

# Mali

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

```
## # A tibble: 18 x 5
```

```
##   aggr.age `1976` `1987` `1998` `2009`
## *   <dbl>   <dbl>   <dbl>   <dbl>   <dbl>
## 1      0 589461. 713518. 824505 1320900.
## 2      5 469318. 587737. 752056. 1140163.
## 3     10 365111. 454909. 626383.  935907.
## 4     15 313740. 372253. 514432.  776702.
## 5     20 283085. 329380. 426025.  651759.
## 6     25 256486. 293568. 357175.  544213.
## 7     30 221242. 249780. 305540.  441083.
## 8     35 176439. 204643. 254144.  346151.
## 9     40 140031. 168372. 204333.  279300.
## 10    45 112098. 138593. 164032.  230165.
## 11    50  92157. 114941. 134674.  187778.
## 12    55  77736.  96562. 110227.  148978.
## 13    60  65678.  81473.  90043.  116856.
## 14    65  48225.  61222.  68496.   87673.
## 15    70  32268.  40138.  47588.   62602.
## 16    75  22262.  20646.  25240.   36935.
## 17    80  17833.  28025.      0   44491.
## 18    85  14930.    NA      NA    NA
```

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

```
## # A tibble: 18 x 5
```

```
##   aggr.age `1976` `1987` `1998` `2009`
## *   <dbl>   <dbl>   <dbl>   <dbl>   <dbl>
## 1      0 587090. 719841. 839795 1353138.
## 2      5 478652. 609625. 784428 1184616.
## 3     10 371670. 471434. 649420.  960509.
## 4     15 294640. 352163. 496697.  741664.
## 5     20 236401. 274904. 378379.  570403.
## 6     25 201103. 230469. 303352.  461460.
## 7     30 183257. 202136. 263623.  393090.
## 8     35 162001. 178354. 231512.  332552.
## 9     40 137909. 156129. 194900.  279044.
## 10    45 116691. 134533. 161088.  233669.
## 11    50  99549. 115354. 134245.  192469.
## 12    55  84109.  99363. 113027.  156346.
## 13    60  67783.  83852.  94609.  125246.
## 14    65  47273.  62772.  73709.   94561.
## 15    70  30306.  40520.  52309.   67163.
## 16    75  20072.  21079.  29751.   41651.
## 17    80  14093.  25047.      0   42759.
## 18    85  14057.    NA      NA    NA
```

*Thiele log-Normal Hump RW*

```
##   user system elapsed
## 44.84   0.64   45.80
```

