

Appendix Table A1: Demographic and Health Surveys datasets used in the analysis

Low-income	Lower-middle income	Upper-middle income
Afghanistan 2015	Angola 2016	Albania 2009, 2018
Benin 1996, 2001, 2006, 2012, 2018	Bangladesh 1994, 1997, 2000, 2004, 2007, 2011, 2014	Armenia 2000, 2005, 2010, 2016
Burkina Faso 1993, 1999, 2003, 2010	Bolivia 1989, 1994, 1998, 2004, 2008	Azerbaijan 2006
Burundi 1987, 2011, 2017	Cambodia 2000, 2006, 2011, 2014	Brazil 1986, 1992, 1996
Central African Republic 1995	Cameroon 1991, 1998, 2004, 2011, 2018	Colombia 1986, 1990, 1995, 2000, 2005, 2010, 2016
DRC 2007, 2014	Comoros 1996, 2012	Dominican Republic 1986, 1991, 1996, 1999, 2002, 2007, 2013
Ethiopia 2000, 2005, 2011, 2016	Republic of Congo 2005, 2012	Ecuador 1987
Gambia 2013	Cote d'Ivoire 1994, 1999, 2012	Gabon 2001, 2012
Guinea 1999, 2005, 2012, 2018	Egypt 1989, 1993, 1996, 2003, 2005, 2008, 2014	Guatemala 1987, 1995, 1999, 2015
Haiti 1995, 2000, 2006, 2012, 2017	El Salvador 1985	Guyana 2009
Liberia 2007, 2013	Eswatini 2007	Jordan 1990, 1997, 2002, 2007, 2012, 2018
Madagascar 1992, 1997, 2004, 2009	Ghana 1988, 1994, 2003, 2008, 2014	Kazakhstan 1995, 1999
Malawi 1992, 2000, 2005, 2010, 2016	Honduras 2006, 2012	Maldives 2009, 2017
Mali 1987, 1996, 2001, 2006, 2013, 2018	India 1993, 1999, 2006, 2016	Mexico 1987
Mozambique 1997, 2004, 2011, 2015	Indonesia 1987, 1991, 1994, 1997, 2003, 2007, 2012, 2017	Namibia 1992, 2000, 2007, 2013
Nepal 1997, 2001, 2006, 2011, 2017	Kenya 1989, 1993, 1998, 2003, 2009, 2014	Paraguay 1990
Niger 1992, 1998, 2006, 2012	Kyrgyz Republic 1997, 2012	Peru 1986, 1992, 1996, 2000, 2004-2012*
Rwanda 1992, 2000, 2008, 2011, 2015	Lesotho 2005, 2010, 2014	
Sierra Leone 2008, 2013	Moldova 2005	
Tajikistan 2012, 2017	Morocco 1987, 1992, 2004	
Tanzania 1999, 2005, 2012, 2016	Myanmar 2016	
Togo 1988, 1998, 2014	Nicaragua 1998, 2001	
Uganda 1989, 1995, 2001, 2006	Nigeria 1990, 2003, 2008, 2013, 2018	
Yemen 1992, 2013	Pakistan 1991, 2007, 2013, 2018	
	Papua New Guinea 2018	
	Philippines 1993, 1998, 2003, 2008, 2013, 2017	
	Sao Tome and Principe 2009	
	Senegal 1986, 1993, 1997, 2011, 2012-2018*	
	Sudan 1990	
	Timor Leste 2010, 2016	
	Tunisia 1988	
	Ukraine 2007	
	Uzbekistan 1996	
	Vietnam 1997, 2002	
	Zambia 1992, 1997, 2002, 2007, 2014, 2018	
	Zimbabwe 1989, 1994, 1999, 2006, 2011, 2015	

Notes: The years denote the timing of survey implementation in each country. Some surveys spanned over more than one calendar year. In these cases, the last year of the survey is indicated. For the analysis, retrospective birth histories are used to create birth and infant mortality data for the 11 years preceding each survey.

* Senegal and Peru had special continuous surveys. Peru had annual survey between 2004 and 2012 and Senegal completed annual surveys between 2012 to 2018.

