Gambia

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

```
## # A tibble: 86 x 4
##      age `1973` `1983` `1993`
##    <dbl>  <dbl>  <dbl>  <dbl>
##  1     0 10161   8954. 14438.
##  2     1  8901. 10514. 14418.
##  3     2  8058. 11886. 16911.
##  4     3  7548. 12294. 17600.
##  5     4  7194. 12659. 18292.
##  6     5  6938. 12702. 18550.
##  7     6  6734. 12179. 17794.
##  8     7  6541. 11352. 16837.
##  9     8  6350. 10368. 15721.
## 10     9  6169.  9343. 14581.
## # ... with 76 more rows
```

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

```
## # A tibble: 18 x 1
##      age
##    <dbl>
##  1     0
##  2     5
##  3    10
##  4    15
##  5    20
##  6    25
##  7    30
##  8    35
##  9    40
## 10    45
## 11    50
## 12    55
## 13    60
## 14    65
## 15    70
## 16    75
## 17    80
## 18    85
```

```
## [1] "Census Males"
```

```
## # A tibble: 86 x 4
##      age `1973` `1983` `1993`
##    <dbl>  <dbl>  <dbl>  <dbl>
##  1     0 10239   9379. 15106.
##  2     1  8856. 10807. 15019.
##  3     2  7961. 11961. 17261.
##  4     3  7434. 12184. 17786.
##  5     4  7054. 12479. 18368.
##  6     5  6773. 12532. 18555.
```

```
##  7     6  6566. 12055. 17795.
##  8     7  6383. 11387. 16934.
##  9     8  6202  10614. 15939.
## 10     9  6031.  9779. 14915.
## # ... with 76 more rows
```

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

```
## # A tibble: 18 x 1
##      age
##    <dbl>
##  1     0
##  2     5
##  3    10
##  4    15
##  5    20
##  6    25
##  7    30
##  8    35
##  9    40
## 10    45
## 11    50
## 12    55
## 13    60
## 14    65
## 15    70
## 16    75
## 17    80
## 18    85
```

Thiele log-Normal Hump Spline

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

```
##        log_tau2_logpop        log_tau2_logpop        log_tau2_logpop        log_tau2_logpop          lo
##             3.79234436             4.87897479             3.57305221             4.30627622
##         log_dispersion         log_dispersion          log_lambda_tp              tp_slope
##            -0.10704294            -0.03382269             4.18277554            -0.14993978
##         log_lambda_phi         log_lambda_psi          log_lambda_A          log_lambda_B      log_la
##            11.33928111            11.30689291            11.22418783             6.36533152
##     log_lambda_epsilon
##             3.13124333
```