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

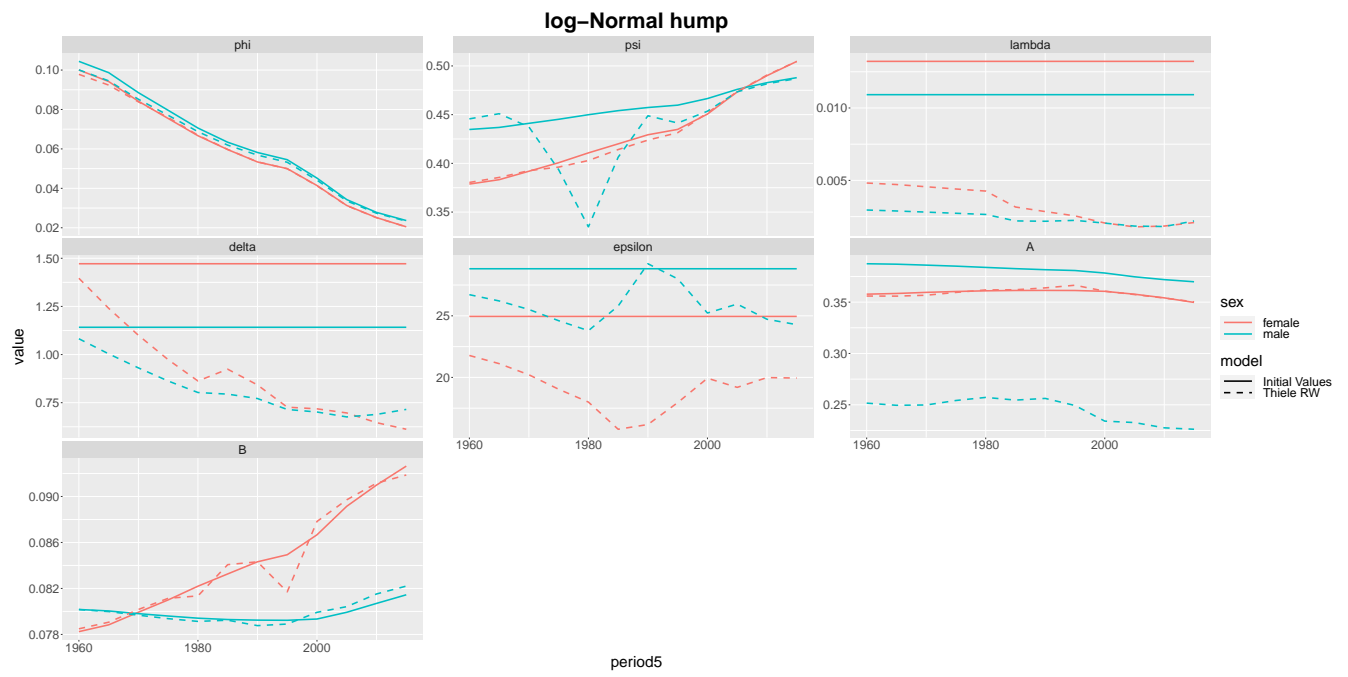


Figure 1: Estimated parameters

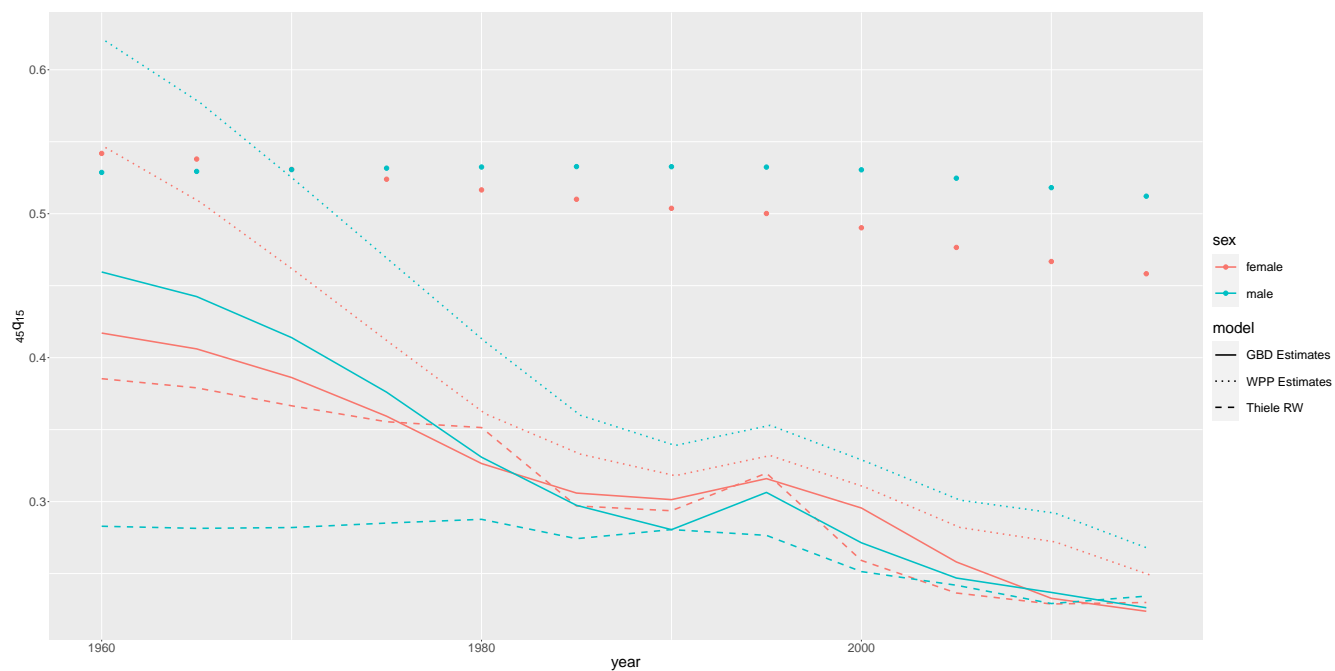


