

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
## 20.78   0.21   21.00
```

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

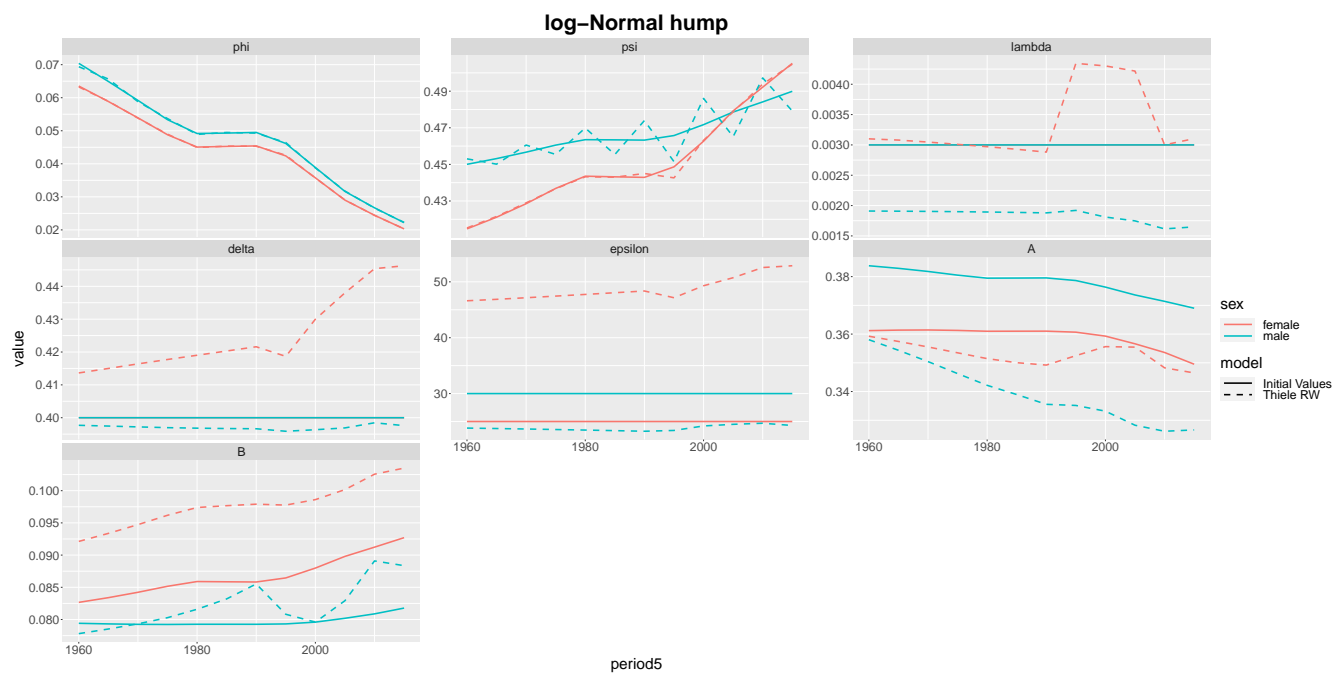


