

Online Supplementary Materials

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Supplementary Table 1. The data source for the prevalence of risk factors

Risk factors	Measurement	Year
Alcohol ^a	Total (recorded + unrecorded) per capita (15+) consumption	2015
Smoking ^b	Current smoking of any tobacco product (age-standardized rate)	2015
Physical inactivity ^c	Prevalence of insufficient physical activity (age-standardized rate)	2016*
Obesity ^d	Prevalence of obesity among adults, (BMI \geq 30, age-standardized)	2015
High cholesterol ^e	Raised total cholesterol (\geq 6.2 mmol/L, age-standardized)	2008*
Education ^f	Gross enrolment ratio, primary, both sexes (%)	*
Unemployment ^f	Unemployment, total (% of total labor force)	2015
Out-of-pocket ^f	Out-of-pocket expenditure (% of current health expenditure)	2015
GDP ^f	GDP per capita growth (annual %)	2015
Health expenditure ^f	Current health expenditure (% of GDP)	2015
Health system ^f	Physicians (per 1,000 people)	*
UHC ^g	UHC service coverage index	2015
BC screening ^h	Existence of national screening program for breast cancer	2015

*Selected year of these factors were between 2010-2019 as they were not available for 2015 in some countries.

Abbreviation: BMI, body mass index; UHC, universal health coverage; GDP, gross national income.

- a. [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/alcohol-total-\(recorded-unrecorded\)-per-capita-\(15-\)-consumption-with-95-ci-projections-to-2025](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/alcohol-total-(recorded-unrecorded)-per-capita-(15-)-consumption-with-95-ci-projections-to-2025)
- b. <https://www.who.int/data/gho/data/indicators/indicator-details/GHO/current-tobacco-smoking-age-standardised>
- c. [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-insufficient-physical-activity-among-adults-aged-18-years-\(age-standardized-estimate\)-\(-\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-insufficient-physical-activity-among-adults-aged-18-years-(age-standardized-estimate)-(-))
- d. [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-obesity-among-adults-bmi--30-\(age-standardized-estimate\)-\(-\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-obesity-among-adults-bmi--30-(age-standardized-estimate)-(-))
- e. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/chol_05
- f. <https://databank.worldbank.org/source/world-development-indicators>
- g. <https://www.who.int/data/gho/data/indicators/indicator-details/GHO/uhc-index-of-service-coverage>
- h. <https://www.who.int/data/gho/data/indicators/indicator-details/GHO/existence-of-national-screening-program-for-breast-cancer>

Supplementary Table 2. Joinpoint analysis for breast cancer, age-standardized incidence in 2000-2019 for female, all age

Country	Trend 1			Trend 2			Trend 3			Trend 4			Year	AAPC	Range
	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range			
Antigua and Barbuda	2000-2019	1.82	1.59 to 2.06										2000-2019	1.82	1.59 to 2.06
Argentina	2000-2015	-0.30	-0.48 to -0.11	2015-2019	1.42	0.18 to 2.68							2000-2019	0.06	-0.21 to 0.34
Australia	2000-2019	-1.04	-1.15 to -0.93										2000-2019	-1.04	-1.15 to -0.93
Austria	2000-2019	-0.80	-0.95 to -0.64										2000-2019	-0.80	-0.95 to -0.64
Barbados	2000-2003	3.04	2.01 to 4.09	2003-2006	-0.23	-2.08 to 1.65	2006-2011	3.13	2.57 to 3.69	2011-2019	-0.64	-0.81 to -0.47	2000-2019	0.98	0.66 to 1.31
Belgium	2000-2019	-1.04	-1.19 to -0.90										2000-2019	-1.04	-1.19 to -0.90
Brazil	2000-2011	0.30	0.13 to 0.48	2011-2019	-0.60	-0.84 to -0.37							2000-2019	-0.08	-0.21 to 0.05
Canada	2000-2013	-1.12	-1.28 to -0.96	2013-2019	0.67	0.17 to 1.17							2000-2019	-0.56	-0.73 to -0.38
Chile	2000-2013	1.57	1.26 to 1.88	2013-2019	-0.07	-0.88 to 0.75							2000-2019	1.05	0.74 to 1.36
China	2000-2010	3.20	3.00 to 3.41	2010-2016	1.44	0.99 to 1.90	2016-2019	3.95	3.01 to 4.90				2000-2019	2.76	2.55 to 2.97
Colombia	2000-2006	0.36	-0.47 to 1.20	2006-2015	2.10	1.65 to 2.56	2015-2019	0.09	-1.02 to 1.20				2000-2019	1.12	0.75 to 1.50
Costa Rica	2000-2019	1.30	0.98 to 1.62										2000-2019	1.30	0.98 to 1.62
Croatia	2000-2015	1.40	1.16 to 1.65	2015-2019	-3.64	-5.32 to -1.92							2000-2019	0.32	-0.06 to 0.71
Cuba	2000-2019	0.80	0.64 to 0.97										2000-2019	0.80	0.64 to 0.97
Denmark	2000-2006	0.48	-0.18 to 1.15	2006-2009	2.08	-1.58 to 5.88	2009-2014	-3.90	-5.02 to -2.76	2014-2019	-0.79	-1.65 to 0.09	2000-2019	-0.77	-1.39 to -0.15

Ecuador	2000-2004	7.86	4.24 to 11.61	2004-2019	1.69	1.35 to 2.03					2000-2019	2.96	2.24 to 3.69		
Estonia	2000-2019	0.35	0.13 to 0.57								2000-2019	0.35	0.13 to 0.57		
Fiji	2000-2005	0.64	-0.12 to 1.41	2005-2008	6.11	2.94 to 9.39	2008-2019	1.09	0.91 to 1.27		2000-2019	1.75	1.26 to 2.23		
Finland	2000-2010	0.94	0.43 to 1.46	2010-2019	-1.59	-2.17 to -1.01					2000-2019	-0.27	-0.62 to 0.09		
France	2000-2003	2.41	0.52 to 4.34	2003-2009	-0.45	-1.24 to 0.35	2009-2019	-1.43	-1.71 to -1.16		2000-2019	-0.53	-0.90 to -0.15		
Germany	2000-2009	0.51	0.24 to 0.79	2009-2019	-0.81	-1.03 to -0.58					2000-2019	-0.18	-0.35 to -0.02		
Greece	2000-2007	1.06	0.21 to 1.91	2007-2019	-0.41	-0.78 to -0.05					2000-2019	0.12	-0.23 to 0.48		
Grenada	2000-2004	0.00	-2.62 to 2.70	2004-2012	3.49	2.50 to 4.49	2012-2019	1.32	0.48 to 2.17		2000-2019	1.95	1.26 to 2.64		
Guatemala	2000-2012	2.52	2.27 to 2.78	2012-2019	0.37	-0.05 to 0.80					2000-2019	1.73	1.52 to 1.93		
Guyana	2000-2006	-1.90	-2.74 to -1.04	2006-2013	1.60	0.78 to 2.43	2013-2019	-0.07	-0.79 to 0.67		2000-2019	-0.04	-0.46 to 0.38		
Hungary	2000-2004	0.58	-0.96 to 2.14	2004-2009	-3.56	-5.09 to -2.00	2009-2019	0.20	-0.21 to 0.61		2000-2019	-0.73	-1.24 to -0.21		
Iceland	2000-2004	-0.21	-1.11 to 0.69	2004-2010	-3.45	-4.06 to -2.84	2010-2019	-0.97	-1.23 to -0.71		2000-2019	-1.60	-1.87 to -1.34		
Israel	2000-2009	-0.60	-0.96 to -0.23	2009-2012	-3.09	-6.71 to 0.66	2012-2019	-0.31	-0.80 to 0.18		2000-2019	-0.89	-1.47 to -0.31		
Italy	2000-2003	0.69	-0.99 to 2.40	2003-2019	-0.97	-1.10 to -0.84					2000-2019	-0.71	-0.97 to -0.45		
Japan	2000-2011	2.67	2.40 to 2.94	2011-2019	-0.61	-1.00 to -0.22					2000-2019	1.28	1.07 to 1.49		
Kuwait	2000-2005	-1.08	-3.04 to 0.92	2005-2008	5.11	-2.99 to 13.89	2008-2015	-3.50	-4.60 to -2.38	2015-2019	0.16	-1.66 to 2.01	2000-2019	-0.77	-2.04 to 0.51
Kyrgyzstan	2000-2019	-0.28	-0.41 to -0.16								2000-2019	-0.28	-0.41 to -0.16		
Latvia	2000-2006	3.39	2.30 to 4.49	2006-2019	-0.35	-0.67 to -0.04					2000-2019	0.81	0.44 to 1.18		
Lithuania	2000-2008	1.69	0.77 to 2.62	2008-2019	-1.06	-1.64 to -0.48					2000-2019	0.09	-0.38 to 0.56		

