 (4631 to 7936)	7117 (5148 to 9548)	15.58 (4.65 to 28.78)
Switzerland	10695 (9668 to 11813)	14969 (13688 to 16325)	39.96 (33.88 to 46.34)	73 (58 to 83)	123 (97 to 160)	69.01 (36.46 to 128.96)	2817 (2268 to 3429)	3807 (2979 to 4738)	35.16 (21.15 to 56.09)
Syrian Arab Republic	2248 (1819 to 2734)	4862 (3940 to 5871)	116.26 (97.13 to 135.91)	23 (13 to 35)	37 (20 to 52)	57.25 (-10.52 to 184.61)	1091 (741 to 1432)	1653 (1195 to 2195)	51.58 (7.71 to 137.88)
Taiwan (Province of China)	2221 (1923 to 2557)	9064 (8139 to 10153)	308.12 (279.81 to 342.19)	101 (67 to 113)	199 (152 to 264)	97.46 (44.81 to 288.02)	2623 (1919 to 2947)	4338 (3499 to 5416)	65.37 (31.64 to 167.25)
Tajikistan	2391 (1972 to 2877)	5519 (4623 to 6632)	130.78 (115.02 to 148.48)	21 (11 to 34)	18 (13 to 26)	-11.19 (-54.29 to 82.80)	1691 (853 to 2831)	1646 (1219 to 2185)	-2.66 (-48.60 to 91.67)

Thailand	1734 (1327 to 2180)	3808 (3078 to 4630)	119.65 (96.59 to 151.17)	72 (52 to 95)	111 (80 to 149)	54.05 (-3.23 to 138.51)	2899 (2029 to 3946)	3272 (2453 to 4259)	12.87 (-26.29 to 71.96)
Timor-Leste	18 (14 to 23)	41 (33 to 50)	122.2 (104.08 to 146.48)	1 (1 to 3)	3 (2 to 5)	107.01 (24.75 to 246.34)	59 (29 to 102)	86 (48 to 138)	47.21 (-28.05 to 185.55)
Togo	190 (155 to 232)	514 (418 to 634)	170.07 (148.46 to 196.29)	9 (4 to 14)	21 (14 to 30)	142.31 (33.33 to 393.01)	457 (182 to 773)	940 (589 to 1321)	105.73 (15.73 to 366.27)
Tokelau	0 (0 to 0)	0 (0 to 0)	17.45 (9.66 to 26.52)	0 (0 to 0)	0 (0 to 0)	-38.14 (-61.51 to -1.52)	0 (0 to 1)	0 (0 to 0)	-39.66 (-63.93 to 8.06)
Tonga	4 (3 to 5)	4 (4 to 5)	14.32 (5.18 to 25.01)	1 (0 to 1)	1 (0 to 1)	0.57 (-36.36 to 55.61)	21 (14 to 30)	19 (13 to 27)	-11.27 (-43.54 to 36.78)
Trinidad and Tobago	275 (226 to 333)	476 (395 to 586)	73.31 (60.64 to 88.40)	3 (2 to 4)	5 (4 to 7)	67.08 (17.69 to 135.28)	143 (110 to 169)	215 (162 to 279)	49.93 (17.59 to 92.29)
Tunisia	2247 (1845 to 2720)	5382 (4413 to 6568)	139.49 (122.55 to 159.3)	7 (5 to 11)	16 (11 to 23)	124.51 (18.63 to 312.49)	569 (405 to 784)	1215 (890 to 1622)	113.58 (59.27 to 174.73)
Turkey	24930 (21910 to 28012)	93902 (80596 to 107925)	276.67 (231.04 to 325.07)	261 (159 to 401)	329 (250 to 471)	26.21 (-22.73 to 118.88)	13910 (9268 to 19352)	22488 (17253 to 28896)	61.67 (9.74 to 147.01)
Turkmenistan	1758 (1463 to 2085)	3806 (3155 to 4551)	116.48 (102.66 to 132.01)	10 (7 to 13)	14 (9 to 20)	45.23 (9.53 to 98.88)	765 (493 to 1049)	1120 (805 to 1438)	46.38 (13.41 to 91.33)
Tuvalu	0 (0 to 0)	0 (0 to 1)	27.01 (14.84 to 39.84)	0 (0 to 0)	0 (0 to 0)	-5.17 (-39.67 to 57.04)	3 (1 to 5)	2 (1 to 4)	-16.57 (-50.42 to 58.50)
Uganda	569 (462 to 701)	1697 (1381 to 2111)	198.27 (178.98 to 220.89)	48 (30 to 75)	102 (70 to 150)	114.15 (26.45 to 252.91)	2257 (1132 to 4612)	4600 (3084 to 7058)	103.84 (-2.52 to 318.38)
Ukraine	44470 (37197 to 53622)	42711 (36101 to 51042)	-3.95 (-10.23 to 3.42)	230 (174 to 306)	260 (210 to 315)	12.61 (-17.79 to 52.12)	13419 (10673 to 16857)	14197 (11469 to 17211)	5.80 (-13.37 to 26.77)
United Arab Emirates	595 (477 to 725)	5742 (4546 to 7126)	864.58 (768.02 to 978.3)	1 (1 to 3)	13 (7 to 22)	939.61 (312.54 to 2260.01)	144 (93 to 219)	1401 (971 to 1965)	871.11 (531.13 to 1256.31)
United Kingdom	150003 (132531 to 168508)	194529 (173985 to 215870)	29.68 (26.73 to 33.13)	856 (756 to 1056)	1793 (1533 to 1999)	109.50 (62.60 to 132.89)	37500 (30121 to 46024)	55171 (45323 to 66217)	47.12 (29.39 to 55.47)
United Republic of Tanzania	1121 (914 to 1369)	2891 (2330 to 3566)	157.88 (138.98 to 177.80)	86 (53 to 152)	181 (115 to 259)	111.26 (24.98 to 260.69)	4655 (2090 to 9955)	8565 (4988 to 14089)	83.97 (-7.81 to 290.41)

United States of America	982982 (846833 to 1129783)	762890 (712357 to 813654)	-22.39 (-29.48 to -14.49)	2171 (1940 to 2662)	5910 (4622 to 6464)	172.17 (80.73 to 199.18)	186357 (137531 to 243644)	215289 (175991 to 256059)	15.53 (-1.97 to 33.87)
United States Virgin Islands	32 (27 to 39)	47 (39 to 58)	46.61 (32.66 to 61.87)	1 (0 to 1)	1 (1 to 1)	11.78 (-24.49 to 72.41)	26 (19 to 32)	23 (18 to 29)	-9.33 (-33.27 to 25.88)
Uruguay	586 (485 to 711)	685 (564 to 830)	16.85 (7.20 to 26.83)	10 (9 to 14)	22 (19 to 26)	123.02 (68.94 to 165.97)	339 (290 to 426)	572 (496 to 648)	68.83 (35.57 to 94.94)
Uzbekistan	10505 (8847 to 12563)	23340 (19452 to 27952)	122.19 (107.43 to 140.58)	48 (31 to 59)	73 (58 to 93)	51.36 (12.53 to 153.54)	4299 (3006 to 5336)	6869 (5391 to 8500)	59.77 (27.87 to 109.54)
Vanuatu	4 (3 to 5)	9 (7 to 11)	115.45 (98.23 to 135.09)	1 (0 to 1)	2 (1 to 2)	77.85 (12.27 to 189.96)	33 (17 to 55)	57 (33 to 92)	71.58 (-1.00 to 187.82)
Venezuela (Bolivarian Republic of)	3817 (3268 to 4388)	8787 (7406 to 10382)	130.21 (113.08 to 147.54)	28 (19 to 32)	44 (31 to 59)	58.23 (11.55 to 165.19)	1676 (1316 to 1993)	2642 (2032 to 3372)	57.61 (25.64 to 101.69)
Viet Nam	4754 (3636 to 5967)	20278 (16050 to 25063)	326.50 (284.54 to 376.20)	221 (120 to 327)	177 (119 to 247)	-19.57 (-57.9 to 40.02)	6650 (4129 to 8928)	7419 (5510 to 9604)	11.56 (-26.71 to 73.67)
Yemen	1826 (1464 to 2237)	6284 (5044 to 7734)	244.20 (216.72 to 270.66)	14 (8 to 25)	44 (30 to 68)	217.58 (89.82 to 463.74)	772 (495 to 1411)	2423 (1790 to 3248)	213.69 (96.39 to 365.86)
Zambia	291 (236 to 350)	971 (790 to 1210)	233.83 (206.24 to 265.39)	35 (18 to 64)	55 (38 to 76)	57.07 (-21.84 to 226.50)	1941 (679 to 4527)	2548 (1621 to 3800)	31.27 (-46.88 to 283.23)
Zimbabwe	524 (430 to 644)	931 (757 to 1165)	77.84 (65.57 to 91.40)	22 (16 to 31)	43 (25 to 65)	98.08 (13.90 to 202.61)	1018 (652 to 1728)	1888 (1075 to 2968)	85.39 (11.43 to 204.97)

Abbreviations: UI=uncertainty interval.

**Supplementary Table 3** Age-standardised prevalence, death and DALY rates for inflammatory bower disease (IBD) by 204 countries or territories in 1990 and 2019, and their temporal trends from 1990 to 2019

	Age-standardised prevalence rate		ence rate	Age-s	tandardized dea	th rate	Age-standardized DALY rate			
Characteristics	pei	r 100,000 popul	ation	per	100,000 popula	tion	per	100,000 populat	ion	
Characteristics	1990 No.	2019 No.	EAPC No.	1990 No.	2019 No.	EAPC No.	1990 No.	2019 No.	EAPC No.	
	(95%UI)	(95%UI)	(95%CI)	(95%UI)	(95%UI)	(95%CI)	(95%UI)	(95%UI)	(95%CI)	
Afghanistan	21.95 (17.75	23.69 (19.05	0.57 (0.40 to	0.44 (0.22 to	0.43 (0.26 to	0.01 (-0.06	15.26 (8.26	14.58 (9.58	0.03 (-0.06	
Arghanistan	to 26.86)	to 29.24)	0.74)	0.78)	0.64)	to 0.08)	to 26.64)	to 20.47)	to 0.12)	
	119.15	116.19	0.01 (-0.06	1.65 (0.90 to	0.41 (0.27 to	-5.17 (-6.14	110.06	36.18 (25.65	-4.07 (-5.01	
Albania	(100.27 to	(97.53 to	to 0.09)	2.05)	0.41 (0.27 to	•	(47.30 to	to 49.28)	to -3.12)	
	140.7)	136.91)	10 0.09)	2.03)	0.01)	to -4.19)	143.55)	10 49.28)	10 -3.12)	
Algeria	34.69 (30.01	39.54 (32.16	0.68 (0.53 to	0.25 (0.17 to	0.17 (0.13 to	-1.14 (-1.23	11.17 (8.26	9.93 (7.45 to	-0.28 (-0.38	
Aigena	to 40.15)	to 48.88)	0.83)	0.37)	0.23)	to -1.04)	to 15.40)	12.97)	to -0.17)	
American	6.24 (5.14 to	6.14 (5.03 to	-0.22 (-0.35	1.54 (0.89 to	0.53 (0.37 to	-4.40 (-4.80	44.49 (26.51	15.67 (10.89	-4.23 (-4.59	
Samoa	7.41)	7.38)	to -0.09)	2.28)	0.90)	to -4.01)	to 63.51)	to 28.11)	to -3.86)	
	108.82	112.31 (94.3	0.17 (0.11 to	0.70 (0.49 to	0.69 (0.41 to	0.03 (-0.06	29.98 (22.66	29.68 (20.92	0.02 (-0.03	
Andorra	(91.32 to		`	1.00)	1.01)	`	`	`	`	
	128.78)	to 132.64)	0.22)	1.00)	1.01)	to 0.13)	to 38.91)	to 39.03)	to 0.07)	
Angolo	7.20 (5.93 to	8.85 (7.31 to	0.59 (0.48 to	0.73 (0.43 to	0.62 (0.45 to	-0.60 (-0.66	23.37 (11.91	18.19 (12.6	-0.89 (-0.95	
Angola	9.02)	10.88)	0.71)	1.16)	0.89)	to -0.54)	to 42.94)	to 26.15)	to -0.83)	
Antigua and	31.33 (26.25	31.79 (26.42	0.10 (0.04 to	0.95 (0.70 to	0.67 (0.53 to	-1.77 (-2.08	31.60 (24.03	22.35 (17.9	-1.66 (-1.90	
Barbuda	to 37.78)	to 38.6)	0.16)	1.12)	0.91)	to -1.46)	to 36.76)	to 28.99)	to -1.42)	
Amaantina	15.07 (12.24	15.98 (13.09	0.21 (0.19 to	0.27 (0.24 to	0.27 (0.23 to	-0.10 (-0.25	9.25 (8.00 to	9.02 (7.72 to	-0.13 (-0.22	
Argentina	to 17.99)	to 19.42)	0.23)	0.30)	0.31)	to 0.04)	10.66)	10.63)	to -0.05)	
Armenia	81.15 (67.51	86.67 (72.86	0.29 (0.26 to	0.25 (0.19 to	0.28 (0.21 to	0.72 (0.36 to	19.99 (15.55	20.5 (15.81	0.20 (0.05 to	
Armema	to 95.76)	to 104.56)	0.32)	0.30)	0.34)	1.09)	to 25.21)	to 26.35)	0.36)	
	98.73 (82.47	154.35	1.00 (0.72 to	0.54 (0.47 to	0.78 (0.56 to	2.23 (1.81 to	24.61 (19.22	35.58 (27.28	1.20 (0.98 to	
Australia	`	(134.91 to	1.00 (0.72 to	0.66)	`	`	,	`	,	
	to 116.23)	175.51)	1.27)	0.00)	0.91)	2.66)	to 31.12)	to 45.33)	1.41)	
	277.06	291.88	0.19 (-0.09	0.87 (0.77 to	0.52 (0.43 to	-1.59 (-2.15	61.71 (48.41	54.31 (39.35	-0.39 (-0.65	
Austria	(243.01 to	(260.14 to	to 0.46)	1.13)	0.32 (0.43 to	to -1.03)	to 77.45)	to 71.37)	to -0.12)	
	307.67)	327.43)	10 0.40)	1.13)	0.61)	10 -1.03)	10 77.43)	10 /1.57)	10 -0.12)	
Azerbaijan	76.23 (63.23	81.93 (68.62	0.35 (0.20 to	0.22 (0.16 to	0.16 (0.11 to	-1.09 (-1.19	17.65 (13.27	16.2 (11.65	-0.36 (-0.44	
Azerbaijan	to 90.47)	to 99.02)	0.49)	0.28)	0.23)	to -1.00)	to 23.02)	to 21.65)	to -0.27)	
Dohamas	32.77 (27.60	28.72 (23.64	-0.27 (-0.39	0.59 (0.50 to	0.49 (0.39 to	-0.66 (-0.78	23.15 (19.78	19.04 (15.33	-0.72 (-0.81	
Bahamas	to 39.08)	to 35.44)	to -0.15)	0.68)	0.62)	to -0.53)	to 26.78)	to 23.86)	to -0.63)	
Bahrain	42.17 (36.27	44.05 (36.4	0.35 (0.18 to	0.26 (0.20 to	0.17 (0.13 to	-1.34 (-1.69	11.98 (9.36	10.05 (7.4 to	-0.53 (-0.63	
Damam	to 48.42)	to 53.11)	0.51)	0.33)	0.22)	to -0.99)	to 15.18)	13.28)	to -0.43)	
Danaladash	17.19 (13.90	21.62 (17.31	0.65 (0.53 to	1.00 (0.64 to	0.56 (0.35 to	-2.14 (-2.39	31.40 (20.47	18.1 (12.11	-2.03 (-2.15	
Bangladesh	to 21.66)	to 27)	0.77)	1.64)	0.83)	to -1.89)	to 45.16)	to 25.27)	to -1.92)	
Barbados	70.62 (59.14	69.57 (58.9	0.04 (-0.02	0.42 (0.36 to	0.38 (0.30 to	-0.41 (-0.57	22.21 (18.13	20.02 (15.56	-0.42 (-0.48	
Darvados	to 84.46)	to 83.59)	to 0.09)	0.48)	0.48)	to -0.25)	to 27.15)	to 25.32)	to -0.36)	
Belarus	82.25 (69.99	87.85 (73.61	0.38 (0.27 to	0.36 (0.26 to	0.38 (0.28 to	0.24 (0.09 to	22.33 (16.76	23.25 (17.89	0.17 (0.09 to	

