

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
## 28.92   0.30   29.22
```

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

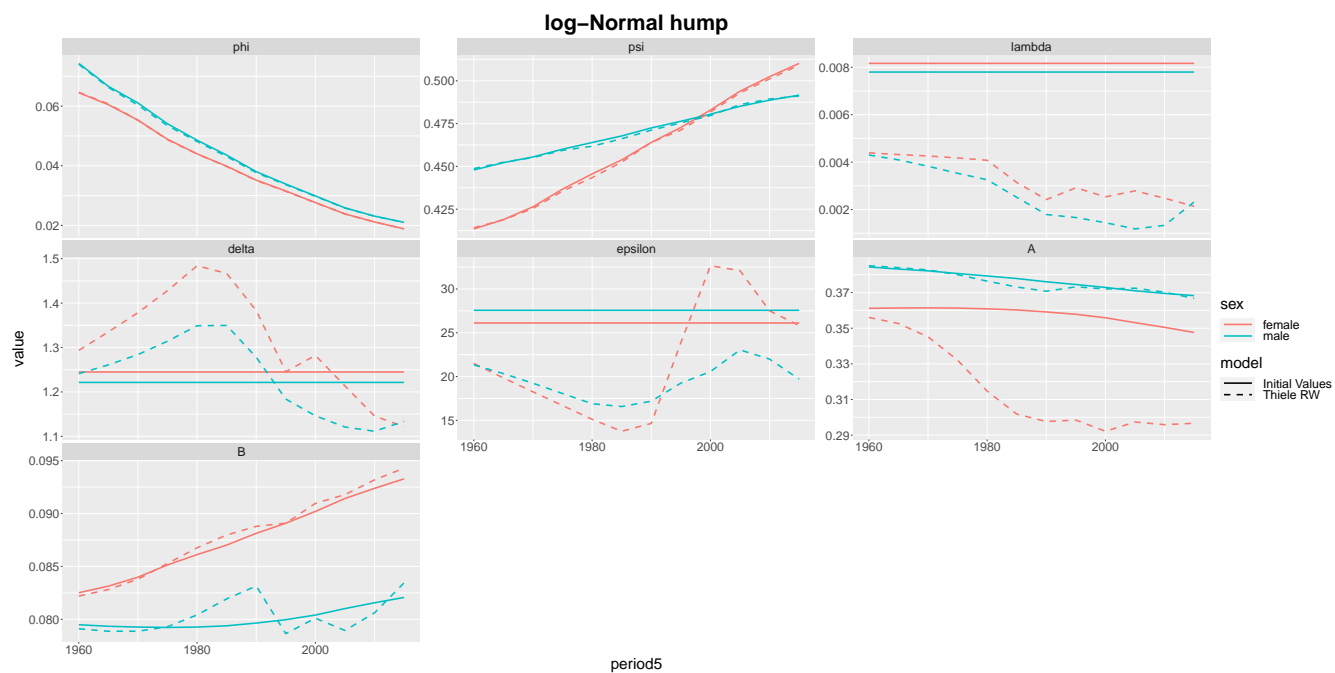


