

# World Population

*An Analysis of Vital Data*

Nathan Keyfitz and Wilhelm Flieger



Standard Book Number: 226-43234-3

Library of Congress Catalog Card Number: 68-14010

The University of Chicago Press, Chicago 60637  
The University of Chicago Press, Ltd., London

© 1968 by The University of Chicago

All rights reserved. Published 1968. Second Impression 1970

Printed in the United States of America

**TABLE 1**  
DATA

AGE AT LAST BIRTHDAY	BOTH SEXES	POPULATION				BIRTHS		DEATHS		AGE AT LAST BIRTHDAY
		MALES		FEMALES		BY AGE OF MOTHER	BOTH SEXES	MALES	FEMALES	
		Number	%	Number	%					
0	1156283	592447	3.4	563836	3.2	0	117937	64716	53221	0
1-4	4667265	2369673	13.6	2297592	13.1	0	66022	32730	33292	1-4
5-9	5343878	2721158	15.6	2622720	14.9	0	14157	7285	6872	5-9
10-14	4379517	2245726	12.9	2133791	12.2	1465	6258	3488	2770	10-14
15-19	3552962	1749121	10.0	1803841	10.3	189086	7727	4308	3419	15-19
20-24	2961491	1413552	8.1	1547939	8.8	463709	10094	5455	4639	20-24
25-29	2516666	1202742	6.9	1313924	7.5	417450	10572	5865	4707	25-29
30-34	2063003	1014869	5.8	1048134	6.0	282044	10102	5667	4435	30-34
35-39	1927193	962313	5.5	964880	5.5	193272	12072	6890	5182	35-39
40-44	1370581	678762	3.9	691819	3.9	67903	9848	5633	4215	40-44
45-49	1239104	613088	3.5	626016	3.6	0	11512	6648	4864	45-49
50-54	1067747	529654	3.0	538093	3.1	0	12223	6969	5254	50-54
55-59	804810	407779	2.3	397031	2.3	0	13667	7776	5891	55-59
60-64	746238	372857	2.1	373381	2.1	0	16173	8662	7511	60-64
65-69	417420	205085	1.2	212335	1.2	0	14226	7404	6822	65-69
70-74	375805	182586	1.0	193219	1.1	0	17604	8786	8818	70-74
75-79	236669	112898	0.6	123771	0.7	0	15650	7599	8051	75-79
80-84	124054	57843	0.3	66211	0.4	828503 M.	13578	6097	7481	80-84
85+	46317	20996	0.1	25321	0.1	786426 F.	16688	6931	9757	85+
TOTAL	34997003	17453149		17543854		1614929	396110	208909	187201	TOTAL

**TABLE 2**  
MALE LIFE TABLE

$x$	${}^nq_x$	$l_x$	${}^nd_x$	${}^nL_x$	${}^nm_x$	${}^na_x$	$T_x$	$r_x$	$i_x$	${}^nM_x$	$x$
0	0.102003	100000	10200	93379	0.109235	0.3513	5564010	0.3000	55.640	0.109235	0
1	0.053207	89800	4778	345925	0.013812	1.2219	5470631	0.0000	60.920	0.013812	1
5	0.013058	85022	1110	422333	0.002629	2.5000	5124706	0.0227	60.275	0.002677	5
10	0.007728	83912	648	417919	0.001552	2.4737	4702372	0.0422	56.040	0.001553	10
15	0.012349	83263	1028	413938	0.002484	2.6886	4284453	0.0437	51.457	0.002463	15
20	0.019203	82235	1579	407418	0.003876	2.6213	3870515	0.0337	47.067	0.003859	20
25	0.024145	80656	1947	398533	0.004887	2.5633	3463097	0.0283	42.937	0.004876	25
30	0.027584	78708	2171	388270	0.005592	2.5722	3064564	0.0165	38.936	0.005584	30
35	0.035277	76537	2700	376111	0.007179	2.5653	2676294	0.0332	34.967	0.007160	35
40	0.040807	73837	3013	361871	0.008326	2.5723	2300183	0.0365	31.152	0.008299	40
45	0.052894	70824	3746	345021	0.010858	2.5711	1938312	0.0141	27.368	0.010843	45
50	0.063980	67078	4292	325074	0.013202	2.5964	1593291	0.0268	23.753	0.013158	50
55	0.091290	62786	5732	300022	0.019104	2.5732	1268217	0.0166	20.199	0.019069	55
60	0.110528	57055	6306	270076	0.023349	2.5902	968195	0.0357	16.970	0.023231	60
65	0.166726	50748	8461	233178	0.036286	2.5695	698119	0.0357	13.756	0.036102	65
70	0.215877	42287	9129	188854	0.048338	2.5262	464942	0.0357	10.995	0.048120	70
75	0.289776	33158	9609	141948	0.067690	2.5184	276088	0.0357	8.326	0.067309	75
80	0.423709	23550	9978	93630	0.106572	2.5827	134140	0.0357	5.696	0.105405	80
85+	*1.000000	13572	13572	40510	0.335015	2.9849	40510	0.0357	2.985	0.330110	85+