	to 96.97)	to 104.11)	0.48)	0.48)	0.50)	0.39)	to 28.89)	to 29.87)	0.25)
	83.42 (76.75	143.07	1.68 (1.42 to	0.76 (0.67 to	0.97 (0.76 to	0.24 (-0.90	25.98 (21.36	36.56 (28.88	0.82 (0.35 to
Belgium	to 90.48)	(123.44 to	1.94)	0.90)	1.12)	to 1.40)	to 31.07)	to 45.93)	1.28)
	22 00 /10 00	164.68) 24.31 (20.10	0.25 (0.25 to	0.70 (0.48 to	0.61 (0.50 to	1 14 ( 1 52	26 21 710 11	21 90 /19 02	1 22 ( 1 40
Belize	22.80 (18.88	`	0.35 (0.25 to	`	`	-1.14 (-1.52	26.21 (19.11	21.80 (18.03	-1.22 (-1.49
	to 28.09)	to 29.68)	0.45)	0.90)	0.80)	to -0.76)	to 32.42)	to 27.26)	to -0.95)
Benin	7.48 (6.20 to	8.88 (7.27 to	0.58 (0.47 to	0.48 (0.26 to	0.45 (0.30 to	-0.42 (-0.64	17.20 (8.03	15.67 (9.98	-0.50 (-0.70
	9.10)	10.87)	0.69)	0.86)	0.65)	to -0.20)	to 28.30)	to 22.61)	to -0.30)
Bermuda	34.26 (28.75	34.27 (28.46	0.17 (0.09 to	0.89 (0.66 to	0.36 (0.28 to	-3.73 (-4.07	28.26 (22.38	14.3 (11.3 to	-2.73 (-3.00
	to 41.82)	to 40.73)	0.25)	1.08)	0.50)	to -3.40)	to 33.89)	18.41)	to -2.46)
Bhutan	16.74 (13.31	22.23 (18.11	1.24 (1.11 to	0.68 (0.35 to	0.55 (0.34 to	-0.84 (-0.97	21.23 (11.26	15.82 (10.39	-1.18 (-1.27
	to 21.03)	to 27.62)	1.38)	1.53)	1.23)	to -0.72)	to 43.14)	to 31.52)	to -1.10)
Bolivia	13.46 (11.31	13.54 (11.36	0.05 (0.00 to	0.50 (0.27 to	0.40 (0.30 to	-0.83 (-0.91	22.17 (10.30	12.73 (9.53	-2.04 (-2.15
(Plurinational	to 16.36)	to 16.33)	0.10)	0.79)	0.52)	to -0.75)	to 41.41)	to 16.38)	to -1.94)
State of)	,	,	,	,	,	,	,	,	,
Bosnia and	102.41	122.38	0.58 (0.55 to	0.46 (0.33 to	0.45 (0.23 to	-0.20 (-0.52	27.68 (21.43	29.74 (21.21	0.14 (-0.01
Herzegovina	(88.37 to	(107.08 to	0.61)	0.58)	0.61)	to 0.12)	to 35.18)	to 38.84)	to 0.28)
Herzegovina	118.99)	140.67)	0.01)	0.50)	0.01)	10 0.12)	10 33.10)	10 30.04)	10 0.20)
Dotowono	8.58 (7.14 to	10.89 (8.88	0.60 (0.44 to	0.70 (0.48 to	0.64 (0.43 to	-0.77 (-1.15	20.94 (14.53	20.3 (13.14	-0.41 (-0.71
Botswana	10.52)	to 13.6)	0.76)	1.00)	0.89)	to -0.39)	to 29.34)	to 30.81)	to -0.11)
D:1	65.87 (57.91	47.78 (41.6	-0.87 (-1.09	0.48 (0.42 to	0.45 (0.41 to	0.01 (-0.16	23.70 (20.23	19.51 (16.72	-0.44 (-0.62
Brazil	to 74.92)	to 54.51)	to -0.65)	0.52)	0.52)	to 0.19)	to 27.67)	to 22.74)	to -0.27)
Brunei	53.76 (43.58	57.28 (46.33	0.25 (0.24 to	1.52 (1.08 to	1.48 (0.97 to	0.09 (-0.02	36.51 (27.84	32.76 (26.62	-0.25 (-0.33
Darussalam	to 66.16)	to 70.04)	0.27)	2.01)	1.89)	to 0.20)	to 47.59)	to 39.71)	to -0.18)
	127.47	120.16	0.16 ( 0.20	0.04 (0.00	0.00 (0.05	1 12 (0 52)	20.21./21.11	27 (2 (20 7)	0.00 / 0.21
Bulgaria	(108.71 to	(101.94 to	-0.16 (-0.29	0.26 (0.23 to	0.33 (0.25 to	1.13 (0.73 to	28.31 (21.41	27.62 (20.56	0.00 (-0.21
	149.68)	142.65)	to -0.03)	0.31)	0.41)	1.54)	to 36.54)	to 35.57)	to 0.21)
	6.79 (5.57 to	7.81 (6.46 to	0.59 (0.41 to	0.61 (0.37 to	0.67 (0.38 to	0.56 (0.28 to	21.41 (10.66	22.52 (12.05	0.38 (0.15 to
Burkina Faso	8.47)	9.56)	0.77)	0.89)	1.00)	0.85)	to 33.67)	to 34.80)	0.62)
	6.12 (5.03 to	6.13 (5.06 to	-0.09 (-0.19	0.69 (0.45 to	0.73 (0.46 to	0.15 (-0.07	22.15 (14.22	20.85 (13.56	-0.20 (-0.42
Burundi	7.50)	7.50)	to 0.01)	1.02)	1.16)	to 0.37)	to 36.56)	to 32.18)	to 0.03)
	10.12 (8.33	12.18 (9.88	0.76 (0.65 to	0.33 (0.20 to	0.25 (0.19 to	-2.05 (-2.56	12.86 (8.37	8.69 (6.98 to	-2.12 (-2.50
Cabo Verde	to 12.38)	to 14.93)	0.88)	0.46)	0.33)	to -1.54)	to 17.33)	10.77)	to -1.74)
	3.02 (2.34 to	3.77 (3.01 to	0.65 (0.57 to	0.50 (0.27 to	0.35 (0.23 to	-1.44 (-1.54	14.51 (8.27	8.98 (6.42 to	-1.86 (-1.96
Cambodia	3.74)	4.61)	0.72)	0.71)	0.45)	to -1.34)	to 21.45)	11.33)	to -1.77)
	8.34 (6.88 to	10.13 (8.33	0.79 (0.68 to	0.54 (0.29 to	0.38 (0.21 to	-1.69 (-1.94	18.12 (9.17	13.36 (7.77	-1.43 (-1.66
Cameroon	10.38)	to 12.46)	0.90)	0.88)	0.59)	to -1.43)	to 27.57)	to 21.03)	to -1.20)
	382.53	357.73	*****/	*****/	,	,		,	,
Canada	(367.54 to	(323.05 to	0.13 (-0.03	0.87 (0.77 to	0.56 (0.46 to	-2.43 (-3.11	74.34 (56.49	64.91 (46.59	-0.31 (-0.41
Canada	397.57)	393.88)	to 0.28)	0.97)	0.82)	to -1.75)	to 95.45)	to 85.11)	to -0.21)
Central African	6.56 (5.39 to	6.92 (5.75 to	0.16 (0.14 to	0.86 (0.55 to	0.86 (0.53 to	0.02 (-0.06	26.29 (16.24	25.47 (14.87	-0.07 (-0.13
Republic	8.20)	8.49)	0.16 (0.14 to	1.38)	1.36)	to 0.10)	to 42.90)	to 41.50)	to 0.00)
Republic					,		,	,	
Chad	6.92 (5.73 to	8.10 (6.65 to	0.68 (0.57 to	0.58 (0.32 to	0.58 (0.39 to	-0.24 (-0.45	20.08 (9.86	19.16 (11.97	-0.36 (-0.55
	8.53)	9.90)	0.80)	0.98)	0.84)	to -0.04)	to 32.61)	to 27.44)	to -0.16)

Chile	30.30 (25.82	31.66 (27.25	0.29 (-0.09	0.46 (0.37 to	0.30 (0.26 to	-1.75 (-2.10	16.52 (13.59	11.96 (9.91	-1.10 (-1.28
Cinic	to 35.36)	to 36.7)	to 0.67)	0.51)	0.38)	to -1.40)	to 19.03)	to 14.48)	to -0.91)
China	22.85 (18.98	47.06 (40.05	2.80 (2.41 to	0.86 (0.59 to	0.30 (0.24 to	-4.11 (-4.50	24.47 (17.88	13.1 (10.29	-2.36 (-2.54
Ciina	to 27.15)	to 54.99)	3.19)	1.16)	0.35)	to -3.71)	to 30.19)	to 16.31)	to -2.18)
Colombia	29.55 (24.81	29.36 (24.89	-0.04 (-0.07	0.28 (0.25 to	0.29 (0.22 to	0.75 (0.38 to	12.89 (10.91	12.53 (9.75	0.36 (0.12 to
Colonibia	to 34.95)	to 34.88)	to -0.01)	0.31)	0.38)	1.12)	to 15.21)	to 15.57)	0.60)
Comoros	7.33 (6.01 to	7.78 (6.38 to	0.36 (0.24 to	0.83 (0.43 to	0.75 (0.48 to	-0.51 (-0.67	23.44 (10.67	20.58 (13.10	-0.63 (-0.84
Comoros	9.00)	9.69)	0.48)	1.44)	1.19)	to -0.36)	to 39.49)	to 30.54)	to -0.41)
C	9.67 (7.93 to	10.38 (8.57	0.30 (0.16 to	0.79 (0.56 to	0.66 (0.47 to	-0.58 (-0.75	23.58 (16.35	18.36 (13.15	-0.82 (-0.99
Congo	11.87)	to 12.74)	0.45)	1.16)	0.93)	to -0.41)	to 34.61)	to 25.90)	to -0.66)
0 111 1	6.37 (5.18 to	6.17 (5.09 to	-0.21 (-0.35	1.64 (1.17 to	0.81 (0.53 to	-2.70 (-2.90	50.74 (35.37	24.94 (15.58	-2.70 (-2.88
Cook Islands	7.65)	7.51)	to -0.06)	2.20)	1.11)	to -2.50)	to 72.08)	to 36.18)	to -2.51)
G . B:	30.77 (25.88	31.40 (26.47	0.04 (0.03 to	0.14 (0.12 to	0.20 (0.14 to	1.04 (0.82 to	8.60 (6.81 to	10.14 (7.74	0.58 (0.47 to
Costa Rica	to 36.60)	to 37.15)	0.05)	0.16)	0.26)	1.26)	10.81)	to 12.91)	0.69)
	8.08 (6.58 to	8.70 (7.15 to	0.43 (0.34 to	0.46 (0.23 to	0.40 (0.26 to	-0.71 (-0.97	15.45 (7.59	13.59 (8.56	-0.63 (-0.86
Côte d'Ivoire	9.97)	10.96)	0.52)	0.80)	0.58)	to -0.45)	to 24.88)	to 19.48)	to -0.40)
	166.42	203.79							
Croatia	(155.48 to	(188.71 to	0.64 (0.57 to	0.28 (0.24 to	0.41 (0.30 to	1.79 (1.42 to	33.08 (24.90	41.30 (30.43	0.79 (0.65 to
	178.41)	220.14)	0.70)	0.42)	0.52)	2.17)	to 42.82)	to 53.17)	0.93)
	30.31 (25.30	29.25 (23.94	-0.01 (-0.07	0.35 (0.23 to	0.23 (0.18 to	-2.04 (-2.48	14.22 (10.70	10.45 (8.37	-1.38 (-1.64
Cuba	to 36.52)	to 35.26)	to 0.06)	0.42)	0.29)	to -1.60)	to 16.97)	to 12.94)	to -1.12)
	42.09 (35.82	58.44 (53.02	0.98 (0.85 to	2.09 (1.24 to	1.00 (0.76 to	-3.13 (-3.45	36.43 (25.10	22.06 (17.95	-2.26 (-2.48
Cyprus	to 49.01)	to 63.85)	1.11)	3.02)	1.32)	to -2.81)	to 47.83)	to 26.41)	to -2.03)
		152.02							
Czechia	85.23 (71.89	(139.69 to	1.52 (1.33 to	0.54 (0.49 to	0.56 (0.42 to	0.80 (0.45 to	26.65 (21.98	35.40 (27.15	0.98 (0.90 to
	to 102.44)	164.49)	1.71)	0.63)	0.69)	1.15)	to 32.43)	to 44.74)	1.06)
Democratic									
People's	15.93 (13.23	15.61 (12.96	-0.13 (-0.21	0.57 (0.33 to	0.41 (0.28 to	-1.10 (-1.20	17.24 (9.70	11.10 (8.17	-1.31 (-1.41
Republic of	to 19.03)	to 18.71)	to -0.06)	0.82)	0.59)	to -1.00)	to 27.63)	to 14.58)	to -1.21)
Korea									
Democratic									
Republic of the	8.50 (6.93 to	7.80 (6.41 to	-0.45 (-0.71	0.71 (0.50 to	0.57 (0.40 to	-0.78 (-0.91	21.69 (14.31	17.22 (12.20	-0.82 (-0.97
Congo	10.44)	9.73)	to -0.20)	1.02)	0.82)	to -0.64)	to 32.28)	to 24.09)	to -0.66)
	232.13	227.82							
Denmark	(210.74 to	(208.42 to	0.47 (0.29 to	0.53 (0.48 to	0.59 (0.50 to	0.01 (-0.61	46.68 (35.05	45.17 (34.12	0.13 (-0.02
	255.89)	250.75)	0.65)	0.62)	0.68)	to 0.63)	to 59.60)	to 58.06)	to 0.29)
	7.12 (5.93 to	9.07 (7.45 to	1.24 (1.04 to	0.60 (0.37 to	0.54 (0.36 to	-0.56 (-0.67	18.05 (10.87	15.83 (10.31	-0.67 (-0.82
Djibouti	8.73)	11.07)	1.45)	1.07)	0.89)	to -0.45)	to 32.37)	to 24.84)	to -0.53)
	29.23 (24.60	27.29 (22.61	-0.12 (-0.18	1.01 (0.79 to	0.76 (0.57 to	-1.20 (-1.28	34.22 (27.47	26 (20.19 to	-1.17 (-1.27
Dominica	to 35.45)	to 33.47)	to -0.07)	1.23)	1.02)	to -1.12)	to 41.24)	34.33)	to -1.07)
Dominican	25.16 (20.80	24.19 (19.90	0.16 (0.01 to	0.24 (0.19 to	0.24 (0.17 to	0.09 (-0.13	12.08 (9.46	10.73 (7.96	-0.27 (-0.50
Republic	to 30.54)	to 29.50)	0.32)	0.31)	0.32)	to 0.32)	to 15.94)	to 13.99)	to -0.04)
puone	17.02 (15.04	19.97 (17.98	0.32) 0.49 (0.39 to	0.23 (0.18 to	0.32) 0.23 (0.17 to	0.55 (-0.03	10.90 (8.22	9.02 (6.84 to	-0.33 (-0.74
Ecuador	to 19.21)	to 22.11)	0.49 (0.39 to	0.23 (0.18 to	0.30)	to 1.13)	to 13.94)	11.09)	to 0.08)
	W 19.21)	w 22.11)	0.55)	0.51)	0.50)	w 1.1 <i>3)</i>	to 15.34)	11.09)	io 0.00)

