Cameroon

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

## # A tibble: 86 x 2
##      age  `2005`
##    <dbl>   <dbl>
## 1      0 337748
## 2      1 306850.
## 3      2 289908.
## 4      3 282849.
## 5      4 274259.
## 6      5 265117.
## 7      6 254493.
## 8      7 245594.
## 9      8 239763.
## 10     9 232630.
## # ... with 76 more rows

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

## # A tibble: 18 x 2
##      age  `1976`
##    <dbl>   <dbl>
## 1      0 605118.
## 2      5 512635.
## 3     10 411125.
## 4     15 345677.
## 5     20 305370.
## 6     25 269228.
## 7     30 240773.
## 8     35 215240.
## 9     40 183224.
## 10    45 149331.
## 11    50 118695.
## 12    55  92248.
## 13    60  69672.
## 14    65  48846.
## 15    70  34361.
## 16    75  23450.
## 17    80  15762.
## 18    85  16650.

## [1] "Census Males"

## # A tibble: 86 x 2
##      age  `2005`
##    <dbl>   <dbl>
## 1      0 343296
## 2      1 315010.
## 3      2 296499.
## 4      3 290401
## 5      4 281627.
## 6      5 272737.
```

```
##  7       6 262914.
##  8       7 254492.
##  9       8 249144.
## 10       9 241906.
## # ... with 76 more rows
```

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

```
## # A tibble: 18 x 2
##      age  `1976`
##    <dbl>   <dbl>
##  1      0 611324.
##  2      5 530589.
##  3     10 431534.
##  4     15 336850.
##  5     20 266002.
##  6     25 221801.
##  7     30 198387.
