

Benin

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

## # A tibble: 18 x 4
##   aggr.age `1979` `1992` `2002`
## *   <dbl>   <dbl>   <dbl>   <dbl>
## 1     0 351457. 451209. 581721.
## 2     5 268180. 399795. 528394.
## 3    10 178950. 297938. 424443.
## 4    15 142937. 230898. 345842.
## 5    20 150307. 217909. 319031.
## 6    25 141563. 203308. 287531.
## 7    30 111638. 168389. 232635.
## 8    35  85508. 130473. 181653.
## 9    40  67925.  98650. 140434.
## 10   45  55549.  75216. 106912.
## 11   50  44515.  58443.  80354.
## 12   55  35211.  46576.  61064.
## 13   60  30311.  40848.  52252.
## 14   65  24816.  33119.  43100.
## 15   70  18851.  24260.  32546.
## 16   75  12313.  17574.  24279.
## 17   80  28474.  12703.  17811.
## 18   85      NA  20123.  29599.
```

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

## # A tibble: 18 x 4
##   aggr.age `1979` `1992` `2002`
## *   <dbl>   <dbl>   <dbl>   <dbl>
## 1     0 351689. 457215. 593589.
## 2     5 288221. 425746. 552851.
## 3    10 196031. 322971. 447134.
## 4    15 126149. 224359. 331492.
## 5    20 101019. 175298. 259297.
## 6    25  92613. 152515. 223049.
## 7    30  81036. 132135. 192641.
## 8    35  67610. 108568. 158344.
## 9    40  56596.  85645. 125995.
## 10   45  48757.  66981.  99224.
## 11   50  41032.  52336.  75992.
## 12   55  33835.  41489.  56863.
## 13   60  29670.  35493.  45486.
## 14   65  25324.  29766.  35834.
## 15   70  20368.  23877.  27073.
## 16   75  13851.  17867.  20036.
## 17   80  31178.  12656.  14361.
## 18   85      NA  21785.  25804.
```

Thiele log-Normal Hump RW

```
##   user  system elapsed
## 14.89   0.25   15.31
```