Figure 2: Estimated  $_{45}q_{15}$

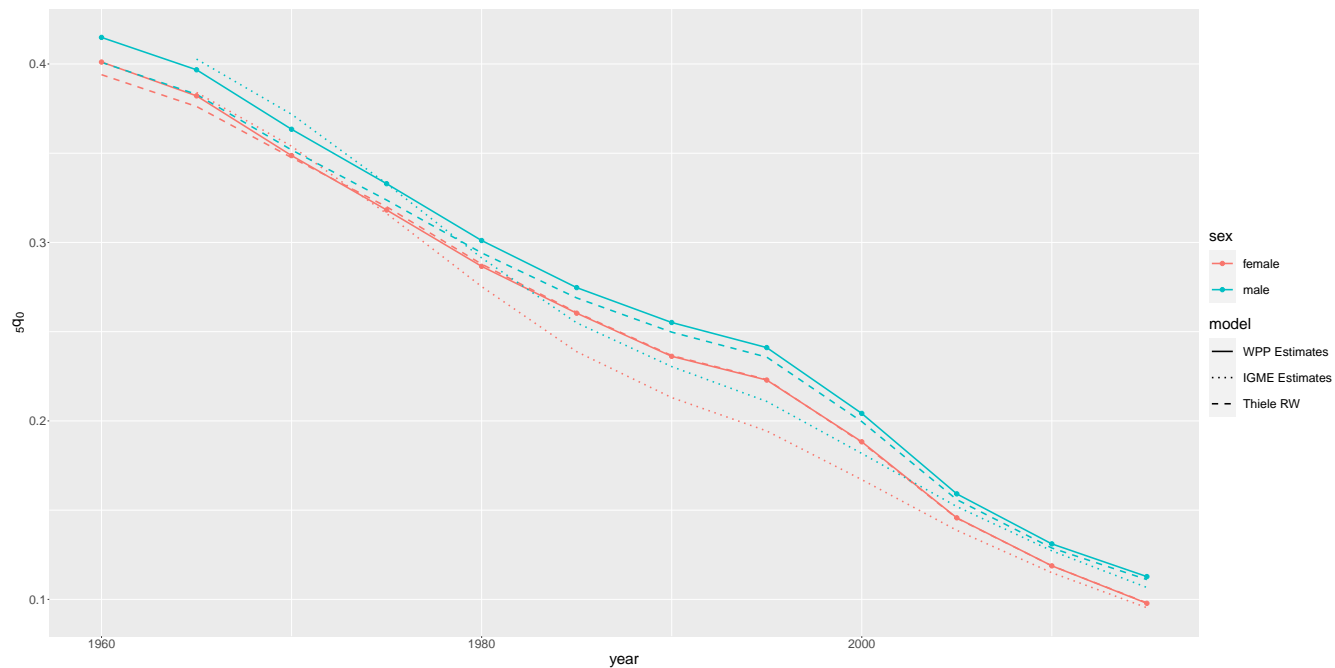


Figure 3: Estimated  $_{5}q_0$

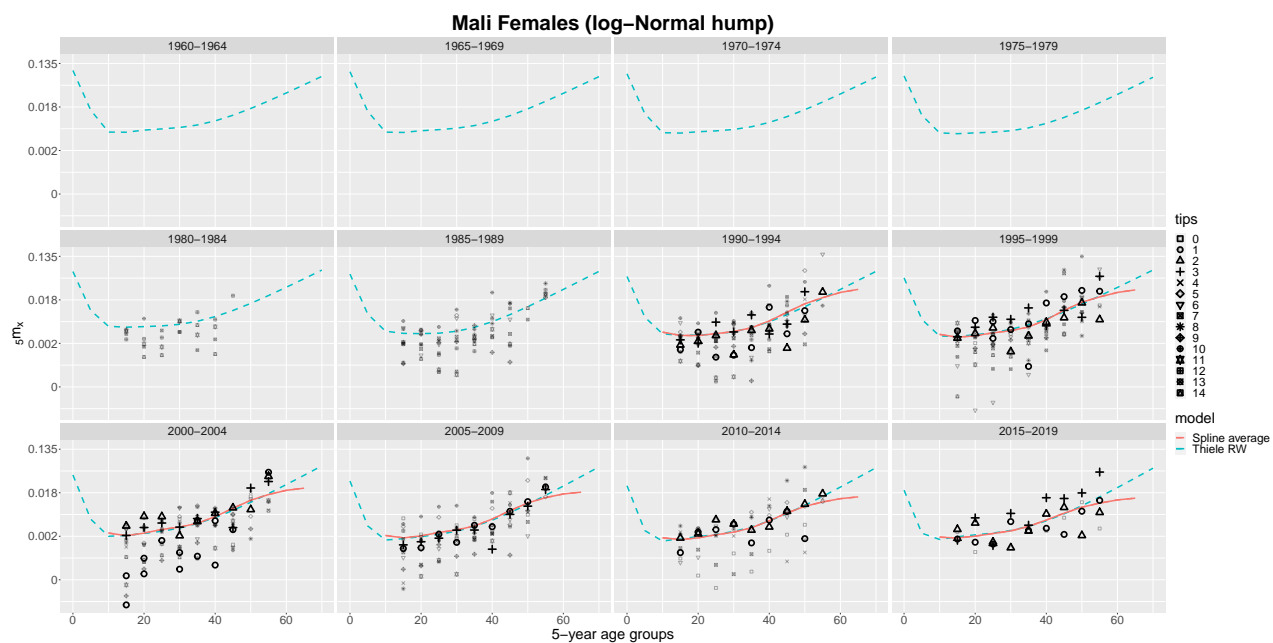


Figure 4: Mortality Schedules