Luxembourg	2000-2010	0.28	-0.15 to 0.72	2010-2019	-2.93	-3.40 to -2.47							2000-2019	-1.25	-1.55 to -0.96
Malta	2000-2004	0.63	-0.44 to 1.71	2004-2013	-1.13	-1.49 to -0.77	2013-2019	0.16	-0.40 to 0.73				2000-2019	-0.35	-0.65 to -0.05
Mauritius	2000-2003	4.97	1.66 to 8.39	2003-2007	0.20	-2.62 to 3.10	2007-2017	2.84	2.38 to 3.30	2017-2019	-0.09	-4.36 to 4.38	2000-2019	2.30	1.47 to 3.13
Mexico	2000-2019	1.21	1.08 to 1.34										2000-2019	1.21	1.08 to 1.34
Netherlands	2000-2011	-0.02	-0.28 to 0.23	2011-2014	-2.68	-6.16 to 0.93	2014-2019	0.79	-0.03 to 1.61				2000-2019	-0.24	-0.80 to 0.33
New Zealand	2000-2019	0.09	-0.02 to 0.20										2000-2019	0.09	-0.02 to 0.20
Norway	2000-2011	-0.25	-0.63 to 0.14	2011-2019	-2.93	-3.52 to -2.34							2000-2019	-1.39	-1.69 to -1.08
Panama	2000-2006	0.42	-0.30 to 1.14	2006-2014	3.00	2.52 to 3.48	2014-2019	0.97	0.32 to 1.63				2000-2019	1.64	1.33 to 1.96
Philippines	2000-2007	-1.45	-1.71 to -1.19	2007-2010	1.75	-0.08 to 3.61	2010-2013	4.05	2.33 to 5.79	2013-2019	1.05	0.80 to 1.30	2000-2019	0.69	0.34 to 1.05
Poland	2000-2003	0.09	-1.36 to 1.56	2003-2008	1.91	1.02 to 2.82	2008-2015	0.32	-0.13 to 0.78	2015-2019	-0.89	-1.70 to -0.06	2000-2019	0.45	0.09 to 0.80
Puerto Rico	2000-2019	0.80	0.53 to 1.06										2000-2019	0.80	0.53 to 1.06
Republic of Korea	2000-2009	4.81	4.36 to 5.27	2009-2019	0.74	0.46 to 1.02							2000-2019	2.65	2.41 to 2.89
Republic of Moldova	2000-2009	1.77	1.17 to 2.37	2009-2012	-3.06	-8.88 to 3.14	2012-2015	4.02	-2.21 to 10.64	2015-2019	-3.90	-5.74 to -2.03	2000-2019	0.13	-1.14 to 1.41
Romania	2000-2019	0.98	0.81 to 1.16										2000-2019	0.98	0.81 to 1.16
Saint Lucia	2000-2008	-0.54	-1.50 to 0.43	2008-2012	3.82	-0.13 to 7.92	2012-2019	0.57	-0.33 to 1.49				2000-2019	0.78	-0.10 to 1.66
Serbia	2000-2002	-1.14	-5.03 to 2.91	2002-2009	1.98	1.31 to 2.66	2009-2019	0.50	0.21 to 0.79				2000-2019	0.87	0.41 to 1.33
Singapore	2000-2012	1.70	1.39 to 2.01	2012-2019	-1.86	-2.41 to -1.31							2000-2019	0.37	0.11 to 0.63
Slovakia	2000-2004	-1.53	-3.24 to 0.22	2004-2011	2.37	1.47 to 3.29	2011-2019	-0.08	-0.60 to 0.44				2000-2019	0.51	0.02 to 1.00
Slovenia	2000-2019	-0.85	-1.06 to -0.64										2000-2019	-0.85	-1.06 to -0.64

Spain	2000-2008	0.15	-0.27 to 0.58	2008-2019	-0.67	-0.91 to -0.43					2000-2019	-0.32	-0.53 to -0.12
Sweden	2000-2004	1.13	-0.36 to 2.65	2004-2013	-0.52	-1.01 to -0.03	2013-2019	-1.74	-2.48 to -0.98		2000-2019	-0.56	-0.97 to -0.15
Switzerland	2000-2012	-1.15	-1.40 to -0.91	2012-2015	-3.95	-7.94 to 0.22	2015-2019	0.22	-1.12 to 1.57		2000-2019	-1.32	-1.97 to -0.65
Trinidad and Tobago	2000-2008	1.97	1.29 to 2.66	2008-2019	-0.45	-0.80 to -0.09					2000-2019	0.56	0.24 to 0.89
United Kingdom	2000-2008	-0.35	-0.61 to -0.09	2008-2013	-1.32	-2.05 to -0.59	2013-2019	0.28	-0.11 to 0.68		2000-2019	-0.41	-0.64 to -0.18
United States of America	2000-2007	-1.75	-2.08 to -1.43	2007-2014	-1.06	-1.46 to -0.66	2014-2019	-0.40	-0.93 to 0.13		2000-2019	-1.14	-1.36 to -0.93
Uruguay	2000-2019	-0.32	-0.43 to -0.21								2000-2019	-0.32	-0.43 to -0.21

Supplementary Table 3. Joinpoint analysis for breast cancer, age-standardized mortality in 2000-2019 for female, all age

Country	Trend 1			Trend 2			Trend 3			Trend 4			Year	AAPC	Range
	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range			
Antigua and Barbuda	2000-2005	-0.55	-0.83 to -0.27	2005-2009	0.63	0.05 to 1.22	2009-2015	2.56	2.32 to 2.80	2015-2019	-0.51	-0.80 to -0.21	2000-2019	0.68	0.53 to 0.83
Argentina	2000-2003	-0.06	-1.33 to 1.23	2003-2014	-1.30	-1.50 to -1.11	2014-2019	0.09	-0.44 to 0.63				2000-2019	-0.74	-0.98 to -0.50
Australia	2000-2005	-2.40	-2.89 to -1.91	2005-2017	-1.15	-1.30 to -1.01	2017-2019	0.21	-1.80 to 2.25				2000-2019	-1.34	-1.58 to -1.11
Austria	2000-2019	-1.46	-1.54 to -1.38										2000-2019	-1.46	-1.54 to -1.38
Barbados	2000-2003	1.99	1.10 to 2.90	2003-2006	-0.94	-2.57 to 0.72	2006-2011	1.61	1.11 to 2.11	2011-2019	-0.67	-0.82 to -0.51	2000-2019	0.30	0.01 to 0.59
Belgium	2000-2008	-2.61	-2.99 to -2.22	2008-2019	-1.43	-1.68 to -1.18							2000-2019	-1.93	-2.13 to -1.73
Brazil	2000-2016	-1.07	-1.14 to -1.01	2016-2019	-2.01	-2.72 to -1.30							2000-2019	-1.22	-1.34 to -1.11
Canada	2000-2013	-2.07	-2.15 to -1.98	2013-2019	0.00	-0.28 to 0.27							2000-2019	-1.42	-1.52 to -1.32
Chile	2000-2007	-0.96	-1.22 to -0.69	2007-2010	0.48	-1.42 to 2.41	2010-2019	-0.93	-1.09 to -0.77				2000-2019	-0.72	-1.01 to -0.42
China	2000-2004	0.41	-0.15 to 0.98	2004-2007	-1.60	-3.26 to 0.08	2007-2016	-0.50	-0.67 to -0.33	2016-2019	1.39	0.67 to 2.12	2000-2019	-0.19	-0.47 to 0.10
Colombia	2000-2007	-0.85	-1.47 to -0.22	2007-2016	0.09	-0.36 to 0.54	2016-2019	-1.57	-3.42 to 0.32				2000-2019	-0.52	-0.91 to -0.13
Costa Rica	2000-2019	0.26	-0.01 to 0.53										2000-2019	0.26	-0.01 to 0.53
Croatia	2000-2015	0.24	0.01 to 0.48	2015-2019	-3.96	-5.64 to -2.25							2000-2019	-0.66	-1.04 to -0.28
Cuba	2000-2019	-0.01	-0.17 to 0.15										2000-2019	-0.01	-0.17 to 0.15
Denmark	2000-2005	-2.39	-2.83 to -1.94	2005-2009	-1.25	-2.26 to -0.24	2009-2014	-4.21	-4.85 to -3.57	2014-2019	-1.20	-1.68 to -0.71	2000-2019	-2.32	-2.60 to -2.04

Ecuador	2000-2005	4.79	2.69 to 6.93	2005-2019	0.55	0.22 to 0.88							2000-2019	1.65	1.10 to 2.20
Estonia	2000-2013	-2.35	-2.71 to -2.00	2013-2019	0.21	-1.03 to 1.47							2000-2019	-1.55	-1.97 to -1.13
Fiji	2000-2005	0.83	-0.07 to 1.73	2005-2009	4.28	2.48 to 6.12	2009-2019	0.44	0.21 to 0.68				2000-2019	1.34	0.93 to 1.76
Finland	2000-2012	-1.28	-1.43 to -1.13	2012-2015	-2.36	-4.86 to 0.20	2015-2019	-0.83	-1.66 to 0.00				2000-2019	-1.36	-1.76 to -0.95
France	2000-2002	-0.30	-2.46 to 1.91	2002-2016	-2.22	-2.33 to -2.10	2016-2019	-0.57	-1.70 to 0.57				2000-2019	-1.76	-2.03 to -1.49
Germany	2000-2007	-1.56	-1.79 to -1.34	2007-2019	-0.82	-0.92 to -0.72							2000-2019	-1.10	-1.19 to -1.00
Greece	2000-2007	-0.78	-1.11 to -0.45	2007-2014	-1.52	-1.94 to -1.10	2014-2019	0.75	0.18 to 1.33				2000-2019	-0.66	-0.88 to -0.43
Grenada	2000-2005	0.58	0.16 to 1.01	2005-2011	3.13	2.75 to 3.52	2011-2017	1.71	1.38 to 2.05	2017-2019	-2.12	-3.51 to -0.71	2000-2019	1.45	1.23 to 1.66
Guatemala	2000-2008	0.90	0.59 to 1.22	2008-2011	2.17	-0.29 to 4.68	2011-2016	0.68	-0.03 to 1.38	2016-2019	-1.30	-2.30 to -0.29	2000-2019	0.69	0.28 to 1.10
Guyana	2000-2006	-1.54	-2.33 to -0.74	2006-2014	0.92	0.32 to 1.52	2014-2019	-1.34	-2.24 to -0.42				2000-2019	-0.46	-0.84 to -0.07
Hungary	2000-2003	0.32	-1.97 to 2.67	2003-2009	-3.81	-4.84 to -2.77	2009-2019	-0.64	-1.03 to -0.24				2000-2019	-1.50	-1.98 to -1.02
Iceland	2000-2004	-2.39	-3.07 to -1.71	2004-2010	-3.60	-4.08 to -3.11	2010-2019	-1.46	-1.66 to -1.25				2000-2019	-2.33	-2.54 to -2.12
Israel	2000-2015	-2.77	-2.87 to -2.67	2015-2019	-0.18	-0.93 to 0.58							2000-2019	-2.23	-2.39 to -2.07
Italy	2000-2006	-2.30	-2.74 to -1.86	2006-2019	-1.24	-1.38 to -1.09							2000-2019	-1.57	-1.73 to -1.42
Japan	2000-2011	0.83	0.66 to 1.01	2011-2019	-1.01	-1.29 to -0.74							2000-2019	0.05	-0.09 to 0.19
Kuwait	2000-2009	0.29	-0.53 to 1.12	2009-2015	-5.58	-7.22 to -3.92	2015-2019	-0.95	-3.14 to 1.29				2000-2019	-1.86	-2.58 to -1.13
Kyrgyzstan	2000-2019	-1.41	-1.54 to -1.29										2000-2019	-1.41	-1.54 to -1.29
Latvia	2000-2006	1.68	0.80 to 2.57	2006-2019	-1.62	-1.90 to -1.35							2000-2019	-0.59	-0.90 to -0.28
Lithuania	2000-2008	1.10	0.37 to 1.84	2008-2019	-1.97	-2.44 to -1.51							2000-2019	-0.69	-1.06 to -0.31

