

Effects of Business-as-usual anthropogenic emissions on air quality

A. Pozzer^{1,2}, P. Zimmermann² U.M. Doering^{3,*},
J. van Aardenne^{3,**}, H. Tost⁴, F. Dentener³
G. Janssens-Maenhout³, J. Lelieveld^{2,5,6}

1 The Abdus Salam International center for Theoretical Physics, Earth System Physics, Trieste, Italy

2 Atmospheric Chemistry Department, Max-Planck Institute of Chemistry, Mainz, Germany

3 European Commission, Joint Research Centre, Institute for Environment and Sustainability, Ispra, Italy

4 Institut für Physik der Atmosphäre, Johannes - Gutenberg Universität Mainz, Mainz, Germany

5 The Cyprus Institute, Energy, Environment and Water Research Center, Nicosia, Cyprus

6 King Saud University, Riyadh, Saudi Arabia

* Now at: Öko-Institut e.V., Berlin, Germany

** now at: Air and climate change-mitigation, European Environment Agency, Copenhagen, Denmark

apozzer@ictp.it

This is the electronic supplement of the article “Effects of Business-as-usual anthropogenic emissions on air quality” in Atmos. Chem. Phys. Discuss. (2012), available at: <http://www.atmos-chem-phys.net>

Date: 07/02/2012

Table 1: Emissions source and projection from 2005 to 2050 under the assumptions of a business as usual (BaU) scenario.

Emissions source sector	activity data	emission factor
power industry	CIRCE(2005) scaled with POLES(power)	CIRCE(2005) constant
manufacturing industry	CIRCE(2005) scaled with POLES(industry)	CIRCE(2005) constant
fuel production & transformation	CIRCE(2005) scaled with POLES(fuel production)	CIRCE(2005) constant
road transport	CIRCE(2005) scaled with POLES(road transport)	CIRCE(2005) constant
aviation	CIRCE(2005) scaled with POLES(aviation)	CIRCE(2005) constant
shipping	CIRCE(2005) scaled with POLES(shipping)	CIRCE(2005) constant
other transport	CIRCE(2005) scaled with POLES(other)	CIRCE(2005) constant
residential combustion	CIRCE(2005) scaled with POLES(residential)	CIRCE(2005) constant
non-metallic mineral production	CIRCE(2005) scaled with POLES(cement ind.)	CIRCE(2005) constant
metal production	CIRCE(2005) scaled with POLES(metal industry)	CIRCE(2005) constant
production of chemicals	CIRCE(2005) scaled with POLES(chemical ind.)	CIRCE(2005) constant
solvents	CIRCE(2005) constant	CIRCE(2005) scaled with population
agricultural soils	CIRCE(2005) constant	CIRCE(2005) scaled with IMAGE(baseline)
manure management	CIRCE(2005) constant	CIRCE(2005) scaled with IMAGE(baseline)
enteric fermentation	CIRCE(2005) constant	CIRCE(2005) scaled with IMAGE(baseline)
agricultural waste burning	CIRCE(2005) constant	CIRCE(2005) scaled with IMAGE(baseline)
waste treatment	CIRCE(2005) constant	CIRCE(2005) scaled with IMAGE(baseline)

Table 2: Sectoral breakdown of the CIRCE emissions for 2005.