##  8     35 184225.
##  9     40 165759.
## 10     45 142701.
## 11     50 117673.
## 12     55  93580.
## 13     60  71082.
## 14     65  48797.
## 15     70  32937.
## 16     75  22064.
## 17     80  14288.
## 18     85  17413.
```

Thiele log-Normal Hump Spline

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

```
##    log_tau2_logpop    log_tau2_logpop    log_tau2_logpop    log_tau2_logpop      log_lambda_fx     log
##         4.65020592         5.54023900         4.69527377         5.47897188         6.79311072       1
##      log_lambda_tp           tp_slope        tp_params_5       tp_params_10     log_lambda_phi     log_
##         3.14032518        -0.03215968         0.18603534         0.65913612        12.61223460       1
## log_lambda_lambda   log_lambda_delta log_lambda_epsilon
##         3.58582628         8.01388892         4.86076226
```
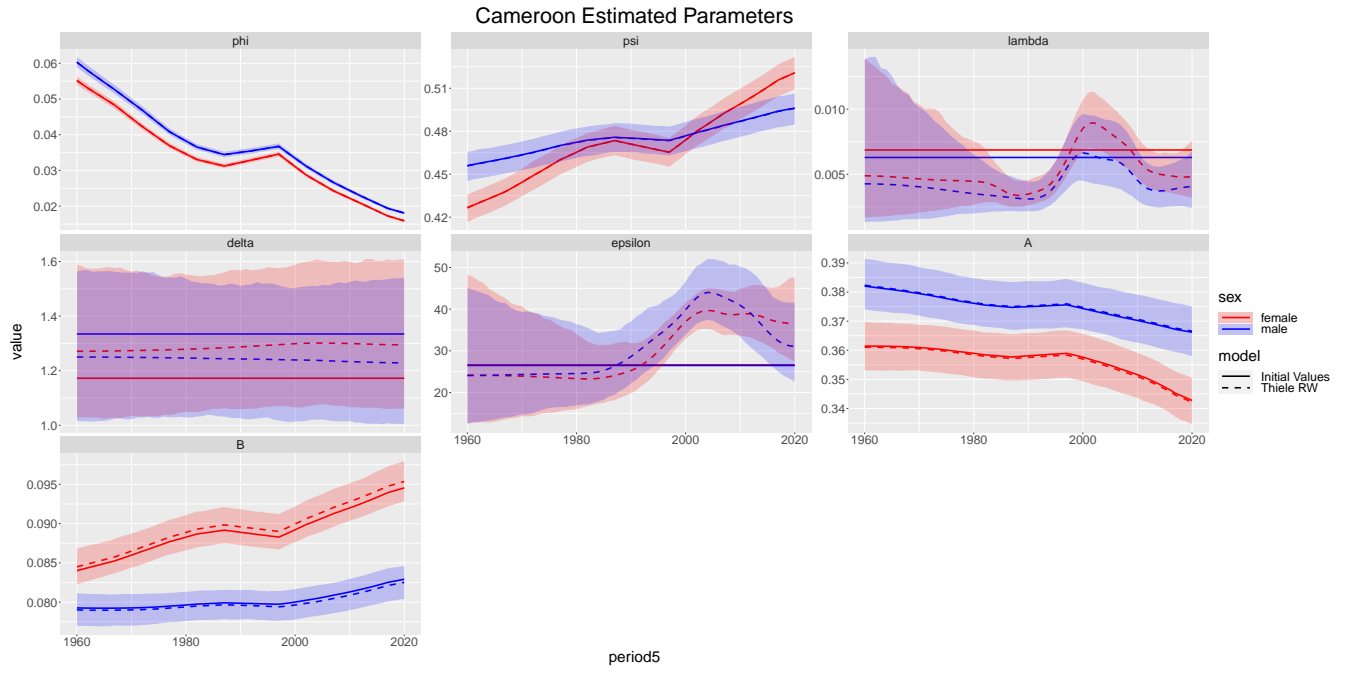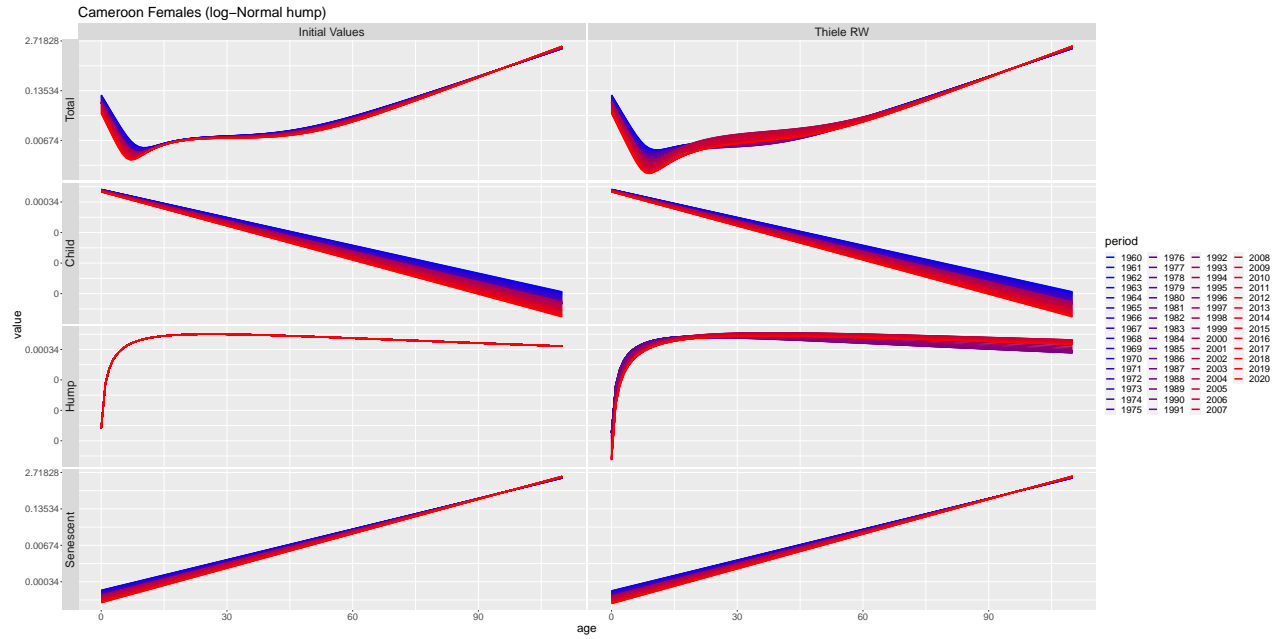
