

Estimating the global mortality from Alzheimers disease and other dementias: a new method and  
results from the Global Burden of Disease Study 2019

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**Abstract**

Estimating the global mortality from Alzheimers disease and other dementias: a new method and results from the Global Burden of Disease Study 2019

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Alzheimer's disease and other dementias (dementia) is currently a leading cause of mortality and morbidity globally, and the total number of individuals effected by dementia will likely increase in the future with corresponding increases in population growth and aging<sup>1,2</sup>. However, inconsistencies in coding practices in vital registration systems both over time and between countries complicate the estimation of dementia mortality. This study updated previous methods developed for the Global Burden of Disease (GBD) study for the estimation of global dementia mortality. We conducted a systematic review on the excess risk of death in those with dementia, and analyzed these data using a bias-reduction meta-regression model. We then multiplied the estimates of total excess deaths by the proportion of dementia deaths that occur in those with severe, end-stage disease to calculate the total number of deaths that could be assigned to dementia. We estimated that there were 1.55 (0.35 to 4.54) million deaths globally due to dementia in 2019. Due to trends in population aging, there were large changes in all-age mortality rates between 1990 and 2019 (38.0%; 33.1 to 43.7). This updated estimation method eliminated all dependency on estimates from vital registration systems, which are known to be

biased. However, future efforts should aim to further strengthen this analysis in order to provide more accurate information on dementia mortality for use by both researchers and policy-makers.

## Introduction

The number of people living with Alzheimer's disease and other dementias (dementia) has been estimated to be between 40-50 million globally<sup>2,3</sup>. These numbers are only expected to increase, given the current trends in population growth and population aging<sup>4,5</sup>. These increases, estimated to lead to over 100 million people living with dementia by 2050, highlight the need for a better understanding of the global burden of the disease.<sup>6</sup>

The estimation of mortality due to dementia is subject to challenges due to the biases and changes over time in the coding practices that exist in vital registration systems. Previous studies have shown large increases over time in the certification of dementia as a cause of death on death certificates in many countries, while the prevalence of the disease has remained stable.<sup>7-9</sup> Where research has compared the certification of dementia deaths on death certificates to information on dementia patients from population-based epidemiological studies, evidence indicates that dementia has been underreported on death certificates, even when examining all fields included on the death certificate, including all contributing conditions as well as other significant conditions<sup>10-14</sup>. In many instances, despite increases in reporting over the past 20 years, dementia continues to be underreported on death certificates.<sup>7</sup> The reporting of dementia on death certificates has been shown to be associated with the location of death, with higher certification of dementia deaths occurring in long-term care centers such as nursing homes or psychiatric hospitals as compared to deaths at home or in general hospitals<sup>10,15</sup>. These discrepancies underscore variable quality in the certification of deaths due to dementia. Prior work has also highlighted how the poor quality of the data and variation in coding practices prohibits geographical comparisons.<sup>15</sup>

Previous estimates of dementia mortality are largely from the United States and have either focused on the estimation of mortality in those with dementia rather than mortality that can be ascribed to dementia as the underlying cause or have either relied on the generalization of prevalence and mortality risk estimates from one population-based cohort to the entire country<sup>16-18</sup>. The only available global estimates of dementia mortality are from previous iterations of the Global Burden of Disease (GBD) study. However, these estimates are subject to a number of known limitations. For GBD 2010, estimates were based on vital registration data.<sup>19</sup> However, the recognition of the biases that exist in reporting dementia as a cause of death in vital registration data led to a new methodology for the estimation of dementia mortality, introduced in GBD 2015. For GBD 2015, 2016 and 2017, we used estimates of excess mortality derived from countries most likely to code to dementia as a cause of death per prevalent dementia case, alongside prevalence estimates to calculate mortality due to dementia.<sup>3,17</sup> While this method allows for the global estimation of dementia deaths, it is sensitive to the choice of how many countries to include in the estimation of excess mortality, and it assumes that the coding practices in these countries do not under- or over- assign dementia as a cause of death. Additionally, the method assumes that excess mortality is constant across locations and over time and is dependent on sparse and heterogeneous prevalence data.

This study aims to address some of these limitations and update the previous methods for the estimation of the global mortality due to dementia.

## Methods

Information on general GBD methods can be found in the GBD 2017 Capstone papers<sup>1,17,20</sup>. This paper will focus on methods pertaining to the estimation of dementia mortality.

### *Systematic Review of the Literature on Excess Mortality*

We conducted a systematic review of the literature on the relative risk of all-cause mortality given the exposure of dementia. Using PubMed and the search term “((Excess mortality[Title/Abstract] OR Standardized mortality[Title/Abstract] OR survival[Title/Abstract] OR (relative risk[Title/Abstract] AND (mortality[Title/Abstract] OR death[Title/Abstract]))) AND (dementia[Title/Abstract] OR alzheimer's disease[Title/Abstract] OR "dementia"[MeSH Terms] OR "alzheimer disease"[MeSH Terms]) AND ("1980/01/01"[PDAT] : "2018/08/14"[PDAT]) NOT (animals[MeSH] NOT humans[MeSH])),” there were 4470 total hits, of which 34 studies were marked for extraction. Overall, the data were heterogeneous and varied in the exposure category measured (all dementia, Alzheimer’s disease, cognitive impairment) and in the different factors controlled for in analyses (Table 1).

### *Calculation and Meta-Analysis of Attributable Risk*

Using the data on relative risks extracted from each study and the GBD estimate of all-cause mortality rate for the given study location and time period<sup>21</sup> we calculated attributable risk, using the formula:

$$\text{Attributable Risk} = (\text{Relative Risk} - 1) * \text{All-Cause Mortality}$$

We then conducted a meta-analysis on the attributable risk data using a Bayesian bias-reduction meta-regression model. The model includes covariates to predict between-study heterogeneity,

and adds uncertainty from unexplained heterogeneity to coefficient estimates and predictions. Additionally, the model incorporates automatic outlier identification as part of the likelihood function.

We included covariates for exposure category, whether the study was conducted in a clinical sample, and five categories indicating different types of variables that were controlled for in the component studies. The control categories used in the model included educational attainment, basic cardiovascular disease comorbidities, more extensive cardiovascular disease factors such as blood pressure and cholesterol, and smoking and alcohol consumption. Additionally, some studies also controlled for factors such as activities of daily living, or residence in nursing homes, which may be on the causal pathway between dementia exposure and death, and these were grouped together into a category of ‘over-controlling’. These were included as covariates on the mean effect as well as on the variance. We added Gaussian priors with a mean of 0 and variance of 0.01 to these covariates to ensure the covariate effect estimates were not over-influenced by sparse data. Additionally, we added a spline on age with four knots, placed based at the quintiles of the data density over age. We tested models with an additional covariate on sex, but as the effect estimate was not significant, we did not retain sex as a covariate in the final model.

### *Prevalence Estimation and the Calculation of Excess Deaths*

We used all available data on the prevalence and incidence of dementia from cross-sectional studies, cohort studies and administrative claims databases for the estimation of dementia prevalence. Using DisMod MR-2.1, the Bayesian meta-regression tool primarily used in nonfatal modeling for GBD and settings of no remission and no incidence before age 40, we generated estimates for the prevalence of dementia.<sup>22</sup> We excluded data on incidence because in locations

with data on both prevalence and incidence from high-quality cohort studies, the incidence data combined with mortality estimates suggested a higher prevalence than what was reported in the data. As dementia is a condition with a slow, insidious onset, the ascertainment of dementia prevalence likely includes less measurement error, and therefore we chose to base our estimates on our prevalence data. We then subtracted out the proportion of dementia that was caused by other GBD conditions, including stroke, traumatic brain injury, and Parkinson's disease. This adjustment prevented the assignment of deaths to dementia where the underlying cause of death was not dementia, but rather the condition which originally led to dementia. Additional details on the modeling strategy for dementia prevalence can be found in the Appendix. We then calculated the total number of excess deaths due to dementia as the product of our prevalence estimates and our estimates of attributable risk.

#### *Calculation of the Proportion of Excess Dementia Deaths Attributable to Dementia*

The excess deaths calculated through the multiplication of attributable risk and prevalence represent the total number of excess deaths in those with dementia, which likely includes deaths due to other conditions, such as cardiovascular diseases, that are more common in those with dementia as compared to the general population due to common underlying risk factors such as blood pressure, smoking and lower educational attainment. In order to subset this total number of excess dementia deaths to calculate the number of deaths that were caused by dementia, we completed an analysis of linked clinical and mortality data. We used mortality records linked to inpatient records, covering all deaths from 2003 to 2017 in the Emilia Romagna region of Italy. In the clinical records, we looked for markers of severe, end-stage disease up to one year before death. A similar strategy of identifying cases of end-stage disease using ICD codes has been implemented using Medicare data in the United States<sup>23</sup>. To select these markers, for each ICD

code that appeared in the data we calculated the difference in the proportion of individuals who died with dementia and had a record of such a code in the year before death and the proportion of individuals who died without dementia and had a record of the same code in the year before death. We reviewed the 150 codes with the highest difference and selected codes that could indicate end-stage disease, excluding codes for conditions such as cardiovascular disease or cancers. Codes for decubitus ulcer, malnutrition, sepsis, pneumonia, urinary tract infections, falling from bed, senility, dehydration, sodium imbalance, muscular wasting, bronchitis, dysphagia, hip fracture and bedridden status were used as indicators of severe disease (full code list in Appendix).

In order to determine the proportion of excess deaths that could be ascribed to dementia as the underlying cause of death, we calculated the proportion of dementia deaths that had clinical markers of end-stage disease in the year prior to death, above and beyond the occurrence of end-stage disease markers in those who died without dementia. The subtraction of the proportions with end-stage disease markers in those without dementia from the proportions in those with dementia, represents the proportion of individuals who are assumed to have died with severe, end-stage dementia in the absence of other end-stage diseases out of total deaths in those with dementia.

In order to apply these estimates to the total excess deaths we then adjusted these proportions to calculate the proportion of individuals who died with end-stage dementia out of excess dementia deaths using the formula:

$$\frac{\textit{Died with Severe Disease}}{\textit{Excess Dementia Deaths}} = \frac{\textit{Died with Severe Disease}}{\textit{Total Dementia Deaths}} * \frac{\textit{Relative Risk}}{\textit{Relative Risk} - 1}$$

Relative risks were estimated using a second Bayesian bias-reduction meta-regression model and the same studies identified through systematic review. The same settings were used between the two models, with the exception of prior adding Gaussian priors of mean 0 and variance 0.0001 on the slope of the tail segments of the spline to reduce the flexibility of the spline in segments with more sparse data.