Luxembourg	2000-2003	-3.09	-4.84 to -1.31	2003-2011	-1.19	-1.67 to -0.71	2011-2017	-3.21	-3.99 to -2.43	2017-2019	-0.87	-4.35 to 2.73	2000-2019	-2.10	-2.59 to -1.61
Malta	2000-2013	-2.35	-2.47 to -2.24	2013-2019	-1.27	-1.66 to -0.88							2000-2019	-2.01	-2.15 to -1.88
Mauritius	2000-2003	4.64	1.51 to 7.86	2003-2007	-0.36	-3.03 to 2.39	2007-2017	2.18	1.74 to 2.62	2017-2019	-1.19	-5.24 to 3.04	2000-2019	1.66	0.88 to 2.45
Mexico	2000-2019	0.33	0.20 to 0.45										2000-2019	0.33	0.20 to 0.45
Netherlands	2000-2003	-3.98	-4.56 to -3.38	2003-2011	-1.18	-1.34 to -1.01	2011-2014	-2.47	-3.66 to -1.26	2014-2019	-0.03	-0.31 to 0.24	2000-2019	-1.53	-1.73 to -1.33
New Zealand	2000-2014	-1.84	-1.97 to -1.71	2014-2019	-0.44	-1.05 to 0.18							2000-2019	-1.48	-1.65 to -1.30
Norway	2000-2006	-2.57	-2.91 to -2.24	2006-2013	-1.92	-2.26 to -1.58	2013-2017	-3.16	-4.15 to -2.15	2017-2019	-0.46	-2.51 to 1.64	2000-2019	-2.24	-2.53 to -1.94
Panama	2000-2002	-1.18	-3.48 to 1.17	2002-2010	1.43	1.14 to 1.71	2010-2013	2.79	0.94 to 4.66	2013-2019	-1.24	-1.52 to -0.96	2000-2019	0.51	0.16 to 0.87
Philippines	2000-2007	-1.97	-2.21 to -1.73	2007-2011	0.99	0.15 to 1.84	2011-2015	2.54	1.77 to 3.32	2015-2019	0.19	-0.24 to 0.62	2000-2019	0.04	-0.19 to 0.28
Poland	2000-2019	-0.89	-0.98 to -0.80										2000-2019	-0.89	-0.98 to -0.80
Puerto Rico	2000-2019	-0.42	-0.63 to -0.20										2000-2019	-0.42	-0.63 to -0.20
Republic of Korea	2000-2010	0.77	0.64 to 0.89	2010-2013	0.08	-1.31 to 1.50	2013-2016	-1.26	-2.59 to 0.08	2016-2019	-0.13	-0.78 to 0.53	2000-2019	0.19	-0.09 to 0.48
Republic of Moldova	2000-2009	1.31	0.82 to 1.79	2009-2012	-4.09	-8.83 to 0.90	2012-2015	2.06	-3.06 to 7.46	2015-2019	-5.02	-6.57 to -3.44	2000-2019	-0.80	-1.84 to 0.25
Romania	2000-2019	-0.21	-0.37 to -0.06										2000-2019	-0.21	-0.37 to -0.06
Saint Lucia	2000-2008	-1.55	-2.02 to -1.08	2008-2019	1.20	0.94 to 1.45							2000-2019	0.03	-0.20 to 0.26
Serbia	2000-2002	-1.99	-4.89 to 1.00	2002-2005	1.40	-1.59 to 4.47	2005-2019	-0.69	-0.83 to -0.55				2000-2019	-0.50	-1.02 to 0.02
Singapore	2000-2007	-1.11	-1.66 to -0.55	2007-2012	-0.08	-1.25 to 1.10	2012-2019	-2.59	-3.04 to -2.15				2000-2019	-1.39	-1.75 to -1.03
Slovakia	2000-2004	-3.46	-4.88 to -2.01	2004-2012	0.90	0.29 to 1.52	2012-2019	-1.26	-1.83 to -0.69				2000-2019	-0.83	-1.24 to -0.42
Slovenia	2000-2019	-2.48	-2.67 to -2.29										2000-2019	-2.48	-2.67 to -2.29

Spain	2000-2004	-2.59	-3.17 to -2.02	2004-2014	-1.43	-1.60 to -1.26	2014-2019	-0.34	-0.74 to 0.07				2000-2019	-1.39	-1.56 to -1.22
Sweden	2000-2004	0.00	-0.56 to 0.56	2004-2009	-1.38	-1.92 to -0.84	2009-2013	-0.45	-1.30 to 0.40	2013-2019	-1.97	-2.26 to -1.68	2000-2019	-1.08	-1.32 to -0.85
Switzerland	2000-2005	-2.91	-3.34 to -2.47	2005-2012	-1.35	-1.68 to -1.01	2012-2015	-2.90	-4.83 to -0.92	2015-2019	-0.50	-1.13 to 0.13	2000-2019	-1.83	-2.16 to -1.50
Trinidad and Tobago	2000-2008	0.25	-0.33 to 0.85	2008-2019	-0.83	-1.15 to -0.51							2000-2019	-0.38	-0.66 to -0.09
United Kingdom	2000-2010	-2.54	-2.65 to -2.43	2010-2014	-1.65	-2.38 to -0.92	2014-2019	0.00	-0.33 to 0.33				2000-2019	-1.69	-1.86 to -1.53
United States of America	2000-2007	-2.16	-2.35 to -1.96	2007-2013	-1.58	-1.90 to -1.26	2013-2019	-0.31	-0.55 to -0.08				2000-2019	-1.40	-1.52 to -1.27
Uruguay	2000-2005	-0.67	-1.21 to -0.12	2005-2012	-1.73	-2.14 to -1.32	2012-2019	-0.48	-0.81 to -0.15				2000-2019	-0.99	-1.21 to -0.78

Supplementary Table 4. Joinpoint analysis for breast cancer, age-standardized incidence in 2000-2019 for female, younger than 40 years

Country	Trend 1			Trend 2			Trend 3			Trend 4			Year	AAPC	Range
	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range			
Antigua and Barbuda	2000-2003	-3.71	-4.12 to -3.30	2003-2006	6.86	6.01 to 7.72	2006-2019	0.39	0.35 to 0.43				2000-2019	0.72	0.59 to 0.85
Argentina	2000-2004	-1.34	-2.90 to 0.23	2004-2015	0.07	-0.30 to 0.44	2015-2019	2.11	0.74 to 3.50				2000-2019	0.19	-0.25 to 0.64
Australia	2000-2019	-0.84	-1.00 to -0.68										2000-2019	-0.84	-1.00 to -0.68
Austria	2000-2004	-3.36	-6.21 to -0.43	2004-2019	-0.05	-0.48 to 0.39							2000-2019	-0.76	-1.41 to -0.10
Barbados	2000-2003	4.77	1.62 to 8.02	2003-2006	-2.79	-8.45 to 3.21	2006-2010	5.03	2.02 to 8.13	2010-2019	-1.04	-1.55 to -0.52	2000-2019	0.83	-0.26 to 1.93
Belgium	2000-2007	-0.09	-1.04 to 0.86	2007-2019	-1.73	-2.18 to -1.28							2000-2019	-1.13	-1.54 to -0.72
Brazil	2000-2016	0.84	0.73 to 0.94	2016-2019	-1.86	-3.04 to -0.65							2000-2019	0.41	0.21 to 0.60
Canada	2000-2009	-0.17	-0.67 to 0.33	2009-2012	-2.91	-8.46 to 2.97	2012-2019	0.91	0.12 to 1.70				2000-2019	-0.21	-1.11 to 0.69
Chile	2000-2015	2.61	2.31 to 2.91	2015-2019	-1.26	-3.18 to 0.70							2000-2019	1.78	1.34 to 2.23
China	2000-2004	-1.11	-2.60 to 0.40	2004-2010	3.21	2.23 to 4.19	2010-2016	1.75	0.85 to 2.67	2016-2019	4.67	2.64 to 6.73	2000-2019	2.05	1.52 to 2.59
Colombia	2000-2007	1.44	0.64 to 2.24	2007-2010	5.42	0.00 to 11.13	2010-2016	2.46	1.33 to 3.59	2016-2019	0.01	-2.27 to 2.35	2000-2019	2.15	1.25 to 3.05
Costa Rica	2000-2019	1.79	1.36 to 2.22										2000-2019	1.79	1.36 to 2.22
Croatia	2000-2014	1.57	1.04 to 2.11	2014-2019	-3.63	-6.09 to -1.11							2000-2019	0.18	-0.54 to 0.90
Cuba	2000-2011	-0.58	-0.99 to -0.18	2011-2019	1.57	0.85 to 2.30							2000-2019	0.32	-0.03 to 0.67
Denmark	2000-2019	-0.98	-1.29 to -0.66										2000-2019	-0.98	-1.29 to -0.66