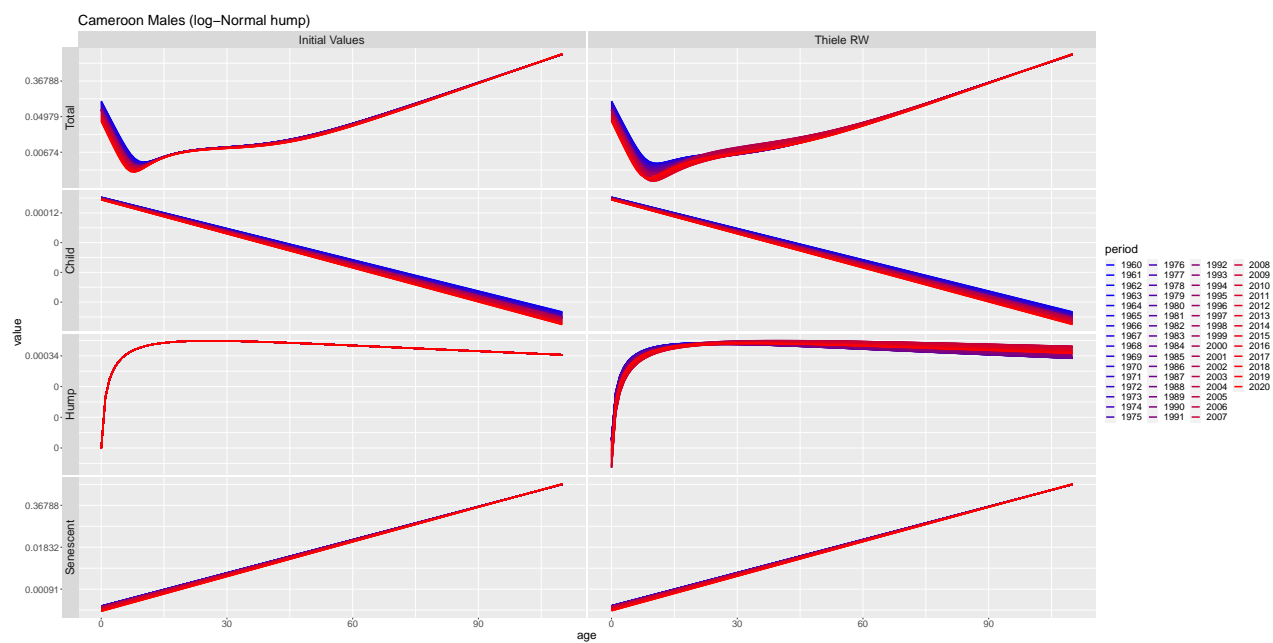Figure 1: Estimated parameters

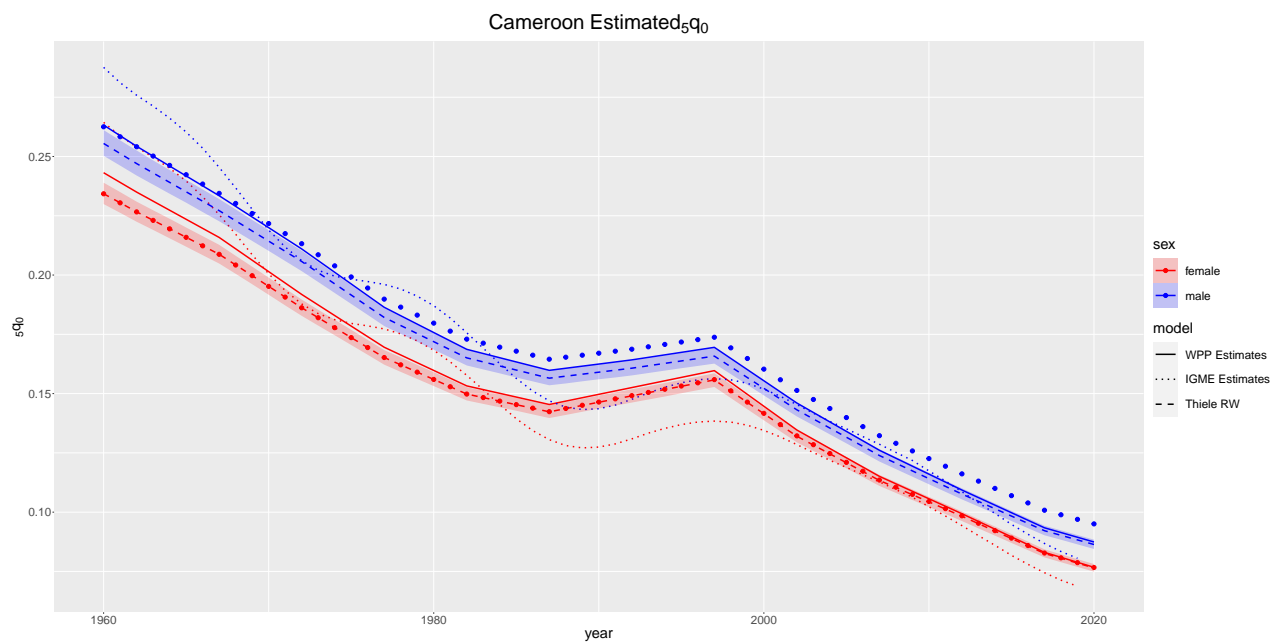Figure 2: Thiele Decomposed

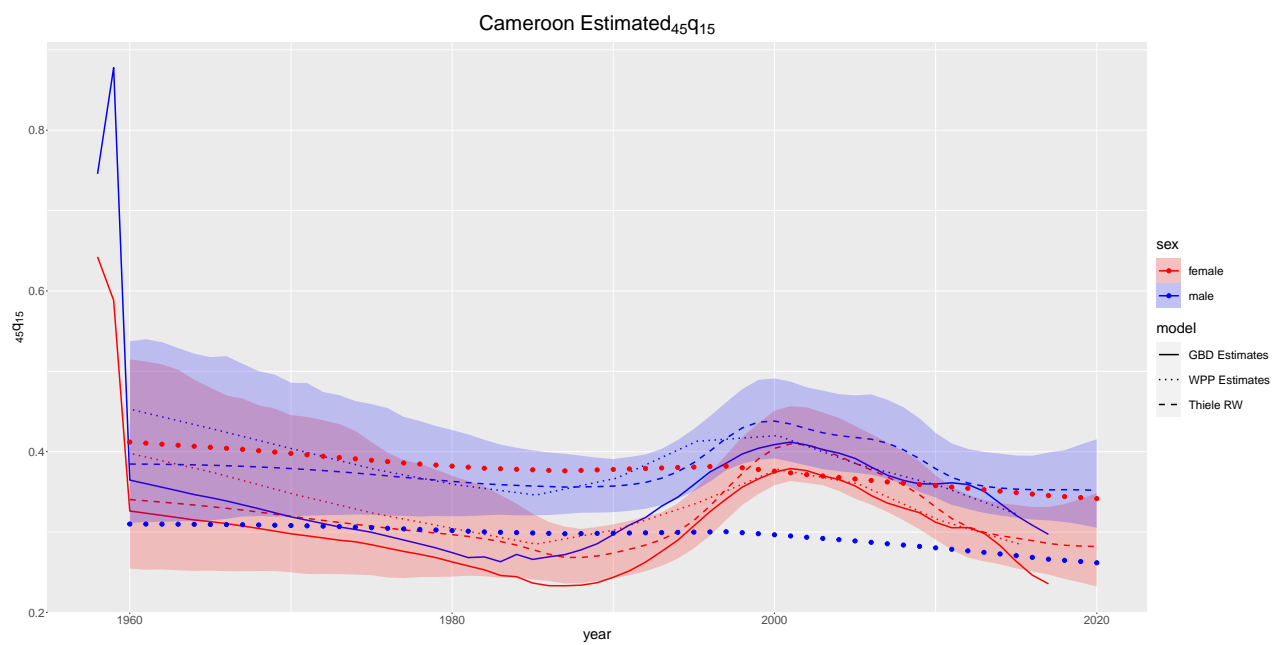Figure 3: Thiele Decomposed

Figure 4: Estimated $_5q_0$

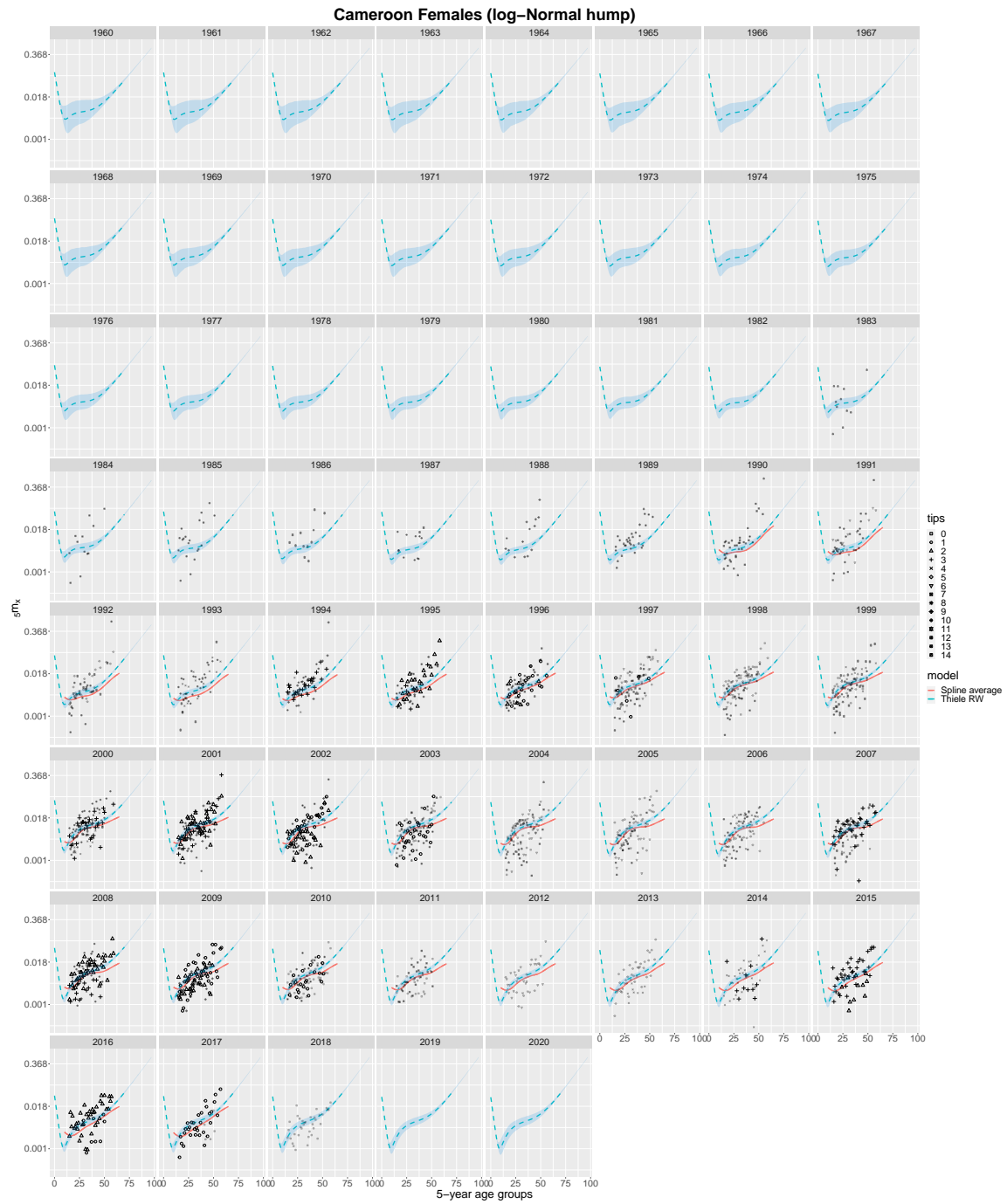Figure 5: Estimated $_{45}q_{15}$

Figure 6: Mortality Schedules

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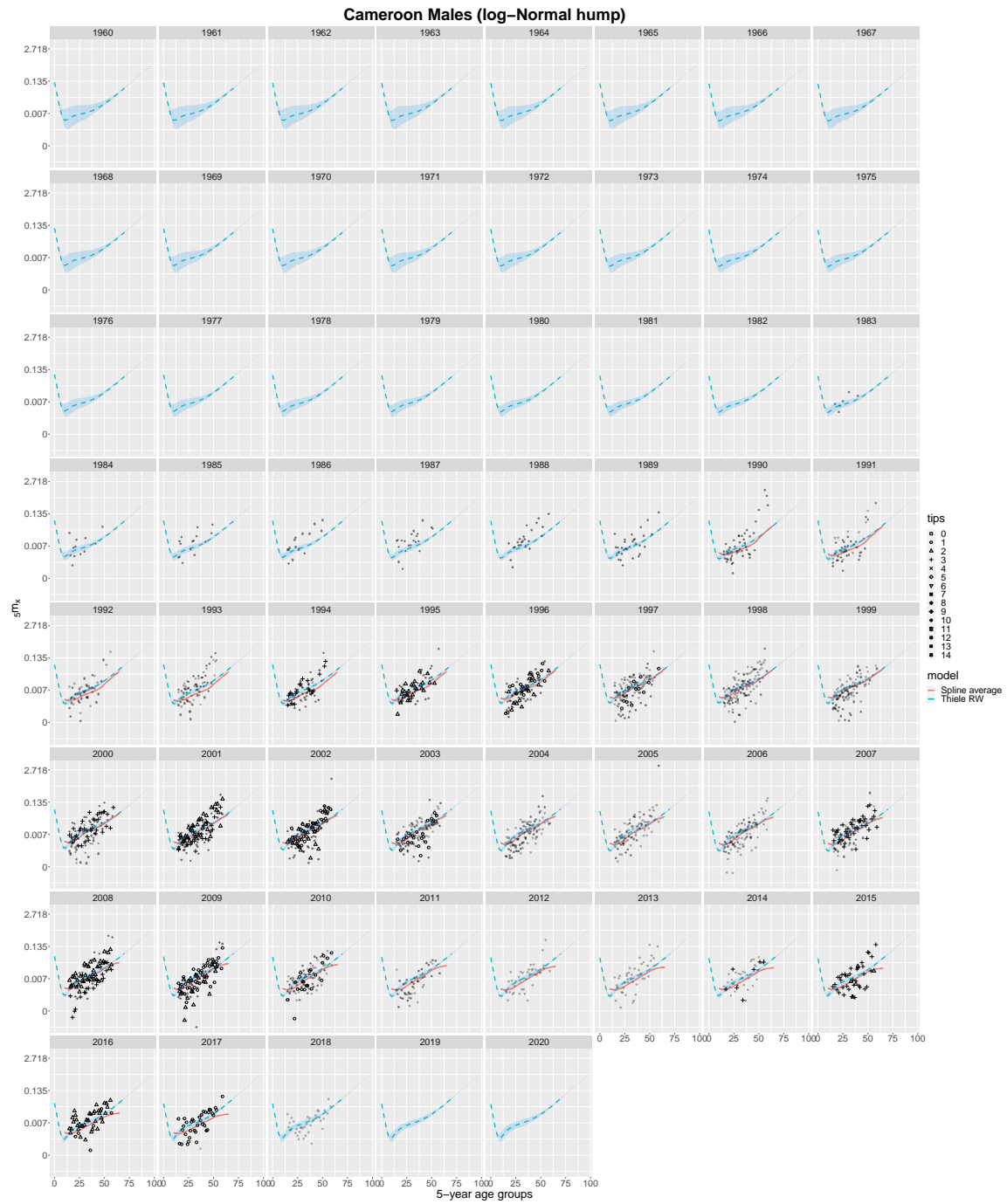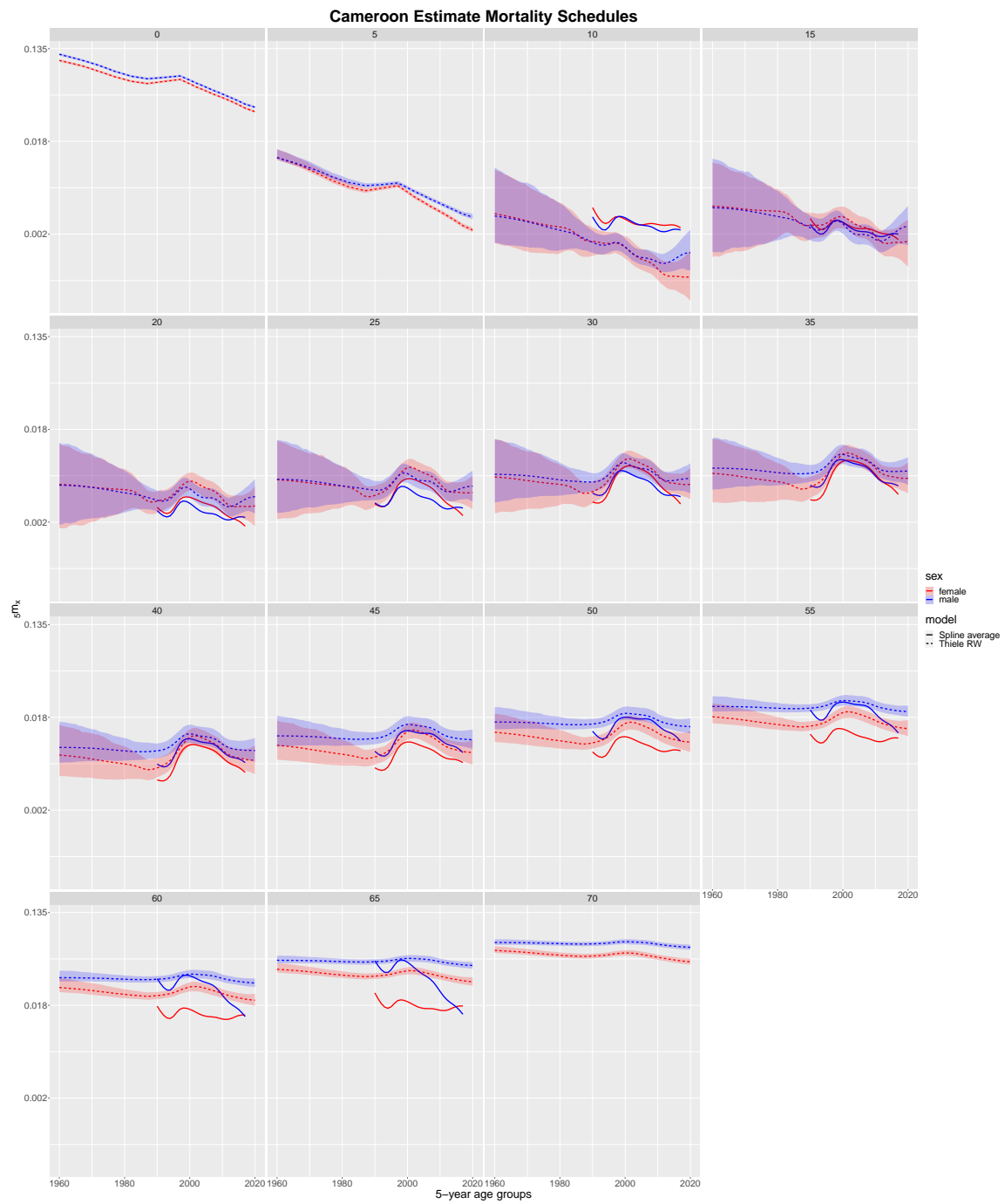