Figure 1: Estimated parameters

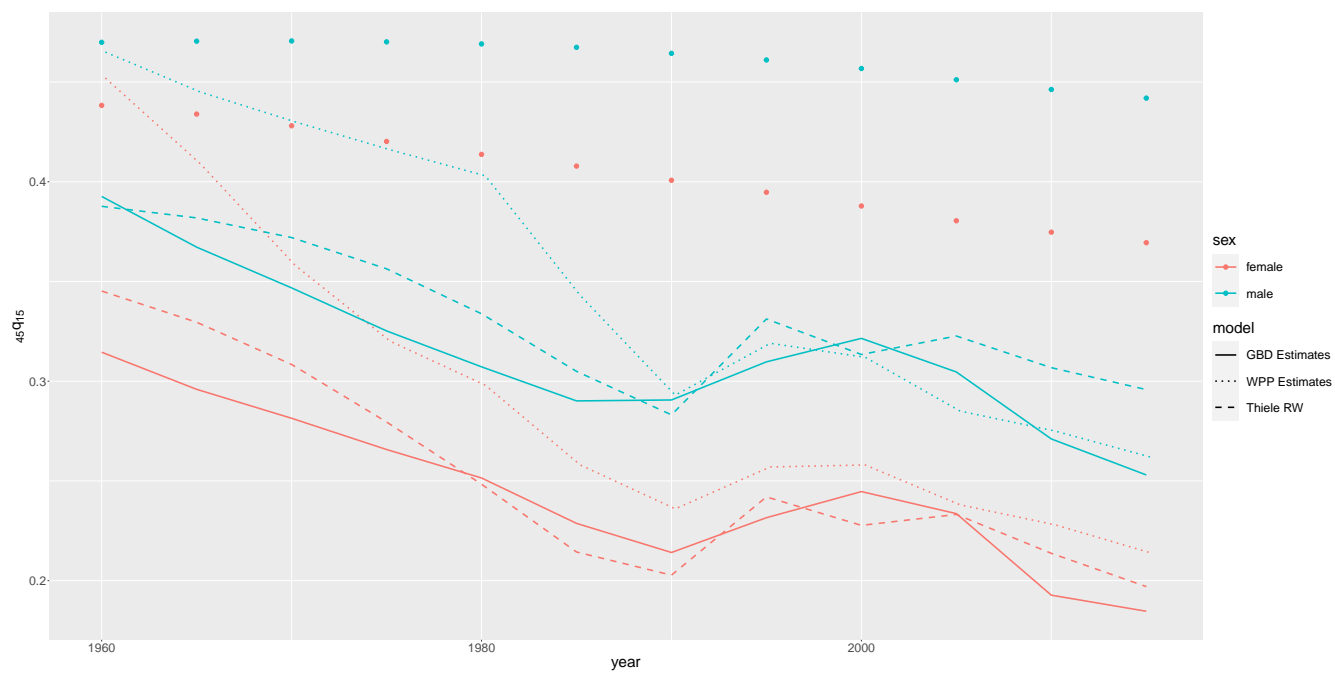


Figure 2: Estimated $45q_{15}$

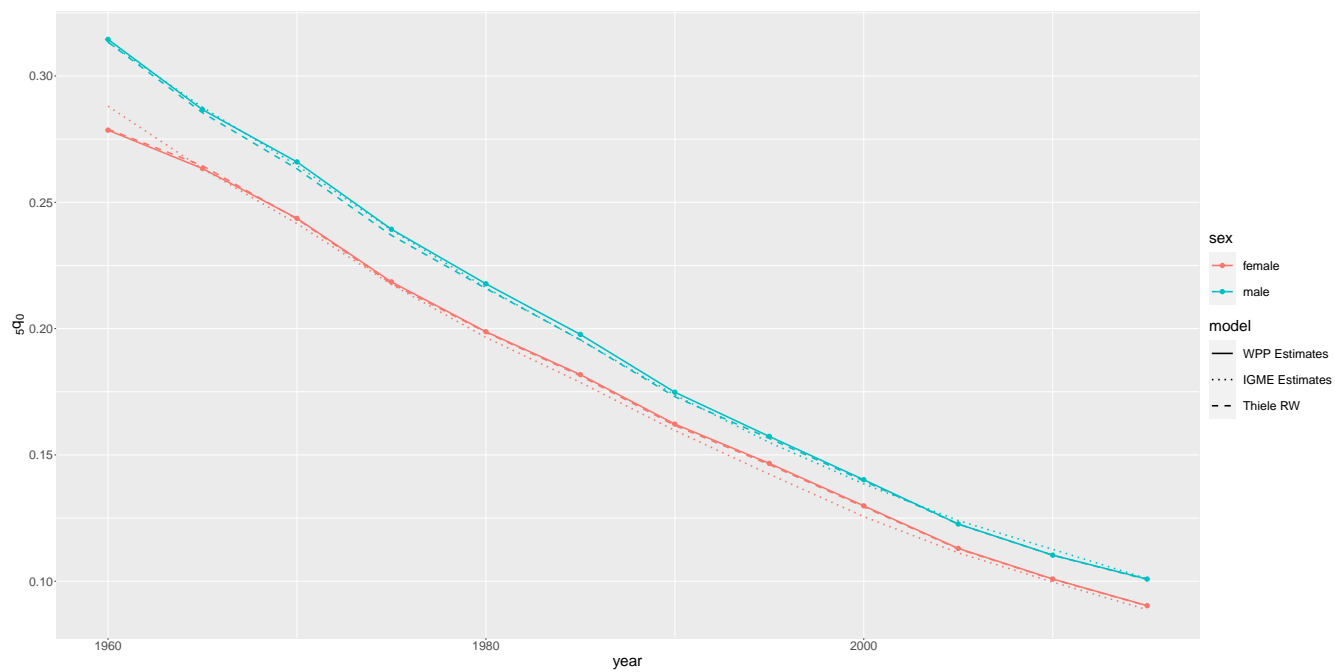