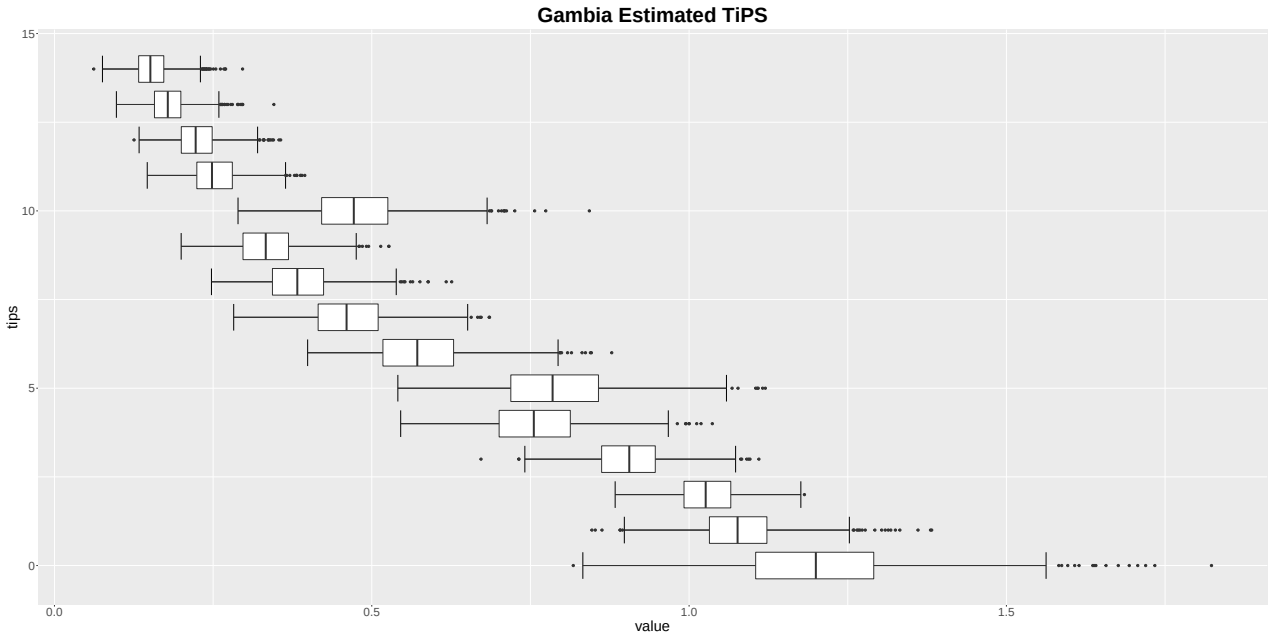

Figure 1: Estimated TiPS

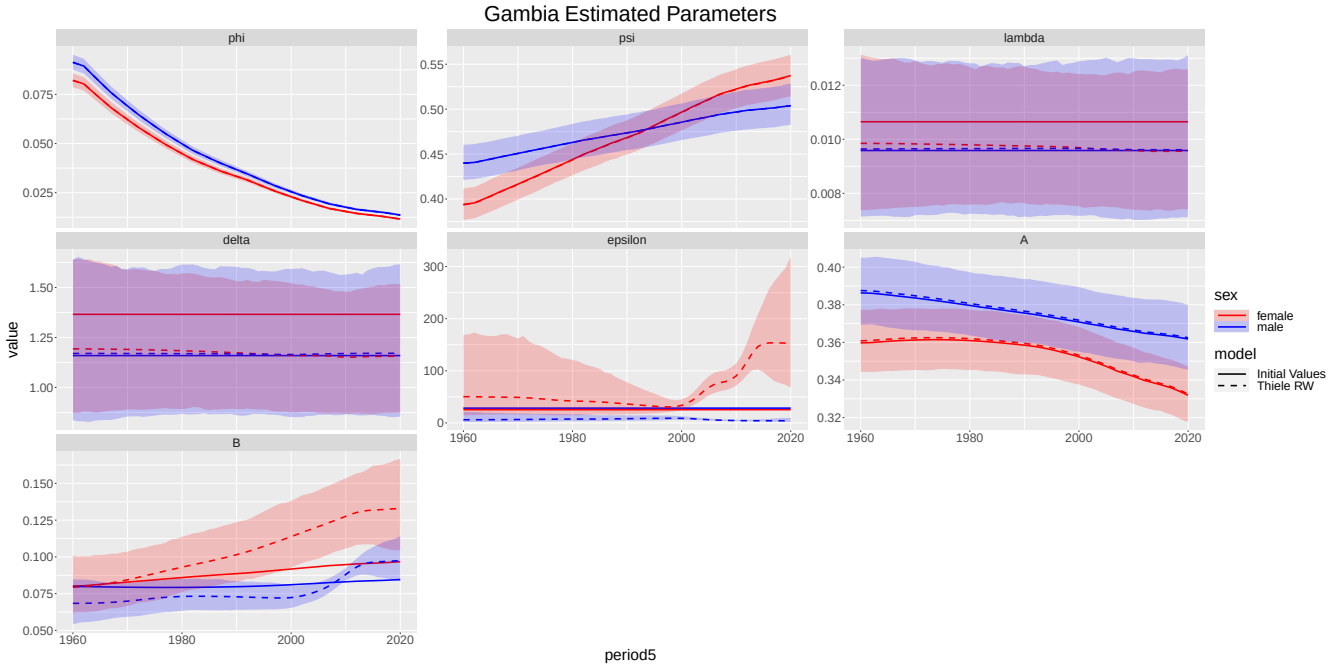

Figure 2: Estimated parameters

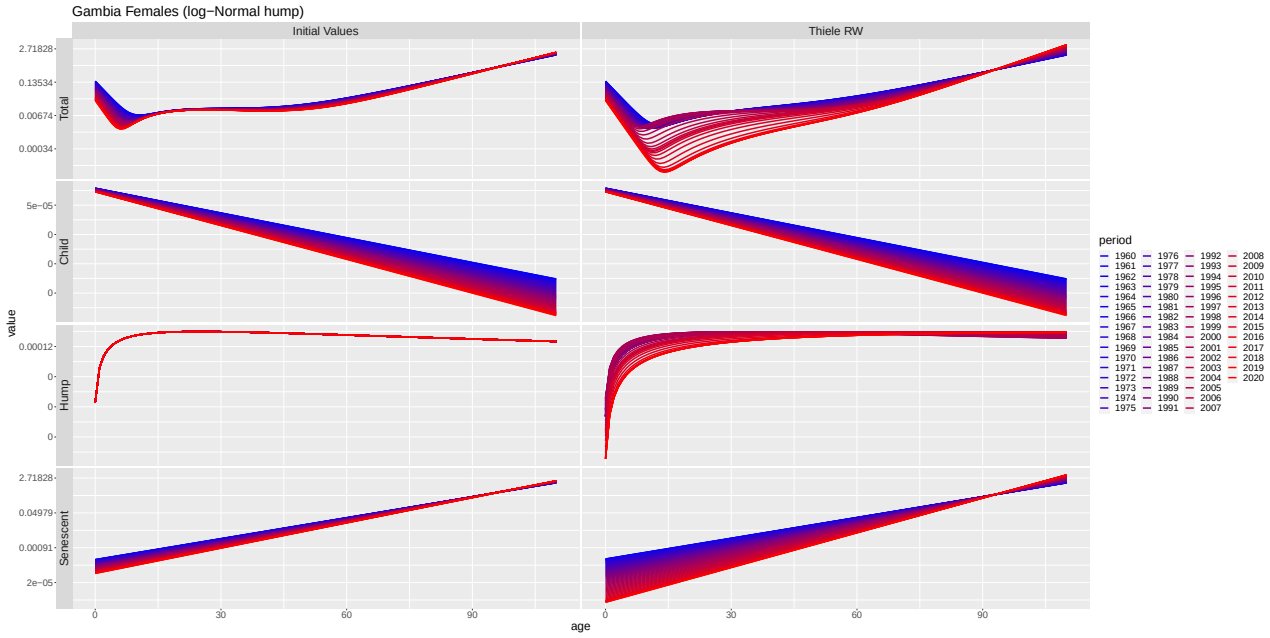

Figure 3: Thiele Decomposed