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

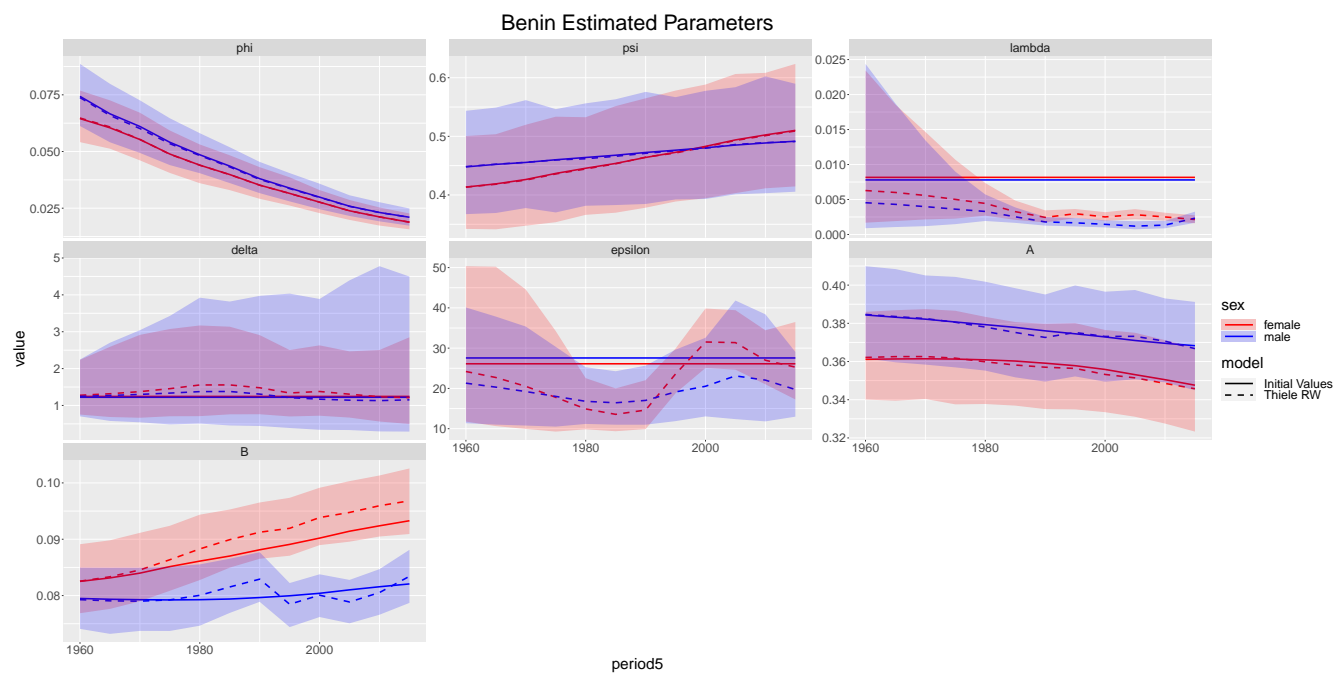


Figure 1: Estimated parameters

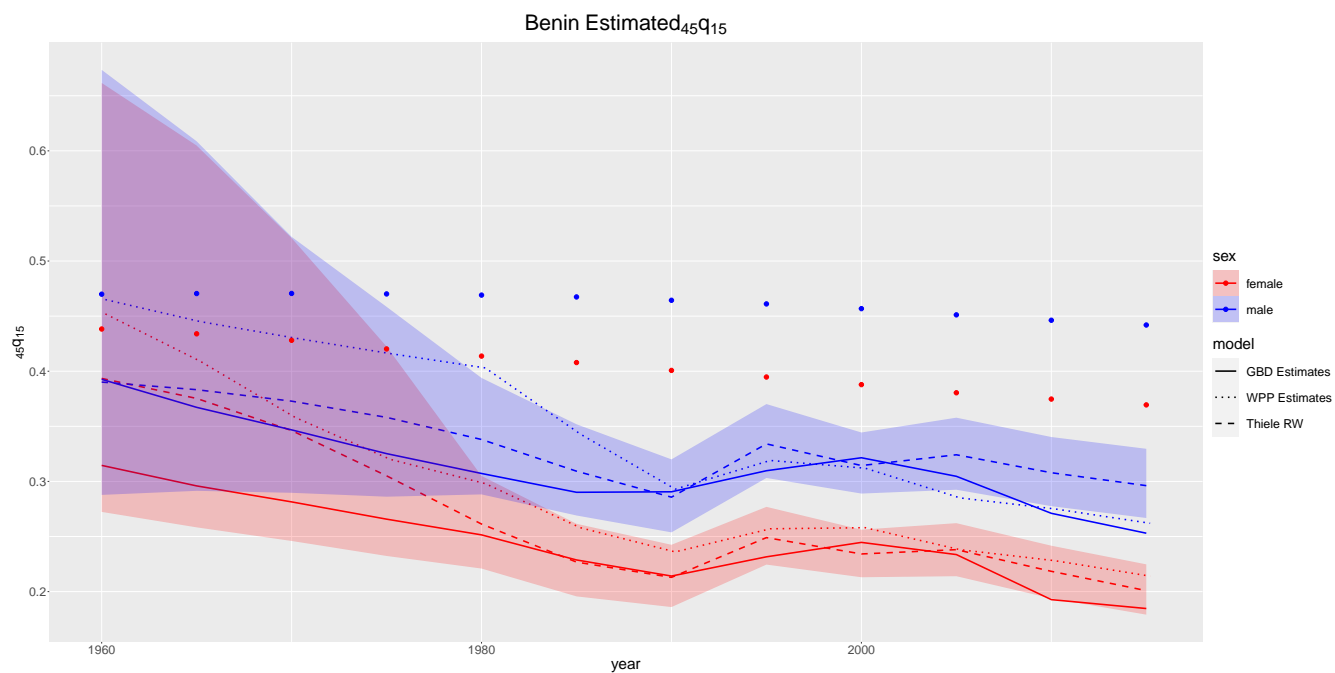