Figure 3: Estimated $5q_0$

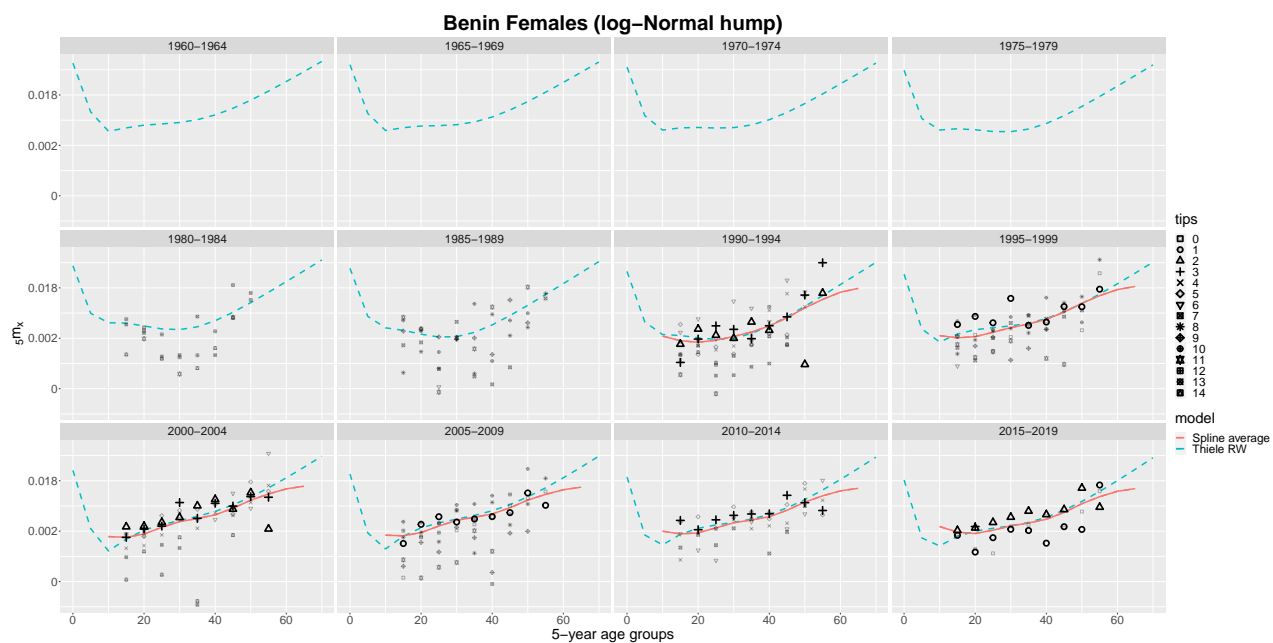


Figure 4: Mortality Schedules

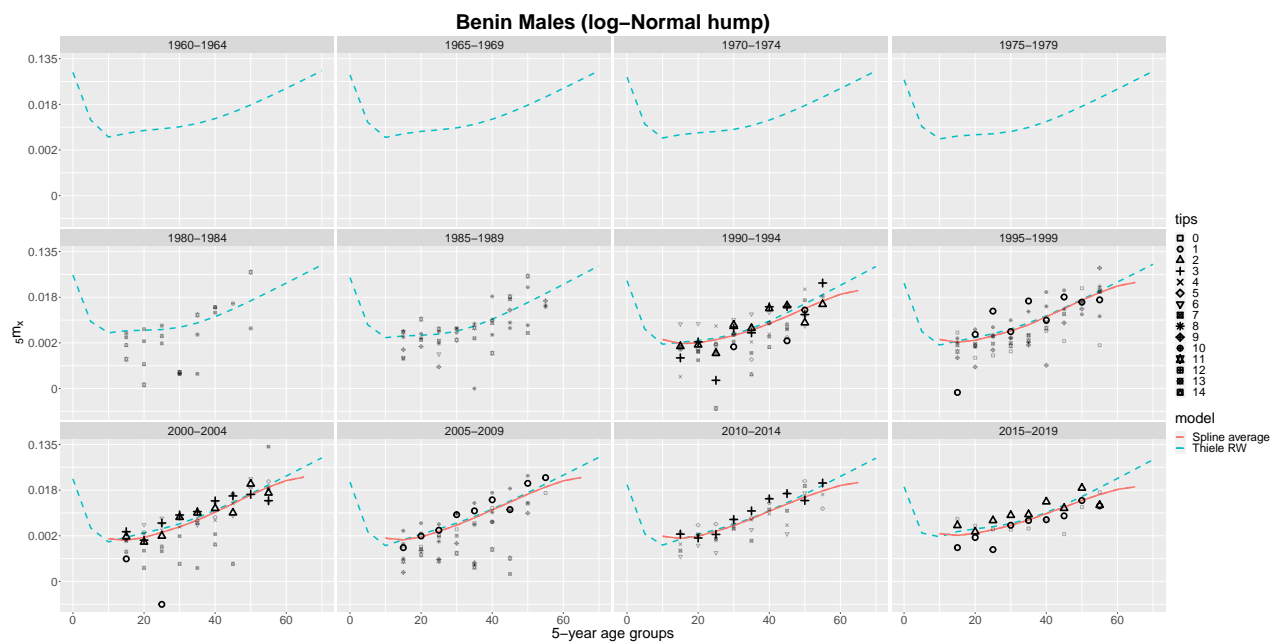


Figure 5: Mortality Schedules