### *Calculation of Final Results*

Finally, we calculated the number of deaths due to dementia as the product of total excess dementia deaths and the proportion of those who died with severe disease out of excess dementia deaths. Age standardized rates were calculated using the world population standard for GBD.<sup>21</sup> Regional and global estimates were calculated by aggregating the estimates from the most-detailed locations. Throughout all calculations, uncertainty was propagated by sampling 1000 draws at each step, allowing for the incorporation of uncertainty from disparate sources. We defined uncertainty intervals as the 25th and 975th values of the ordered draws.

## Results

We identified 34 studies on the excess mortality associated with dementia through our systematic review. As some studies reported multiple estimates for different exposures, such as cognitive impairment or vascular dementia, in total there were 60 unique estimates on the relative risk of all-cause mortality from the 34 studies. These data covered 7 out of the 21 world regions, but the majority of the data were from High-income North America and Western Europe. We included data on the excess risk due to dementia, Alzheimer's disease, vascular dementia and cognitive impairment (Table 1).

Attributable risk increases with age, and this relationship becomes more pronounced after 70. In 40-44 year-olds, the attributable risk is 0.019 (0.003 to 0.87) and in the 95+ age group these estimates reach 0.169 (0.0472 to 0.574) (Figure 1). This indicates that individuals over 95 with dementia experience a mortality rate that is 16,900 per 100,000 person-years higher than those over 95 who do not have dementia.

Of the 13 markers of severe, end-stage disease considered, the proportion of those who had pneumonia in the last year before death and died with dementia was the highest (0.31) and this proportion remained the highest (0.13) after subtracting out the proportion of people who had the same end stage condition in the last year before death and died without dementia. The next end-stage condition with the largest absolute and excess proportions were dehydration (absolute: 0.15; excess: 0.11), urinary tract infections (0.12; 0.06) and decubitus ulcer (0.06; 0.05). The proportion of individuals who died with dementia and had any end-stage disease marker in the year before death was 0.59 and the proportion of individuals with who had an end-stage disease marker in the year before death who died without dementia was 0.35. Therefore, we calculated

the proportion of people with dementia who died with severe, end-stage disease as 0.24 (Figure 2).

Overall, we estimated there were 1.55 (0.35 to 4.54) million deaths due to dementia globally in 2019. Far more deaths occurred in women (1.02 million; 0.23 to 2.96) than men (0.54 million: 0.12 to 1.58), giving a female to male ratio of 1.90 (1.82 to 1.99) (Table 2). The female to male ratio for age-standardized rates was 1.19 (1.17 to 1.20), indicating that a portion of the sex difference was due to women living longer. Between 1990 and 2019, there were small increases globally in age-standardized mortality rates (2.4%; 1.3 to 3.6), but much larger changes in all-age mortality rates (38.0%; 33.1 to 43.7) due to population aging and growth.

There was a 1.7-fold variation in age-standardized mortality rates between countries. The countries with the highest age-standardized mortality rates due to dementia were Japan (54.37 deaths per 100,000 person-years; 11.97 to 161.81), Brazil (50.07; 11.19 to 148.67) and Afghanistan (49.20; 10.82 to 148.78). The countries with the lowest age-standardized mortality rates due to dementia were Bangladesh (32.89 deaths per 100,000 person-years; 7.29 to 95.69), Bhutan (33.95; 7.63 to 99.57) and Pakistan (34.11; 7.56 to 99.14) (Figure 3).

## Discussion

Globally, 1.55 (0.35 to 4.54) million people died of end-stage dementia in 2019, with the majority of deaths occurring in women. Over time, while age-standardized rates were fairly stable, or increased slightly, there were large increases in all-age rates as a result of population growth and aging. With these trends expected to increase in the future, an increase in dementia deaths can be expected as well.

While our estimate of 115,345 (26,221 to 324,731) deaths in the United States in those over 75 in 2010, is less than the estimate of 503,400 reported by James et al. (2014), this estimate was based on relative risks from a cox proportional hazards model that did not control for cardiovascular disease confounders or other comorbid conditions and James et al. (2014) furthermore did not restrict their analysis to deaths in those with end-stage disease<sup>24</sup>. Therefore, this estimate likely also captures excess mortality in those with dementia that is due to common comorbid conditions. Our method of sub-setting all excess deaths to those with end-stage disease restricts our estimates to deaths that could plausibly be ascribed to dementia as the underlying cause.

Our new method used to estimate dementia mortality updated the methods used in previous iterations of the GBD study. In prior iterations, we employed an excess mortality regression strategy which was sensitive to the choice of which countries to include and assumed that the level of coding deaths to dementia was correct in countries that had the highest rates of coding per prevalent dementia case (i.e. there was no over-coding).<sup>3,17</sup> Through the use of estimates of attributable risk from cohort studies and data on the proportion of deaths with end-stage disease from linked data, we avoid any reliance on vital registration data and cause of death coding practices. As we have found extreme changes in mortality rates from vital registration data both

over time and between countries, use of this data risks the incorporation of a large source of measurement error. While removing this reliance could be seen as an improvement, as we do not have a gold-standard measure to which we can compare our estimates of dementia mortality, we do not have the ability to assess their accuracy. As a result of this change in strategy, where in previous iterations of the GBD study our estimates were always the same or higher than dementia mortality reported in vital registration data, now our estimates are in some cases lower than what is seen in vital registration data, particularly in recent years for selected high-income countries.

Despite the removal of reliance on vital registration data, a number of limitations still remain. First, the data on the risk of all-cause mortality due to dementia is sparse and heterogeneous, resulting in uncertain predictions of the absolute risk of mortality for those with dementia. Second, we remain reliant on our estimates of prevalence for the calculation of excess deaths from data on attributable risk, and these data are also heterogeneous. Third, we are assuming that there is a constant risk of dying from end-stage dementia across locations. While there are no available therapies that can slow or prevent death, the quality of elder care varies between locations and this could influence mortality.<sup>25-27</sup> Fourth, we are assuming that administrative data can be used to accurately identify markers of end-stage disease in dementia. However, these data may be subject to selection biases, and coding practices for those with and without dementia could be different. Finally, we are using linked data from Italy for the measurement of end-stage conditions, which we are generalizing to the rest of the world. Given that there are no disease-modifying treatments currently available, healthcare practices and other cultural factors may not greatly influence the proportion of individuals with dementia who have end-stage disease.<sup>25,26</sup> However, the integration of data sources from other locations would strengthen the analysis.

This analysis could be further improved through the use of additional sources for the calculation of attributable risk, which would allow for more precise estimates. Additional sources of linked data could also be used to calculate excess mortality and strengthen the meta-regression.

Furthermore, strengthening our prevalence model would also improve estimates, as prevalence is an input for this estimation process. Our prevalence models contain sparse data based on diagnosing dementia in surveys. We intend to improve these models by leveraging new data sources from longitudinal surveys of aging that do not provide dementia diagnoses through the use of item response theory methods. Item response theory methods have been previously utilized for data harmonization, and may allow for the prediction of dementia prevalence in samples without diagnostic evaluation.<sup>28,29</sup>

This study utilized innovative meta-analytic methods to estimate the global mortality due to dementia. In the context of population aging and growth, the importance of dementia as a public health concern will only continue to rise.<sup>30</sup> By helping funders and policy-makers better understand the global distribution of dementia burden and mortality, these estimates will help guide evidence-driven resource allocation and health system planning.

## Tables and Figures

<b>Table 1: Results of systematic review on all-cause excess mortality with dementia</b>		
<b>N</b>		60
<b>Region Name (%)</b>	East Asia	4 (6.7)
	Eastern Sub-Saharan Africa	2 (3.3)
	High-income Asia Pacific	4 (6.7)
	High-income North America	22 (36.7)
	North Africa and Middle East	1 (1.7)
	Tropical Latin America	1 (1.7)
	Western Europe	26 (43.3)
<b>Exposure (%)</b>	Alzheimer's disease	11 (18.3)
	Cognitive Impairment	10 (16.7)
	Other Dementia	35 (58.3)
	Vascular Dementia	4 (6.7)
<b>Conducted in Clinical Setting (%)</b>	Clinical Setting	10 (16.7)
	Population Representative	50 (83.3)
<b>Controlled for Education (%)</b>	Controlled	32 (53.3)
	No Control	28 (46.7)
<b>Controlled for Basic CVD Info (%)</b>	Controlled	33 (55.0)
	No Control	27 (45.0)
<b>Extensive CVD Control (%)</b>	Controlled	15 (25.0)
	No Control	45 (75.0)
<b>Controlled for Smoking and Alcohol (%)</b>	Controlled	11 (18.3)
	No Control	49 (81.7)
<b>Controlled for Factors in Causal Pathway (%)</b>	Controlled	13 (21.7)
	No Control	47 (78.3)

Figure 1: Attributable risk for all-cause mortality due to dementia by age

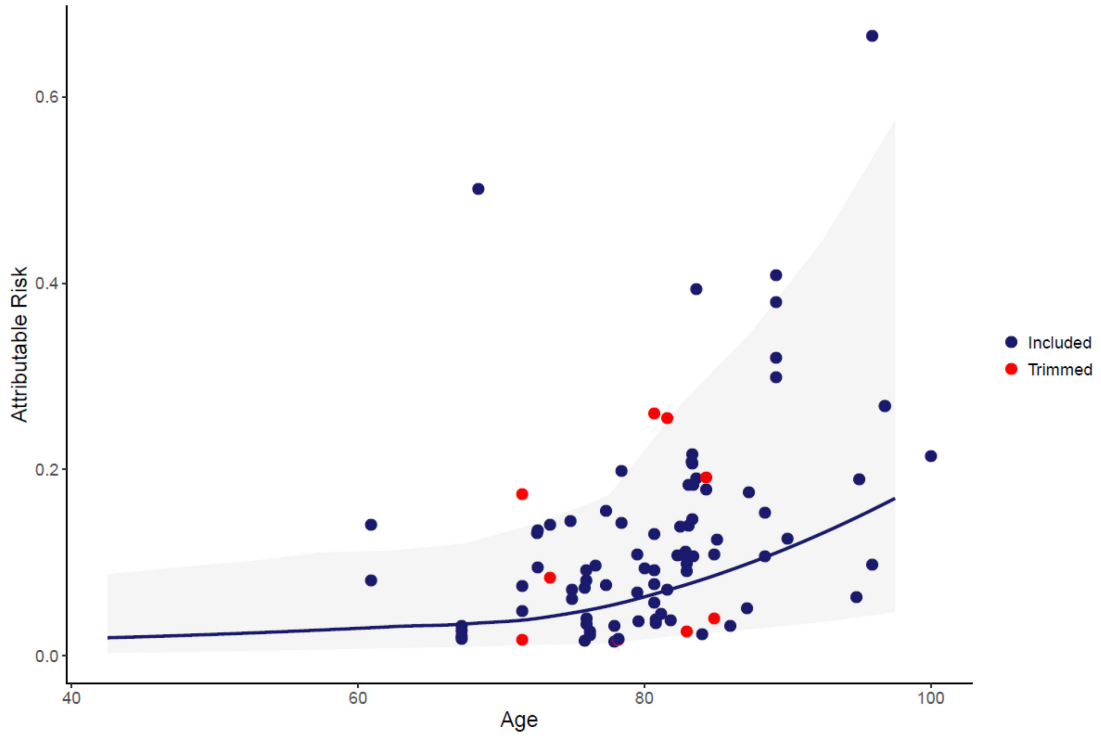


Figure 2: Percent of individuals who died with and without dementia with end stage conditions in the last year before death