Figure 2: Estimated $_{45}q_{15}$

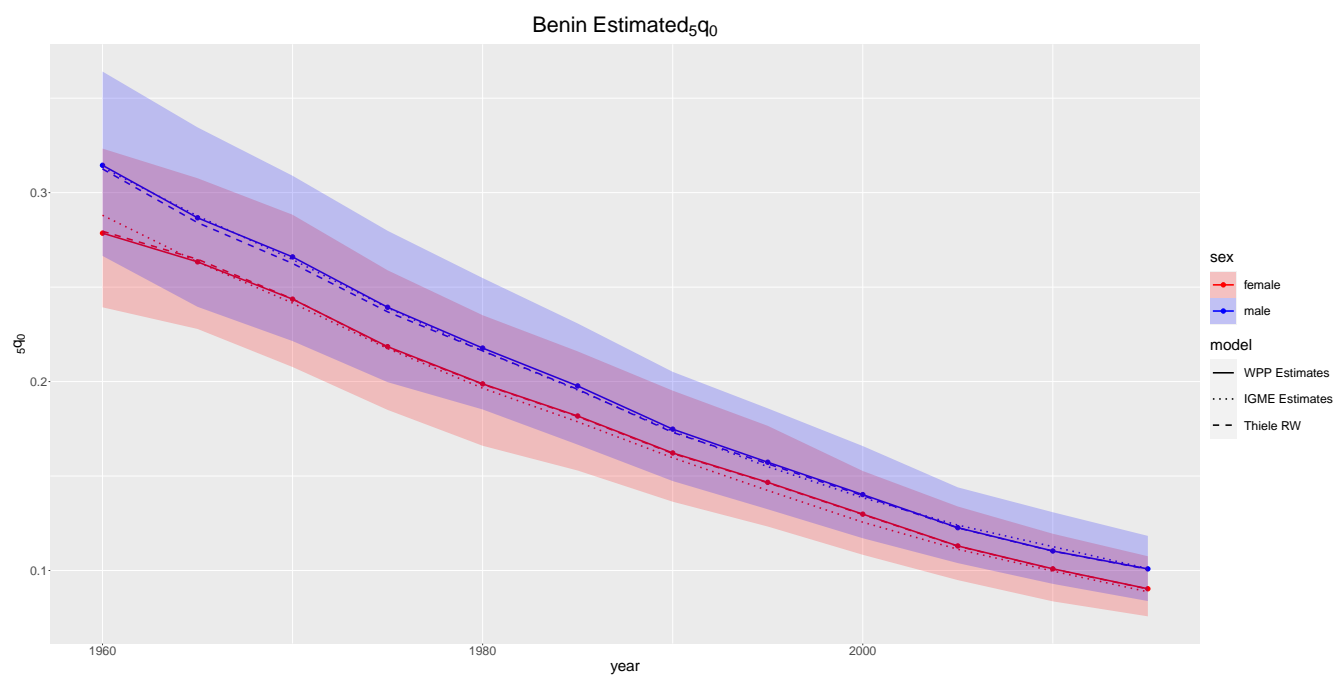


Figure 3: Estimated ${}_5q_0$

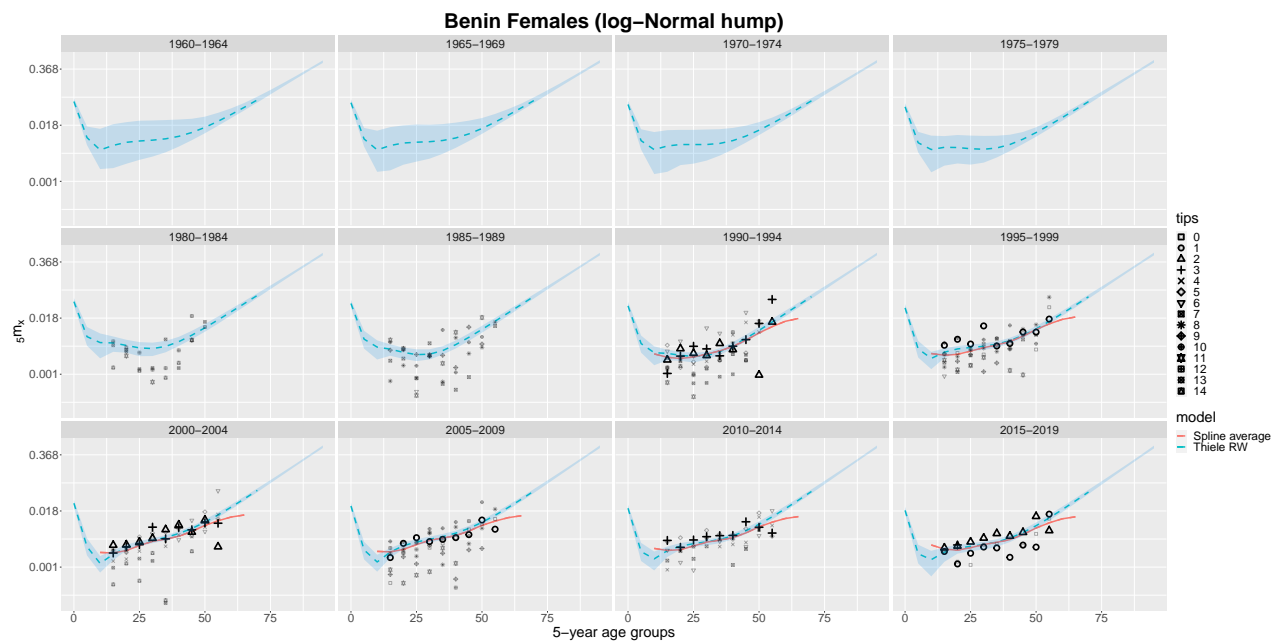


Figure 4: Mortality Schedules