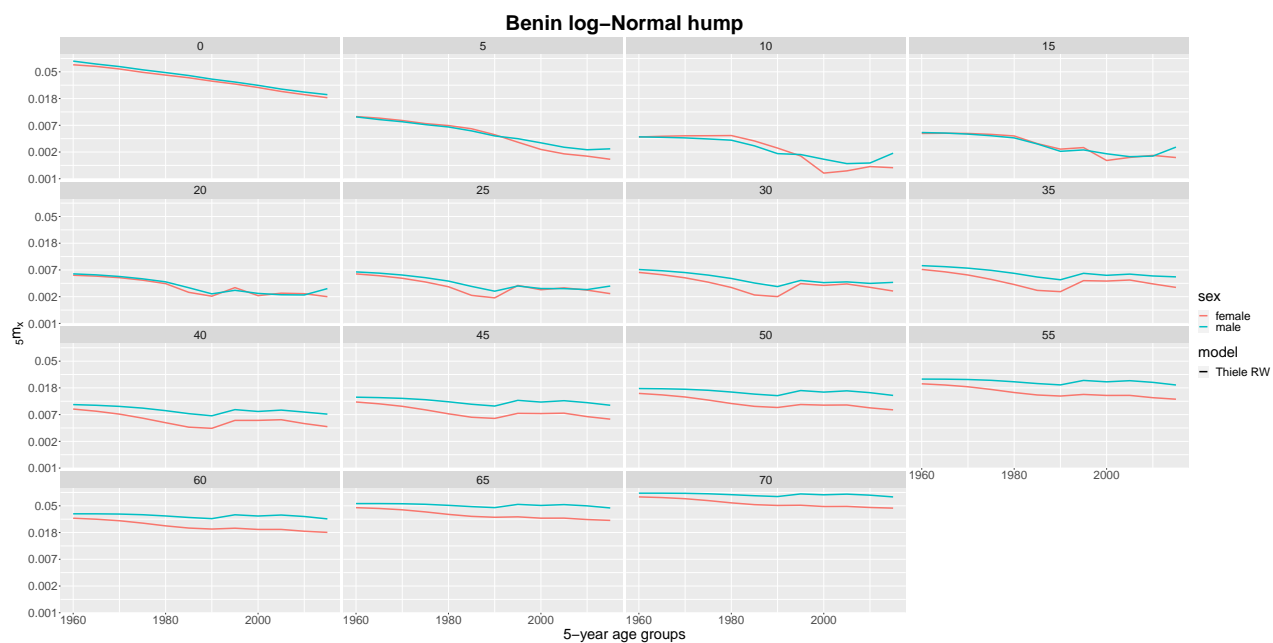


Figure 6: Mortality Schedules

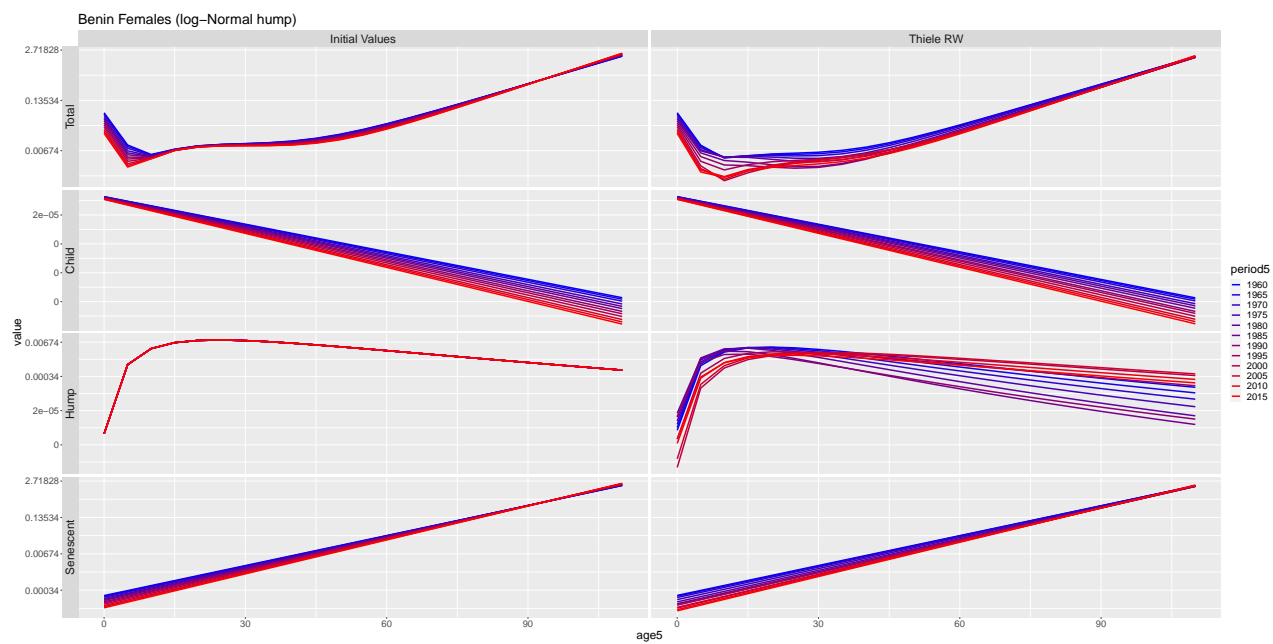


Figure 7: Thiele Decomposed

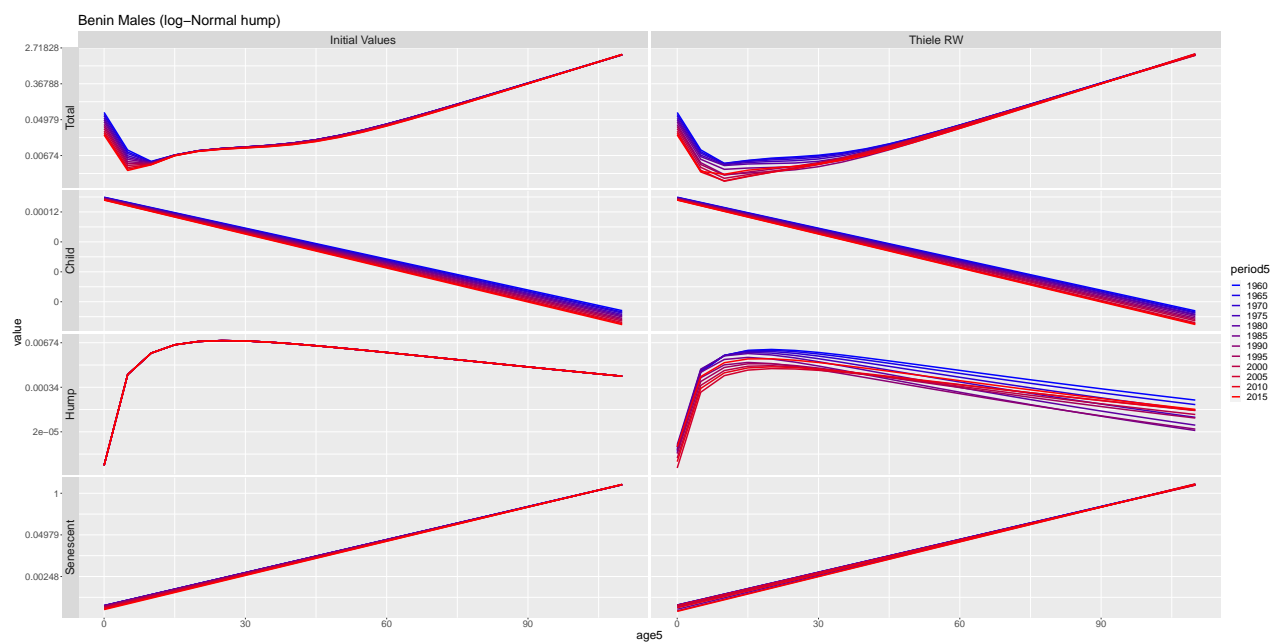