Ecuador	2000-2003	9.01	3.72 to 14.57	2003-2019	1.61	1.31 to 1.91							2000-2019	2.74	1.96 to 3.52
Estonia	2000-2006	-2.55	-4.00 to -1.08	2006-2019	1.00	0.51 to 1.50							2000-2019	-0.14	-0.67 to 0.40
Fiji	2000-2005	1.25	-0.57 to 3.11	2005-2008	6.99	-0.72 to 15.29	2008-2019	1.49	1.03 to 1.95				2000-2019	2.28	1.09 to 3.48
Finland	2000-2019	-1.00	-1.34 to -0.66										2000-2019	-1.00	-1.34 to -0.66
France	2000-2009	0.63	0.05 to 1.22	2009-2019	-1.58	-2.08 to -1.07							2000-2019	-0.54	-0.89 to -0.18
Germany	2000-2007	-0.60	-1.03 to -0.16	2007-2010	2.02	-1.38 to 5.53	2010-2019	-0.21	-0.54 to 0.11				2000-2019	-0.01	-0.53 to 0.51
Greece	2000-2004	3.01	0.23 to 5.86	2004-2019	0.01	-0.35 to 0.37							2000-2019	0.63	0.04 to 1.23
Grenada	2000-2002	10.33	9.58 to 11.09	2002-2007	-1.40	-1.59 to -1.21	2007-2010	6.06	5.44 to 6.69	2010-2019	0.50	0.45 to 0.55	2000-2019	1.85	1.73 to 1.96
Guatemala	2000-2019	1.22	0.85 to 1.59										2000-2019	1.22	0.85 to 1.59
Guyana	2000-2003	-4.23	-9.55 to 1.42	2003-2019	0.31	-0.15 to 0.77							2000-2019	-0.42	-1.32 to 0.48
Hungary	2000-2007	-1.03	-1.83 to -0.21	2007-2010	-4.31	-10.25 to 2.02	2010-2019	0.98	0.40 to 1.56				2000-2019	-0.61	-1.58 to 0.37
Iceland	2000-2004	-0.65	-1.61 to 0.32	2004-2007	-3.64	-6.65 to -0.53	2007-2019	-1.02	-1.21 to -0.82				2000-2019	-1.36	-1.85 to -0.86
Israel	2000-2014	-0.76	-1.23 to -0.29	2014-2017	4.49	-4.45 to 14.28	2017-2019	-4.35	-12.40 to 4.44				2000-2019	-0.34	-1.87 to 1.22
Italy	2000-2003	0.46	-1.12 to 2.07	2003-2008	-2.22	-3.19 to -1.23	2008-2019	-1.01	-1.23 to -0.78				2000-2019	-1.10	-1.44 to -0.75
Japan	2000-2009	1.23	0.86 to 1.61	2009-2019	-1.39	-1.70 to -1.08							2000-2019	-0.16	-0.38 to 0.07
Kuwait	2000-2016	-2.46	-3.03 to -1.89	2016-2019	2.96	-2.63 to 8.87							2000-2019	-1.63	-2.54 to -0.71
Kyrgyzstan	2000-2012	-0.29	-0.61 to 0.03	2012-2016	-2.75	-5.31 to -0.11	2016-2019	1.48	-1.16 to 4.19				2000-2019	-0.54	-1.19 to 0.11
Latvia	2000-2003	-1.54	-6.47 to 3.65	2003-2006	6.44	-3.98 to 17.98	2006-2011	-3.24	-6.44 to 0.06	2011-2019	0.74	-0.53 to 2.03	2000-2019	0.18	-1.62 to 2.01
Lithuania	2000-2007	2.49	0.57 to 4.44	2007-2019	-0.21	-1.12 to 0.71							2000-2019	0.78	-0.06 to 1.62

Luxembourg	2000-2005	-1.31	-2.12 to -0.50	2005-2010	0.52	-0.62 to 1.67	2010-2019	-2.53	-2.85 to -2.21				2000-2019	-1.41	-1.77 to -1.06
Malta	2000-2005	3.52	1.07 to 6.04	2005-2019	0.41	-0.06 to 0.89							2000-2019	1.22	0.55 to 1.90
Mauritius	2000-2019	2.21	1.91 to 2.52										2000-2019	2.21	1.91 to 2.52
Mexico	2000-2012	0.13	-0.30 to 0.55	2012-2019	2.20	1.35 to 3.05							2000-2019	0.88	0.51 to 1.26
Netherlands	2000-2011	-0.68	-1.04 to -0.33	2011-2014	-3.64	-9.02 to 2.05	2014-2019	1.65	0.29 to 3.02				2000-2019	-0.55	-1.44 to 0.34
New Zealand	2000-2019	0.30	0.05 to 0.54										2000-2019	0.30	0.05 to 0.54
Norway	2000-2010	-0.44	-1.00 to 0.13	2010-2019	-2.98	-3.66 to -2.29							2000-2019	-1.65	-2.05 to -1.24
Panama	2000-2006	-1.03	-2.02 to -0.04	2006-2017	3.40	3.00 to 3.81	2017-2019	-1.30	-5.54 to 3.13				2000-2019	1.48	0.93 to 2.03
Philippines	2000-2007	0.16	-0.31 to 0.64	2007-2010	2.57	-0.70 to 5.94	2010-2013	4.51	1.43 to 7.68	2013-2019	1.14	0.68 to 1.61	2000-2019	1.53	0.88 to 2.17
Poland	2000-2003	-1.11	-2.57 to 0.36	2003-2009	1.10	0.40 to 1.80	2009-2019	0.32	0.10 to 0.55				2000-2019	0.34	0.03 to 0.65
Puerto Rico	2000-2019	1.26	0.88 to 1.64										2000-2019	1.26	0.88 to 1.64
Republic of Korea	2000-2009	4.88	4.39 to 5.37	2009-2019	-0.21	-0.57 to 0.15							2000-2019	2.17	1.89 to 2.44
Republic of Moldova	2000-2013	-0.73	-1.14 to -0.32	2013-2016	2.96	-4.96 to 11.53	2016-2019	-6.11	-9.99 to -2.06				2000-2019	-1.03	-2.32 to 0.27
Romania	2000-2008	-0.54	-1.36 to 0.28	2008-2019	1.82	1.33 to 2.32							2000-2019	0.82	0.41 to 1.23
Saint Lucia	2000-2006	-2.65	-5.31 to 0.08	2006-2012	8.51	5.20 to 11.93	2012-2017	-4.62	-8.40 to -0.69	2017-2019	5.01	-8.12 to 20.02	2000-2019	1.00	-0.90 to 2.95
Serbia	2000-2006	-2.26	-3.17 to -1.33	2006-2019	1.30	0.99 to 1.60							2000-2019	0.16	-0.17 to 0.50
Singapore	2000-2012	0.96	0.19 to 1.73	2012-2019	-4.12	-5.71 to -2.52							2000-2019	-0.94	-1.65 to -0.23
Slovakia	2000-2003	-2.75	-5.75 to 0.36	2003-2019	0.55	0.31 to 0.79							2000-2019	0.02	-0.47 to 0.52
Slovenia	2000-2004	-0.24	-2.05 to 1.60	2004-2007	-5.21	-10.82 to 0.75	2007-2010	4.11	-2.05 to 10.66	2010-2019	-0.67	-1.23 to -0.12	2000-2019	-0.58	-1.81 to 0.67

Spain	2000-2005	-1.13	-2.13 to -0.11	2005-2009	0.98	-1.19 to 3.19	2009-2017	-1.74	-2.32 to -1.16	2017-2019	2.79	-1.87 to 7.68	2000-2019	-0.54	-1.20 to 0.12
Sweden	2000-2019	-0.52	-0.79 to -0.24										2000-2019	-0.52	-0.79 to -0.24
Switzerland	2000-2011	-1.16	-1.63 to -0.69	2011-2015	-4.78	-8.35 to -1.06	2015-2019	1.27	-1.21 to 3.82				2000-2019	-1.43	-2.31 to -0.54
Trinidad and Tobago	2000-2008	1.45	0.26 to 2.66	2008-2019	-1.17	-1.88 to -0.45							2000-2019	-0.07	-0.67 to 0.53
United Kingdom	2000-2012	-0.61	-0.93 to -0.28	2012-2019	0.82	0.05 to 1.59							2000-2019	-0.09	-0.41 to 0.24
United States of America	2000-2013	-1.64	-1.88 to -1.39	2013-2017	1.96	-0.57 to 4.55	2017-2019	-2.68	-7.44 to 2.33				2000-2019	-1.00	-1.68 to -0.32
Uruguay	2000-2019	-0.31	-0.46 to -0.16										2000-2019	-0.31	-0.46 to -0.16

Supplementary Table 5. Joinpoint analysis for breast cancer, age-standardized mortality in 2000-2019 for female, younger than 40 years

Country	Trend 1			Trend 2			Trend 3			Trend 4			Year	AAPC	Range
	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range			
Antigua and Barbuda	2000-2004	-1.50	-2.09 to -0.91	2004-2011	0.08	-0.23 to 0.40	2011-2019	0.71	0.51 to 0.92				2000-2019	0.01	-0.16 to 0.18
Argentina	2000-2005	-2.43	-3.22 to -1.65	2005-2015	-0.96	-1.29 to -0.64	2015-2019	0.52	-0.54 to 1.59				2000-2019	-1.04	-1.36 to -0.73
Australia	2000-2005	-3.49	-4.21 to -2.77	2005-2014	-2.01	-2.39 to -1.62	2014-2017	0.47	-3.13 to 4.20	2017-2019	-2.49	-6.03 to 1.17	2000-2019	-2.07	-2.70 to -1.43
Austria	2000-2005	-4.37	-5.86 to -2.85	2005-2019	-1.12	-1.49 to -0.75							2000-2019	-1.98	-2.43 to -1.53
Barbados	2000-2003	2.05	0.81 to 3.30	2003-2006	-2.63	-4.98 to -0.21	2006-2010	2.03	0.79 to 3.29	2010-2019	-0.83	-1.05 to -0.61	2000-2019	-0.07	-0.52 to 0.38
Belgium	2000-2019	-2.64	-2.84 to -2.43										2000-2019	-2.64	-2.84 to -2.43
Brazil	2000-2005	-1.19	-1.59 to -0.78	2005-2008	0.43	-1.35 to 2.25	2008-2016	-0.54	-0.77 to -0.31	2016-2019	-2.54	-3.37 to -1.71	2000-2019	-0.88	-1.17 to -0.58
Canada	2000-2009	-1.36	-1.74 to -0.97	2009-2012	-3.84	-8.29 to 0.82	2012-2019	-0.03	-0.68 to 0.62				2000-2019	-1.27	-1.98 to -0.55
Chile	2000-2007	-0.56	-1.23 to 0.12	2007-2015	0.88	0.21 to 1.56	2015-2019	-2.25	-3.79 to -0.69				2000-2019	-0.32	-0.77 to 0.14
China	2000-2004	-5.00	-6.35 to -3.63	2004-2013	-1.88	-2.37 to -1.38	2013-2019	0.54	-0.31 to 1.39				2000-2019	-1.79	-2.20 to -1.38
Colombia	2000-2016	0.94	0.66 to 1.21	2016-2019	-1.54	-4.74 to 1.76							2000-2019	0.54	0.02 to 1.07
Costa Rica	2000-2019	0.53	0.11 to 0.95										2000-2019	0.53	0.11 to 0.95
Croatia	2000-2014	-0.39	-0.90 to 0.12	2014-2019	-4.73	-7.30 to -2.08							2000-2019	-1.55	-2.28 to -0.81
Cuba	2000-2011	-1.88	-2.32 to -1.45	2011-2019	0.69	-0.14 to 1.53							2000-2019	-0.81	-1.20 to -0.41
Denmark	2000-2016	-3.47	-3.76 to -3.17	2016-2019	0.75	-3.92 to 5.64							2000-2019	-2.81	-3.52 to -2.10

