Revised Tables: By Ariel Sosnovsky

Ariel Sosnovsky

July 16, 2019

Table # 1b								
Gompertz-Makeham Parameters Around the World: FEMALE								
Country	$\ln h[i]$	$\lambda_0[i]$	Makeham: $\lambda$	g[i]	$\lambda_{55}[i]$	m	b	
1. Australia	-12.349	$31.5 \times 10^{-5}$	$31.0 \times 10^{-5}$	11.29%	0.273%	90.04	8.85	
2. Austria	-11.952	$4.7 \times 10^{-5}$	$4.0 \times 10^{-5}$	10.99%	0.308%	88.65	9.10	
3. Belarus	-10.797	$76.3 \times 10^{-5}$	$74.0 \times 10^{-5}$	10.21%	0.695%	83.44	9.80	
4. Belgium	-11.620	$15.0 \times 10^{-5}$	$14.0 \times 10^{-5}$	10.60%	0.355%	88.43	9.43	
5. Canada	-11.773	$18.9 \times 10^{-5}$	$18.0 \times 10^{-5}$	10.64%	0.317%	89.56	9.40	
6. Croatia	-11.784	$1.9 \times 10^{-5}$	$1.0 \times 10^{-5}$	11.25%	0.416%	85.34	8.89	
7. Czechia	-12.009	$19.7 \times 10^{-5}$	$19.0 \times 10^{-5}$	11.44%	0.388%	86.01	8.74	
8. Denmark	-11.608	$2.0 \times 10^{-5}$	$1.0 \times 10^{-5}$	10.75%	0.376%	87.21	9.30	
9. Estonia	-11.132	$18.6 \times 10^{-5}$	$17.0 \times 10^{-5}$	10.20%	0.460%	86.75	9.80	
10. Finland	-11.860	$9.8 \times 10^{-5}$	$9.0 \times 10^{-5}$	10.84%	0.315%	88.90	9.22	
11. France	-11.614	$22.0 \times 10^{-5}$	$21.0 \times 10^{-5}$	10.25%	0.302%	91.08	9.75	
12. Germany	-11.898	$11.8 \times 10^{-5}$	$11.0 \times 10^{-5}$	11.00%	0.332%	88.12	9.09	
13. Greece	-12.594	$24.4 \times 10^{-5}$	$24.0 \times 10^{-5}$	11.78%	0.272%	88.77	8.49	
14. Hungary	-10.812	$3.2 \times 10^{-5}$	$1.0 \times 10^{-5}$	10.14%	0.590%	84.06	9.86	
15. Ireland	-11.725	$8.9 \times 10^{-5}$	$8.0 \times 10^{-5}$	10.75%	0.342%	88.29	9.30	
16. Israel	-12.494	$23.4 \times 10^{-5}$	$23.0 \times 10^{-5}$	11.64%	0.277%	88.84	8.59	
17. Italy	-12.478	$15.4 \times 10^{-5}$	$15.0 \times 10^{-5}$	11.49%	0.252%	89.80	8.71	
18. Japan	-12.344	$38.5 \times 10^{-5}$	$38.0 \times 10^{-5}$	11.00%	0.245%	92.12	9.09	