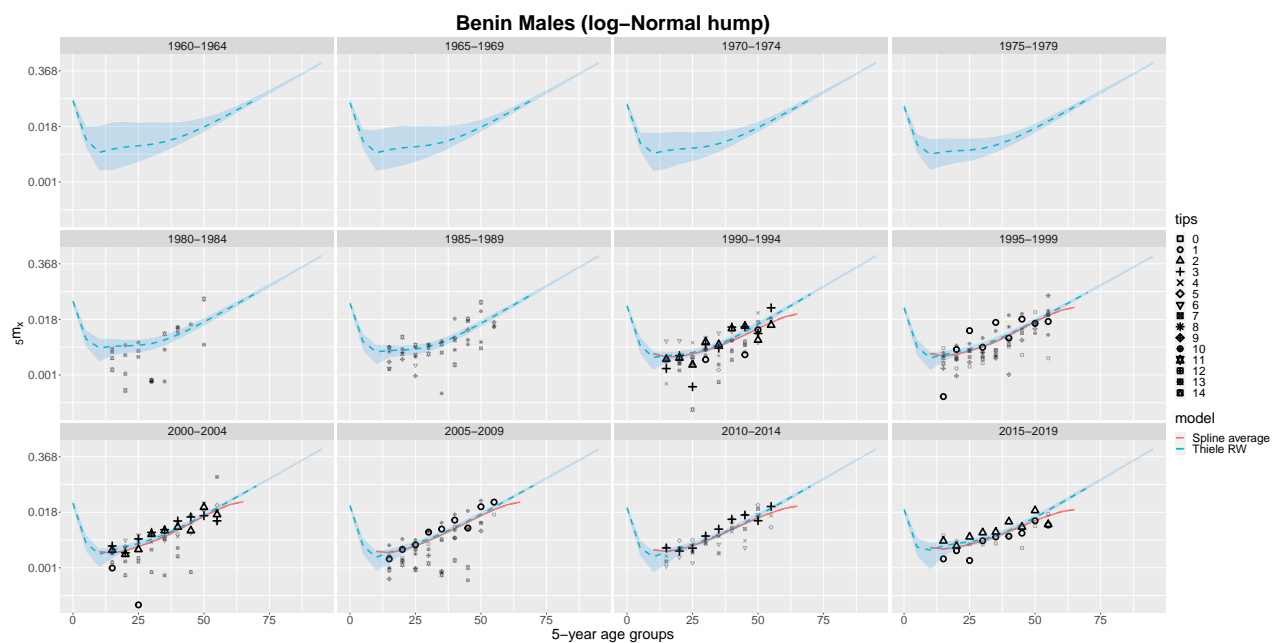


Figure 5: Mortality Schedules

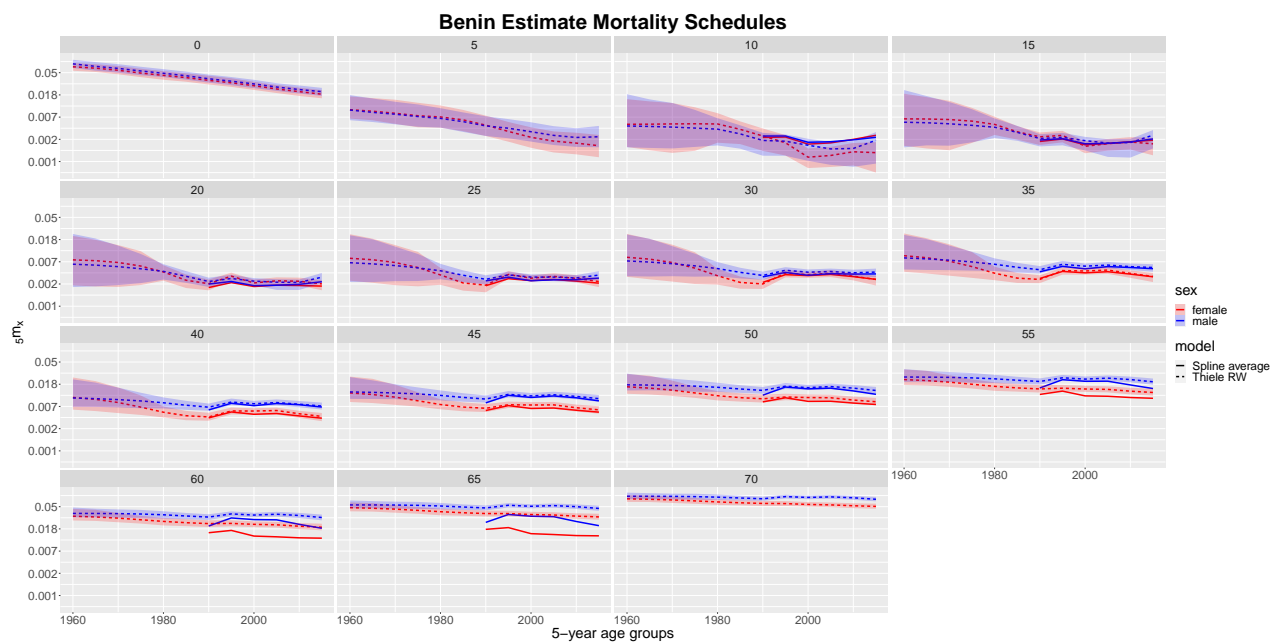


Figure 6: Mortality Schedules

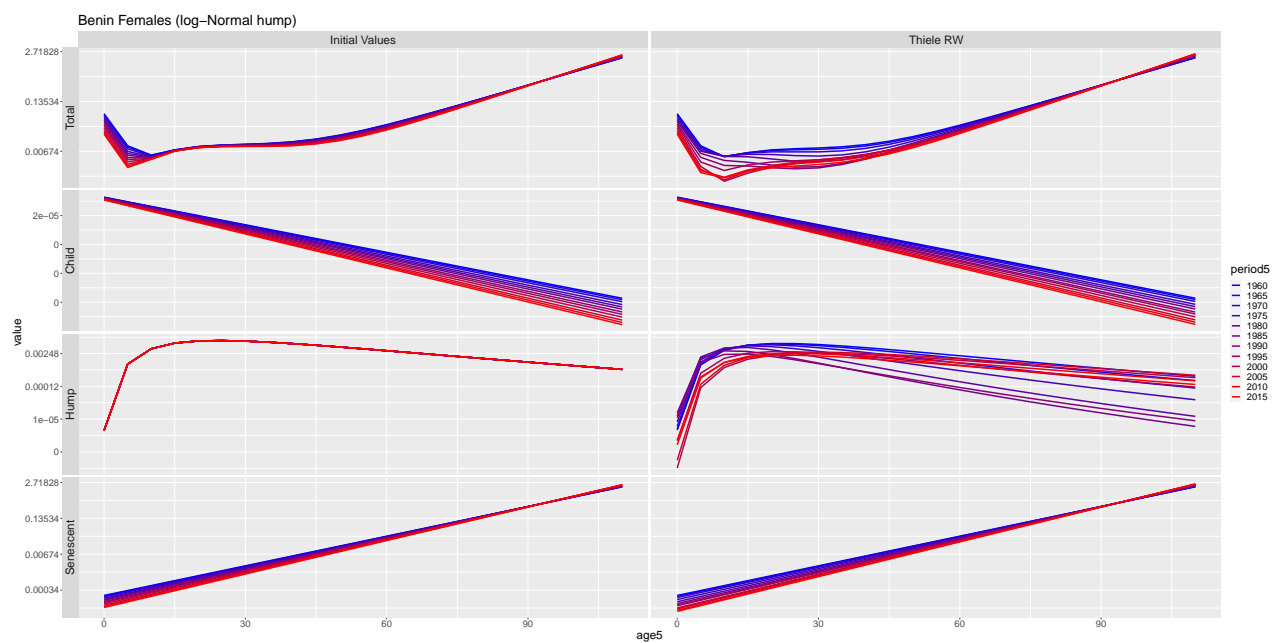


