

Nigeria

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

```
## # A tibble: 18 x 4
```

```
##   aggr.age  `1963`  `1991`  `2006`
## *    <dbl>    <dbl>    <dbl>    <dbl>
## 1      0 4839245. 6999435 11025750.
## 2      5 4078378. 6646966. 9472730.
## 3     10 3453745. 5651352. 8060730.
## 4     15 3180736. 4826841 7388734.
## 5     20 2982973. 4382111. 7108729.
## 6     25 2723035. 3869107. 6378455.
## 7     30 2188102. 3056352. 5068074.
## 8     35 1544791. 2248946. 3841144.
## 9     40 1024925. 1704664 2955588.
## 10    45 695895. 1294884. 2251449.
## 11    50 481549. 976756 1669202.
## 12    55 339385. 734128. 1181326.
## 13    60 242265. 605485 893306.
## 14    65 174753. 475122. 674225.
## 15    70 125814. 325500 476063.
## 16    75 48624. 232370. 355207.
## 17    80 84728. 222627 351373.
## 18    85 99379. 194404 311204.
```

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

```
## # A tibble: 18 x 4
```

```
##   aggr.age  `1963`  `1991`  `2006`
## *    <dbl>    <dbl>    <dbl>    <dbl>
## 1      0 4709918 7344454 11569219.
## 2      5 4360920 6976405 10212690.
## 3     10 3512201 5882028. 8733445.
## 4     15 3098374 4546071. 7453733.
## 5     20 2736107. 3615516. 6386522.
## 6     25 2448012. 3183102. 5452913.
## 7     30 2072221. 2782217 4551491.
## 8     35 1601086. 2298392 3805735.
## 9     40 1182046. 1876092. 3253409.
## 10    45 870618. 1517512. 2720620.
## 11    50 630049. 1192739 2119792.
## 12    55 457276. 891118. 1526674.
## 13    60 329680. 710629. 1136161.
## 14    65 242164. 550994. 846520.
## 15    70 174570 396592. 621957.
## 16    75 77214 285289. 457375.
## 17    80 106428 258059 408680.
## 18    85 147514 230585 404021.
```

Thiele log-Normal Hump RW

```
##   user system elapsed
## 23.16 0.37 23.63
```

```
## [1] "relative convergence (4)"
Thiele log-Normal Hump RW (Pop 5-9 to 70-74, DHS 15-19 to 45-49)
## Warning in fit_tmb(input.thiele.loghump.oag.vec.RW.re, inner_verbose = FALSE, : convergence error: fals
##      user  system elapsed
## 200.58    0.19   201.19
## [1] "false convergence (8)"
```