**TABLE 3**  
FEMALE LIFE TABLE

$x$	${}^nq_x$	$l_x$	${}^nd_x$	${}^nL_x$	${}^nm_x$	${}^na_x$	$T_x$	$r_x$	$i_x$	${}^nM_x$	$x$
0	0.089101	100000	8910	94395	0.094391	0.3710	5861297	0.0000	58.613	0.094391	0
1	0.055747	91090	5078	350449	0.014490	1.2607	5766902	0.0000	63.310	0.014490	1
5	0.012739	86012	1096	427320	0.002564	2.5000	5416453	0.0243	62.973	0.002620	5
10	0.006444	84916	547	423151	0.001293	2.3876	4989132	0.0357	58.754	0.001298	10
15	0.009489	84369	801	419990	0.001906	2.6822	4565981	0.0301	54.119	0.001895	15
20	0.014928	83568	1248	414862	0.003007	2.6110	4145991	0.0288	49.612	0.002997	20
25	0.017802	82321	1465	408035	0.003591	2.5639	3731129	0.0354	45.324	0.003582	25
30	0.020990	80856	1697	400168	0.004241	2.5783	3323094	0.0265	41.099	0.004231	30
35	0.026575	79158	2104	390662	0.005385	2.5617	2922927	0.0363	36.925	0.005371	35
40	0.030107	77055	2320	379630	0.006111	2.5674	2532265	0.0370	32.863	0.006093	40
45	0.038197	74735	2855	366772	0.007783	2.5823	2152634	0.0173	28.804	0.007770	45
50	0.047955	71880	3447	351214	0.009815	2.6247	1785862	0.0351	24.845	0.009764	50
55	0.071868	68433	4918	330428	0.014884	2.6134	1434648	0.0218	20.964	0.014838	55
60	0.096414	63515	6124	303031	0.020208	2.6250	1104220	0.0270	17.385	0.020116	60
65	0.149723	57391	8593	266292	0.032268	2.6250	801188	0.0270	13.960	0.032128	65
70	0.205934	48799	10049	219353	0.045813	2.5481	534896	0.0270	10.961	0.045637	70
75	0.281657	38749	10914	166957	0.065370	2.5454	315543	0.0270	8.143	0.065048	75
80	0.446456	27835	12427	109044	0.113965	2.5753	148587	0.0270	5.338	0.112988	80
85+	*1.000000	15408	15408	39542	0.389662	2.5663	39542	0.0270	2.566	0.385332	85+

**TABLE 4**  
OBSERVED AND PROJECTED VITAL RATES

RATES PER THOUSAND	OBSERVED POPULATION			PROJECTED POPULATION				STABLE POPULATION			
	BOTH SEXES	MALES	FEMALES	1965		1970		1975		MALES	FEMALES
Birth	46.14	47.47	44.83	46.72	44.34	46.25	44.07	45.74	43.73	45.40	44.14
Death	11.32	11.97	10.67	12.52	11.06	12.40	10.99	12.23	10.88	12.45	11.19
Increase	34.83	35.50	34.16	34.20	33.28	33.85	33.08	33.51	32.85		32.9511
PERCENTAGE											
under 15	44.42	45.43	43.42	45.82	44.14	45.84	44.27	46.97	45.46	45.94	45.21
15-64	52.15	51.25	53.04	50.68	52.22	50.79	52.25	49.73	51.06	51.24	51.64
65 and over	3.43	3.32	3.54	3.50	3.65	3.37	3.48	3.30	3.48	2.82	3.15
DEP. RATIO X 100	91.77	95.12	88.54	97.32	91.51	96.88	91.39	101.10	95.85	95.16	93.65

