Supplemental material I: Associations between changes in cohorts' child mortality at young ages and changes in their adult mortality

Table S1a: Estimated regression coefficients of the regression $\ln(M_i(40,59)) = \alpha_i + \beta_i * \ln(M_i(0,4)) + \varepsilon_i$ by country (i), sex and cohort year of birth. M(40,59) and M(0,4) correspond to mortality rates at ages 40-59 and 0-4

	Female aged 40-59										Male aged 40-59									
	Before 1935					After 1935					Before 1935					After 1935				
	n	β	SE	95% CI	R^2	n	β	SE	95% CI	R^2	n	β	SE	95% CI	R^2	n	β	SE	95% CI	R^2
Forerunners																				
Argentina	35	0.87	0.059	(0.76,0.99)	0.87	17	0.14	0.016	(0.11,0.18)	0.84	35	0.40	0.026	(0.35,0.45)	0.88	17	0.26	0.023	(0.21,0.3)	0.89
Chile	35	2.74	0.093	(2.56,2.93)	0.96	17	0.63	0.038	(0.55,0.7)	0.95	35	1.94	0.054	(1.83,2.04)	0.97	17	0.70	0.037	(0.63,0.77)	0.96
Colombia	30	1.76	0.061	(1.64,1.88)	0.97	17	0.99	0.049	(0.89,1.08)	0.96	30	1.40	0.062	(1.28,1.52)	0.95	17	0.42	0.034	(0.35,0.48)	0.91
Costa Rica	35	2.24	0.068	(2.11,2.38)	0.97	17	0.44	0.039	(0.37,0.52)	0.90	35	1.69	0.125	(1.45,1.94)	0.85	17	0.19	0.048	(0.1,0.29)	0.52
Cuba	35	1.25	0.131	(1,1.51)	0.74	17	0.13	0.006	(0.12,0.14)	0.97	35	1.24	0.140	(0.96,1.51)	0.70	17	0.00	0.023	(-0.05,0.04)	0.00
Mexico	35	2.39	0.117	(2.16,2.62)	0.93	17	0.51	0.051	(0.41,0.61)	0.87	35	1.66	0.093	(1.48,1.84)	0.91	17	0.56	0.050	(0.46,0.66)	0.89
Panama	24	1.47	0.043	(1.38,1.55)	0.98	17	0.34	0.060	(0.23,0.46)	0.69	24	1.16	0.017	(1.12,1.19)	1.00	17	0.15	0.032	(0.08,0.21)	0.57
Uruguay	35	0.54	0.023	(0.49,0.58)	0.94	17	0.13	0.018	(0.09,0.16)	0.76	35	0.32	0.019	(0.28,0.36)	0.89	17	0.22	0.012	(0.2,0.25)	0.95
Venezuela	9	0.59	0.020	(0.55,0.63)	0.99	17	0.26	0.029	(0.21,0.32)	0.85	9	0.40	0.027	(0.35,0.45)	0.97	17	0.17	0.021	(0.13,0.21)	0.82
Laggards																				
Brazil	35	3.08	0.106	(2.87,3.28)	0.96	17	1.55	0.068	(1.42,1.68)	0.97	35	2.27	0.062	(2.15,2.39)	0.98	17	1.18	0.044	(1.09,1.26)	0.98
Dominican Republic	15	1.38	0.108	(1.17,1.6)	0.93	17	1.24	0.115	(1.01,1.47)	0.89	15	0.63	0.132	(0.37,0.88)	0.63	17	0.45	0.029	(0.4,0.51)	0.94
El Salvador	6	1.08	0.073	(0.94,1.22)	0.98	16	0.50	0.040	(0.42,0.58)	0.92	6	0.37	0.022	(0.32,0.41)	0.99	16	0.40	0.072	(0.26,0.54)	0.69
Guatemala	35	3.35	0.114	(3.13,3.58)	0.96	16	0.94	0.106	(0.73,1.15)	0.85	35	2.48	0.117	(2.25,2.71)	0.93	16	0.83	0.110	(0.61,1.05)	0.80
Nicaragua						16	0.13	0.039	(0.05,0.21)	0.44						16	0.18	0.025	(0.13,0.23)	0.78
Peru	35	3.76	0.090	(3.59,3.94)	0.98	16	1.58	0.034	(1.51,1.64)	0.99	35	3.95	0.113	(3.73,4.17)	0.97	16	1.13	0.038	(1.06,1.21)	0.98

Coefficients were estimated only when more than 5 cohorts were available.

Table S1b: Estimated regression coefficients of the regression $\ln(M_i(40,69)) = \alpha_i + \beta_i*\ln(M(0,4)) + \varepsilon_i$ by country (i), sex and cohort year of birth. M(40,69) and M(0,4) correspond to mortality rates at ages 40-69 and 0-4

	Female aged 40-69										Male aged 40-69									
	Before 1935					After 1935					Before 1935					After 1935				
	n	β	SE	95% CI	R^2	n	β	SE	95% CI	R^2	n	β	SE	95% CI	R^2	n	β	SE	95% CI	R^2
Forerunners																				
Argentina	35	0.74	0.027	(0.68,0.79)	0.96	7	0.24	0.038	(0.17,0.32)	0.89	35	0.44	0.016	(0.41,0.47)	0.96	7	0.49	0.041	(0.41,0.57)	0.97
Chile	35	2.64	0.101	(2.44,2.83)	0.95	7	0.62	0.096	(0.43,0.81)	0.89	35	2.01	0.065	(1.88,2.14)	0.97	7	0.68	0.098	(0.48,0.87)	0.91
Colombia	30	1.50	0.034	(1.44,1.57)	0.99	7	1.14	0.035	(1.07,1.21)	1.00	30	1.25	0.037	(1.18,1.33)	0.98	7	0.40	0.038	(0.33,0.48)	0.96
Costa Rica	35	1.82	0.091	(1.64,2)	0.92	7	0.74	0.018	(0.7,0.78)	1.00	35	1.31	0.104	(1.1,1.51)	0.83	7	0.58	0.022	(0.54,0.63)	0.99
Cuba	35	0.82	0.095	(0.63,1.01)	0.69	7	0.24	0.010	(0.22,0.26)	0.99	35	0.86	0.097	(0.67,1.05)	0.70	7	−0.35	0.010	(-0.37,-0.33)	1.00
Mexico	35	1.94	0.121	(1.7,2.18)	0.89	7	0.71	0.034	(0.65,0.78)	0.99	35	1.51	0.098	(1.32,1.7)	0.88	7	0.76	0.043	(0.67,0.84)	0.98
Panama	24	1.28	0.035	(1.21,1.35)	0.98	7	0.77	0.017	(0.74,0.8)	1.00	24	0.95	0.027	(0.9,1)	0.98	7	0.38	0.049	(0.28,0.48)	0.92
Uruguay	35	0.51	0.016	(0.48,0.54)	0.97	7	0.39	0.044	(0.3,0.48)	0.94	35	0.31	0.013	(0.29,0.34)	0.94	7	0.38	0.043	(0.3,0.46)	0.94
Venezuela	9	0.54	0.035	(0.47,0.61)	0.97	7	0.53	0.021	(0.49,0.57)	0.99	9	0.50	0.024	(0.45,0.55)	0.98	7	0.42	0.011	(0.4,0.44)	1.00
Laggards																				
Brazil	35	4.03	0.106	(3.83,4.24)	0.98	7	1.78	0.041	(1.7,1.86)	1.00	35	2.78	0.090	(2.61,2.96)	0.97	7	1.45	0.037	(1.38,1.52)	1.00
Dominican Republic	15	1.43	0.145	(1.15,1.71)	0.88	7	0.83	0.095	(0.65,1.02)	0.94	15	0.90	0.132	(0.64,1.15)	0.78	7	0.20	0.045	(0.11,0.29)	0.79
El Salvador	6	0.92	0.086	(0.75,1.09)	0.97	6	0.28	0.053	(0.18,0.39)	0.88	6	0.54	0.025	(0.49,0.59)	0.99	6	0.11	0.045	(0.02,0.2)	0.60
Guatemala	35	3.24	0.132	(2.98,3.5)	0.95	6	1.19	0.192	(0.81,1.56)	0.91	35	2.43	0.098	(2.24,2.63)	0.95	6	1.03	0.128	(0.78,1.28)	0.94
Nicaragua						6	0.40	0.028	(0.34,0.45)	0.98						6	0.48	0.046	(0.39,0.57)	0.96
Peru	35	3.14	0.118	(2.91,3.37)	0.96	6	1.82	0.124	(1.57,2.06)	0.98	35	3.21	0.145	(2.92,3.49)	0.94	6	1.63	0.108	(1.42,1.84)	0.98

Coefficients were estimated only when more than 5 cohorts were available.

