

Burkina Faso

```
## [1] "Census Females"

## # A tibble: 86 x 4
##   age `1985` `1996` `2006`
##   <dbl>   <dbl>   <dbl>   <dbl>
## 1     0 167832. 172440. 232753.
## 2     1 123725. 158579. 223962.
## 3     2 141892. 173977. 242712.
## 4     3 145972. 183827. 249952.
## 5     4 150713. 189024. 251469.
## 6     5 153834. 187775. 246964.
## 7     6 147967. 185126. 240567.
## 8     7 141900. 176317. 231701.
## 9     8 131468. 170684. 223447.
## 10    9 120867. 159025. 206341.
## # ... with 76 more rows

## [1] "Census Females 5-year"

## # A tibble: 86 x 2
##   age `1975`
##   <dbl>   <dbl>
## 1     0 96603.
## 2     1 97590.
## 3     2 97096.
## 4     3 95122.
## 5     4 91667.
## 6     5 88668.
## 7     6 86656.
## 8     7 83960.
## 9     8 80580.
## 10    9 76516.
## # ... with 76 more rows

## [1] "Census Males"

## # A tibble: 86 x 4
##   age `1985` `1996` `2006`
##   <dbl>   <dbl>   <dbl>   <dbl>
## 1     0 167276. 172610. 235553.
## 2     1 124717. 160332. 228656.
## 3     2 142790. 176211. 247490.
## 4     3 146294. 185818. 254364.
## 5     4 151165. 191299. 256052.
## 6     5 154561. 190424. 251428.
## 7     6 148812. 188950. 245963.
## 8     7 143700. 181509. 238291.
## 9     8 134979. 176879. 231002.
## 10    9 125450. 166434. 215623.
## # ... with 76 more rows

## [1] "Census Males 5-year"
```

```
## # A tibble: 86 x 2
##   age `1975`
##   <dbl> <dbl>
## 1     0 100261.
## 2     1 100952.
## 3     2 100606.
## 4     3  99226.
## 5     4  96809.
## 6     5  95104.
## 7     6  94089.
## 8     7  92007.
## 9     8  88858.
## 10    9  84641.
## # ... with 76 more rows
```

Thiele log-Normal Hump Spline

```
## [1] "relative convergence (4)"

##           log_tau2_logpop           log_tau2_logpop
##           5.390677e+00           6.712875e+00
##           log_tau2_logpop           log_tau2_logpop
##           5.347888e+00           6.495533e+00
##   log_marginal_lambda_fx   log_marginal_lambda_gx
##           8.028093e+00           6.953567e+00
##           log_dispersion           log_dispersion
##           8.287262e-01           9.573822e-01
##           log_lambda_tp           tp_slope
##           3.299694e+00           -1.932087e-02
##           tp_params_5           tp_params_10
##           2.356123e-01           7.381219e-01
##   log_marginal_lambda_phi   log_marginal_lambda_psi
##           7.404711e+00           7.353408e+00
##   log_marginal_lambda_lambda   log_marginal_lambda_delta
##           3.228136e+00           7.327522e+00
##   log_marginal_lambda_epsilon   log_marginal_lambda_A
##           4.800645e+00           7.220413e+00
##           log_marginal_lambda_B           logit_rho_phi
##           6.750536e+00           -1.639117e+00
##           logit_rho_psi           logit_rho_lambda
##           -1.646639e+00           2.144886e+00
##           logit_rho_delta           logit_rho_epsilon
##           -1.661367e+00           -1.308480e+00
##           logit_rho_A           logit_rho_B
##           -1.658514e+00           -1.606817e+00
##           logit_rho_fx_age           logit_rho_fx_time
##           -1.660706e+00           -1.612583e+00
##           logit_rho_gx_age           logit_rho_gx_time
##           1.825227e+00           -1.504526e+00
##           log_gamma_lambda           log_gamma_delta
##           3.579229e+00           3.367318e-06
##           log_gamma_epsilon
##           2.541392e+00
```