Figure 7: Thiele Decomposed

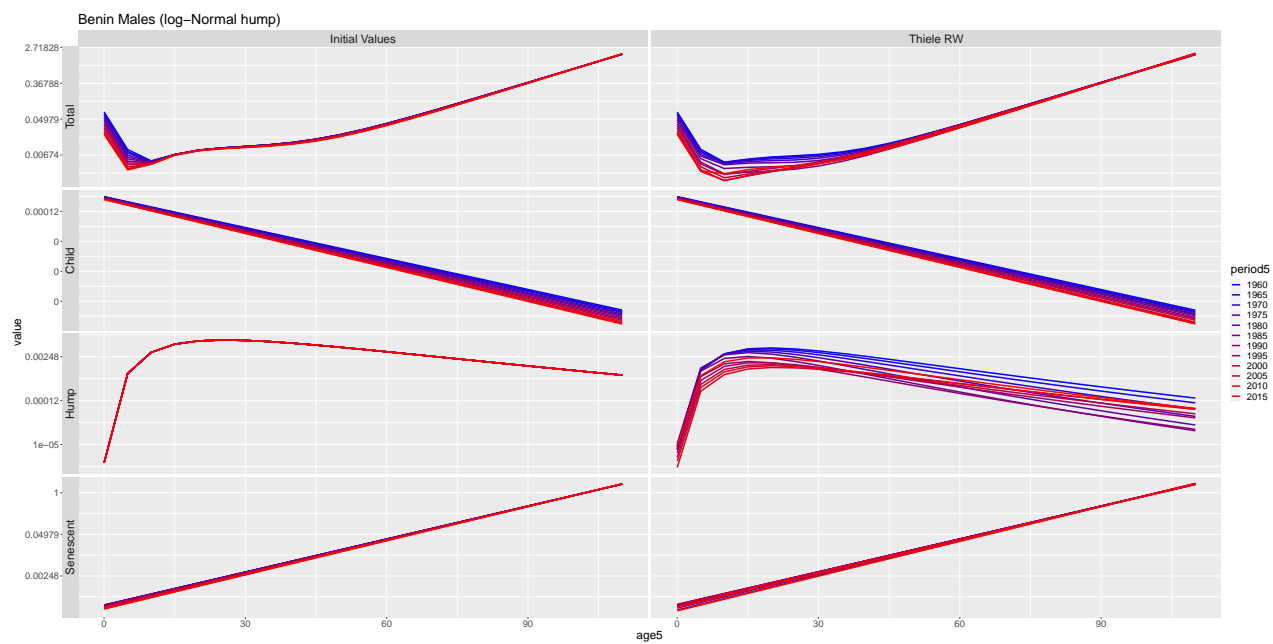


Figure 8: Thiele Decomposed

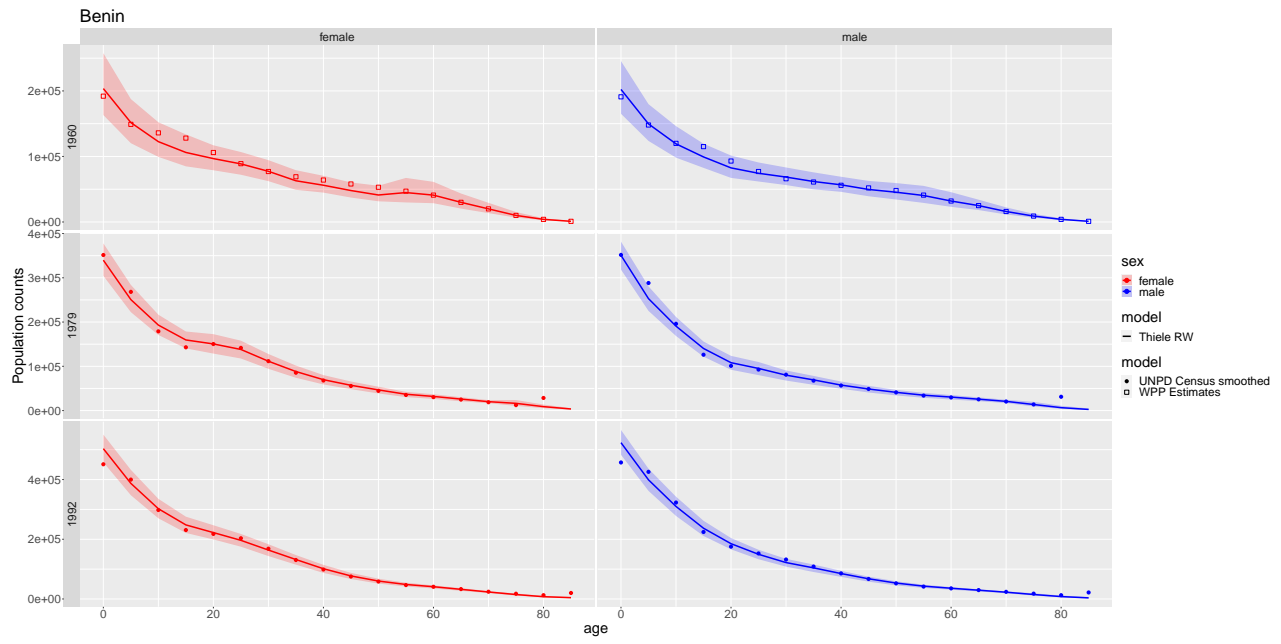


Figure 9: Population

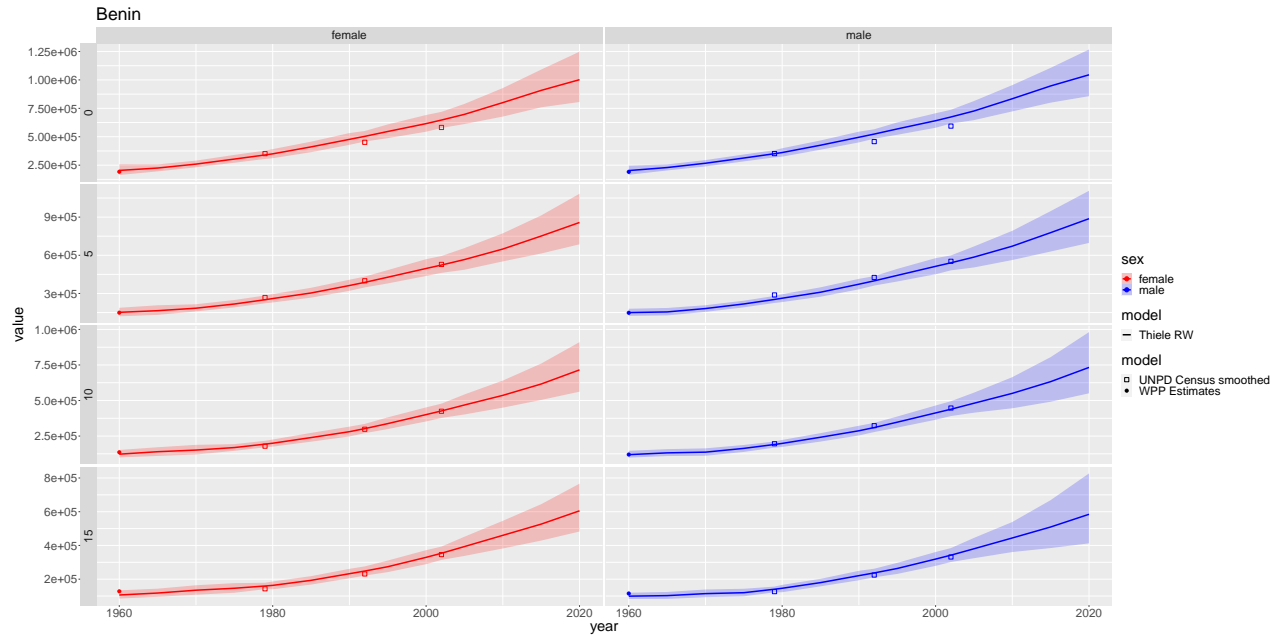