**TABLE 1**  
DATA

AGE AT LAST BIRTHDAY	BOTH SEXES	POPULATION				BIRTHS		DEATHS		AGE AT LAST BIRTHDAY
		MALES		FEMALES		BY AGE OF MOTHER	BOTH SEXES	MALES	FEMALES	
		Number	%	Number	%					
0	1557000	796000	4.1	761000	3.9	0	119430	65558	53872	0
1-4	5606000	2876000	14.9	2730000	14.2	0	67413	33566	33847	1-4
5-9	5797000	2969000	15.4	2828000	14.7	0	13577	6962	6615	5-9
10-14	4712000	2385000	12.4	2327000	12.1	1456	6253	3430	2823	10-14
15-19	3850000	1932000	10.0	1918000	10.0	194026	7518	4142	3376	15-19
20-24	3195000	1579000	8.2	1616000	8.4	479981	9757	5376	4381	20-24
25-29	2692000	1313000	6.8	1379000	7.2	440632	10385	5748	4637	25-29
30-34	2288000	1111000	5.8	1177000	6.1	299377	10099	5643	4456	30-34
35-39	1939000	943000	4.9	996000	5.2	209080	11906	6531	5375	35-39
40-44	1602000	772000	4.0	830000	4.3	80929	10097	5778	4319	40-44
45-49	1310000	629000	3.3	681000	3.5	0	10842	6181	4661	45-49
50-54	1112000	547000	2.8	565000	2.9	0	12318	7054	5264	50-54
55-59	915000	459000	2.4	456000	2.4	0	13337	7510	5827	55-59
60-64	703000	348000	1.8	355000	1.8	0	18281	9799	8482	60-64
65-69	509000	247000	1.3	262000	1.4	0	14348	7517	6831	65-69
70-74	349000	168000	0.9	181000	0.9	0	17286	8743	8543	70-74
75-79	220000	106000	0.6	114000	0.6	0	14212	7163	7049	75-79
80-84	135439	64945	0.3	70494	0.4	880648 M.	13932	6268	7664	80-84
85+	51561	24055	0.1	27506	0.1	824833 F.	22055	9149	12906	85+
TOTAL	38543000	19269000		19274000			403046	212118	190928	TOTAL

**TABLE 2**  
MALE LIFE TABLE

x	$nq_x$	$l_x$	$n^d_x$	$nL_x$	$n^m_x$	$n^a_x$	$T_x$	$r_x$	$i_x$	$nM_x$	x
0	0.078063	100000	7806	95037	0.082140	0.3643	5827484	0.0040	58.275	0.082359	0
1	0.045137	92194	4161	357318	0.011646	1.2469	5732447	0.0040	62.178	0.011671	1
5	0.011316	88032	996	437671	0.002276	2.5000	5375129	0.0389	61.059	0.002345	5
10	0.007159	87036	623	433609	0.001437	2.4774	4937458	0.0412	56.729	0.001438	10
15	0.010746	86413	929	429916	0.002160	2.6856	4503849	0.0390	52.120	0.002144	15
20	0.016968	85484	1450	423983	0.003421	2.6287	4073933	0.0353	47.657	0.003405	20
25	0.021711	84034	1824	415738	0.004389	2.5706	3649950	0.0308	43.434	0.004378	25
30	0.025160	82210	2068	406066	0.005094	2.5917	3234213	0.0277	39.341	0.005079	30
35	0.034127	80141	2735	394031	0.006941	2.5597	2828146	0.0298	35.290	0.006926	35
40	0.036845	77406	2852	380079	0.007504	2.5623	2434115	0.0326	31.446	0.007484	40
45	0.048128	74554	3588	364132	0.009854	2.5925	2054036	0.0245	27.551	0.009827	45
50	0.062646	70966	4446	344065	0.012921	2.5786	1689904	0.0187	23.813	0.012896	50
55	0.079145	66520	5265	320200	0.016442	2.6444	1345839	0.0269	20.232	0.016362	55
60	0.132149	61256	8095	286519	0.028253	2.5591	1025639	0.0299	16.744	0.028158	60
65	0.142230	53161	7561	247415	0.030560	2.5681	739120	0.0299	13.904	0.030433	65
70	0.231726	45600	10567	202121	0.052279	2.5510	491705	0.0299	10.783	0.052042	70
75	0.289725	35033	10150	149637	0.067830	2.4849	289584	0.0299	8.266	0.067575	75
80	0.395099	24883	9831	100858	0.097476	2.6039	139947	0.0299	5.624	0.096512	80
85+	*1.000000	15052	15052	39089	0.385067	2.5969	39089	0.0299	2.597	0.380337	85+