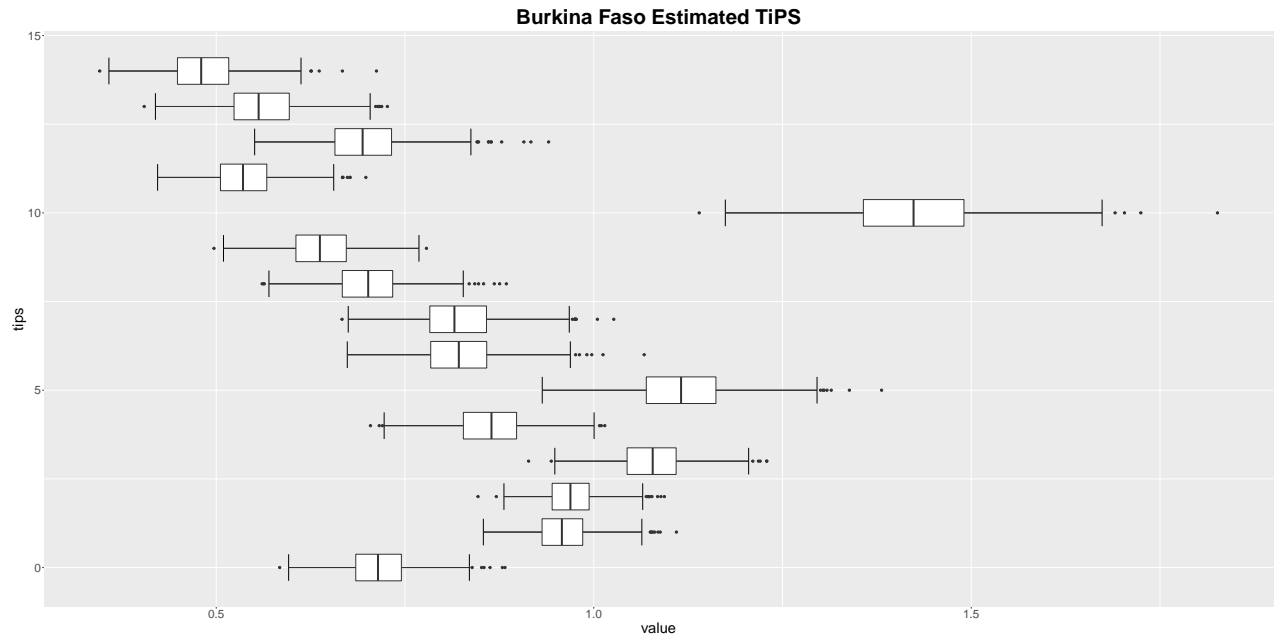


Figure 1: Estimated TiPS

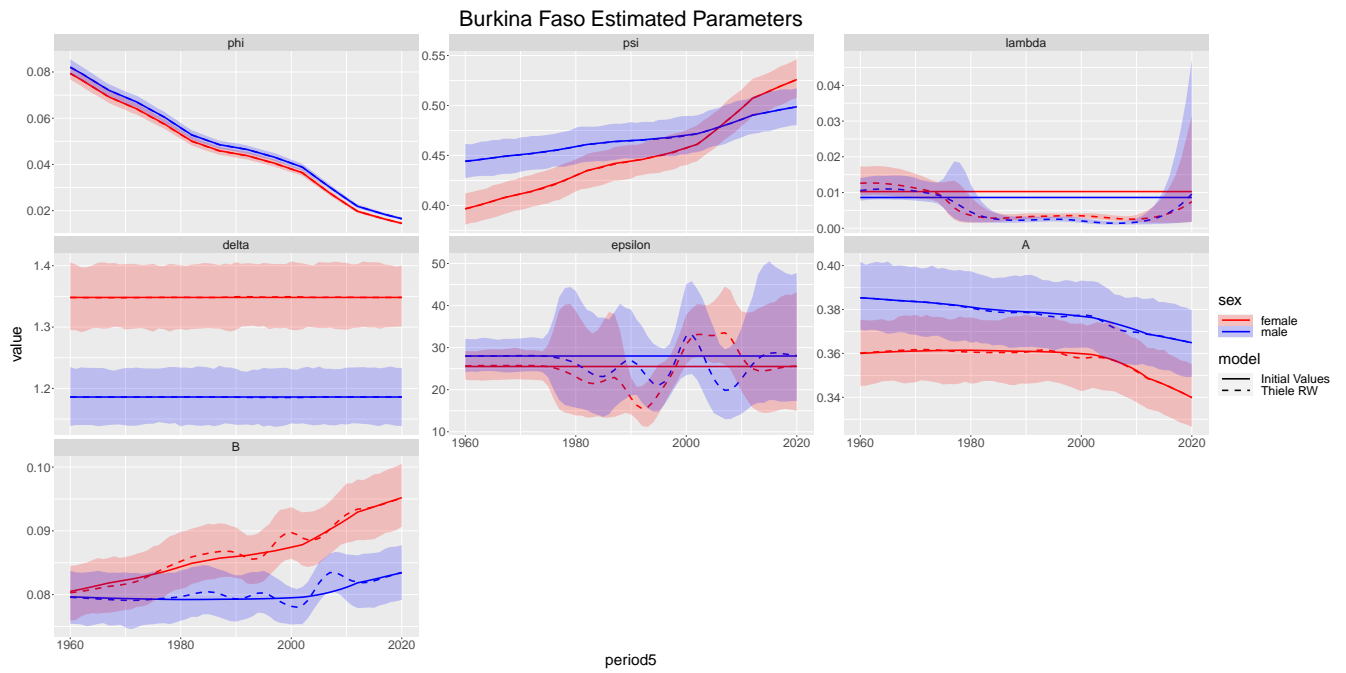


Figure 2: Estimated parameters

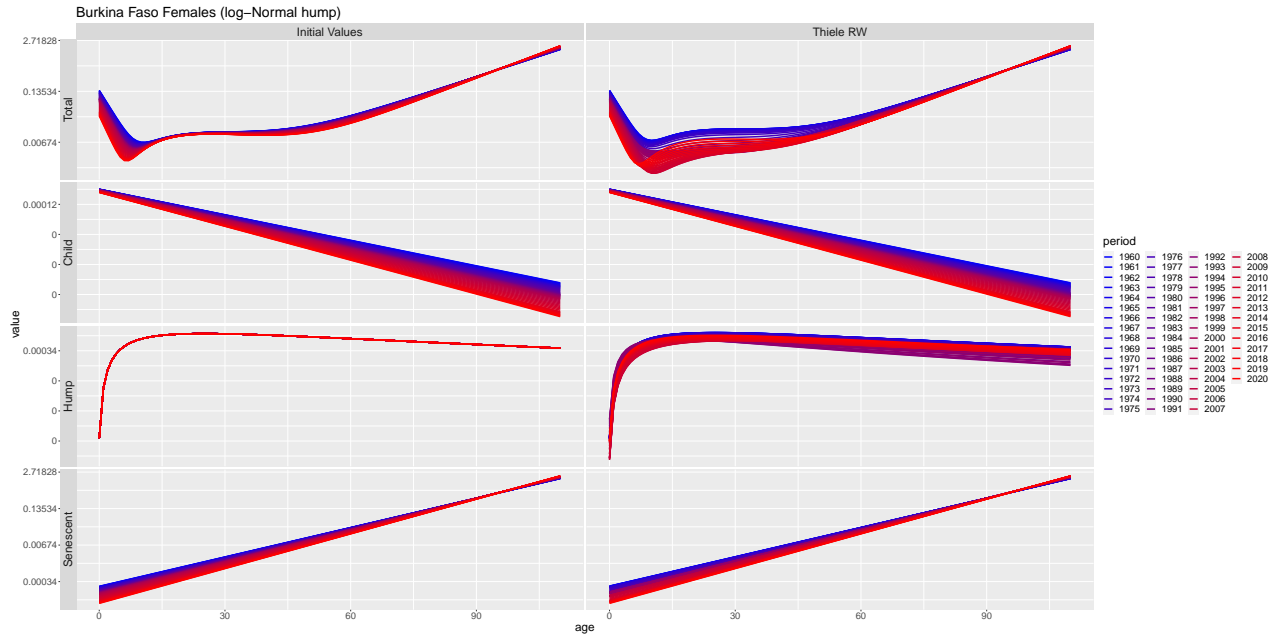