Figure 7: Mortality Schedules
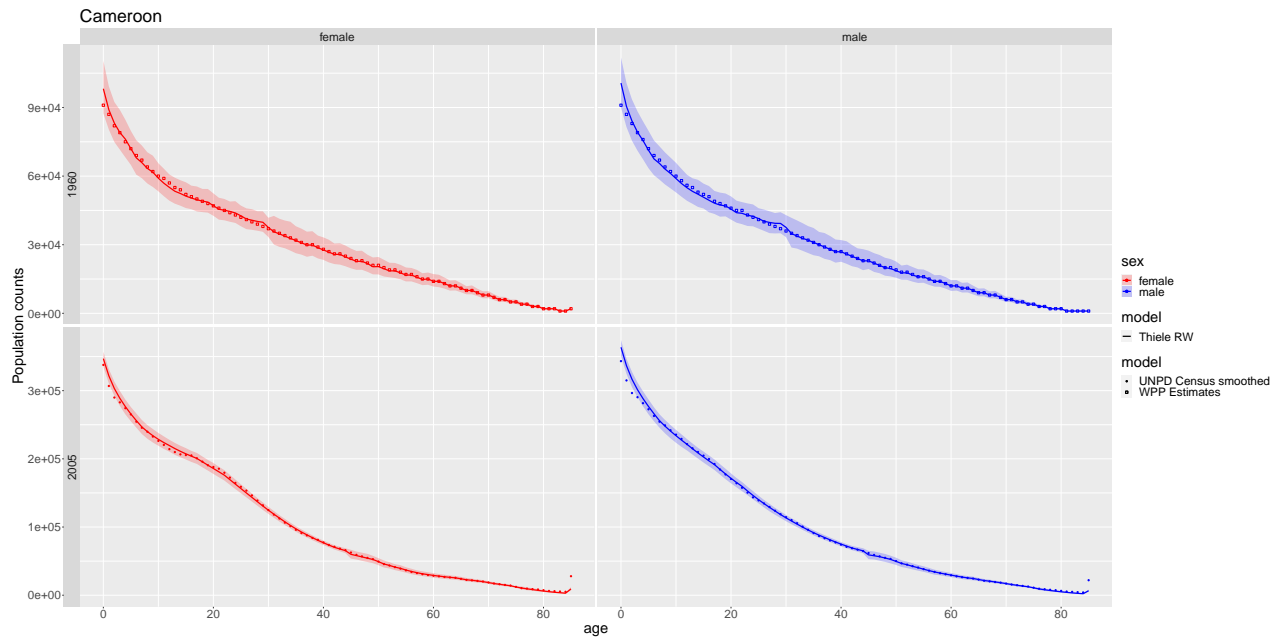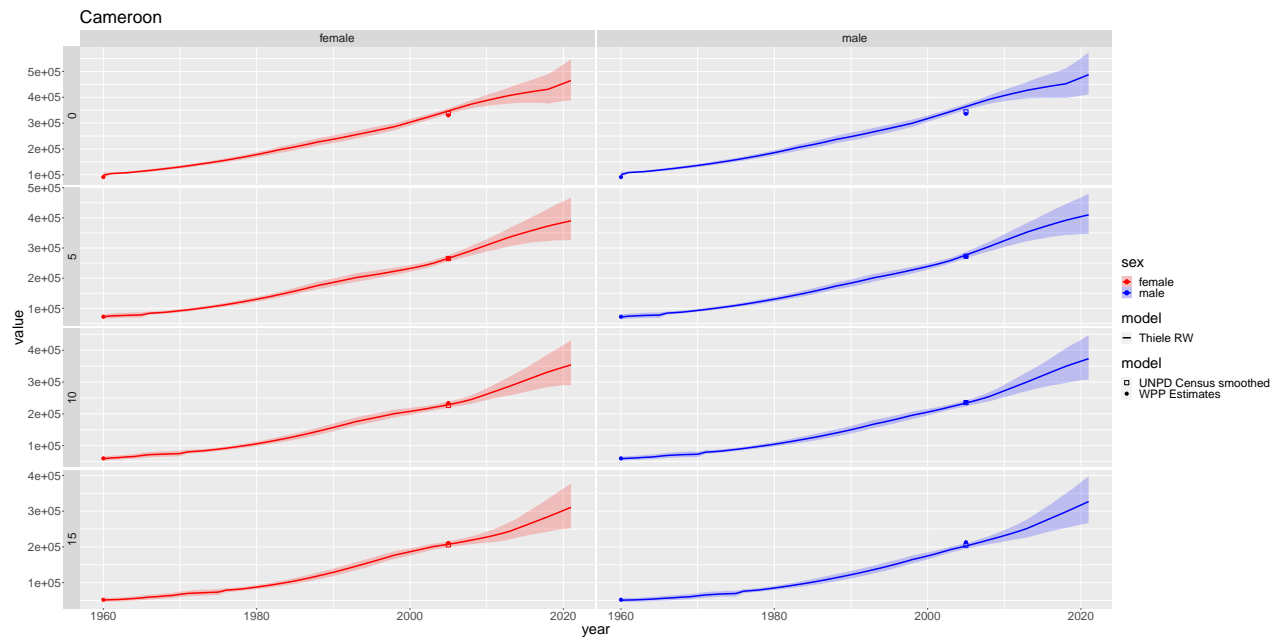
Figure 8: Mortality Schedules
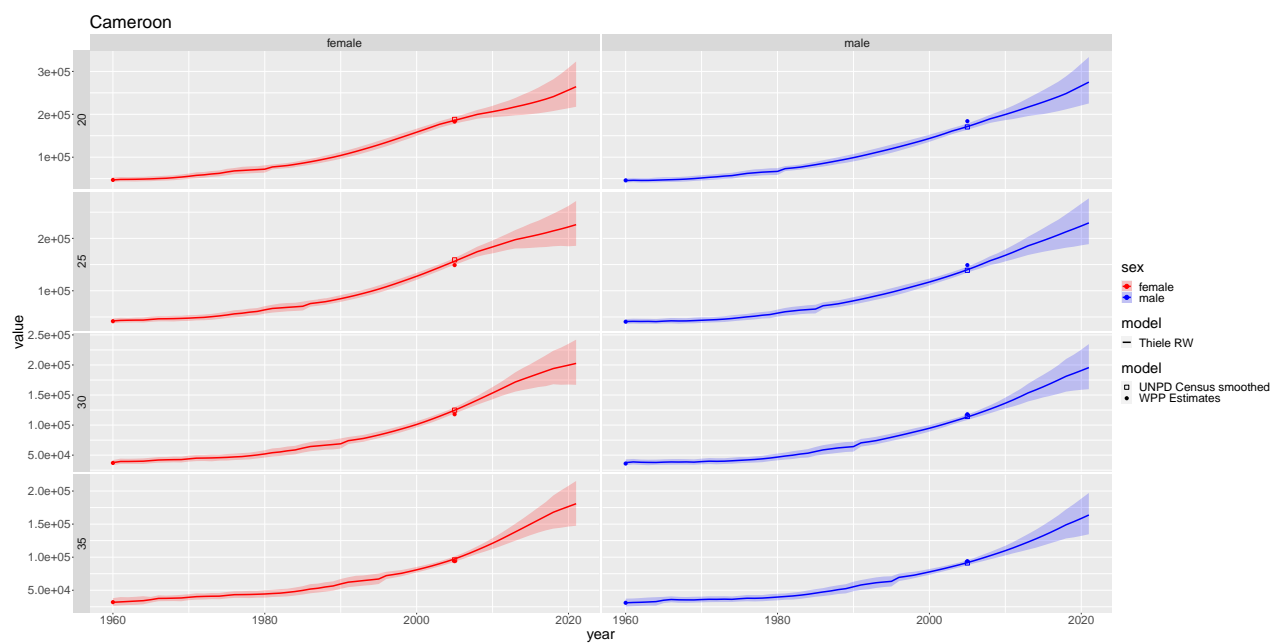
Figure 9: Population

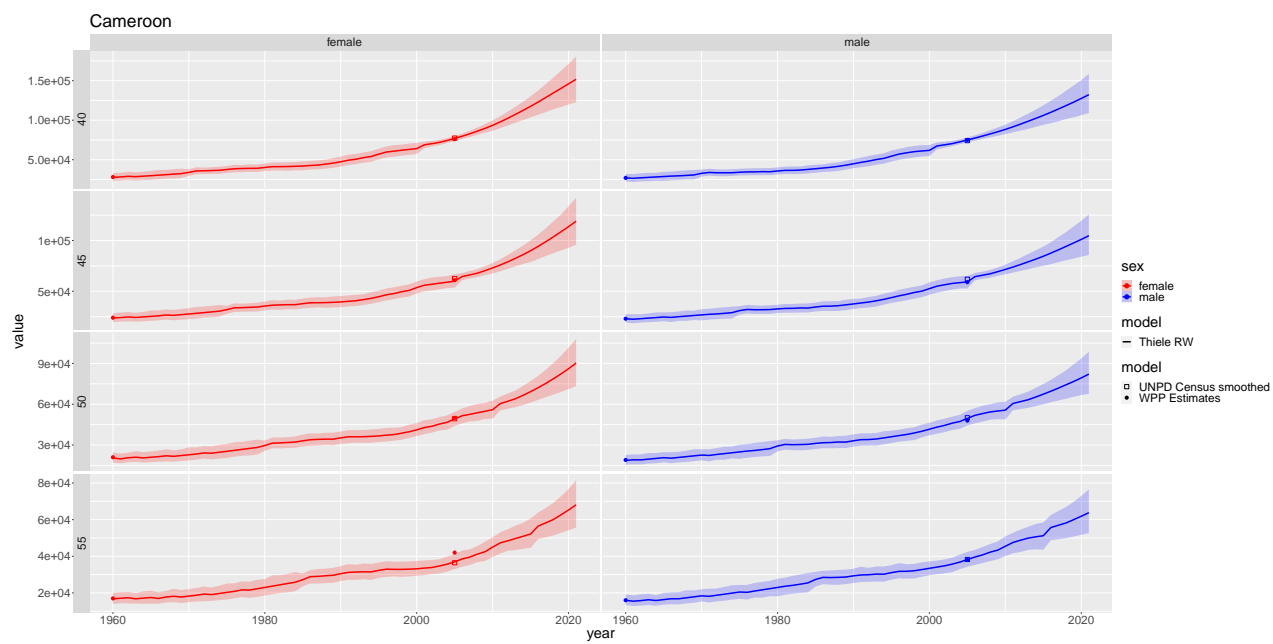Figure 10: Population

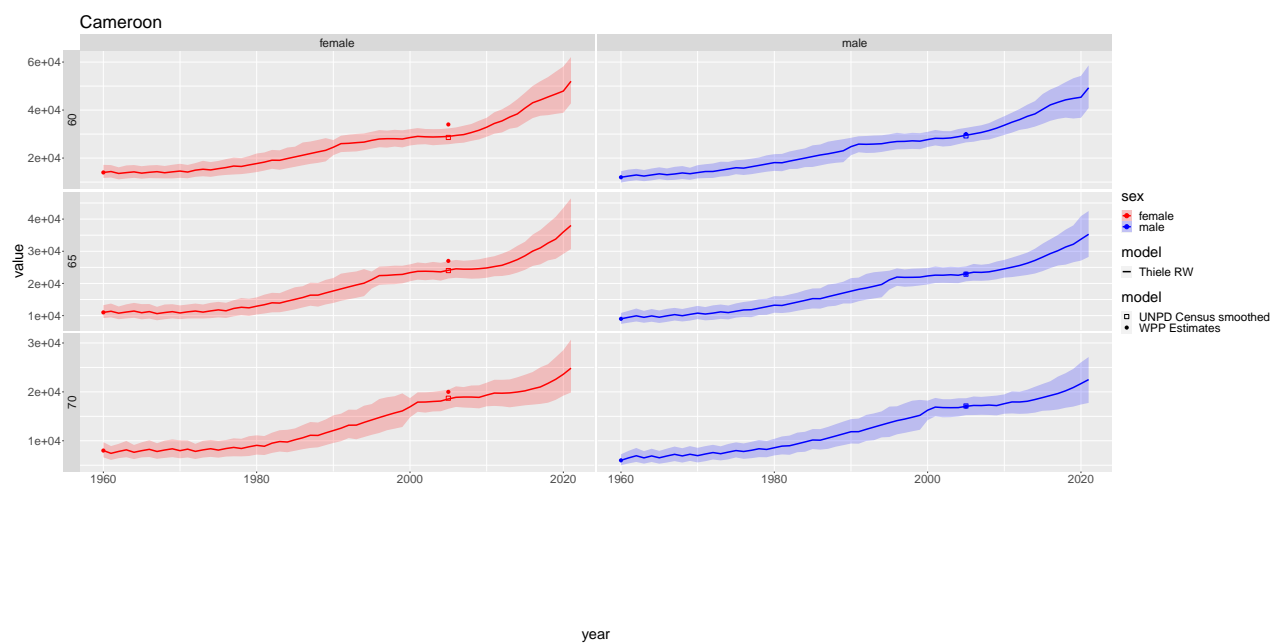Figure 11: Population
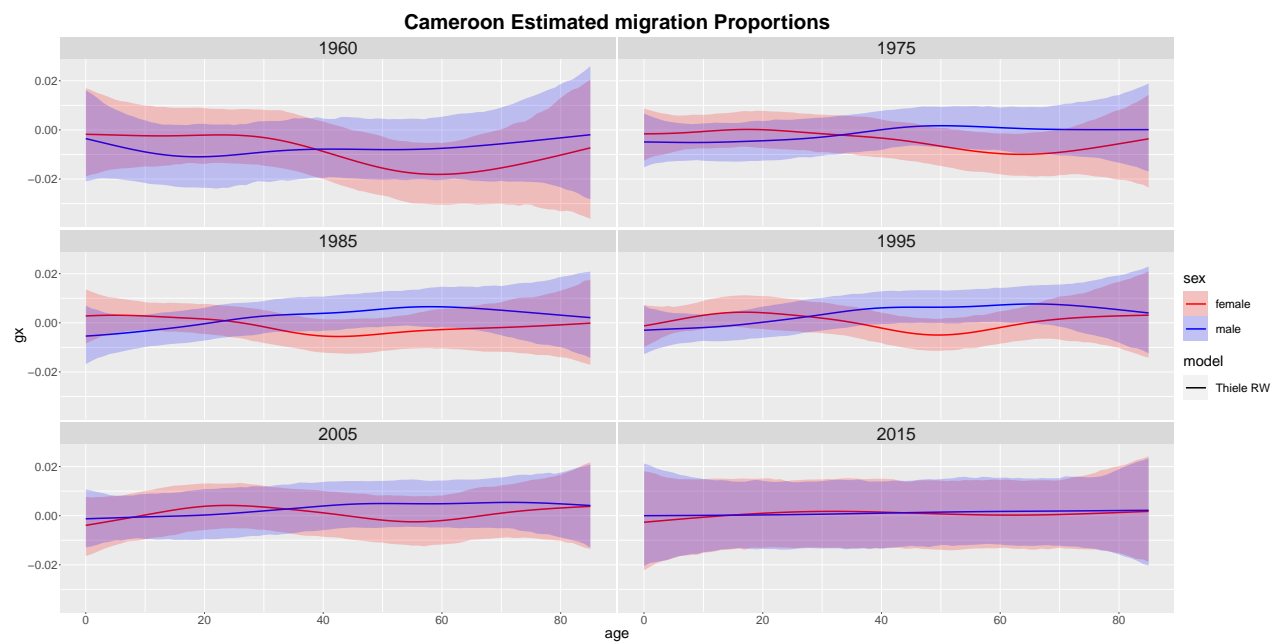

Figure 12: Population
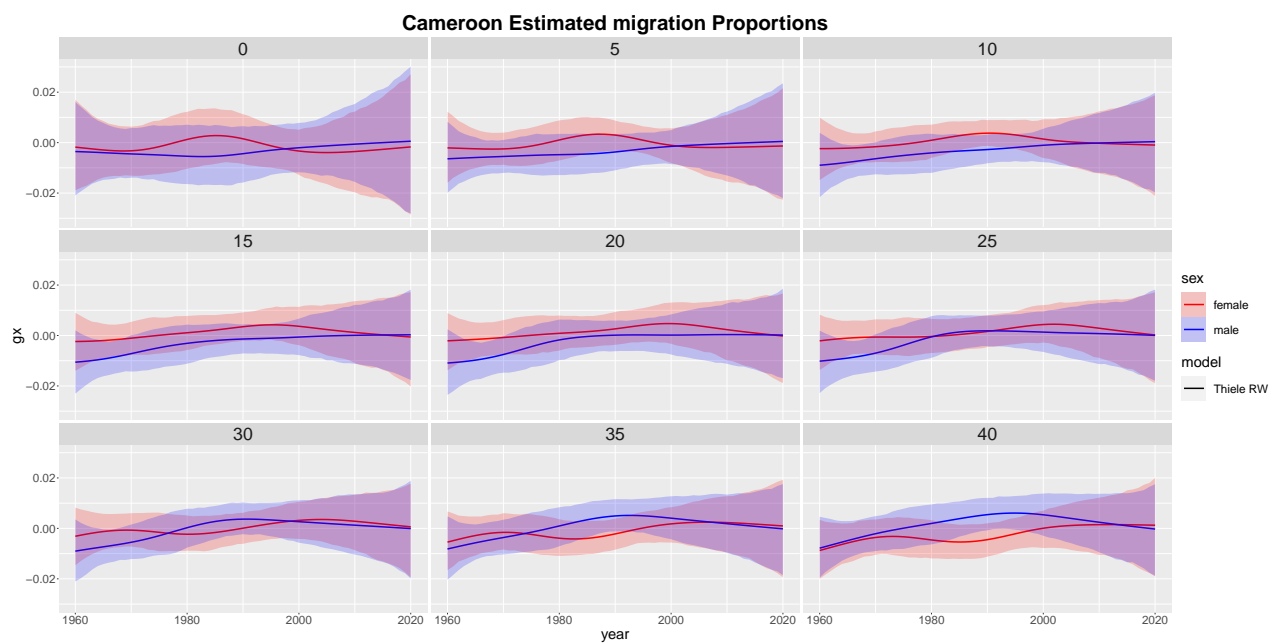
Figure 13: Population