Egypt	39.84 (33.94	44.48 (36.34	0.26 (0.20 to	0.22 (0.13 to	0.21 (0.12 to	0.32 (0.07 to	11.25 (7.91	11.49 (8.21	0.19 (0.10 to
Едурі	to 46.00)	to 55.00)	0.32)	0.47)	0.35)	0.56)	to 16.51)	to 15.51)	0.27)
El Salvador	23.89 (19.87	24.71 (20.64	0.12 (0.05 to	0.36 (0.23 to	0.14 (0.11 to	-3.87 (-4.22	15.07 (11.16	7.25 (5.45 to	-2.87 (-3.18
Li Saivadoi	to 28.45)	to 29.14)	0.19)	0.45)	0.20)	to -3.52)	to 18.78)	9.54)	to -2.56)
Equatorial	7.11 (5.84 to	10.89 (9.04	1.66 (1.48 to	0.76 (0.44 to	0.54 (0.33 to	-1.45 (-1.60	23.13 (13.07	14.77 (9.26	-1.89 (-2.04
Guinea	8.80)	to 13.36)	1.85)	1.28)	0.86)	to -1.30)	to 37.98)	to 22.66)	to -1.73)
Eritrea	6.35 (5.28 to	6.98 (5.79 to	0.26 (0.21 to	0.61 (0.39 to	0.77 (0.52 to	0.71 (0.52 to	20.05 (11.19	22.27 (15.26	0.34 (0.20 to
Littlea	7.85)	8.43)	0.32)	0.96)	1.12)	0.89)	to 34.57)	to 32.30)	0.49)
Estonia	71.59 (62.77 to 81.41)	103.71 (90.72 to	1.12 (0.91 to 1.32)	0.55 (0.46 to 0.61)	0.34 (0.26 to 0.47)	-2.35 (-2.68 to -2.02)	28.55 (23.60 to 33.59)	24.50 (18.49 to 31.62)	-1.07 (-1.32 to -0.81)
		118.15)							
Eswatini	8.30 (6.84 to	9.49 (7.76 to	0.49 (0.39 to	0.55 (0.33 to	0.60 (0.42 to	0.53 (0.14 to	17.33 (9.97	17.93 (12.43	0.38 (0.14 to
	10.21)	11.68)	0.58)	0.83)	0.83)	0.91)	to 26.06)	to 25.37)	0.63)
Ethiopia	5.88 (4.90 to	6.78 (5.64 to	0.53 (0.48 to	0.84 (0.59 to	0.72 (0.42 to	-0.67 (-0.82	26.74 (17.05	19.04 (11.93	-1.33 (-1.48
	7.15)	8.29)	0.59)	1.34)	1.07)	to -0.52)	to 45.16)	to 28.10)	to -1.18)
Fiji	4.78 (3.90 to	4.70 (3.85 to	-0.12 (-0.34	0.35 (0.26 to	0.26 (0.19 to	-1.16 (-1.28	10.67 (8.31	8.17 (5.94 to	-1.08 (-1.21
1 1/1	5.75)	5.71)	to 0.09)	0.45)	0.34)	to -1.03)	to 13.70)	10.77)	to -0.95)
	162.00	286.76	1.86 (1.78 to	0.47 (0.35 to	0.29 (0.25 to	-2.22 (-2.47	33.34 (25.19	47.57 (33.68	1.06 (0.98 to
Finland	(150.44 to	(256.44 to	1.94)	0.55)	0.34)	to -1.96)	to 43.04)	to 63.99)	1.14)
	173.8)	318.38)	1.54)	0.55)	0.54)	10 1.50)	10 43.04)	10 03.77)	1.14)
	96.03 (87.62	136.71	1.43 (1.34 to	1.08 (0.93 to	1.21 (0.73 to	0.74 (0.46 to	31.92 (26.78	39.44 (31.13	1.07 (0.94 to
France	to 104.59)	(123.31 to	1.53)	1.20)	1.42)	1.02)	to 37.48)	to 48.47)	1.20)
	10 104.57)	151.14)	1.55)	1.20)	1.42)	1.02)	10 37.40)	10 40.47)	1.20)
Gabon	9.49 (7.90 to	11.27 (9.27	0.53 (0.51 to	0.61 (0.41 to	0.53 (0.38 to	-0.49 (-0.70	18.69 (12.11	15.27 (10.62	-0.71 (-0.88
Gabon	11.62)	to 13.92)	0.56)	0.96)	0.76)	to -0.28)	to 28.60)	to 21.51)	to -0.54)
Gambia	8.70 (7.11 to	8.81 (7.23 to	-0.10 (-0.21	0.58 (0.34 to	0.44 (0.29 to	-1.52 (-1.81	19.12 (10.73	14.25 (9.59	-1.56 (-1.85
Gambia	10.56)	10.96)	to 0.01)	0.92)	0.60)	to -1.24)	to 31.19)	to 19.10)	to -1.28)
Georgia	84.45 (71.53	87.97 (73.75	0.15 (0.08 to	0.29 (0.18 to	0.29 (0.19 to	0.18 (-1.12	20.37 (15.24	20.25 (15.35	0.02 (-0.38
Georgia	to 99.72)	to 104.83)	0.22)	0.39)	0.37)	to 1.50)	to 26.41)	to 26.28)	to 0.41)
	104.26	214.93	1.09 (0.54 to	0.96 (0.79 to	1.94 (1.46 to	3.73 (3.26 to	35.51 (28.44	64.06 (51.49	1.80 (1.57 to
Germany	(89.74 to	(188.62 to	1.64)	1.60)	2.20)	4.20)	to 47.28)	to 77.71)	2.02)
	121.91)	243.64)	1.04)	1.00)	2.20)	4.20)	10 47.20)	10 77.71)	2.02)
Ghana	10.54 (8.69	12.26 (10.11	0.73 (0.63 to	0.70 (0.35 to	0.55 (0.31 to	-0.97 (-1.23	24.11 (11.81	18.5 (10.85	-1.02 (-1.27
Gilalia	to 12.71)	to 14.88)	0.83)	1.24)	0.82)	to -0.70)	to 39.44)	to 26.95)	to -0.77)
Greece	97.92 (82.43	78.66 (70.88	-0.98 (-1.20	0.26 (0.22 to	0.23 (0.19 to	-0.36 (-0.92	19.2 (14.17	15.88 (11.92	-0.78 (-0.85
Greece	to 113.83)	to 87.04)	to -0.75)	0.30)	0.27)	to 0.20)	to 25.49)	to 20.55)	to -0.71)
	144.67	163.39	0.24 (0.27 +-	0.57.(0.45.4-	0.74 (0.29 +-	1.07 (0.90 +-	24.12 (26.01	20.2 (20.26	0.26 (0.24 +-
Greenland	(122.01 to	(138.74 to	0.34 (0.27 to	0.57 (0.45 to	0.74 (0.38 to	1.07 (0.80 to	34.12 (26.01	38.3 (28.36	0.36 (0.24 to
	170.01)	188.49)	0.40)	0.71)	0.96)	1.34)	to 44.17)	to 50.15)	0.47)
Cuona 1-	24.13 (19.74	24.31 (20.03	0.03 (-0.05	1.34 (1.06 to	1.24 (1.03 to	-0.55 (-0.68	44.27 (36.58	38.43 (32.58	-0.64 (-0.73
Grenada	to 29.02)	to 30.13)	to 0.12)	1.62)	1.52)	to -0.41)	to 52.74)	to 46.61)	to -0.56)
C····	6.83 (5.65 to	6.54 (5.35 to	-0.18 (-0.35	0.33 (0.26 to	0.16 (0.12 to	-3.00 (-3.55	9.01 (7.19 to	5.39 (4.11 to	-2.12 (-2.65
Guam	8.11)	7.82)	to -0.01)	0.42)	0.23)	to -2.45)	11.32)	7.68)	to -1.59)
Guatemala	21.60 (18.10	23.54 (19.84	0.29 (0.25 to	0.25 (0.18 to	0.29 (0.22 to	1.32 (0.72 to	11.81 (8.36	11.99 (9.52	0.71 (0.18 to