Figure 3: Thiele Decomposed

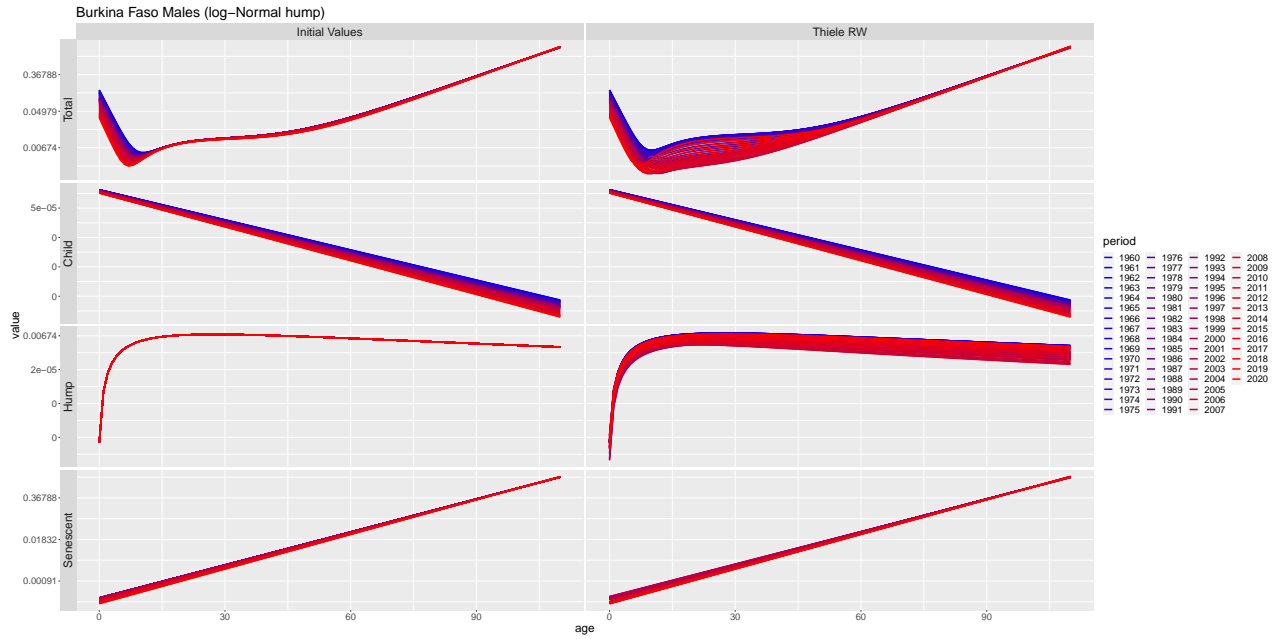


Figure 4: Thiele Decomposed

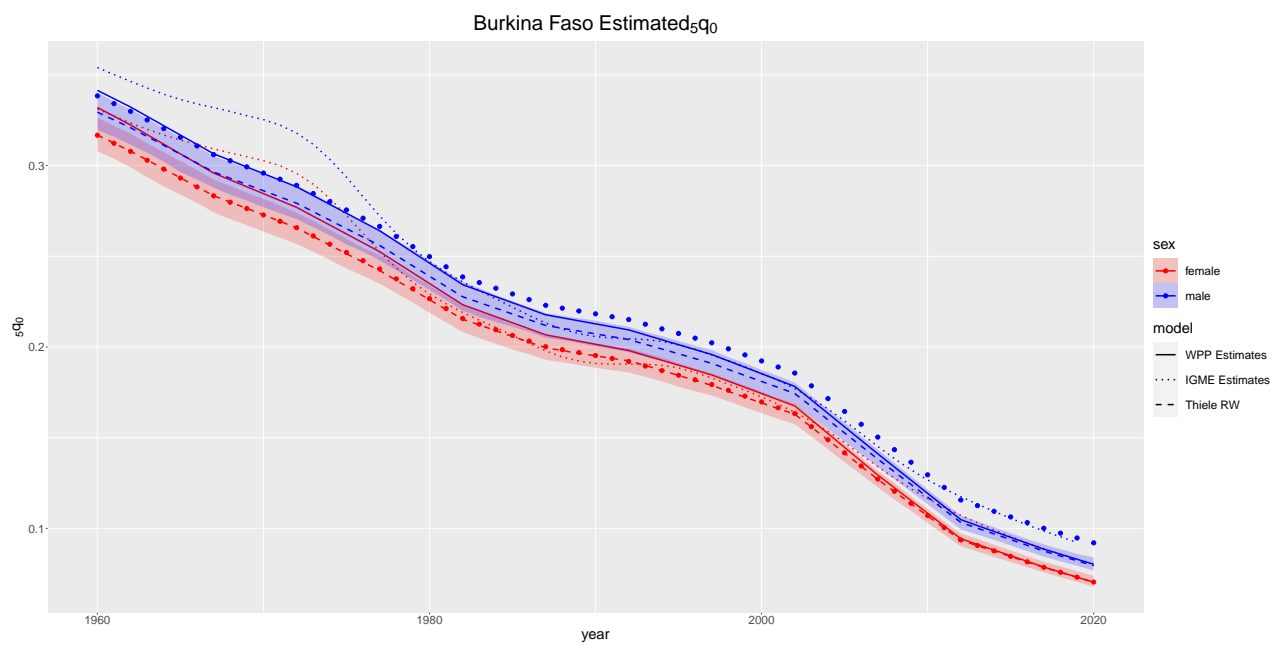


Figure 5: Estimated ${}_5q_0$