Table S2a: Estimated regression coefficients from a linear mixed model of the log of adult mortality as a function of childhood mortality fitted separately by sex and country's state of demographic transition for ages 40-59

Level 1: $\log(M_{ij}(x,x+n)) = a_{0j} + \beta_{1j}\ln(M_{ij}(0\text{-}4)) + r_{ij}$,

Level 2:

$$a_{0j} = \gamma_{00} + \gamma_{01} * \text{Born after 1935} + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11} * \text{Born after 1935} + u_{1j}$$

	Females aged 40-59				**Males aged 40-59**			
	Forerunner		**Laggard**		**Forerunner**		**Laggard**	
Model components	Unconditional	Conditional on Year of Birth	Unconditional	Conditional on Year of Birth	Unconditional	Conditional on Year of Birth	Unconditional	Conditional on Year of Birth
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Fixed effects								
Model for intercept								
$\hat{\gamma}_{00}$	-1.17 ***	-0.49 *	-0.21	0.82	-1.04 ***	-0.59 ***	-0.34	0.40
$\widehat{\gamma_{01}}$ =Born after 1935		-1.37 ***		-1.63 ***		-0.92 ***		-1.19 ***
Model for slope								
$\hat{\gamma}_{10}$	0.97 ***	1.54 ***	1.49 ***	2.55 ***	0.72 ***	1.14 ***	1.12 ***	1.98 ***
$\widehat{\gamma_{11}}$ =Born after 1935		-1.14 ***		-1.67 ***		-0.85 ***		-1.37 *
Random effects	Variance components		Variance components		Variance components		Variance components	
	Variance	Variance	Variance	Variance	Variance	Variance	Variance	Variance
intercept	0.871 ***	0.399 ***	1.446 ***	0.848 ***	0.443 ***	0.234 ***	0.886 ***	0.586 ***
slopes	0.668 ***	0.344 ***	1.348 ***	0.707 ***	0.381 ***	0.201 ***	1.229 ***	0.842 ***
Percent of the variance explained in parameters by addding year of birth								
intercept	-----	54.21	-----	41.38	-----	47.20	-----	33.88
slopes	-----	48.49	-----	47.55	-----	47.23	-----	31.51

*** p<0.001, ** p<0.01, * p<0.05

Note: see the text for a full description of the model parameters.

Table S2b: Estimated regression coefficients from a linear mixed model of the log of adult mortality as a function of childhood mortality fitted separately by sex and country's state of demographic transition for ages 40-69

Level 1: $\log(M_{ij}(x,x+n)) = a_{0j} + b_{1j}\ln(M_{ij}(0\text{-}4)) + r_{ij}$,

Level 2: $a_{0j} = \gamma_{00} + \gamma_{01} *$ Born after 1935 $+ u_{0j}$

$b_{1j} = \gamma_{10} + \gamma_{11} *$ Born after 1935 $+ u_{1j}$

	Females aged 40-69				Males aged 40-69			
	Forerunner		Laggard		Forerunner		Laggard	
Model components	Unconditional (a)	Conditional on Year of Birth (b)	Unconditional (a)	Conditional on Year of Birth (b)	Unconditional (a)	Conditional on Year of Birth (b)	Unconditional (a)	Conditional on Year of Birth (b)
Fixed effects								
Model for intercept								
$\hat{\gamma}_{00}$	0.73	1.63 **	-0.25	0.09	0.57	1.19 **	-0.15	0.13
$\widehat{\gamma_{01}}$ =Born after 1935		-1.78 ***		-0.85 ***		-1.28 ***		-0.71 ***
Model for slope								
$\hat{\gamma}_{10}$	1.72 ***	2.58 ***	1.00 ***	1.31 ***	1.35 ***	2.02 ***	0.74 ***	1.02 ***
$\widehat{\gamma_{11}}$ =Born after 1935		-1.69 **		-0.74 *		-1.35 *		-0.66 **
Random effects	Variance components		Variance components		Variance components		Variance components	
	Variance	Variance	Variance	Variance	Variance	Variance	Variance	Variance
intercept	2.054 ***	1.359 ***	0.445 ***	0.318 ***	1.001 ***	0.641 ***	0.298 ***	0.200 ***
slopes	1.615 ***	0.949 ***	0.408 ***	0.308 ***	1.150 ***	0.739 ***	0.282 ***	0.197 ***
Percent of the variance explained in parameters by addding year of birth								
intercept	-----	33.82	-----	28.46	-----	35.98	-----	32.75
slopes	-----	41.24	-----	24.36	-----	35.75	-----	30.27

*** p<0.001, ** p<0.01, * p<0.05

Note: see the text for a full description of the model parameters.

Table S3a: Estimated regression coefficients and associated statistics of the regression ln(Gompertz-slope$_i$ (40,59)) = α_i + θ_i*ln(M_i(0,4)) + ε_i by country (i), sex and cohort year of birth. A Gompertz-slope is separately estimated for each country-cohort-sex from the model M(x) = a*exp(b*x), for x ϵ [40,59].

(a) Latin American countries

	Female aged 40-59										Male aged 40-59									
	Before 1935					After 1935					Before 1935					After 1935				
	n	θ	SE	95% CI	R^2	n	θ	SE	95% CI	R^2	n	θ	SE	95% CI	R^2	n	θ	SE	95% CI	R^2
Forerunners																				
Argentina	35	−1.23	0.189	(-1.6,-0.86)	0.56	17	−0.26	0.051	(-0.36,-0.16)	0.63	35	−0.39	0.152	(-0.68,-0.09)	0.16	17	−0.06	0.036	(-0.13,0.01)	0.16
Chile	35	−1.12	0.300	(-1.71,-0.53)	0.30	17	−0.34	0.046	(-0.43,-0.24)	0.78	35	0.11	0.239	(-0.36,0.58)	0.01	17	−0.30	0.055	(-0.41,-0.19)	0.67
Colombia	30	−1.12	0.121	(-1.36,-0.88)	0.75	17	0.34	0.073	(0.2,0.48)	0.59	30	−0.65	0.077	(-0.8,-0.5)	0.72	17	1.76	0.105	(1.55,1.96)	0.95
Costa Rica	35	−2.45	0.315	(-3.07,-1.83)	0.65	17	−0.11	0.070	(-0.25,0.03)	0.14	35	−1.78	0.356	(-2.48,-1.08)	0.43	17	0.11	0.094	(-0.08,0.29)	0.08
Cuba	35	−1.21	0.110	(-1.43,-1)	0.79	17	0.31	0.026	(0.26,0.36)	0.91	35	−0.77	0.120	(-1.01,-0.54)	0.55	17	0.24	0.022	(0.2,0.29)	0.89
Mexico	35	−2.35	0.200	(-2.74,-1.96)	0.81	17	−0.67	0.087	(-0.85,-0.5)	0.80	35	−1.45	0.256	(-1.96,-0.95)	0.49	17	−0.49	0.055	(-0.59,-0.38)	0.84
Panama	24	0.08	0.145	(-0.2,0.37)	0.02	17	−0.38	0.067	(-0.51,-0.25)	0.69	24	0.11	0.151	(-0.19,0.41)	0.02	17	−0.23	0.047	(-0.33,-0.14)	0.62
Uruguay	35	−0.36	0.049	(-0.46,-0.26)	0.62	17	−0.29	0.031	(-0.35,-0.23)	0.85	35	−0.23	0.059	(-0.35,-0.11)	0.31	17	−0.02	0.033	(-0.08,0.05)	0.02
Venezuela	9	−0.65	0.058	(-0.76,-0.54)	0.95	17	0.03	0.019	(0,0.07)	0.16	9	0.33	0.044	(0.25,0.42)	0.89	17	−0.03	0.031	(-0.09,0.03)	0.07
Laggards																				
Brazil	35	4.02	0.292	(3.45,4.59)	0.85	17	−1.53	0.158	(-1.84,-1.22)	0.86	35	1.85	0.176	(1.5,2.19)	0.77	17	0.29	0.032	(0.23,0.36)	0.85
Dominican Republic	15	0.25	0.233	(-0.21,0.71)	0.08	17	−2.15	0.111	(-2.37,-1.93)	0.96	15	−0.20	0.094	(-0.38,-0.01)	0.25	17	0.17	0.088	(0,0.35)	0.21
El Salvador	6	−0.39	0.110	(-0.6,-0.17)	0.76	16	−0.42	0.055	(-0.53,-0.31)	0.81	6	3.06	0.335	(2.41,3.72)	0.95	16	−0.90	0.397	(-1.68,-0.13)	0.27
Guatemala	35	−0.62	0.330	(-1.27,0.03)	0.10	16	0.33	0.102	(0.13,0.52)	0.42	35	−1.63	0.284	(-2.18,-1.07)	0.50	16	2.22	0.309	(1.62,2.83)	0.79
Nicaragua						16	−0.54	0.069	(-0.67,-0.4)	0.81						16	−0.94	0.141	(-1.22,-0.66)	0.76
Peru	35	−1.60	0.671	(-2.91,-0.28)	0.15	16	−1.19	0.156	(-1.5,-0.89)	0.81	35	−1.34	0.485	(-2.29,-0.39)	0.19	16	0.78	0.085	(0.62,0.95)	0.86

A Gompertz-slope is separately estimated for each country-cohort-sex from the model $M(x) = a * exp(b * x)$, for x ϵ $[40, 59]$.
Coefficients were estimated only when more than 5 cohorts were available.