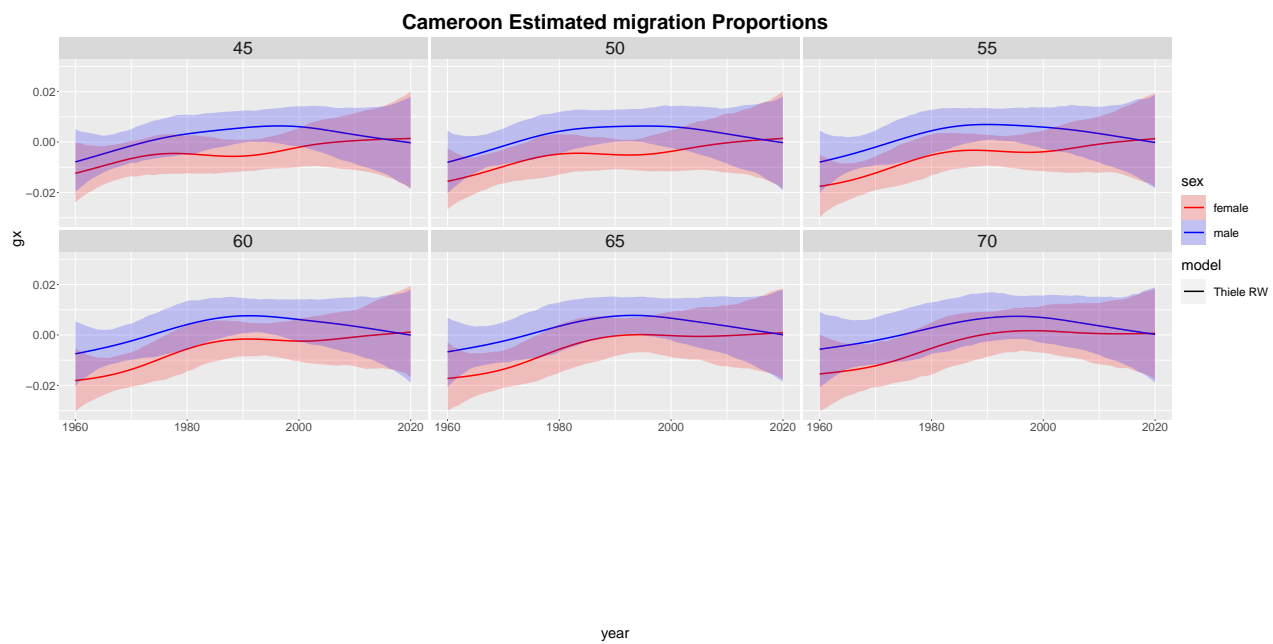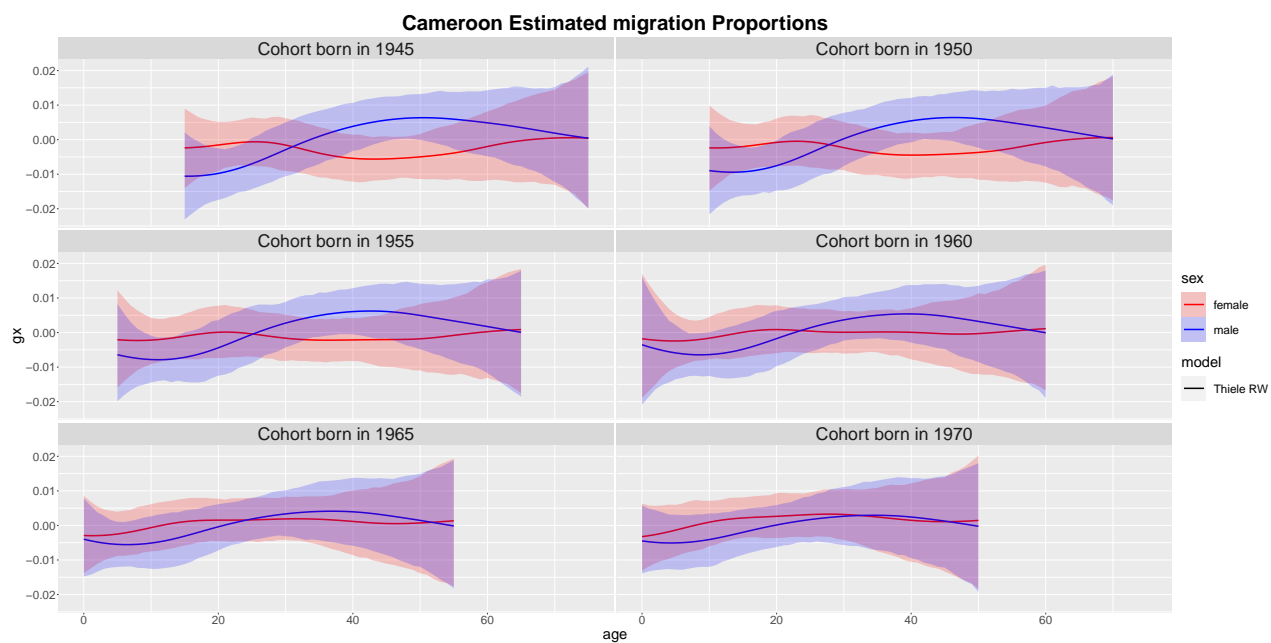Figure 14: Migration

Figure 15: Migration

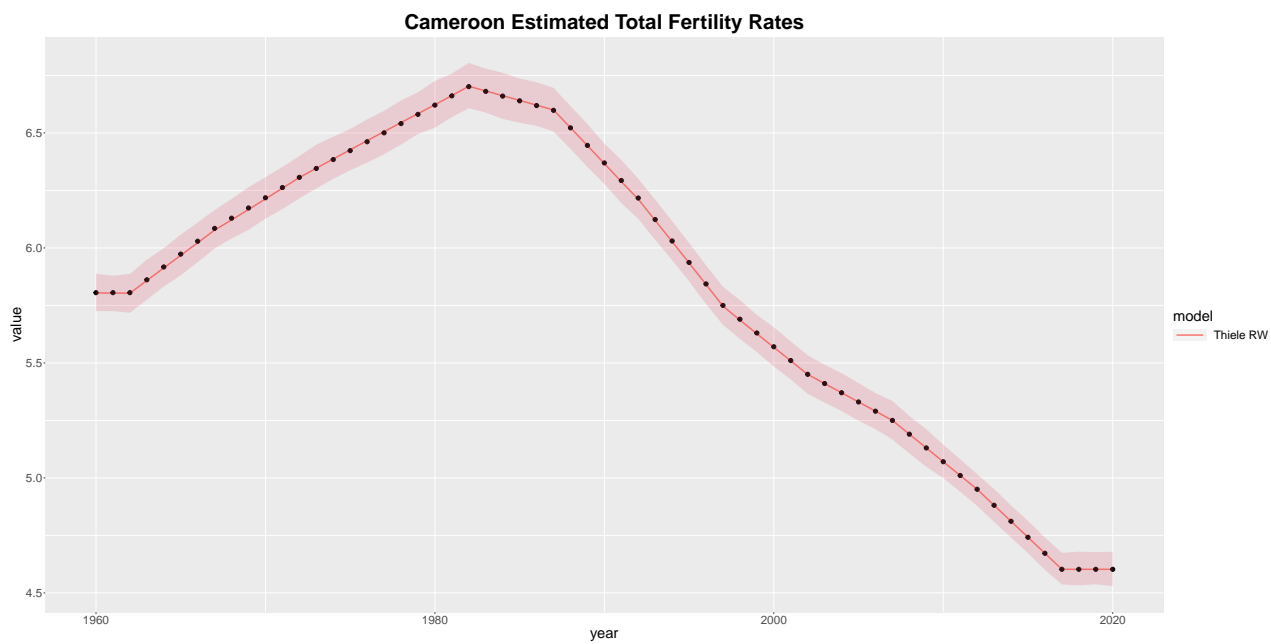Figure 16: Migration

Figure 17: Migration
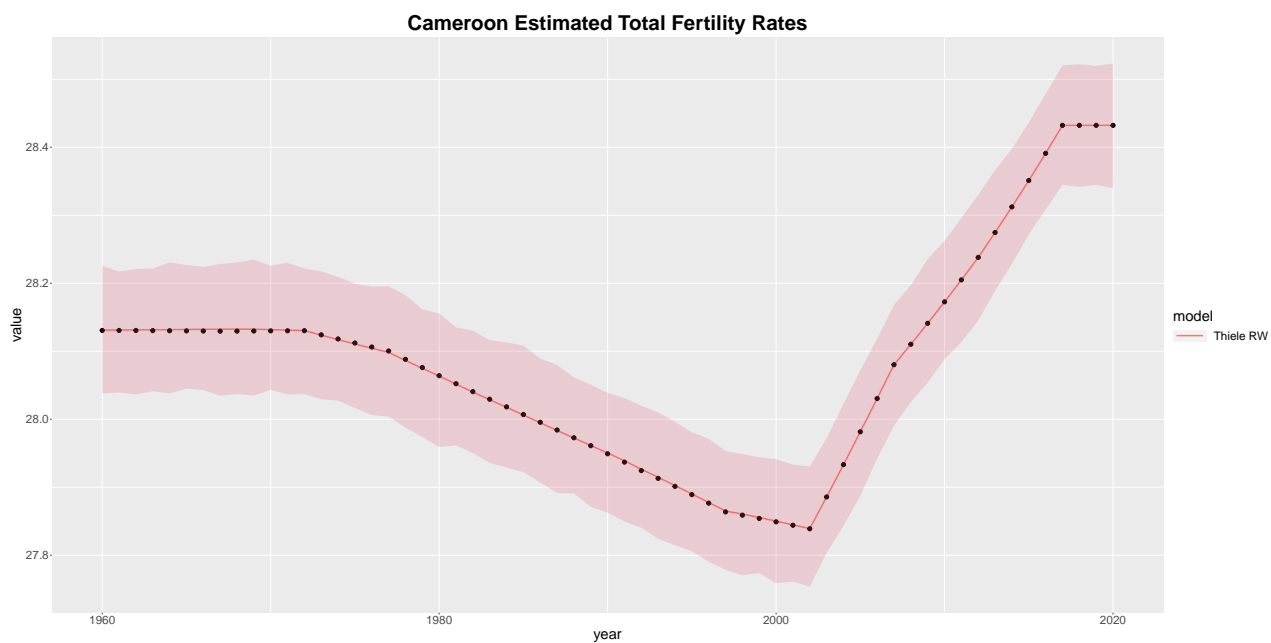
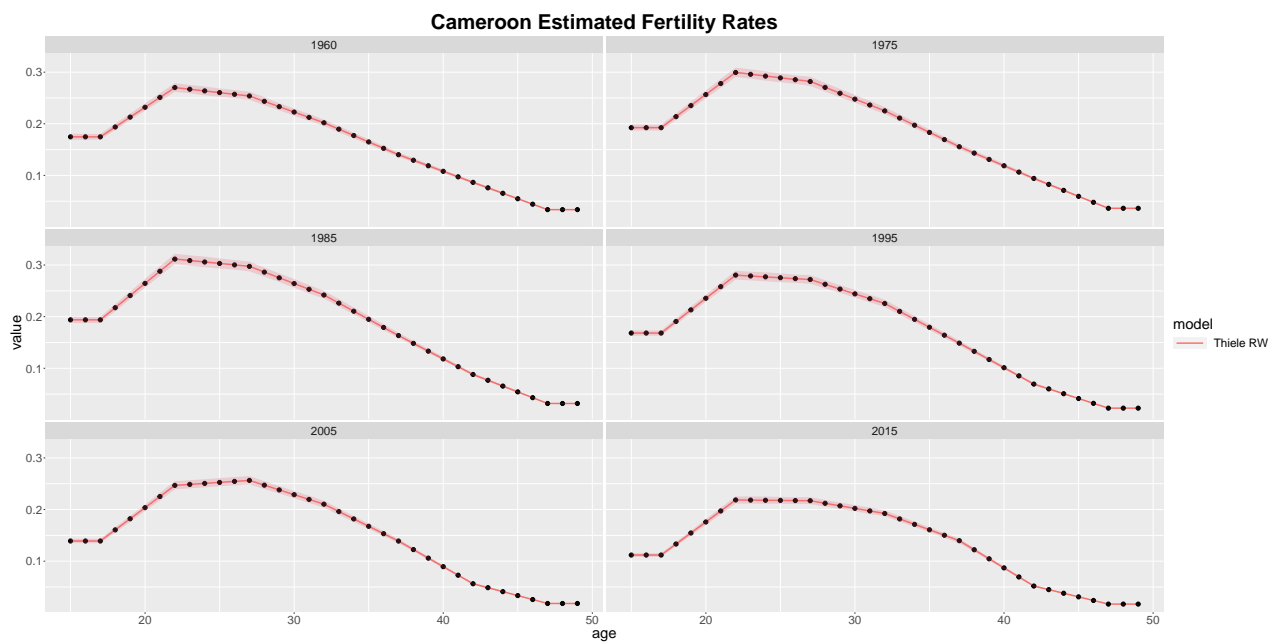

Figure 18: Total Fertility

Figure 19: Mean age at births
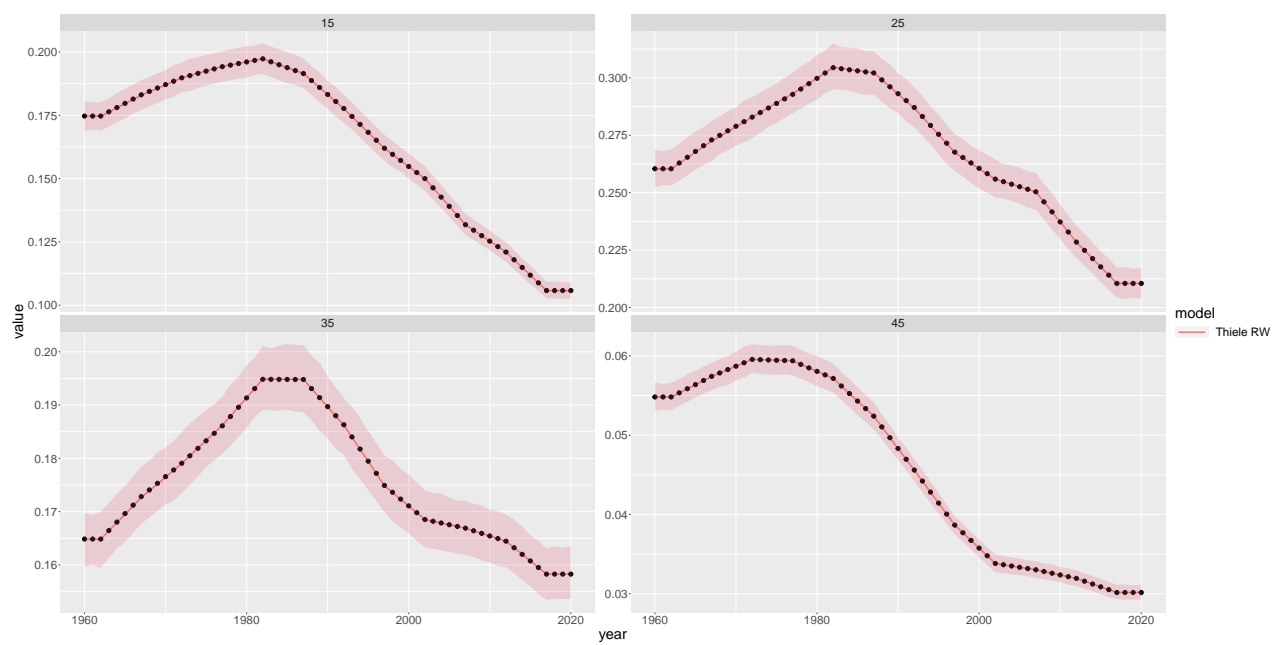

Figure 20: Fertility

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Figure 21: Fertility