19. Korea	-13.266	$47.2 \times 10^{-5}$	$47.0 \times 10^{-5}$	12.46%	0.233%	89.77	8.03	
20. Latvia	-10.646	$20.6 \times 10^{-5}$	$18.0 \times 10^{-5}$	9.86%	0.612%	84.51	10.15	
21. Lithuania	-10.649	$43.6 \times 10^{-5}$	$41.0 \times 10^{-5}$	9.74%	0.597%	85.39	10.26	
22. Luxembourg	-11.877	$1.8 \times 10^{-5}$	$1.0 \times 10^{-5}$	10.92%	0.316%	88.47	9.16	
23. Netherlands	-11.700	$12.9 \times 10^{-5}$	$12.0 \times 10^{-5}$	10.73%	0.350%	88.22	9.32	
24. New Zealand	-12.079	$33.6 \times 10^{-5}$	$33.0 \times 10^{-5}$	11.17%	0.329%	88.48	8.95	
25. Norway	-12.006	$5.7 \times 10^{-5}$	$5.0 \times 10^{-5}$	11.05%	0.303%	88.68	9.05	
26. Poland	-11.280	$10.4 \times 10^{-5}$	$9.0 \times 10^{-5}$	10.45%	0.449%	86.31	9.57	
27. Portugal	-12.249	$27.5 \times 10^{-5}$	$27.0 \times 10^{-5}$	11.31%	0.297%	89.00	8.84	
28. Russia	-11.156	$160.6 \times 10^{-5}$	$159.0 \times 10^{-5}$	10.65%	0.714%	83.74	9.39	
29. Slovakia	-11.560	$10.1 \times 10^{-5}$	$9.0 \times 10^{-5}$	11.00%	0.460%	85.04	9.09	
30. Slovenia	-11.683	$1.9 \times 10^{-5}$	$1.0 \times 10^{-5}$	10.73%	0.345%	88.07	9.32	
31. Spain	-12.362	$17.5 \times 10^{-5}$	$17.0 \times 10^{-5}$	11.24%	0.248%	90.57	8.90	
32. Sweden	-12.377	$11.5 \times 10^{-5}$	$11.0 \times 10^{-5}$	11.51%	0.276%	88.79	8.69	
33. Switzerland	-12.233	$6.5 \times 10^{-5}$	$6.0 \times 10^{-5}$	11.15%	0.256%	90.05	8.97	
34. Taiwan	-12.051	$40.7 \times 10^{-5}$	$40.0 \times 10^{-5}$	11.15%	0.341%	88.40	8.97	
35. U.K.	-11.861	$29.8 \times 10^{-5}$	$29.0 \times 10^{-5}$	10.90%	0.345%	88.48	9.17	
36. U.S.A.	-11.063	$41.7 \times 10^{-5}$	$40.0 \times 10^{-5}$	9.97%	0.457%	87.83	10.03	
37. Ukraine	-11.460	$129.2 \times 10^{-5}$	$128.0 \times 10^{-5}$	11.12%	0.662%	83.29	8.99	
Average:	-11.795	$27.0 imes10^{-5}$	$26.0 imes10^{-5}$	10.90%	0.381%	87.80	9.20	
Source: Human Mortality Database, Period 2011								