Emissions source sector	Tg NOx	Tg SO2	Tg CO	Tg NMVOC	Tg BC	Tg OC
power industry	30.94	63.29	11.73	2.57	0.10	0.05
manufacturing industry	6.67	16.21	52.16	0.71	0.10	0.09
fuel production & transformation	2.26	7.19	18.26	39.82	0.03	0.00
road transport	24.25	2.07	133.98	21.06	1.37	0.68
other transport (incl. air & sea)	7.00	0.42	14.85	2.77	0.10	0.08
residential combustion	8.42	8.77	262.27	17.52	3.89	10.57
production of non-metallic minerals	5.76	3.98	0.72	0.88	0.00	0.00
metal production	2.65	27.07	42.53	0.20	0.00	0.00
production of chemicals	0.00	2.63	0.00	1.31	0.00	0.00
solvents	0.00	0.00	0.00	24.10	0.00	0.00
agricultural soils	2.30	0.00	0.00	0.00	0.00	0.00
manure management	0.00	0.00	0.00	0.00	0.00	0.00
enteric fermentation	0.00	0.00	0.00	0.00	0.00	0.00
agricultural waste burning	2.08	0.22	50.43	3.84	0.38	1.81
waste treatment	0.00	0.06	0.08	0.08	0.00	0.00
total anthropogenic	92.33	131.92	587.01	114.85	5.96	13.29

Table 3: Sectoral breakdown of the CIRCE emissions, BaU scenario projection for 2010.

Emissions source sector	Tg NOx	Tg SO2	Tg CO	Tg NMVOC	Tg BC	Tg OC
power industry	37.41	84.17	14.72	3.25	0.12	0.06
manufacturing industry	7.01	17.65	60.87	0.74	0.11	0.10
fuel production & transformation	2.52	8.00	23.07	37.47	0.04	0.00
road transport	24.09	2.07	135.39	21.48	1.35	0.69
other transport (incl. air & sea)	6.13	0.43	15.73	3.02	0.10	0.08
residential combustion	8.39	8.56	262.66	17.45	3.89	10.58
production of non-metallic minerals	6.02	4.12	0.73	0.89	0.00	0.00
metal production	2.92	28.91	48.41	0.23	0.00	0.00
production of chemicals	0.00	2.75	0.00	1.34	0.00	0.00
solvents	0.00	0.00	0.00	24.93	0.00	0.00
agricultural soils	2.39	0.00	0.00	0.00	0.00	0.00
manure management	0.00	0.00	0.00	0.00	0.00	0.00
enteric fermentation	0.00	0.00	0.00	0.00	0.00	0.00
agricultural waste burning	2.24	0.24	54.13	4.12	0.41	1.94
waste treatment	0.00	0.06	0.08	0.08	0.00	0.00
total anthropogenic	99.11	156.94	615.78	114.99	6.02	13.46

Table 4: Sectoral breakdown of the CIRCE emissions, BaU scenario projection for 2025.

Emissions source sector	Tg NOx	Tg SO2	Tg CO	Tg NMVOC	Tg BC	Tg OC
power industry	51.47	110.64	24.45	4.97	0.16	0.07
manufacturing industry	9.42	23.70	96.64	1.04	0.17	0.17
fuel production & transformation	3.41	10.07	34.69	42.87	0.06	0.00
road transport	29.09	2.67	171.23	27.38	1.59	0.89
other transport (incl. air & sea)	8.39	0.55	22.37	4.55	0.13	0.11
residential combustion	10.83	9.60	296.04	19.63	4.32	12.22
production of non-metallic minerals	5.89	4.05	0.73	0.88	0.00	0.00
metal production	2.70	27.91	42.84	0.20	0.00	0.00
production of chemicals	0.00	2.69	0.00	1.32	0.00	0.00
solvents	0.00	0.00	0.00	27.01	0.00	0.00
agricultural soils	2.67	0.00	0.00	0.00	0.00	0.00
manure management	0.00	0.00	0.00	0.00	0.00	0.00
enteric fermentation	0.00	0.00	0.00	0.00	0.00	0.00
agricultural waste burning	2.39	0.25	57.75	4.39	0.43	2.07
waste treatment	0.00	0.06	0.08	0.08	0.00	0.00
total anthropogenic	126.25	192.19	746.82	134.33	6.85	15.53

Table 5: Sectoral breakdown of the CIRCE emissions, BaU scenario projection for 2050.