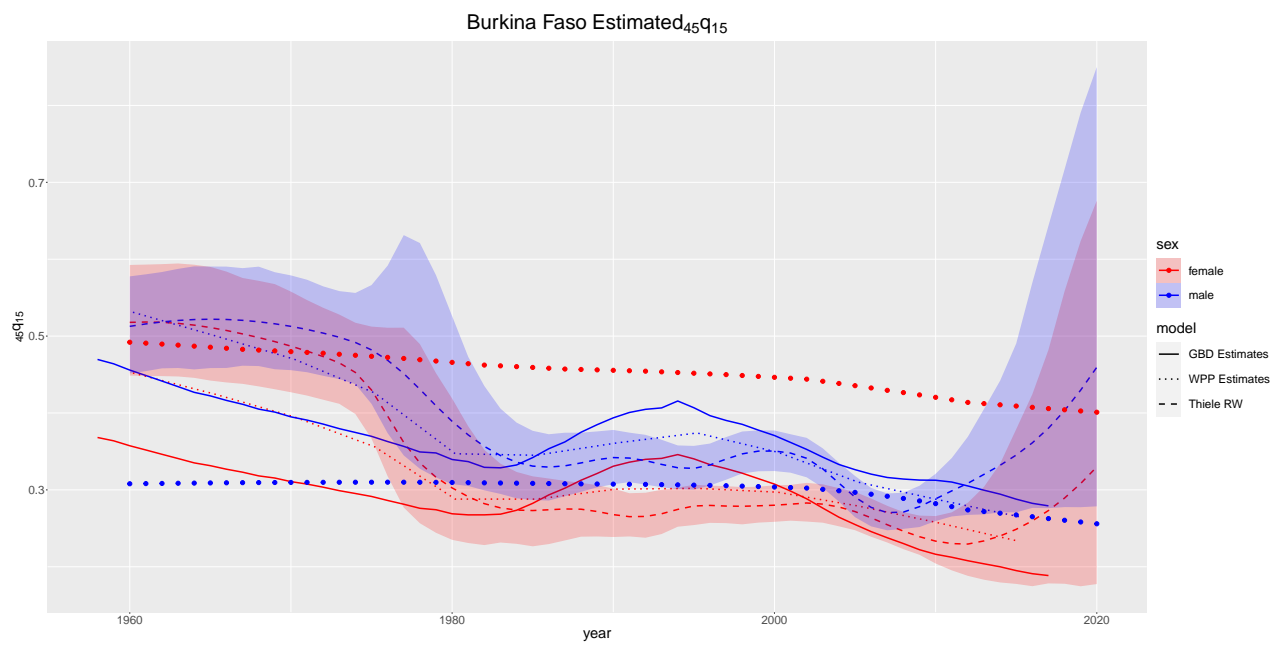


Figure 6: Estimated ${}_{45}q_{15}$

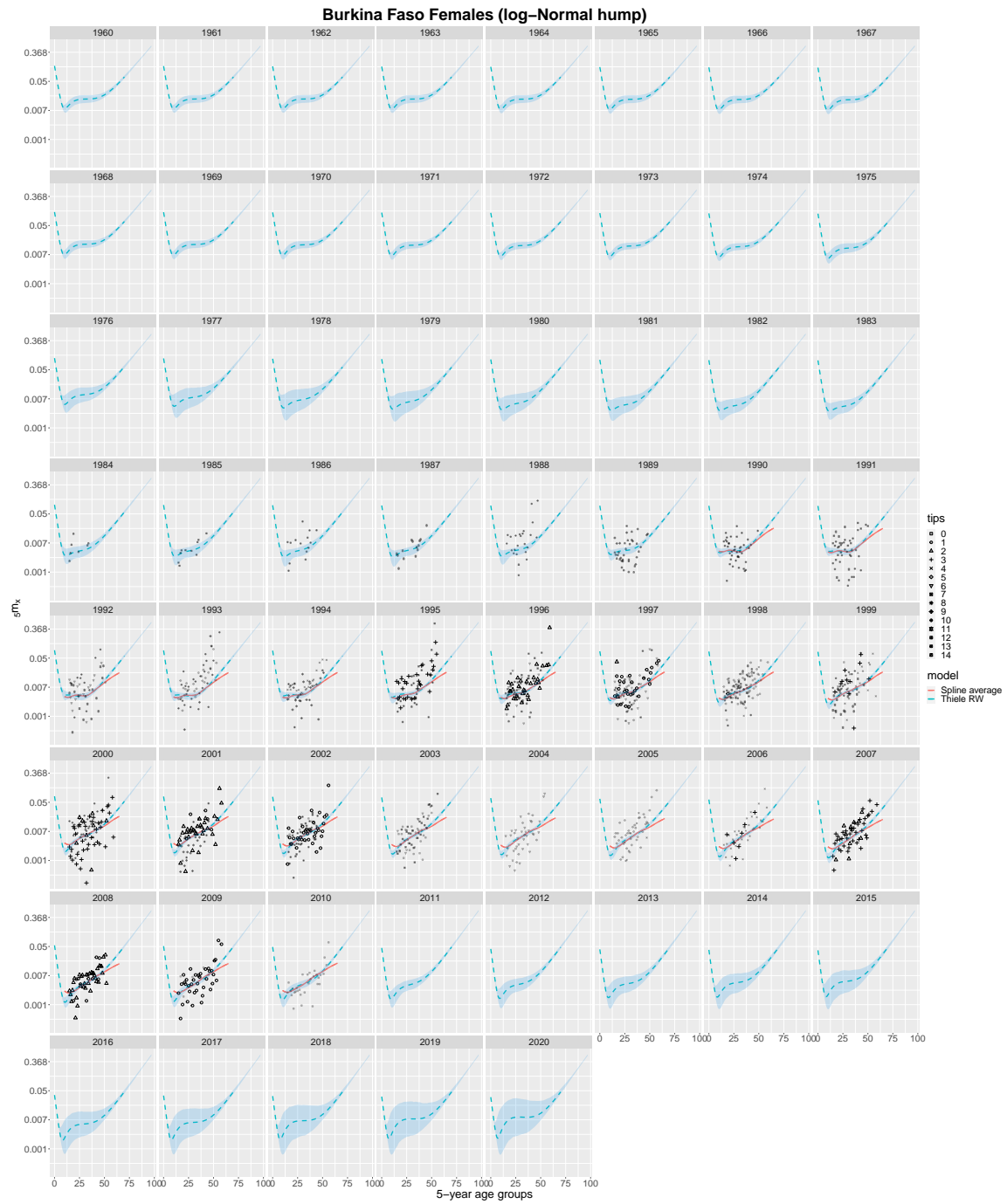


Figure 7: Mortality Schedules

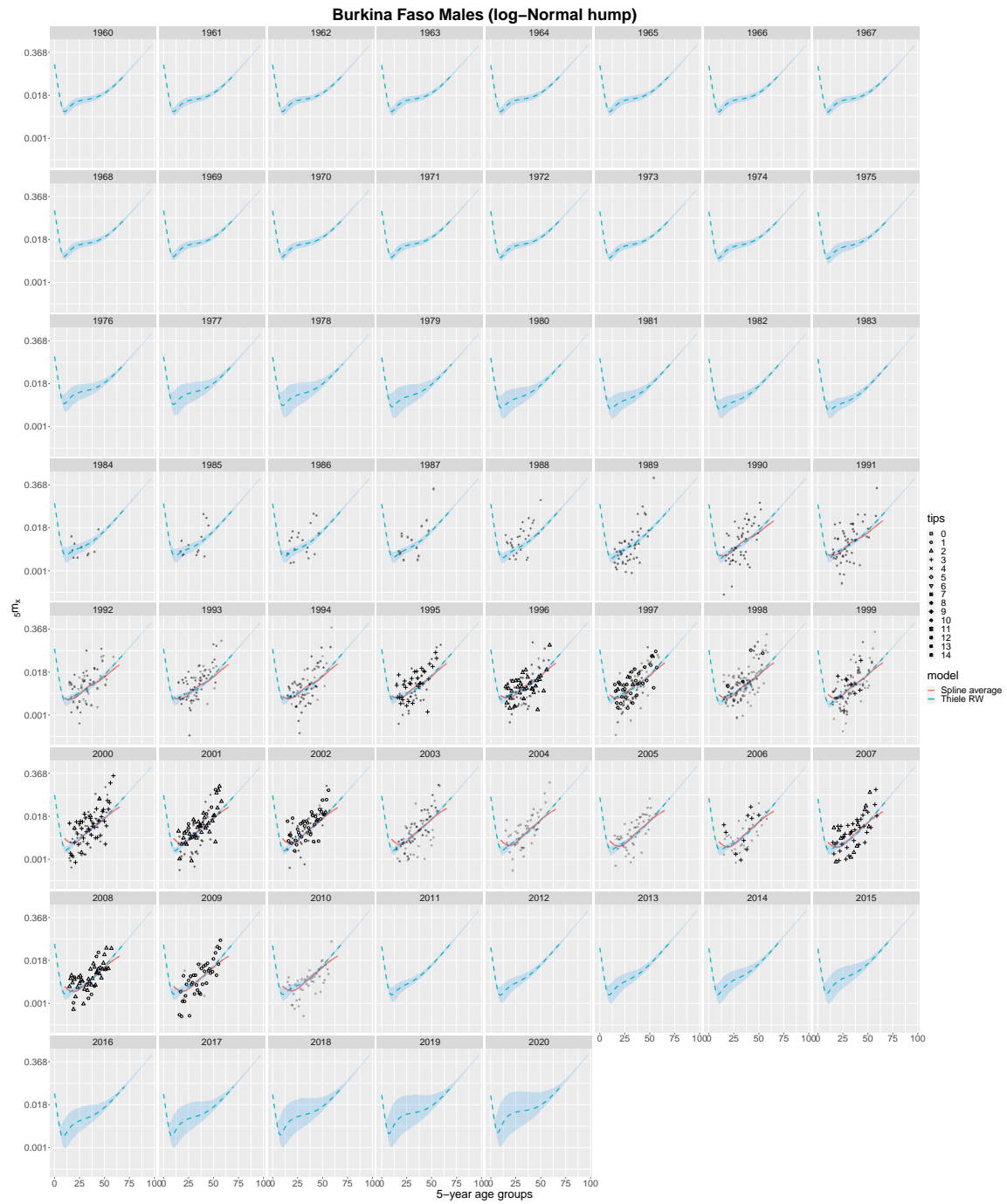