Table # 1a								
Gompertz-Makeham Parameters Around the World: MALE								
Country	$\ln h[i]$	$\lambda_0[i]$	Makeham: λ	g[i]	$\lambda_{55}[i]$	m	b	
1. Australia	-11.854	$66.8 \times 10^{-5}$	$66.0 \times 10^{-5}$	11.19%	0.440%	86.37	8.94	
2. Austria	-10.769	$3.3 \times 10^{-5}$	$1.0 \times 10^{-5}$	10.08%	0.596%	84.08	9.92	
3. Belarus	-7.746	$50.4 \times 10^{-5}$	$4.0 \times 10^{-5}$	7.12%	2.335%	71.68	14.04	
4. Belgium	-10.900	$29.0 \times 10^{-5}$	$27.0 \times 10^{-5}$	10.28%	0.610%	83.92	9.73	
5. Canada	-11.292	$37.4 \times 10^{-5}$	$36.0 \times 10^{-5}$	10.53%	0.490%	85.85	9.50	
6. Croatia	-10.156	$5.3 \times 10^{-5}$	$1.0 \times 10^{-5}$	9.75%	0.914%	80.29	10.26	
7. Czechia	-10.258	$4.9 \times 10^{-5}$	$1.0 \times 10^{-5}$	9.81%	0.855%	80.88	10.19	
8. Denmark	-10.835	$16.2 \times 10^{-5}$	$14.0 \times 10^{-5}$	10.25%	0.626%	83.50	9.76	
9. Estonia	-9.045	$13.8 \times 10^{-5}$	$1.0 \times 10^{-5}$	8.33%	1.256%	78.72	12.00	
10. Finland	-10.594	$36.8 \times 10^{-5}$	$34.0 \times 10^{-5}$	9.91%	0.679%	83.57	10.09	
11. France	-10.378	$35.4 \times 10^{-5}$	$32.0 \times 10^{-5}$	9.44%	0.647%	84.92	10.59	
12. Germany	-10.731	$3.4 \times 10^{-5}$	$1.0 \times 10^{-5}$	10.10%	0.625%	83.57	9.90	
13. Greece	-10.485	$17.1 \times 10^{-5}$	$14.0 \times 10^{-5}$	9.67%	0.643%	84.26	10.34	
14. Hungary	-9.421	$9.9 \times 10^{-5}$	$1.0 \times 10^{-5}$	8.98%	1.239%	78.07	11.13	
15. Ireland	-11.291	$39.4 \times 10^{-5}$	$38.0 \times 10^{-5}$	10.67%	0.529%	84.87	9.37	
16. Israel	-11.038	$2.8 \times 10^{-5}$	$1.0 \times 10^{-5}$	10.19%	0.486%	85.88	9.81	
17. Italy	-11.647	$23.0 \times 10^{-5}$	$22.0 \times 10^{-5}$	11.06%	0.450%	85.39	9.04	
18. Japan	-11.282	$39.4 \times 10^{-5}$	$38.0 \times 10^{-5}$	10.55%	0.502%	85.60	9.48	
19. Korea	-10.803	$37.3 \times 10^{-5}$	$35.0 \times 10^{-5}$	10.19%	0.647%	83.59	9.81	
20. Latvia	-8.517	$22.6 \times 10^{-5}$	$1.0 \times 10^{-5}$	7.86%	1.635%	75.98	12.72	
21. Lithuania	-8.143	$32.3 \times 10^{-5}$	$1.0 \times 10^{-5}$	7.34%	1.772%	75.37	13.63	
22. Luxembourg	-11.334	$2.3 \times 10^{-5}$	$1.0 \times 10^{-5}$	10.83%	0.517%	84.11	9.23	
23. Netherlands	-11.628	$18.0 \times 10^{-5}$	$17.0 \times 10^{-5}$	11.12%	0.468%	84.83	8.99	
24. New Zealand	-11.542	$49.1 \times 10^{-5}$	$48.0 \times 10^{-5}$	10.88%	0.478%	85.68	9.19	
25. Norway	-11.566	$33.1 \times 10^{-5}$	$32.0 \times 10^{-5}$	11.01%	0.484%	85.00	9.08	
26. Poland	-9.198	$12.0 \times 10^{-5}$	$1.0 \times 10^{-5}$	8.48%	1.172%	79.34	11.79	
27. Portugal	-10.377	$42.4 \times 10^{-5}$	$39.0 \times 10^{-5}$	9.62%	0.721%	83.50	10.39	
28. Russia	-8.246	$315.3 \times 10^{-5}$	$287.0 \times 10^{-5}$	7.62%	2.158%	74.43	13.12	
29. Slovakia	-9.593	$8.5 \times 10^{-5}$	$1.0 \times 10^{-5}$	9.10%	1.117%	79.06	10.99	
30. Slovenia	-10.559	$3.9 \times 10^{-5}$	$1.0 \times 10^{-5}$	10.02%	0.712%	82.40	9.98	
31. Spain	-10.827	$3.2 \times 10^{-5}$	$1.0 \times 10^{-5}$	10.04%	0.551%	84.92	9.96	
32. Sweden	-11.898	$25.8 \times 10^{-5}$	$25.0 \times 10^{-5}$	11.40%	0.427%	85.34	8.77	
33. Switzerland	-11.721	$25.9 \times 10^{-5}$	$25.0 \times 10^{-5}$	11.07%	0.424%	86.02	9.04	
34. Taiwan	-9.849	$97.8 \times 10^{-5}$	$92.0 \times 10^{-5}$	8.89%	0.859%	83.56	11.25	
35. U.K.	-11.386	$64.3 \times 10^{-5}$	$63.0 \times 10^{-5}$	10.73%	0.525%	85.30	9.32	
36. U.S.A.	-10.275	$65.8 \times 10^{-5}$	$62.0 \times 10^{-5}$	9.42%	0.735%	84.01	10.62	
37. Ukraine	-8.616	$223.6 \times 10^{-5}$	$204.0 \times 10^{-5}$	8.12%	1.914%	75.18	12.31	
Average:	-10.427	$41.0 imes10^{-5}$	$34.3 imes10^{-5}$	<b>9.77</b> %	<b>0.844</b> %	82.41	10.39	
Source: Human Mortality Database, Period 2011								