	to 26.13)	to 28.11)	0.32)	0.38)	0.37)	1.92)	to 18.2)	to 14.91)	1.24)
	7.53 (6.18 to	8.61 (7.06 to	0.61 (0.49 to	0.43 (0.18 to	0.40 (0.21 to	-0.36 (-0.50	16.9 (6.31 to	14.41 (7.36	-0.58 (-0.70
Guinea	9.35)	10.53)	0.74)	0.86)	0.60)	to -0.22)	29.14)	to 21.95)	to -0.47)
	7.32 (5.99 to	8.43 (6.92 to	0.63 (0.50 to	0.75 (0.36 to	0.61 (0.4 to	-0.81 (-0.93	26.39 (11.34	20.54 (12.76	-0.94 (-1.07
Guinea-Bissau	9.06)	10.32)	0.76)	1.18)	0.85)	to -0.68)	to 44.49)	to 28.9)	to -0.80)
	23.56 (19.43	22.95 (18.93	0.06 (-0.03	1.19 (0.97 to	1.02 (0.76 to	-0.53 (-0.70	40.69 (32.87	35.43 (26.51	-0.46 (-0.59
Guyana	to 28.53)	to 28.26)	to 0.15)	1.41)	1.33)	to -0.35)	to 48.37)	to 46.07)	to -0.32)
	20.11 (16.54	19.43 (16.14	0.07 (-0.03	1.41 (0.74 to	1.08 (0.61 to	-0.77 (-0.89	52.02 (22.41	36.86 (19.94	-0.94 (-1.12
Haiti	to 24.88)	to 24.31)	to 0.17)	2.12)	1.59)	to -0.65)	to 92.43)	to 54.22)	to -0.77)
	22.83 (18.97	23.93 (19.84	0.18 (0.14 to	0.72 (0.46 to	0.83 (0.51 to	0.87 (0.73 to	28.54 (19.06	24.37 (15.88	-0.38 (-0.43
Honduras	to 27.11)	to 28.49)	0.23)	0.99)	1.15)	1.02)	to 38.67)	to 32.67)	to -0.32)
	199.20	332.82		0.64.00.00					
Hungary	(181.71 to	(309.79 to	2.13 (1.78 to	0.64 (0.58 to	0.56 (0.45 to	-0.62 (-1.04	48.33 (38.31	64.34 (47.69	1.15 (0.85 to
	219.68)	356.72)	2.48)	0.82)	0.71)	to -0.20)	to 59.55)	to 82.55)	1.46)
	136.42	210.18							
Iceland	(115.41 to	(180.43 to	0.84 (0.59 to	0.67 (0.57 to	0.65 (0.51 to	0.14 (-0.01	33.49 (26.34	42.38 (31.83	0.47 (0.33 to
	161.21)	243.51)	1.09)	0.78)	0.75)	to 0.29)	to 42.36)	to 54.83)	0.62)
T 1'	20.68 (16.76	20.34 (16.57	0.18 (-0.03	0.63 (0.43 to	0.40 (0.29 to	-1.93 (-2.11	20.11 (13.58	13.04 (9.44	-1.73 (-1.86
India	to 25.67)	to 24.97)	to 0.38)	0.91)	0.53)	to -1.74)	to 26.72)	to 16.5)	to -1.61)
T., d.,	3.37 (2.70 to	4.16 (3.37 to	0.74 (0.60 to	0.77 (0.37 to	0.55 (0.33 to	-1.42 (-1.56	19.48 (11.70	11.66 (8.16	-2.04 (-2.17
Indonesia	4.07)	5.00)	0.88)	1.04)	0.70)	to -1.29)	to 24.6)	to 14.98)	to -1.91)
Iran (Islamic	41.07 (33.51	44.80 (36.70	0.29 (0.02 to	0.22 (0.12 to	0.19 (0.08 to	-0.11 (-0.64	11.09 (8.34	11.03 (7.60	0.12 (-0.02
Republic of)	to 50.84)	to 55.07)	0.57)	0.34)	0.24)	to 0.42)	to 14.22)	to 14.22)	to 0.25)
T	19.71 (16.52	28.11 (23.22	1.43 (1.27 to	0.29 (0.20 to	0.19 (0.15 to	-1.58 (-1.76	13.75 (9.61	10.42 (8.08	-0.96 (-1.14
Iraq	to 23.39)	to 34.20)	1.59)	0.42)	0.27)	to -1.39)	to 19.18)	to 13.32)	to -0.78)
Ireland	90.59 (75.89	97.87 (84.83	0.42 (0.35 to	0.87 (0.76 to	0.66 (0.53 to	-1.61 (-2.56	29.44 (24.40	25.50 (20.1	-0.80 (-1.30
Heland	to 107.72)	to 112.53)	0.49)	0.96)	0.84)	to -0.66)	to 35.63)	to 32.09)	to -0.30)
Igraal	70.49 (59.79	70.21 (62.42	-0.08 (-0.20	0.47 (0.41 to	0.38 (0.32 to	-1.01 (-1.36	21.15 (17.17	18.50 (14.69	-0.65 (-0.76
Israel	to 83.85)	to 78.72)	to 0.05)	0.53)	0.51)	to -0.66)	to 26.12)	to 23.20)	to -0.54)
	261.58	227.51	-0.24 (-0.43	0.44 (0.39 to	0.76 (0.55 to	2.55 (2.03 to	49.44 (36.73	46.95 (35.41	0.17 (0.00 to
Italy	(226.94 to	(200.83 to	to -0.05)	0.70)	0.70 (0.33 to	3.06)	to 63.71)	to 59.78)	0.34)
	297.14)	254.27)	10 -0.03)	0.70)	0.03)	3.00)	10 03.71)	10 37.70)	0.54)
Jamaica	29.63 (24.88	29.42 (24.46	0.15 (0.05 to	0.30 (0.23 to	0.24 (0.17 to	-1.45 (-1.78	14.86 (11.53	11.50 (8.84	-1.28 (-1.50
Jamarea	to 35.60)	to 35.27)	0.25)	0.35)	0.33)	to -1.12)	to 17.70)	to 14.50)	to -1.06)
	151.17	291.90	1.48 (1.08 to	0.25 (0.18 to	0.11 (0.09 to	-2.39 (-2.83	27.14 (19.46	46.58 (31.41	1.21 (0.88 to
Japan	(125.74 to	(251.75 to	1.88)	0.27)	0.16)	to -1.95)	to 36.26)	to 63.54)	1.54)
	179.69)	336.57)	1.00)	0.27)	0.10)	10 11,50)	10 20.20)	10 05.5 1)	1.0 .)
	69.20 (60.07	113.51	2.51 (2.23 to	0.43 (0.30 to	0.23 (0.18 to	-2.62 (-2.98	20.68 (15.47	22.01 (16.06	0.46 (0.34 to
Jordan	to 79.85)	(95.78 to	2.79)	0.59)	0.30)	to -2.26)	to 26.15)	to 29.65)	0.58)
		133.87)	,	/					2.20)
Kazakhstan	80.02 (67.16	81.77 (68.13	0.12 (0.06 to	0.57 (0.41 to	0.46 (0.37 to	-1.26 (-1.68	30.23 (24.06	26.97 (21.78	-0.74 (-1.02
	to 96.26)	to 97.46)	0.18)	0.72)	0.56)	to -0.85)	to 37.42)	to 33.61)	to -0.45)
Kenya	6.80 (5.68 to	8.33 (6.99 to	0.31 (0.19 to	0.81 (0.43 to	0.84 (0.50 to	0.31 (0.22 to	21.25 (13.20	21.31 (13.76	0.26 (0.16 to
<b>y</b>	8.23)	10.12)	0.42)	1.44)	1.26)	0.40)	to 36.93)	to 30.78)	0.36)

Kiribati	4.05 (3.25 to	3.55 (2.90 to	-0.69 (-0.88	1.81 (0.99 to	1.08 (0.68 to	-2.13 (-2.29	53.42 (24.47	31.83 (17.58	-2.07 (-2.20
Kiirouti	4.96)	4.32)	to -0.51)	2.71)	1.67)	to -1.98)	to 92.59)	to 55.40)	to -1.93)
Kuwait	55.67 (51.70	54.34 (45.07	0.09 (-0.06	0.19 (0.14 to	0.15 (0.12 to	-0.66 (-1.06	13.39 (10.47	11.73 (8.74	-0.33 (-0.50
Kuwan	to 60.02)	to 65.64)	to 0.25)	0.22)	0.20)	to -0.25)	to 16.77)	to 15.53)	to -0.15)
Kyrgyzstan	73.48 (61.75	73.31 (61.61	-0.03 (-0.10	0.42 (0.29 to	0.19 (0.16 to	-3.52 (-3.86	28 (21.04 to	17.37 (13.34	-2.11 (-2.28
Kyigyzstan	to 87.12)	to 87.09)	to 0.04)	0.50)	0.25)	to -3.19)	34.06)	to 22.37)	to -1.94)
Lao People's	2.98 (2.32 to	3.67 (2.95 to	0.79 (0.74 to	0.45 (0.22 to	0.26 (0.14 to	-2.40 (-2.60	13.04 (6.62	6.97 (4.13 to	-2.47 (-2.65
Democratic	3.69)	4.55)	0.83)	0.72)	0.41)	to -2.19)	to 19.19)	11.24)	to -2.30)
Republic	3.09)	4.55)	0.63)	0.72)	0.41)	10 -2.19)	10 19.19)	11.24)	10 -2.30)
	103.47	123.78	0.42 (0.33 to	0.34 (0.29 to	0.37 (0.30 to	0.22 (-0.08	25.74 (20.10	28.66 (21.84	0.14 (-0.02
Latvia	(89.32 to	(108.48 to	0.50)	0.42)	0.48)	to 0.51)	to 32.35)	to 36.61)	to 0.29)
	119.13)	139.23)	0.50)	0.42)	0.40)	10 0.31)	10 32.33)	10 30.01)	10 0.27)
Lebanon	33.16 (27.13	46.20 (37.84	1.23 (1.00 to	0.14 (0.10 to	0.15 (0.08 to	0.32 (0.10 to	8.48 (6.32 to	10.18 (7.34	0.79 (0.65 to
Levanon	to 41.07)	to 56.68)	1.47)	0.21)	0.23)	0.55)	11.24)	to 13.75)	0.93)
Lesotho	7.67 (6.36 to	8.77 (7.23 to	0.48 (0.40 to	0.55 (0.36 to	0.69 (0.48 to	1.08 (0.85 to	16.56 (10.77	20.29 (13.61	1.06 (0.87 to
Lesouio	9.34)	10.83)	0.57)	0.8)	0.98)	1.31)	to 23.28)	to 29.06)	1.26)
Liberia	7.84 (6.42 to	8.46 (6.99 to	0.57 (0.33 to	0.52 (0.23 to	0.42 (0.26 to	-0.84 (-1.09	19.69 (7.54	13.96 (8.48	-1.16 (-1.44
Liberia	9.75)	10.34)	0.80)	0.92)	0.62)	to -0.60)	to 32.92)	to 21.59)	to -0.88)
Libya	23.56 (19.39	25.77 (21.21	0.56 (0.29 to	0.21 (0.13 to	0.22 (0.15 to	0.11 (-0.02	8.88 (6.41 to	9.05 (6.69 to	0.21 (0.11 to
Libya	to 28.73)	to 31.41)	0.84)	0.37)	0.31)	to 0.24)	12.85)	11.82)	0.31)
	109.21 (95.7	133.41	0.84 (0.76 to	0.32 (0.24 to	0.33 (0.26 to	0.13 (-0.20	25.36 (19.61	28.75 (21.98	0.49 (0.33 to
Lithuania	to 123.65)	(123.84 to	0.92)	0.32 (0.24 to	0.33 (0.20 to	to 0.47)	to 31.92)	to 36.27)	0.49 (0.33 to
	10 123.03)	142.65)	0.72)	0.37)	0.42)	10 0.47)	10 31.72)	10 30.27)	0.03)
	166.34	187.63	0.37 (0.22 to	0.96 (0.84 to	0.97 (0.72 to	0.55 (0.30 to	42.53 (33.57	43.90 (33.95	0.27 (0.15 to
Luxembourg	(145.24 to	(163.86 to	0.57 (0.22 to	1.10)	1.16)	0.80)	to 52.29)	to 55.68)	0.38)
	189.85)	213.76)	0.55)	1.10)	1.10)	0.00)	10 32.2)	10 33.00)	0.50)
Madagascar	6.62 (5.44 to	7.25 (5.99 to	0.38 (0.29 to	0.53 (0.32 to	0.59 (0.40 to	0.45 (0.34 to	17.91 (8.95	16.98 (11.97	-0.03 (-0.18
wadagascar	8.22)	9.04)	0.48)	0.88)	0.88)	0.56)	to 28.15)	to 24.64)	to 0.13)
Malawi	5.73 (4.70 to	6.33 (5.28 to	0.44 (0.40 to	0.71 (0.49 to	0.67 (0.46 to	-0.26 (-0.39	24.10 (13.49	19.08 (13.47	-0.85 (-1.02
11111111111	7.05)	7.8)	0.48)	1.02)	0.97)	to -0.12)	to 42.83)	to 26.73)	to -0.69)
Malaysia	4.33 (3.64 to	6.56 (5.71 to	1.38 (1.19 to	0.18 (0.14 to	0.17 (0.12 to	-0.75 (-1.06	5.01 (4.15 to	4.92 (3.71 to	-0.54 (-0.73
171111175111	5.05)	7.56)	1.57)	0.22)	0.23)	to -0.43)	6.10)	6.26)	to -0.35)
Maldives	4.10 (3.25 to	4.94 (3.96 to	0.74 (0.68 to	0.53 (0.32 to	0.30 (0.23 to	-2.37 (-2.52	13.21 (8.16	7.20 (5.69 to	-2.50 (-2.68
1viaidi ves	4.98)	5.96)	0.80)	0.81)	0.40)	to -2.22)	to 20.38)	9.23)	to -2.32)
Mali	7.19 (5.85 to	8.08 (6.68 to	0.63 (0.48 to	0.49 (0.20 to	0.47 (0.26 to	-0.28 (-0.46	19.25 (6.81	16.53 (8.45	-0.64 (-0.80
111411	8.93)	9.79)	0.79)	0.89)	0.71)	to -0.10)	to 33.36)	to 26.83)	to -0.48)
Malta	66.69 (57.4	72.00 (63.55	0.11 (0.05 to	0.54 (0.48 to	0.62 (0.48 to	0.78 (0.57 to	20.61 (16.77	22.28 (18.12	0.40 (0.30 to
Mana	to 76.82)	to 81.87)	0.17)	0.62)	0.74)	0.99)	to 24.94)	to 27.35)	0.50)
Marshall	4.22 (3.40 to	4.10 (3.35 to	-0.25 (-0.43	1.32 (0.84 to	0.83 (0.50 to	-1.90 (-2.04	38.63 (23.47	24.94 (14.63	-1.80 (-1.93
Islands	5.11)	4.93)	to -0.08)	1.88)	1.31)	to -1.76)	to 58.16)	to 40.72)	to -1.68)
Mauritania	8.95 (7.32 to	11.87 (9.73	0.85 (0.70 to	0.68 (0.41 to	0.41 (0.28 to	-2.01 (-2.18	22.06 (12.99	13.42 (9.08	-1.97 (-2.14
iviaaiitailla	10.94)	to 14.62)	0.99)	0.99)	0.57)	to -1.84)	to 31.74)	to 18.70)	to -1.80)
Mauritius	4.55 (3.68 to	5.50 (4.43 to	0.68 (0.63 to	0.17 (0.14 to	0.22 (0.17 to	1.44 (1.10 to	5.3 (4.63 to	7.7 (5.86 to	1.88 (1.53 to
iviauiiius	5.63)	6.63)	0.73)	0.19)	0.28)	1.78)	6.29)	9.69)	2.23)