Figure 8: Mortality Schedules

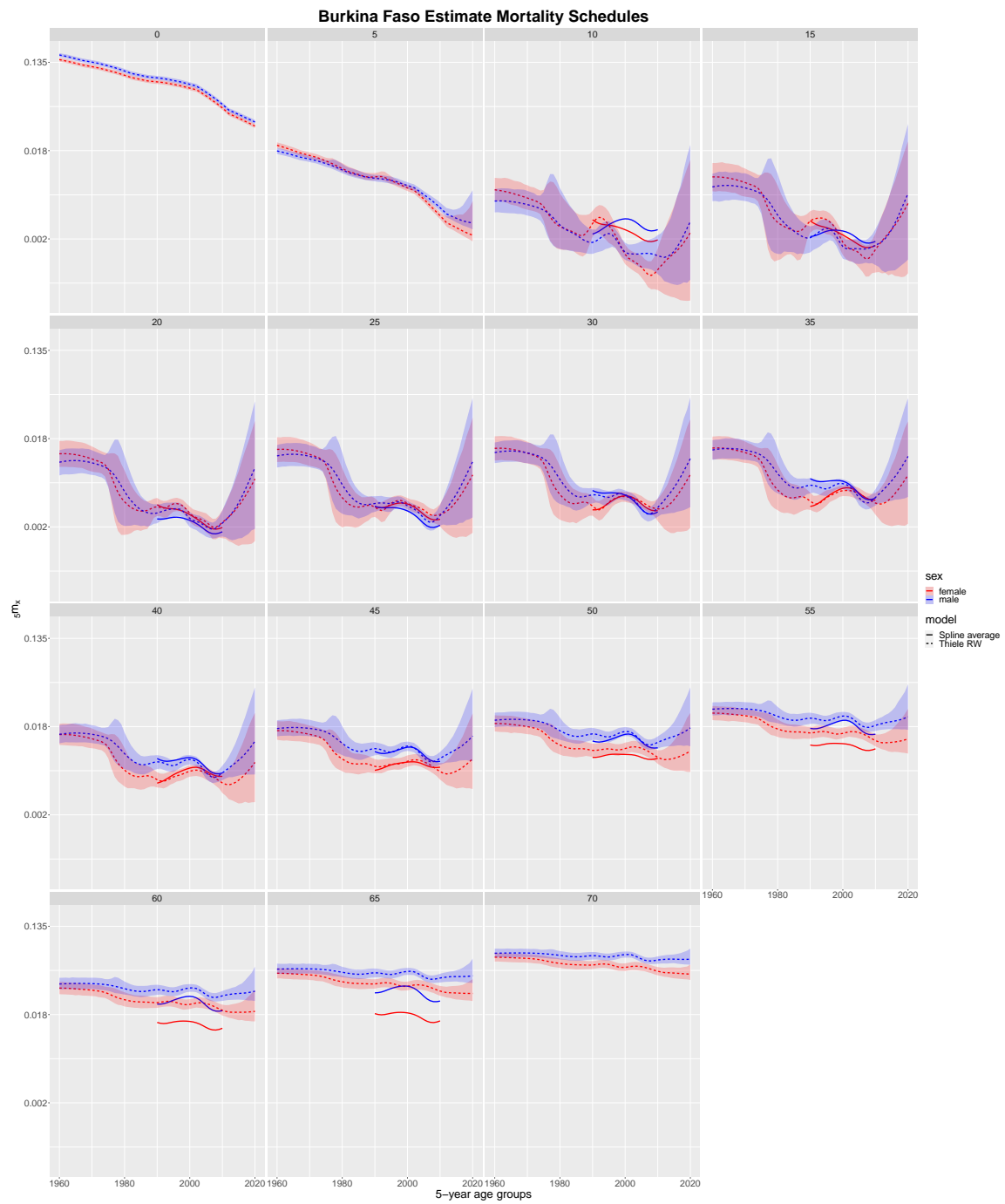


Figure 9: Mortality Schedules

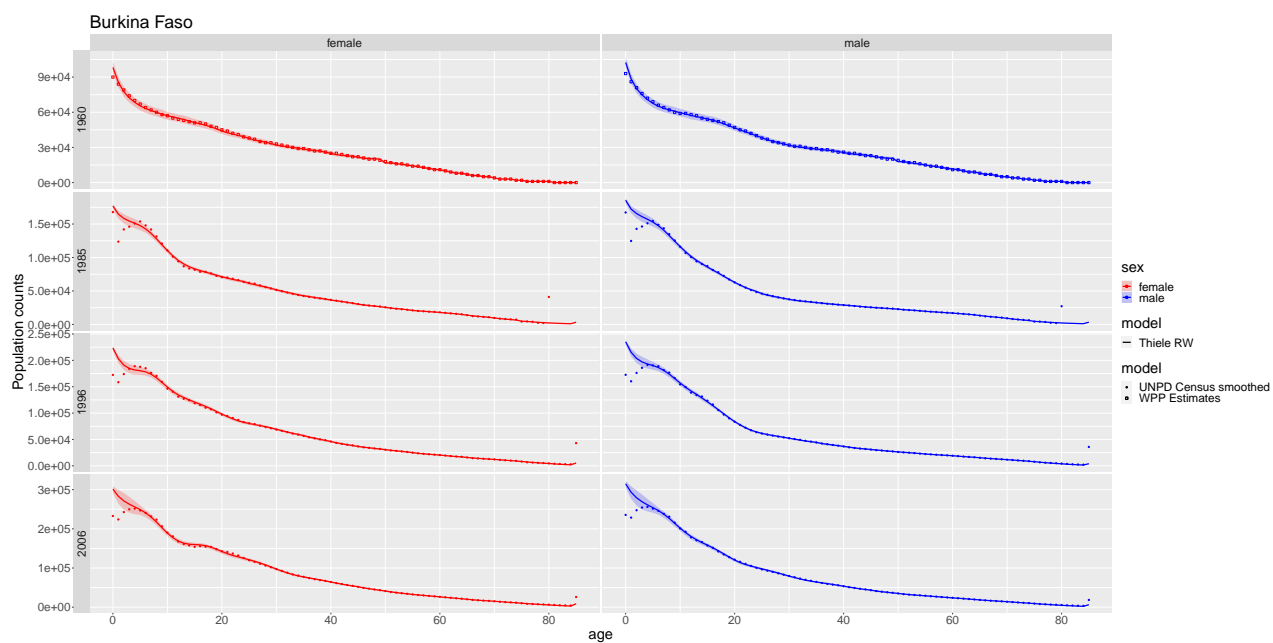


Figure 10: Population

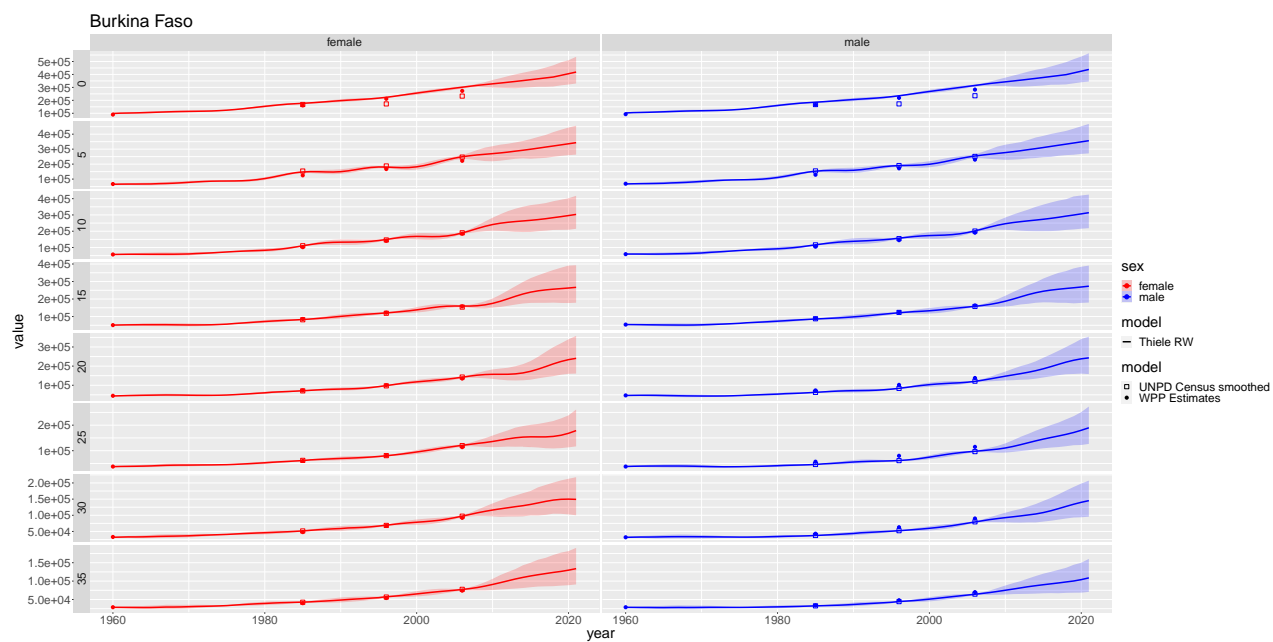