Ecuador	2000-2003	6.32	1.77 to 11.08	2003-2019	0.22	-0.06 to 0.51							2000-2019	1.16	0.49 to 1.84
Estonia	2000-2008	-5.99	-6.82 to -5.16	2008-2019	-0.53	-1.19 to 0.14							2000-2019	-2.87	-3.34 to -2.39
Fiji	2000-2004	0.36	-0.62 to 1.34	2004-2008	5.73	4.22 to 7.27	2008-2019	0.68	0.50 to 0.86				2000-2019	1.65	1.31 to 2.00
Finland	2000-2013	-2.79	-3.15 to -2.43	2013-2016	-6.05	-13.76 to 2.34	2016-2019	1.81	-2.47 to 6.27				2000-2019	-2.60	-3.94 to -1.25
France	2000-2006	-2.37	-3.04 to -1.70	2006-2009	-0.94	-5.09 to 3.39	2009-2017	-3.00	-3.60 to -2.40	2017-2019	1.47	-3.44 to 6.63	2000-2019	-2.02	-2.79 to -1.23
Germany	2000-2006	-3.37	-3.81 to -2.92	2006-2019	-0.50	-0.67 to -0.34							2000-2019	-1.42	-1.59 to -1.25
Greece	2000-2019	-0.45	-0.63 to -0.28										2000-2019	-0.45	-0.63 to -0.28
Grenada	2000-2009	0.47	0.24 to 0.69	2009-2017	1.12	0.81 to 1.43	2017-2019	-3.27	-5.50 to -0.99				2000-2019	0.34	0.07 to 0.61
Guatemala	2000-2019	0.19	-0.15 to 0.53										2000-2019	0.19	-0.15 to 0.53
Guyana	2000-2003	-4.70	-7.42 to -1.90	2003-2008	2.00	0.11 to 3.92	2008-2011	-3.85	-9.44 to 2.09	2011-2019	0.21	-0.47 to 0.89	2000-2019	-0.77	-1.79 to 0.27
Hungary	2000-2012	-3.01	-3.37 to -2.64	2012-2019	-0.02	-0.94 to 0.91							2000-2019	-1.92	-2.29 to -1.54
Iceland	2000-2009	-3.63	-3.78 to -3.47	2009-2019	-0.55	-0.70 to -0.40							2000-2019	-2.02	-2.12 to -1.92
Israel	2000-2013	-2.85	-3.21 to -2.48	2013-2017	2.51	-0.98 to 6.13	2017-2019	-4.41	-10.75 to 2.38				2000-2019	-1.91	-2.84 to -0.97
Italy	2000-2008	-3.34	-3.57 to -3.10	2008-2016	-1.65	-1.98 to -1.33	2016-2019	-0.34	-1.68 to 1.02				2000-2019	-2.16	-2.40 to -1.92
Japan	2000-2002	-2.53	-4.46 to -0.55	2002-2011	-1.21	-1.43 to -0.99	2011-2014	-2.88	-4.90 to -0.82	2014-2019	-1.23	-1.73 to -0.73	2000-2019	-1.62	-1.99 to -1.25
Kuwait	2000-2016	-4.88	-5.42 to -4.33	2016-2019	1.58	-4.42 to 7.97							2000-2019	-3.88	-4.83 to -2.93
Kyrgyzstan	2000-2007	-1.46	-2.33 to -0.57	2007-2019	-2.97	-3.38 to -2.55							2000-2019	-2.41	-2.79 to -2.03
Latvia	2000-2003	-3.45	-8.37 to 1.75	2003-2006	3.92	-6.76 to 15.82	2006-2011	-4.79	-8.24 to -1.21	2011-2019	-1.32	-2.78 to 0.16	2000-2019	-1.78	-3.65 to 0.13
Lithuania	2000-2007	1.71	-0.15 to 3.60	2007-2019	-1.56	-2.49 to -0.62							2000-2019	-0.37	-1.20 to 0.46

Luxembourg	2000-2004	-3.80	-4.37 to -3.24	2004-2014	-2.01	-2.18 to -1.83	2014-2017	-3.37	-5.30 to -1.40	2017-2019	-0.74	-2.72 to 1.28	2000-2019	-2.47	-2.82 to -2.12
Malta	2000-2002	-1.99	-3.89 to -0.05	2002-2005	2.53	0.51 to 4.59	2005-2014	-1.61	-1.82 to -1.39	2014-2019	-0.68	-1.13 to -0.22	2000-2019	-0.76	-1.11 to -0.41
Mauritius	2000-2008	2.63	1.46 to 3.81	2008-2019	0.49	-0.18 to 1.17							2000-2019	1.38	0.81 to 1.96
Mexico	2000-2011	-0.95	-1.41 to -0.50	2011-2019	0.97	0.28 to 1.67							2000-2019	-0.15	-0.51 to 0.22
Netherlands	2000-2014	-3.14	-3.38 to -2.89	2014-2019	0.28	-1.15 to 1.73							2000-2019	-2.25	-2.63 to -1.87
New Zealand	2000-2005	-2.44	-3.51 to -1.35	2005-2010	-0.24	-1.85 to 1.38	2010-2014	-3.66	-6.22 to -1.04	2014-2019	0.02	-1.26 to 1.32	2000-2019	-1.48	-2.19 to -0.76
Norway	2000-2017	-3.63	-3.79 to -3.48	2017-2019	-0.57	-5.81 to 4.97							2000-2019	-3.32	-3.84 to -2.79
Panama	2000-2006	-0.90	-2.02 to 0.25	2006-2013	2.56	1.51 to 3.62	2013-2019	-0.68	-1.63 to 0.27				2000-2019	0.43	-0.11 to 0.98
Philippines	2000-2006	-0.31	-0.63 to 0.01	2006-2010	1.33	0.44 to 2.23	2010-2015	2.45	1.93 to 2.98	2015-2019	0.18	-0.30 to 0.65	2000-2019	0.86	0.62 to 1.09
Poland	2000-2002	-3.80	-6.63 to -0.87	2002-2014	-1.78	-2.00 to -1.55	2014-2019	-0.84	-1.60 to -0.08				2000-2019	-1.75	-2.10 to -1.39
Puerto Rico	2000-2019	-0.18	-0.55 to 0.18										2000-2019	-0.18	-0.55 to 0.18
Republic of Korea	2000-2006	-0.14	-0.63 to 0.36	2006-2009	1.69	-1.24 to 4.71	2009-2016	-2.07	-2.56 to -1.57	2016-2019	-0.94	-2.52 to 0.68	2000-2019	-0.69	-1.19 to -0.19
Republic of Moldova	2000-2019	-2.13	-2.46 to -1.79										2000-2019	-2.13	-2.46 to -1.79
Romania	2000-2011	-1.89	-2.30 to -1.48	2011-2019	0.70	-0.02 to 1.43							2000-2019	-0.81	-1.16 to -0.45
Saint Lucia	2000-2003	-3.35	-5.04 to -1.62	2003-2006	-1.02	-4.43 to 2.51	2006-2012	2.73	1.99 to 3.48	2012-2019	-1.61	-2.03 to -1.20	2000-2019	-0.45	-1.03 to 0.14
Serbia	2000-2007	-4.50	-4.88 to -4.11	2007-2013	-1.25	-2.02 to -0.48	2013-2019	0.10	-0.49 to 0.70				2000-2019	-2.04	-2.34 to -1.74
Singapore	2000-2003	-4.41	-7.37 to -1.35	2003-2013	-1.52	-2.11 to -0.92	2013-2017	-7.98	-11.18 to -4.66	2017-2019	1.41	-5.45 to 8.78	2000-2019	-3.07	-4.08 to -2.06
Slovakia	2000-2003	-4.47	-6.98 to -1.89	2003-2014	-1.55	-1.99 to -1.10	2014-2019	-0.15	-1.45 to 1.17				2000-2019	-1.65	-2.18 to -1.11
Slovenia	2000-2007	-4.50	-5.90 to -3.08	2007-2019	-1.74	-2.48 to -0.98							2000-2019	-2.76	-3.41 to -2.11

Spain	2000-2004	-4.07	-4.64 to -3.50	2004-2011	-1.45	-1.77 to -1.14	2011-2016	-3.18	-3.79 to -2.57	2016-2019	1.39	0.32 to 2.47	2000-2019	-2.03	-2.27 to -1.78
Sweden	2000-2019	-1.57	-1.80 to -1.34										2000-2019	-1.57	-1.80 to -1.34
Switzerland	2000-2012	-2.57	-2.84 to -2.30	2012-2015	-5.35	-10.21 to -0.22	2015-2019	0.56	-1.15 to 2.30				2000-2019	-2.37	-3.17 to -1.55
Trinidad and Tobago	2000-2019	-1.45	-1.74 to -1.15										2000-2019	-1.45	-1.74 to -1.15
United Kingdom	2000-2005	-3.62	-4.11 to -3.12	2005-2008	-1.45	-3.80 to 0.95	2008-2012	-2.80	-4.03 to -1.56	2012-2019	-0.11	-0.46 to 0.25	2000-2019	-1.82	-2.25 to -1.39
United States of America	2000-2012	-2.64	-2.81 to -2.47	2012-2017	1.32	0.29 to 2.37	2017-2019	-2.21	-5.30 to 0.98				2000-2019	-1.56	-1.96 to -1.17
Uruguay	2000-2019	-1.39	-1.52 to -1.27										2000-2019	-1.39	-1.52 to -1.27

Supplementary Table 6. Joinpoint analysis for breast cancer, age-standardized incidence in 2000-2019 for female, 40 years or older