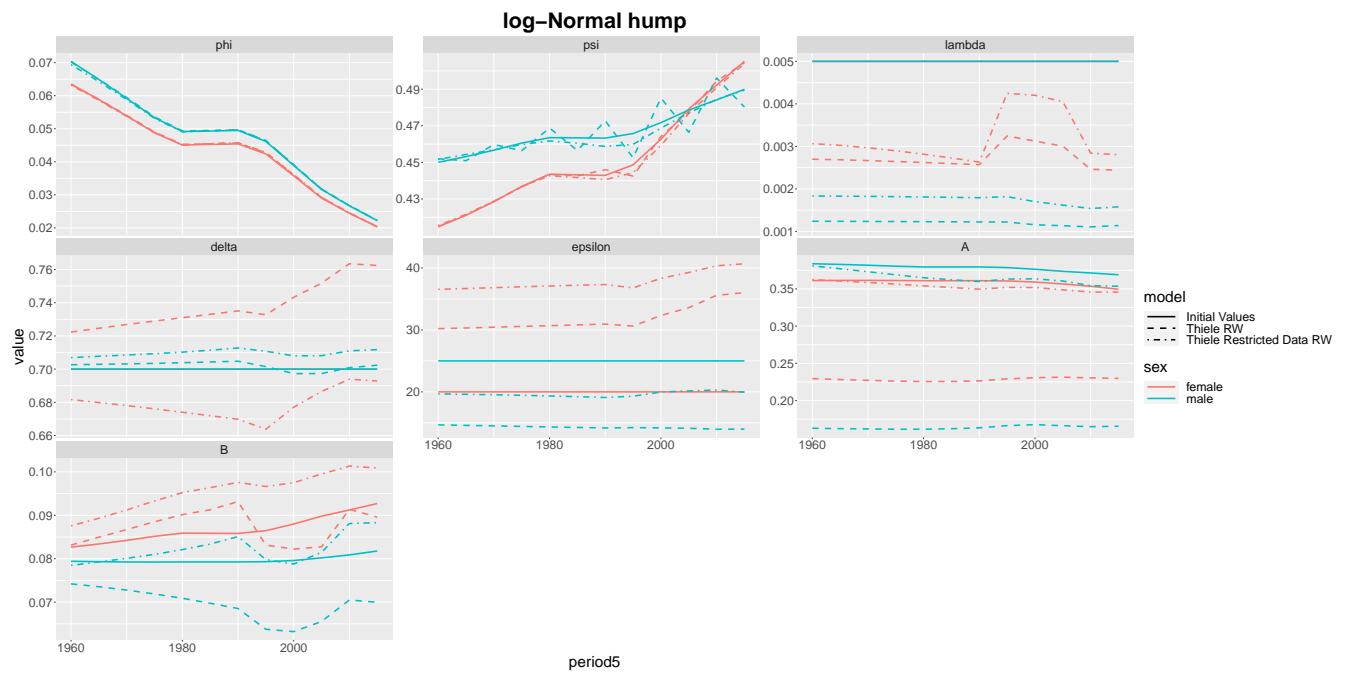


Figure 1: Estimated parameters

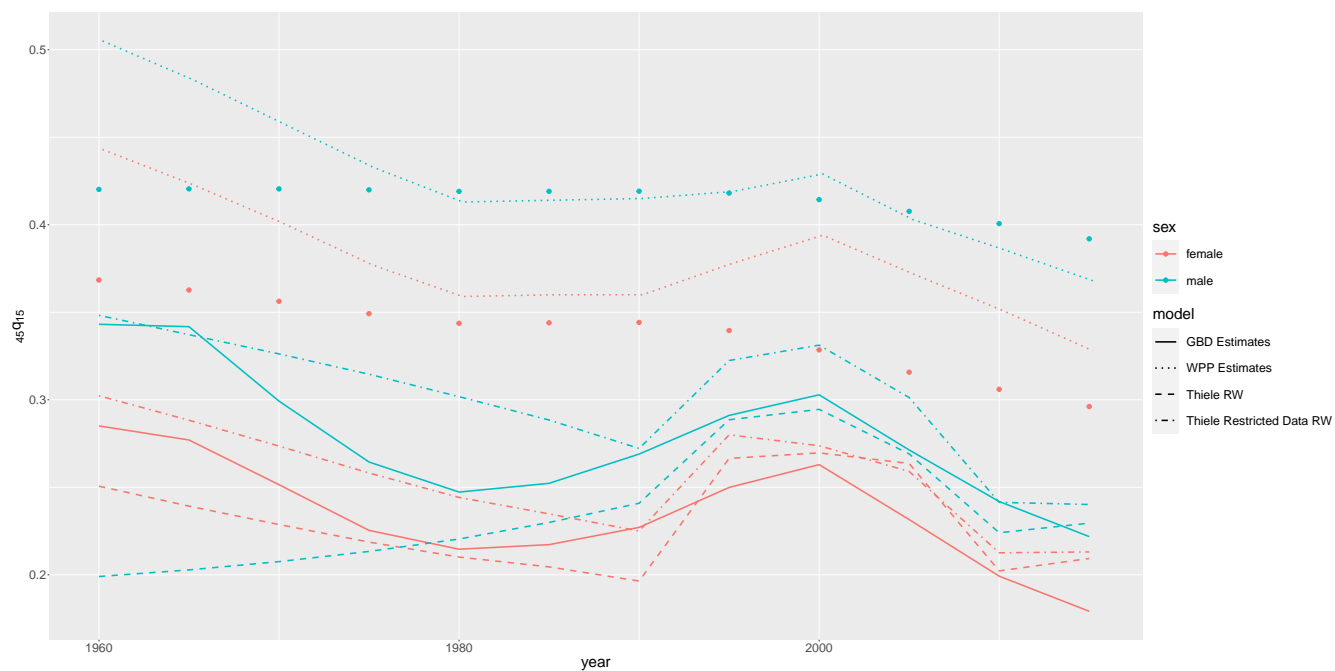


Figure 2: Estimated $_{45}q_{15}$

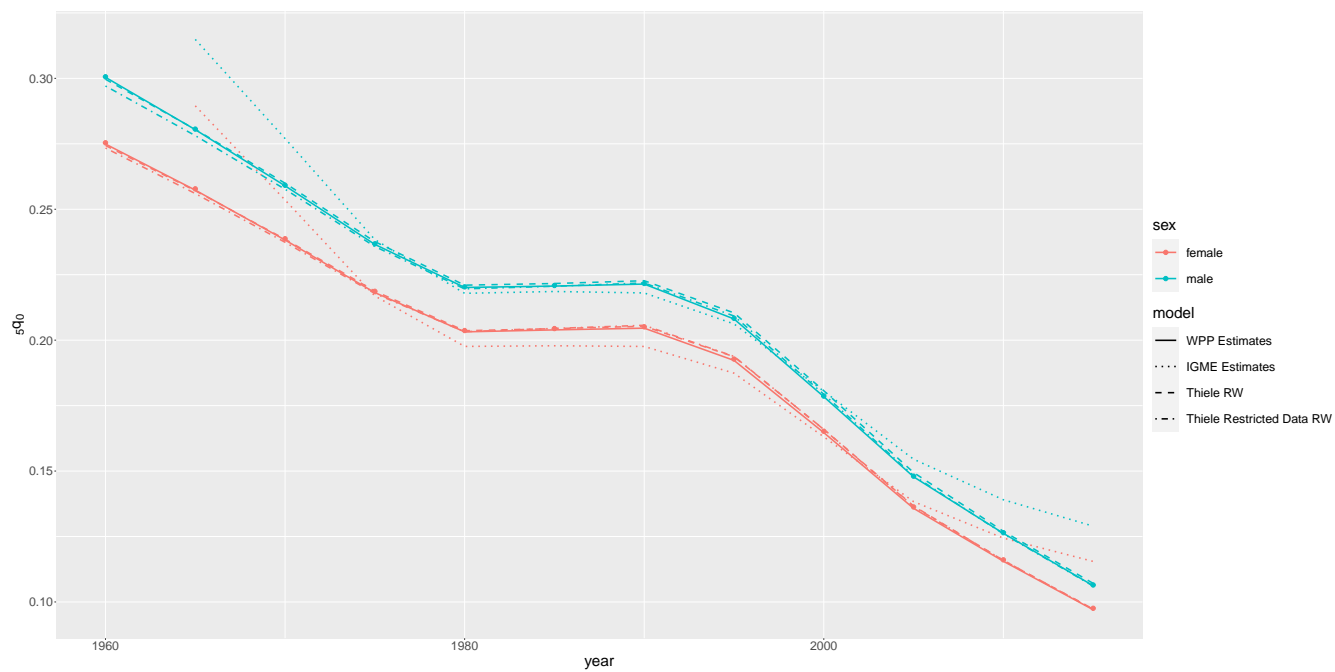