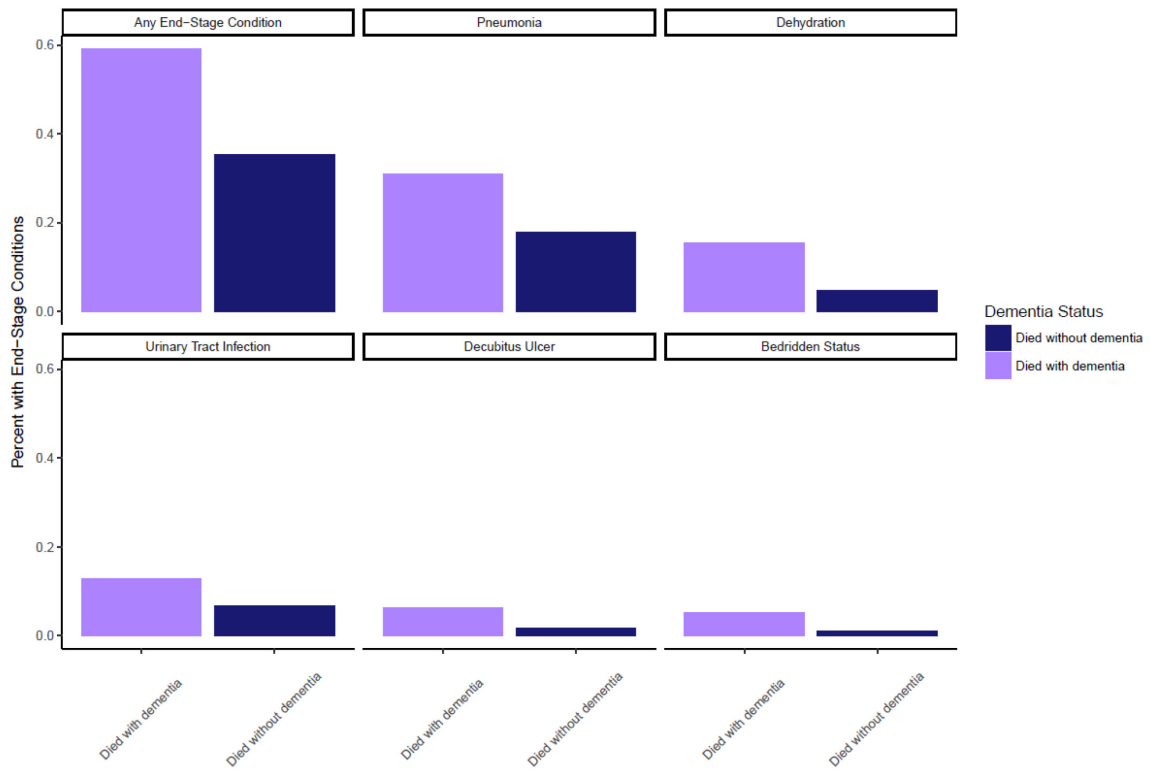
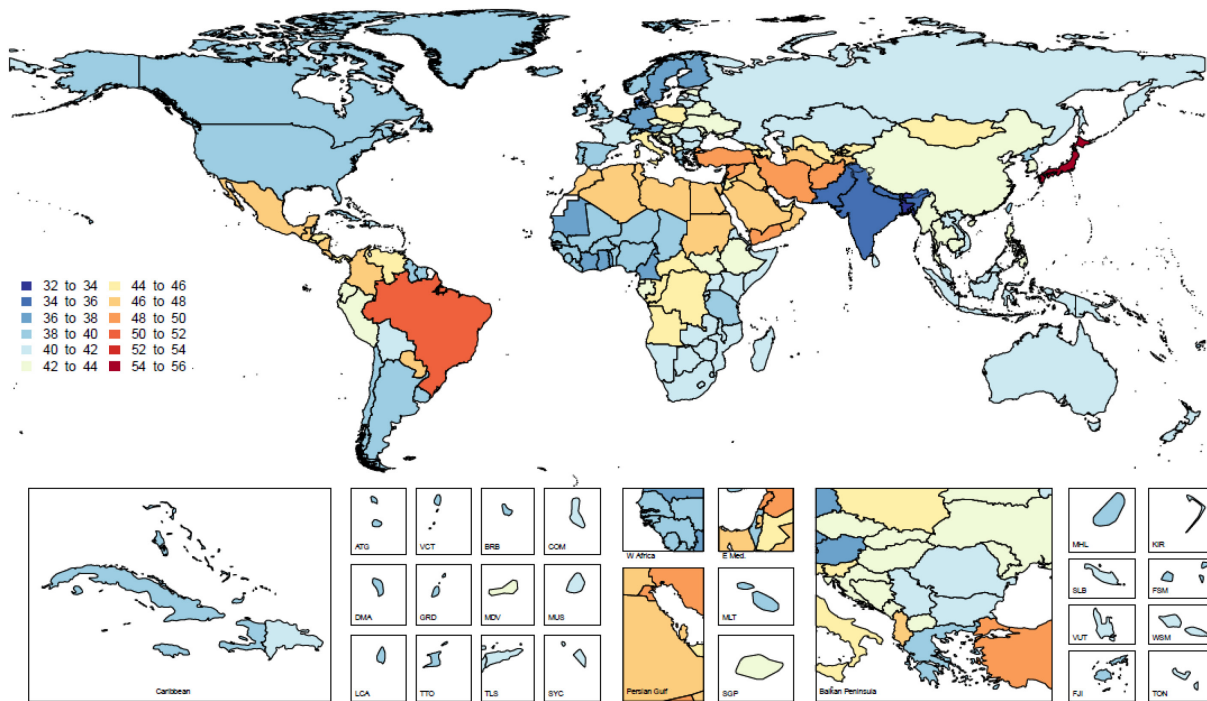


Figure 3: Both sex age-standardized mortality rate for dementia in 2019 by location



**Table 2: Deaths in 2019 and percentage change of all-age and age-standardized mortality rates by location for dementia**

Location	Male			Female		
	2019 counts	Percentage change in all-age rates between 1990 and 2019 (95% UI)	Percentage change in age-standardised rates between 1990 and 2019 (95% UI)	2019 counts	Percentage change in all-age rates between 1990 and 2019 (95% UI)	Percentage change in age-standardised rates between 1990 and 2019 (95% UI)
Global	535 452 (119 110 to 1 583 755)	45.1 (39.6 to 51.5)	2.3 (1.1 to 3.5)	1 018 495 (226 120 to 2 958 742)	34.4 (29.6 to 40.0)	2.5 (1.2 to 3.9)
Central Asia	3 260 (707 to 9 921)	-28.4 (-32.3 to -24.9)	-1.0 (-3.8 to 1.5)	7 373 (1 641 to 22 155)	-24.1 (-26.1 to -21.9)	-0.3 (-2.8 to 2.5)
Armenia	300 (68 to 897)	63.3 (52.4 to 75.7)	3.2 (-3.2 to 10.7)	531 (118 to 1 605)	49.2 (37.8 to 60.6)	4.1 (-3.8 to 11.7)
Azerbaijan	377 (83 to 1 141)	-40.1 (-46.8 to -33.2)	-2.8 (-9.5 to 3.3)	843 (188 to 2 575)	-42.9 (-47.9 to -37.8)	-1.7 (-7.7 to 4.4)
Georgia	371 (82 to 1 087)	45.0 (34.8 to 54.8)	0.7 (-6.0 to 7.0)	889 (198 to 2 657)	43.9 (34.4 to 53.7)	-1.8 (-8.0 to 4.7)
Kazakhstan	672 (144 to 2 028)	-3.8 (-10.0 to 2.5)	-0.7 (-7.1 to 6.2)	1 697 (376 to 5 009)	-15.0 (-20.4 to -8.5)	-1.7 (-7.9 to 5.7)
Kyrgyzstan	231 (53 to 690)	-14.8 (-19.8 to -9.0)	4.0 (-1.8 to 10.9)	568 (125 to 1 712)	-12.6 (-19.2 to -5.7)	4.6 (-2.2 to 11.8)
Mongolia	73 (16 to 218)	-44.2 (-48.2 to -40.4)	-3.2 (-8.8 to 3.6)	158 (35 to 467)	-35.7 (-39.5 to -31.6)	-1.2 (-7.0 to 5.2)
Tajikistan	310 (69 to 946)	-34.2 (-38.3 to -30.0)	0.7 (-5.1 to 7.3)	518 (114 to 1 523)	-32.6 (-36.8 to -28.0)	1.2 (-4.6 to 7.3)