Figure 11: Population

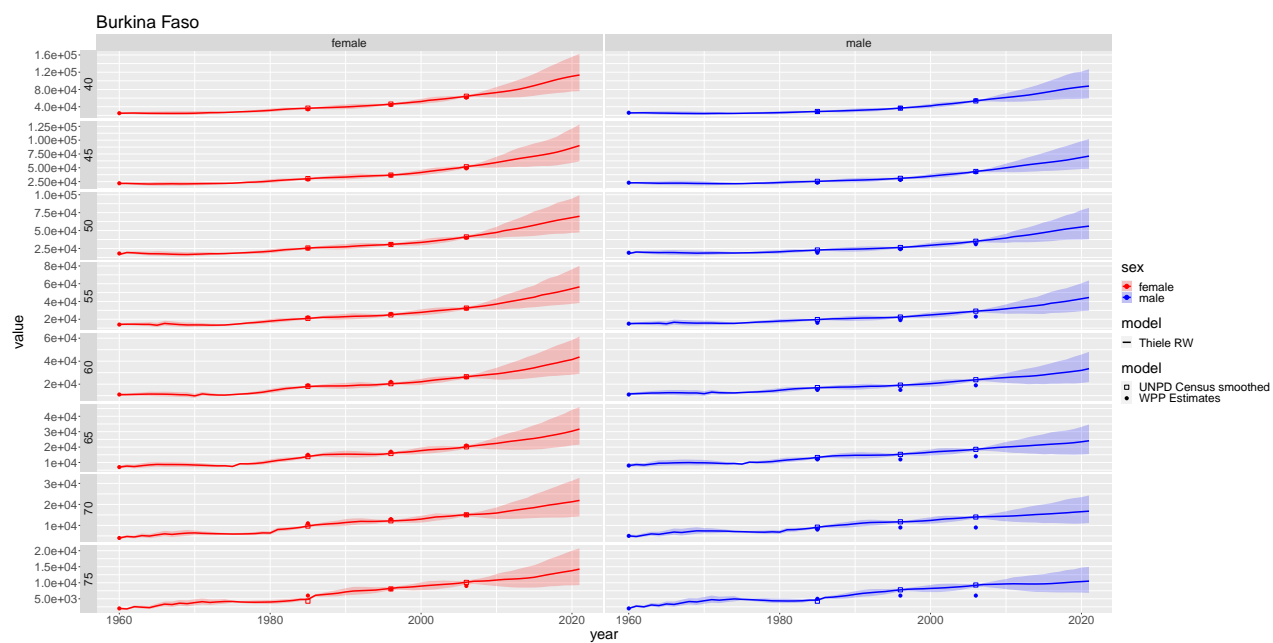


Figure 12: Population

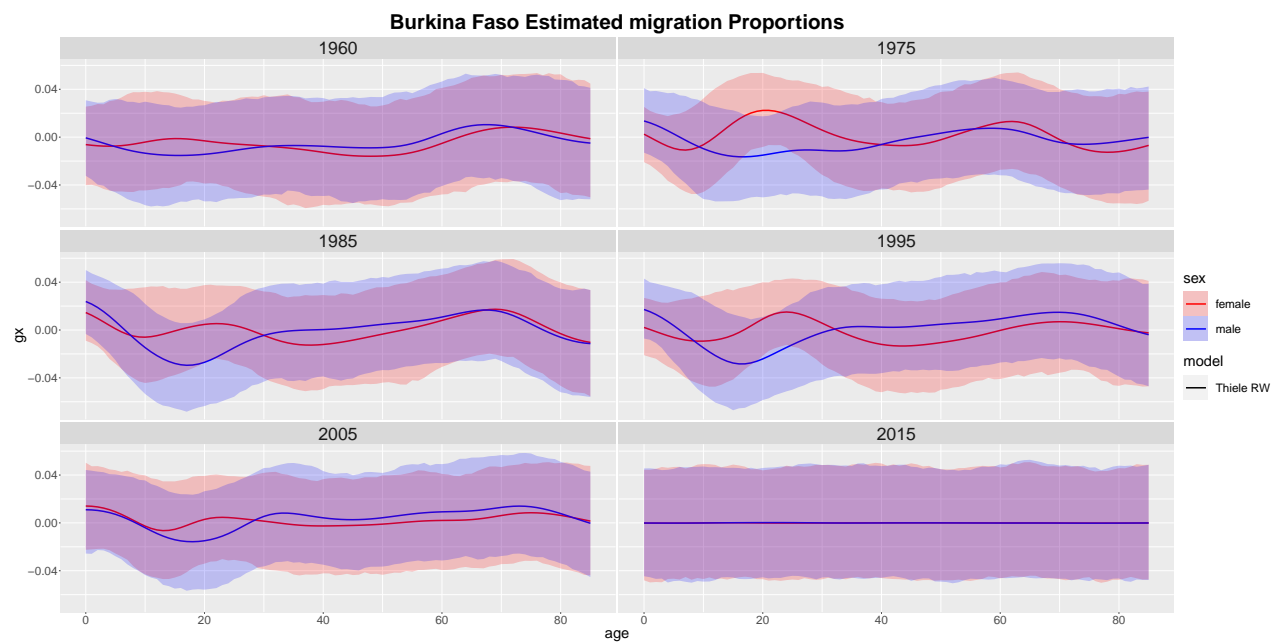


Figure 13: Migration

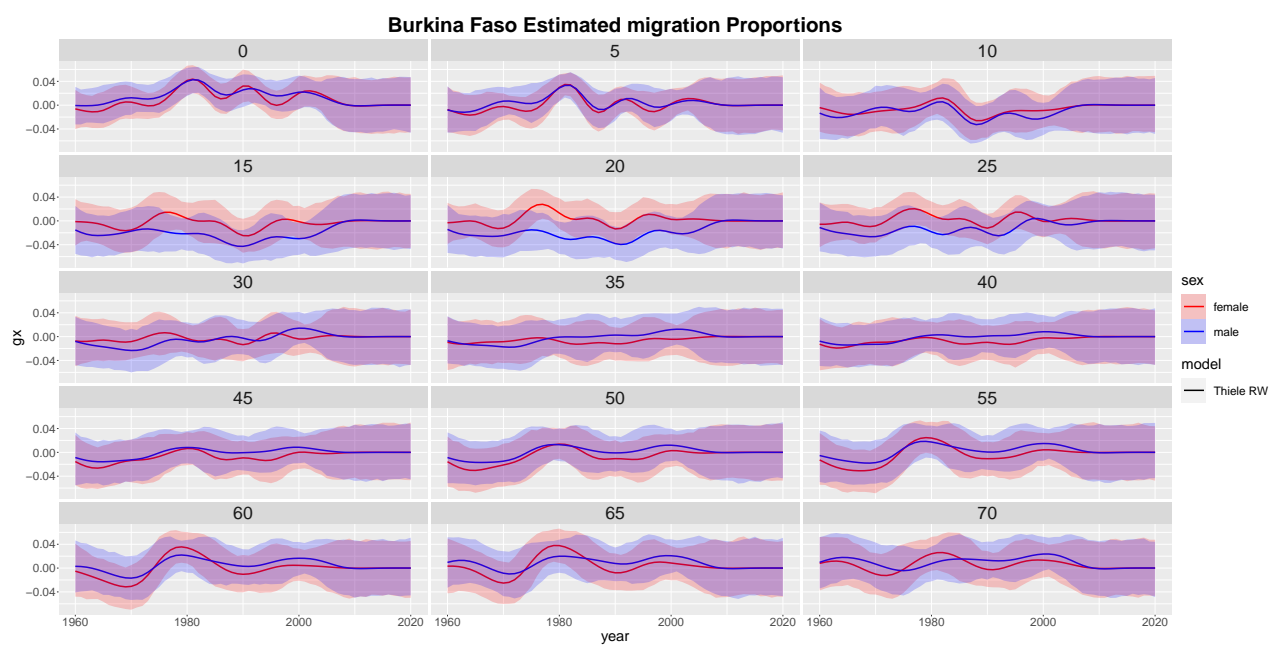