Figure 3: Estimated $_{5}q_0$

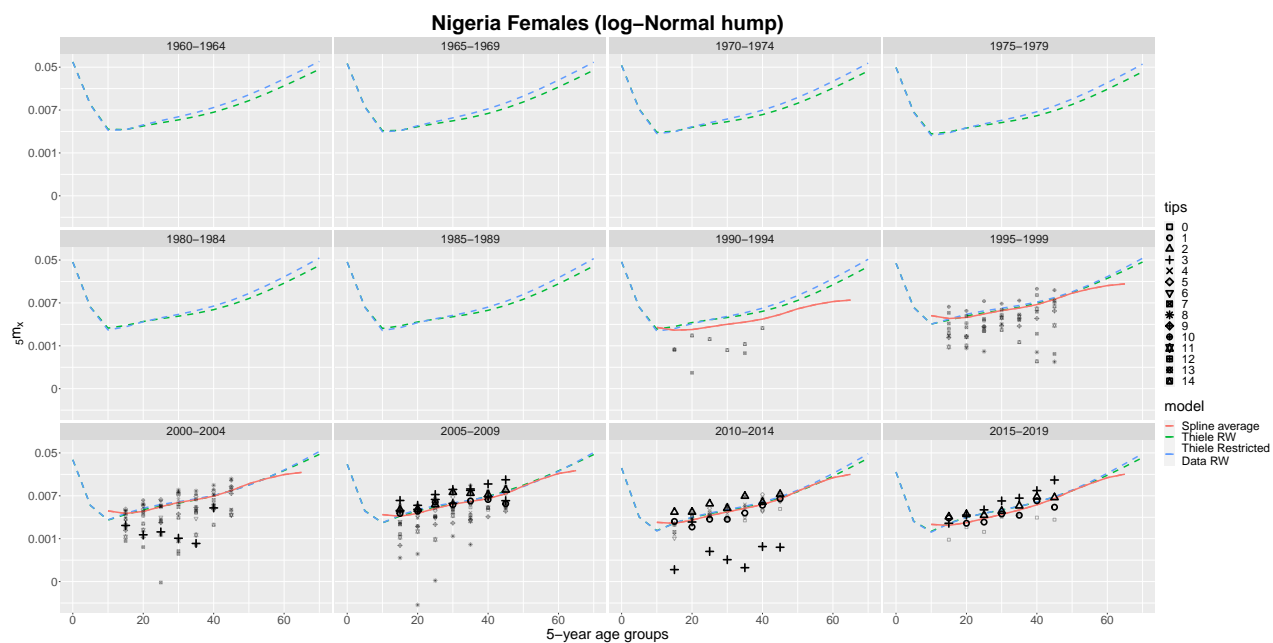


Figure 4: Mortality Schedules

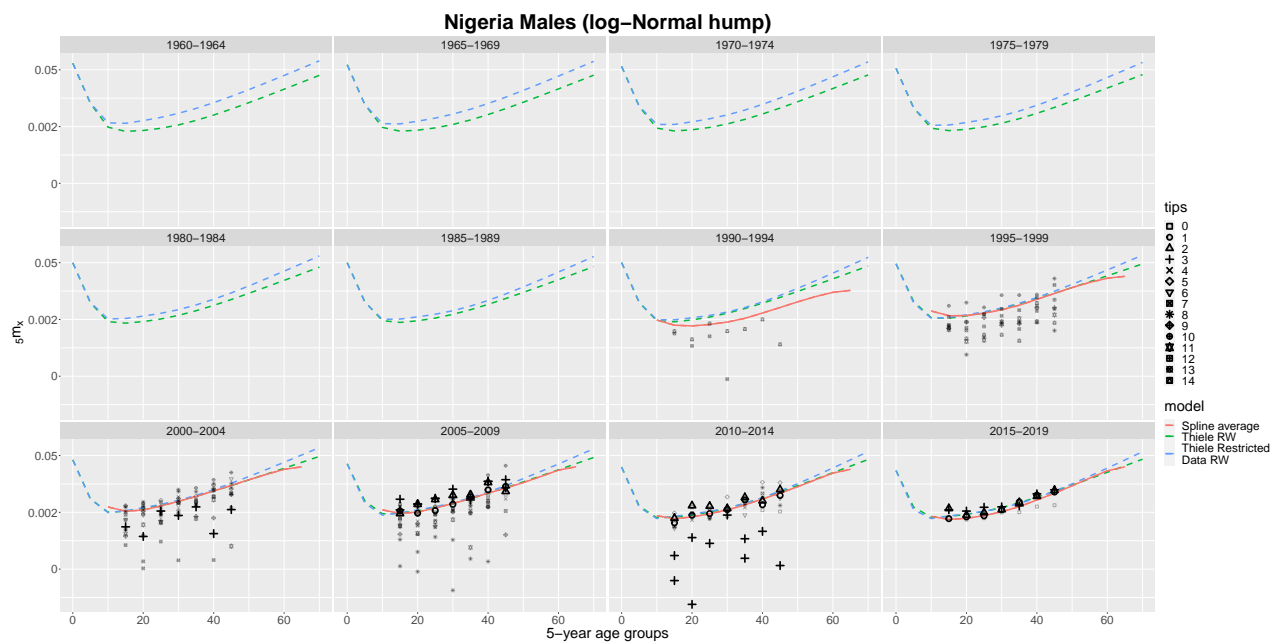