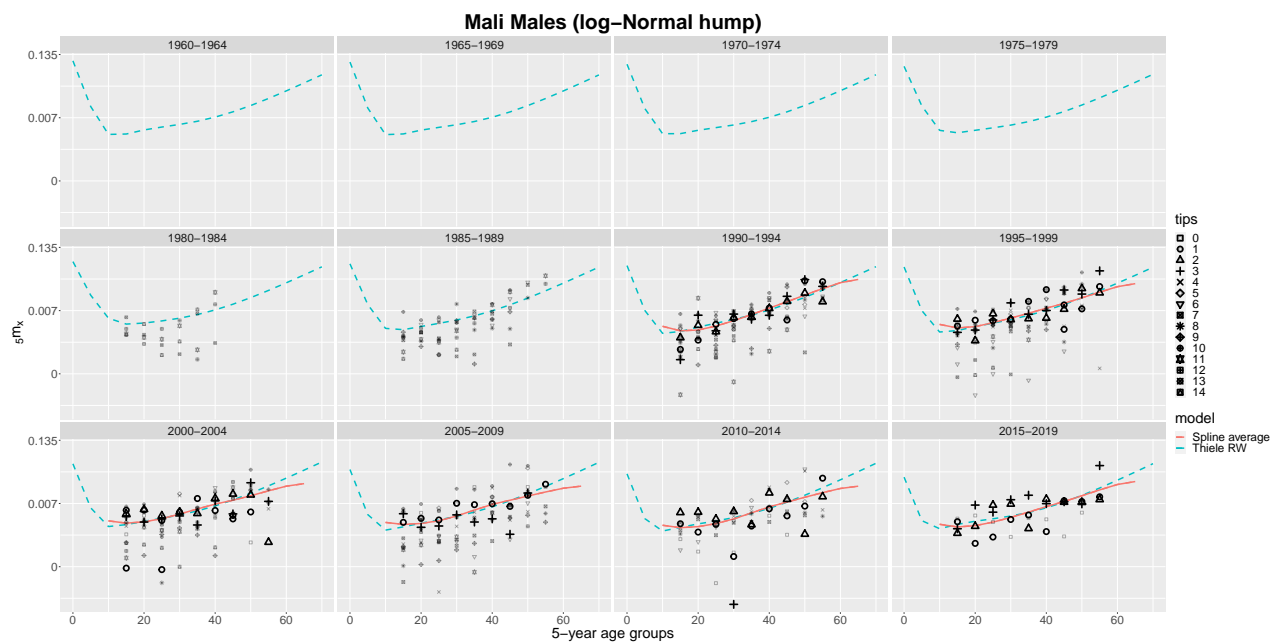


Figure 5: Mortality Schedules

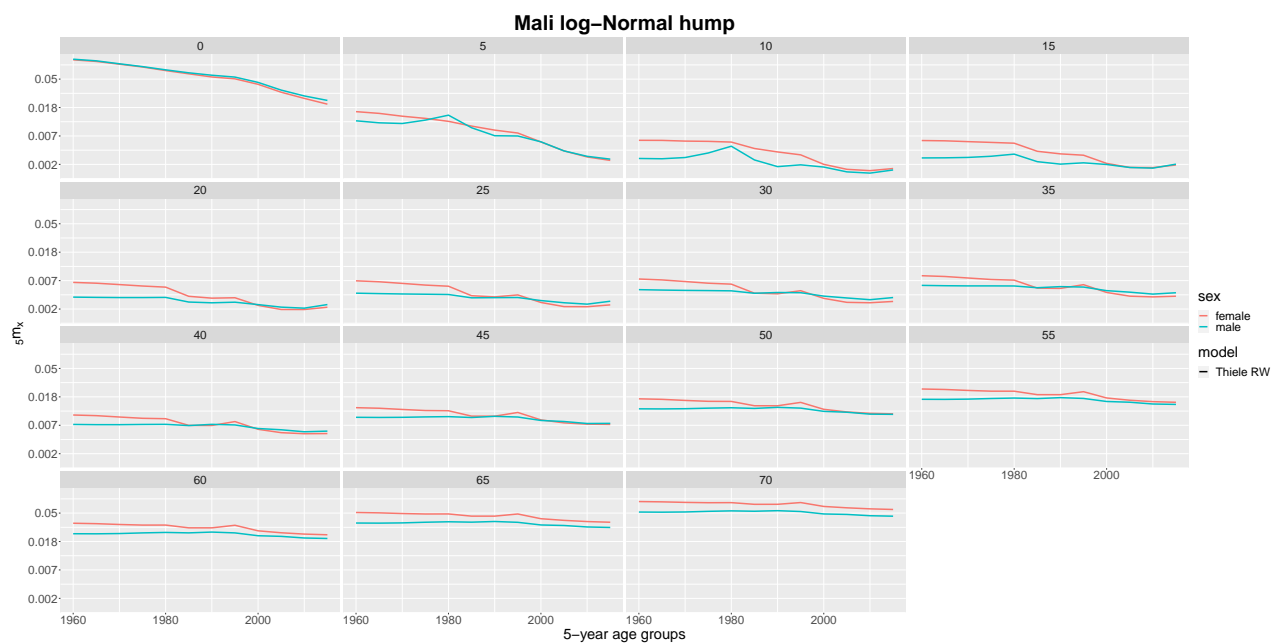


Figure 6: Mortality Schedules

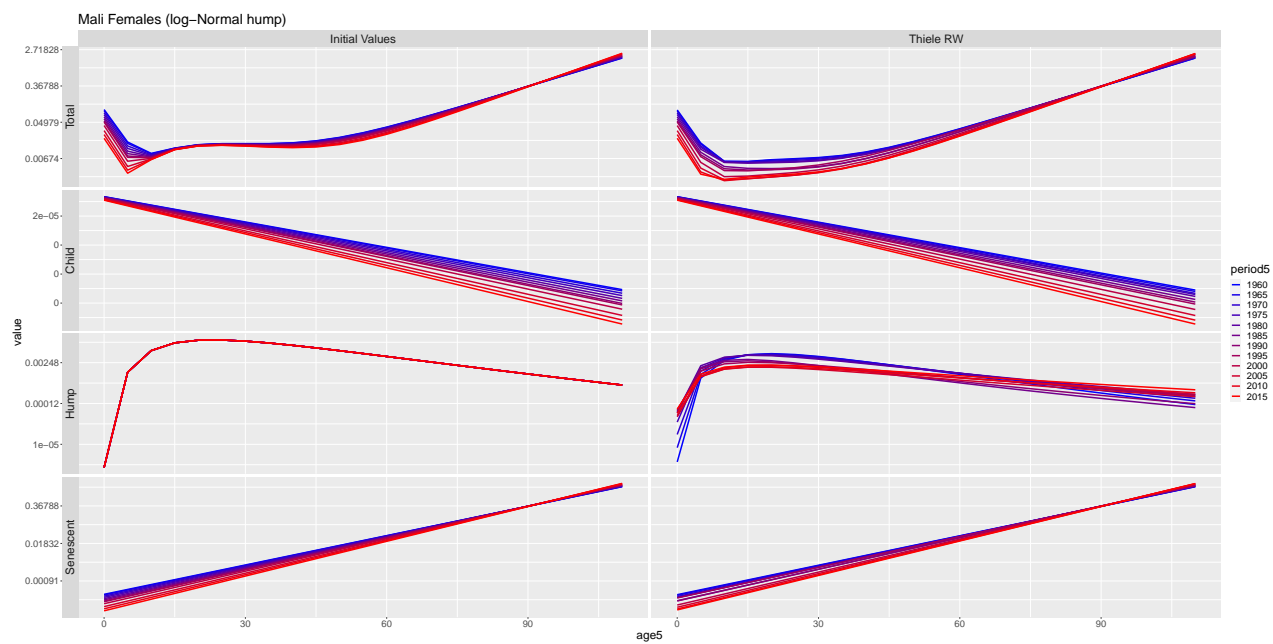