Figure 10: Population

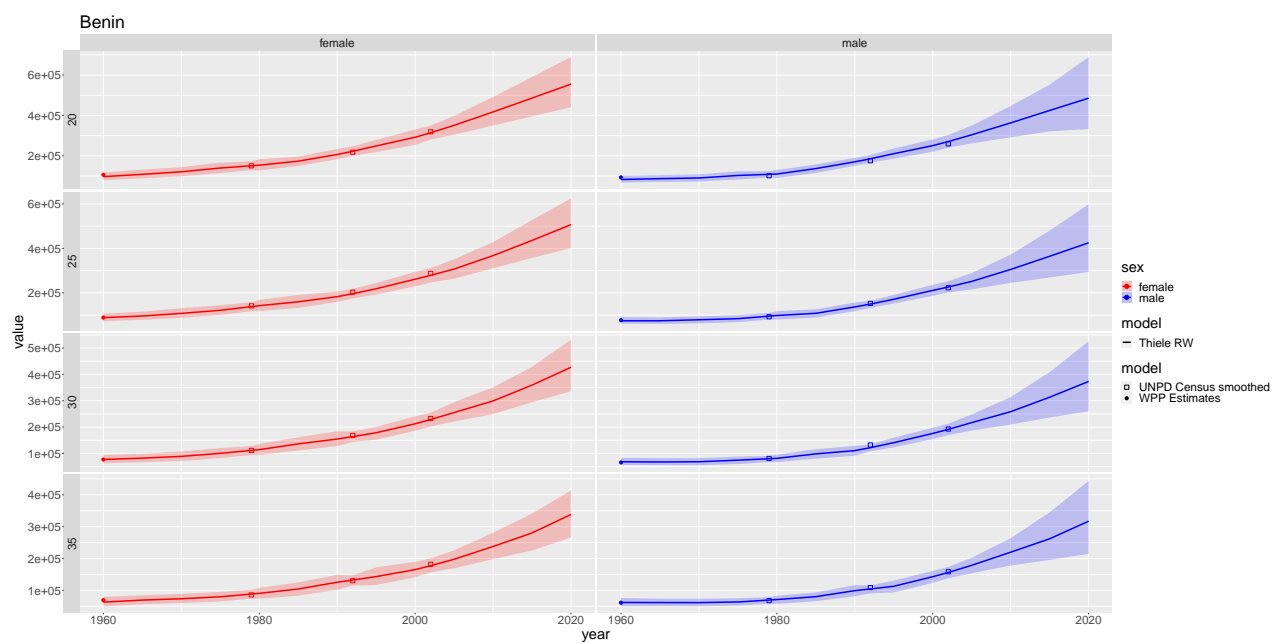


Figure 11: Population

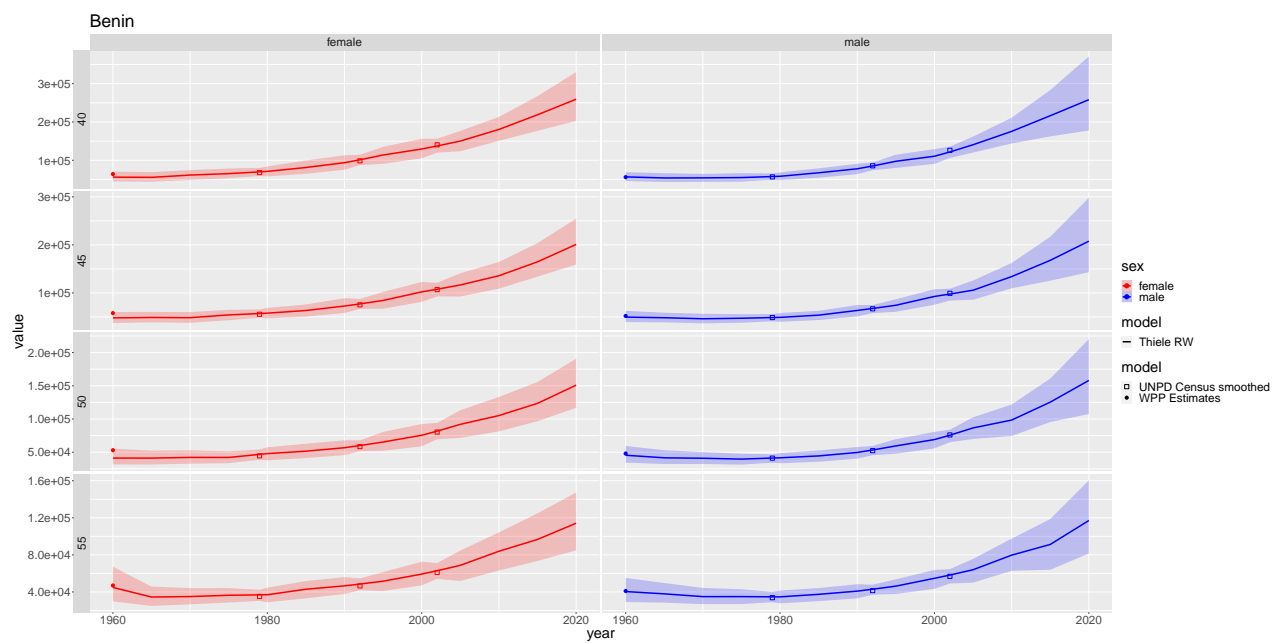


Figure 12: Population