Table S3b: Estimated regression coefficients and associated statistics of the regression ln(Gompertz-slope$_i$ (40,69)) = α_i + θ_i*ln(M_i(0,4)) + ε_i by country (*i*), sex and cohort year of birth. A Gompertz-slope is separately estimated for each country-cohort-sex from the model M(*x*) = *a**exp(*b***x*), for x ϵ [40,69].

(a) Latin America

	Female aged 40-69										Male aged 40-69									
	Before 1935					After 1935					Before 1935					After 1935				
	n	θ	SE	95% CI	R^2	n	θ	SE	95% CI	R^2	n	θ	SE	95% CI	R^2	n	θ	SE	95% CI	R^2
Forerunners																				
Argentina	35	−0.55	0.101	(-0.75,-0.35)	0.47	7	−0.34	0.032	(-0.4,-0.28)	0.96	35	−0.08	0.068	(-0.22,0.05)	0.04	7	−0.24	0.019	(-0.27,-0.2)	0.97
Chile	35	−0.44	0.083	(-0.6,-0.28)	0.46	7	−0.73	0.012	(-0.76,-0.71)	1.00	35	0.17	0.073	(0.03,0.32)	0.14	7	−0.65	0.037	(-0.72,-0.57)	0.98
Colombia	30	−0.75	0.041	(-0.83,-0.67)	0.92	7	0.46	0.103	(0.26,0.66)	0.80	30	−0.44	0.038	(-0.51,-0.36)	0.83	7	0.71	0.158	(0.4,1.03)	0.80
Costa Rica	35	−1.12	0.051	(-1.22,-1.02)	0.94	7	−0.48	0.050	(-0.58,-0.38)	0.95	35	−0.95	0.130	(-1.2,-0.69)	0.62	7	−0.19	0.128	(-0.44,0.06)	0.30
Cuba	35	−0.96	0.077	(-1.11,-0.81)	0.82	7	0.36	0.033	(0.3,0.43)	0.96	35	−0.68	0.060	(-0.8,-0.56)	0.79	7	0.23	0.085	(0.06,0.39)	0.59
Mexico	35	−1.35	0.052	(-1.45,-1.25)	0.95	7	−0.84	0.021	(-0.88,-0.8)	1.00	35	−0.66	0.053	(-0.77,-0.56)	0.83	7	−0.38	0.077	(-0.53,-0.23)	0.83
Panama	24	−0.38	0.096	(-0.57,-0.19)	0.42	7	−0.38	0.080	(-0.54,-0.22)	0.82	24	−0.27	0.060	(-0.39,-0.15)	0.48	7	−0.35	0.043	(-0.43,-0.26)	0.93
Uruguay	35	−0.15	0.026	(-0.2,-0.1)	0.50	7	0.02	0.074	(-0.13,0.16)	0.01	35	−0.10	0.030	(-0.16,-0.04)	0.24	7	−0.08	0.046	(-0.17,0.01)	0.36
Venezuela	9	−0.28	0.012	(-0.3,-0.25)	0.99	7	0.08	0.042	(0,0.16)	0.42	9	0.24	0.025	(0.19,0.29)	0.93	7	0.14	0.069	(0,0.27)	0.43
Laggards																				
Brazil	35	2.59	0.214	(2.17,3)	0.82	7	−1.42	0.124	(-1.66,-1.17)	0.96	35	1.38	0.138	(1.11,1.65)	0.75	7	0.03	0.047	(-0.06,0.12)	0.07
Dominican Republic	15	0.06	0.366	(-0.65,0.78)	0.00	7	−1.75	0.114	(-1.97,-1.52)	0.98	15	0.28	0.066	(0.15,0.41)	0.58	7	−0.30	0.049	(-0.39,-0.2)	0.88
El Salvador	6	−0.37	0.031	(-0.43,-0.31)	0.97	6	−0.29	0.049	(-0.39,-0.2)	0.90	6	1.46	0.133	(1.2,1.73)	0.97	6	0.92	0.245	(0.44,1.4)	0.78
Guatemala	35	−0.36	0.141	(-0.64,-0.09)	0.17	6	−1.08	0.248	(-1.57,-0.6)	0.83	35	−0.50	0.139	(-0.77,-0.23)	0.28	6	1.49	0.168	(1.16,1.81)	0.95
Nicaragua						6	−0.24	0.063	(-0.36,-0.11)	0.78						6	0.27	0.064	(0.14,0.39)	0.81
Peru	35	−1.81	0.221	(-2.24,-1.37)	0.67	6	1.30	0.286	(0.74,1.86)	0.84	35	−1.89	0.184	(-2.26,-1.53)	0.76	6	1.71	0.302	(1.11,2.3)	0.89

A Gompertz-slope is separately estimated for each country-cohort-sex from the model $M(x) = a * exp(b * x)$, for $x \epsilon [40, 69]$.
Coefficients were estimated only when more than 5 cohorts were available.

Figure S1a: Scatterplots of the relationship between cohort adult mortality rates and childhood mortality rates by cohort's year of birth and stage of country's demographic transition for ages 40-59

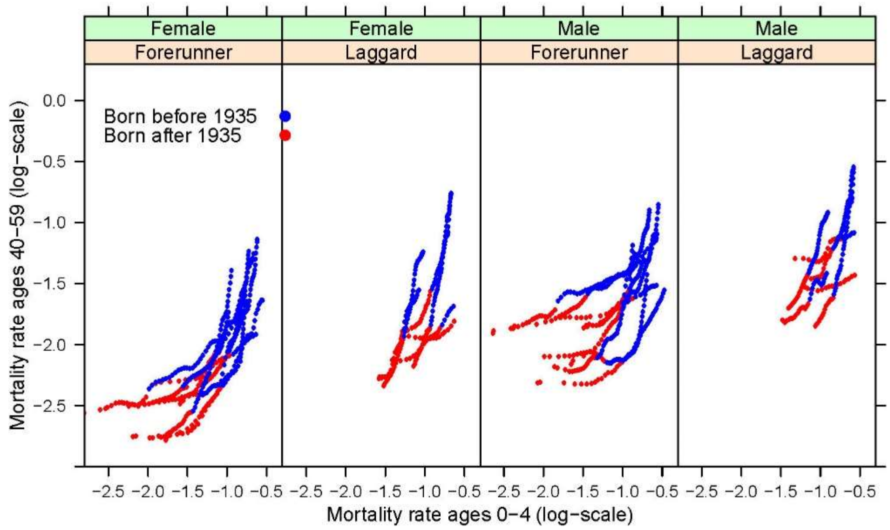


Figure S1b: Scatterplots of the relationship between cohort adult mortality rates and childhood mortality rates by cohort's year of birth and stage of country's demographic transition for ages 40-64