Figure 5: Mortality Schedules

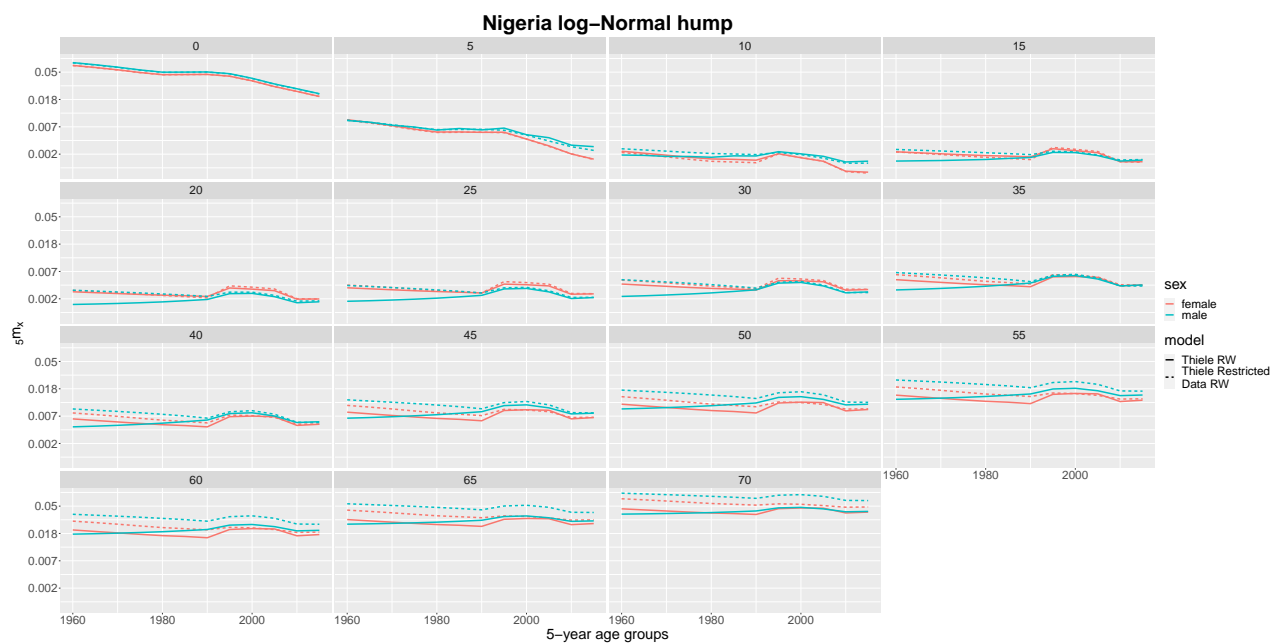


Figure 6: Mortality Schedules

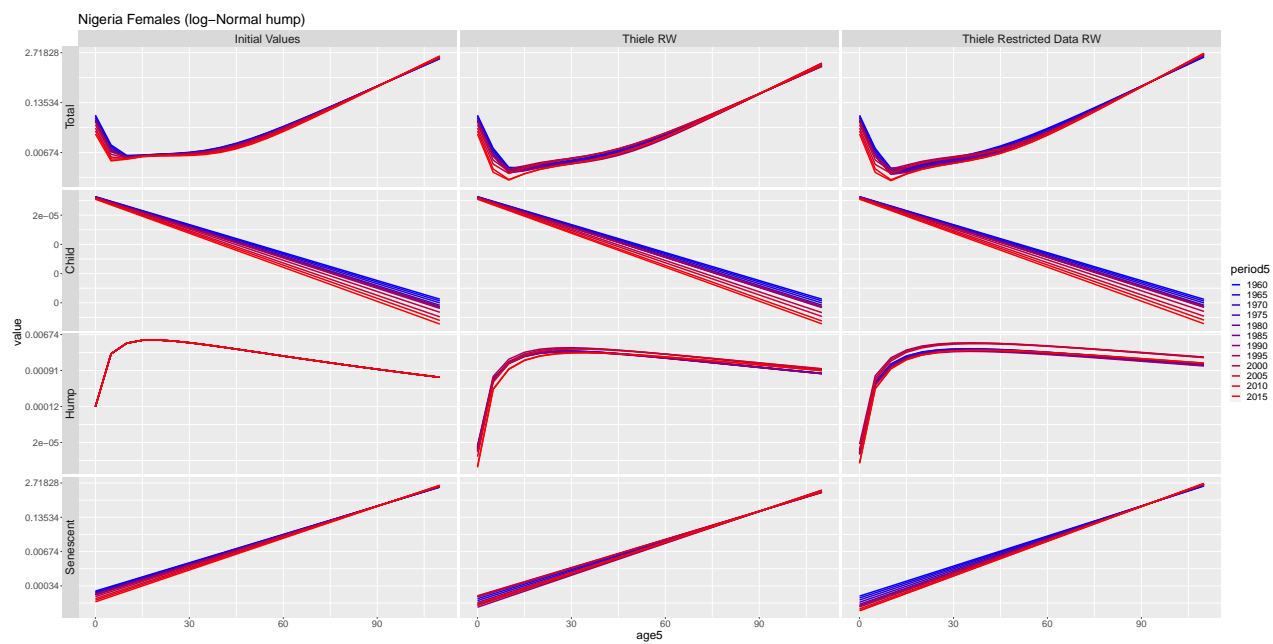


Figure 7: Thiele Decomposed

