

- Tried different priors on the LogQuad  $h$  parameter, AR(1) around IGME estimates, MVN around IGME estimates, weighted means on IGME estimates, AR(1) around common mean, ARIMA(1,1,0)
  - used WPP population estimates at 1960, 1975, 1985, 1995, 2005 and 2015 as input
  - IGME estimates seem to be inconsistent with the population data/DHS data
  - at years where there is no population data, the IGME based priors do have an effect and draw the fitted  $h_t$  towards the IGME estimates, but at years with population data the estimates just drop and move further away from the IGME estimates
  - tried fitting the same model with MVN prior around the IGME estimates without using the DHS data, and the estimated  $h_t$  deviates even further away from the IGME estimates, so the inconsistency probably mainly comes from the population counts instead of the DHS data
  - prior contribution of different dimensions?  $h_t$  and  $g_{xt}$
- used UNPD census counts at 1975, 1985, 1996 and 2006 instead (keeping WPP 1960 estimates as baseline) and TMB cannot converge in some cases, e.g. MVN around IGME estimates and weighted means on IGME estimates
  - assumed constant intercensal grow rates in population counts to extrapolate
  - cannot figure out which parameter(s) are causing problems yet
  - the MVN prior converges when I do not use IGME estimates as prior means, and estimate a common mean instead