Figure 8: Thiele Decomposed

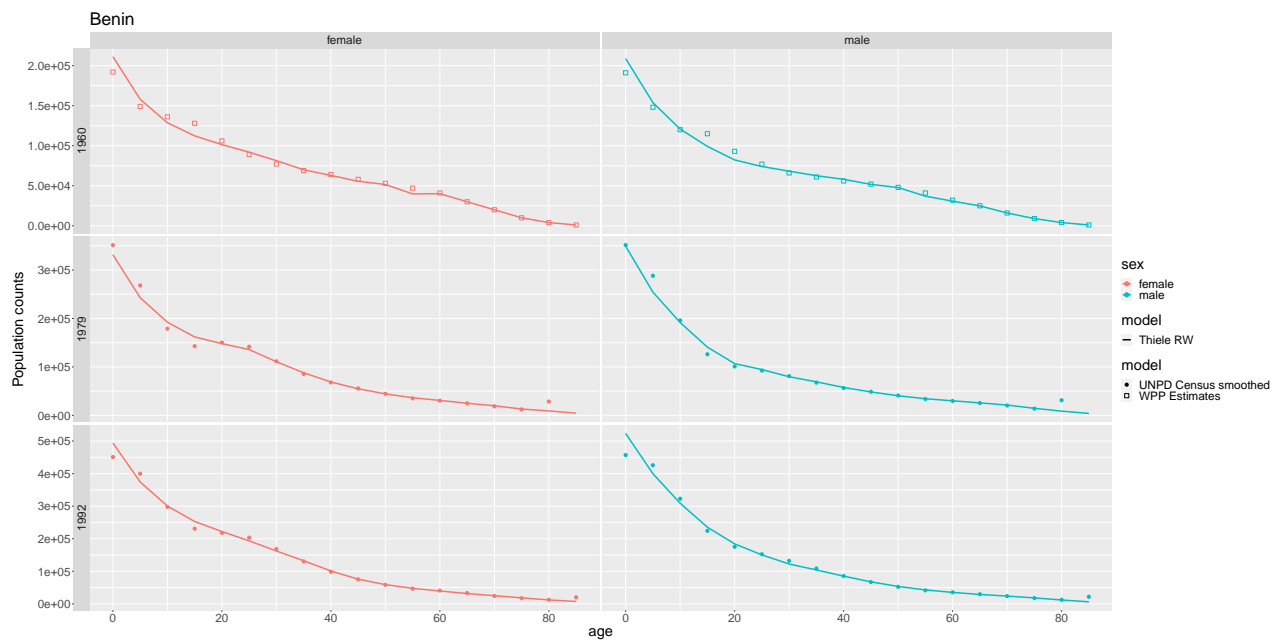


Figure 9: Population

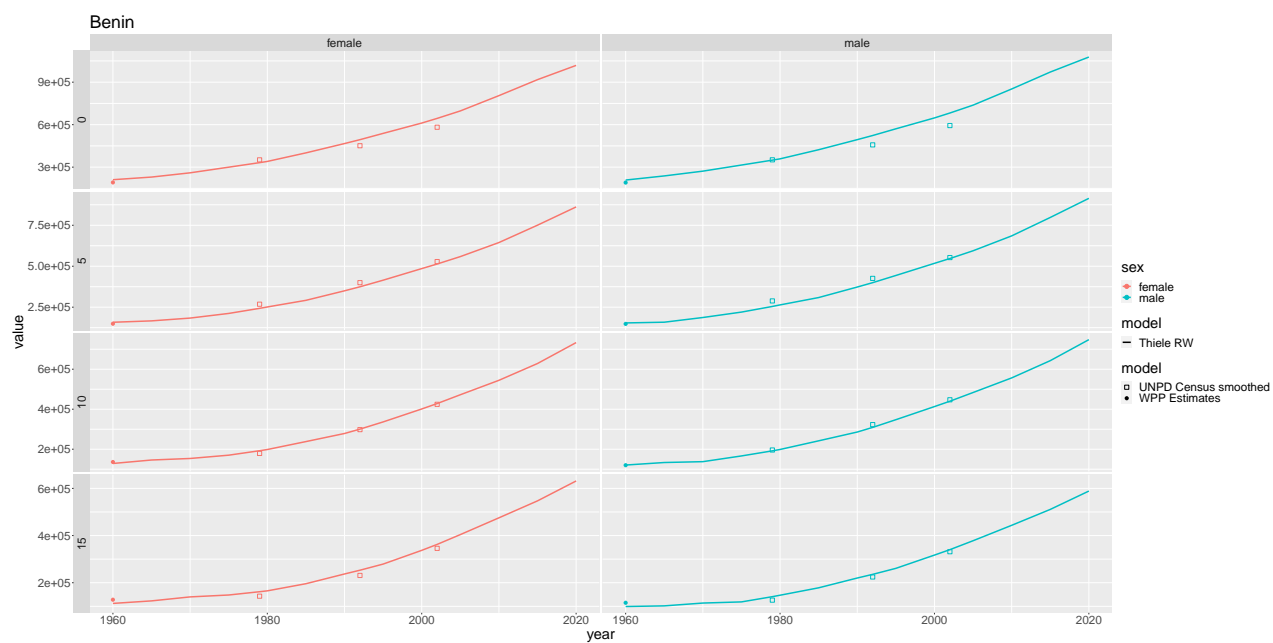


Figure 10: Population