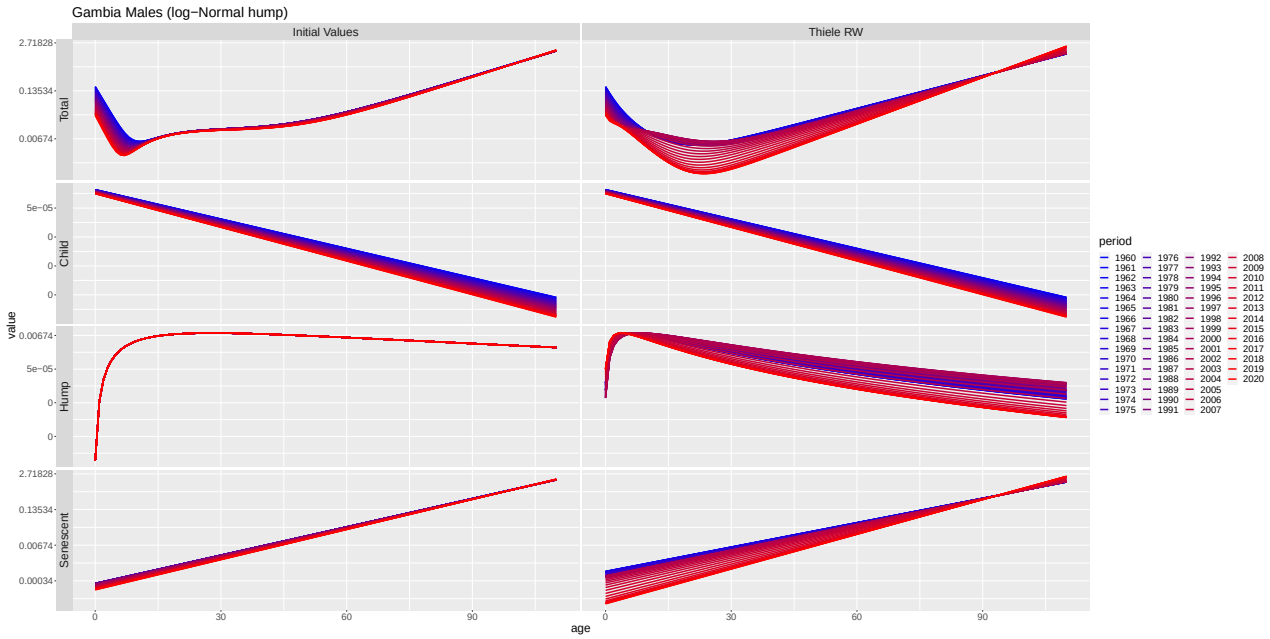

Figure 4: Thiele Decomposed

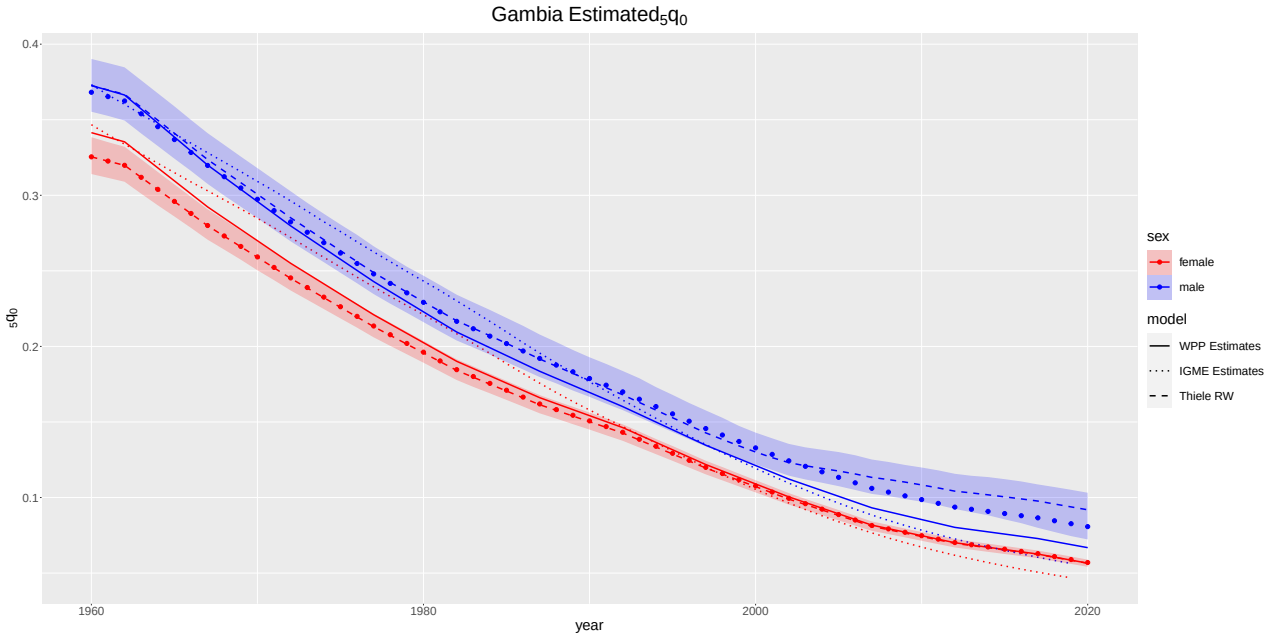

Figure 5: Estimated $_5q_0$

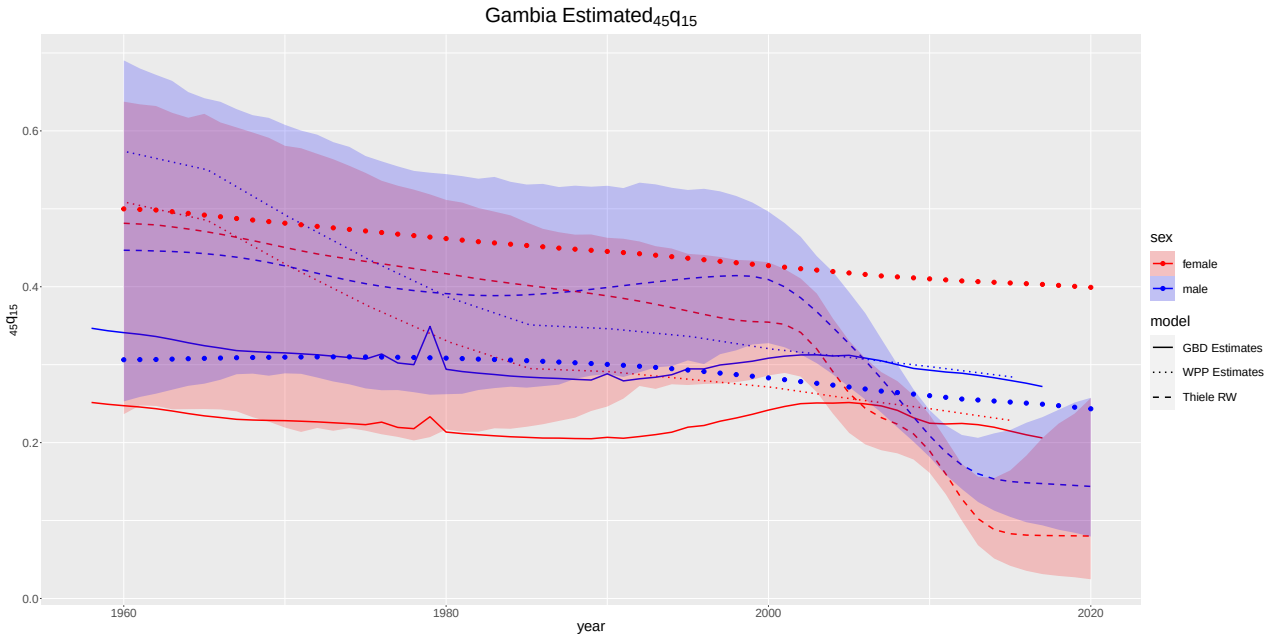

Figure 6: Estimated $_{45}q_{15}$