Turkmenistan	195 (43 to 584)	-11.0 (-16.2 to -5.2)	-1.9 (-8.1 to 4.9)	367 (81 to 1086)	-14.3 (-19.2 to -8.7)	-0.9 (-6.5 to 5.3)
Uzbekistan	731 (163 to 2196)	-61.3 (-65.7 to -56.6)	-4.3 (-10.4 to 2.5)	1802 (405 to 5364)	-45.1 (-48.6 to -41.6)	-0.9 (-7.0 to 4.9)
<b>Central Europe</b>	<b>15 187 (3 308 to 45 269)</b>	<b>57.0 (49.4 to 65.8)</b>	<b>-1.1 (-2.9 to 0.9)</b>	<b>34 410 (7 729 to 102 188)</b>	<b>68.9 (60.3 to 78.2)</b>	<b>-0.6 (-2.2 to 1.1)</b>
Albania	304 (66 to 940)	75.5 (63.6 to 87.1)	-1.7 (-8.2 to 4.9)	541 (121 to 1627)	-0.2 (-8.0 to 7.3)	-1.6 (-8.0 to 4.2)
Bosnia and Herzegovina	353 (78 to 1042)	55.2 (45.4 to 65.8)	-6.3 (-12.3 to -0.3)	631 (133 to 1900)	65.6 (54.3 to 77.4)	-6.1 (-12.1 to 0.1)
Bulgaria	1071 (234 to 3203)	75.1 (58.8 to 92.2)	0.0 (-6.5 to 6.9)	2139 (475 to 6405)	106.9 (88.8 to 127.7)	-1.1 (-7.5 to 5.5)
Croatia	601 (129 to 1757)	79.2 (68.5 to 92.9)	-0.7 (-5.9 to 5.6)	1420 (313 to 4240)	82.2 (68.1 to 96.8)	2.6 (-3.9 to 9.7)
Czech Republic	1477 (324 to 4351)	72.0 (56.5 to 91.3)	5.4 (-1.6 to 13.5)	3356 (741 to 9955)	65.0 (49.4 to 82.0)	8.3 (0.9 to 16.4)
Hungary	1293 (277 to 3852)	49.7 (37.4 to 63.5)	2.4 (-3.7 to 8.8)	3456 (760 to 10239)	75.6 (59.3 to 94.5)	6.0 (-1.1 to 13.7)
Macedonia	206 (44 to 608)	25.4 (18.0 to 34.8)	1.9 (-3.9 to 9.5)	427 (94 to 1279)	83.0 (69.5 to 98.6)	4.2 (-2.7 to 12.1)
Montenegro	72 (16 to 213)	30.9 (21.9 to 39.0)	-1.5 (-8.5 to 4.3)	121 (27 to 357)	24.0 (16.8 to 31.4)	-1.5 (-7.2 to 4.6)
Poland	5237 (1166 to 15726)	49.1 (41.1 to 58.7)	-5.7 (-7.8 to -3.5)	12890 (2877 to 38017)	57.3 (47.9 to 67.1)	-5.2 (-7.0 to -3.5)
Romania	2718 (594 to 8070)	67.8 (54.2 to 83.5)	-0.3 (-6.2 to 6.4)	5394 (1162 to 15618)	104.7 (86.6 to 124.8)	2.0 (-4.7 to 9.1)
Serbia	1001 (215 to 2912)	56.3 (44.4 to 69.2)	0.4 (-6.6 to 7.4)	1872 (406 to 5597)	36.1 (25.8 to 46.6)	-5.3 (-12.0 to 1.2)

Slovakia	520 (113 to 1 526)	9.2 (2.0 to 17.4)	-0.5 (-6.8 to 6.1)	1 310 (285 to 3 843)	34.1 (24.3 to 44.0)	0.5 (-5.9 to 6.1)
Slovenia	334 (75 to 995)	81.8 (68.2 to 95.6)	2.1 (-4.0 to 8.3)	856 (193 to 2 490)	107.1 (87.3 to 129.1)	3.9 (-2.5 to 10.3)
<b>Eastern Europe</b>	<b>17 358 (3 742 to 52 022)</b>	<b>71.1 (61.8 to 81.6)</b>	<b>3.6 (0.9 to 6.4)</b>	<b>53 757 (12 024 to 158 255)</b>	<b>52.5 (44.0 to 61.2)</b>	<b>5.3 (2.5 to 8.3)</b>
Belarus	811 (176 to 2 402)	5.9 (-0.9 to 13.0)	-2.0 (-8.3 to 4.0)	2 770 (621 to 8 206)	25.8 (17.1 to 34.3)	0.2 (-6.4 to 6.7)
Estonia	167 (37 to 488)	91.9 (76.4 to 108.6)	5.7 (-1.1 to 13.4)	560 (123 to 1 633)	94.4 (78.2 to 111.6)	8.5 (0.5 to 16.1)
Latvia	225 (50 to 652)	63.5 (51.9 to 78.2)	3.1 (-3.3 to 10.7)	751 (165 to 2 249)	80.7 (67.5 to 96.8)	3.3 (-3.5 to 10.7)
Lithuania	355 (76 to 1 057)	22.0 (13.9 to 30.6)	-1.9 (-8.5 to 4.5)	1 110 (244 to 3 294)	76.8 (63.8 to 90.5)	0.0 (-6.0 to 6.1)
Moldova	323 (70 to 967)	41.2 (31.0 to 51.6)	-0.5 (-6.7 to 6.4)	926 (205 to 2 680)	90.0 (71.9 to 107.7)	1.8 (-4.9 to 8.6)
Russian Federation	11 508 (2 485 to 34 361)	99.6 (83.7 to 117.7)	5.6 (2.6 to 8.8)	35 061 (7 782 to 103 149)	50.0 (42.1 to 58.5)	4.2 (2.1 to 6.6)
Ukraine	3 969 (855 to 11 898)	48.4 (39.1 to 59.0)	4.4 (-2.0 to 11.2)	12 579 (2 765 to 36 706)	61.6 (47.2 to 77.4)	10.8 (3.4 to 19.4)
<b>Australasia</b>	<b>4 564 (1 009 to 13 239)</b>	<b>93.4 (75.7 to 114.1)</b>	<b>1.0 (-5.3 to 8.6)</b>	<b>8 977 (2 024 to 25 624)</b>	<b>47.5 (36.4 to 59.2)</b>	<b>0.4 (-5.7 to 6.8)</b>
Australia	3 891 (858 to 11 240)	98.9 (78.9 to 122.5)	1.6 (-5.5 to 10.6)	7 664 (1 723 to 21 888)	51.0 (37.8 to 64.3)	0.4 (-6.7 to 7.8)
New Zealand	672 (151 to 1 988)	67.8 (54.6 to 81.2)	-1.2 (-7.6 to 5.3)	1 313 (295 to 3 851)	30.3 (21.1 to 40.8)	0.1 (-5.5 to 6.5)

<b>High-income Asia-Pacific</b>	<b>50 974</b> (11 351 to 154 685)	<b>224.6</b> (199.3 to 253.8)	<b>33.7</b> (29.1 to 38.9)	<b>126 416</b> (28 380 to 366 754)	<b>268.8</b> (236.6 to 304.7)	<b>29.9</b> (25.8 to 34.5)
Brunei	14 (3 to 40)	-1.0 (-7.2 to 6.4)	2.8 (-3.2 to 9.3)	24 (5 to 71)	15.0 (7.3 to 23.7)	3.1 (-3.0 to 9.4)
Japan	45 659 (10 135 to 137 866)	270.0 (240.4 to 305.0)	37.8 (32.9 to 43.1)	113 224 (25 502 to 328 439)	326.2 (288.1 to 370.1)	34.6 (30.5 to 39.5)
South Korea	4 804 (1 056 to 14 402)	131.5 (107.1 to 159.1)	-2.0 (-11.5 to 6.1)	12 190 (2 714 to 35 336)	110.3 (88.3 to 132.3)	-1.0 (-8.8 to 7.2)
Singapore	497 (110 to 1 440)	105.1 (84.9 to 129.6)	2.3 (-4.4 to 9.4)	977 (220 to 2 904)	92.6 (74.0 to 112.7)	1.9 (-6.5 to 9.6)
<b>High-income North America</b>	<b>49 836</b> (11 132 to 138 762)	<b>33.3</b> (20.4 to 46.6)	<b>-1.3</b> (-10.6 to 8.4)	<b>107 603</b> (24 420 to 299 625)	<b>15.4</b> (4.3 to 26.8)	<b>-0.9</b> (-9.7 to 8.3)
Canada	5 466 (1 242 to 15 568)	54.6 (39.4 to 69.0)	-4.0 (-13.9 to 4.6)	11 633 (2 596 to 32 883)	37.5 (24.3 to 50.0)	-4.1 (-12.5 to 3.9)
Greenland	3 (1 to 8)	108.3 (93.1 to 125.6)	0.8 (-5.7 to 7.5)	5 (1 to 16)	58.5 (45.6 to 71.8)	4.8 (-2.5 to 12.3)
USA	44 367 (9 891 to 124 078)	31.2 (18.4 to 44.3)	-1.0 (-10.6 to 9.1)	95 965 (21 778 to 267 858)	13.4 (2.2 to 25.3)	-0.5 (-9.5 to 9.0)
<b>Southern Latin America</b>	<b>5 737</b> (1 281 to 17 186)	<b>43.0</b> (34.7 to 52.0)	<b>1.9</b> (-2.9 to 6.5)	<b>12 472</b> (2 760 to 36 657)	<b>54.1</b> (43.9 to 63.9)	<b>0.8</b> (-4.1 to 5.4)
Argentina	3 635 (809 to 10 855)	44.3 (33.7 to 55.9)	2.2 (-4.9 to 8.9)	8 397 (1 831 to 24 243)	56.9 (44.8 to 68.6)	1.1 (-5.4 to 7.2)
Chile	1 694 (379 to 5 078)	42.4 (31.8 to 54.9)	1.3 (-5.9 to 9.6)	3 036 (693 to 9 004)	58.7 (45.2 to 73.4)	2.0 (-4.8 to 9.4)