Appendix Table A2: Projections of growth shortfall and excess infant mortality in lower- and middle-income countries

Country	Region ^a	Number of annual birth 2015-2020 (in thousands) ^b	WEO projections of 2020 growth ^c			Excess mortality projection		
			October 2019 projection	October 2020 projection	Growth Shortfall	estimate	95% lower bound	95% higher bound
Panel A: Lower Income Economies ^a								
Afghanistan	SAR	1205	3.5	-5.0	-8.5	4888	1342	8434
Benin	AFR	413	6.7	2.0	-4.7	930	255	1604
Burkina Faso	AFR	745	6.0	-2.0	-8.0	2852	783	4920
Burundi	AFR	433	0.5	-3.2	-3.7	775	213	1338
Central African Republic	AFR	165	5.0	-1.0	-5.9	468	128	807
Chad	AFR	648	5.4	-0.7	-6.1	1894	520	3267
Congo, Dem. Rep.	AFR	3434	3.9	-2.2	-6.0	9925	2724	17126
Eritrea	AFR	106	3.9	-0.6	-4.5	226	62	391
Ethiopia	AFR	3514	7.2	1.9	-5.3	8832	2424	15240
Gambia, The	AFR	87	6.4	-1.8	-8.2	343	94	591
Guinea	AFR	449	6.0	1.4	-4.5	970	266	1673
Guinea-Bissau	AFR	66	4.9	-2.9	-7.8	245	67	422
Haiti	LAC	271	1.2	-4.0	-5.2	674	185	1164
Liberia	AFR	158	1.6	-3.0	-4.6	345	95	596
Madagascar	AFR	852	5.3	-3.2	-8.5	3454	948	5960
Malawi	AFR	614	5.1	0.6	-4.5	1323	363	2283
Mali	AFR	787	5.0	-2.0	-7.0	2631	722	4540
Mozambique	AFR	1099	6.0	-0.5	-6.5	3441	944	5937
Nepal	SAR	562	6.3	0.0	-6.3	1681	461	2900
Niger	AFR	1023	6.1	0.5	-5.6	2717	746	4688
Rwanda	AFR	390	8.1	2.0	-6.1	1142	313	1970
Sierra Leone	AFR	255	4.7	-3.1	-7.7	945	260	1631
Somalia	AFR	622	3.2	-1.5	-4.7	1398	384	2412
South Sudan	AFR	386	8.2	4.1	-4.1	757	208	1306
Tajikistan	ECA	281	4.5	1.0	-3.5	470	129	811
Tanzania	AFR	2052	5.7	1.9	-3.8	3732	1024	6440
Togo	AFR	260	5.3	0.0	-5.3	659	181	1137
Uganda	AFR	1614	6.2	-0.3	-6.5	5022	1378	8666
Yemen, Rep.	MNA	865	2.0	-5.0	-7.0	2890	793	4987

Panel B: Lower-Middle Income Economies ^a								
Angola	AFR	1243	1.2	-4.0	-5.2	1523	832	2215
Bangladesh	SAR	2946	7.4	3.8	-3.6	2550	1393	3707
Bhutan	SAR	13	7.2	0.6	-6.6	21	11	30
Bolivia	LAC	247	3.8	-7.9	-11.7	685	374	996
Cabo Verde	AFR	11	5.0	-6.8	-11.7	30	16	43
Cambodia	EAP	366	6.8	-2.8	-9.5	828	452	1204
Cameroon	AFR	887	4.2	-2.8	-6.9	1461	798	2124
Comoros	AFR	26	4.2	-1.8	-6.1	38	21	55
Congo, Rep.	AFR	171	2.8	-7.0	-9.8	398	217	578
Côte d'Ivoire	AFR	890	7.3	1.8	-5.5	1161	634	1688
Djibouti	AFR	21	6.0	-1.0	-7.0	34	19	50
Egypt	MNA	2584	5.9	3.5	-2.3	1424	778	2070
El Salvador	LAC	118	2.3	-9.0	-11.3	315	172	458
Eswatini	AFR	30	0.5	-3.5	-4.0	29	16	41
Ghana	AFR	871	5.6	0.9	-4.7	968	529	1407
Honduras	LAC	207	3.5	-6.6	-10.1	496	271	721
India	SAR	24238	7.0	-10.3	-17.3	99642	54424	144860
Indonesia	EAP	4842	5.1	-1.5	-6.6	7549	4123	10975
Kenya	AFR	1469	6.0	1.0	-5.0	1743	952	2533
Kiribati	EAP	3	2.3	-1.1	-3.4	3	1	4
Kyrgyz Republic	ECA	155	3.4	-12.0	-15.4	566	309	823
Lao PDR	EAP	167	6.5	0.2	-6.3	250	136	363
Lesotho	AFR	57	-0.2	-4.8	-4.6	62	34	91
Mauritania	AFR	147	5.9	-3.2	-9.1	318	174	463
Micronesia, Fed. Sts.	EAP	3	0.8	-3.8	-4.6	3	2	4
Moldova	ECA	41	3.8	-4.5	-8.3	81	44	118
Mongolia	EAP	77	5.4	-2.0	-7.4	134	73	195
Morocco	MNA	682	3.7	-7.0	-10.7	1725	942	2508
Myanmar	EAP	948	6.3	2.0	-4.3	959	524	1395
Nicaragua	LAC	134	-0.8	-5.5	-4.7	151	82	219
Nigeria	AFR	7377	2.5	-4.3	-6.8	11904	6502	17306
Pakistan	SAR	5994	2.4	-0.4	-2.7	3891	2125	5656
Papua New Guinea	EAP	232	2.6	-3.3	-5.8	322	176	468
Philippines	EAP	2178	6.2	-8.3	-14.4	7466	4078	10855