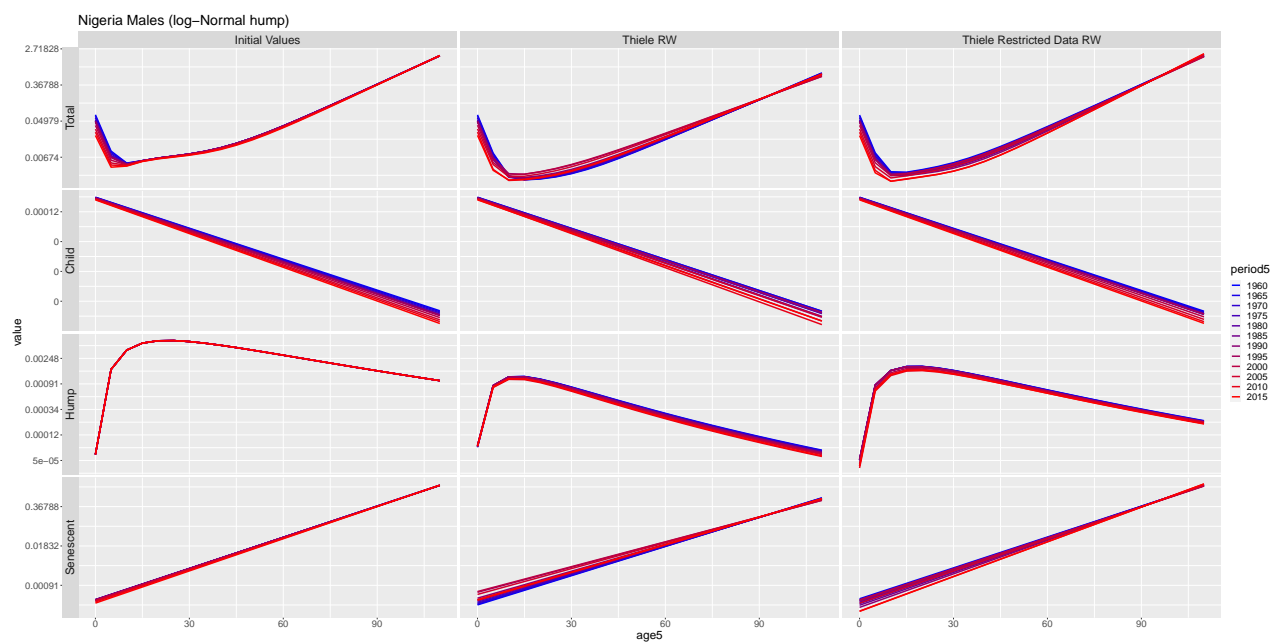


Figure 8: Thiele Decomposed

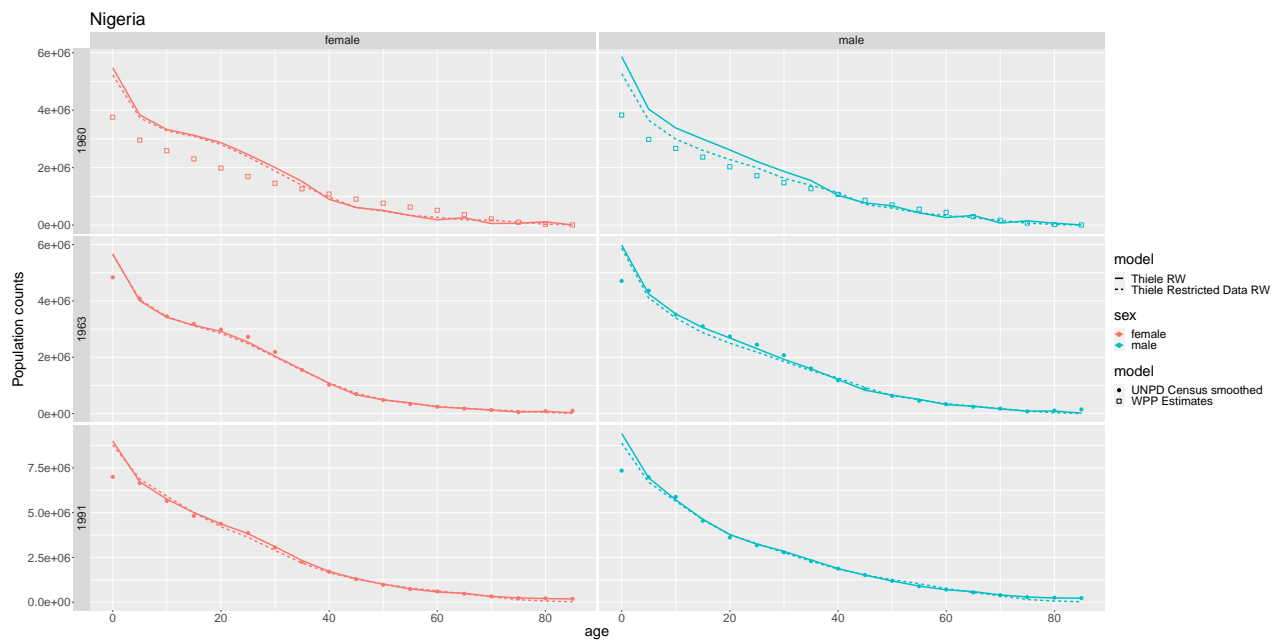


Figure 9: Population

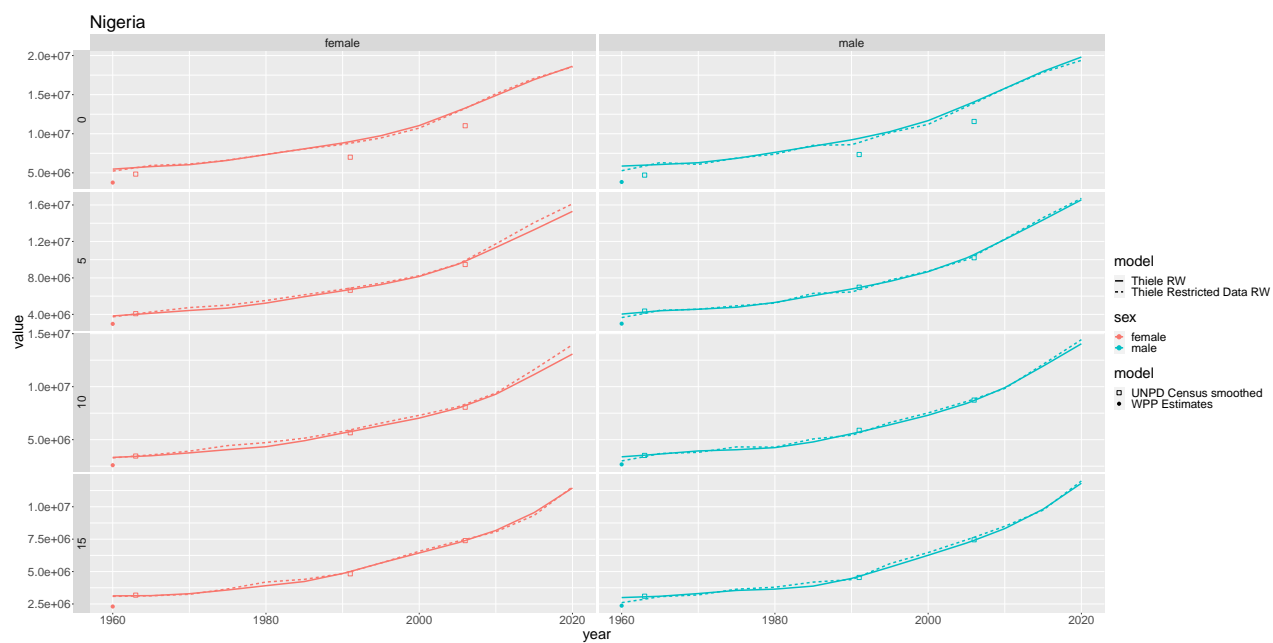