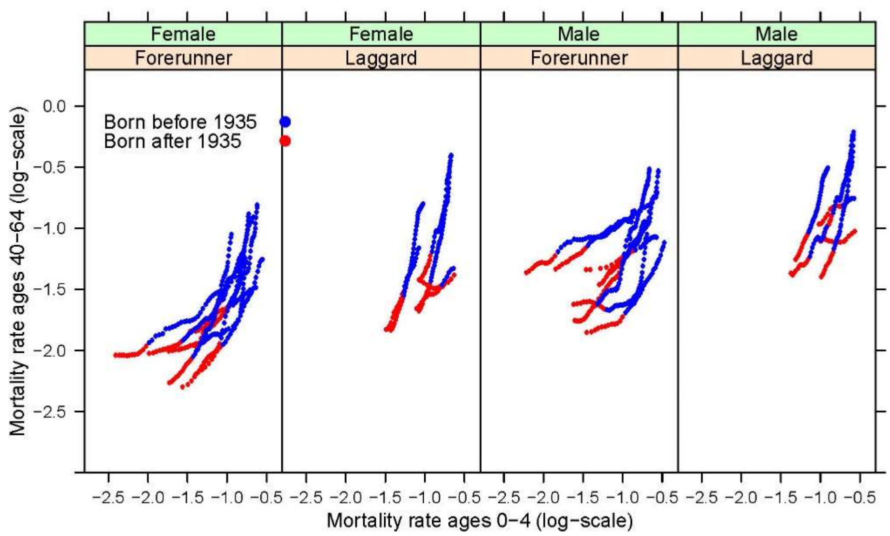


Figure S1c: Scatterplots of the relationship between cohort adult mortality rates and childhood mortality rates by cohort's year of birth and stage of country's demographic transition for ages 40-69

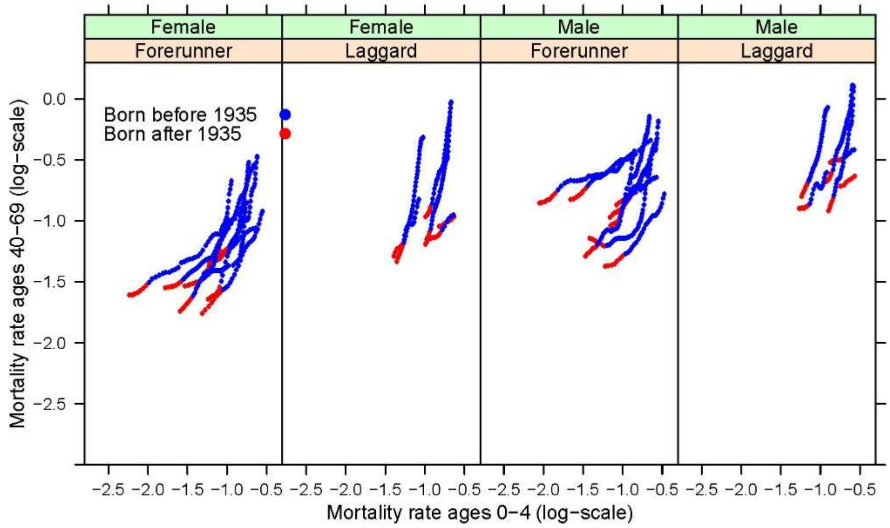


Figure S2a: Box Plots of estimated coefficients of regressions of log of adult mortality and child mortality, (Model 1a): adult age group 40-59

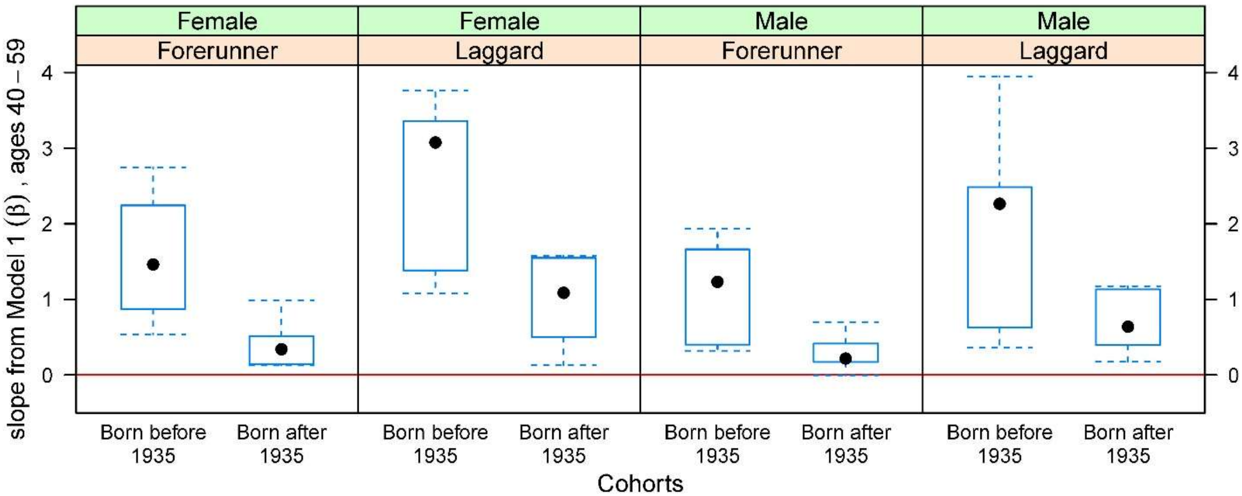


Figure S2b: Box Plots of estimated coefficients of regressions of log of adult mortality and child mortality, (Model 1a): adult age group 40-64

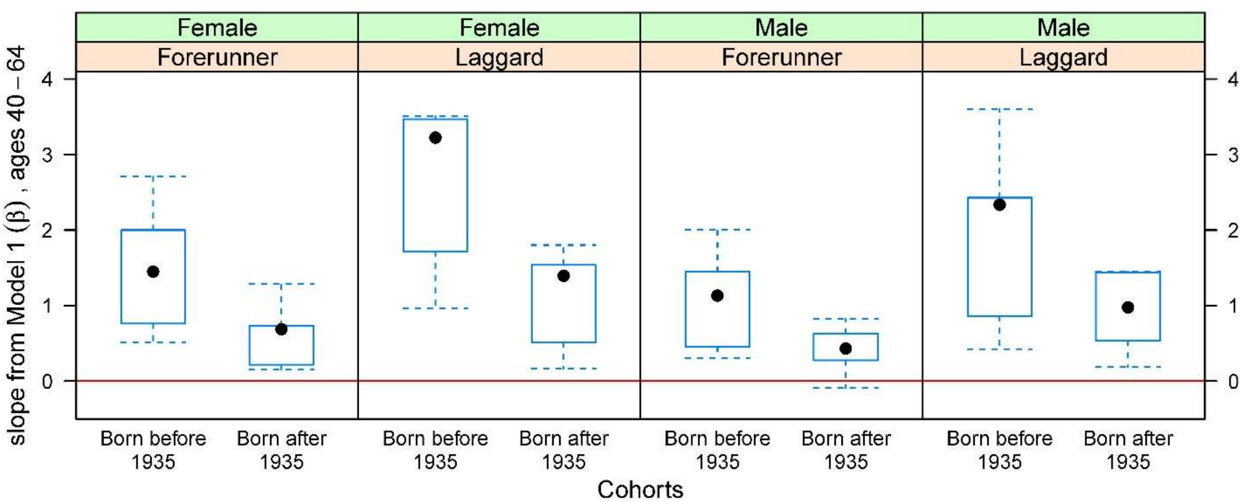


Figure S2c: Box Plots of estimated coefficients of regressions of log of adult mortality and child mortality, (Model 1a): adult age group 40-69

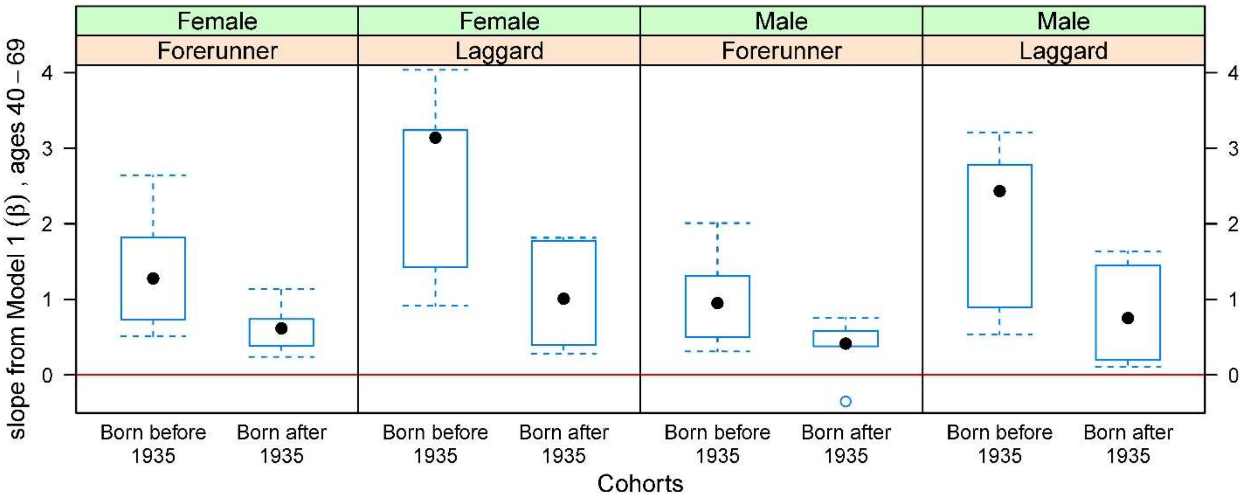


Figure S3a: Secular relation between Gompertz slope and child mortality for adult ages 40-59