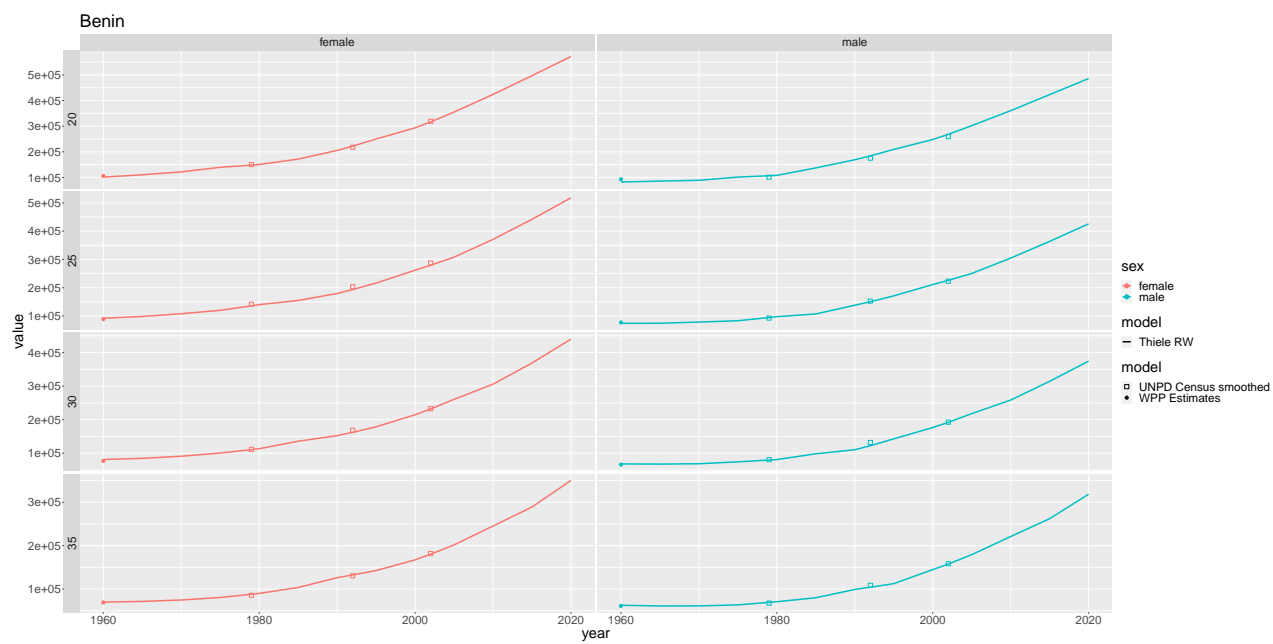


Figure 11: Population

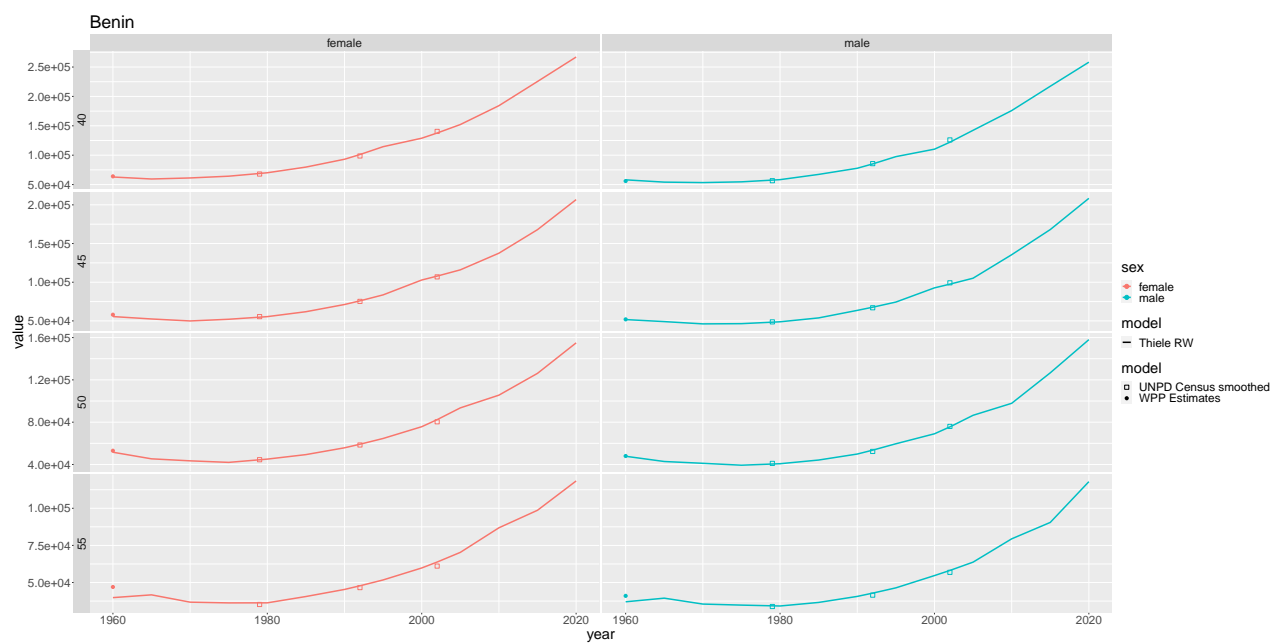


Figure 12: Population

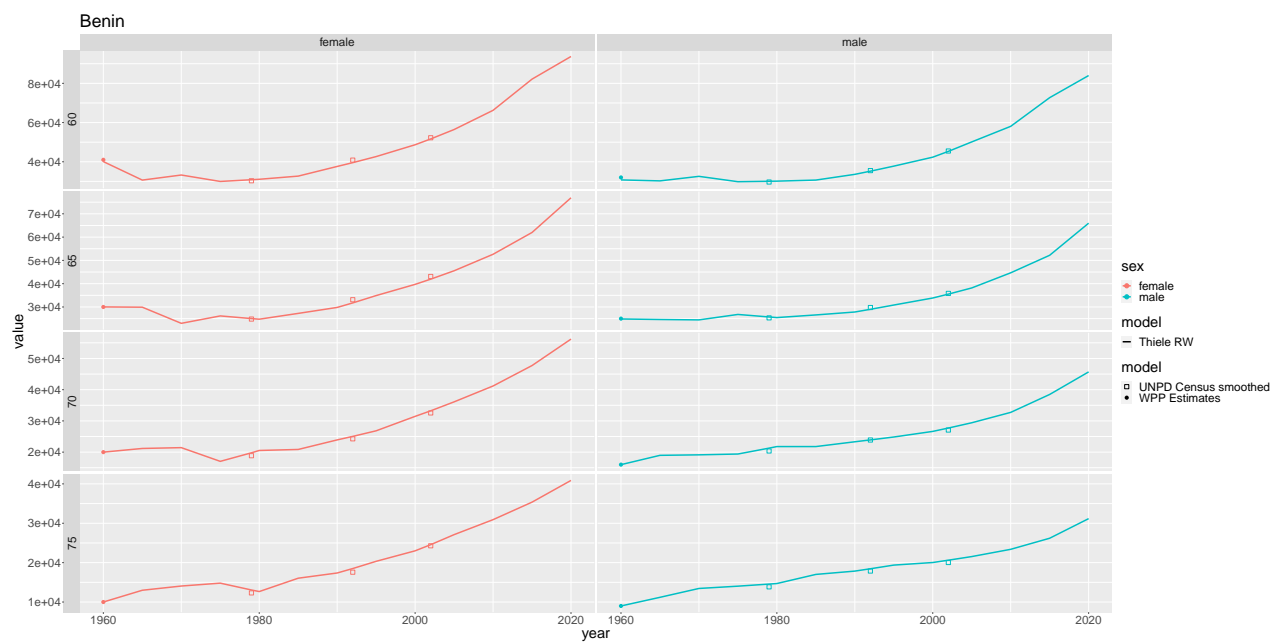