Figure 14: Migration

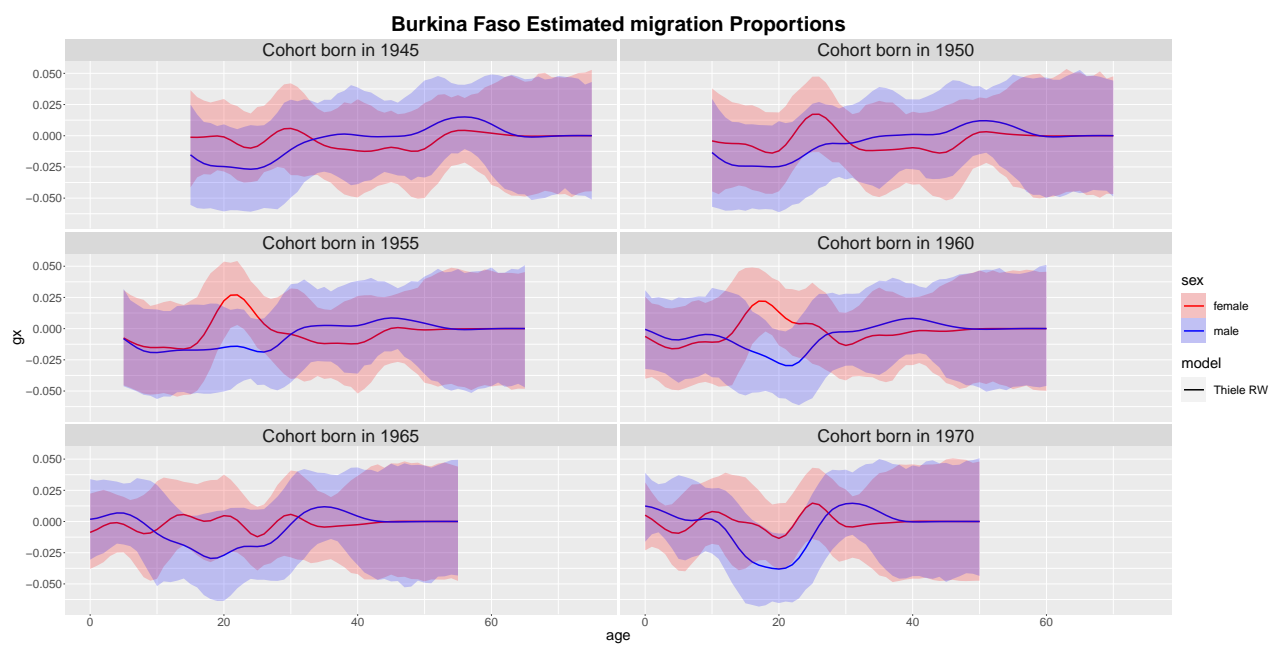


Figure 15: Migration

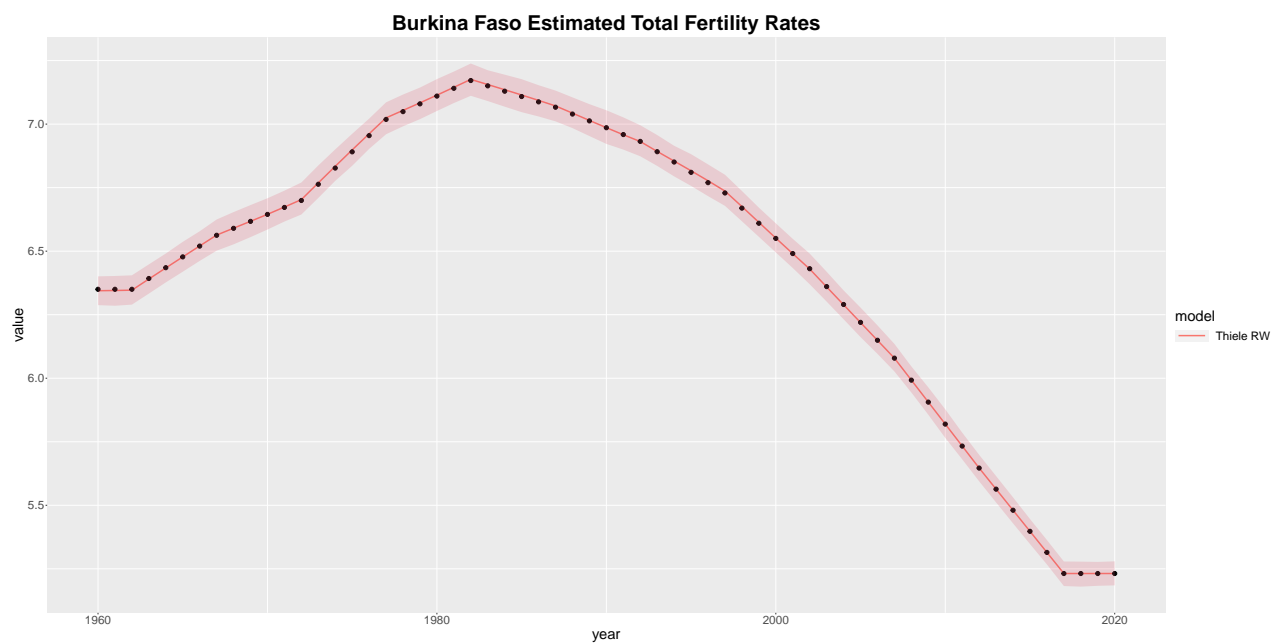


Figure 16: Total Fertility