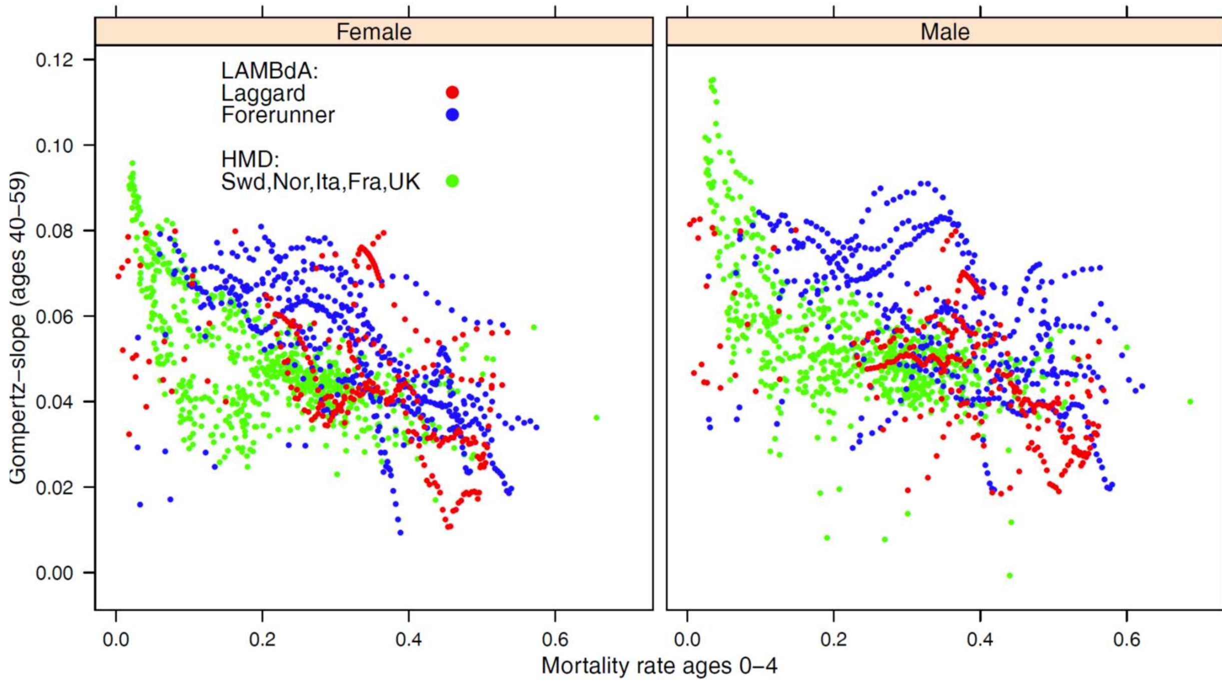


Figure S3b: Secular relation between Gompertz slope and child mortality for adult ages 40-64

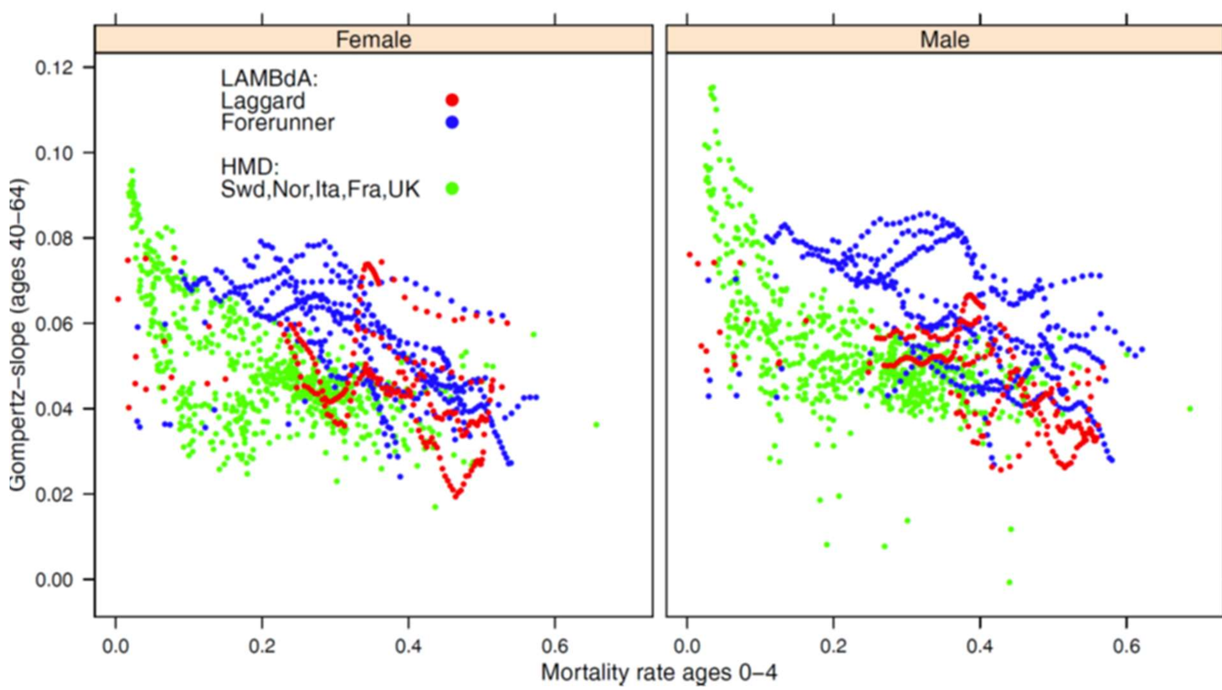


Fig S3c: Secular relation between Gompertz slope and child mortality for adult ages 40-69

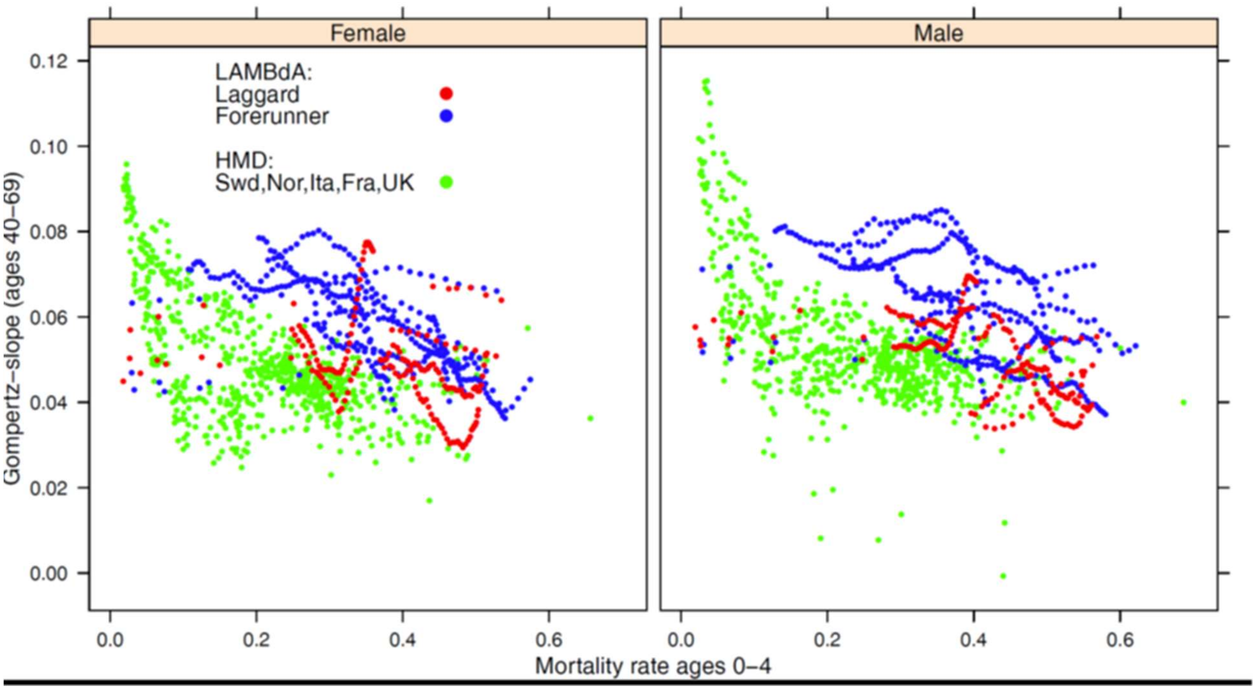


Figure S4a: Box Plots of regression coefficients of log of Gompertz-slopes and log of child mortality, M(0,4), for ages 40-59 (Model 2).