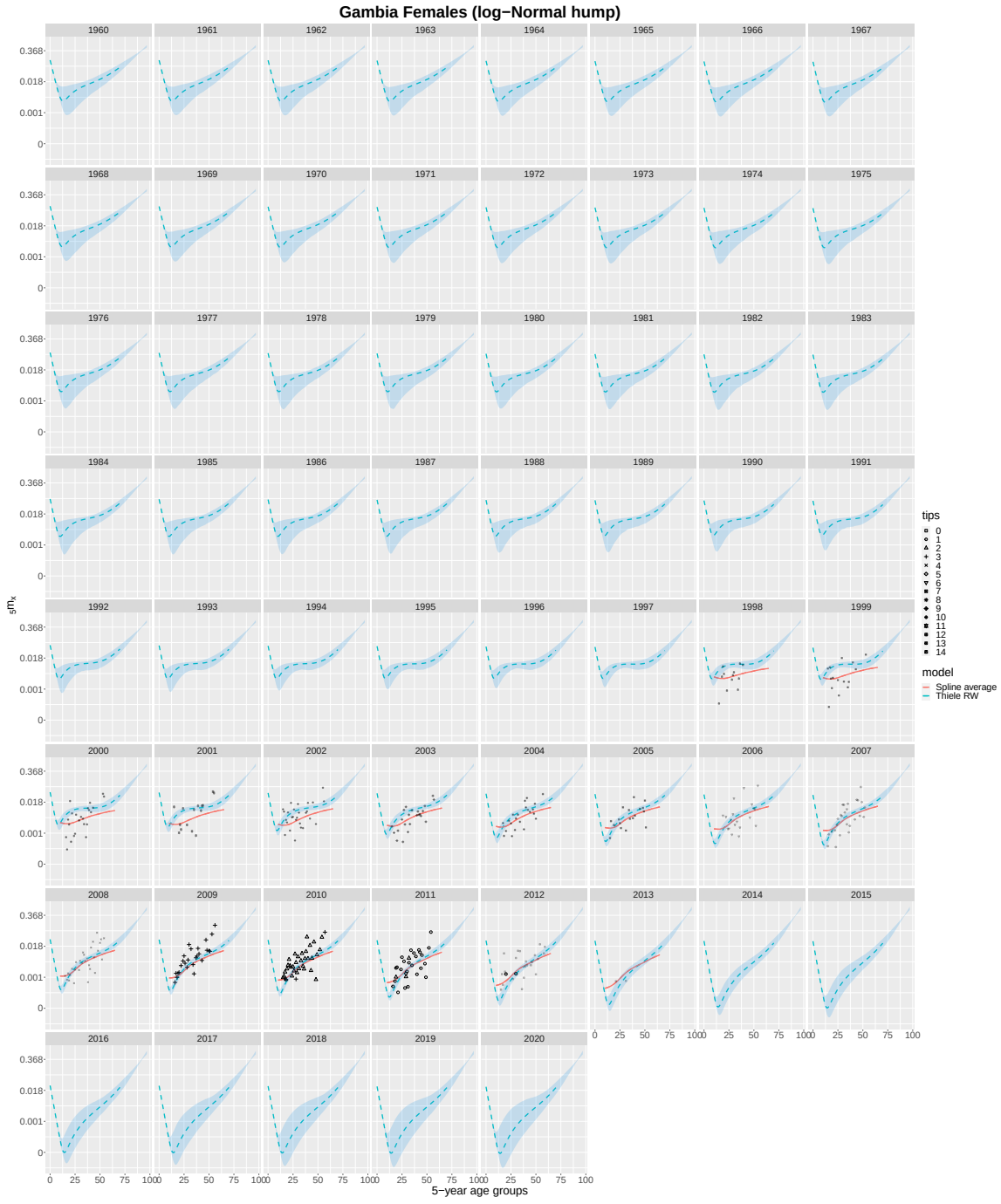

Figure 7: Mortality Schedules

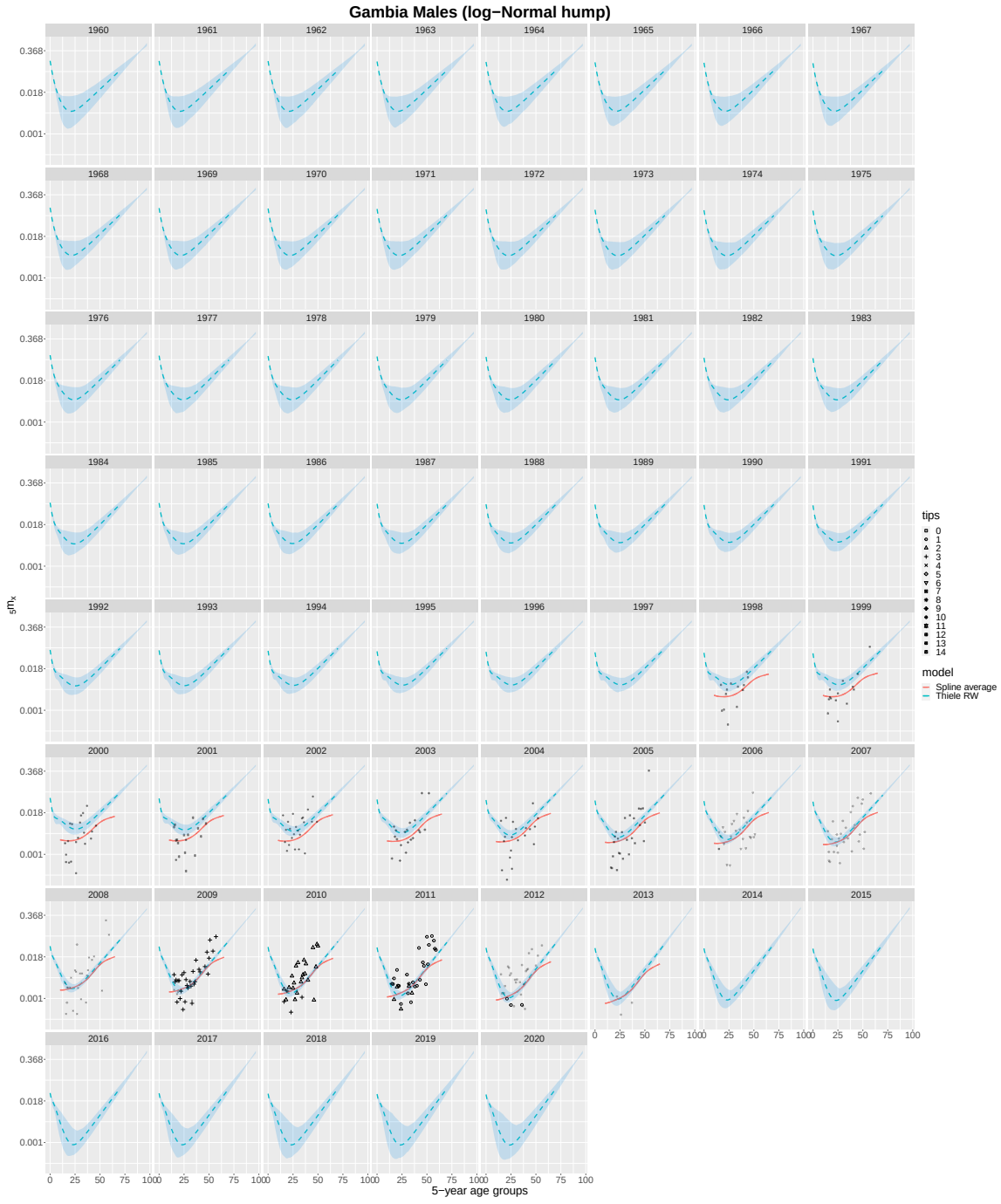

Figure 8: Mortality Schedules

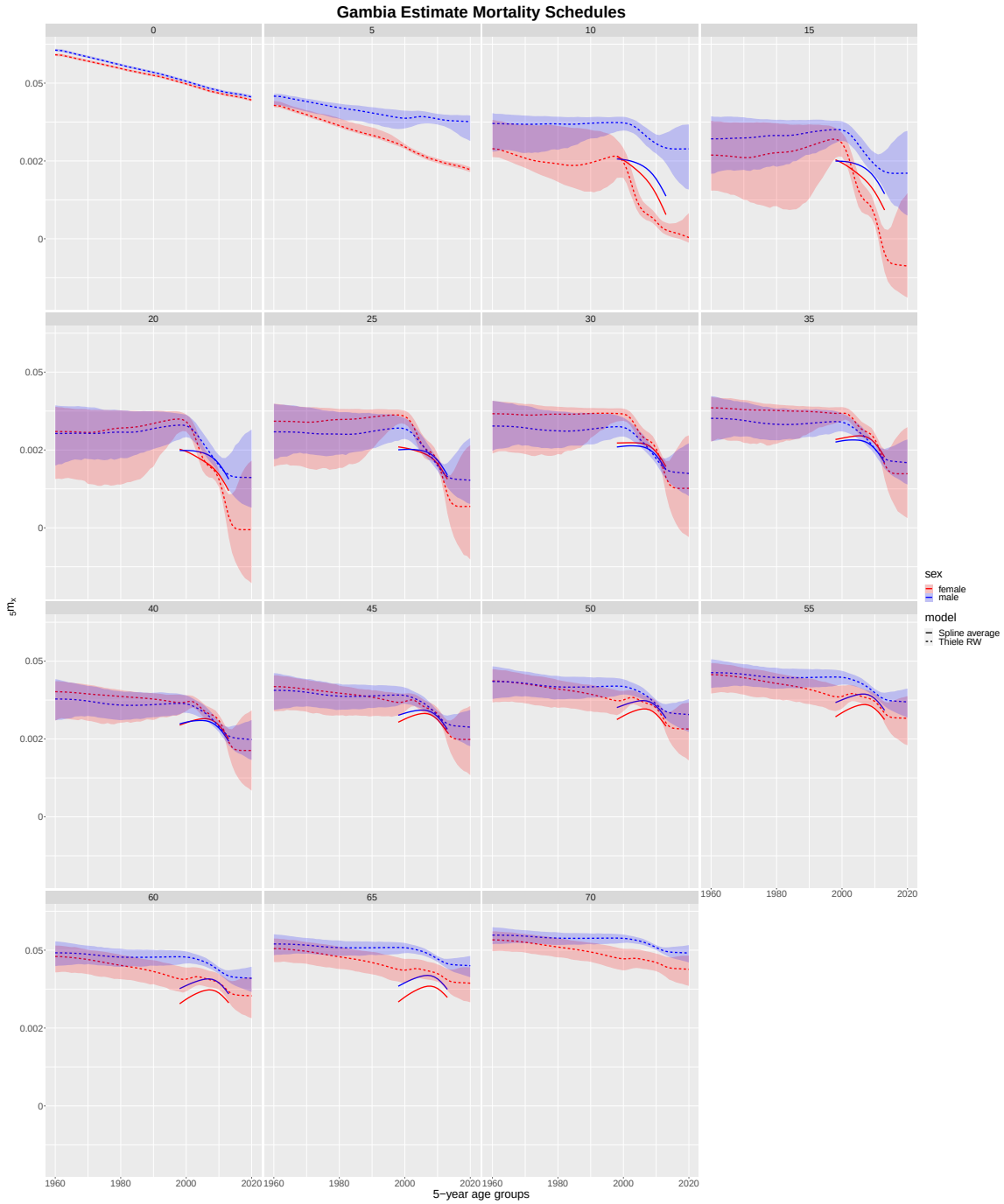

Figure 9: Mortality Schedules