Figure 13: Population

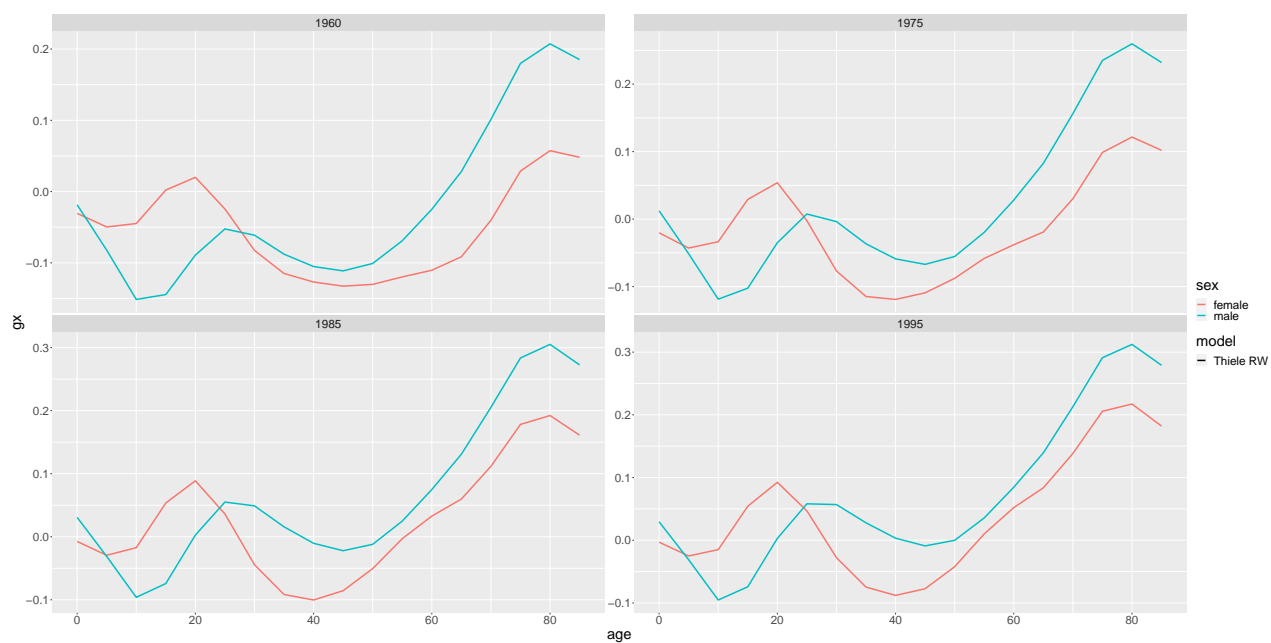


Figure 14: Migration

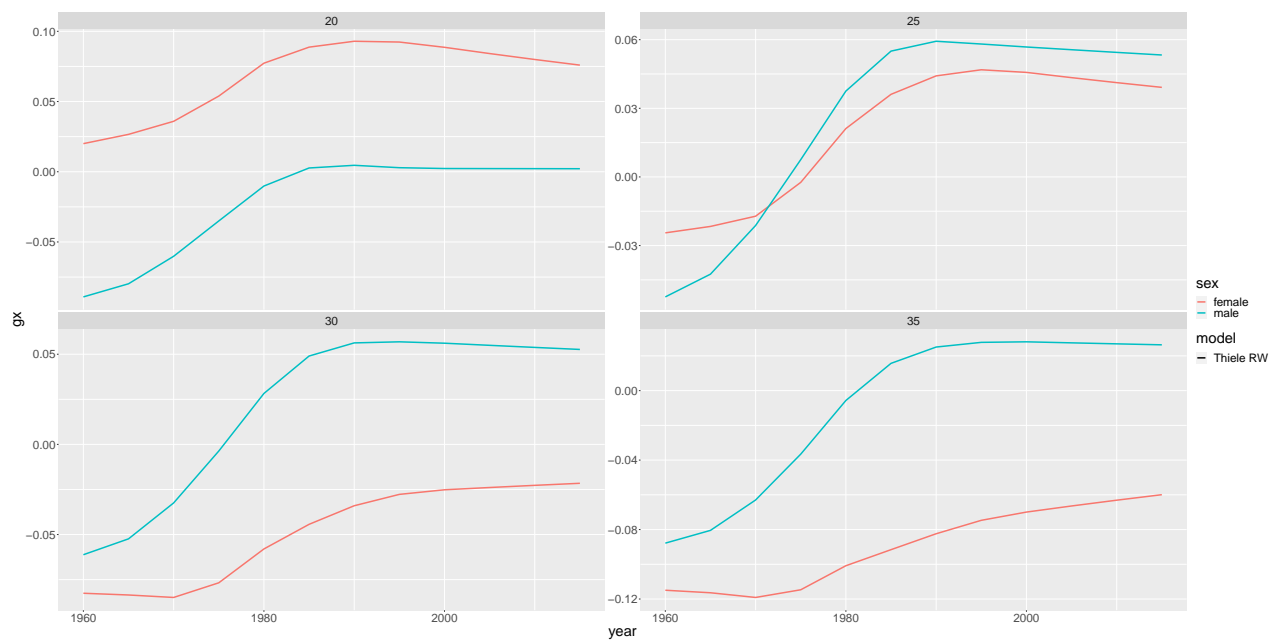


Figure 15: Migration