Figure 10: Population

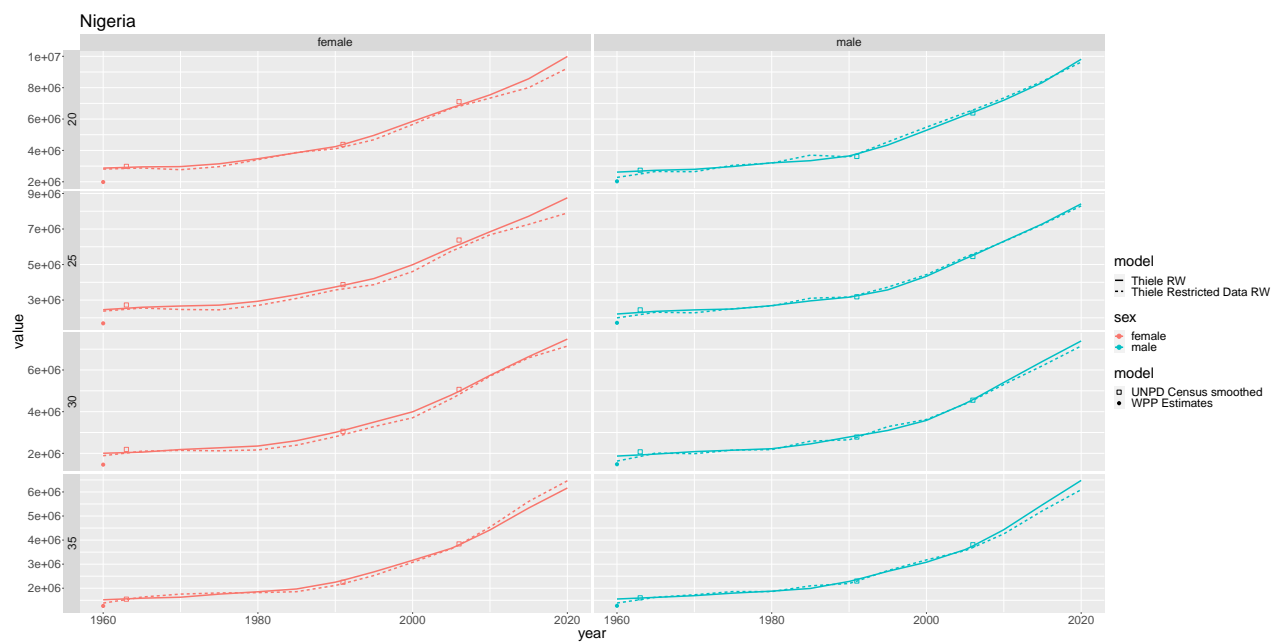


Figure 11: Population

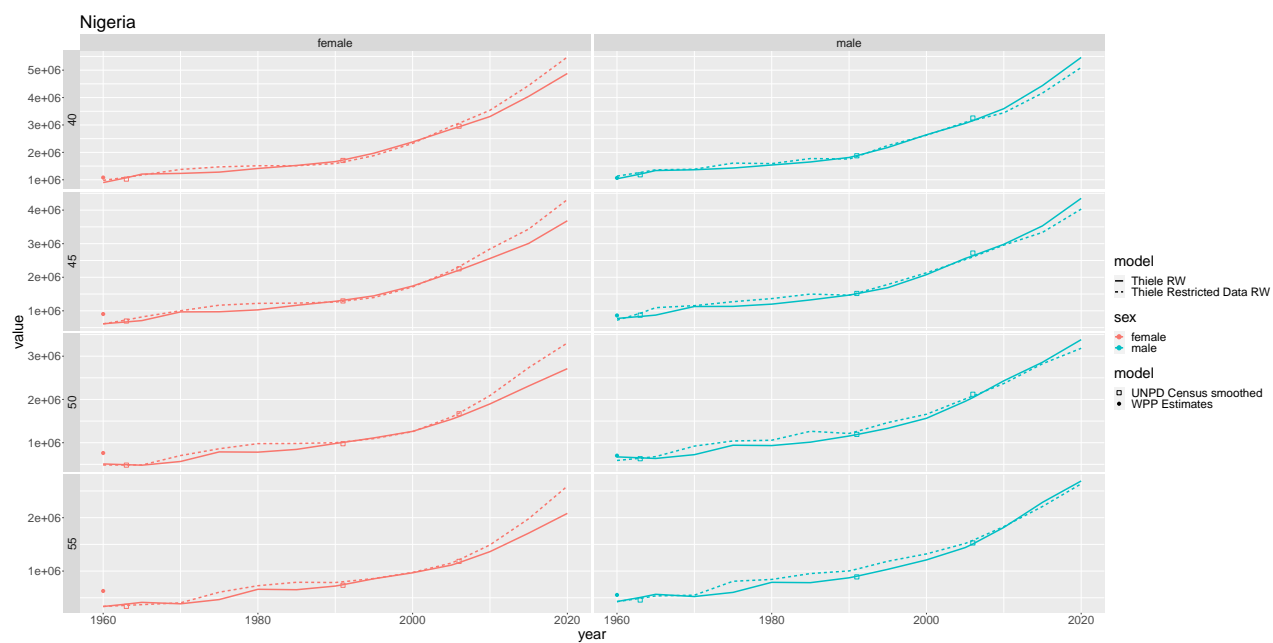


Figure 12: Population

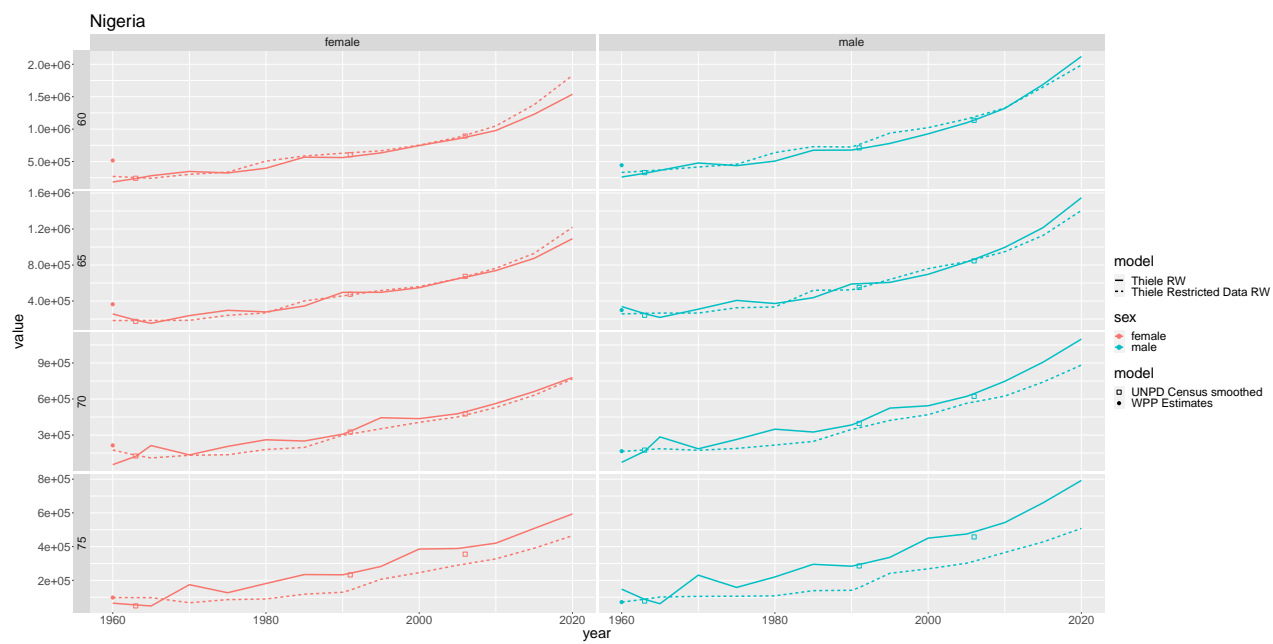