Uruguay	408 (92 to 1 230)	42.5 (31.5 to 54.0)	0.1 (-6.7 to 6.9)	1 039 (231 to 3 030)	56.2 (45.2 to 68.0)	-0.7 (-6.6 to 5.5)
<b>Western Europe</b>	<b>79 543 (17 865 to 235 239)</b>	<b>75.6 (66.1 to 86.2)</b>	<b>0.8 (-2.7 to 4.4)</b>	<b>181 978 (40 646 to 510 977)</b>	<b>50.7 (42.7 to 59.7)</b>	<b>-1.3 (-4.9 to 2.3)</b>
Andorra	12 (3 to 34)	88.3 (64.5 to 116.3)	0.6 (-5.1 to 7.1)	24 (5 to 69)	128.6 (101.7 to 162.6)	-0.8 (-6.3 to 6.0)
Austria	1 297 (288 to 3 786)	53.7 (41.4 to 67.5)	-0.9 (-6.8 to 5.9)	3 367 (742 to 9 906)	43.1 (30.7 to 56.6)	-0.8 (-6.4 to 5.3)
Belgium	1 817 (406 to 5 457)	59.9 (46.2 to 74.1)	-3.8 (-10.4 to 3.2)	4 507 (997 to 12 869)	41.2 (26.6 to 55.5)	-6.4 (-14.3 to 0.9)
Cyprus	114 (26 to 350)	22.4 (14.8 to 29.8)	-0.8 (-6.9 to 5.7)	285 (64 to 850)	57.5 (44.3 to 71.7)	-0.5 (-7.0 to 6.1)
Denmark	763 (173 to 2 285)	19.5 (5.7 to 30.9)	-5.1 (-15.6 to 3.6)	1 743 (393 to 5 110)	12.4 (-2.9 to 25.0)	-5.7 (-17.4 to 3.4)
Finland	821 (180 to 2 427)	95.7 (79.6 to 113.0)	-4.2 (-10.5 to 2.1)	2 157 (484 to 6 266)	68.8 (48.4 to 88.3)	-6.3 (-16.5 to 2.1)
France	12 750 (2 827 to 37 050)	91.0 (69.9 to 111.9)	7.5 (-2.3 to 17.4)	33 001 (7 441 to 92 200)	69.5 (52.5 to 88.8)	9.4 (0.2 to 20.6)
Germany	14 854 (3 297 to 44 477)	61.6 (45.1 to 80.9)	-12.0 (-20.7 to - 1.8)	34 940 (7 837 to 99 049)	24.0 (6.5 to 41.2)	-14.5 (-26.4 to - 3.7)
Greece	2 342 (507 to 7 072)	103.3 (85.0 to 123.8)	0.5 (-6.0 to 7.4)	3 997 (884 to 11 819)	92.2 (77.0 to 106.6)	1.2 (-4.6 to 7.7)
Iceland	44 (10 to 125)	14.8 (7.5 to 21.0)	-0.2 (-6.5 to 5.1)	96 (21 to 285)	28.7 (18.9 to 38.4)	-0.1 (-6.4 to 6.4)
Ireland	510 (111 to 1 536)	37.9 (27.3 to 49.8)	0.5 (-5.6 to 7.1)	1 073 (240 to 3 055)	29.4 (20.1 to 42.3)	-0.1 (-5.5 to 7.1)
Israel	965 (215 to 2 791)	38.6 (25.9 to 54.7)	0.0 (-5.7 to 5.5)	1 832 (415 to 5 280)	82.1 (63.1 to 105.4)	-0.6 (-6.0 to 5.8)

Italy	15 676 (3 531 to 47 180)	154.2 (136.1 to 173.7)	24.9 (13.8 to 36.7)	33 441 (7 350 to 97 761)	138.0 (123.7 to 153.5)	23.0 (11.4 to 35.3)
Luxembourg	66 (15 to 203)	36.8 (22.3 to 51.7)	-5.2 (-14.0 to 3.0)	156 (35 to 469)	30.2 (15.4 to 45.2)	-5.6 (-13.9 to 2.6)
Malta	59 (13 to 179)	71.6 (59.9 to 83.9)	0.6 (-5.6 to 6.6)	131 (29 to 385)	95.3 (79.9 to 113.5)	0.1 (-5.8 to 6.8)
Netherlands	2 594 (589 to 7 413)	43.8 (34.8 to 53.8)	-0.8 (-7.4 to 6.2)	5 643 (1 280 to 15 460)	20.2 (11.1 to 31.4)	-5.4 (-11.9 to 2.4)
Norway	749 (166 to 2 183)	9.6 (3.5 to 16.3)	-5.8 (-9.0 to -2.7)	1 803 (400 to 5 155)	14.5 (6.0 to 23.6)	-6.2 (-8.8 to -3.6)
Portugal	1 884 (419 to 5 562)	126.7 (102.8 to 153.7)	5.4 (-1.8 to 13.7)	4 384 (961 to 12 843)	118.7 (97.2 to 143.4)	5.0 (-2.1 to 12.5)
Spain	8 003 (1 806 to 23 119)	40.5 (22.8 to 57.0)	-15.3 (-24.0 to - 7.2)	20 718 (4 604 to 58 556)	58.3 (40.8 to 77.1)	-12.7 (-19.4 to - 5.2)
Sweden	1 700 (374 to 5 055)	24.6 (13.1 to 35.6)	-9.4 (-16.5 to - 2.3)	3 624 (810 to 10 365)	11.6 (0.7 to 22.5)	-14.8 (-21.6 to - 7.7)
Switzerland	1 413 (318 to 4 200)	47.2 (35.4 to 60.5)	2.0 (-4.6 to 9.0)	3 320 (746 to 9 594)	30.8 (19.4 to 41.6)	-0.4 (-6.6 to 6.3)
United Kingdom	11 096 (2 469 to 32 387)	71.5 (61.7 to 83.1)	3.4 (0.2 to 7.0)	21 702 (4 826 to 61 225)	20.2 (13.9 to 27.0)	-2.0 (-5.0 to 1.1)
<b>Andean Latin America</b>	<b>5 260 (1 180 to 15 565)</b>	<b>41.9 (35.0 to 50.5)</b>	<b>-1.3 (-5.8 to 3.0)</b>	<b>6 489 (1 462 to 18 799)</b>	<b>36.5 (29.8 to 44.1)</b>	<b>-1.2 (-5.1 to 3.2)</b>
Bolivia	539 (120 to 1 590)	28.3 (20.3 to 36.8)	-2.4 (-8.0 to 4.1)	744 (165 to 2 219)	40.8 (30.7 to 51.1)	-1.4 (-7.5 to 5.3)
Ecuador	1 290 (287 to 3 746)	21.9 (14.3 to 30.3)	-1.4 (-7.1 to 5.2)	1 610 (358 to 4 653)	22.7 (15.8 to 30.0)	-0.8 (-6.0 to 5.0)

Peru	3 431 (764 to 10 229)	54.9 (45.3 to 67.3)	-1.1 (-6.5 to 5.2)	4 135 (923 to 12 129)	42.5 (32.5 to 53.9)	-1.2 (-7.3 to 5.5)
<b>Caribbean</b>	<b>4 277 (943 to 12 652)</b>	<b>23.7 (17.0 to 31.6)</b>	<b>-1.0 (-4.2 to 2.3)</b>	<b>5 924 (1 337 to 16 986)</b>	<b>37.5 (28.9 to 47.2)</b>	<b>-0.8 (-3.7 to 2.1)</b>
Antigua and Barbuda	9 (2 to 26)	7.8 (-3.4 to 20.2)	0.3 (-5.5 to 6.3)	11 (2 to 33)	-27.8 (-31.9 to - 23.4)	-0.7 (-6.1 to 5.4)
The Bahamas	23 (5 to 66)	22.7 (14.3 to 32.4)	0.0 (-5.3 to 5.8)	34 (8 to 98)	-1.6 (-7.6 to 5.0)	-0.1 (-5.9 to 5.8)
Barbados	40 (9 to 118)	-1.0 (-9.0 to 7.0)	0.6 (-5.1 to 6.5)	62 (14 to 178)	-13.9 (-20.1 to - 7.5)	0.6 (-6.0 to 7.4)
Belize	21 (5 to 62)	-13.2 (-18.4 to - 7.6)	-1.5 (-7.3 to 4.7)	24 (5 to 68)	-25.7 (-30.7 to - 20.7)	-0.7 (-7.3 to 5.3)
Bermuda	9 (2 to 27)	58.7 (48.4 to 69.5)	0.0 (-5.2 to 5.5)	19 (4 to 56)	62.0 (50.9 to 74.2)	1.4 (-4.7 to 7.2)
Cuba	1 811 (400 to 5 279)	26.6 (16.9 to 38.8)	-1.5 (-7.5 to 4.9)	2 448 (552 to 6 987)	49.7 (35.8 to 66.0)	-1.4 (-7.6 to 5.4)
Dominica	8 (2 to 23)	-8.1 (-13.5 to - 2.1)	-1.5 (-7.0 to 4.8)	13 (3 to 39)	10.0 (2.5 to 18.6)	-1.9 (-7.5 to 3.9)
Dominican Republic	796 (178 to 2 337)	17.5 (10.2 to 25.1)	-1.2 (-7.1 to 5.0)	1 055 (236 to 3 026)	43.3 (33.5 to 53.6)	-1.3 (-7.5 to 5.1)
Grenada	16 (4 to 48)	35.8 (27.3 to 44.8)	-1.3 (-7.1 to 4.5)	21 (5 to 61)	7.0 (0.6 to 14.1)	-0.4 (-6.0 to 5.9)
Guyana	33 (7 to 97)	1.1 (-5.6 to 8.7)	0.9 (-5.6 to 7.3)	46 (10 to 132)	0.9 (-5.6 to 7.5)	-0.2 (-6.8 to 6.1)
Haiti	320 (70 to 958)	19.7 (11.8 to 29.2)	-2.6 (-8.5 to 3.4)	333 (72 to 987)	7.2 (0.8 to 13.8)	-0.7 (-6.7 to 5.5)
Jamaica	285 (64 to 826)	14.6 (4.4 to 27.0)	-0.5 (-6.2 to 5.0)	394 (87 to 1 138)	6.5 (-1.7 to 15.9)	-0.2 (-5.8 to 5.7)
Puerto Rico	706 (156 to 2 077)	61.1 (49.4 to 75.3)	-0.2 (-5.7 to 5.3)	1 155 (256 to 3 334)	86.4 (71.4 to 103.4)	-0.4 (-6.0 to 5.1)