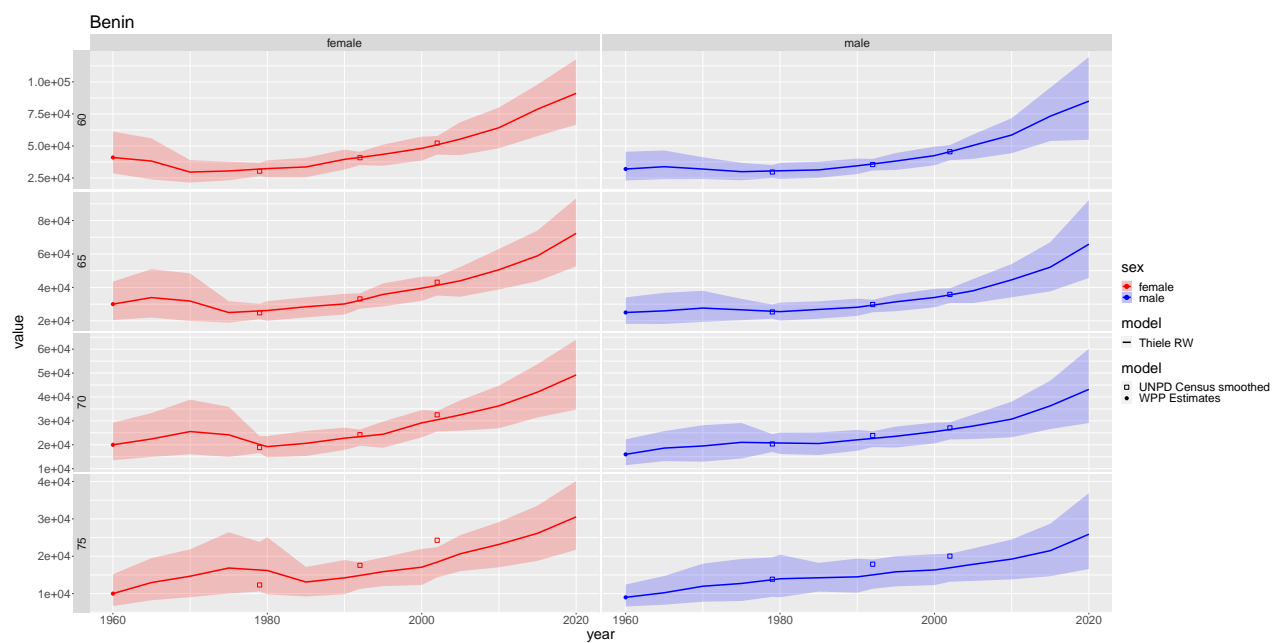


Figure 13: Population

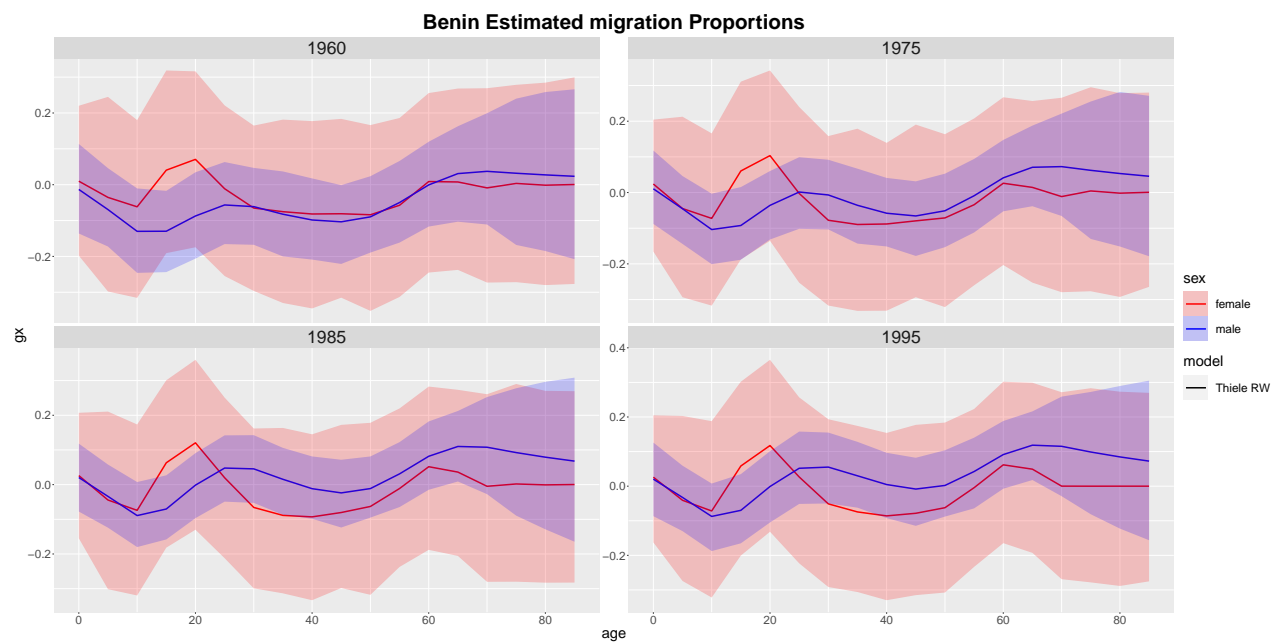


Figure 14: Migration

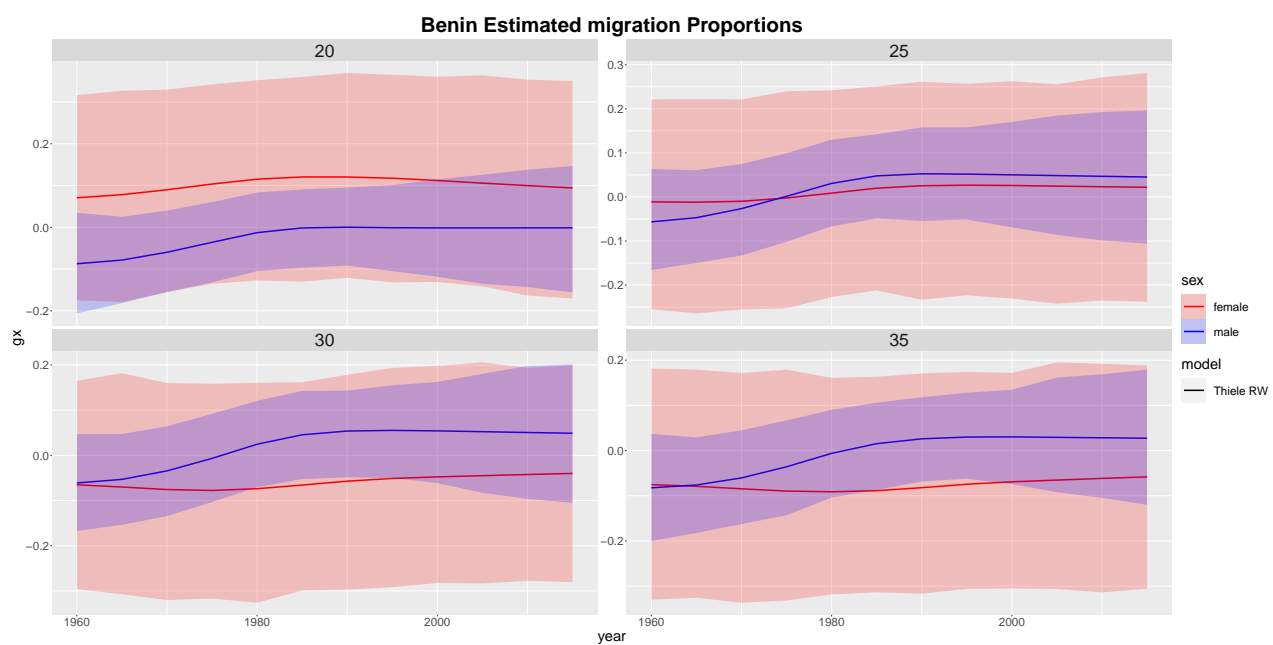


Figure 15: Migration