**TABLE 3**  
FEMALE LIFE TABLE

x	$nq_x$	$l_x$	$n^d_x$	$nL_x$	$n^m_x$	$n^a_x$	$T_x$	$r_x$	$i_x$	$nM_x$	x
0	0.067636	100000	6764	95843	0.070570	0.3853	6111654	0.0048	61.117	0.070791	0
1	0.047878	93236	4464	360864	0.012370	1.2935	6015811	0.0048	64.522	0.012398	1
5	0.011280	88772	1001	441359	0.002269	2.5000	5654948	0.0363	63.702	0.002339	5
10	0.006027	87771	529	437485	0.001209	2.4086	5213589	0.0372	59.400	0.001213	10
15	0.008819	87242	769	434420	0.001771	2.6733	4776105	0.0346	54.745	0.001760	15
20	0.013518	86473	1169	429578	0.002721	2.6169	4341684	0.0303	50.209	0.002711	20
25	0.016707	85304	1425	423041	0.003369	2.5599	3912106	0.0284	45.861	0.003363	25
30	0.018818	83879	1578	415607	0.003798	2.6016	3489065	0.0285	41.597	0.003786	30
35	0.026675	82300	2195	406113	0.005406	2.5459	3073458	0.0300	37.344	0.005397	35
40	0.025736	80105	2062	395462	0.005213	2.5447	2667345	0.0324	33.298	0.005204	40
45	0.033801	78043	2638	383911	0.006871	2.6096	2271882	0.0315	29.111	0.006844	45
50	0.045751	75405	3450	368789	0.009355	2.6123	1887972	0.0307	25.038	0.009317	50
55	0.062498	71955	4497	349408	0.012870	2.6942	1519183	0.0319	21.113	0.012779	55
60	0.113286	67458	7642	318785	0.023973	2.5783	1169775	0.0270	17.341	0.023893	60
65	0.123188	59816	7369	281390	0.026187	2.5991	850990	0.0270	14.227	0.026073	65
70	0.212544	52448	11147	235152	0.047405	2.5702	569600	0.0270	10.860	0.047199	70
75	0.269381	41300	11126	179094	0.062121	2.5365	334447	0.0270	8.098	0.061833	75
80	0.434103	30175	13099	119366	0.109738	2.5946	155353	0.0270	5.148	0.108718	80
85+	*1.000000	17076	17076	35987	0.474494	2.1075	35987	0.0270	2.108	0.469207	85+

**TABLE 4**  
OBSERVED AND PROJECTED VITAL RATES

RATES PER THOUSAND	OBSERVED POPULATION			PROJECTED POPULATION				STABLE POPULATION			
	BOTH SEXES	MALES	FEMALES	1967		1972		1977		MALES	FEMALES
Birth	44.25	45.70	42.80	44.88	42.34	44.65	42.38	44.80	42.75	44.28	43.26
Death	10.46	11.01	9.91	10.82	9.62	10.68	9.57	10.62	9.59	10.63	9.61
Increase	33.79	34.69	32.89	34.06	32.72	33.97	32.81	34.18	33.16		33.6501
PERCENTAGE											
under 15	45.85	46.84	44.86	47.25	45.16	47.05	45.13	46.76	45.02	46.11	45.45
15-64	50.87	49.99	51.74	49.59	51.46	49.78	51.47	50.14	51.57	51.12	51.44
65 and over	3.28	3.17	3.40	3.16	3.38	3.18	3.40	3.11	3.41	2.77	3.12
DEP. RATIO X 100	96.59	100.03	93.26	101.67	94.34	100.90	94.29	99.45	93.91	95.61	94.41