Saint Lucia	18 (4 to 53)	24.2 (13.6 to 36.4)	-0.3 (-6.2 to 6.0)	23 (5 to 67)	5.7 (-1.6 to 13.5)	0.5 (-5.5 to 6.3)
Saint Vincent and the Grenadines	12 (3 to 35)	14.5 (6.7 to 22.4)	-2.4 (-7.9 to 3.2)	16 (4 to 45)	2.3 (-4.7 to 10.2)	-1.6 (-7.6 to 4.9)
Suriname	37 (8 to 107)	7.2 (0.1 to 14.3)	-2.0 (-8.3 to 4.3)	56 (13 to 164)	10.4 (4.0 to 17.1)	-2.0 (-7.5 to 3.8)
Trinidad and Tobago	122 (27 to 360)	31.9 (20.7 to 45.2)	-0.1 (-6.4 to 6.2)	193 (42 to 559)	36.0 (25.1 to 49.4)	1.2 (-5.1 to 7.9)
Virgin Islands	9 (2 to 27)	64.3 (55.3 to 75.2)	-1.9 (-7.3 to 4.6)	19 (4 to 54)	83.0 (69.3 to 97.8)	-1.3 (-7.1 to 4.9)
<b>Central Latin America</b>	<b>21 673 (4 882 to 64 445)</b>	<b>31.7 (26.8 to 37.6)</b>	<b>-1.1 (-2.8 to 0.9)</b>	<b>28 389 (6 368 to 82 945)</b>	<b>31.9 (27.3 to 37.4)</b>	<b>-0.6 (-2.4 to 1.3)</b>
Colombia	5 688 (1 275 to 16 638)	70.0 (57.7 to 82.9)	-0.2 (-6.2 to 6.1)	7 758 (1 742 to 22 835)	82.4 (69.6 to 96.0)	0.4 (-5.2 to 5.9)
Costa Rica	501 (112 to 1 426)	32.7 (22.3 to 43.9)	-0.5 (-6.3 to 5.2)	722 (163 to 2 036)	43.8 (31.9 to 56.6)	-0.3 (-5.9 to 5.8)
El Salvador	552 (122 to 1 665)	39.5 (30.1 to 48.7)	-1.8 (-7.4 to 3.9)	868 (194 to 2 557)	33.1 (25.2 to 42.6)	-0.9 (-6.4 to 5.3)
Guatemala	832 (188 to 2 545)	49.4 (40.0 to 59.1)	-2.0 (-7.3 to 3.8)	1 157 (262 to 3 449)	55.2 (44.8 to 66.3)	-0.9 (-7.2 to 5.3)
Honduras	558 (123 to 1 635)	19.2 (11.1 to 26.8)	-2.1 (-8.6 to 4.4)	536 (121 to 1 547)	2.7 (-2.9 to 9.1)	-1.9 (-7.5 to 4.3)
Mexico	10 484 (2 340 to 31 417)	19.6 (15.9 to 24.8)	-0.8 (-2.1 to 0.7)	12 847 (2 859 to 37 895)	15.1 (12.0 to 18.6)	-0.3 (-1.9 to 1.3)
Nicaragua	481 (107 to 1 416)	41.7 (30.6 to 52.2)	-0.4 (-6.1 to 4.7)	562 (127 to 1 632)	19.6 (12.2 to 27.4)	-0.1 (-5.8 to 6.5)
Panama	439 (98 to 1 323)	43.1 (32.0 to 55.5)	-0.4 (-6.5 to 5.8)	572 (128 to 1 648)	49.3 (37.9 to 61.8)	0.5 (-5.3 to 6.4)

Venezuela	2 139 (479 to 6 341)	16.2 (8.5 to 25.8)	-3.1 (-9.1 to 3.2)	3 367 (754 to 9 567)	24.2 (14.1 to 35.3)	-3.8 (-9.8 to 2.5)
<b>Tropical Latin America</b>	<b>20 536 (4 534 to 61 189)</b>	<b>61.7 (52.4 to 73.7)</b>	<b>-1.4 (-4.3 to 1.6)</b>	<b>33 600 (7 519 to 97 999)</b>	<b>65.5 (54.8 to 78.4)</b>	<b>-5.0 (-8.0 to -1.7)</b>
Brazil	20 082 (4 430 to 59 869)	62.9 (53.4 to 75.1)	-1.5 (-4.4 to 1.6)	32 913 (7 363 to 95 969)	66.7 (55.7 to 79.9)	-5.2 (-8.3 to -1.7)
Paraguay	454 (103 to 1 319)	19.7 (11.0 to 29.4)	-1.5 (-7.4 to 4.9)	687 (156 to 2 030)	22.6 (13.5 to 33.4)	-1.5 (-7.6 to 4.8)
<b>North Africa and Middle East</b>	<b>30 480 (6 636 to 90 614)</b>	<b>6.1 (2.7 to 9.4)</b>	<b>-4.4 (-6.3 to -2.7)</b>	<b>41 287 (9 114 to 121 236)</b>	<b>18.3 (14.5 to 22.3)</b>	<b>-2.3 (-4.7 to -0.1)</b>
Afghanistan	708 (157 to 2 093)	-27.4 (-32.8 to - 21.8)	-6.1 (-11.8 to 0.2)	601 (133 to 1 796)	-30.5 (-34.7 to - 26.2)	-5.1 (-11.1 to 0.3)
Algeria	2 984 (650 to 8 729)	35.1 (22.4 to 47.6)	-3.1 (-8.6 to 2.8)	3 129 (674 to 9 497)	34.2 (23.0 to 46.7)	-2.7 (-8.1 to 2.8)
Bahrain	43 (9 to 123)	-41.8 (-46.0 to - 37.9)	-2.4 (-8.4 to 3.4)	47 (10 to 138)	-10.4 (-16.2 to - 5.2)	-0.3 (-6.2 to 5.3)
Egypt	2 389 (534 to 6 937)	-17.6 (-22.7 to - 12.4)	-3.2 (-9.2 to 3.7)	3 279 (722 to 9 546)	4.0 (-2.5 to 10.5)	-2.3 (-8.9 to 4.5)
Iran	6 382 (1 414 to 19 413)	73.8 (60.0 to 87.6)	-4.7 (-6.1 to -3.2)	6 665 (1 457 to 19 655)	36.9 (30.9 to 43.2)	-1.7 (-3.3 to 0.0)
Iraq	1 834 (409 to 5 295)	7.8 (-0.5 to 16.3)	-1.9 (-7.5 to 4.5)	1 747 (376 to 5 064)	-17.5 (-22.3 to - 12.5)	0.6 (-5.3 to 6.5)
Jordan	370 (82 to 1 070)	-12.7 (-18.5 to - 6.7)	-3.4 (-9.0 to 2.4)	389 (86 to 1 148)	-15.4 (-21.1 to - 9.4)	-1.0 (-6.8 to 4.8)
Kuwait	267 (58 to 785)	78.7 (61.8 to 96.9)	-4.9 (-10.8 to 0.6)	204 (45 to 590)	-13.7 (-19.1 to - 7.8)	-1.5 (-6.8 to 4.0)
Lebanon	423 (95 to 1 254)	18.8 (11.8 to 26.2)	-2.8 (-8.2 to 3.5)	787 (176 to 2 284)	29.3 (20.4 to 37.7)	-0.7 (-7.4 to 5.4)

Libya	321 (72 to 963)	-22.9 (-27.4 to -17.7)	-4.3 (-9.6 to 1.9)	380 (82 to 1 136)	-27.6 (-31.8 to -23.1)	-3.1 (-8.7 to 2.9)
Morocco	2 422 (533 to 7 310)	-11.2 (-16.1 to -5.4)	-5.8 (-11.1 to -0.2)	2 877 (644 to 8 688)	9.6 (3.1 to 16.3)	-4.5 (-10.1 to 1.1)
Palestine	164 (36 to 485)	-43.5 (-46.8 to -40.3)	-2.1 (-7.7 to 3.4)	232 (51 to 674)	-25.6 (-30.6 to -20.4)	-2.2 (-8.1 to 3.7)
Oman	117 (26 to 341)	-20.1 (-24.6 to -14.8)	-6.9 (-12.5 to -0.8)	128 (28 to 372)	-19.9 (-24.2 to -14.8)	-4.9 (-10.0 to 1.1)
Qatar	41 (9 to 119)	29.1 (19.0 to 40.0)	0.6 (-5.8 to 7.2)	23 (5 to 66)	-20.7 (-25.4 to -15.1)	2.5 (-3.3 to 9.4)
Saudi Arabia	827 (182 to 2 342)	-58.4 (-62.2 to -54.7)	-6.7 (-12.8 to -1.1)	914 (203 to 2 629)	-60.0 (-62.8 to -57.3)	-5.2 (-11.3 to 0.4)
Sudan	1 475 (326 to 4 440)	12.6 (3.3 to 22.1)	-5.8 (-11.7 to -0.1)	1 443 (317 to 4 328)	7.1 (-1.6 to 17.2)	-5.1 (-10.9 to 0.7)
Syria	798 (177 to 2 353)	-31.1 (-37.8 to -24.2)	-3.5 (-9.7 to 2.6)	999 (221 to 2 936)	-3.3 (-9.6 to 3.0)	-1.2 (-7.4 to 5.2)
Tunisia	1 011 (226 to 2 977)	24.2 (13.3 to 35.8)	-5.4 (-11.5 to 0.9)	1 361 (305 to 4 039)	51.5 (39.2 to 65.7)	-4.2 (-10.0 to 1.4)
Turkey	7 082 (1 551 to 20 623)	23.0 (15.3 to 30.6)	-4.9 (-10.6 to 0.6)	15 094 (3 353 to 43 534)	50.8 (41.1 to 61.0)	-1.8 (-7.5 to 3.9)
United Arab Emirates	77 (17 to 222)	-48.4 (-55.8 to -41.4)	-2.6 (-9.1 to 4.1)	62 (14 to 178)	-40.1 (-45.1 to -34.6)	-1.6 (-7.1 to 4.8)
Yemen	744 (159 to 2 187)	31.2 (21.4 to 40.5)	-5.5 (-11.4 to 0.1)	926 (200 to 2 741)	-4.0 (-9.4 to 2.5)	-4.6 (-9.6 to 2.3)
<b>South Asia</b>	<b>58 170 (12 960 to 172 372)</b>	<b>29.0 (25.2 to 32.5)</b>	<b>-3.0 (-4.5 to -1.4)</b>	<b>71 024 (15 779 to 209 739)</b>	<b>33.7 (29.4 to 38.7)</b>	<b>-4.8 (-6.2 to -3.3)</b>
Bangladesh	6 779 (1 510 to 20 225)	13.5 (6.6 to 21.3)	-5.2 (-11.4 to 1.6)	6 295 (1 411 to 18 415)	-1.6 (-7.7 to 5.2)	-7.0 (-12.9 to -0.3)