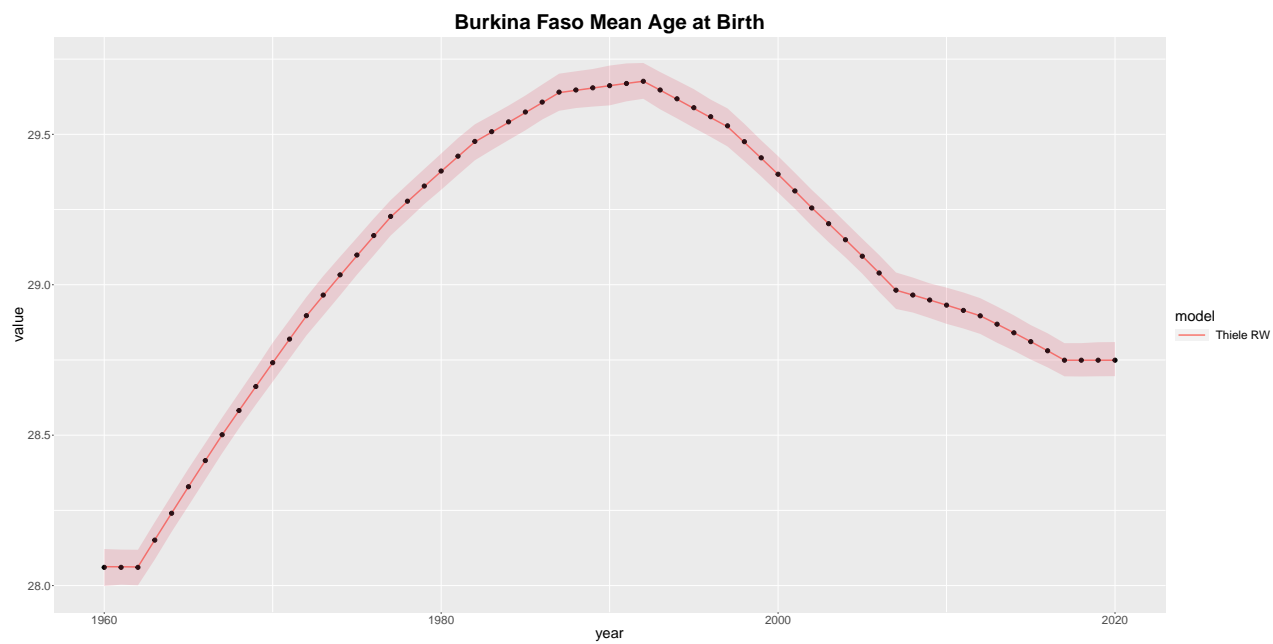


Figure 17: Mean age at births

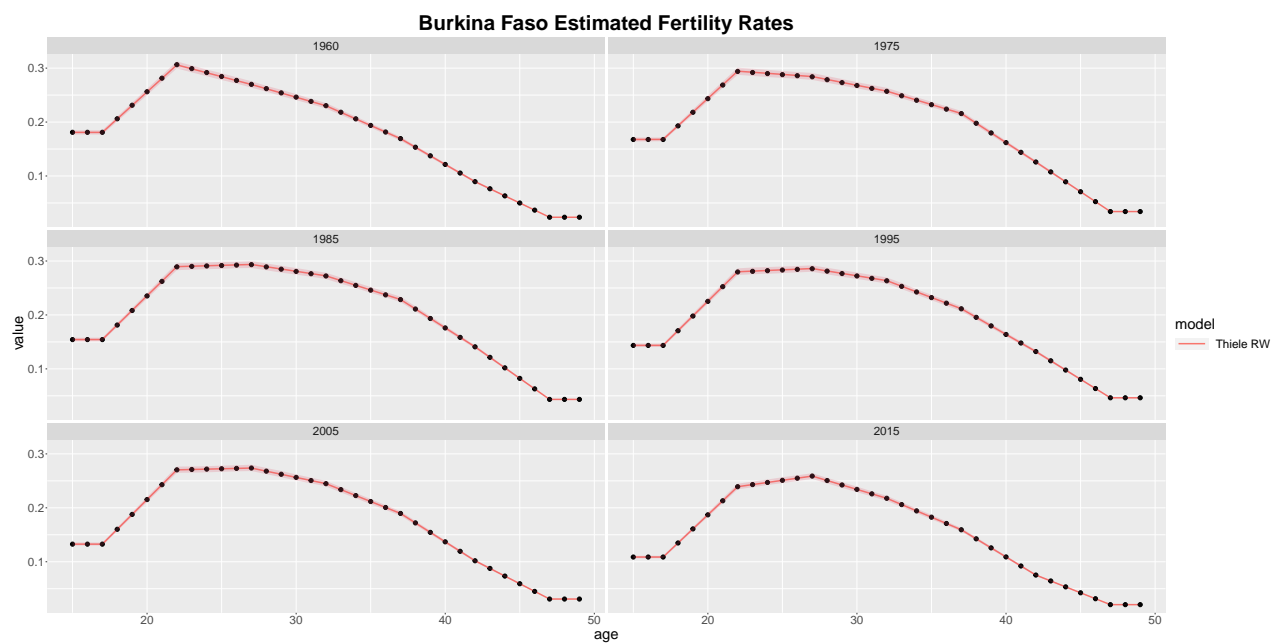


Figure 18: Fertility

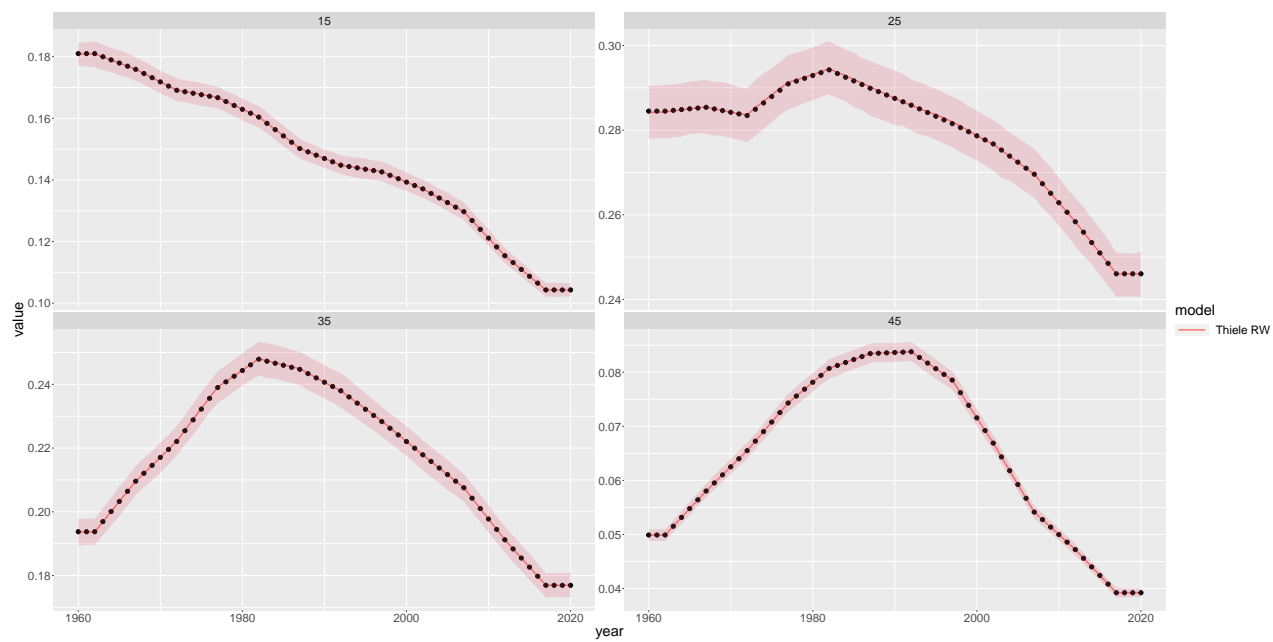


Figure 19: Fertility