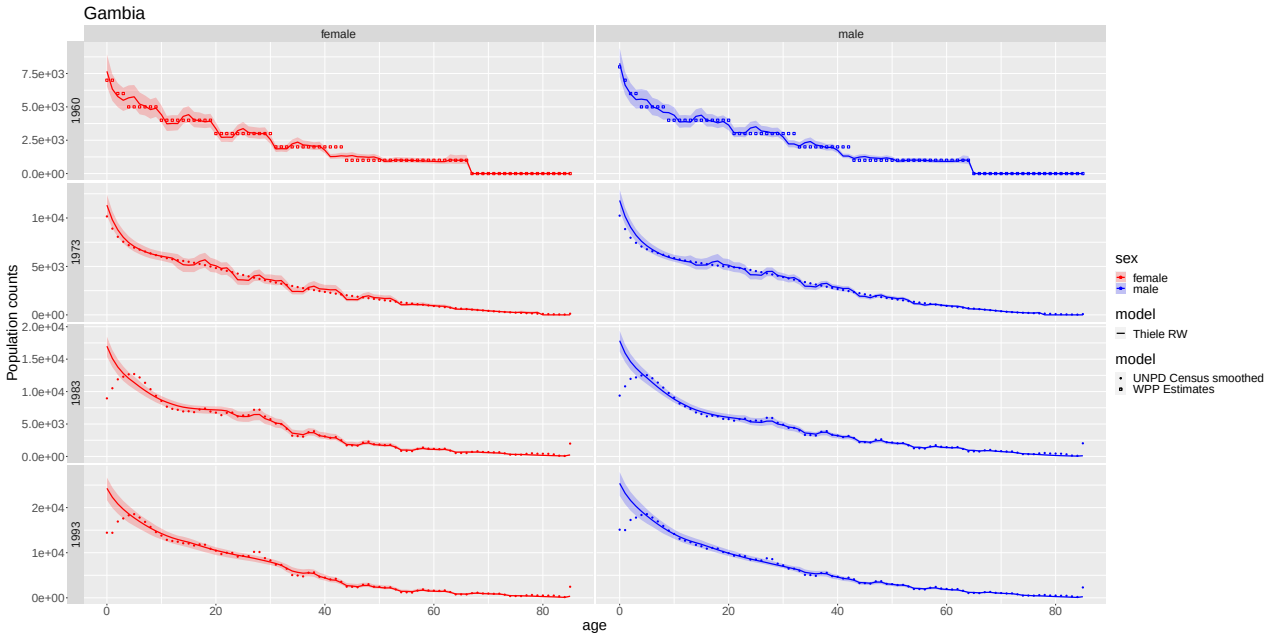

Figure 10: Population

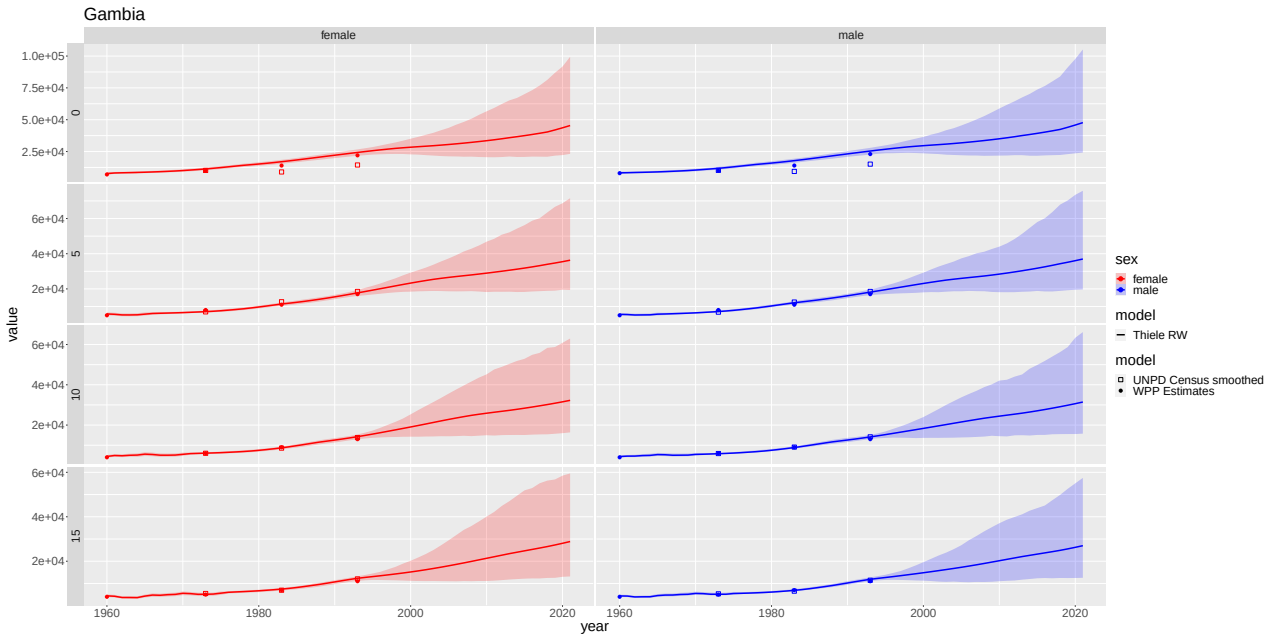

Figure 11: Population

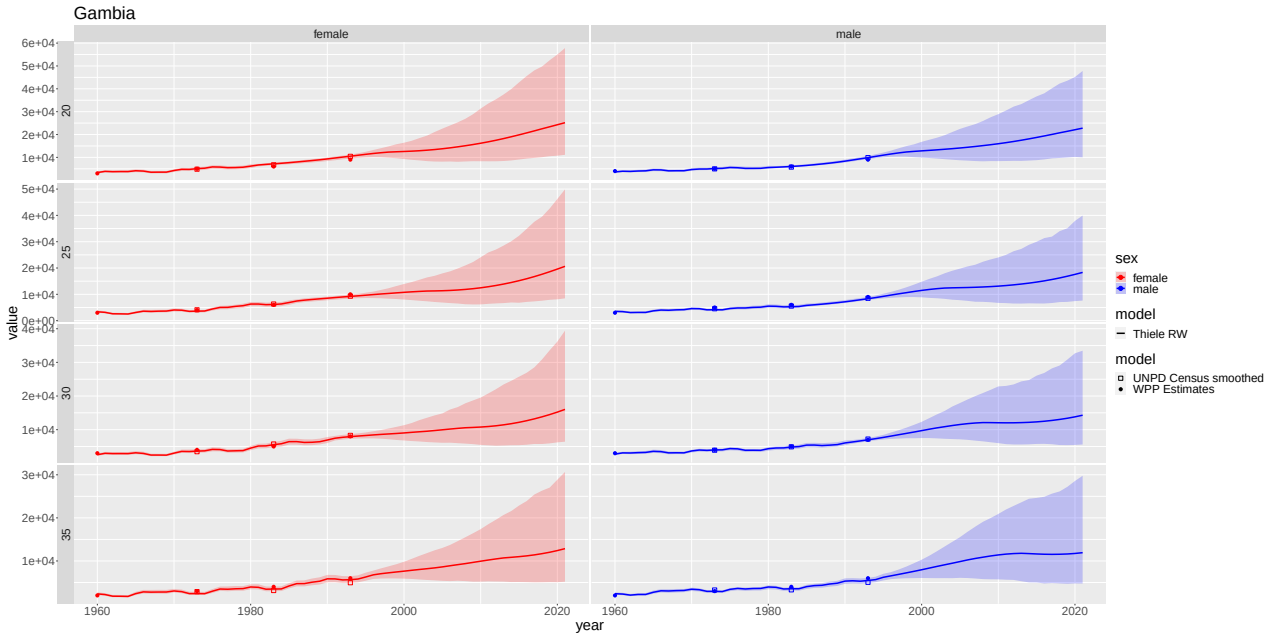

Figure 12: Population