Bhutan	32 (7 to 96)	33.6 (24.2 to 43.6)	-4.2 (-10.4 to 2.7)	40 (9 to 116)	48.4 (37.0 to 60.6)	-4.0 (-10.2 to 2.7)
India	45 338 (10 150 to 134 249)	49.3 (42.6 to 56.7)	-1.5 (-3.1 to 0.1)	58 473 (13 008 to 173 328)	50.7 (43.9 to 58.8)	-4.2 (-5.7 to -2.8)
Nepal	919 (206 to 2 711)	35.9 (27.1 to 44.9)	-5.9 (-11.9 to 0.4)	1 325 (298 to 3 850)	40.8 (32.5 to 50.6)	-5.7 (-11.5 to 0.3)
Pakistan	5 103 (1 129 to 15 051)	-40.0 (-42.6 to -37.3)	-5.2 (-8.8 to -1.1)	4 891 (1 103 to 14 164)	-32.6 (-35.4 to -29.5)	-3.9 (-7.1 to -0.3)
<b>East Asia</b>	<b>120 440 (26 171 to 356 816)</b>	<b>62.3 (51.0 to 74.4)</b>	<b>3.9 (0.2 to 7.5)</b>	<b>210 972 (45 255 to 631 728)</b>	<b>44.3 (35.7 to 53.7)</b>	<b>-0.5 (-3.7 to 2.4)</b>
China	116 341 (25 338 to 343 865)	61.1 (49.9 to 72.9)	4.0 (0.1 to 7.7)	202 327 (43 433 to 607 431)	43.3 (34.9 to 52.8)	-0.6 (-3.9 to 2.5)
North Korea	911 (203 to 2 637)	14.3 (6.7 to 23.0)	-3.7 (-9.4 to 2.4)	3 613 (788 to 10 726)	36.0 (27.4 to 44.8)	-4.7 (-10.3 to 0.8)
Taiwan (Province of China)	3 188 (715 to 9 295)	157.0 (119.9 to 198.8)	11.1 (0.2 to 21.5)	5 032 (1 123 to 14 465)	120.0 (93.9 to 145.8)	10.4 (0.5 to 20.7)
<b>Oceania</b>	<b>192 (43 to 549)</b>	<b>-0.4 (-4.2 to 3.4)</b>	<b>-3.6 (-6.7 to -0.8)</b>	<b>259 (57 to 764)</b>	<b>6.8 (1.8 to 11.9)</b>	<b>-2.6 (-5.5 to 0.1)</b>
American Samoa	2 (0 to 5)	5.6 (-1.1 to 12.2)	-1.0 (-7.0 to 4.7)	3 (1 to 8)	-1.8 (-7.1 to 4.0)	-1.4 (-7.1 to 4.5)
Federated States of Micronesia	2 (0 to 6)	-30.2 (-35.1 to -25.3)	-2.8 (-8.8 to 3.4)	4 (1 to 13)	-22.5 (-27.8 to -17.0)	-1.8 (-8.1 to 4.4)
Fiji	24 (5 to 71)	-3.4 (-8.7 to 2.2)	-3.5 (-9.2 to 2.9)	45 (10 to 134)	25.1 (18.5 to 32.4)	-3.1 (-8.5 to 2.8)
Guam	10 (2 to 29)	103.2 (83.9 to 126.8)	-2.3 (-8.3 to 3.7)	19 (4 to 55)	73.1 (60.3 to 86.7)	-1.0 (-6.6 to 4.7)

Kiribati	2 (0 to 5)	-21.3 (-26.0 to -16.5)	-3.7 (-9.9 to 2.3)	4 (1 to 13)	-3.2 (-8.6 to 2.2)	-3.1 (-8.2 to 3.2)
Marshall Islands	1 (0 to 2)	-27.3 (-33.8 to -21.8)	-2.6 (-8.4 to 4.1)	1 (0 to 3)	-42.9 (-46.8 to -38.7)	-1.8 (-7.7 to 3.8)
Northern Mariana Islands	2 (0 to 6)	115.0 (98.7 to 133.7)	-1.3 (-7.2 to 4.6)	3 (1 to 9)	50.3 (39.4 to 62.7)	1.0 (-5.0 to 6.9)
Papua New Guinea	115 (26 to 333)	2.5 (-4.2 to 9.6)	-4.8 (-10.6 to 0.7)	133 (29 to 390)	5.9 (-2.3 to 14.5)	-3.6 (-9.6 to 2.3)
Samoa	7 (2 to 20)	-4.2 (-9.8 to 2.0)	-2.8 (-8.8 to 4.0)	13 (3 to 38)	18.2 (11.1 to 25.8)	-3.2 (-8.8 to 2.5)
Solomon Islands	14 (3 to 40)	8.1 (0.4 to 15.4)	-3.8 (-9.3 to 2.3)	16 (4 to 48)	33.6 (24.1 to 44.0)	-2.7 (-8.9 to 3.7)
Tonga	5 (1 to 14)	27.0 (17.3 to 37.1)	-3.7 (-9.1 to 2.3)	8 (2 to 25)	53.7 (42.8 to 64.3)	-1.8 (-8.1 to 3.9)
Vanuatu	7 (2 to 22)	6.2 (0.3 to 12.3)	-2.5 (-8.4 to 3.4)	8 (2 to 25)	14.3 (8.0 to 20.3)	-2.4 (-8.2 to 3.1)
<b>Southeast Asia</b>	<b>28 424 (6 288 to 82 810)</b>	<b>11.6 (7.7 to 16.0)</b>	<b>-4.4 (-6.5 to -2.6)</b>	<b>57 522 (12 691 to 167 942)</b>	<b>28.8 (23.9 to 34.0)</b>	<b>-3.5 (-5.8 to -1.3)</b>
Cambodia	422 (94 to 1 258)	6.6 (-0.4 to 13.3)	-4.6 (-10.1 to 1.1)	956 (215 to 2 849)	37.0 (28.5 to 47.2)	-2.8 (-8.3 to 3.5)
Indonesia	8 727 (1 930 to 25 195)	-0.6 (-3.5 to 2.3)	-7.3 (-9.8 to -4.8)	16 102 (3 498 to 47 091)	31.1 (25.3 to 38.1)	-5.5 (-8.1 to -2.8)
Laos	188 (42 to 558)	17.3 (7.5 to 28.2)	-4.1 (-9.9 to 1.9)	307 (69 to 941)	29.8 (18.9 to 42.9)	-2.3 (-8.1 to 4.1)
Malaysia	1 426 (317 to 4 157)	16.0 (8.5 to 23.1)	-5.5 (-11.5 to 0.6)	1 942 (424 to 5 765)	8.6 (2.0 to 15.2)	-3.3 (-9.1 to 2.7)
Maldives	26 (6 to 77)	49.8 (33.5 to 68.0)	-2.9 (-8.8 to 2.6)	27 (6 to 78)	191.9 (147.7 to 243.3)	-0.6 (-6.1 to 5.6)

Mauritius	85 (19 to 246)	50.0 (38.6 to 62.5)	-0.1 (-6.1 to 5.9)	191 (43 to 553)	36.3 (26.6 to 46.1)	-0.6 (-6.3 to 5.1)
Myanmar	2 045 (450 to 5 991)	21.5 (12.3 to 31.6)	-2.9 (-8.7 to 3.5)	4 446 (982 to 13 249)	33.7 (23.5 to 44.3)	-4.1 (-9.9 to 1.0)
Philippines	2 971 (661 to 8 532)	-13.6 (-16.3 to -11.0)	-5.2 (-7.0 to -3.5)	5 431 (1 180 to 16 045)	10.5 (7.6 to 13.1)	-5.4 (-7.2 to -3.7)
Sri Lanka	1 252 (282 to 3 749)	14.7 (8.8 to 21.7)	-1.3 (-7.0 to 5.1)	2 545 (561 to 7 567)	47.8 (38.2 to 58.2)	-2.7 (-9.3 to 3.9)
Seychelles	5 (1 to 15)	-31.4 (-35.3 to -27.1)	-3.5 (-9.3 to 2.6)	14 (3 to 40)	-20.8 (-25.3 to -16.1)	-3.7 (-8.4 to 1.8)
Thailand	6 964 (1 536 to 20 228)	75.4 (61.1 to 90.9)	-0.3 (-6.3 to 5.2)	13 214 (2 945 to 37 621)	67.6 (55.9 to 80.8)	-0.1 (-5.8 to 6.1)
Timor-Leste	43 (10 to 124)	70.7 (60.3 to 82.1)	-5.5 (-11.1 to 0.0)	57 (13 to 169)	78.2 (66.4 to 91.2)	-4.3 (-10.4 to 1.9)
Vietnam	4 269 (945 to 12 486)	-11.6 (-17.1 to -5.0)	-3.3 (-8.8 to 2.4)	12 290 (2 685 to 35 847)	0.0 (-6.2 to 6.5)	-2.8 (-8.2 to 3.2)
<b>Central sub-Saharan Africa</b>	<b>1 744 (389 to 5 151)</b>	<b>-10.2 (-15.4 to -5.5)</b>	<b>-2.6 (-7.0 to 1.7)</b>	<b>3 229 (714 to 9 685)</b>	<b>40.3 (30.1 to 51.0)</b>	<b>-1.7 (-6.1 to 3.2)</b>
Angola	345 (76 to 1 011)	-3.5 (-9.0 to 3.1)	-4.1 (-10.3 to 2.5)	588 (133 to 1 775)	11.5 (4.3 to 18.2)	-3.2 (-9.6 to 2.8)
Central African Republic	52 (12 to 156)	-18.4 (-23.4 to -13.3)	-5.9 (-12.0 to -0.1)	97 (22 to 289)	17.1 (9.1 to 25.6)	0.5 (-5.8 to 7.2)
Congo (Brazzaville)	99 (22 to 288)	1.5 (-7.5 to 12.4)	1.4 (-6.1 to 9.6)	142 (32 to 419)	11.8 (1.9 to 24.3)	0.8 (-7.4 to 9.7)
DR Congo	1 184 (263 to 3 500)	-12.7 (-18.9 to -7.0)	-2.2 (-7.9 to 3.2)	2 271 (496 to 6 840)	58.0 (43.1 to 73.4)	-1.7 (-8.1 to 5.3)
Equatorial Guinea	19 (4 to 58)	17.0 (8.5 to 26.2)	-5.0 (-10.9 to 1.1)	34 (7 to 101)	13.4 (5.8 to 21.9)	-4.7 (-10.0 to 1.7)