Figure 7: Thiele Decomposed

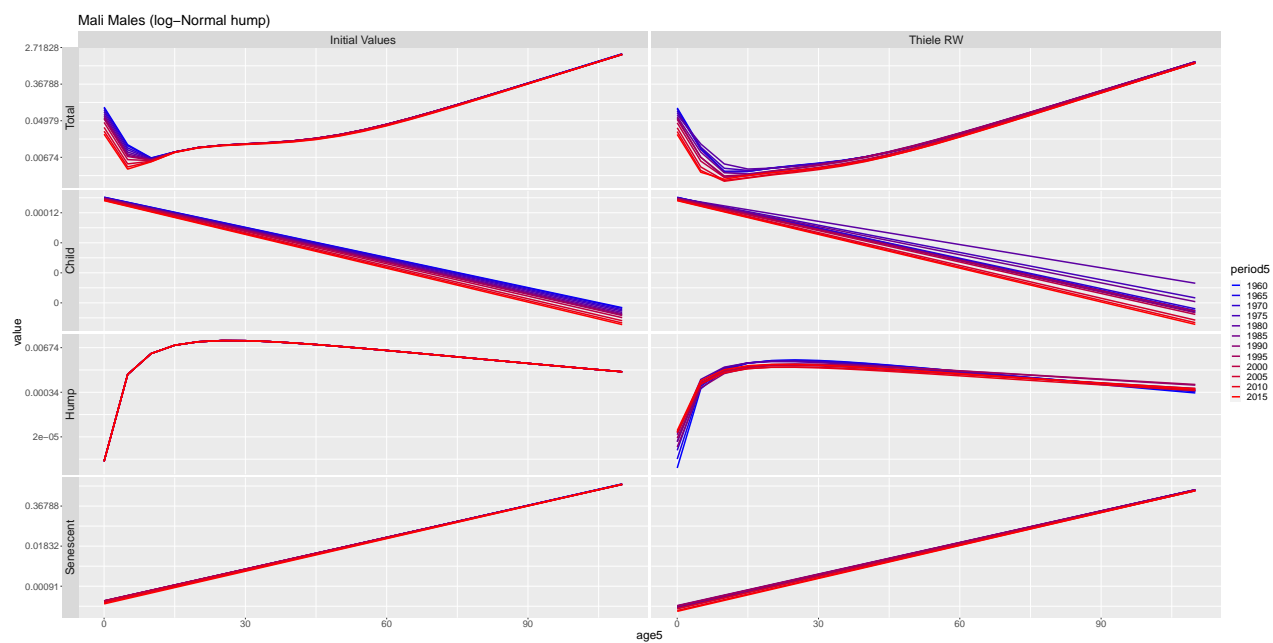


Figure 8: Thiele Decomposed

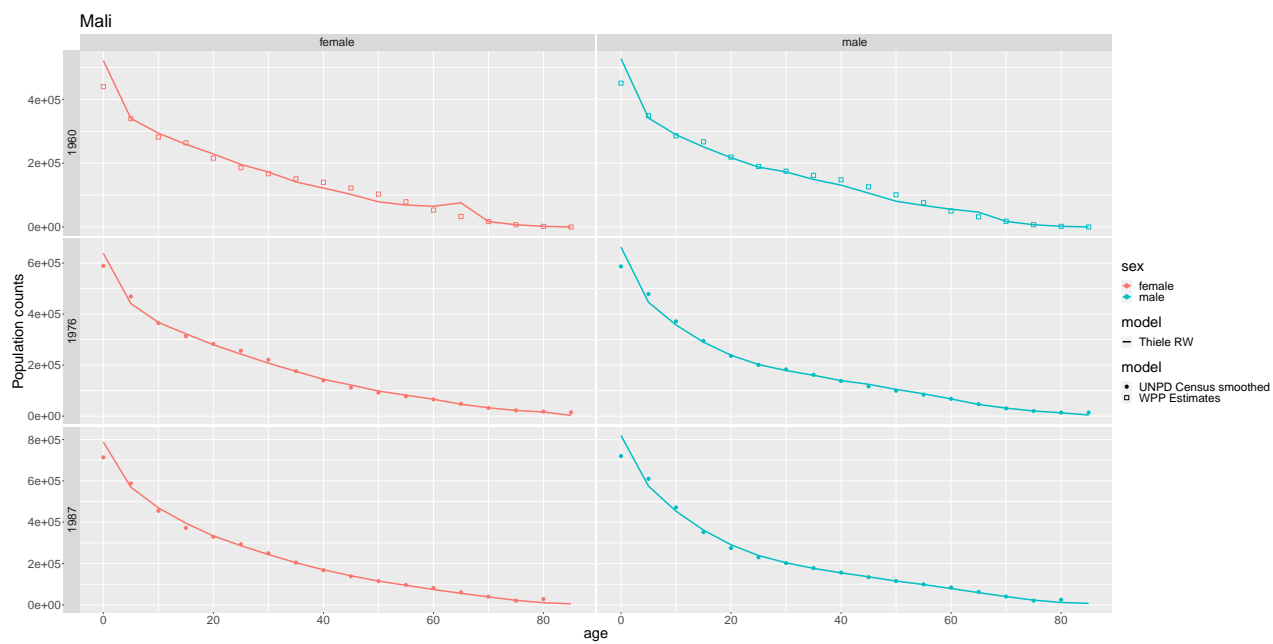


Figure 9: Population

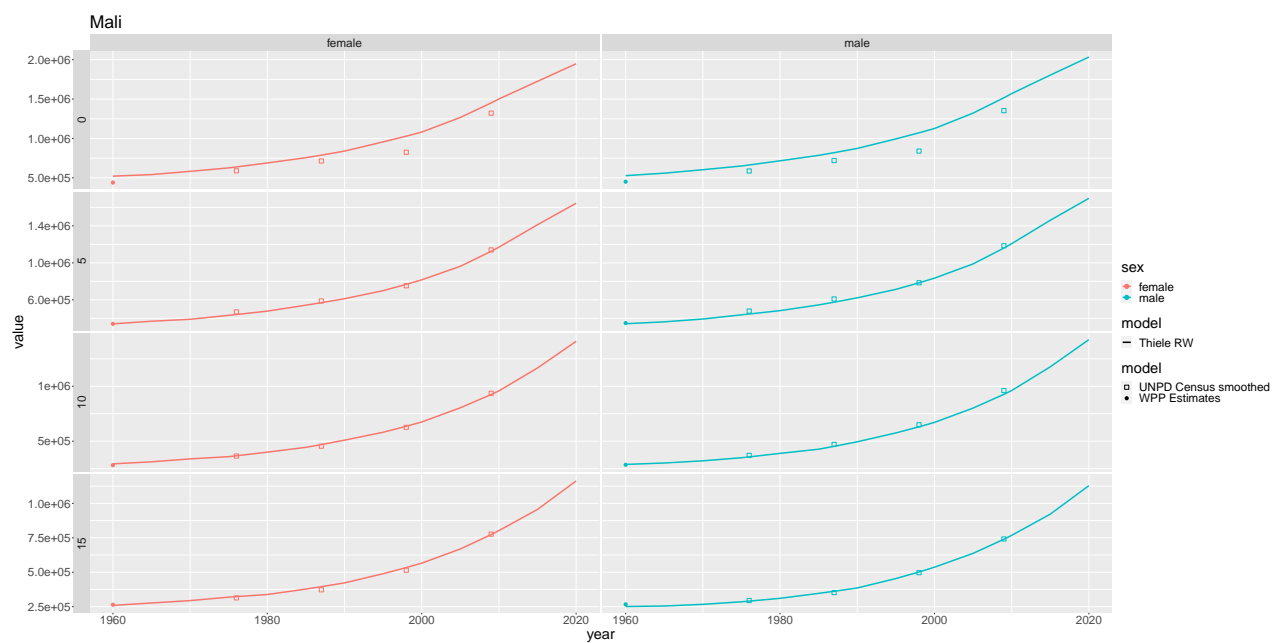