Senegal	AFR	544	6.8	-0.7	-7.4	961	525	1397
Solomon Islands	EAP	21	2.9	-5.0	-7.9	39	21	57
Sudan	AFR	1339	-1.5	-8.4	-6.9	2182	1192	3172
São Tomé and Príncipe	AFR	7	3.5	-6.5	-10.0	16	9	23
Timor-Leste	EAP	37	5.0	-6.8	-11.8	105	57	152
Tunisia	MNA	204	2.4	-7.0	-9.5	458	250	666
Ukraine	ECA	426	3.0	-7.2	-10.2	1032	564	1500
Uzbekistan	ECA	703	6.0	0.7	-5.3	884	483	1285
Vanuatu	EAP	9	3.1	-8.3	-11.4	23	13	34
Vietnam	EAP	1610	6.5	1.6	-4.9	1872	1023	2722
Zambia	AFR	622	1.7	-4.8	-6.5	963	526	1400
Zimbabwe	AFR	442	2.7	-10.4	-13.1	1375	751	1999
Nigeria	AFR	7377	2.5	-4.3	-6.8	11904	832	2215
Pakistan	SAR	5994	2.4	-0.4	-2.7	3891	1393	3707
Papua New Guinea	EAP	232	2.6	-3.3	-5.8	322	11	30
Philippines	EAP	2178	6.2	-8.3	-14.4	7466	374	996
Senegal	AFR	544	6.8	-0.7	-7.4	961	16	43
Solomon Islands	EAP	21	2.9	-5.0	-7.9	39	452	1204
Sudan	AFR	1339	-1.5	-8.4	-6.9	2182	798	2124
São Tomé and Príncipe	AFR	7	3.5	-6.5	-10.0	16	21	55
Timor-Leste	EAP	37	5.0	-6.8	-11.8	105	217	578
Tunisia	MNA	204	2.4	-7.0	-9.5	458	634	1688
Ukraine	ECA	426	3.0	-7.2	-10.2	1032	19	50
Uzbekistan	ECA	703	6.0	0.7	-5.3	884	778	2070
Vanuatu	EAP	9	3.1	-8.3	-11.4	23	172	458
Vietnam	EAP	1610	6.5	1.6	-4.9	1872	16	41
Zambia	AFR	622	1.7	-4.8	-6.5	963	529	1407
Zimbabwe	AFR	442	2.7	-10.4	-13.1	1375	271	721
Panel C: Upper-Middle Income Economies ^a								
Albania	ECA	34	4.0	-7.5	-11.6	63	11	116
Algeria	MNA	1032	2.4	-5.5	-7.9	1305	223	2388
Argentina	LAC	755	-1.3	-11.8	-10.5	1276	218	2333
Armenia	ECA	42	4.8	-4.5	-9.3	62	11	114
Azerbaijan	ECA	169	2.1	-4.0	-6.1	167	28	305
Belarus	ECA	112	0.3	-3.0	-3.3	59	10	108