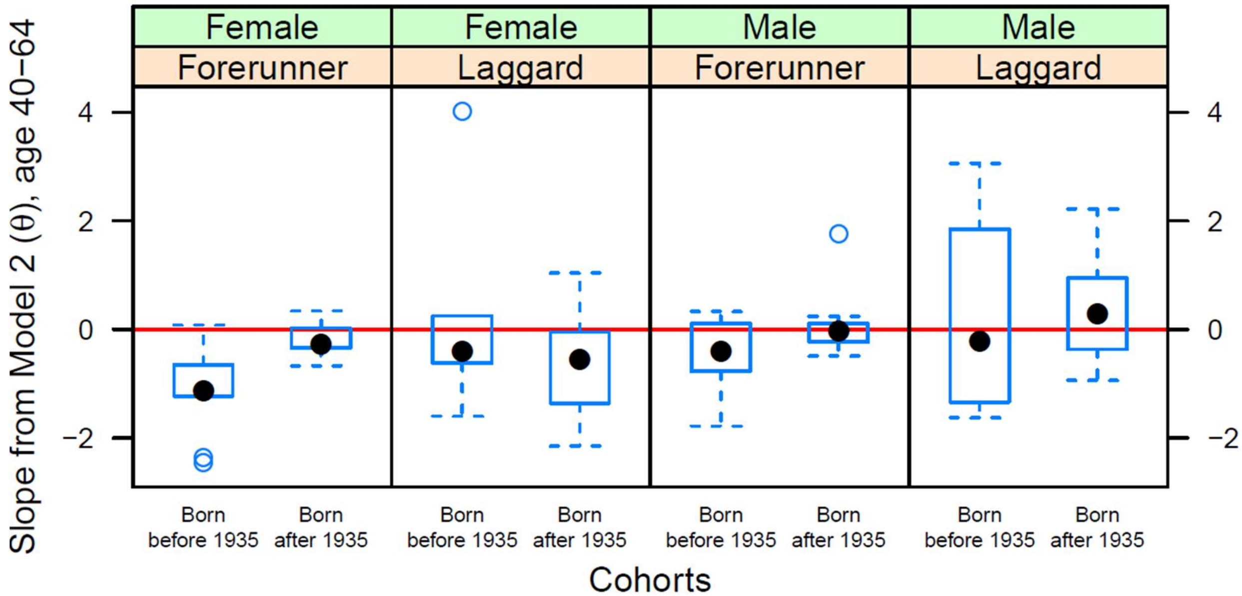


Figure S4b: Box Plots of regression coefficients of log of Gompertz-slopes and log of child mortality, M(0,4), for ages 40-64 (Model 2).

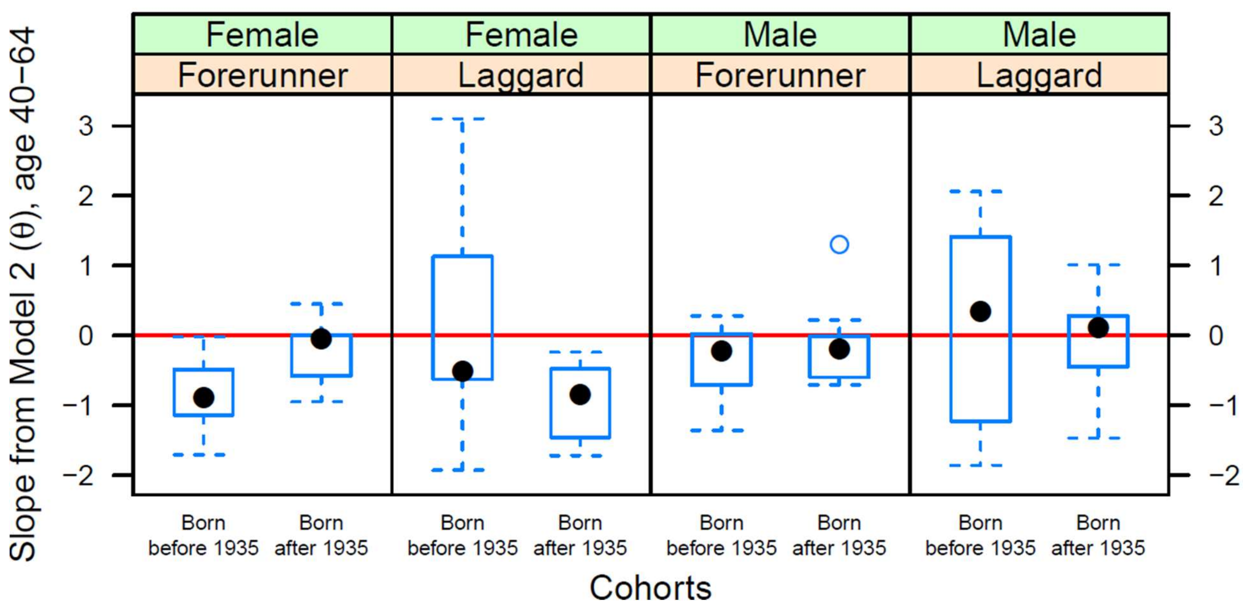
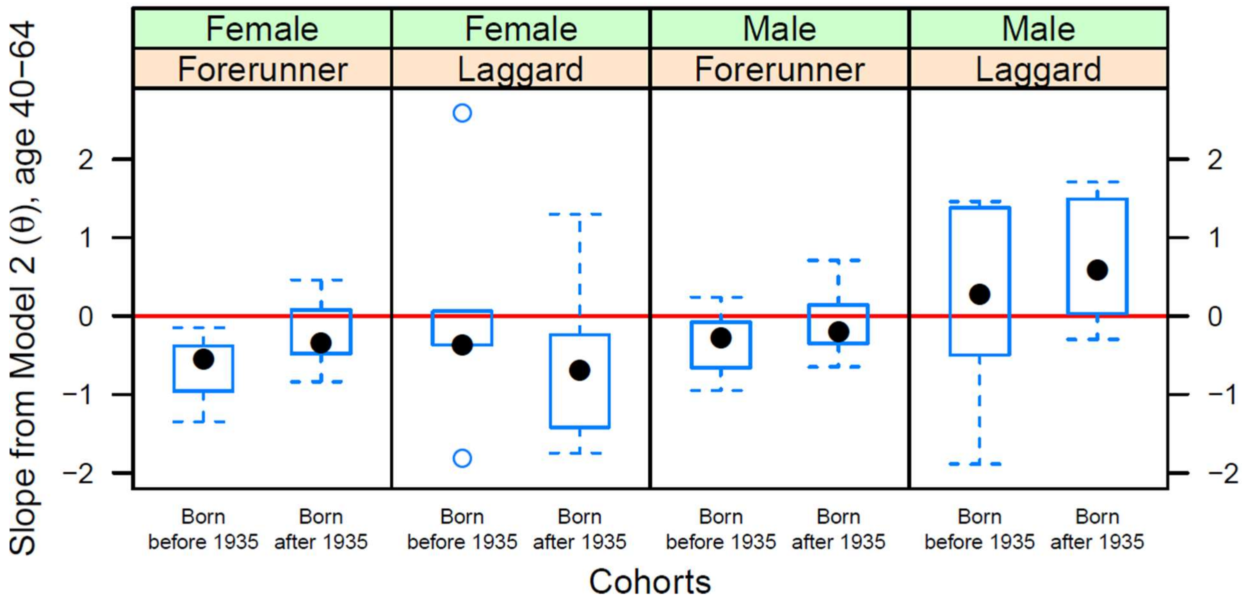


Figure S4c: Box Plots of regression coefficients of log of Gompertz-slopes and log of child mortality, M(0,4), for ages 40-69 (Model 2).