Figure 13: Population

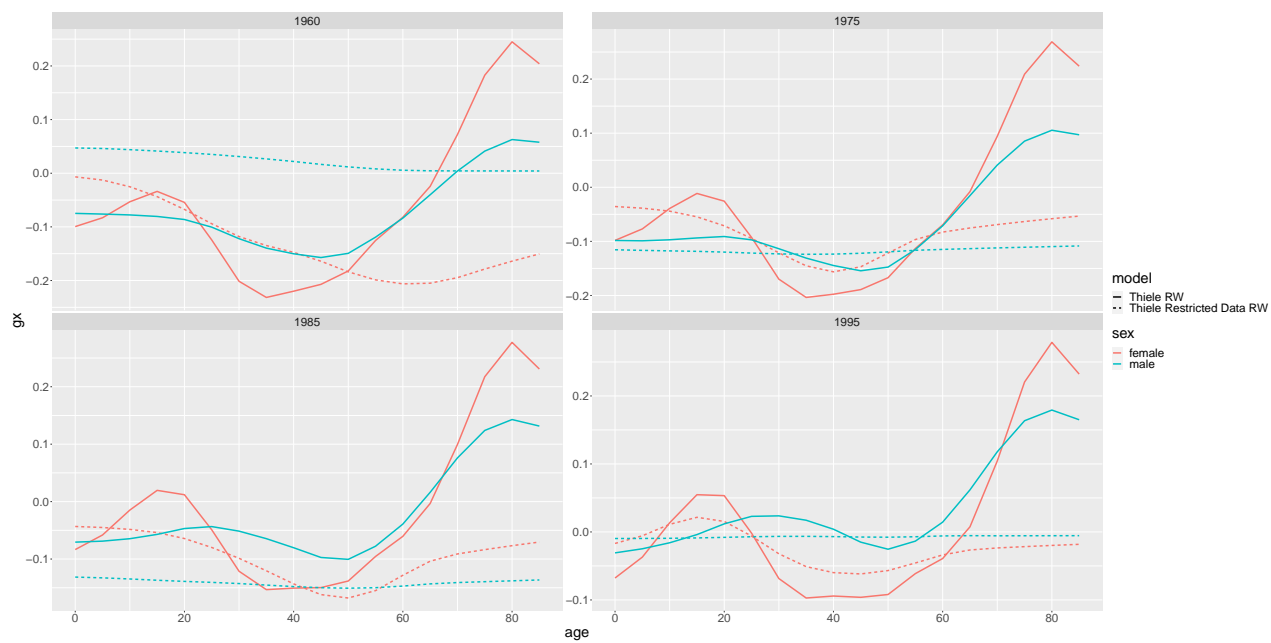


Figure 14: Migration

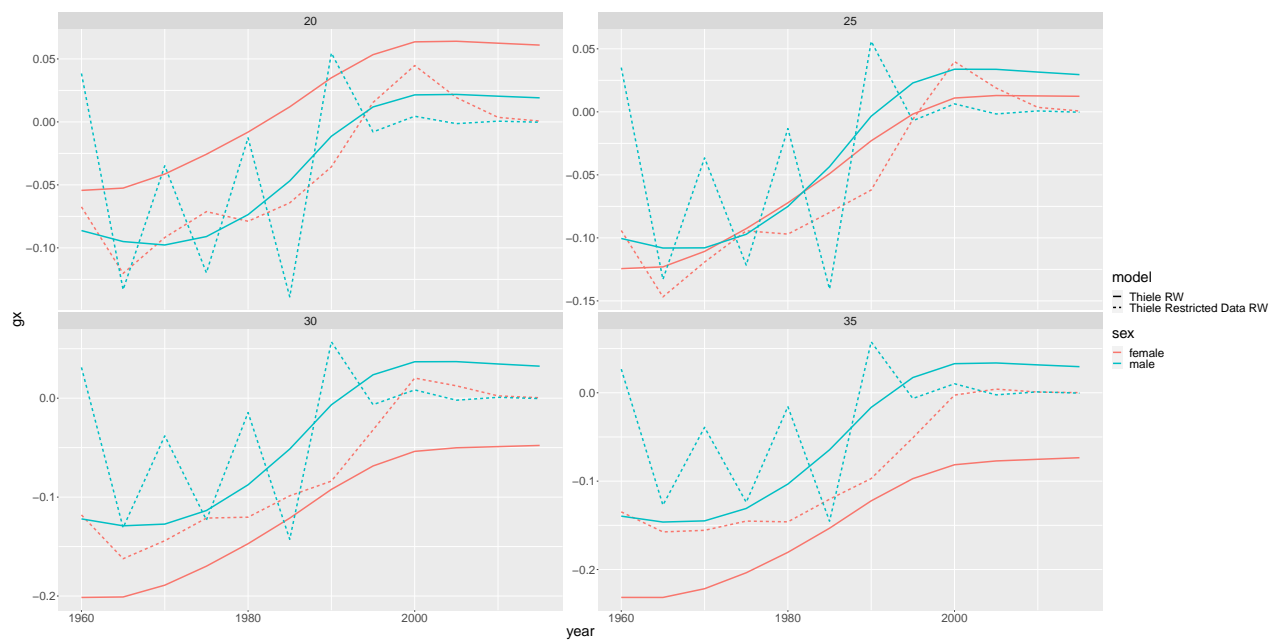


Figure 15: Migration