Emissions source sector	Tg NOx	Tg SO2	Tg CO	Tg NMVOC	Tg BC	Tg OC
power industry	85.29	178.94	45.02	9.20	0.27	0.14
manufacturing industry	11.33	27.22	117.73	1.30	0.20	0.28
fuel production & transformation	2.79	8.01	28.36	41.18	0.04	0.00
road transport	27.95	2.60	178.08	28.75	1.40	0.94
other transport (incl. air & sea)	10.75	0.69	29.56	6.24	0.16	0.13
residential combustion	15.56	12.16	363.59	22.76	5.15	15.89
production of non-metallic minerals	5.79	3.99	0.72	0.88	0.00	0.00
metal production	2.63	27.34	41.35	0.20	0.00	0.00
production of chemicals	0.00	2.64	0.00	1.31	0.00	0.00
solvents	0.00	0.00	0.00	28.69	0.00	0.00
agricultural soils	3.26	0.00	0.00	0.00	0.00	0.00
manure management	0.00	0.00	0.00	0.00	0.00	0.00
enteric fermentation	0.00	0.00	0.00	0.00	0.00	0.00
agricultural waste burning	1.87	0.20	45.18	3.44	0.34	1.62
waste treatment	0.00 3	0.06	0.07	0.07	0.00	0.00
total anthropogenic	167.23	263.86	849.66	144.01	7.56	19.00

Table 6: PCMPI values for different counties (ranked according to the PCMPI in *SC_2005*).