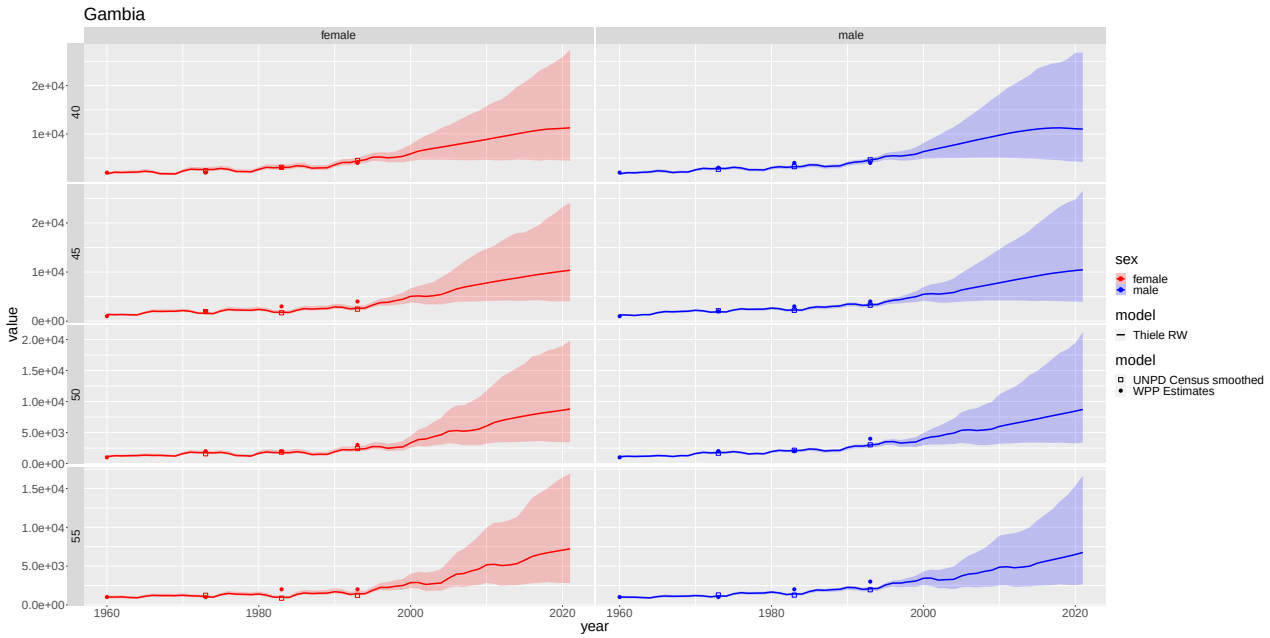

Figure 13: Population

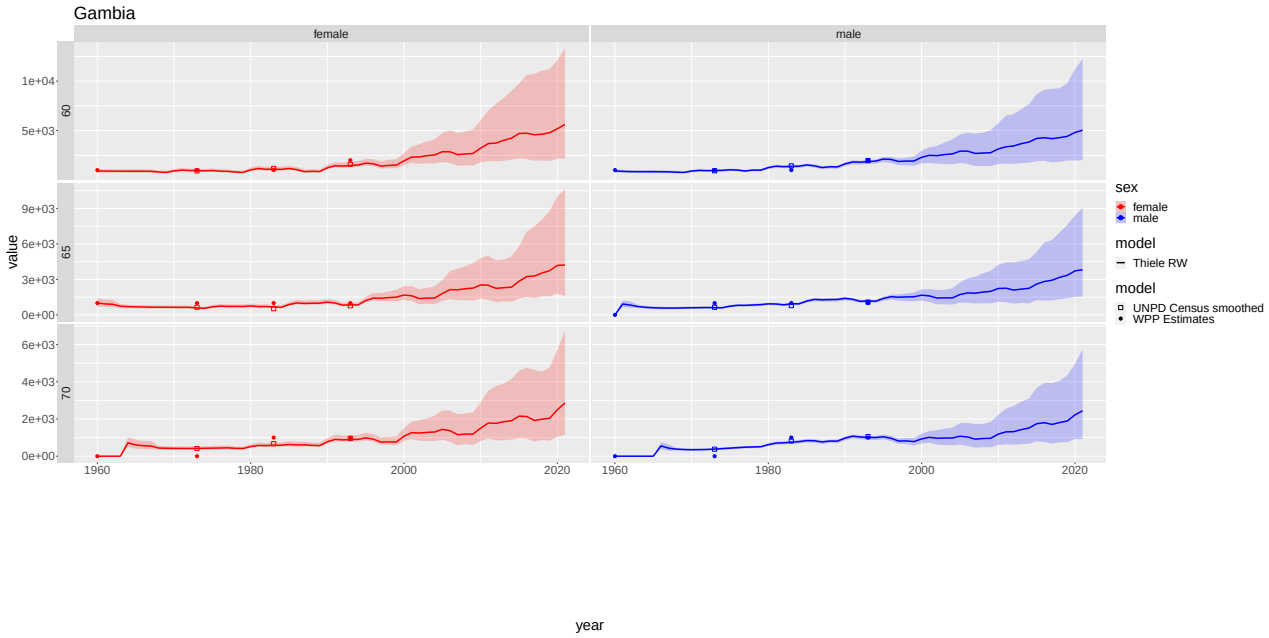

Figure 14: Population

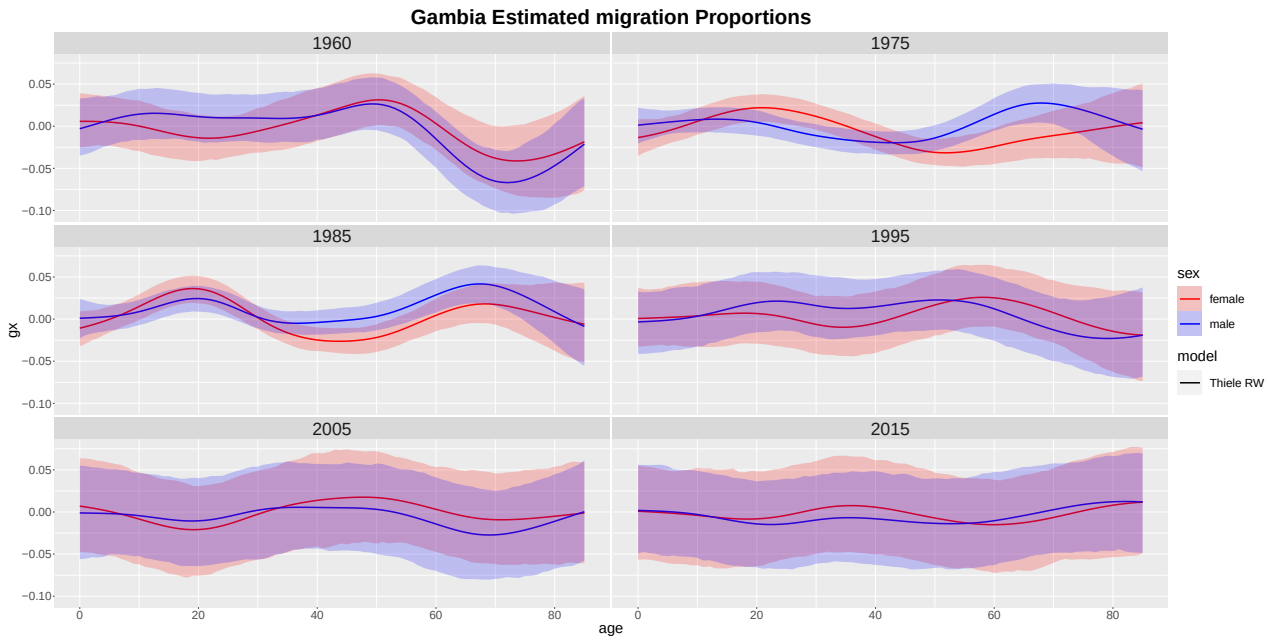

Figure 15: Migration

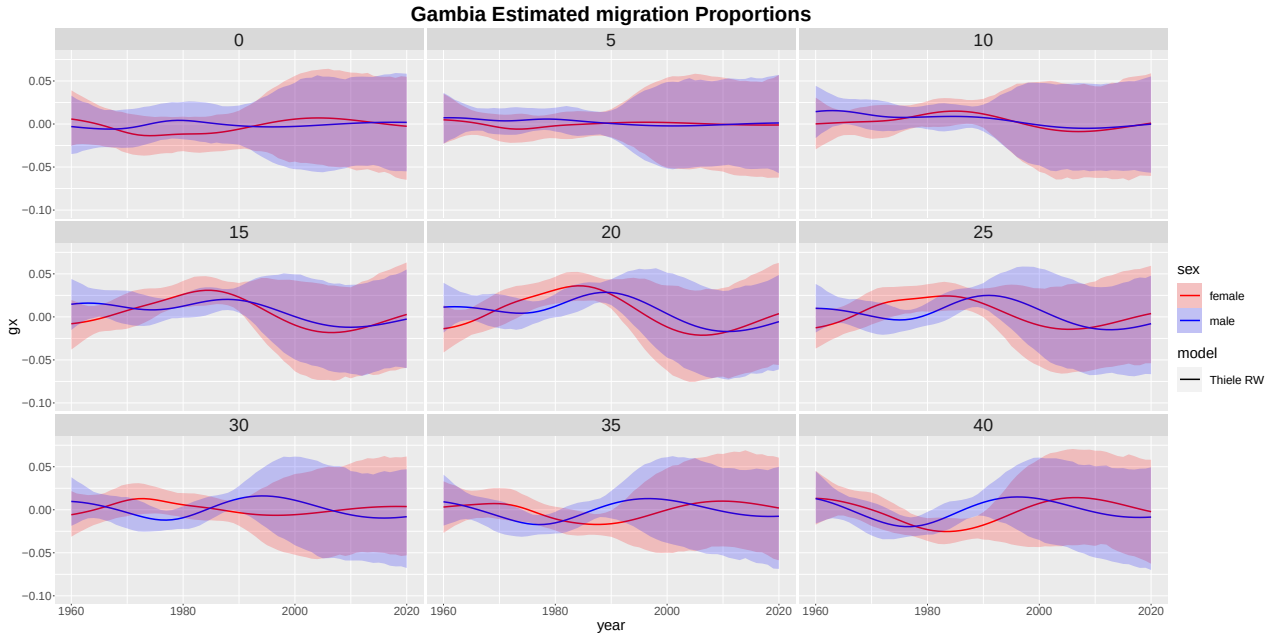