Figure 10: Population

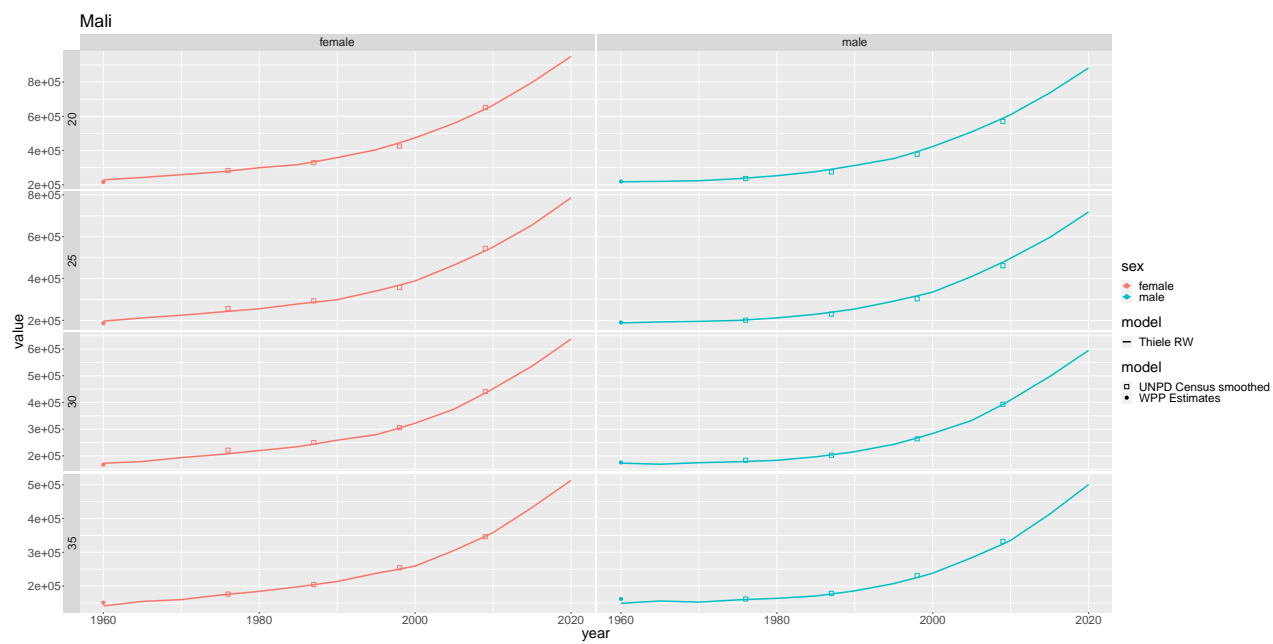


Figure 11: Population



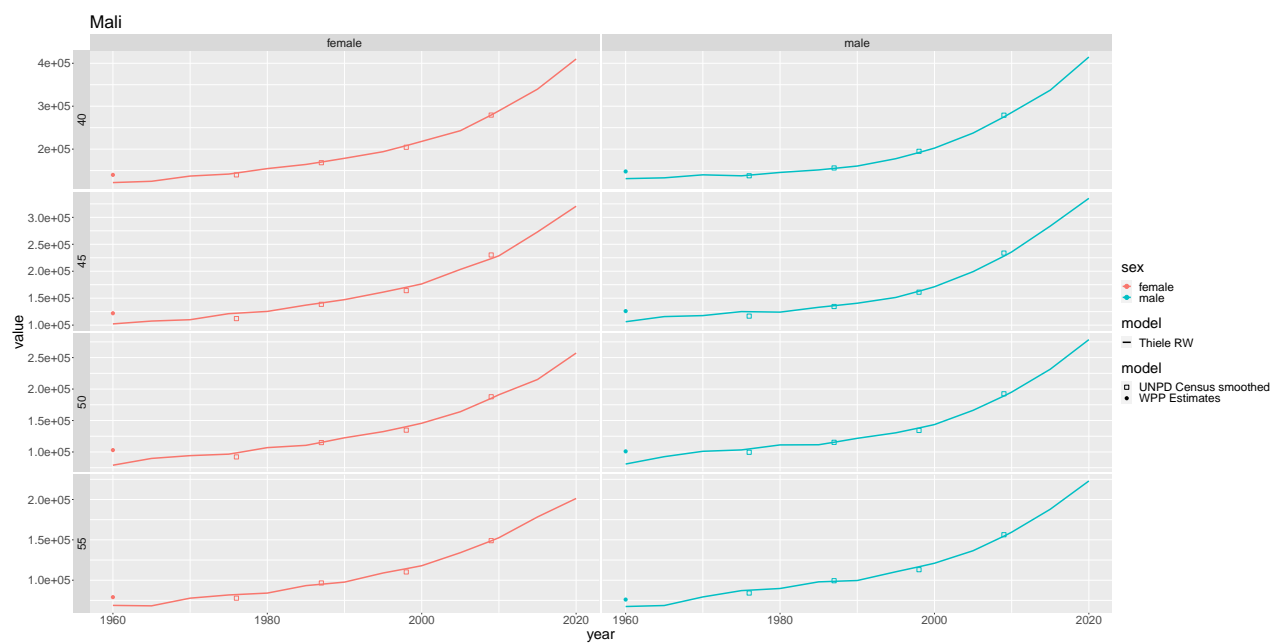


Figure 12: Population