country	<i>SC_natural</i>	<i>SC_2005</i>	<i>SC_2010</i>	<i>SC_2025</i>	<i>SC_2050</i>	country	<i>SC_natural</i>	<i>SC_2005</i>	<i>SC_2010</i>	<i>SC_2025</i>	<i>SC_2050</i>
Niger	1.38	1.51	1.52	1.55	1.57	Yemen	-0.41	-0.23	-0.22	-0.19	-0.12
Mauritania	1.21	1.30	1.29	1.30	1.33	Uzbekistan	-0.50	-0.26	-0.24	-0.21	-0.16
Chad	1.12	1.21	1.21	1.23	1.25	Eritrea	-0.40	-0.26	-0.25	-0.22	-0.17
Egypt	0.67	0.94	0.95	1.01	1.11	Netherlands	-0.83	-0.27	-0.27	-0.25	-0.21
Iraq	0.44	0.70	0.70	0.73	0.82	Ivory Coast	-0.35	-0.28	-0.28	-0.26	-0.24
Mali	0.54	0.62	0.61	0.63	0.65	Mongolia	-0.43	-0.30	-0.30	-0.27	-0.23
Libyan Arab Jamahiriya	0.42	0.61	0.62	0.63	0.67	Myanmar	-0.70	-0.34	-0.32	-0.24	-0.15
Kuwait	0.21	0.57	0.57	0.60	0.72	Greece	-0.66	-0.35	-0.34	-0.33	-0.27
Saudi Arabia	0.34	0.56	0.56	0.59	0.66	Bulgaria	-0.73	-0.35	-0.32	-0.33	-0.24
Nigeria	0.20	0.52	0.52	0.58	0.59	Congo, Democratic Republic	-0.45	-0.36	-0.36	-0.35	-0.34
Sudan	0.35	0.46	0.46	0.48	0.52	Chile	-0.79	-0.38	-0.35	-0.32	-0.29
United Arab Emirates	0.16	0.44	0.44	0.49	0.59	Tajikistan	-0.60	-0.38	-0.37	-0.34	-0.29
Bahrain	0.04	0.40	0.40	0.44	0.56	Cambodia	-0.68	-0.38	-0.37	-0.32	-0.30
Burkina Faso	0.30	0.40	0.41	0.43	0.45	Kyrgyz Republic	-0.56	-0.38	-0.37	-0.34	-0.29
Senegal	0.29	0.39	0.39	0.42	0.45	Cyprus	-0.62	-0.38	-0.37	-0.32	-0.25
China	-0.69	0.37	0.47	0.71	0.92	Czech Republic	-0.83	-0.39	-0.38	-0.37	-0.34
Qatar	0.01	0.36	0.35	0.40	0.51	Italy	-0.74	-0.39	-0.38	-0.37	-0.33
Pakistan	-0.28	0.29	0.29	0.40	0.53	Gibraltar	-0.67	-0.40	-0.39	-0.36	-0.31
Gambia	0.16	0.25	0.25	0.27	0.30	Turkey	-0.67	-0.40	-0.38	-0.32	-0.24
Syrian Arab Republic	-0.05	0.19	0.21	0.27	0.37	Albania	-0.69	-0.40	-0.38	-0.38	-0.32
Jordan	-0.15	0.18	0.20	0.30	0.47	Poland	-0.84	-0.40	-0.38	-0.38	-0.36
Guinea-Bissau	0.08	0.16	0.17	0.18	0.21	Indonesia	-0.75	-0.40	-0.40	-0.32	-0.28
Cameroon	0.04	0.16	0.16	0.19	0.20	San Marino	-0.77	-0.40	-0.39	-0.38	-0.34
Palestinian Terr.	-0.20	0.13	0.16	0.27	0.46	Liberia	-0.48	-0.42	-0.41	-0.39	-0.38
Korea	-0.76	0.11	0.18	0.33	0.46	Taiwan	-0.80	-0.42	-0.37	-0.27	-0.17
Turkmenistan	-0.05	0.08	0.09	0.11	0.15	Azerbaijan	-0.61	-0.42	-0.42	-0.38	-0.32
Macao	-0.79	0.07	0.15	0.35	0.55	Slovenia	-0.79	-0.42	-0.40	-0.39	-0.35
Israel	-0.29	0.05	0.07	0.19	0.38	Macedonia	-0.72	-0.42	-0.40	-0.40	-0.34