Figure 16: Migration

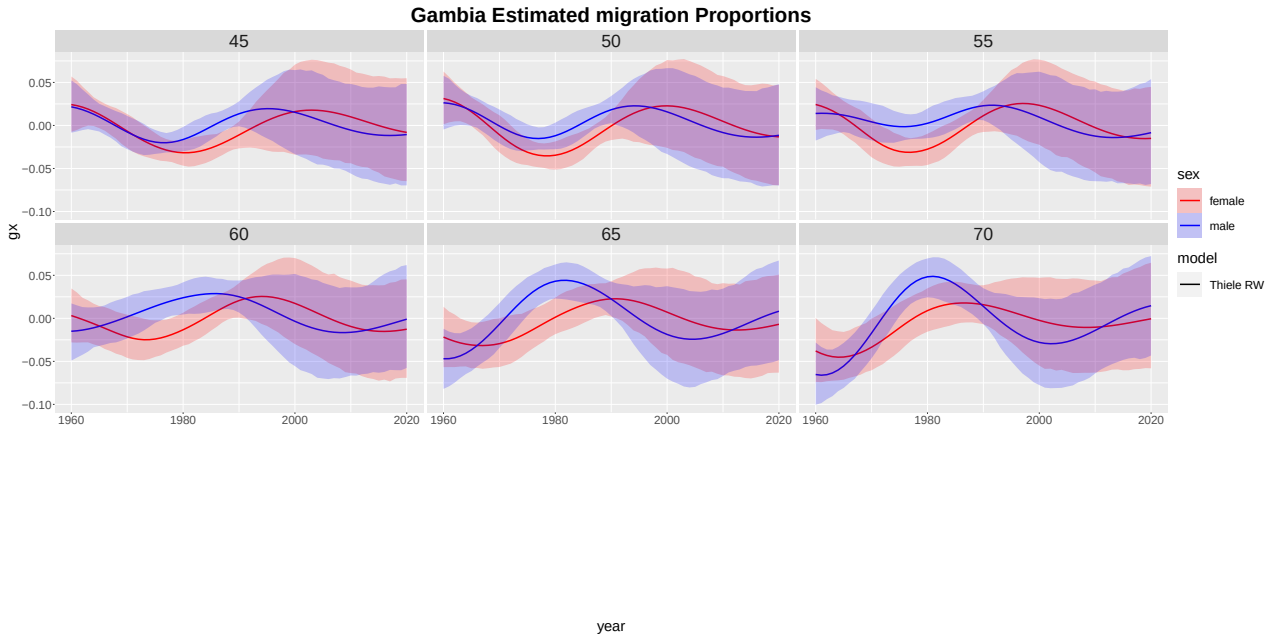

Figure 17: Migration

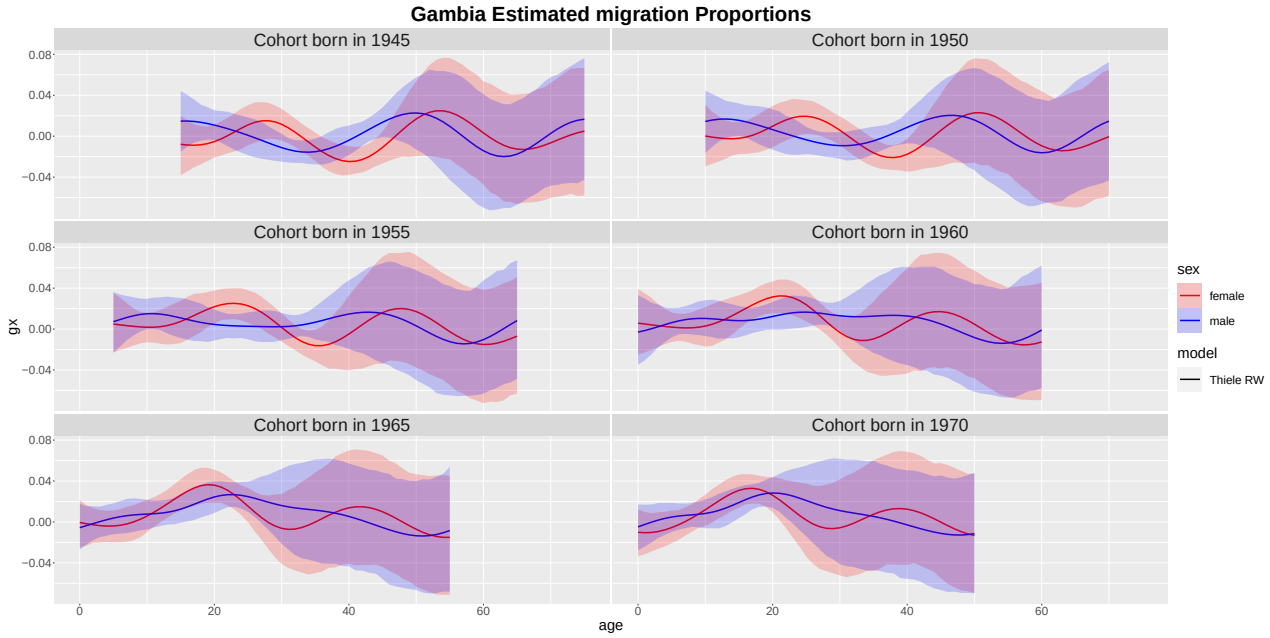

Figure 18: Migration

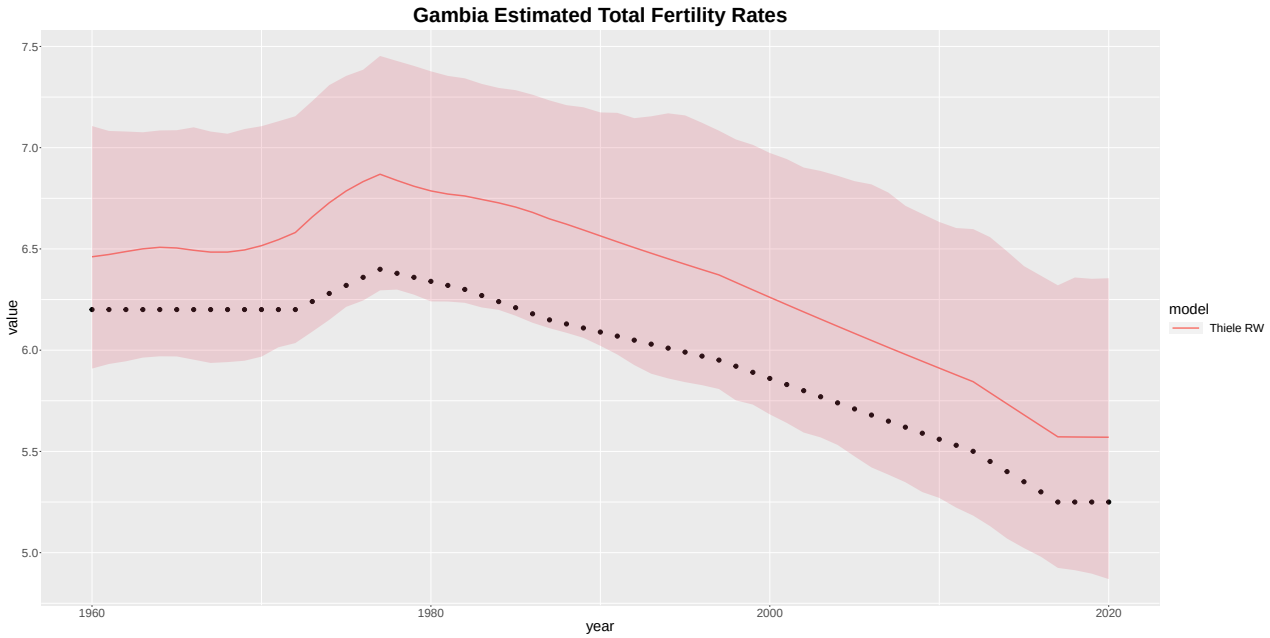