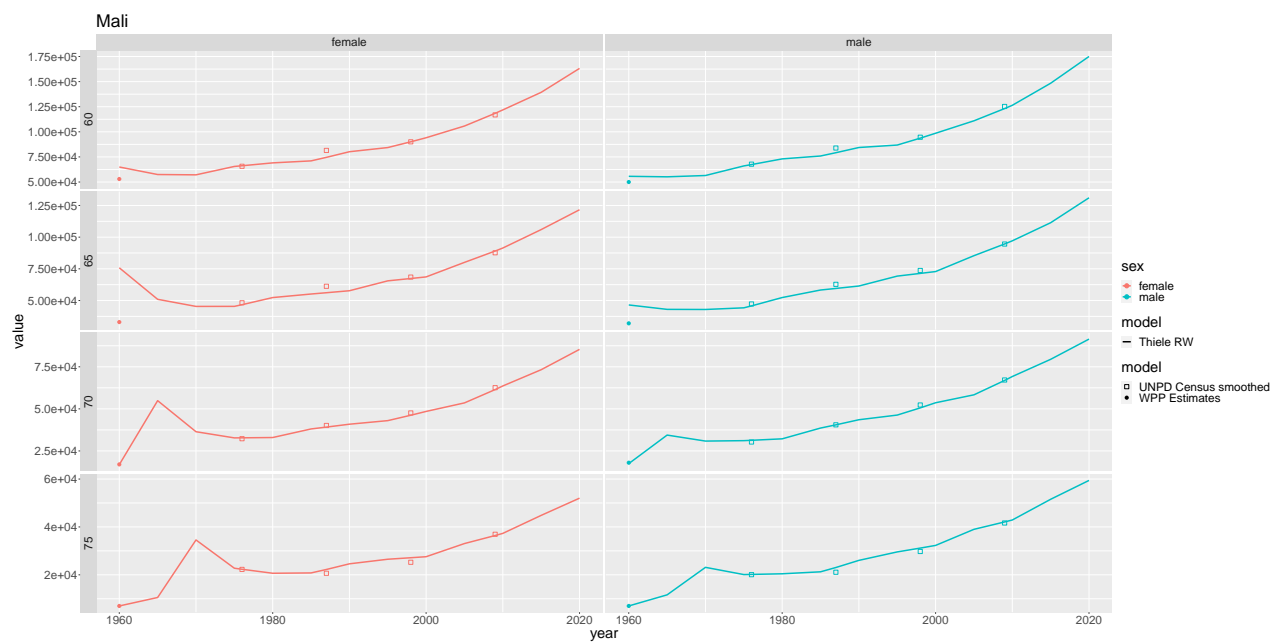


Figure 13: Population

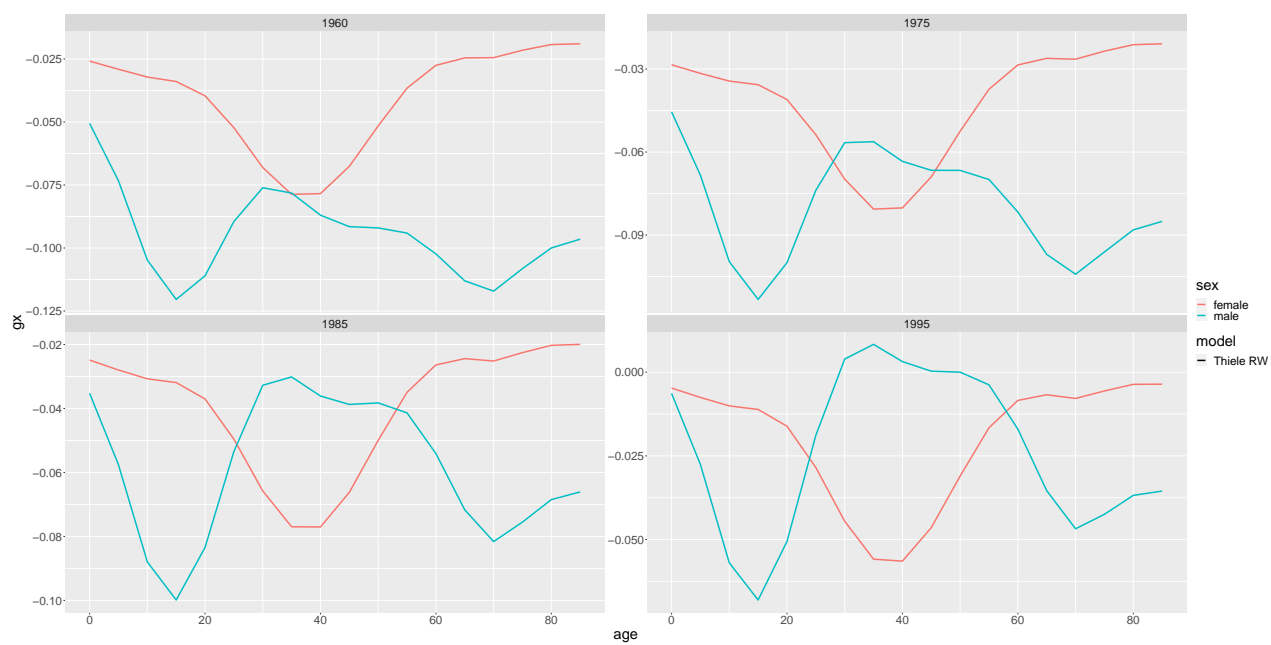


Figure 14: Migration

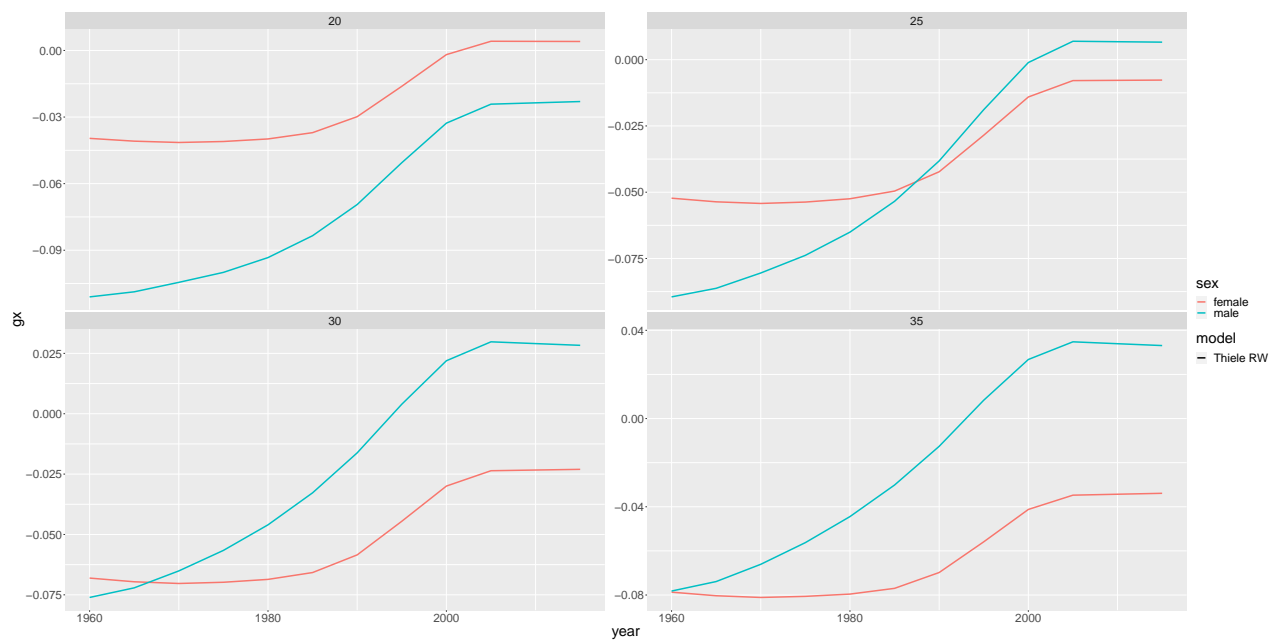


Figure 15: Migration