Hong Kong	-0.79	0.02	0.10	0.28	0.45	Germany	-0.84	-0.42	-0.42	-0.40	-0.37
Algeria	-0.19	0.02	0.03	0.06	0.09	Thailand	-0.76	-0.42	-0.41	-0.32	-0.26
Guinea	-0.06	0.01	0.01	0.03	0.05	Japan	-0.79	-0.42	-0.41	-0.38	-0.35
Benin	-0.15	-0.01	-0.00	0.01	0.03	Slovakia	-0.81	-0.43	-0.40	-0.39	-0.36
Cape Verde	-0.13	-0.01	-0.00	0.01	0.04	Kazakhstan	-0.62	-0.43	-0.41	-0.38	-0.33
Togo	-0.13	-0.02	-0.02	0.00	0.02	Spain	-0.75	-0.43	-0.43	-0.41	-0.37
Oman	-0.23	-0.03	-0.03	0.00	0.07	Croatia	-0.77	-0.44	-0.42	-0.41	-0.36
Central African Republic	-0.11	-0.06	-0.06	-0.05	-0.03	Hungary	-0.81	-0.45	-0.42	-0.41	-0.37
Bangladesh	-0.75	-0.08	-0.05	0.14	0.64	Lao People Democratic Republic	-0.74	-0.45	-0.43	-0.36	-0.29
Iran	-0.30	-0.08	-0.07	-0.04	0.05	Austria	-0.82	-0.45	-0.44	-0.42	-0.39
India	-0.67	-0.08	-0.04	0.15	0.79	Serbia and Montenegro	-0.75	-0.45	-0.40	-0.40	-0.34
Lebanon	-0.39	-0.09	-0.08	-0.01	0.11	France	-0.82	-0.45	-0.45	-0.43	-0.39
Tunisia	-0.37	-0.10	-0.09	-0.06	-0.02	Bhutan	-0.76	-0.45	-0.44	-0.35	-0.11
Ghana	-0.22	-0.12	-0.12	-0.09	-0.07	Jersey	-0.78	-0.46	-0.45	-0.42	-0.37
Dem. Peop. Rep. of Korea	-0.74	-0.12	-0.07	0.06	0.20	Angola	-0.52	-0.46	-0.46	-0.44	-0.44
Sierra Leone	-0.24	-0.16	-0.16	-0.14	-0.12	Guernsey	-0.77	-0.46	-0.45	-0.42	-0.38
Viet Nam	-0.80	-0.17	-0.15	-0.00	0.08	Romania	-0.78	-0.46	-0.43	-0.43	-0.35
Belgium	-0.84	-0.19	-0.18	-0.16	-0.12	Uganda	-0.65	-0.46	-0.46	-0.43	-0.39
Nepal	-0.70	-0.20	-0.18	-0.05	0.27	Bosnia-Herzegovina	-0.75	-0.46	-0.44	-0.43	-0.38
Malta	-0.49	-0.22	-0.21	-0.19	-0.14	Andorra	-0.79	-0.46	-0.46	-0.44	-0.40
Afghanistan	-0.41	-0.22	-0.22	-0.18	-0.15	Luxembourg	-0.85	-0.47	-0.47	-0.45	-0.42
Marocco	-0.43	-0.22	-0.22	-0.18	-0.12	Armenia	-0.67	-0.47	-0.47	-0.44	-0.38
Portugal	-0.74	-0.48	-0.48	-0.46	-0.43	Saint Lucia	-0.74	-0.65	-0.65	-0.63	-0.61
Ukraine	-0.79	-0.49	-0.45	-0.44	-0.39	Netherland Antilles	-0.74	-0.65	-0.65	-0.63	-0.61
Georgia	-0.70	-0.50	-0.49	-0.46	-0.41	Norway	-0.82	-0.65	-0.65	-0.63	-0.61
Republic of Moldova	-0.79	-0.50	-0.47	-0.46	-0.41	Martinique	-0.74	-0.65	-0.65	-0.63	-0.61
Rwanda	-0.73	-0.50	-0.50	-0.46	-0.44	Dominican Republic	-0.79	-0.66	-0.65	-0.62	-0.59
Switzerland	-0.82	-0.50	-0.51	-0.49	-0.46	Commonwealth of Dominica	-0.75	-0.66	-0.66	-0.64	-0.61
United States of America	-0.81	-0.51	-0.49	-0.47	-0.44	French Guiana	-0.72	-0.66	-0.66	-0.64	-0.62