Belize	LAC	8	2.1	-16.0	-18.1	23	4	42
Bosnia and Herzegovina	ECA	27	2.6	-6.5	-9.1	40	7	74
Botswana	AFR	56	4.3	-9.6	-14.0	126	22	231
Brazil	LAC	2934	2.0	-5.8	-7.8	3700	632	6768
Bulgaria	ECA	63	3.2	-4.0	-7.2	73	13	134
China	EAP	16978	5.8	1.9	-4.0	10835	1852	19818
Colombia	LAC	739	3.6	-8.2	-11.8	1407	240	2573
Costa Rica	LAC	70	2.5	-5.5	-8.0	91	15	166
Dominican Republic	LAC	208	5.2	-6.0	-11.2	375	64	686
Ecuador	LAC	336	0.5	-11.0	-11.5	621	106	1135
Equatorial Guinea	AFR	43	-5.0	-6.0	-1.0	7	1	13
Fiji	EAP	19	3.0	-21.0	-24.0	73	13	134
Gabon	AFR	67	3.4	-2.7	-6.1	65	11	120
Georgia	ECA	54	4.8	-5.0	-9.8	86	15	157
Grenada	LAC	2	2.7	-11.8	-14.5	4	1	8
Guatemala	LAC	423	3.5	-2.0	-5.5	377	64	690
Guyana	LAC	16	85.6	26.2	-59.4	149	25	273
Iran	MNA	1552	0.0	-5.0	-5.0	1257	215	2298
Iraq	MNA	1104	4.7	-12.1	-16.7	2972	508	5436
Jamaica	LAC	47	1.0	-8.6	-9.6	73	13	134
Jordan	MNA	215	2.4	-5.0	-7.4	255	44	467
Kazakhstan	ECA	389	3.9	-2.7	-6.6	413	71	756
Lebanon	MNA	117	0.9	-25.0	-25.9	488	83	893
Libya	MNA	126	0.0	-66.7	-66.6	1353	231	2475
Malaysia	EAP	527	4.4	-6.0	-10.4	882	151	1613
Maldives	SAR	7	6.0	-18.6	-24.6	28	5	52
Mauritius	AFR	13	3.8	-14.2	-18.0	38	6	69
Mexico	LAC	2224	1.3	-9.0	-10.3	3670	627	6713
Montenegro	ECA	7	2.5	-12.0	-14.5	17	3	32
Namibia	AFR	70	1.6	-5.9	-7.4	83	14	153
North Macedonia	ECA	23	3.4	-5.4	-8.8	32	5	58
Paraguay	LAC	143	4.0	-4.0	-8.0	185	32	338
Peru	LAC	574	3.6	-13.9	-17.6	1621	277	2966
Romania	ECA	192	3.5	-4.8	-8.3	256	44	468
Russia	ECA	1858	1.9	-4.1	-6.0	1788	306	3271

Samoa	EAP	5	4.4	-5.0	-9.4	7	1	13
Serbia	ECA	84	4.0	-2.5	-6.5	87	15	160
South Africa	AFR	1185	1.1	-8.0	-9.1	1730	296	3165
Sri Lanka	SAR	339	3.5	-4.6	-8.1	441	75	806
St. Lucia	LAC	2	3.2	-16.9	-20.1	7	1	13
St. Vincent and the Grenadines	LAC	2	2.3	-7.0	-9.3	2	0	4
Suriname	LAC	11	2.5	-13.1	-15.6	27	5	49
Thailand	EAP	725	3.0	-7.1	-10.2	1183	202	2164
Tonga	EAP	3	3.7	-2.5	-6.2	3	0	5
Turkey	ECA	1318	3.0	-5.0	-8.0	1689	289	3089
Turkmenistan	ECA	139	6.0	1.8	-4.3	95	16	174
Venezuela, RB	LAC	528	-10.0	-25.0	-15.0	1273	218	2328

^aThe country classification into income and region groups follows the World Bank classification for fiscal year 2021. AFR = sub-Saharan Africa; EAP = East Asia and Pacific; ECA = European and Central Asia; LAC = Latin America and Caribbean; MNA = Middle East and North Africa SAR = South Asia;

^bNumber of births projected by the United Nations World Population Prospects 2019.

^cProjections by the IMF World Economic Outlook for 2020.