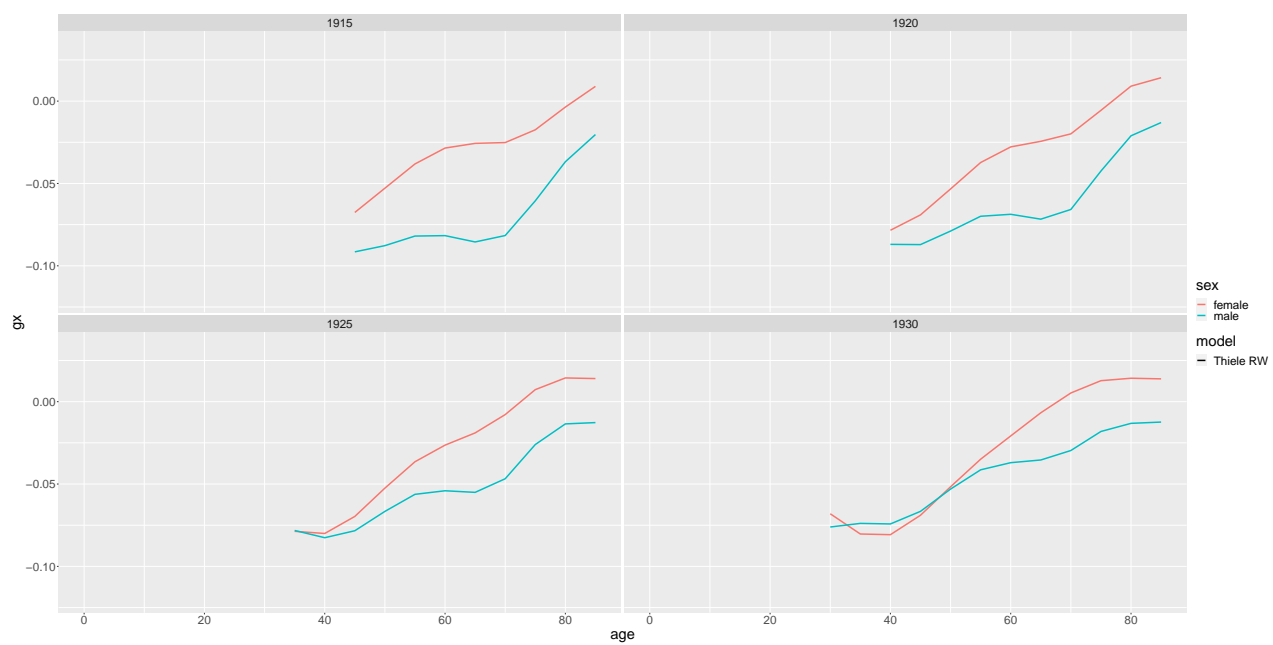


Figure 16: Migration

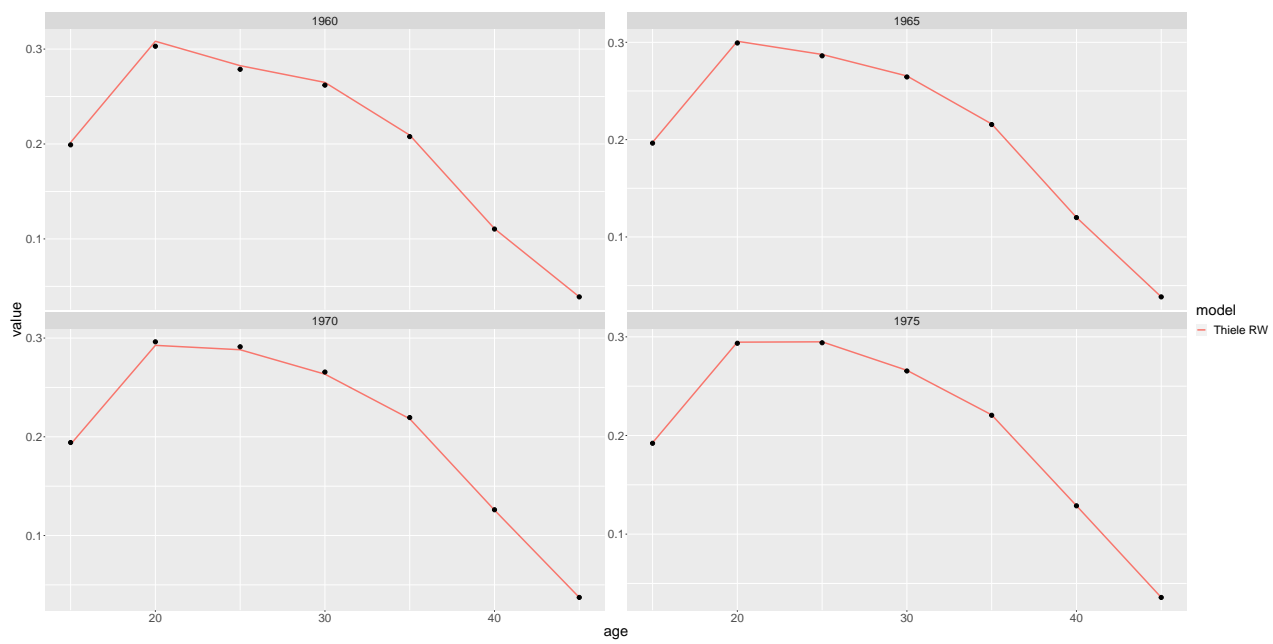


Figure 17: Fertility

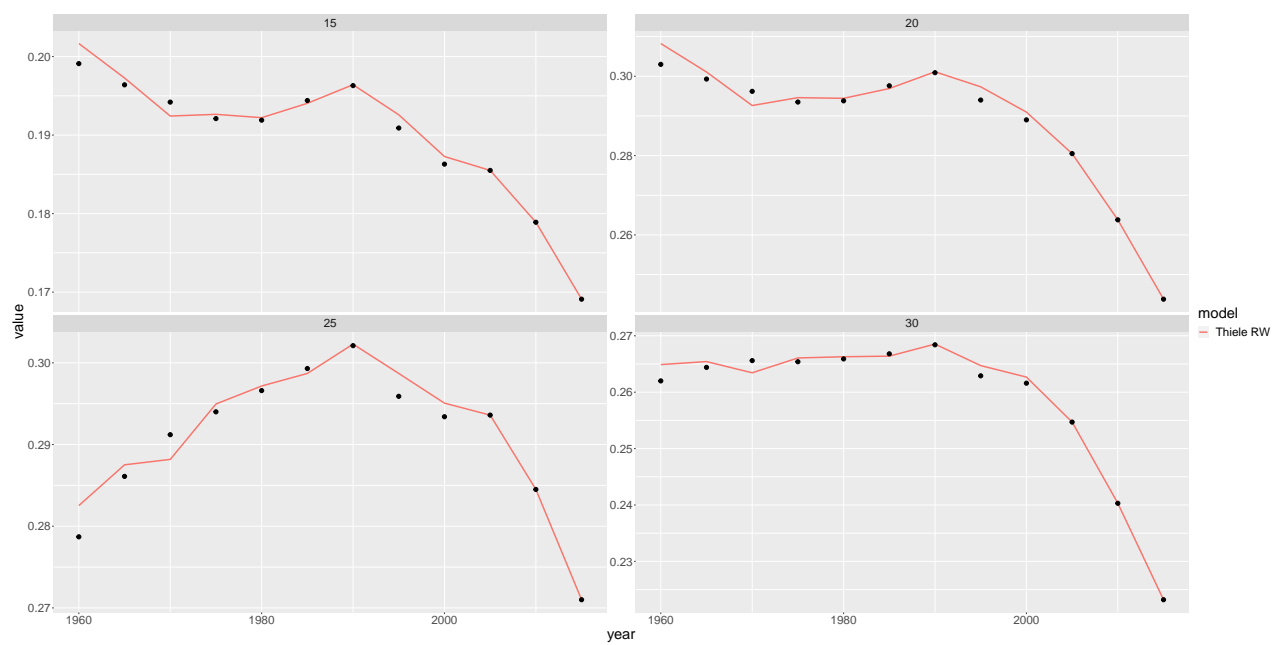


Figure 18: Fertility