Mexico	47.30 (40.55 to 55.27)	36.92 (31.76 to 42.73)	-0.82 (-0.97 to -0.67)	0.34 (0.31 to 0.39)	0.45 (0.36 to 0.54)	1.68 (1.33 to 2.02)	16.08 (13.61 to 19.12)	17.13 (14.12 to 20.45)	0.68 (0.41 to 0.96)
Micronesia (Federated States of)	4.44 (3.61 to 5.35)	4.11 (3.40 to 4.96)	-0.45 (-0.62 to -0.27)	1.36 (0.88 to 1.97)	0.80 (0.48 to 1.32)	-2.09 (-2.29 to -1.88)	40.59 (25.23 to 65.57)	23.88 (12.56 to 43.11)	-2.07 (-2.24 to -1.89)
Monaco	102.48 (86.41 to 120.82)	110.59 (93.15 to 130.73)	0.31 (0.29 to 0.33)	0.38 (0.27 to 0.50)	0.36 (0.27 to 0.47)	-0.07 (-0.15 to 0.01)	22.98 (17.18 to 30.02)	23.10 (17.08 to 29.93)	0.08 (0.06 to 0.10)
Mongolia	68.37 (56.95 to 82.11)	69.72 (57.44 to 83.84)	0.02 (0.01 to 0.04)	0.73 (0.47 to 1.01)	0.45 (0.33 to 0.61)	-2.10 (-2.26 to -1.94)	38.19 (25.22 to 51.55)	24.75 (19.13 to 31.11)	-1.88 (-2.00 to -1.75)
Montenegro	135.02 (114.64 to 158.46)	133.80 (112.95 to 156.37)	0.02 (0.00 to 0.05)	0.29 (0.23 to 0.37)	0.30 (0.23 to 0.37)	0.27 (0.08 to 0.46)	29.84 (22.66 to 38.5)	28.38 (20.94 to 37.02)	-0.08 (-0.14 to -0.02)
Morocco	15.56 (13.00 to 18.49)	17.60 (14.69 to 21.00)	0.60 (0.47 to 0.72)	0.23 (0.14 to 0.38)	0.21 (0.15 to 0.28)	-0.17 (-0.38 to 0.04)	8.23 (5.69 to 11.59)	7.60 (5.86 to 9.68)	-0.09 (-0.21 to 0.02)
Mozambique	5.71 (4.71 to 7.03)	6.30 (5.22 to 7.69)	0.38 (0.33 to 0.43)	0.69 (0.45 to 1.04)	0.84 (0.58 to 1.20)	0.94 (0.77 to 1.12)	22.30 (13.46 to 36.57)	24.35 (16.57 to 34.27)	0.62 (0.41 to 0.84)
Myanmar	3.09 (2.42 to 3.79)	3.71 (3.00 to 4.59)	0.72 (0.63 to 0.81)	0.22 (0.13 to 0.31)	0.13 (0.1 to 0.17)	-1.95 (-2.07 to -1.83)	7.97 (4.53 to 12.88)	4.34 (3.28 to 6.04)	-2.29 (-2.41 to -2.17)
Namibia	9.39 (7.72 to 11.59)	11.47 (9.48 to 14.12)	0.66 (0.54 to 0.77)	0.72 (0.50 to 1.00)	0.63 (0.45 to 0.87)	-0.61 (-0.80 to -0.41)	21.26 (13.8 to 28.84)	18.09 (12.71 to 26.34)	-0.52 (-0.63 to -0.41)
Nauru	5.33 (4.35 to 6.41)	5.02 (4.11 to 6.11)	-0.61 (-0.94 to -0.28)	1.37 (0.82 to 2.13)	0.92 (0.54 to 1.45)	-1.85 (-2.09 to -1.61)	42.03 (22.9 to 73.19)	27.18 (13.97 to 47.82)	-1.87 (-2.08 to -1.65)
Nepal	16.18 (12.92 to 20.54)	18.72 (15.04 to 23.18)	0.55 (0.50 to 0.59)	0.98 (0.57 to 1.86)	0.59 (0.36 to 0.98)	-1.88 (-2.06 to -1.69)	28.52 (18.28 to 47.84)	15.65 (10.93 to 23.88)	-2.15 (-2.36 to -1.94)
Netherlands	142.28 (129.20 to 155.78)	73.64 (63.08 to 85.72)	-2.19 (-2.78 to -1.60)	1.43 (1.24 to 1.75)	2.08 (1.58 to 2.40)	1.35 (0.87 to 1.84)	47.17 (39.07 to 56.59)	41.11 (35.20 to 47.09)	-0.50 (-0.93 to -0.06)
New Zealand	160.29 (139.19 to 182.59)	168.32 (152.62 to 186.95)	0.20 (0.15 to 0.26)	0.53 (0.45 to 0.59)	0.38 (0.32 to 0.46)	-1.70 (-2.05 to -1.34)	34.31 (26.39 to 43.21)	31.98 (23.24 to 41.73)	-0.32 (-0.42 to -0.22)
Nicaragua	23.25 (19.28 to 27.88)	26.41 (22.30 to 31.28)	0.20 (0.10 to 0.31)	0.15 (0.12 to 0.18)	0.17 (0.13 to 0.21)	0.48 (0.30 to 0.67)	7.80 (6.25 to 9.75)	8.26 (6.41 to 10.34)	0.12 (-0.02 to 0.25)
Niger	7.12 (5.75 to 8.74)	7.75 (6.26 to 9.48)	0.37 (0.26 to 0.48)	0.58 (0.28 to 0.99)	0.5 (0.29 to 0.79)	-0.71 (-0.92 to -0.51)	21.59 (8.82 to 38.22)	17.16 (9.15 to 26.85)	-1.08 (-1.30 to -0.86)
Nigeria	8.88 (7.36 to 10.86)	11.03 (9.13 to 13.41)	0.98 (0.83 to 1.14)	0.57 (0.28 to 0.97)	0.52 (0.28 to 0.83)	-0.11 (-0.21 to -0.02)	19.98 (11.19 to 32.55)	17.08 (10.24 to 26.72)	-0.43 (-0.51 to -0.35)
Niue	5.82 (4.77 to 7.03)	5.53 (4.56 to 6.74)	-0.24 (-0.39 to -0.08)	0.96 (0.67 to 1.38)	0.63 (0.38 to 0.91)	-1.75 (-1.86 to -1.63)	29.80 (19.61 to 46.61)	19.00 (10.29 to 29.66)	-1.92 (-2.07 to -1.78)
North Macedonia	119.00 (100.79 to 140.81)	122.13 (103.27 to 143.78)	0.14 (0.12 to 0.17)	0.20 (0.15 to 0.25)	0.18 (0.13 to 0.23)	-0.21 (-0.36 to -0.07)	23.91 (17.63 to 31.43)	23.32 (16.99 to 31.08)	0.00 (-0.04 to 0.05)
Northern Mariana	6.60 (5.47 to 7.98)	5.79 (4.80 to 6.96)	-0.61 (-0.80 to -0.42)	1.28 (0.85 to 1.82)	0.38 (0.26 to 0.73)	-4.76 (-5.32 to -4.19)	34.73 (23.54 to 50.03)	11.56 (7.82 to 20.63)	-4.28 (-4.78 to -3.78)

Islands									
	406.73	498.95	0.20 (0.24)	0.42.40.20.4	0.20 (0.22 )	0.06 / 1.10	60.15 (40.55	00.27 (56.25	0.17 (0.01)
Norway	(342.53 to	(429.41 to	0.38 (0.24 to	0.43 (0.39 to	0.38 (0.32 to	-0.86 (-1.19	69.15 (49.57	80.37 (56.25	0.17 (0.01 to
	478.15)	570.55)	0.52)	0.58)	0.52)	to -0.53)	to 92.09)	to 108.56)	0.33)
0	32.04 (26.30	33.81 (27.79	0.24 (0.08 to	0.23 (0.12 to	0.23 (0.15 to	0.58 (0.34 to	10.5 (7.14 to	9.96 (7.66 to	0.17 (0.00 to
Oman	to 38.55)	to 40.80)	0.40)	0.39)	0.34)	0.82)	15.11)	12.72)	0.35)
Dalriston	13.75 (11.11	16.77 (13.78	0.77 (0.72 to	0.78 (0.39 to	0.62 (0.41 to	-0.87 (-0.93	21.52 (12.69	17.80 (12.91	-0.71 (-0.77
Pakistan	to 17.15)	to 21.25)	0.81)	1.57)	0.99)	to -0.80)	to 38.34)	to 25.37)	to -0.66)
Palau	5.62 (4.60 to	5.22 (4.30 to	-0.40 (-0.56	0.88 (0.53 to	0.62 (0.29 to	-1.36 (-1.47	26.21 (13.51	19.34 (8.32	-1.21 (-1.31
r alau	6.79)	6.32)	to -0.24)	1.46)	0.97)	to -1.24)	to 47.84)	to 32.27)	to -1.10)
Palestine	31.49 (25.86	35.42 (29.15	0.71 (0.52 to	0.33 (0.23 to	0.20 (0.15 to	-2.83 (-3.48	11.67 (8.60	9.47 (7.18 to	-1.16 (-1.42
1 diestine	to 38.19)	to 42.61)	0.90)	0.50)	0.29)	to -2.18)	to 16.06)	12.75)	to -0.90)
Panama	30.64 (26.19	31.9 (26.95	0.09 (0.04 to	0.40 (0.33 to	0.59 (0.45 to	2.20 (1.67 to	19.61 (16.04	24.28 (18.4	1.57 (1.10 to
Tanama	to 35.44)	to 37.19)	0.14)	0.57)	0.76)	2.73)	to 24.02)	to 31.52)	2.05)
Papua New	4.05 (3.24 to	3.65 (2.96 to	-0.52 (-0.69	0.54 (0.31 to	0.42 (0.27 to	-1.02 (-1.10	19.34 (11.2	14.68 (9.5 to	-1.09 (-1.18
Guinea	4.88)	4.45)	to -0.35)	0.80)	0.63)	to -0.93)	to 29.45)	21.87)	to -1.00)
Paraguay	35.78 (30.69	30.96 (26.24	-0.62 (-0.73	0.16 (0.13 to	0.21 (0.15 to	1.35 (1.08 to	10.62 (8.39	10.30 (7.70	0.12 (-0.06
Taraguay	to 41.49)	to 36.59)	to -0.50)	0.21)	0.28)	1.63)	to 13.36)	to 13.16)	to 0.29)
Peru	17.18 (14.20	16.74 (13.74	-0.14 (-0.17	0.69 (0.47 to	0.23 (0.16 to	-4.20 (-4.68	34.79 (19.65	9.31 (6.89 to	-5.08 (-5.69
1014	to 20.56)	to 20.14)	to -0.10)	0.93)	0.32)	to -3.72)	to 53.77)	12.58)	to -4.47)
Philippines	4.47 (3.59 to	4.96 (4.02 to	0.35 (0.25 to	0.35 (0.16 to	0.16 (0.13 to	-3.25 (-3.54	8.94 (5.36 to	4.87 (4.06 to	-2.61 (-2.86
<b>1</b> ppes	5.38)	6.00)	0.46)	0.46)	0.20)	to -2.95)	11.07)	6.26)	to -2.35)
	418.60	177.25	-3.73 (-4.52	0.44 (0.41 to	0.53 (0.42 to	0.82 (0.68 to	72.05 (51.85	38.44 (29.32	-2.70 (-3.28
Poland	(351.62 to	(157.39 to	to -2.94)	0.51)	0.62)	0.96)	to 95.72)	to 49.04)	to -2.11)
	498.71)	199.48)	,	,	,	,	,	,	,
Portugal	52.37 (46.30	74.24 (66.91	0.72 (0.46 to	0.69 (0.60 to	1.06 (0.57 to	2.38 (1.99 to	20.51 (17.46	27.82 (20.23	1.24 (1.07 to
2	to 58.76)	to 82.44)	0.99)	0.76)	1.24)	2.77)	to 24.14)	to 33.05)	1.41)
Puerto Rico	31.12 (29.32	30.88 (28.28	0.00 (-0.04	0.56 (0.43 to	0.27 (0.19 to	-3.70 (-4.28	21.05 (16.43	12.28 (9.43	-2.69 (-3.09
	to 33.10)	to 33.59)	to 0.04)	0.64)	0.41)	to -3.10)	to 24.23)	to 16.08)	to -2.29)
Qatar	38.47 (31.44	44.46 (36.75	0.53 (0.42 to	0.37 (0.24 to	0.34 (0.21 to	0.52 (0.07 to	14.06 (10.55	13.06 (9.28	0.13 (-0.12
	to 45.79)	to 53.66)	0.64)	0.59)	0.51)	0.98)	to 19.68)	to 17.59)	to 0.37)
Republic of	37.89 (33.49			1.76 (0.56 to				15 (11.13 to	
Korea	to 42.88)	to 74.79)	1.61)	2.34)	0.39)	to -7.25)	to 38.85)	19.33)	to -3.23)
Republic of	67.21 (55.76	66.12 (59.51	0.47 (0.09 to	0.38 (0.32 to	0.33 (0.27 to	-0.60 (-0.96	22.87 (18.45	20.72 (16.98	-0.20 (-0.52
Moldova	to 80.49)	to 73.09)	0.85)	0.47)	0.39)	to -0.25)	to 27.69)	to 25.12)	to 0.13)
Romania	70.01 (58.65	70.93 (63.66	0.37 (0.16 to	0.27 (0.23 to	0.23 (0.18 to	-0.65 (-1.01	21.99 (17.23	17.97 (13.92	-0.63 (-0.89
	to 82.51)	to 79.55)	0.59)	0.31)	0.28)	to -0.29)	to 27.18)	to 22.6)	to -0.37)
Russian	95.59 (81.25	85.89 (72.98	-0.12 (-0.25	0.57 (0.42 to	0.56 (0.46 to	-0.40 (-0.74	30.76 (24.06	28.04 (22.97	-0.52 (-0.70
Federation	to 111.84)	to 100.35)	to 0.00)	0.66)	0.66)	to -0.06)	to 37.42)	to 34.48)	to -0.35)
Rwanda	6.69 (5.55 to	7.89 (6.47 to	0.57 (0.40 to	0.92 (0.61 to	0.65 (0.42 to	-1.79 (-2.06	29.08 (17.93	19.33 (12.66	-1.92 (-2.15
0.1	8.31)	9.74)	0.74)	1.40)	0.92)	to -1.51)	to 46.16)	to 28.48)	to -1.69)
Saint Kitts and	29.59 (24.68	28.95 (23.75	0.06 (-0.02	2.25 (1.70 to	1.44 (1.06 to	-2.01 (-2.26	67.93 (52.91	42.16 (29.05	-2.07 (-2.32
Nevis	to 35.93)	to 35.61)	to 0.14)	2.63)	2.05)	to -1.76)	to 79.57)	to 61.00)	to -1.82)
Saint Lucia	25.70 (21.15	27.48 (22.74	0.32 (0.22 to	0.99 (0.78 to	0.65 (0.51 to	-2.24 (-2.69	32.61 (26.63	22.26 (17.86	-1.84 (-2.19