Country	Trend 1			Trend 2			Trend 3			Trend 4			Year	AAPC	Range
	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range			
Antigua and Barbuda	2000-2019	1.93	1.65 to 2.22										2000-2019	1.93	1.65 to 2.22
Argentina	2000-2003	1.37	-0.72 to 3.50	2003-2014	-0.58	-0.88 to -0.27	2014-2019	1.13	0.30 to 1.96				2000-2019	0.17	-0.21 to 0.56
Australia	2000-2019	-1.08	-1.19 to -0.96										2000-2019	-1.08	-1.19 to -0.96
Austria	2000-2019	-0.86	-1.00 to -0.73										2000-2019	-0.86	-1.00 to -0.73
Barbados	2000-2004	2.32	1.40 to 3.24	2004-2007	0.21	-2.36 to 2.85	2007-2011	3.47	2.25 to 4.69	2011-2019	-0.56	-0.79 to -0.33	2000-2019	1.00	0.54 to 1.46
Belgium	2000-2019	-1.01	-1.17 to -0.86										2000-2019	-1.01	-1.17 to -0.86
Brazil	2000-2003	1.13	-0.00 to 2.28	2003-2012	-0.10	-0.32 to 0.11	2012-2019	-0.72	-0.95 to -0.48				2000-2019	-0.14	-0.34 to 0.07
Canada	2000-2013	-1.18	-1.34 to -1.02	2013-2019	0.69	0.20 to 1.18							2000-2019	-0.59	-0.77 to -0.42
Chile	2000-2013	1.34	1.04 to 1.63	2013-2019	-0.13	-0.90 to 0.64							2000-2019	0.87	0.58 to 1.16
China	2000-2003	4.80	2.94 to 6.70	2003-2010	3.31	2.78 to 3.83	2010-2016	1.33	0.77 to 1.89	2016-2019	3.77	2.66 to 4.89	2000-2019	2.98	2.61 to 3.36
Colombia	2000-2006	0.11	-0.65 to 0.89	2006-2015	1.80	1.38 to 2.21	2015-2019	0.05	-0.96 to 1.07				2000-2019	0.89	0.55 to 1.24
Costa Rica	2000-2019	1.20	0.86 to 1.53										2000-2019	1.20	0.86 to 1.53
Croatia	2000-2015	1.40	1.13 to 1.67	2015-2019	-3.40	-5.27 to -1.49							2000-2019	0.37	-0.06 to 0.80
Cuba	2000-2008	1.76	1.19 to 2.33	2008-2019	0.42	0.13 to 0.71							2000-2019	0.98	0.71 to 1.25
Denmark	2000-2005	0.52	-0.16 to 1.20	2005-2009	1.91	0.47 to 3.36	2009-2014	-3.97	-4.83 to -3.12	2014-2019	-0.94	-1.59 to -0.28	2000-2019	-0.78	-1.17 to -0.39

Ecuador	2000-2005	6.73	4.11 to 9.42	2005-2019	1.61	1.23 to 1.99							2000-2019	2.93	2.26 to 3.61
Estonia	2000-2007	1.10	0.30 to 1.91	2007-2010	-1.98	-7.47 to 3.85	2010-2019	1.07	0.54 to 1.61				2000-2019	0.60	-0.29 to 1.50
Fiji	2000-2005	0.48	-0.18 to 1.15	2005-2008	5.88	3.14 to 8.69	2008-2019	0.97	0.82 to 1.12				2000-2019	1.60	1.19 to 2.02
Finland	2000-2010	1.17	0.68 to 1.65	2010-2019	-1.57	-2.10 to -1.03							2000-2019	-0.14	-0.47 to 0.19
France	2000-2003	2.49	0.84 to 4.17	2003-2009	-0.44	-1.12 to 0.25	2009-2013	-1.96	-3.44 to -0.47	2013-2019	-1.02	-1.53 to -0.51	2000-2019	-0.49	-0.91 to -0.07
Germany	2000-2009	0.58	0.29 to 0.87	2009-2019	-0.98	-1.21 to -0.75							2000-2019	-0.25	-0.41 to -0.08
Greece	2000-2009	0.81	0.37 to 1.25	2009-2015	-1.28	-2.32 to -0.23	2015-2019	1.02	-0.48 to 2.53				2000-2019	0.19	-0.26 to 0.64
Grenada	2000-2019	2.52	2.15 to 2.89										2000-2019	2.52	2.15 to 2.89
Guatemala	2000-2013	2.55	2.39 to 2.71	2013-2019	0.07	-0.31 to 0.45							2000-2019	1.76	1.61 to 1.91
Guyana	2000-2006	-1.99	-3.00 to -0.98	2006-2013	1.99	1.03 to 2.97	2013-2019	-0.39	-1.23 to 0.46				2000-2019	-0.03	-0.53 to 0.46
Hungary	2000-2003	1.84	-0.63 to 4.37	2003-2009	-3.23	-4.31 to -2.13	2009-2019	0.08	-0.33 to 0.49				2000-2019	-0.70	-1.21 to -0.19
Iceland	2000-2004	-0.04	-1.03 to 0.97	2004-2010	-3.67	-4.34 to -3.00	2010-2019	-1.01	-1.29 to -0.73				2000-2019	-1.66	-1.95 to -1.36
Israel	2000-2008	-0.61	-1.18 to -0.04	2008-2016	-2.07	-2.73 to -1.41	2016-2019	0.96	-1.43 to 3.42				2000-2019	-0.98	-1.46 to -0.51
Italy	2000-2003	0.99	-0.97 to 2.99	2003-2019	-0.89	-1.04 to -0.75							2000-2019	-0.60	-0.90 to -0.29
Japan	2000-2011	3.12	2.88 to 3.35	2011-2016	0.17	-0.81 to 1.16	2016-2019	-1.61	-3.12 to -0.08				2000-2019	1.58	1.23 to 1.92
Kuwait	2000-2005	-0.42	-2.44 to 1.64	2005-2008	5.89	-2.24 to 14.70	2008-2015	-3.46	-4.55 to -2.35	2015-2019	-0.26	-2.06 to 1.58	2000-2019	-0.56	-1.83 to 0.73
Kyrgyzstan	2000-2019	-0.17	-0.29 to -0.05										2000-2019	-0.17	-0.29 to -0.05
Latvia	2000-2006	3.68	2.68 to 4.69	2006-2019	-0.31	-0.59 to -0.02							2000-2019	0.93	0.60 to 1.27
Lithuania	2000-2008	1.60	0.76 to 2.45	2008-2019	-1.24	-1.75 to -0.73							2000-2019	-0.05	-0.47 to 0.37

Luxembourg	2000-2010	0.31	-0.02 to 0.64	2010-2014	-2.33	-4.25 to -0.38	2014-2017	-5.04	-8.79 to -1.13	2017-2019	0.08	-3.84 to 4.16	2000-2019	-1.14	-1.89 to -0.37
Malta	2000-2004	-0.04	-0.95 to 0.87	2004-2013	-1.43	-1.74 to -1.13	2013-2019	0.00	-0.48 to 0.48				2000-2019	-0.69	-0.95 to -0.44
Mauritius	2000-2003	5.47	2.33 to 8.70	2003-2007	-0.66	-3.27 to 2.02	2007-2017	3.12	2.70 to 3.54	2017-2019	-0.34	-4.11 to 3.58	2000-2019	2.31	1.54 to 3.08
Mexico	2000-2019	1.29	1.18 to 1.41										2000-2019	1.29	1.18 to 1.41
Netherlands	2000-2006	-0.33	-1.01 to 0.36	2006-2011	0.61	-0.60 to 1.85	2011-2014	-2.89	-6.47 to 0.83	2014-2019	0.67	-0.16 to 1.51	2000-2019	-0.23	-0.87 to 0.41
New Zealand	2000-2019	0.05	-0.06 to 0.16										2000-2019	0.05	-0.06 to 0.16
Norway	2000-2011	-0.17	-0.55 to 0.20	2011-2019	-2.89	-3.46 to -2.32							2000-2019	-1.33	-1.63 to -1.03
Panama	2000-2007	1.02	0.41 to 1.64	2007-2014	3.01	2.37 to 3.65	2014-2019	0.71	0.01 to 1.41				2000-2019	1.67	1.33 to 2.01
Philippines	2000-2007	-1.84	-2.09 to -1.60	2007-2010	1.52	-0.20 to 3.27	2010-2013	3.93	2.31 to 5.57	2013-2019	1.03	0.79 to 1.26	2000-2019	0.48	0.15 to 0.82
Poland	2000-2003	0.19	-1.33 to 1.74	2003-2007	2.35	0.87 to 3.85	2007-2014	0.52	0.05 to 0.98	2014-2019	-0.87	-1.47 to -0.27	2000-2019	0.48	0.08 to 0.88
Puerto Rico	2000-2019	0.68	0.41 to 0.95										2000-2019	0.68	0.41 to 0.95
Republic of Korea	2000-2003	6.47	4.53 to 8.45	2003-2009	4.08	3.39 to 4.77	2009-2013	1.99	0.70 to 3.29	2013-2019	0.50	0.12 to 0.89	2000-2019	2.87	2.45 to 3.28
Republic of Moldova	2000-2009	2.25	1.66 to 2.84	2009-2012	-3.09	-8.62 to 2.78	2012-2015	3.90	-2.00 to 10.15	2015-2019	-3.78	-5.52 to -2.00	2000-2019	0.35	-0.85 to 1.57
Romania	2000-2019	1.00	0.84 to 1.16										2000-2019	1.00	0.84 to 1.16
Saint Lucia	2000-2008	-0.48	-1.68 to 0.73	2008-2019	1.78	1.18 to 2.39							2000-2019	0.82	0.25 to 1.40
Serbia	2000-2009	2.09	1.67 to 2.51	2009-2019	0.41	0.08 to 0.74							2000-2019	1.20	0.96 to 1.45
Singapore	2000-2012	1.84	1.50 to 2.18	2012-2019	-1.45	-2.02 to -0.87							2000-2019	0.62	0.34 to 0.90
Slovakia	2000-2004	-1.28	-3.02 to 0.48	2004-2012	2.40	1.70 to 3.11	2012-2019	-0.45	-1.08 to 0.18				2000-2019	0.56	0.09 to 1.04
Slovenia	2000-2019	-0.93	-1.14 to -0.73										2000-2019	-0.93	-1.14 to -0.73

Spain	2000-2008	0.23	-0.19 to 0.66	2008-2019	-0.58	-0.82 to -0.34					2000-2019	-0.24	-0.45 to -0.03
Sweden	2000-2004	1.46	0.12 to 2.81	2004-2013	-0.56	-0.99 to -0.13	2013-2019	-1.86	-2.51 to -1.20		2000-2019	-0.55	-0.91 to -0.19
Switzerland	2000-2012	-1.13	-1.38 to -0.88	2012-2015	-3.64	-7.60 to 0.50	2015-2019	0.00	-1.32 to 1.34		2000-2019	-1.29	-1.95 to -0.64
Trinidad and Tobago	2000-2008	2.09	1.46 to 2.71	2008-2019	-0.29	-0.60 to 0.03					2000-2019	0.71	0.41 to 1.00
United Kingdom	2000-2008	-0.31	-0.54 to -0.08	2008-2014	-1.37	-1.82 to -0.92	2014-2019	0.43	-0.02 to 0.88		2000-2019	-0.45	-0.64 to -0.27
United States of America	2000-2007	-1.72	-2.04 to -1.39	2007-2017	-1.03	-1.24 to -0.82	2017-2019	0.25	-2.01 to 2.55		2000-2019	-1.15	-1.41 to -0.89
Uruguay	2000-2019	-0.33	-0.44 to -0.21								2000-2019	-0.33	-0.44 to -0.21

