Appendix D. Magnitudes of demographic changes associated with actuarial senescence: details on population dynamics indices.

In order to quantify demographic and population dynamics changes associated with actuarial senescence, four indices of change were computed, based on the comparison between the *senescence model* and the *null model* (transformations were used to achieve the best linearity and avoid undefined numbers):

1) Change in deterministic annual growth rate $\Delta\lambda$, computed as

$$\Delta\lambda = \log(\lambda_{(Null)} - \lambda_{(\mathrm{Senesc})})$$

2) Change in generation time ΔT, computed as

$$\Delta T = \log(\frac{T_{(Null)}}{T_{(Senesc)}} + 1)$$

3) Change in deterministic per generation growth rate ΔR_0, computed as

$$\Delta R_0 = \log(R_{0(Null)} - R_{0(\mathrm{Senesc})})$$

4) Change in median time to extinction ΔT_{ext}, computed as

$$\Delta T_{ext} = \sqrt{\frac{T_{ext(Null)}}{T_{ext(Senesc)}}}$$

($T_{ext\,(\mathrm{Null})}$ and $T_{ext(\mathrm{Senesc})}$ are based on K=250 mature individuals in the main results).