Table #2:								
CLaM Regression Line Around the World								
Variable	MALE			FEMALE				
	Coeff.	Std.Er	t-val.	Coeff.	Std.Er	t-val.		
Intercept $(L)$	-0.851	0.193	-4.413	-1.289	0.705	-1.828		
Slope: $(-x^*)$	-97.964	1.960	-49.987	-96.360	6.459	-14.919		
Adj. $R^2$	98.58%			86.02%				
Range: $g[i]$	(7.12%, 11.40%)			(9.74%, 12.46%)				
Average: $g[i]$	G = 9.77%%			G = 10.90%%				
Plateau (+/-): $\lambda^*$	(0.291, 0.628)			(0.068, 1.129)				
Countries	N = 37			N = 37				

Note: These are the results from regressing the (male and female) Gompertz-Makeham (log) mortality intercepts  $\ln h[i]$  on the mortality growth rates g[i], from the Human Mortality Database (HMD) for *period* mortality in 2011. This is the second phase regression.

Table # 3							
Mortality-Adjusted Biological Ages $(\xi)$ Around the World							
	MALE			FEMALE			
Country	x = 55	x = 70	x = 85	x = 55	x = 70	x = 85	
1. Australia	48.79	65.96	83.12	53.52	69.06	84.59	
2. Austria	53.66	69.13	84.60	54.66	69.79	84.91	
3. Belarus	66.67	77.59	88.52	57.64	71.69	85.73	
4. Belgium	52.80	68.57	84.33	56.14	70.72	85.31	
5. Canada	51.67	67.84	84.00	55.98	70.63	85.27	
6. Croatia	55.11	70.07	85.03	53.69	69.16	84.64	
7. Czechia	54.83	69.89	84.95	52.96	68.70	84.44	
8. Denmark	52.93	68.65	84.37	55.56	70.36	85.15	
9. Estonia	61.34	74.12	86.91	57.66	71.70	85.73	
10. Finland	54.40	69.61	84.82	55.23	70.15	85.06	
11. France	56.46	70.95	85.44	57.47	71.57	85.68	
12. Germany	53.58	69.08	84.57	54.64	69.77	84.90	
13. Greece	55.46	70.30	85.14	51.68	67.88	84.09	
14. Hungary	58.49	72.27	86.05	57.89	71.84	85.79	
15. Ireland	51.08	67.45	83.82	55.57	70.36	85.16	
16. Israel	53.16	68.80	84.44	52.19	68.21	84.23	
17. Italy	49.35	66.32	83.30	52.79	68.59	84.39	
18. Japan	51.58	67.78	83.97	54.62	69.75	84.89	
19. Korea	53.17	68.81	84.45	49.10	66.24	83.38	
20. Latvia	63.40	75.47	87.54	58.97	72.53	86.09	
21. Lithuania	65.71	76.97	88.23	59.40	72.80	86.21	
22. Luxembourg	50.36	66.98	83.60	54.93	69.95	84.98	
23. Netherlands	49.10	66.16	83.22	55.64	70.41	85.18	
24. New Zealand	50.13	66.83	83.53	53.97	69.34	84.72	
25. Norway	49.56	66.46	83.36	54.42	69.63	84.84	
26. Poland	60.67	73.69	86.71	56.71	71.09	85.47	
27. Portugal	55.66	70.43	85.20	53.44	69.00	84.57	
28. Russia	64.47	76.16	87.86	55.97	70.62	85.27	
29. Slovakia	57.96	71.92	85.89	54.64	69.77	84.90	

30. Slovenia	53.91	69.29	84.67	55.65	70.41	85.18	
31. Spain	53.82	69.23	84.64	53.74	69.19	84.65	
32. Sweden	47.87	65.36	82.85	52.71	68.54	84.37	
33. Switzerland	49.32	66.30	83.29	54.06	69.40	84.74	
34. Taiwan	58.89	72.53	86.17	54.06	69.40	84.74	
35. U.K.	50.79	67.26	83.73	55.01	70.01	85.00	
36. U.S.A.	56.57	71.02	85.47	58.53	72.25	85.97	
37. Ukraine	62.27	74.73	87.19	54.17	69.47	84.77	
Average:	55.00	70.00	85.00	55.00	70.00	85.00	
Source: Human Mortality Database, Period 2011							