Supplementary Table 7. Joinpoint analysis for breast cancer, age-standardized mortality in 2000-2019 for female, 40 years or older

Country	Trend 1			Trend 2			Trend 3			Trend 4			Year	AAPC	Range
	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range	Year	EAPC	range			
Antigua and Barbuda	2000-2006	-0.36	-0.57 to -0.14	2006-2009	0.95	-0.24 to 2.14	2009-2015	2.72	2.48 to 2.97	2015-2019	-0.61	-0.91 to -0.32	2000-2019	0.76	0.56 to 0.95
Argentina	2000-2003	0.26	-1.06 to 1.59	2003-2014	-1.32	-1.52 to -1.12	2014-2019	0.07	-0.48 to 0.62				2000-2019	-0.71	-0.96 to -0.46
Australia	2000-2005	-2.24	-2.80 to -1.67	2005-2017	-1.11	-1.27 to -0.95	2017-2019	0.27	-1.99 to 2.57				2000-2019	-1.26	-1.53 to -1.00
Austria	2000-2019	-1.44	-1.51 to -1.36										2000-2019	-1.44	-1.51 to -1.36
Barbados	2000-2003	1.83	0.87 to 2.81	2003-2007	-0.27	-1.16 to 0.62	2007-2011	1.89	1.05 to 2.73	2011-2019	-0.67	-0.83 to -0.50	2000-2019	0.34	0.08 to 0.61
Belgium	2000-2008	-2.63	-3.02 to -2.22	2008-2019	-1.30	-1.55 to -1.05							2000-2019	-1.86	-2.07 to -1.66
Brazil	2000-2016	-1.17	-1.24 to -1.10	2016-2019	-1.92	-2.72 to -1.11							2000-2019	-1.29	-1.42 to -1.16
Canada	2000-2003	-1.72	-2.35 to -1.09	2003-2006	-2.76	-3.99 to -1.52	2006-2014	-1.77	-1.93 to -1.61	2014-2019	0.23	-0.03 to 0.50	2000-2019	-1.40	-1.61 to -1.19
Chile	2000-2008	-0.90	-1.07 to -0.73	2008-2011	0.52	-0.94 to 2.00	2011-2016	-1.44	-1.87 to -1.00	2016-2019	-0.23	-0.89 to 0.44	2000-2019	-0.72	-0.96 to -0.47
China	2000-2004	1.42	0.77 to 2.08	2004-2007	-1.46	-3.35 to 0.47	2007-2016	-0.39	-0.58 to -0.19	2016-2019	1.29	0.50 to 2.09	2000-2019	0.09	-0.23 to 0.41
Colombia	2000-2007	-1.03	-1.65 to -0.40	2007-2016	-0.09	-0.53 to 0.36	2016-2019	-1.51	-3.33 to 0.35				2000-2019	-0.66	-1.04 to -0.27
Costa Rica	2000-2019	0.22	-0.06 to 0.50										2000-2019	0.22	-0.06 to 0.50
Croatia	2000-2015	0.32	0.07 to 0.57	2015-2019	-3.80	-5.54 to -2.03							2000-2019	-0.56	-0.96 to -0.17
Cuba	2000-2019	0.08	-0.10 to 0.26										2000-2019	0.08	-0.10 to 0.26
Denmark	2000-2005	-2.24	-2.62 to -1.86	2005-2009	-1.16	-2.01 to -0.31	2009-2014	-4.21	-4.74 to -3.68	2014-2019	-1.21	-1.62 to -0.81	2000-2019	-2.27	-2.50 to -2.04

Ecuador	2000-2005	5.06	2.93 to 7.24	2005-2019	0.61	0.29 to 0.94							2000-2019	1.77	1.21 to 2.32
Estonia	2000-2014	-2.09	-2.43 to -1.75	2014-2019	0.53	-1.22 to 2.32							2000-2019	-1.40	-1.88 to -0.92
Fiji	2000-2005	0.71	-0.26 to 1.68	2005-2009	4.16	2.21 to 6.14	2009-2019	0.43	0.18 to 0.69				2000-2019	1.28	0.83 to 1.72
Finland	2000-2008	-1.29	-1.58 to -1.01	2008-2012	-0.73	-2.00 to 0.56	2012-2015	-2.36	-4.84 to 0.19	2015-2019	-0.84	-1.67 to -0.01	2000-2019	-1.25	-1.70 to -0.79
France	2000-2002	-0.18	-2.27 to 1.96	2002-2016	-2.20	-2.31 to -2.09	2016-2019	-0.51	-1.57 to 0.57				2000-2019	-1.73	-1.98 to -1.47
Germany	2000-2007	-1.43	-1.67 to -1.19	2007-2019	-0.86	-0.96 to -0.75							2000-2019	-1.07	-1.17 to -0.97
Greece	2000-2007	-0.81	-1.13 to -0.49	2007-2014	-1.59	-2.01 to -1.18	2014-2019	0.76	0.19 to 1.33				2000-2019	-0.69	-0.91 to -0.47
Grenada	2000-2005	0.63	0.21 to 1.06	2005-2011	3.55	3.17 to 3.94	2011-2017	1.80	1.47 to 2.13	2017-2019	-1.95	-3.31 to -0.57	2000-2019	1.64	1.42 to 1.85
Guatemala	2000-2008	1.15	0.96 to 1.33	2008-2011	2.06	0.59 to 3.56	2011-2016	0.81	0.39 to 1.23	2016-2019	-1.43	-2.03 to -0.83	2000-2019	0.79	0.54 to 1.04
Guyana	2000-2006	-1.69	-2.49 to -0.89	2006-2014	1.20	0.60 to 1.80	2014-2019	-1.55	-2.44 to -0.65				2000-2019	-0.45	-0.83 to -0.06
Hungary	2000-2003	0.49	-1.84 to 2.89	2003-2009	-3.79	-4.84 to -2.73	2009-2019	-0.62	-1.02 to -0.22				2000-2019	-1.46	-1.95 to -0.97
Iceland	2000-2005	-2.46	-2.99 to -1.92	2005-2010	-3.78	-4.53 to -3.02	2010-2019	-1.55	-1.78 to -1.33				2000-2019	-2.38	-2.62 to -2.14
Israel	2000-2016	-2.77	-2.88 to -2.67	2016-2019	0.52	-0.77 to 1.84							2000-2019	-2.26	-2.46 to -2.06
Italy	2000-2006	-2.13	-2.59 to -1.68	2006-2019	-1.19	-1.33 to -1.04							2000-2019	-1.49	-1.65 to -1.33
Japan	2000-2012	1.09	0.92 to 1.25	2012-2019	-1.15	-1.50 to -0.80							2000-2019	0.26	0.10 to 0.41
Kuwait	2000-2009	0.66	-0.19 to 1.52	2009-2016	-5.19	-6.46 to -3.90	2016-2019	0.04	-3.43 to 3.64				2000-2019	-1.63	-2.38 to -0.88
Kyrgyzstan	2000-2019	-1.25	-1.38 to -1.13										2000-2019	-1.25	-1.38 to -1.13
Latvia	2000-2006	1.94	1.07 to 2.81	2006-2019	-1.52	-1.78 to -1.25							2000-2019	-0.44	-0.74 to -0.14
Lithuania	2000-2008	1.09	0.41 to 1.78	2008-2019	-2.02	-2.44 to -1.59							2000-2019	-0.72	-1.06 to -0.37

Luxembourg	2000-2004	-2.63	-3.82 to -1.43	2004-2010	-0.78	-1.63 to 0.08	2010-2017	-3.07	-3.69 to -2.44	2017-2019	-1.06	-4.69 to 2.72	2000-2019	-2.05	-2.55 to -1.54
Malta	2000-2013	-2.53	-2.66 to -2.40	2013-2019	-1.26	-1.71 to -0.80							2000-2019	-2.13	-2.28 to -1.97
Mauritius	2000-2003	5.00	2.15 to 7.94	2003-2007	-0.94	-3.34 to 1.53	2007-2017	2.44	2.06 to 2.83	2017-2019	-1.24	-4.76 to 2.40	2000-2019	1.73	1.02 to 2.44
Mexico	2000-2019	0.41	0.29 to 0.52										2000-2019	0.41	0.29 to 0.52
Netherlands	2000-2003	-3.99	-4.60 to -3.37	2003-2011	-1.00	-1.17 to -0.83	2011-2014	-2.31	-3.52 to -1.08	2014-2019	-0.10	-0.38 to 0.17	2000-2019	-1.45	-1.66 to -1.24
New Zealand	2000-2013	-1.91	-2.07 to -1.75	2013-2019	-0.61	-1.11 to -0.11							2000-2019	-1.50	-1.68 to -1.32
Norway	2000-2008	-2.33	-2.54 to -2.12	2008-2013	-1.58	-2.19 to -0.96	2013-2017	-3.14	-4.10 to -2.18	2017-2019	-0.48	-2.44 to 1.51	2000-2019	-2.11	-2.41 to -1.81
Panama	2000-2002	-1.10	-5.05 to 3.02	2002-2014	1.67	1.44 to 1.91	2014-2019	-1.57	-2.19 to -0.95				2000-2019	0.52	0.08 to 0.95
Philippines	2000-2007	-2.25	-2.50 to -2.01	2007-2011	0.85	-0.02 to 1.73	2011-2015	2.55	1.75 to 3.35	2015-2019	0.19	-0.25 to 0.64	2000-2019	-0.09	-0.33 to 0.15
Poland	2000-2019	-0.81	-0.91 to -0.71										2000-2019	-0.81	-0.91 to -0.71
Puerto Rico	2000-2019	-0.46	-0.68 to -0.24										2000-2019	-0.46	-0.68 to -0.24
Republic of Korea	2000-2003	1.41	0.70 to 2.13	2003-2013	0.67	0.56 to 0.78	2013-2016	-1.21	-2.26 to -0.15	2016-2019	0.02	-0.49 to 0.53	2000-2019	0.38	0.19 to 0.58
Republic of Moldova	2000-2009	1.74	1.25 to 2.23	2009-2012	-4.04	-8.73 to 0.89	2012-2015	2.06	-2.99 to 7.38	2015-2019	-4.89	-6.42 to -3.33	2000-2019	-0.57	-1.59 to 0.47
Romania	2000-2019	-0.13	-0.28 to 0.02										2000-2019	-0.13	-0.28 to 0.02
Saint Lucia	2000-2009	-1.57	-2.03 to -1.12	2009-2019	1.57	1.24 to 1.90							2000-2019	0.07	-0.19 to 0.33
Serbia	2000-2002	-1.60	-4.45 to 1.35	2002-2005	2.27	-0.65 to 5.28	2005-2019	-0.65	-0.79 to -0.52				2000-2019	-0.30	-0.80 to 0.21
Singapore	2000-2002	1.60	-2.37 to 5.73	2002-2006	-1.83	-3.67 to 0.04	2006-2012	0.09	-0.66 to 0.86	2012-2019	-2.33	-2.72 to -1.93	2000-2019	-1.05	-1.60 to -0.50
Slovakia	2000-2004	-3.43	-4.87 to -1.97	2004-2012	1.12	0.51 to 1.74	2012-2019	-1.32	-1.88 to -0.75				2000-2019	-0.75	-1.16 to -0.34
Slovenia	2000-2019	-2.46	-2.65 to -2.27										2000-2019	-2.46	-2.65 to -2.27