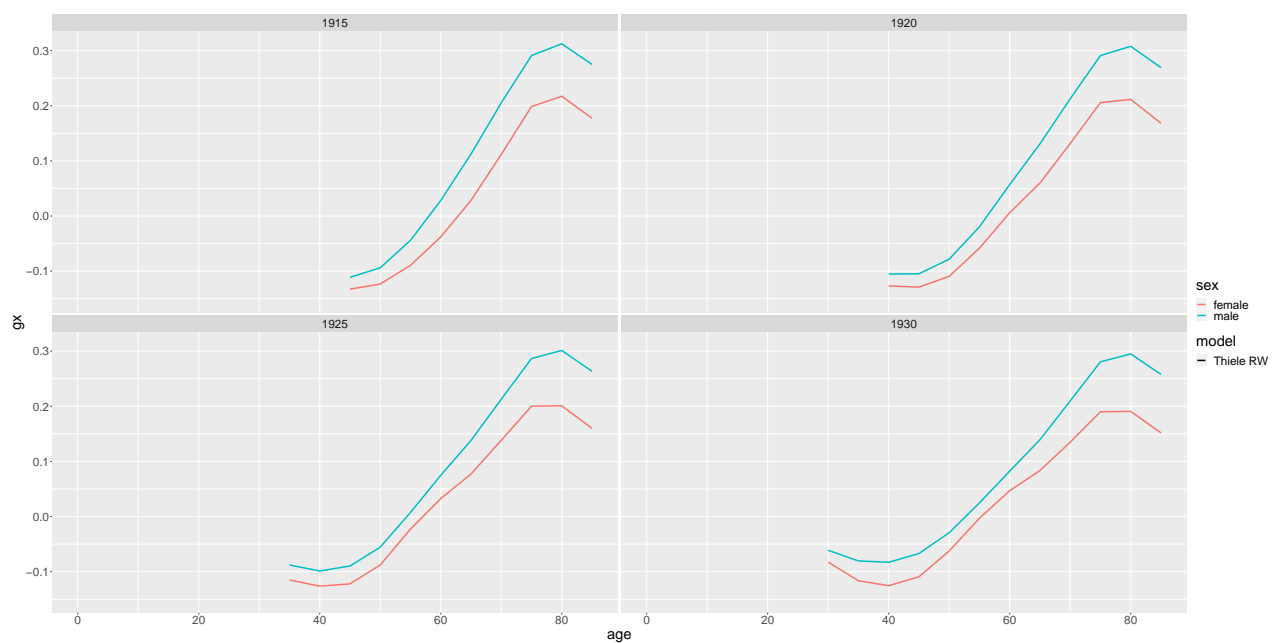


Figure 16: Migration

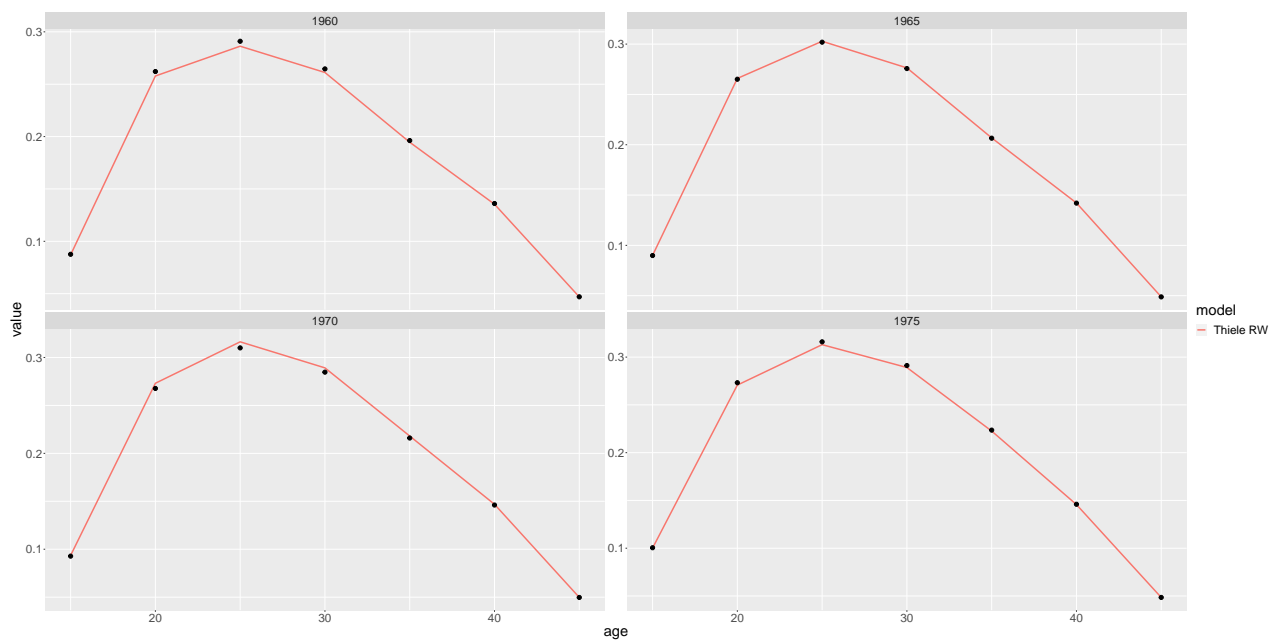


Figure 17: Fertility

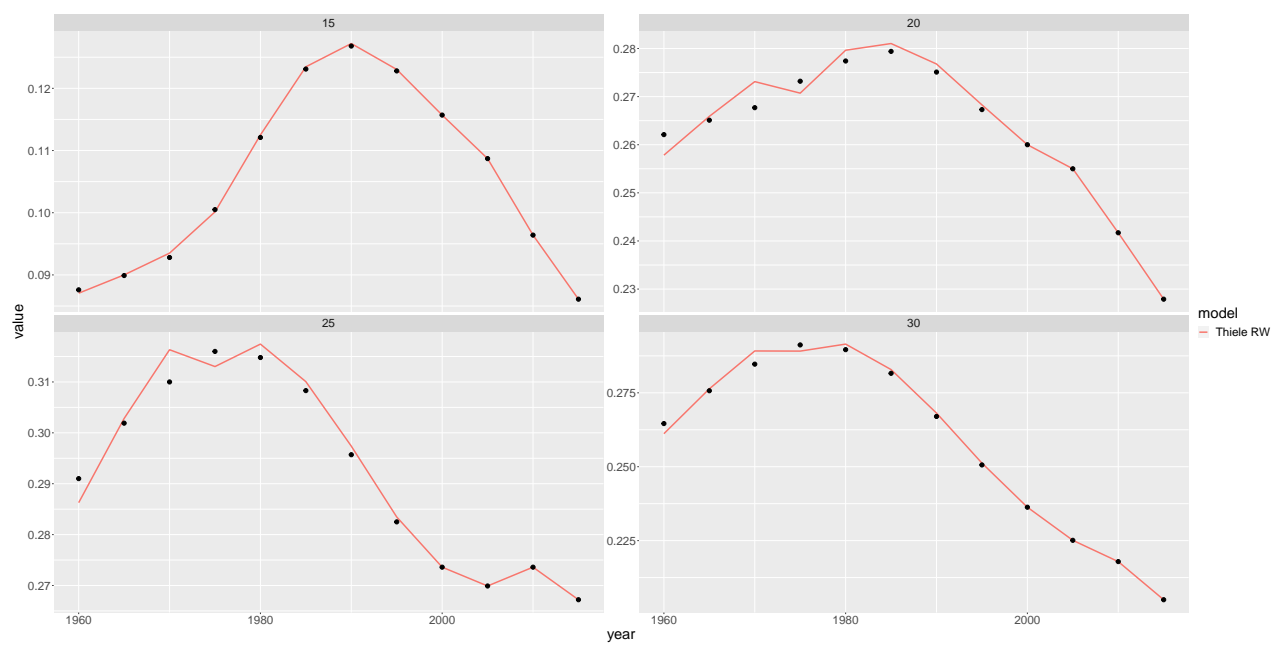


Figure 18: Fertility