	to 31.22)	to 33.54)	0.42)	1.15)	0.84)	to -1.78)	to 37.29)	to 28.14)	to -1.49)
Saint Vincent	24.01.(20.72	24.40.720.24	0.24 (0.12 )	1 21 (1 00 4	1 22 (0 00 4	0.56 ( 0.70	44.05 (27.25	20 (1 (21 46	0.00 ( 0.04
and the	24.91 (20.72	24.40 (20.24	0.24 (0.13 to	1.31 (1.08 to	1.22 (0.98 to	-0.56 (-0.70	44.25 (37.35	38.61 (31.46	-0.80 (-0.94
Grenadines	to 30.36)	to 29.76)	0.34)	1.57)	1.53)	to -0.41)	to 51.61)	to 48.07)	to -0.67)
Comoo	5.60 (4.60 to	4.77 (3.92 to	-0.77 (-1.05	0.98 (0.66 to	0.63 (0.45 to	-1.64 (-1.80	27.95 (18.61	17.97 (11.92	-1.62 (-1.75
Samoa	6.71)	5.78)	to -0.49)	1.49)	0.85)	to -1.47)	to 40.58)	to 26.18)	to -1.49)
	107.02	112.86	0.23 (0.21 to	0.37 (0.27 to	0.36 (0.22 to	0.22 (0.06 to	21.57 (15.79	21.79 (15.52	0.15 (0.11 to
San Marino	(89.88 to	(94.72 to	`	`	,	0.38)			`
	126.67)	132.67)	0.24)	0.48)	0.53)	0.36)	to 28.34)	to 28.71)	0.19)
Sao Tome and	10.50 (8.66	11.85 (9.61	0.59 (0.46 to	0.46 (0.26 to	0.31 (0.21 to	-1.58 (-1.93	15.7 (9.25 to	10.34 (7.41	-1.71 (-2.03
Principe	to 12.87)	to 14.64)	0.71)	0.73)	0.50)	to -1.24)	23.73)	to 15.57)	to -1.38)
Saudi Arabia	33.86 (28.47	34.43 (28.66	0.22 (0.09 to	0.19 (0.11 to	0.15 (0.11 to	-0.60 (-0.71	9.73 (6.96 to	8.9 (6.65 to	-0.18 (-0.25
Saudi Arabia	to 40.38)	to 41.36)	0.35)	0.31)	0.21)	to -0.48)	13.65)	11.75)	to -0.10)
Senegal	8.06 (6.57 to	8.84 (7.25 to	0.39 (0.27 to	0.55 (0.29 to	0.43 (0.27 to	-1.00 (-1.21	18.61 (9.28	14.15 (8.71	-1.12 (-1.32
Sellegal	9.88)	11.10)	0.51)	0.93)	0.65)	to -0.78)	to 29.66)	to 21.53)	to -0.91)
	118.24	151.50	0.43 (0.26 to	0.49 (0.37 to	0.76 (0.50 to	2.49 (2.05 to	31.72 (24.28	39.47 (29.72	0.83 (0.67 to
Serbia	(99.70 to	(130.14 to	0.61)	0.78)	0.97)	2.94)	to 43.38)	to 49.82)	0.98)
	138.39)	173.84)	0.01)	0.70)	0.57)	2.74)	10 43.30)	10 47.02)	0.70)
Seychelles	4.66 (3.75 to	5.45 (4.43 to	0.52 (0.44 to	0.30 (0.19 to	0.22 (0.16 to	-1.44 (-1.65	8.38 (5.69 to	6.28 (4.77 to	-1.35 (-1.51
Seyenenes	5.71)	6.55)	0.60)	0.38)	0.30)	to -1.23)	10.68)	7.85)	to -1.19)
Sierra Leone	7.33 (6.06 to	8.45 (6.95 to	0.64 (0.51 to	0.42 (0.19 to	0.43 (0.24 to	0.20 (-0.07	15.88 (6.30	15.30 (8.12	0.00 (-0.27
Sicita Leone	9.02)	10.53)	0.77)	0.72)	0.61)	to 0.48)	to 28.04)	to 23.35)	to 0.26)
Singapore	47.14 (38.3	41.88 (34.28	-0.58 (-0.74	0.18 (0.14 to	0.07 (0.06 to	-3.18 (-3.41	12.19 (9.33	8.16 (5.69 to	-1.52 (-1.73
Singapore	to 56.56)	to 51.91)	to -0.43)	0.20)	0.11)	to -2.95)	to 15.58)	11.25)	to -1.31)
	165.72	154.57	-0.05 (-0.12	0.54 (0.45 to	0.68 (0.48 to	1.56 (1.21 to	40.62 (31.28	40.31 (30.39 to 50.67)	0.34 (0.19 to 0.49)
Slovakia	(148.05 to	(140.40 to	to 0.02)	0.84)	0.90)	1.91)	to 53.36)		
	183.09)	170.08)	10 0.02)	0.04)	0.50)	1.71)	10 33.30)	10 30.07)	0.42)
	167.07	179.18	0.15 (0.08 to	0.44 (0.33 to	0.39 (0.28 to	-1.39 (-2.13	34.68 (25.60	34.27 (24.57	-0.42 (-0.67
Slovenia	(146.63 to	(160.70 to	0.21)	0.56)	0.52)	to -0.65)	to 44.77)	to 44.81)	to -0.17)
	189.8)	199.69)	0.21)	0.50)	0.32)	10 0.03)	10 11.77)	10 11.01)	10 0.17)
Solomon	3.49 (2.80 to	3.35 (2.73 to	-0.31 (-0.46	0.75 (0.42 to	0.53 (0.33 to	-1.42 (-1.56	24.39 (12.55	17.28 (10.22	-1.38 (-1.51
Islands	4.25)	4.12)	to -0.15)	1.16)	0.79)	to -1.29)	to 43.26)	to 29.48)	to -1.25)
Somalia	5.39 (4.41 to	5.28 (4.33 to	-0.09 (-0.12	0.55 (0.29 to	0.48 (0.30 to	-0.45 (-0.53	17.8 (7.75 to	14.47 (8.44	-0.63 (-0.69
	6.68)	6.56)	to -0.06)	0.91)	0.79)	to -0.37)	34.12)	to 24.4)	to -0.56)
South Africa	11.04 (9.21	12.40 (10.36	0.52 (0.44 to	0.39 (0.30 to	0.39 (0.30 to	0.13 (-0.38	15.07 (10.33	12.17 (9.76	-0.56 (-0.99
	to 13.55)	to 15.05)	0.60)	0.50)	0.47)	to 0.64)	to 20.06)	to 14.04)	to -0.14)
South Sudan	6.93 (5.69 to	7.78 (6.41 to	0.35 (0.31 to	0.68 (0.39 to	0.65 (0.36 to	-0.05 (-0.09	22.59 (10.42	19.12 (11.06	-0.45 (-0.58
	8.55)	9.49)	0.40)	1.43)	1.40)	to 0.00)	to 43.44)	to 39.88)	to -0.32)
	90.41 (86.16	134.10	0.77 (0.60 to	0.54 (0.46 to	0.35 (0.29 to	-2.16 (-2.54	24.91 (20.33	27.31 (20.61	-0.26 (-0.47
Spain	to 94.9)	(127.51 to	0.95)	0.60)	0.50)	to -1.78)	to 30.25)	to 34.99)	to -0.05)
	,	141.19)	/	/		,	,	,	,
Sri Lanka	5.98 (4.90 to	9.51 (8.29 to	1.67 (1.38 to	0.18 (0.14 to	0.10 (0.07 to	-2.15 (-2.31	5.73 (4.38 to	3.77 (2.86 to	-1.45 (-1.57
	7.28)	10.90)	1.96)	0.23)	0.13)	to -1.99)	7.09)	4.79)	to -1.33)
Sudan	25.18 (20.47	30.96 (25.17	0.90 (0.76 to	0.21 (0.10 to	0.25 (0.14 to	0.95 (0.78 to	9.58 (5.87 to	10.84 (7.56	0.71 (0.58 to

	to 31.02)	to 37.98)	1.05)	0.39)	0.43)	1.11)	15.53)	to 15.32)	0.84)
	25.78 (21.39	25.28 (20.76	0.11 (0.01 to	1.00 (0.77 to	0.66 (0.50 to	-1.99 (-2.24	35.66 (26.78	23.00 (18.20	-1.99 (-2.24
Suriname	to 31.18)	to 30.88)	0.22)	1.18)	0.86)	to -1.73)	to 43.03)	to 29.10)	to -1.75)
	294.18	315.22	*/	/	*****/	,	,		,
Sweden	(253.51 to	(271.18 to	0.31 (0.28 to	0.68 (0.56 to	0.38 (0.31 to	-3.16 (-4.26	56.12 (41.20	53.00 (37.35	-0.35 (-0.54
	336.93)	360.86)	0.34)	0.75)	0.56)	to -2.06)	to 73.41)	to 71.73)	to -0.16)
	129.02	134.73							
Switzerland	(116.30 to	(121.98 to	0.09 (0.06 to	0.68 (0.54 to	0.58 (0.47 to	-1.03 (-1.80	32.21 (25.49	29.51 (22.30	-0.56 (-0.82
	142.70)	148.05)	0.12)	0.77)	0.75)	to -0.26)	to 39.69)	to 37.67)	to -0.31)
Syrian Arab	28.71 (23.39	33.67 (27.34	0.96 (0.65 to	0.46 (0.23 to	0.36 (0.19 to	-1.00 (-1.20	14.71 (9.86	12.75 (9.00	-0.46 (-0.53
Republic	to 35.03)	to 40.47)	1.26)	0.76)	0.52)	to -0.80)	to 20.18)	to 16.93)	to -0.39)
Taiwan	11.00 (0.71	27.00 (24.00	1.00 (0.71	0.01 (0.55	0.50 (0.00	2.00 / 2.27	17.05.410.00	10 10 (10 06	0.05 ( 4.50
(Province of	11.23 (9.74	27.80 (24.80	4.29 (3.71 to	0.91 (0.57 to	0.50 (0.38 to	-2.08 (-3.37	17.35 (12.32	12.40 (10.06	-0.85 (-1.78
China)	to 12.86)	to 31.28)	4.86)	1.04)	0.65)	to -0.78)	to 19.43)	to 15.44)	to 0.10)
Tajikistan	68.84 (56.59	71.19 (59.54	0.12 (0.07 to	0.41 (0.28 to	0.3 (0.22 to	-0.79 (-0.88	30.29 (19.52	20.60 (15.55	-0.89 (-1.10
Tajikistan	to 83.10)	to 85.49)	0.18)	0.58)	0.41)	to -0.70)	to 43.28)	to 26.90)	to -0.69)
Thailand	3.31 (2.57 to	4.28 (3.44 to	0.96 (0.83 to	0.2 (0.14 to	0.12 (0.08 to	-2.46 (-2.78	6.06 (4.39 to	3.64 (2.76 to	-2.40 (-2.71
Thanand	4.15)	5.22)	1.08)	0.26)	0.15)	to -2.14)	7.89)	4.68)	to -2.09)
Timor Lasta	3.20 (2.51 to	3.90 (3.14 to	0.84 (0.75 to	0.42 (0.17 to	0.36 (0.20 to	-0.57 (-0.70	11.64 (5.58	9.14 (5.17 to	-0.95 (-1.13
Timor-Leste	3.91)	4.72)	0.94)	0.83)	0.61)	to -0.44)	to 22.42)	14.89)	to -0.77)
Того	9.42 (7.74 to	9.00 (7.38 to	0.03 (-0.09	0.49 (0.28 to	0.48 (0.32 to	-0.05 (-0.31	17.29 (9.05	16.30 (10.74	-0.23 (-0.48
Togo	11.41)	11.07)	to 0.15)	0.76)	0.68)	to 0.21)	to 26.59)	to 22.75)	to 0.01)
Tokelau	4.65 (3.78 to	5.36 (4.37 to	0.72 (0.46 to	0.89 (0.57 to	0.58 (0.42 to	-1.72 (-1.88	25.84 (15.77	16.11 (11.19	-1.68 (-1.80
Tokciau	5.66)	6.54)	0.97)	1.34)	0.78)	to -1.57)	to 38.77)	to 22.98)	to -1.56)
Tonga	5.55 (4.56 to	4.96 (4.08 to	-0.51 (-0.69	1.14 (0.67 to	0.76 (0.56 to	-1.73 (-1.92	31.30 (19.82	21.58 (15.55	-1.63 (-1.83
Toliga	6.66)	5.98)	to -0.32)	1.64)	1.02)	to -1.54)	to 44.12)	to 30.10)	to -1.44)
Trinidad and	27.68 (22.88	27.49 (22.91	0.31 (0.17 to	0.34 (0.24 to	0.29 (0.21 to	-0.98 (-1.25	14.27 (10.86	12.54 (9.51	-0.66 (-0.84
Tobago	to 33.63)	to 33.71)	0.45)	0.39)	0.39)	to -0.72)	to 16.75)	to 16.14)	to -0.48)
Tunisia	35.29 (29.00	40.47 (33.21	0.59 (0.45 to	0.15 (0.1 to	0.14 (0.09 to	-0.05 (-0.15	9.05 (6.50 to	9.36 (6.89 to	0.27 (0.17 to
Tullista	to 42.68)	to 49.35)	0.73)	0.22)	0.20)	to 0.06)	12.22)	12.40)	0.37)
Turkey	50.66 (44.42	98.87 (84.96	2.04 (1.87 to	0.67 (0.43 to	0.40 (0.30 to	-1.87 (-2.02	27.88 (19.30	25.05 (19.42	-0.61 (-0.70
Turkey	to 56.99)	to 113.45)	2.20)	1.06)	0.56)	to -1.72)	to 38.53)	to 32.24)	to -0.51)
Turkmenistan	69.03 (57.31	77.89 (64.42	0.43 (0.32 to	0.37 (0.28 to	0.33 (0.22 to	-0.50 (-0.78	24.59 (17.78	22.90 (16.63	-0.20 (-0.38
Turkmenistan	to 82.24)	to 92.76)	0.54)	0.49)	0.46)	to -0.21)	to 31.67)	to 29.27)	to -0.02)
Tuvalu	4.48 (3.63 to	4.08 (3.38 to	-0.47 (-0.63	1.08 (0.65 to	0.71 (0.47 to	-1.60 (-1.73	33.30 (17.86	21.17 (13.37	-1.65 (-1.76
Tuvaiu	5.44)	4.88)	to -0.30)	1.59)	1.05)	to -1.47)	to 54.06)	to 33.22)	to -1.55)
Uganda	5.79 (4.75 to	7.14 (5.88 to	1.01 (0.88 to	0.59 (0.37 to	0.61 (0.40 to	-0.03 (-0.17	17.22 (11.39	17.40 (12.18	-0.02 (-0.16
Oganda	7.14)	8.92)	1.15)	0.91)	0.92)	to 0.10)	to 25.60)	to 25.46)	to 0.13)
Ukraine	68.71 (57.64	68 (57.27 to	0.19 (0.03 to	0.34 (0.26 to	0.39 (0.31 to	0.17 (-0.10	21.06 (16.76	23.62 (18.99	0.34 (0.12 to
Oktanic	to 82.57)	80.79)	0.35)	0.45)	0.48)	to 0.44)	to 26.65)	to 28.82)	0.56)
United Arab	36.50 (30.28	42.72 (35.58	0.73 (0.60 to	0.21 (0.09 to	0.24 (0.15 to	0.72 (0.25 to	10.79 (6.88	12.40 (8.88	0.73 (0.52 to
Emirates	to 44.12)	to 51.97)	0.87)	0.43)	0.43)	1.20)	to 16.90)	to 17.45)	0.94)
United	223.81	240.37	0.17 (0.12 to	0.97 (0.85 to	1.30 (1.12 to	1.22 (0.84 to	52.80 (41.67	59.34 (47.21	0.41 (0.25 to
Kingdom	(197.49 to	(214.96 to	0.21)	1.18)	1.44)	1.59)	to 65.37)	to 72.73)	0.57)