Spain	2000-2005	-2.26	-2.67 to -1.85	2005-2014	-1.29	-1.49 to -1.09	2014-2019	-0.27	-0.66 to 0.13				2000-2019	-1.28	-1.44 to -1.12
Sweden	2000-2004	0.25	-0.29 to 0.79	2004-2008	-1.41	-2.23 to -0.59	2008-2013	-0.59	-1.10 to -0.08	2013-2019	-1.95	-2.22 to -1.68	2000-2019	-1.02	-1.25 to -0.79
Switzerland	2000-2005	-2.93	-3.41 to -2.45	2005-2012	-1.24	-1.62 to -0.87	2012-2015	-2.69	-4.80 to -0.53	2015-2019	-0.59	-1.27 to 0.10	2000-2019	-1.78	-2.14 to -1.42
Trinidad and Tobago	2000-2008	0.42	-0.14 to 0.98	2008-2019	-0.67	-0.97 to -0.38							2000-2019	-0.21	-0.48 to 0.05
United Kingdom	2000-2010	-2.51	-2.62 to -2.40	2010-2014	-1.73	-2.46 to -1.00	2014-2019	0.02	-0.30 to 0.35				2000-2019	-1.68	-1.85 to -1.52
United States of America	2000-2007	-2.07	-2.30 to -1.84	2007-2013	-1.55	-1.93 to -1.17	2013-2019	-0.43	-0.71 to -0.15				2000-2019	-1.39	-1.55 to -1.24
Uruguay	2000-2005	-0.66	-1.22 to -0.10	2005-2013	-1.63	-1.96 to -1.30	2013-2019	-0.26	-0.68 to 0.17				2000-2019	-0.94	-1.16 to -0.73

Supplementary Table 8. Analysis of the association between the risk factor exposure at the national level and female breast cancer incidence

Risk factor	2015			2016			2017		
	β	95% CI	P	β	95% CI	P	β	95% CI	P
Alcohol	-0.703	-2.878 1.472	0.523	-0.743	-2.874 1.388	0.491	-0.926	-3.204 1.352	0.422
Smoking	0.358	-0.058 0.775	0.091	0.317	-0.091 0.726	0.126	0.365	-0.071 0.802	0.100
Physical inactivity	0.120	-0.157 0.397	0.391	0.119	-0.152 0.390	0.386	0.124	-0.166 0.414	0.400
Obesity	0.077	-0.275 0.428	0.665	0.085	-0.260 0.429	0.627	0.108	-0.260 0.476	0.562
High cholesterol	2.481	1.426 3.537	0.000*	2.374	1.340 3.409	0.000*	2.291	1.186 3.397	0.000*
Education	-0.237	-0.482 0.008	0.058	-0.227	-0.467 0.013	0.064	-0.227	-0.484 0.029	0.082
Unemployment	0.240	-0.269 0.749	0.351	0.212	-0.287 0.710	0.402	0.145	-0.388 0.678	0.590
Out-of-pocket	-0.044	-0.233 0.144	0.643	-0.027	-0.212 0.158	0.774	-0.060	-0.258 0.137	0.547
GDP	0.658	-0.158 1.475	0.113	0.653	-0.148 1.453	0.109	0.616	-0.240 1.471	0.156
Health expenditure	1.706	0.309 3.102	0.017*	1.724	0.356 3.093	0.014*	1.608	0.145 3.071	0.032*
Health system	0.595	-2.664 3.854	0.718	0.621	-2.573 3.814	0.700	0.635	-2.778 4.049	0.713
UHC	0.078	-0.351 0.508	0.718	0.114	-0.307 0.535	0.591	0.101	-0.349 0.551	0.656
BC screening	-4.681	-12.077 2.715	0.212	-4.667	-11.913 2.580	0.204	-5.521	-13.268 2.226	0.160

Risk factor	2018			2019		
	β	95% CI	P	β	95% CI	P
Alcohol	-1.159	-3.716 1.397	0.370	-1.139	-3.620 1.342	0.365
Smoking	0.452	-0.038 0.941	0.070	0.424	-0.051 0.900	0.079
Physical inactivity	0.122	-0.203 0.448	0.458	0.114	-0.202 0.430	0.475
Obesity	0.137	-0.276 0.550	0.511	0.137	-0.264 0.538	0.498
High cholesterol	2.193	0.952 3.433	0.001*	2.203	0.999 3.408	0.000*
Education	-0.229	-0.517 0.059	0.117	-0.222	-0.502 0.057	0.118
Unemployment	0.049	-0.549 0.648	0.870	0.078	-0.503 0.658	0.791
Out-of-pocket	-0.106	-0.328 0.116	0.344	-0.089	-0.305 0.126	0.411
GDP	0.541	-0.419 1.501	0.266	0.533	-0.398 1.465	0.259
Health expenditure	1.466	-0.176 3.108	0.079	1.430	-0.163 3.023	0.078
Health system	0.553	-3.278 4.384	0.775	0.569	-3.148 4.287	0.762
UHC	0.094	-0.411 0.599	0.713	0.094	-0.396 0.584	0.703
BC screening	-6.275	-14.968 2.419	0.155	-6.070	-14.507 2.367	0.156

The analysis was conducted using multivariable linear regression model at a country level.

β , beta coefficient. The beta coefficient can be interpreted as the change in ASR of incidence or mortality associated with one percent increase of a certain risk factor.

CI, confidence interval; ASR, age-standardized rate.

* P values less than .05

Supplementary Table 9. Analysis of the association between the risk factor exposure at the national level and female breast cancer mortality

Risk factor	2015			2016			2017		
	β	95% CI	P	β	95% CI	P	β	95% CI	P
Alcohol	-0.326	-1.903 1.251	0.682	-0.336	-1.894 1.221	0.669	-0.456	-2.126 1.213	0.589
Smoking	0.109	-0.193 0.411	0.475	0.088	-0.211 0.386	0.561	0.133	-0.187 0.453	0.411
Physical inactivity	0.022	-0.179 0.222	0.831	0.024	-0.175 0.222	0.814	0.028	-0.185 0.240	0.797
Obesity	0.344	0.089 0.599	0.009*	0.335	0.083 0.587	0.010*	0.345	0.075 0.615	0.013*
High cholesterol	0.753	-0.013 1.518	0.054	0.710	-0.045 1.466	0.065	0.652	-0.158 1.463	0.113
Education	-0.086	-0.264 0.092	0.338	-0.083	-0.258 0.093	0.351	-0.085	-0.273 0.103	0.374
Unemployment	0.122	-0.247 0.490	0.514	0.110	-0.254 0.474	0.550	0.051	-0.339 0.442	0.795
Out-of-pocket	-0.038	-0.174 0.099	0.585	-0.030	-0.165 0.105	0.659	-0.060	-0.205 0.084	0.410
GDP	0.203	-0.389 0.795	0.497	0.207	-0.378 0.791	0.485	0.168	-0.459 0.795	0.595
Health expenditure	0.221	-0.792 1.233	0.666	0.236	-0.764 1.237	0.640	0.163	-0.909 1.235	0.763
Health system	-0.716	-3.079 1.647	0.549	-0.769	-3.103 1.565	0.514	-0.790	-3.291 1.712	0.532
UHC	-0.330	-0.641 -0.018	0.038*	-0.314	-0.622 -0.006	0.045*	-0.329	-0.659 0.001	0.050
BC screening	-4.224	-9.586 1.138	0.121	-4.231	-9.527 1.066	0.116	-4.839	-10.516 0.839	0.094

Risk factor	2018			2019		
	β	95% CI	P	β	95% CI	P
Alcohol	-0.578	-2.453 1.297	0.542	-0.533	-2.351 1.284	0.561
Smoking	0.201	-0.158 0.560	0.269	0.183	-0.165 0.531	0.300
Physical inactivity	0.028	-0.211 0.267	0.817	0.021	-0.210 0.253	0.855
Obesity	0.359	0.056 0.662	0.021*	0.350	0.056 0.644	0.020*
High cholesterol	0.588	-0.322 1.498	0.203	0.598	-0.284 1.480	0.182
Education	-0.087	-0.298 0.124	0.417	-0.083	-0.288 0.121	0.421
Unemployment	-0.023	-0.461 0.416	0.918	-0.002	-0.427 0.424	0.994
Out-of-pocket	-0.097	-0.260 0.065	0.238	-0.087	-0.245 0.070	0.275
GDP	0.111	-0.593 0.815	0.756	0.112	-0.570 0.795	0.745
Health expenditure	0.077	-1.126 1.281	0.899	0.082	-1.085 1.249	0.889
Health system	-0.867	-3.676 1.942	0.542	-0.890	-3.614 1.834	0.518
UHC	-0.344	-0.715 0.026	0.068	-0.344	-0.703 0.015	0.060
BC screening	-5.408	-11.783 0.967	0.095	-5.213	-11.394 0.968	0.097

The analysis was conducted using multivariable linear regression model at a country level.

β , beta coefficient. The beta coefficient can be interpreted as the change in ASR of incidence or mortality associated with one percent increase of a certain risk factor.

CI, confidence interval; ASR, age-standardized rate.

* P values less than .05