Supplemental material II: Comparisons between life tables for fictitious and real cohorts

1 On the use of fictitious and incomplete cohorts

An important component of the empirical testing we implement in the paper requires comparisons of birth-specific cohort mortality. However, complete cohort life tables are available in the HMD for some countries but only for birth cohorts born before 1925. To circumvent this problem we construct "fictitious" cohort life tables, both for countries in HMD and in LAMBdA. These life tables are the product of chaining together diagonals of single-year, single-age mortality rates from period life tables. This strategy has two advantages. First, we are able to maintain strict comparability between mortality rates in HMD and those computed in LAMBdA since the latter's information is insufficient to construct real cohort life tables and we can only access fictitious cohort life tables. Second, the use of fictitious cohorts allow us to create a placebo test including cohorts born prior to 1955 both in HMD and LAMBdA, thereby strengthening its robustness as it is possible to discern differences between cohorts born before and after 1935. Had it been possible to use real cohort life tables in HMD and LAMBda, the test would not have reflected patterns that emerge after 1925.

A legitimate question is whether or not parameter estimates, and relations between parameter estimates, retrieved from fictitious cohort life tables yield the same inferences as those from real cohort life tables. This issue can be investigated by using comparisons between analyses carried out with real and fictitious cohorts born before 1925 in the HMD. Although not an ideal test, it has the potential to generate signals revealing flaws in the use of fictitious cohorts.

The bottom line is that the sensitivity test we are able to carry out in HMD provides no indication of dangerous inconsistencies and we therefore conclude that our substantive inferences are likely to be upheld if the analyses had relied on real rather than fictitious cohort life tables. In particular, the estimates we are interested in regarding predictions 1 and 2 are unchanged when using fictitious and true cohorts from HMD. The section below summarizes the most important results from the test.

2 Consistency tests with HMD real cohort life tables

The test is designed to verify three empirical regularities. The first is that estimates of Gompertz slopes from real cohort life tables are very close to estimates of the same parameter from fictitious cohort life tables. The second is that the magnitude and direction of the association between Gompertz slopes and a cohort child mortality is approximately the same in real and fictitious cohort life tables. The third is that estimates of Gompertz slope from complete (uncensored) data, e.g.using age groups 40-85+, are highly correlated with estimates retrieved from incomplete data, e.g using censored experiences of birth cohorts (real or fictitious) up to ages $x < 85$.

1. We produce graphs showing that the slope of the relation between Gompertz-slopes computed

with true cohorts from HMD fall in a 45 degree line going through 0 relative to values obtained from fictitious cohorts (Figure 1).

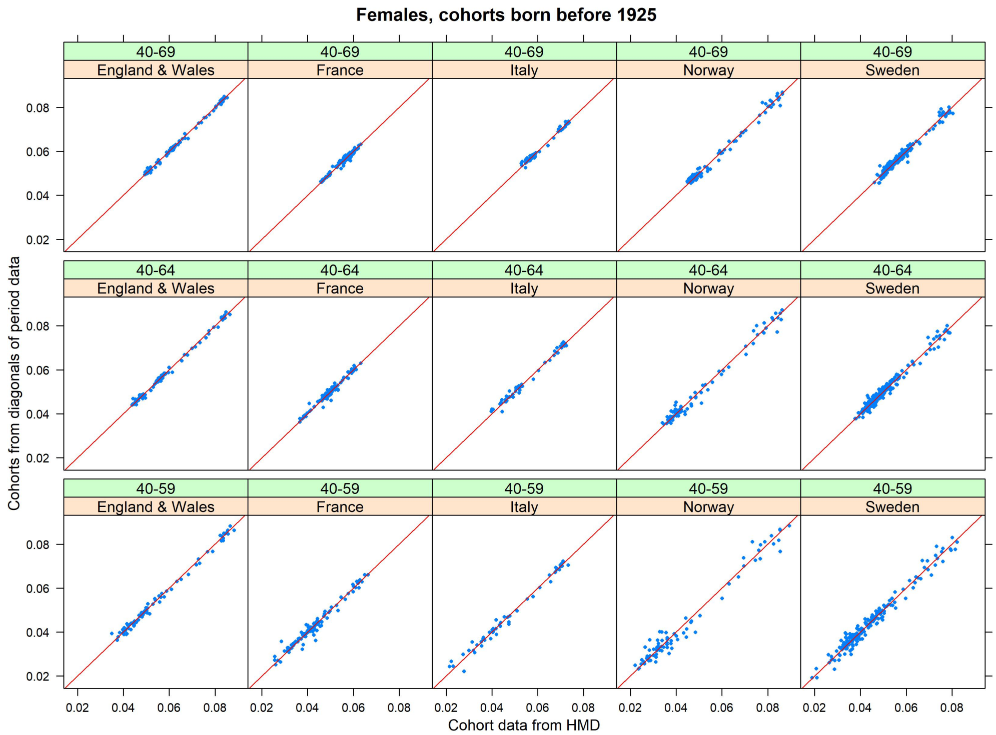
2. We also produce graphs showing that the relation between child mortality and Gompertz-slope using fictitious and real cohorts in HMD is similar (Figure 2).

3. Although we estimate Gompertz-slopes with incomplete observations cohorts censored at ages before 70), our estimates of Gompertz-slopes using uncensored cohorts (up to age 90) in HMD show that these are highly correlated with those computed with incomplete observations (Figure 3).

4. We produce estimates of the relation between Gompertz-slopes and child mortality in uncensored cohorts in HMD and show that estimates of interest (the slope of the relations) are highly correlated with those estimated using censored or incomplete cohorts (Figure 4).

Figure 1: Scatterplots showing Gompertz-slopes for adult mortality from fictitious cohorts (Y-axis) and true cohorts from HMD (X-axis).

(a)



(b)

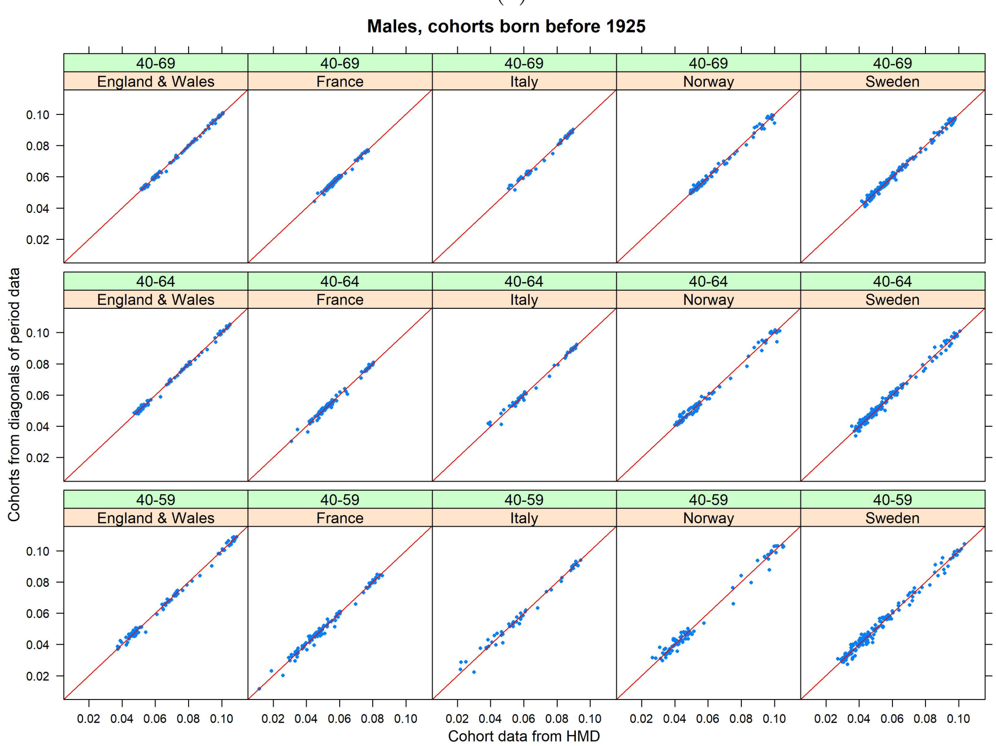


Figure 2: Scatterplots showing Gompertz-slopes vs. child mortality for fictitious cohorts (green color) and true cohorts from HMD (black color).