Zambia	-0.62	-0.51	-0.51	-0.49	-0.48	Suriname	-0.72	-0.66	-0.66	-0.64	-0.62
United Kingdom	-0.81	-0.51	-0.51	-0.49	-0.45	Jamaica	-0.79	-0.66	-0.66	-0.63	-0.60
Denmark	-0.81	-0.51	-0.50	-0.48	-0.45	Bermuda	-0.80	-0.66	-0.66	-0.63	-0.61
Burundi	-0.70	-0.52	-0.51	-0.49	-0.46	El Salvador	-0.81	-0.66	-0.65	-0.63	-0.60
Liechtenstein	-0.82	-0.52	-0.52	-0.50	-0.47	Guadeloupe	-0.76	-0.66	-0.66	-0.64	-0.62
Singapore	-0.73	-0.52	-0.52	-0.47	-0.44	Mozambique	-0.74	-0.66	-0.66	-0.64	-0.63
Russia	-0.77	-0.52	-0.49	-0.48	-0.43	Kenya	-0.82	-0.66	-0.66	-0.63	-0.57
Equatorial Guinea	-0.60	-0.53	-0.53	-0.51	-0.51	Montserrat	-0.76	-0.66	-0.66	-0.64	-0.62
Ethiopia	-0.69	-0.53	-0.53	-0.50	-0.46	Paraguay	-0.75	-0.67	-0.66	-0.64	-0.63
Djibouti	-0.68	-0.54	-0.53	-0.50	-0.44	Cayman Islands	-0.80	-0.67	-0.66	-0.64	-0.61
South Africa	-0.77	-0.55	-0.53	-0.48	-0.40	Antigua and Barbuda	-0.76	-0.67	-0.66	-0.64	-0.62
Congo	-0.64	-0.55	-0.55	-0.54	-0.53	Cuba	-0.81	-0.67	-0.66	-0.64	-0.61
Sri Lanka	-0.80	-0.56	-0.55	-0.49	-0.42	Saint Kitts and Nevis	-0.77	-0.67	-0.67	-0.64	-0.62
Isle of Man	-0.78	-0.56	-0.55	-0.54	-0.51	Puerto Rico	-0.78	-0.67	-0.67	-0.64	-0.62
Malaysia	-0.77	-0.57	-0.56	-0.51	-0.47	Belize	-0.78	-0.67	-0.67	-0.65	-0.62
Mexico	-0.81	-0.57	-0.56	-0.52	-0.49	Bahamas	-0.81	-0.67	-0.67	-0.64	-0.61
Belarus	-0.83	-0.58	-0.56	-0.54	-0.50	Anguilla	-0.77	-0.67	-0.67	-0.65	-0.63
Peru	-0.82	-0.58	-0.57	-0.56	-0.54	United States Virgin Islands	-0.77	-0.67	-0.67	-0.65	-0.63
Lesotho	-0.79	-0.58	-0.57	-0.52	-0.41	British Virgin Islands	-0.78	-0.68	-0.67	-0.65	-0.63
Ireland	-0.79	-0.59	-0.58	-0.56	-0.53	Brunei Darussalam	-0.80	-0.68	-0.68	-0.65	-0.63
Lithuania	-0.84	-0.59	-0.58	-0.56	-0.51	United Rep. of Tanzania	-0.77	-0.68	-0.67	-0.65	-0.62
Malawi	-0.70	-0.59	-0.59	-0.57	-0.56	Zimbabwe	-0.76	-0.68	-0.67	-0.66	-0.64
Australia	-0.76	-0.59	-0.59	-0.57	-0.56	Turks and Caicos Islands	-0.80	-0.68	-0.67	-0.65	-0.62
Estonia	-0.82	-0.60	-0.59	-0.57	-0.53	Botswana	-0.78	-0.68	-0.67	-0.65	-0.60
Canada	-0.84	-0.60	-0.59	-0.56	-0.53	Guyana	-0.74	-0.68	-0.68	-0.66	-0.65
Sweden	-0.82	-0.60	-0.59	-0.58	-0.55	Argentina	-0.77	-0.68	-0.67	-0.65	-0.64
Latvia	-0.83	-0.60	-0.59	-0.56	-0.52	Iceland	-0.79	-0.69	-0.68	-0.67	-0.65
Finland	-0.81	-0.61	-0.60	-0.59	-0.56	Falkland Islands	-0.73	-0.69	-0.69	-0.68	-0.67