Figure 19: Total Fertility

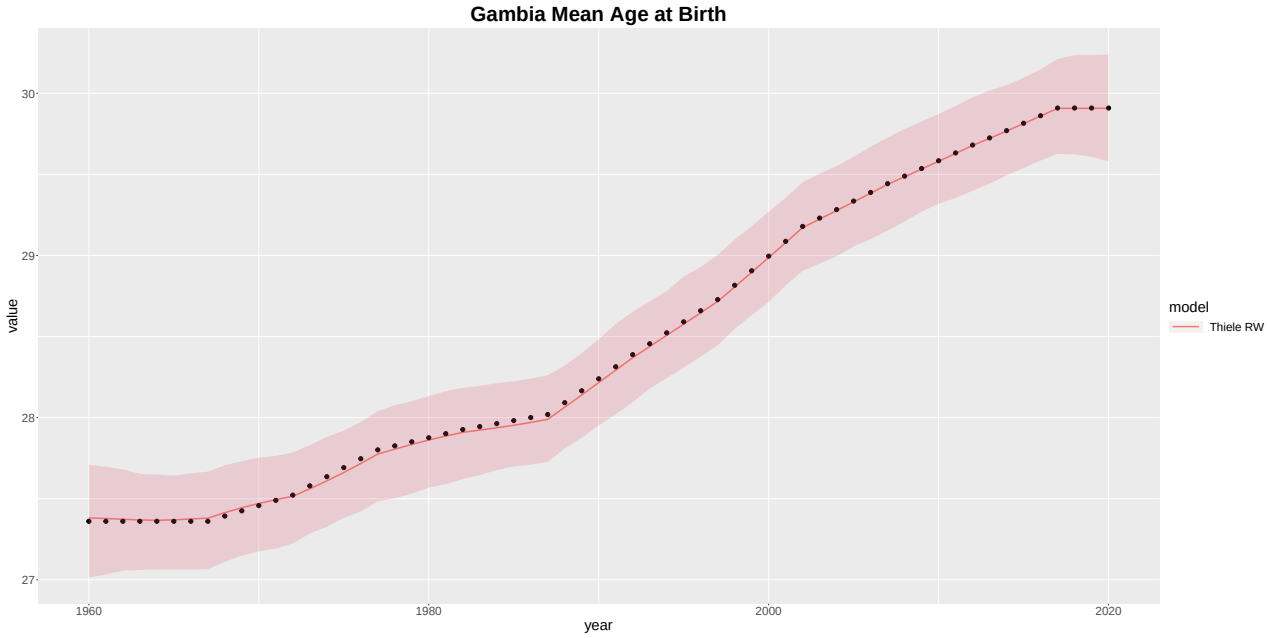

Figure 20: Mean age at births

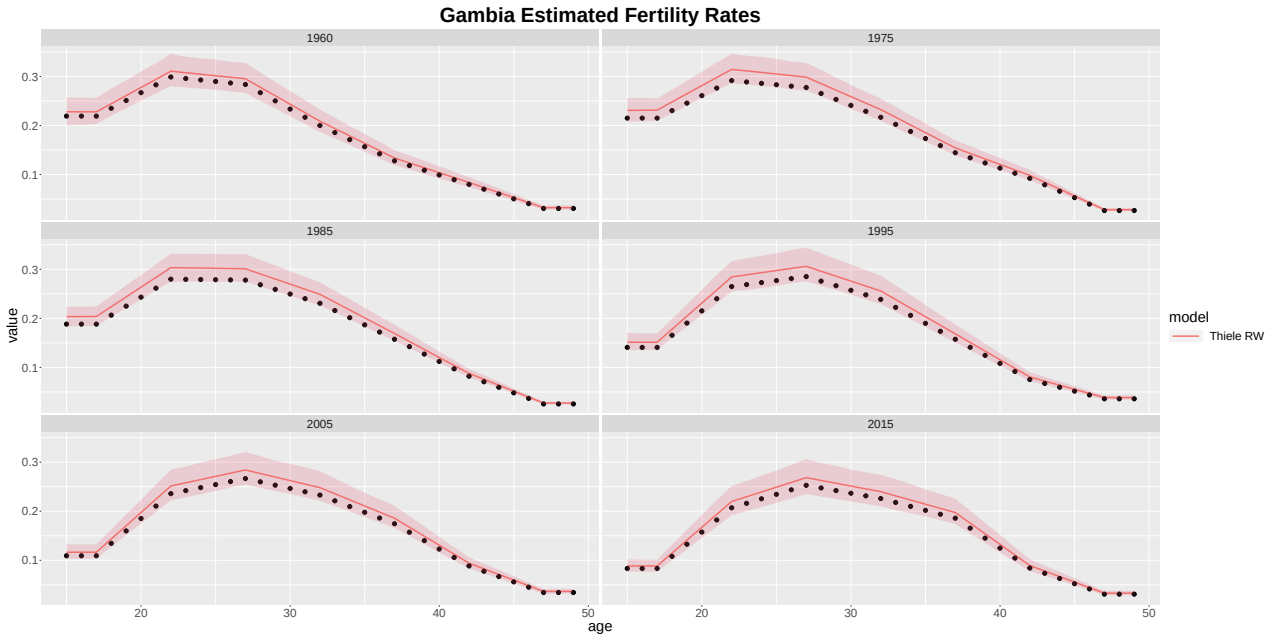

Figure 21: Fertility

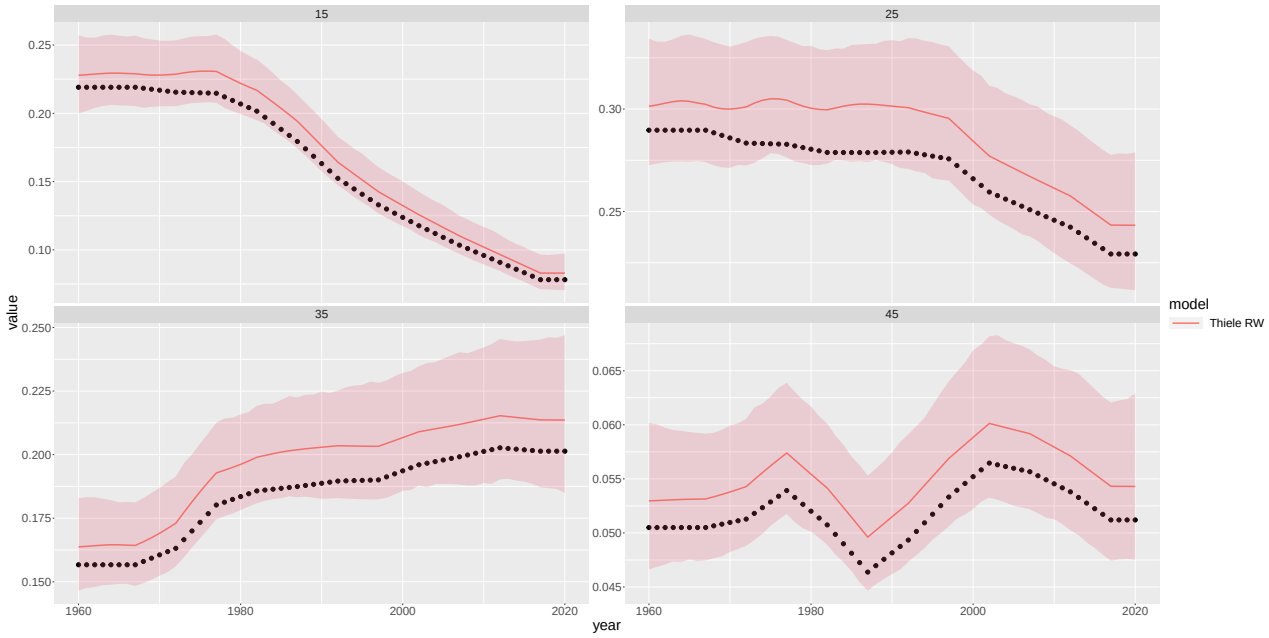

Figure 22: Fertility