Gabon	44 (10 to 131)	-7.2 (-13.7 to -0.6)	-2.8 (-8.0 to 3.1)	97 (22 to 292)	-0.5 (-7.3 to 6.0)	-1.8 (-7.9 to 4.0)
<b>Eastern sub-Saharan Africa</b>	<b>6 535 (1 457 to 19 163)</b>	<b>-0.3 (-3.6 to 3.2)</b>	<b>-3.8 (-5.8 to -1.7)</b>	<b>10 005 (2 243 to 29 989)</b>	<b>25.6 (20.3 to 31.6)</b>	<b>-3.6 (-5.6 to -1.7)</b>
Burundi	129 (29 to 379)	-7.6 (-13.8 to -0.6)	-1.4 (-7.6 to 5.4)	194 (43 to 573)	1.9 (-5.5 to 9.5)	-2.1 (-8.4 to 4.3)
Comoros	21 (5 to 62)	20.3 (12.0 to 29.5)	-3.5 (-9.4 to 2.7)	32 (7 to 96)	40.0 (30.7 to 49.3)	-3.3 (-8.6 to 2.0)
Djibouti	19 (4 to 57)	24.0 (16.6 to 31.8)	-3.5 (-10.0 to 2.3)	24 (5 to 71)	21.6 (14.2 to 29.5)	-3.6 (-9.7 to 3.0)
Eritrea	38 (8 to 110)	-3.8 (-9.2 to 1.8)	-4.1 (-10.2 to 2.6)	110 (24 to 320)	23.9 (16.3 to 32.1)	-4.6 (-10.3 to 1.3)
Ethiopia	2 150 (483 to 6 382)	92.8 (69.8 to 117.3)	-5.6 (-8.8 to -2.4)	2 324 (526 to 6 931)	60.5 (46.6 to 76.0)	-4.1 (-7.1 to -0.6)
Kenya	733 (164 to 2 139)	-37.6 (-39.8 to -35.3)	-3.6 (-4.9 to -2.5)	1 438 (322 to 4 237)	9.3 (5.9 to 13.2)	-1.5 (-2.8 to 0.1)
Madagascar	368 (82 to 1 086)	-47.5 (-51.0 to -43.6)	-1.8 (-7.6 to 5.7)	503 (111 to 1 472)	-11.9 (-16.9 to -6.4)	-1.7 (-7.5 to 4.8)
Malawi	324 (72 to 969)	0.3 (-5.9 to 6.5)	-3.1 (-8.7 to 3.3)	697 (157 to 2 120)	55.3 (44.4 to 67.5)	-2.7 (-8.2 to 3.3)
Mozambique	334 (75 to 993)	-16.9 (-21.8 to -11.7)	-5.4 (-11.3 to 0.8)	684 (154 to 2 017)	11.0 (5.0 to 18.2)	-5.2 (-10.5 to 0.7)
Rwanda	183 (41 to 541)	-16.7 (-21.6 to -11.9)	-3.1 (-8.7 to 2.6)	408 (90 to 1 235)	25.6 (17.5 to 34.2)	-2.5 (-9.0 to 4.2)
Somalia	178 (39 to 517)	-10.4 (-16.7 to -4.0)	-3.4 (-9.3 to 2.9)	261 (57 to 784)	5.9 (-1.3 to 13.1)	-3.9 (-10.1 to 1.7)
South Sudan	170 (38 to 504)	-0.1 (-6.6 to 7.0)	-4.9 (-10.7 to 1.2)	170 (38 to 504)	-27.1 (-31.4 to -22.6)	-4.2 (-9.4 to 1.3)
Tanzania	1 131 (255 to 3 371)	1.3 (-7.7 to 10.0)	-8.8 (-17.0 to -1.2)	1 822 (414 to 5 471)	27.4 (17.5 to 38.6)	-6.4 (-13.7 to 0.3)

Uganda	497 (111 to 1 458)	-27.6 (-31.7 to - 23.3)	-3.9 (-9.4 to 2.1)	947 (211 to 2 848)	21.4 (13.2 to 30.1)	-2.6 (-8.5 to 3.5)
Zambia	259 (57 to 766)	-21.3 (-25.9 to - 16.9)	-3.4 (-9.2 to 2.4)	391 (87 to 1 148)	28.2 (20.2 to 36.0)	-2.7 (-8.7 to 3.3)
<b>Southern sub- Saharan Africa</b>	<b>2 295 (511 to 6 741)</b>	<b>-14.5 (-16.5 to - 12.6)</b>	<b>-2.7 (-4.8 to -0.4)</b>	<b>5 835 (1 303 to 17 227)</b>	<b>-0.4 (-2.5 to 1.8)</b>	<b>-3.5 (-5.7 to -1.2)</b>
Botswana	57 (12 to 166)	6.5 (-0.7 to 14.2)	-2.5 (-8.0 to 3.3)	122 (27 to 364)	15.9 (7.9 to 25.1)	-4.0 (-9.8 to 2.2)
Lesotho	33 (7 to 100)	1.2 (-4.7 to 7.3)	-3.6 (-9.2 to 2.6)	99 (22 to 298)	-9.0 (-14.6 to - 4.2)	-5.0 (-10.8 to 0.6)
Namibia	63 (14 to 190)	24.4 (13.4 to 36.6)	-1.8 (-7.8 to 4.1)	157 (35 to 465)	59.0 (43.3 to 75.6)	-0.7 (-6.5 to 5.9)
South Africa	1 899 (423 to 5 571)	-19.2 (-21.7 to - 16.5)	-2.8 (-4.9 to -0.3)	5 007 (1 114 to 14 771)	-0.2 (-2.7 to 2.3)	-3.6 (-6.0 to -1.1)
Swaziland	13 (3 to 39)	-14.4 (-19.6 to - 8.8)	-2.1 (-8.4 to 4.5)	37 (8 to 110)	-1.3 (-6.9 to 4.7)	-2.8 (-8.6 to 3.2)
Zimbabwe	230 (51 to 696)	-2.2 (-8.6 to 4.3)	-2.1 (-8.6 to 4.4)	413 (92 to 1 211)	-20.9 (-25.4 to - 16.6)	-3.0 (-8.2 to 2.6)
<b>Western sub- Saharan Africa</b>	<b>8 969 (1 995 to 26 318)</b>	<b>4.6 (1.6 to 7.7)</b>	<b>-3.2 (-4.2 to -2.1)</b>	<b>10 977 (2 452 to 32 276)</b>	<b>-20.5 (-21.8 to - 19.2)</b>	<b>-1.5 (-2.6 to -0.5)</b>
Benin	204 (45 to 608)	-37.1 (-41.1 to - 32.9)	-3.9 (-9.8 to 2.6)	322 (73 to 959)	-15.8 (-21.1 to - 10.4)	-2.9 (-9.4 to 3.7)
Burkina Faso	374 (83 to 1 113)	-6.0 (-12.0 to 0.1)	-5.9 (-11.3 to - 0.8)	538 (119 to 1 594)	11.3 (2.5 to 20.3)	-5.3 (-11.5 to 0.8)
Cameroon	431 (95 to 1 257)	-15.6 (-20.4 to - 10.7)	-3.6 (-9.5 to 2.4)	623 (139 to 1 868)	4.5 (-1.2 to 10.3)	-2.9 (-8.3 to 3.0)
Cape Verde	32 (7 to 95)	-15.6 (-22.5 to - 8.8)	-4.3 (-10.3 to 1.6)	66 (15 to 192)	-1.9 (-8.4 to 5.1)	-3.7 (-9.3 to 2.4)

Chad	292 (63 to 856)	-24.5 (-29.2 to -19.7)	-5.1 (-11.4 to 1.2)	287 (65 to 862)	-28.9 (-33.3 to -24.4)	-4.6 (-10.7 to 1.4)
Cote d'Ivoire	379 (84 to 1 121)	13.7 (7.1 to 21.1)	-3.0 (-9.2 to 2.7)	455 (99 to 1 342)	26.5 (19.7 to 34.5)	-2.4 (-7.8 to 3.9)
The Gambia	42 (9 to 121)	44.6 (33.2 to 56.3)	-4.0 (-9.9 to 2.8)	67 (15 to 205)	33.0 (24.5 to 42.3)	-3.1 (-8.3 to 2.5)
Ghana	531 (118 to 1 561)	-7.6 (-12.2 to -2.4)	-3.7 (-8.7 to 2.1)	899 (202 to 2 702)	15.9 (9.8 to 22.4)	-1.8 (-7.1 to 3.6)
Guinea	310 (69 to 938)	-11.2 (-16.1 to -6.4)	-5.3 (-10.9 to 0.4)	378 (86 to 1 107)	3.2 (-3.4 to 9.9)	-4.3 (-10.5 to 1.6)
Guinea-Bissau	21 (5 to 61)	-20.3 (-25.8 to -14.8)	-4.4 (-10.1 to 2.1)	33 (7 to 97)	5.9 (-1.1 to 12.2)	-3.9 (-9.7 to 1.8)
Liberia	103 (23 to 312)	-17.6 (-25.2 to -10.2)	-3.2 (-9.7 to 2.8)	106 (24 to 307)	-18.3 (-23.4 to -13.0)	-2.8 (-8.4 to 3.2)
Mali	407 (91 to 1 213)	17.8 (10.7 to 24.7)	-4.3 (-9.8 to 2.1)	404 (90 to 1 198)	13.1 (6.2 to 20.0)	-3.3 (-9.5 to 3.3)
Mauritania	115 (25 to 343)	18.6 (10.9 to 27.8)	-2.9 (-8.5 to 3.4)	128 (28 to 373)	-10.6 (-16.6 to -4.8)	-1.8 (-8.0 to 4.5)
Niger	299 (66 to 882)	22.1 (12.9 to 32.0)	-3.5 (-9.1 to 2.4)	339 (76 to 986)	-4.4 (-10.0 to 1.3)	-2.6 (-8.5 to 3.4)
Nigeria	4 798 (1 066 to 14 032)	20.3 (15.7 to 25.2)	-2.3 (-3.5 to -1.1)	5 453 (1 208 to 15 733)	-35.7 (-37.1 to -34.1)	-0.2 (-1.3 to 0.8)
Sao Tome and Principe	5 (1 to 14)	-32.9 (-36.8 to -29.2)	-4.2 (-10.4 to 1.8)	8 (2 to 23)	-40.0 (-44.2 to -35.8)	-3.1 (-9.2 to 3.1)
Senegal	367 (82 to 1 087)	1.0 (-4.6 to 7.7)	-3.4 (-8.7 to 3.2)	489 (108 to 1 456)	8.2 (1.8 to 14.5)	-2.2 (-7.7 to 3.5)
Sierra Leone	166 (37 to 490)	-27.1 (-31.7 to -22.4)	-3.6 (-9.5 to 2.5)	193 (43 to 579)	-21.5 (-26.2 to -16.1)	-4.0 (-10.2 to 2.9)
Togo	94 (21 to 272)	-33.7 (-37.9 to -29.8)	-4.0 (-9.6 to 1.6)	187 (41 to 559)	1.4 (-4.5 to 6.9)	-3.0 (-9.3 to 2.9)

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