Table 6: Continued.

country	<i>SC_natural</i>	<i>SC_2005</i>	<i>SC_2010</i>	<i>SC_2025</i>	<i>SC_2050</i>	country	<i>SC_natural</i>	<i>SC_2005</i>	<i>SC_2010</i>	<i>SC_2025</i>	<i>SC_2050</i>
Faeroe Islands	-0.74	-0.62	-0.62	-0.60	-0.58	Brazil	-0.80	-0.70	-0.69	-0.66	-0.64
Guatemala	-0.79	-0.62	-0.62	-0.58	-0.55	Bolivia	-0.76	-0.70	-0.69	-0.68	-0.67
Saint Pierre and Miquelon	-0.77	-0.62	-0.62	-0.60	-0.58	Honduras	-0.81	-0.70	-0.70	-0.68	-0.65
Namibia	-0.68	-0.63	-0.63	-0.61	-0.60	Nicaragua	-0.81	-0.71	-0.70	-0.68	-0.66
Sao Tome and Principe	-0.68	-0.63	-0.63	-0.61	-0.60	Somalia	-0.79	-0.71	-0.71	-0.69	-0.65
Swaziland	-0.79	-0.63	-0.62	-0.59	-0.52	East Timor	-0.79	-0.72	-0.71	-0.70	-0.68
Venezuela	-0.76	-0.64	-0.64	-0.62	-0.60	Madagascar	-0.79	-0.73	-0.73	-0.71	-0.70
Barbados	-0.73	-0.64	-0.64	-0.62	-0.60	Greenland	-0.82	-0.73	-0.73	-0.71	-0.69
Gabon	-0.70	-0.65	-0.64	-0.63	-0.62	Maldives	-0.84	-0.73	-0.73	-0.69	-0.64
Trinidad and Tobago	-0.73	-0.65	-0.64	-0.62	-0.60	Panama	-0.83	-0.73	-0.73	-0.71	-0.68
Saint Vincent	-0.73	-0.65	-0.64	-0.62	-0.60	Uruguay	-0.81	-0.73	-0.73	-0.71	-0.70
Philippines	-0.84	-0.65	-0.64	-0.60	-0.57	Colombia	-0.83	-0.73	-0.73	-0.71	-0.70
Aruba	-0.74	-0.65	-0.64	-0.62	-0.60	Norfolk Island	-0.79	-0.74	-0.74	-0.72	-0.71
Haiti	-0.79	-0.65	-0.64	-0.61	-0.58	Saint Helena	-0.79	-0.74	-0.74	-0.73	-0.71
Grenada	-0.73	-0.65	-0.64	-0.63	-0.60	Svalbard	-0.83	-0.74	-0.74	-0.72	-0.71
New Zealand	-0.80	-0.74	-0.74	-0.72	-0.71	Niue	-0.85	-0.81	-0.81	-0.80	-0.79
Costa Rica	-0.84	-0.74	-0.74	-0.72	-0.70	Fiji	-0.85	-0.81	-0.81	-0.80	-0.79
Mauritius	-0.80	-0.75	-0.75	-0.74	-0.72	Papua New Guinea	-0.86	-0.82	-0.82	-0.80	-0.79
Reunion	-0.81	-0.76	-0.76	-0.74	-0.73	French Polynesia	-0.86	-0.82	-0.82	-0.81	-0.80
Ecuador	-0.86	-0.76	-0.76	-0.74	-0.73	Marshall Islands	-0.88	-0.83	-0.83	-0.82	-0.81
New Caledonia	-0.81	-0.77	-0.76	-0.75	-0.74	Palau	-0.90	-0.84	-0.83	-0.82	-0.80
Comoros	-0.83	-0.78	-0.78	-0.76	-0.74	American Samoa	-0.88	-0.85	-0.85	-0.84	-0.83
Mayotte	-0.83	-0.78	-0.78	-0.77	-0.75	Federated State of Micronesia	-0.90	-0.85	-0.85	-0.83	-0.82
Pitcairn	-0.83	-0.79	-0.79	-0.78	-0.77	Wallis and Futuna	-0.88	-0.85	-0.85	-0.84	-0.83
Tonga	-0.83	-0.79	-0.79	-0.78	-0.77	Western Samoa	-0.88	-0.85	-0.85	-0.84	-0.83
Northern Mariana Islands	-0.87	-0.79	-0.79	-0.77	-0.74	Solomon Islands	-0.89	-0.85	-0.85	-0.84	-0.83
Vanuatu	-0.83	-0.79	-0.79	-0.78	-0.77	Tokelau	-0.89	-0.85	-0.85	-0.84	-0.83
Seychelles	-0.85	-0.80	-0.79	-0.78	-0.76	Kiribati	-0.90	-0.87	-0.86	-0.86	-0.85
Guam	-0.88	-0.80	-0.80	-0.78	-0.76	Tuvalu	-0.90	-0.87	-0.87	-0.86	-0.85
Cook Islands	-0.85	-0.81	-0.81	-0.79	-0.78	Nauru	-0.91	-0.88	-0.88	-0.87	-0.86