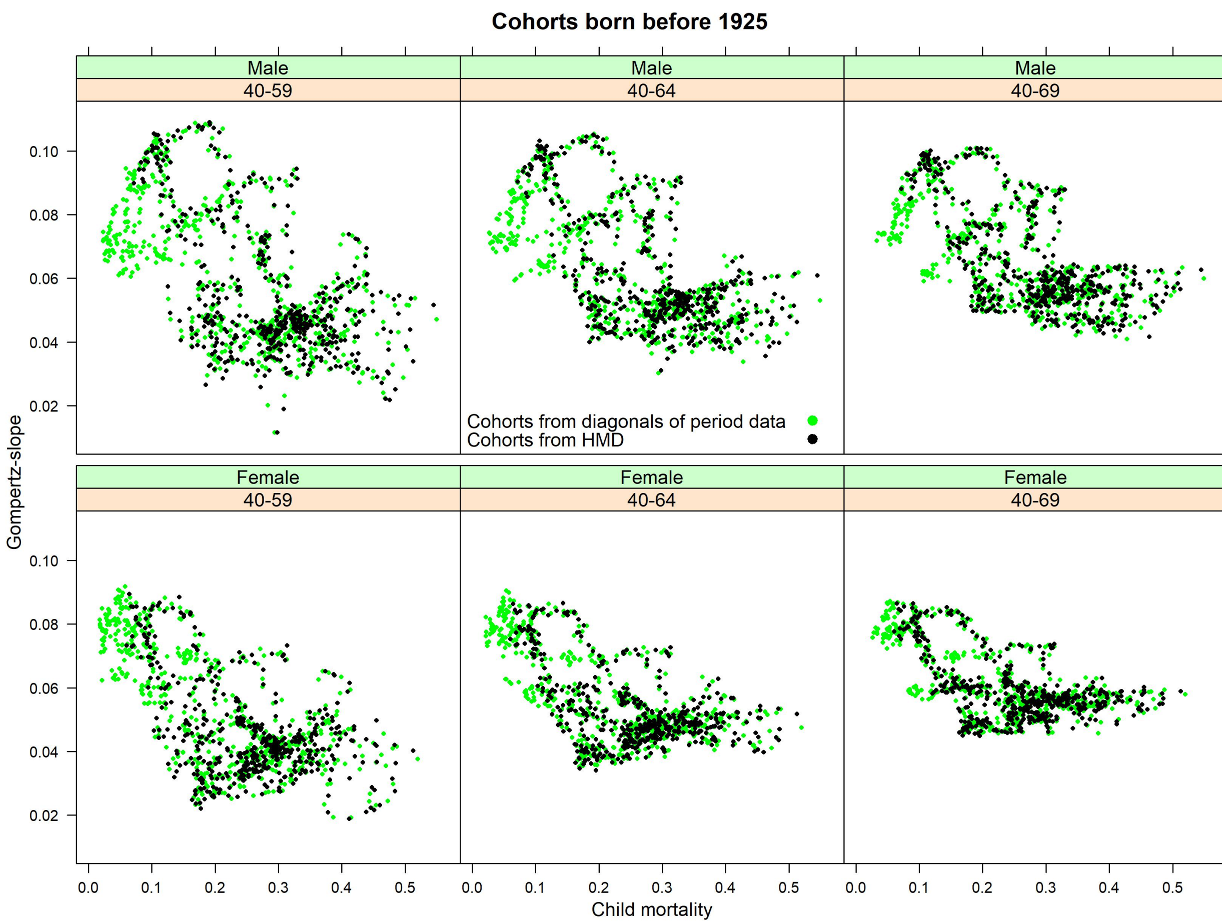
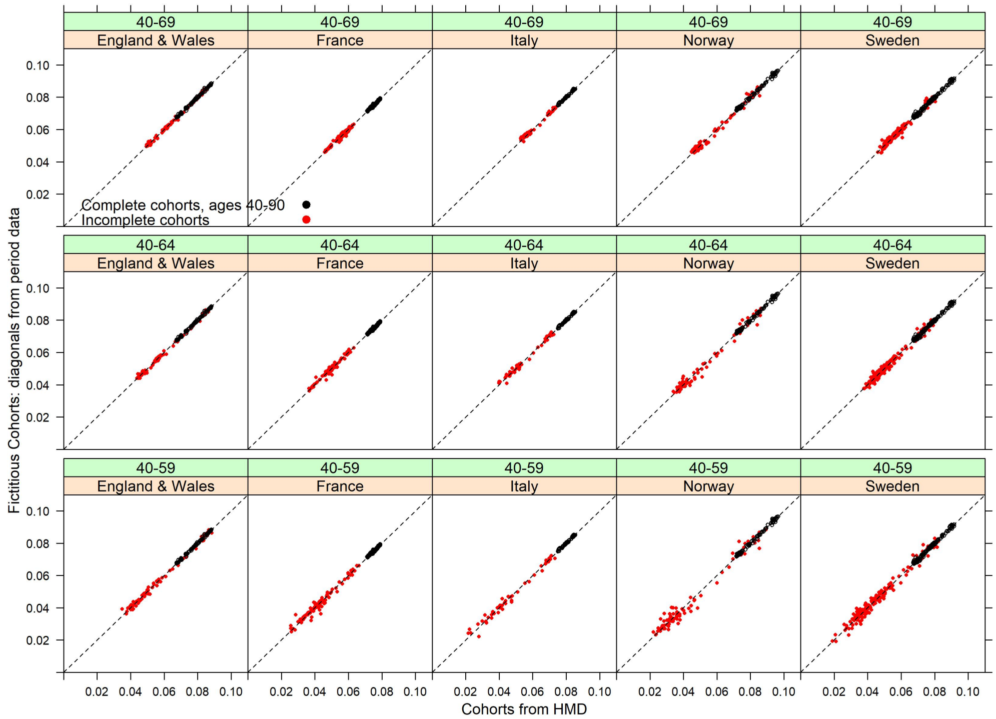


Figure 3: Scatterplots showing Gompertz-slopes for adult mortality from fictitious cohorts (Y-axis) and true cohorts from HMD (X-axis) using incomplete cohorts (i.e., before age 70 shown in red color) and complete cohorts (i.e., ages 40-90 shown in black color).

(a) Females



(b) Males

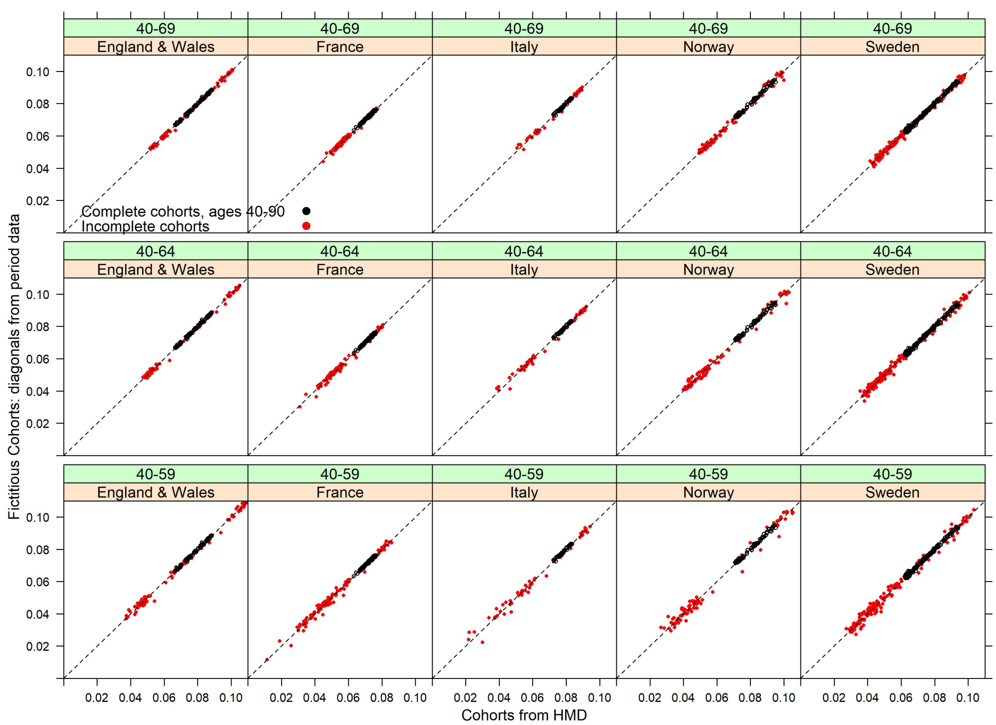


Figure 4: Boxplots showing slopes of the linear regression of Gompertz-slopes vs. child mortality using incomplete (ages 40-69) and complete (ages 40-90) cohorts when estimating Gompertz-slopes.