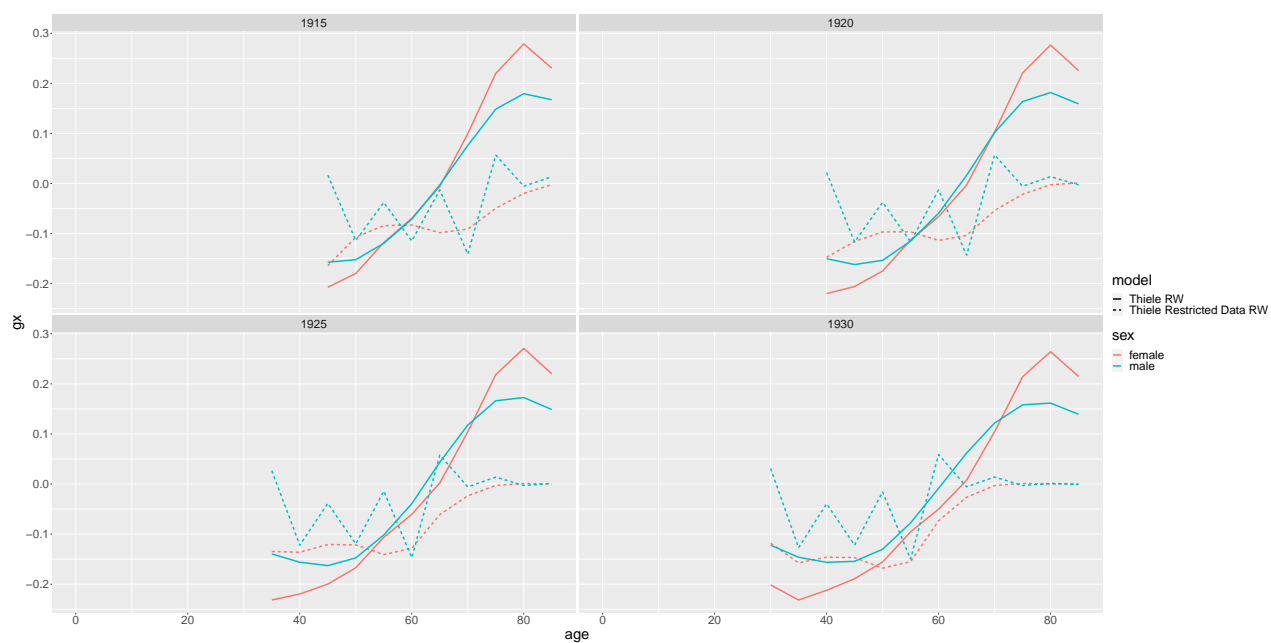


Figure 16: Migration

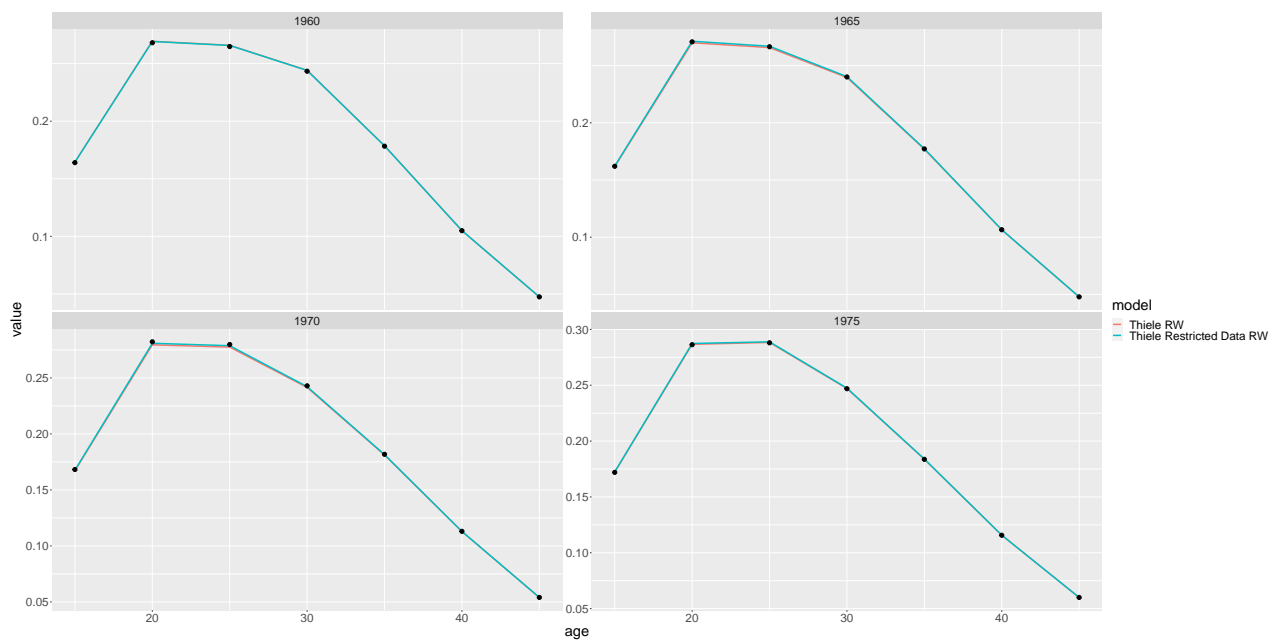


Figure 17: Fertility

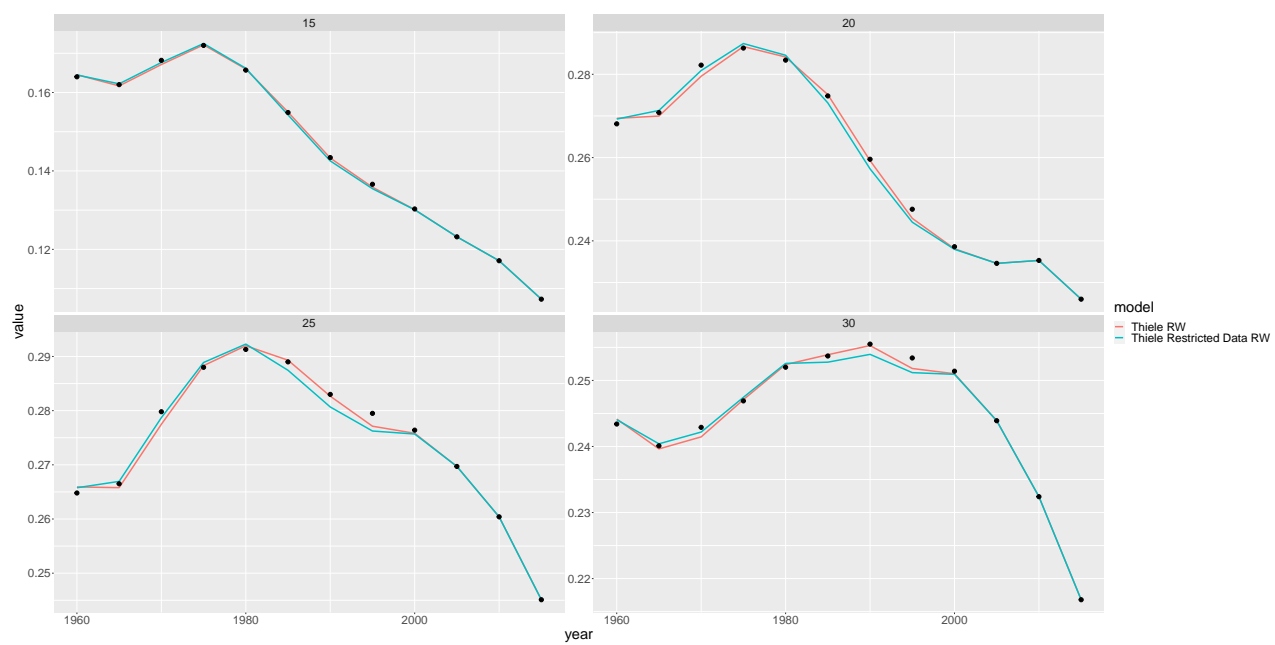


Figure 18: Fertility