	251.35)	267.14)							
United Republic of Tanzania	7.20 (5.89 to 8.90)	7.76 (6.36 to 9.50)	0.22 (0.10 to 0.35)	0.58 (0.40 to 0.81)	0.60 (0.41 to 0.89)	0.38 (0.19 to 0.57)	19.56 (13.24 to 32.21)	18.91 (12.48 to 26.55)	0.25 (0.07 to 0.43)
United States of America	343.12 (295.81 to 394.51)	193.07 (179.65 to 206.87)	-1.59 (-2.08 to -1.09)	0.67 (0.60 to 0.82)	1.02 (0.80 to 1.11)	1.80 (1.52 to 2.07)	64.72 (47.50 to 84.88)	49.82 (40.25 to 60.19)	-0.48 (-0.78 to -0.18)
United States	31.96 (26.73	33.22 (27.69	0.23 (0.16 to	0.81 (0.56 to	0.45 (0.34 to	-2.32 (-2.66	26.35 (19.55	15.91 (12.54	-2.03 (-2.27
Virgin Islands	to 38.19)	to 39.97)	0.31)	1.02)	0.59)	to -1.99)	to 32.66)	to 20.17)	to -1.78)
I I	17.66 (14.59	17.41 (14.35	-0.17 (-0.21	0.27 (0.23 to	0.41 (0.35 to	1.10 (0.62 to	9.71 (8.22 to	12.78 (11.11	0.63 (0.27 to
Uruguay	to 21.30)	to 21.13)	to -0.13)	0.37)	0.47)	1.58)	12.16)	to 14.58)	0.98)
Uzbekistan	74.25 (62.30	75.79 (63.42	-0.02 (-0.05	0.28 (0.20 to	0.29 (0.23 to	-0.33 (-0.58	23.48 (17.64	21.90 (17.37	-0.47 (-0.58
	to 88.98)	to 90.50)	to 0.01)	0.39)	0.39)	to -0.09)	to 29.48)	to 27.16)	to -0.36)
***	4.27 (3.44 to	3.94 (3.23 to	-0.42 (-0.59	1.22 (0.69 to	0.84 (0.52 to	-1.74 (-1.94	34.45 (18.68	25.36 (15.29	-1.58 (-1.80
Vanuatu	5.21)	4.77)	to -0.24)	2.03)	1.24)	to -1.54)	to 54.26)	to 38.79)	to -1.36)
Venezuela (Bolivarian Republic of)	29.50 (25.29 to 33.94)	29.03 (24.54 to 34.19)	-0.01 (-0.05 to 0.03)	0.25 (0.17 to 0.29)	0.15 (0.11 to 0.21)	-2.32 (-2.82 to -1.82)	12.00 (9.33 to 14.20)	8.87 (6.84 to 11.26)	-1.36 (-1.66 to -1.05)
Viet Nam	9.12 (7.04 to	18.35 (14.68	2.72 (2.05 to	0.58 (0.30 to	0.22 (0.15 to	-3.98 (-4.35	13.87 (8.53	7.60 (5.65 to	-2.48 (-2.72
viet Naiii	11.43)	to 22.55)	3.39)	0.88)	0.32)	to -3.61)	to 18.99)	9.80)	to -2.23)
Vaman	23.40 (18.89	28.03 (22.65	0.95 (0.76 to	0.28 (0.15 to	0.33 (0.22 to	0.85 (0.73 to	10.64 (7.11	12.40 (9.18	0.79 (0.66 to
Yemen	to 29.12)	to 34.94)	1.14)	0.52)	0.52)	0.97)	to 15.89)	to 16.77)	0.93)
Zambia	6.36 (5.26 to	8.42 (6.92 to	0.86 (0.63 to	0.86 (0.60 to	0.70 (0.51 to	-0.86 (-1.04	27.59 (16.02	20.49 (14.47	-1.05 (-1.14
Zamora	7.78)	10.46)	1.10)	1.32)	0.94)	to -0.69)	to 45.42)	to 27.66)	to -0.96)
Zimbobwe	8.69 (7.15 to	8.91 (7.29 to	0.21 (0.11 to	0.47 (0.36 to	0.58 (0.35 to	0.96 (0.85 to	14.20 (10.79	17.38 (10.28	1.22 (0.99 to
Zimbabwe	10.74)	11.06)	0.30)	0.64)	0.86)	1.06)	to 19.20)	to 25.35)	1.44)

Abbreviations: CI=confidence interval. DALY=disability adjusted life year. EAPC=estimated annual percentage change. UI=uncertainty interval.

**Supplementary Table 4** Incident cases, YLLs and YLDs of inflammatory bower disease (IBD) in 1990 and 2019 and their percentage change from 1990 to 2019

	`	Incident cases			YLLs	ange nom 1		YLDs	
Characteristics	1990 No. (95%UI)	2019 No. (95%UI)	Percentage change (%) (95%UI)	1990 No. (95%UI)	2019 No. (95%UI)	Percentage change (%) (95%UI)	1990 No. (95%UI)	2019 No. (95%UI)	Percentage change (%) (95%UI)
Global	293572 (257425 to 336651)	404552 (360521 to 456478)	37.80 (33.91 to 41.98)	757137 (557008 to 914270)	895798 (779706 to 999120)	18.31 (-1.81 to 52.08)	491137 (326283 to 678806)	726701 (487015 to 993466)	47.96 (43.96 to 52.28)
Sex									
Male	153074 (133344 to 174640)	213814 (189759 to 241304)	39.68 (36.00 to 43.73)	370299 (264345 to 462642)	450214 (368766 to 507382)	21.58 (-1.85 to 53.89)	230665 (152583 to 318772)	352534 (235403 to 486701)	52.83 (48.57 to 57.83)
Female	140498 (123361 to 161173)	190738 (171154 to 213778)	35.76 (31.29 to 39.92)	386839 (242819 to 477114)	445584 (372799 to 510194)	15.19 (-5.95 to 67.02)	260473 (173833 to 359493)	374167 (251188 to 513406)	43.65 (39.16 to 48.19)
SDI quintile									
High	171841 (151878 to 195746)	196451 (179556 to 217510)	14.32 (9.64 to 19.56)	139690 (129255 to 171300)	268406 (221318 to 288862)	92.14 (36.87 to 107.98)	275795 (183466 to 378544)	334924 (229615 to 452309)	21.44 (15.85 to 27.66)
High-middle	71474 (62545 to 81510)	94553 (84101 to 107156)	32.29 (29.05 to 36.06)	149876 (130428 to 171308)	151980 (137423 to 168345)	1.40 (-11.32 to 17.80)	138460 (92476 to 192296)	200814 (133980 to 276597)	45.03 (40.58 to 50.41)
	27459	59817	117.84	201655	167470	-16.95	46484	123619	165.94
Middle	(23259 to	(50973 to	(108.98 to	(144191 to	(141946 to	(-32.64 to	(30292 to	(80636 to	(155.28 to
	32310)	70648)	127.40)	243718)	187219)	19.35)	65651)	174495)	177.70)
Low-middle	17434 (14532 to 20935)	36681 (30862 to 44031)	110.40 (104.05 to 116.72)	179309 (103608 to 244139)	184730 (144128 to 223656)	3.02 (-21.85 to 54.27)	23711 (15318 to 33814)	51855 (33811 to 73563)	118.69 (110.14 to 127.95)
Low	5279 (4395 to 6379)	12215 (10164 to 14793)	131.41 (126.67 to 136.00)	86179 (39359 to 140538)	122638 (86434 to 167342)	42.31 (-5.62 to 150.88)	6540 (4199 to 9362)	15228 (9694 to 22000)	132.87 (123.17 to 142.33)
GBD region									
Andean Latin America	472 (402 to 550)	1128 (975 to 1314)	138.95 (128.76 to 150.71)	10085 (4860 to 16590)	4311 (3237 to 5564)	-57.25 (-76.23 to -4.50)	682 (439 to 990)	1631 (1060 to 2311)	139.04 (119.92 to 161.86)
Australasia	2979 (2556 to 3481)	6446 (5755 to 7212)	116.39 (101.08 to 132.24)	2212 (1997 to 2709)	5448 (4212 to 6156)	146.25 (61.5 to 182.75)	3590 (2340 to 5079)	7879 (5232 to 10860)	119.48 (94.61 to 145.44)
Caribbean	677 (580 to 796)	1312 (1121 to 1571)	93.82 (84.67 to 103.42)	6186 (3853 to 10389)	6861 (4657 to 9603)	10.92 (-26.38 to 51.60)	1266 (836 to 1782)	2038 (1332 to 2893)	61.05 (49.16 to 73.60)
Central Asia	3514 (2995 to 4146)	6461 (5487 to 7637)	83.87 (77.84 to 90.36)	9604 (7718 to 11578)	9458 (8184 to 10959)	-1.52 (-20.39 to	6348 (4181 to 9075)	10778 (7154 to 15134)	69.79 (58.22 to 81.49)

						25.90)			
	20997	14809	-29.47	19517	20261	201/1256	42029	34433	-18.07
Central Europe	(18082 to	(13443 to	(-33.69 to	(17440 to	(17005 to	3.81 (-12.56	(28219 to	(23103 to	(-23.95 to
	24170)	16391)	-24.67)	21350)	23354)	to 21.14)	58172)	46581)	-11.37)
Combined Latin	2069 (2402	(754 (5924	70.22 (64.07	11909	23887	100.58	(197 (4022	12201 (2076	00.64.00.00
Central Latin	3968 (3402	6754 (5834 to 7826)	70.22 (64.07	(10476 to	(19416 to	(62.63 to	6187 (4023 to 8802)	12291 (8076	98.64 (90.00
America	to 4618)	to 7826)	to 77.19)	13363)	28208)	141.31)	10 8802)	to 17492)	to 107.98)
Central	381 (318 to	1150 (955 to	201.42	9036 (4403	14431 (9735	59.71	455 (291 to	1142 (725 to	151.34
Sub-Saharan	469)	1400)	(188.00 to	to 17181)	to 21338)	(-15.47 to	663)	1644)	(136.85 to
Africa	107)	1100)	216.18)	10 17 101)	10 21330)	217.75)	003)	1011)	168.27)
	17567	52319	197.82	202402	101852	-49.68	37829	138111	265.09
East Asia	(14627 to	(44680 to	(178.88 to	(132058 to	(80904 to	(-63.19 to	(24646 to	(90529 to	(244.38 to
	20802)	61455)	220.44)	259475)	117925)	-16.68)	53906)	194304)	290.80)
	18150	19500	7.44 (5.08	39012	42550	9.07 (-8.79	33920	34573	1.92 (-2.34
Eastern Europe	(15600 to	(16838 to	to 9.90)	(29086 to	(36378 to	to 41.38)	(22663 to	(23253 to	to 6.15)
	21209)	22671)	,	45400)	48906)		47811)	48708)	,
Eastern	1092 (908	2938 (2449	168.96	34323	49854	45.25	1157 (736 to	3074 (1958	165.68
Sub-Saharan	to 1315)	to 3538)	(163.69 to	(15796 to	(36274 to	(-23.18 to	1664)	to 4469)	(159.54 to
Africa	10105	27094	175.74)	66928)	71146)	204.58)	27.42.4	69216	172.36)
High-income	18105	27084	49.59 (40.22	14265	10285 (8672	-27.90	37434	68316	82.50 (67.39
Asia Pacific	(15391 to	(23870 to	to 59.35)	(11234 to	to 13984)	(-41.19 to	(24881 to	(45509 to	to 99.60)
	21422)	30621)	7.44	15903)	111106	11.39)	52603)	94577)	16.22
High-income	107616	99611	-7.44	48899	111196 (90610 to	127.40	160173	134037	-16.32
North America	(94147 to 123884)	(91945 to 109000)	(-13.45 to -0.48)	(45188 to 60393)	118997)	(58.53 to 147.53)	(106818 to 221989)	(92136 to 178957)	(-22.94 to -9.00)
North Africa	123004)	22722	180.29	21634	30142	147.55)	221909)	42612	208.69
and Middle	8107 (7040 to 9204) (1927	(19277 to		(13448 to	(25222 to	39.33 (-4.16 to 131.21)	13804 (8984 to 19350)	(27805 to	(184.84 to
East		26952)	198.18)	31651)	36090)			59873)	233.72)
Lust		20732)	181.23	31031)	30070)			37073)	109.64
Oceania	22 (18 to	63 (52 to	(166.43 to	1003 (571	1628 (1040	62.31 (1.40	33 (20 to	69 (43 to	(96.04 to
o commu	27)	77)	197.89)	to 1593)	to 2510)	to 173.45)	48)	102)	124.81)
	18439	39705	115.33	146986	170233	15.82	24461	51744	111.54
South Asia	(15169 to	(32943 to	(107.88 to	(82781 to	(122056 to	(-12.64 to	(15784 to	(33609 to	(102.18 to
	22582)	48454)	123.07)	202629)	222489)	63.63)	35449)	74915)	121.79)
			164.62	42561	38819	-8.79			185.53
Southeast Asia	1882 (1527	4980 (4182	(151.61 to	(28111 to	(32029 to	(-30.14 to	2755 (1714	7867 (5022	(161.80 to
	to 2270)	to 5972)	181.06)	54072)	46584)	30.72)	to 4108)	to 11568)	213.61)
Southern Latin	879 (742 to	1382 (1177	57.15 (49.53	3794 (3293	5362 (4801	41.34 (23.31	1454 (944	2377 (1528	63.53 (47.49
America	1030)	to 1620)	to 64.67)	to 4092)	to 6325)	to 66.99)	to 2091)	to 3449)	to 82.12)
Southern	504 (423 to	989 (837 to	96.29 (90.20	6007 (3712	7933 (6389	32.06 (-8.55	608 (390 to	1298 (837	113.43
Sub-Saharan	608)	1188)	to 103.76)	to 8927)	to 9558)	52.06 (-8.55 to 122.99)	884)	to 1875)	(105.15 to
Africa	000)	1100)	103.70)	10 0921)	w 2230)	10 144.77)	004)	W 10/3)	123.26)
Tropical Latin	7826 (6859	12928	65.19 (58.70	16336	29155	78.46 (62.35	11387 (7351	17842	56.68 (48.38
America	to 8976)	(11334 to	to 72.03)	(14276 to	(26876 to	to 103.68)	to 15958)	(11730 to	to 65.76)

	59081	14874) 78645	33.11 (30.56	18011) 81826	33305) 160823	96.54 (25.96	103907	25165) 149868	44.23 (39.12
Western Europe	(53733 to 65529)	(71611 to 86709)	to 35.75)	(75154 to 106409)	(127602 to 175684)	to 118.11)	(69789 to 141113)	(101976 to 202986)	to 49.03)
Western	1314 (1102	3628 (3028	176.18	29540	51309	73.69 (23.64	1657 (1057	4717 (3002	184.63
Sub-Saharan	`	`	(171.94 to	(12580 to	(30850 to	`		`	(179.19 to
Africa	to 1599)	to 4401)	180.47)	46343)	73337)	to 200.73) to 2403) to 68	to 6840)	190.47)	

Abbreviations: GBD=Global Burden of Disease. SDI=Socio-demographic Index. UI=uncertainty interval. YLDs=years of life lived with disability. YLLs=years of life lost.