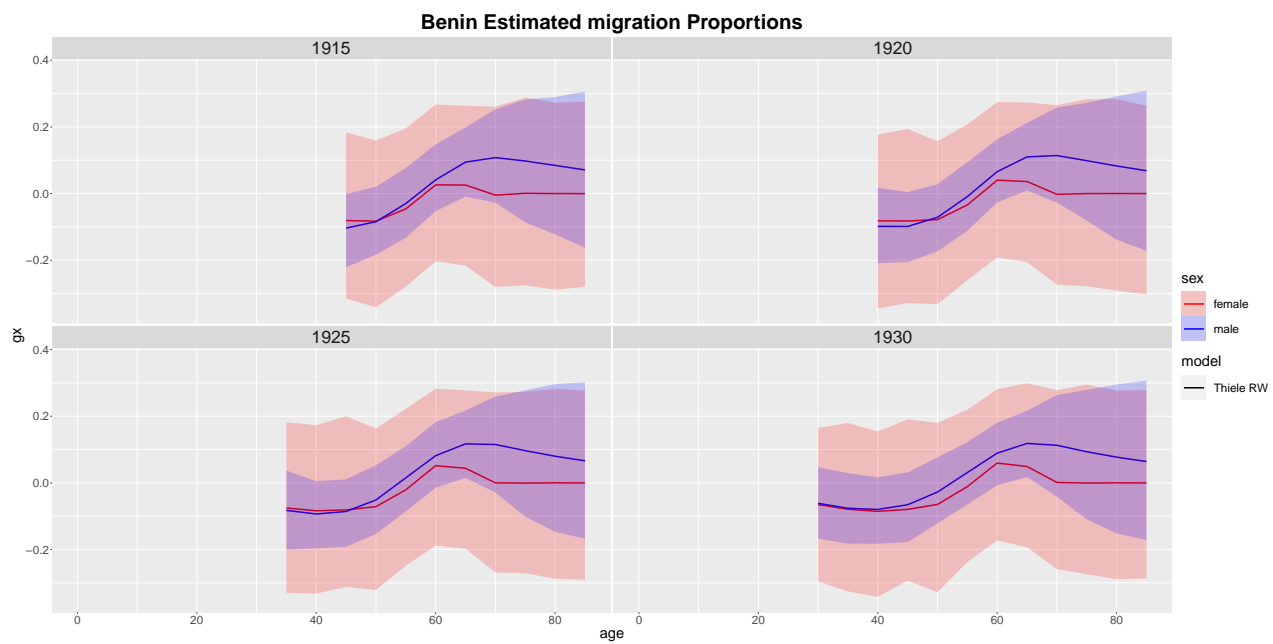


Figure 16: Migration

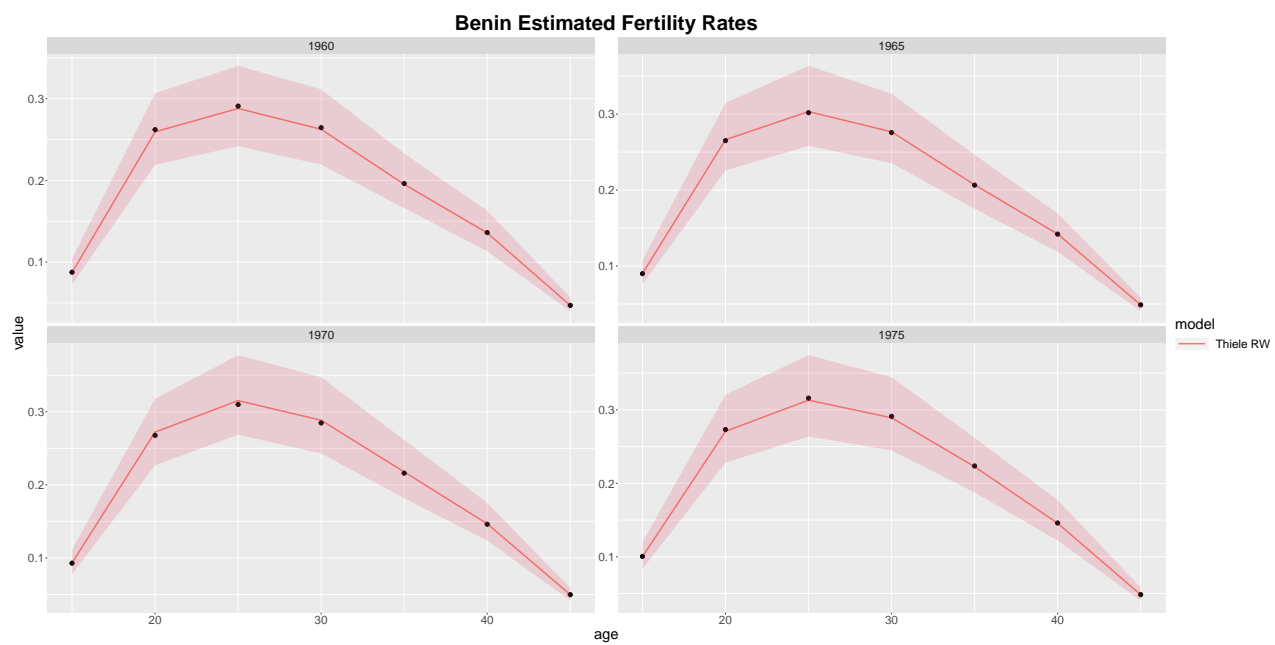


Figure 17: Fertility

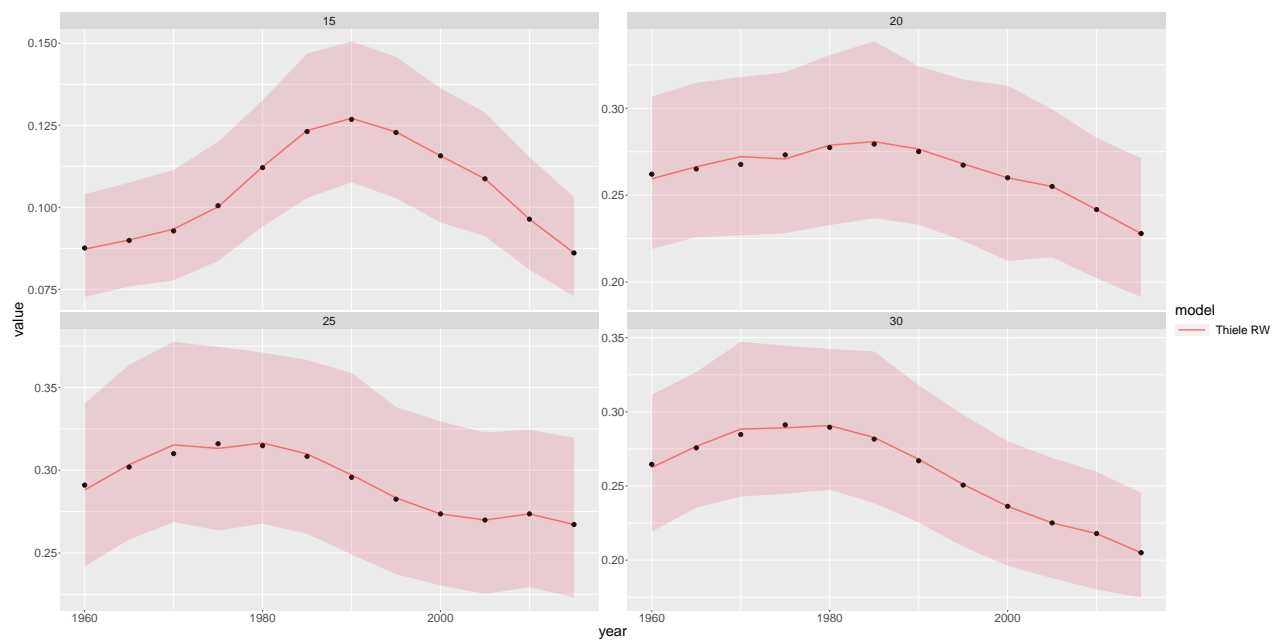


Figure 18: Fertility