**Supplementary Table 5** Age-standardised incidence, YLL and YLD rates for inflammatory bower disease (IBD) in 1990 and 2019 and their temporal trends from 1990 to 2019

	Age	-standardised in	cidence rate	Age-star	ndardized YLL	rate	Age-standardized YLD rate		
Characteristics		per 100,000 pop	oulation	per 100	0,000 population	n	1	per 100,000 pop	ulation
Characteristics	1990 No.	2019 No.	EAPC No.	1990 No.	2019 No.	EAPC No.	1990 No.	2019 No.	EAPC No.
	(95%UI)	(95%UI)	(95%CI)	(95%UI)	(95%UI)	(95%CI)	(95%UI)	(95%UI)	(95%CI)
Global	6.10 (5.35	4.97 (4.43	-0.60 (-0.73	16.47 (12.78	11.35 (9.89	-1.33 (-1.37	10.73 (7.16	8.80 (5.90	-0.62 (-0.70
	to 6.96)	to 5.59)	to -0.48)	to 19.33)	to 12.70)	to -1.30)	to 14.82)	to 12.05)	to -0.53)
Sex									
Mil	6.39 (5.60	5.30 (4.72	-0.55 (-0.68	17.08 (12.95	11.98 (9.82	-1.29 (-1.32	10.32 (6.91	8.66 (5.80	-0.53 (-0.60
Male	to 7.29)	to 5.99)	to -0.43)	to 20.96)	to 13.45)	to -1.27)	to 14.27)	to 11.93)	to -0.47)
Б. 1	5.80 (5.12	4.64 (4.16	-0.65 (-0.78	15.95 (10.70	10.74 (8.88	-1.39 (-1.43	11.15 (7.43	8.96 (6.02	-0.69 (-0.79
Female	to 6.61)	to 5.20)	to -0.53)	to 19.09)	to 12.44)	to -1.35)	to 15.41)	to 12.30)	to -0.59)
SDI region									
	18.96	17.61 (16.03	-0.16 (-0.30	14.41 (13.34	15.64 (13.09	0.56 (0.41	29.54 (19.66	27.29 (18.55	-0.30 (-0.39
High	(16.73 to	to 19.41)	to -0.01)	to 17.57)	to 16.73)	to 0.70)	to 40.6)	to 37.18)	to -0.21)
	21.58)	10 19.41)	10 -0.01)	10 17.57)	10.73)	10 0.70)	10 40.0)	w 37.16)	10 -0.21)
High-middle	6.12 (5.36	5.58 (4.97	-0.35 (-0.45	13.87 (12.06	8.37 (7.56	-1.99 (-2.11	12.05 (8.08	10.97 (7.26	-0.26 (-0.40
High-middle	to 6.99)	to 6.28)	to -0.24)	to 15.79)	to 9.33)	to -1.88)	to 16.72)	to 15.12)	to -0.13)
Middle	1.83 (1.58	2.27 (1.94	1.07 (0.95	14.68 (11.06	7 (5.95 to	-2.77 (-2.85	3.43 (2.26	4.61 (3.01	1.22 (1.01 to
Wilde	to 2.15)	to 2.68)	to 1.18)	to 17.93)	7.79)	to -2.69)	to 4.84)	to 6.52)	1.43)
Low-middle	2.00 (1.70	2.21 (1.88	0.46 (0.35	20.36 (13.37	12.15 (9.66	-1.99 (-2.09	2.93 (1.93	3.22 (2.12	0.50 (0.38 to
Low initiatio	to 2.40)	to 2.65)	to 0.57)	to 27.43)	to 14.61)	to -1.90)	to 4.16)	to 4.56)	0.62)
Low	1.46 (1.23	1.52 (1.29	0.37 (0.31	20.24 (12.52	15.18 (11.82	-1.08 (-1.14	1.95 (1.26	2.02 (1.32	0.28 (0.19 to
Low	to 1.77)	to 1.83)	to 0.44)	to 27.74)	to 19.54)	to -1.02)	to 2.82)	to 2.88)	0.37)
GBD region									
Andean Latin	1.63 (1.41	1.82 (1.57	-0.05 (-0.29	23.76 (13.24	7.15 (5.41	-4.50 (-5.07	2.6 (1.67 to	2.68 (1.74	0.05 (0.01 to
America	to 1.91)	to 2.12)	to 0.20)	to 36.33)	to 9.17)	to -3.92)	3.8)	to 3.79)	0.08)
	13.56	20.03 (17.79	0.94 (0.72	9.98 (9.01	11.54 (8.93	1.11 (0.82 to	16.21 (10.57	23.45 (15.53	0.86 (0.63 to
Australasia	(11.64 to	to 22.57)	to 1.16)	to 12.07)	to 13.01)	1.41)	to 22.95)	to 32.51)	1.09)
	15.80)								
Caribbean	2.11 (1.83	2.63 (2.24	0.49 (0.34	19.10 (12.84	14.19 (9.36	-1.13 (-1.33	4.28 (2.83	4.02 (2.62	-0.06 (-0.14
	to 2.49)	to 3.14)	to 0.64)	to 29.41)	to 20.49)	to -0.93)	to 6.06)	to 5.72)	to 0.01)
Central Asia	5.99 (5.13	6.9 (5.87 to	0.50 (0.46	14.63 (11.46	10.56 (9.16	-1.41 (-1.54	11.48 (7.62	11.7 (7.77 to	0.08 (0.04 to
	to 7.07)	8.13)	to 0.53)	to 17.20)	to 12.18)	to -1.29)	to 16.46)	16.39)	0.11)
G . 15	15.78	11.59 (10.51	-1.38 (-1.76	15.87 (13.6	11.95 (10.00	-0.91 (-1.11	30.41 (20.26	23.89 (15.95	-1.16 (-1.53
Central Europe	(13.61 to 18.19)	to 12.81)	to -0.99)	to 17.59)	to 13.79)	to -0.72)	to 42.11)	to 32.56)	to -0.79)
Central Latin	3.16 (2.74	2.64 (2.29	-0.70 (-0.87	9.15 (8.21	9.79 (7.96	0.81 (0.47	5.69 (3.74	4.89 (3.22	-0.50 (-0.58
America	to 3.66)	to 3.06)	to -0.54)	to 10.10)	to 11.55)	to 1.16)	to 8.02)	to 6.96)	to -0.42)
Central	1.04 (0.88	1.26 (1.06	0.64 (0.59	20.92 (13.38	16.45 (11.73	-0.84 (-0.92	1.33 (0.87	1.32 (0.85	-0.16 (-0.35
Sub-Saharan	to 1.26)	to 1.52)	to 0.70)	to 31.16)	to 22.99)	to -0.75)	to 1.94)	to 1.91)	to 0.04)
			•			•	•		•

Africa									
East Asia	1.45 (1.22	2.95 (2.55	2.54 (2.39	20.78 (14.55	6.12 (4.90	-4.52 (-4.79	3.45 (2.26	6.95 (4.57	2.74 (2.37 to
East Asia	to 1.71)	to 3.43)	to 2.69)	to 26.09)	to 7.03)	to -4.24)	to 4.87)	to 9.69)	3.12)
Eastern Europe	7.10 (6.12	7.34 (6.34	0.07 (-0.02	14.85 (11.23	14.46 (12.37	-0.56 (-0.82	12.83 (8.55	12.21 (8.15	0.05 (-0.07
Eastern Europe	to 8.29)	to 8.55)	to 0.17)	to 17.29)	to 16.65)	to -0.30)	to 18.05)	to 17.24)	to 0.17)
Eastern	0.89 (0.76	1.04 (0.88	0.55 (0.48	21.56 (15.07	18.27 (13.48	-0.51 (-0.59	1.02 (0.66	1.17 (0.76	0.44 (0.40 to
Sub-Saharan	to 1.07)	to 1.25)	to 0.61)	to 32.54)	to 24.41)	to -0.43)	to 1.46)	to 1.67)	0.48)
Africa	,	,				,	,	,	,
High-income	9.25 (7.88	14.93 (13.14	1.10 (0.84	7.85 (6.04	2.74 (2.35	-4.07 (-4.38	18.58 (12.28	31.81 (21.06	1.11 (0.73 to
Asia Pacific	to 10.91)	to 16.93)	to 1.37)	to 8.80)	to 3.86)	to -3.77)	to 26.01)	to 44.06)	1.49)
High-income	34.88	24.51 (22.65	-0.82 (-1.20	14.94 (13.84	20.18 (16.54	1.26 (1.03	50.69 (33.71	31.1 (21.34	-1.28 (-1.69
North America	(30.59 to	to 26.77)	to -0.45)	to 18.40)	to 21.51)	to 1.50)	to 70.19)	to 41.87)	to -0.86)
	40.02)	,	,	,	,	,	,	,	,
North Africa	2.95 (2.59	3.74 (3.19	0.62 (0.53	8.82 (5.96	6.06 (5.08	-1.32 (-1.36	5.55 (3.65	7.21 (4.74	0.88 (0.76 to
and Middle	to 3.38)	to 4.45)	to 0.72)	to 12.45)	to 7.15)	to -1.29)	to 7.72)	to 10.1)	1.00)
East									
Oceania	0.44 (0.36	0.56 (0.47	0.87 (0.76	19.89 (12.45	14.30 (9.82	-1.32 (-1.41	0.71 (0.45	0.63 (0.40	-0.53 (-0.72
	to 0.52)	to 0.67)	to 0.98)	to 28.10)	to 20.46)	to -1.23)	to 1.03)	to 0.93)	to -0.34)
South Asia	2.15 (1.79	2.32 (1.93	0.47 (0.31	18.45 (11.93	10.91 (7.96	-2.10 (-2.23	3.02 (1.97	3.08 (2.01	0.25 (0.09 to
	to 2.64)	to 2.84)	to 0.63)	to 26.19)	to 14.27)	to -1.97)	to 4.38)	to 4.49)	0.40)
Southeast Asia	0.46 (0.38	0.70 (0.59	1.45 (1.27	12.43 (7.76	6.35 (5.08	-2.69 (-2.85	0.73 (0.46	1.09 (0.7 to	1.52 (1.22 to
	to 0.56)	to 0.84)	to 1.63)	to 15.13)	to 7.61)	to -2.53)	to 1.09)	1.60)	1.83)
Southern Latin	1.82 (1.54	1.92 (1.63	0.24 (0.15	8.05 (7.00	6.85 (6.15	-0.71 (-0.86	3.05 (1.98	3.21 (2.06	0.23 (0.04 to
America	to 2.13)	to 2.26)	to 0.34)	to 8.69)	to 8.08)	to -0.56)	to 4.38)	to 4.68)	0.42)
Southern	1.30 (1.10	1.37 (1.17	0.13 (0.06	13.43 (9.33	11.79 (9.6 to	-0.20 (-0.55	1.67 (1.08	1.87 (1.22	0.48 (0.41 to
Sub-Saharan	to 1.56)	to 1.65)	to 0.20)	to 17.23)	13.95)	to 0.15)	to 2.41)	to 2.70)	0.55)
Africa									
Tropical Latin	6.09 (5.40	5.25 (4.60	-0.55 (-0.59	13.65 (11.97	12.09 (11.13	-0.18 (-0.34	9.72 (6.37	7.17 (4.71	-0.83 (-1.04
America	to 6.93)	to 6.03)	to -0.51)	to 14.87)	to 13.83)	to -0.02)	to 13.54)	to 10.10)	to -0.63)
W . 5	13.98	16.94 (15.33	0.60 (0.55	16.07 (14.83	18.85 (15.12	0.92 (0.72	23.17 (15.52	27.93 (19.01	0.38 (0.26 to
Western Europe	(12.67 to	to 18.73)	to 0.65)	to 20.58)	to 20.42)	to 1.11)	to 31.53)	to 38.12)	0.49)
W	15.48)								
Western	1.01 (0.86	1.17 (1.00	0.36 (0.22	18.33 (10.38	15.14 (10.25	-0.69 (-0.80	1.37 (0.89	1.63 (1.06	0.78 (0.66 to
Sub-Saharan	to 1.23)	to 1.41)	to 0.50)	to 29.12)	to 20.82)	to -0.58)	to 1.98)	to 2.34)	0.90)
Africa									

Abbreviations: CI=confidence interval. EAPC=estimated annual percentage change. GBD=Global Burden of Disease. SDI=Socio-demographic Index. UI=uncertainty interval. YLD=years of life lived with disability. YLL=years of life lost.