Figure 1: Estimated parameters

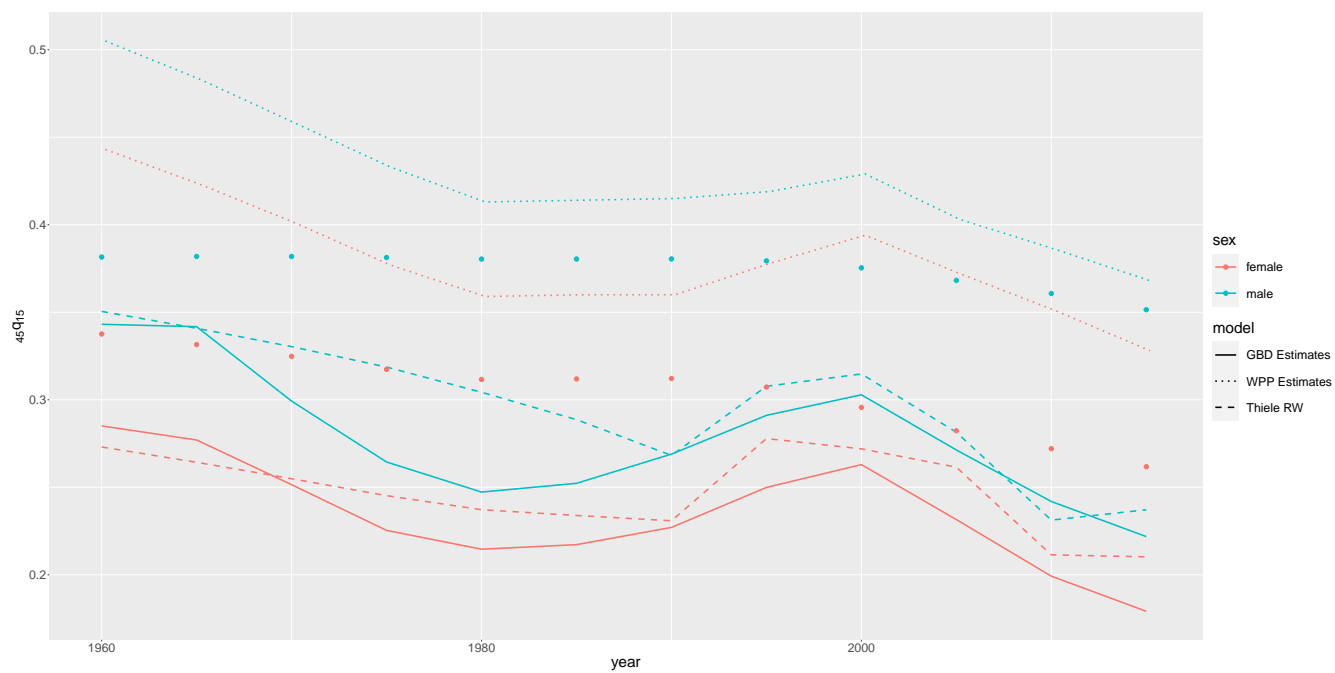


Figure 2: Estimated $45q_{15}$

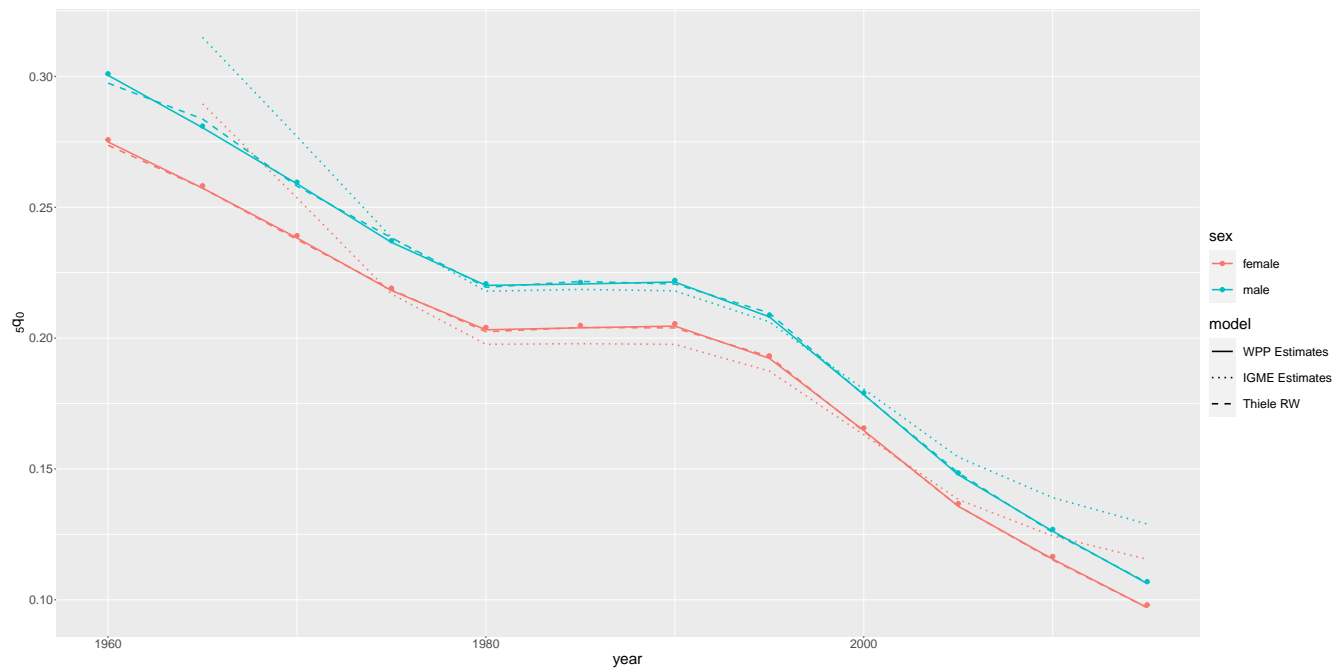


Figure 3: Estimated $5q_0$

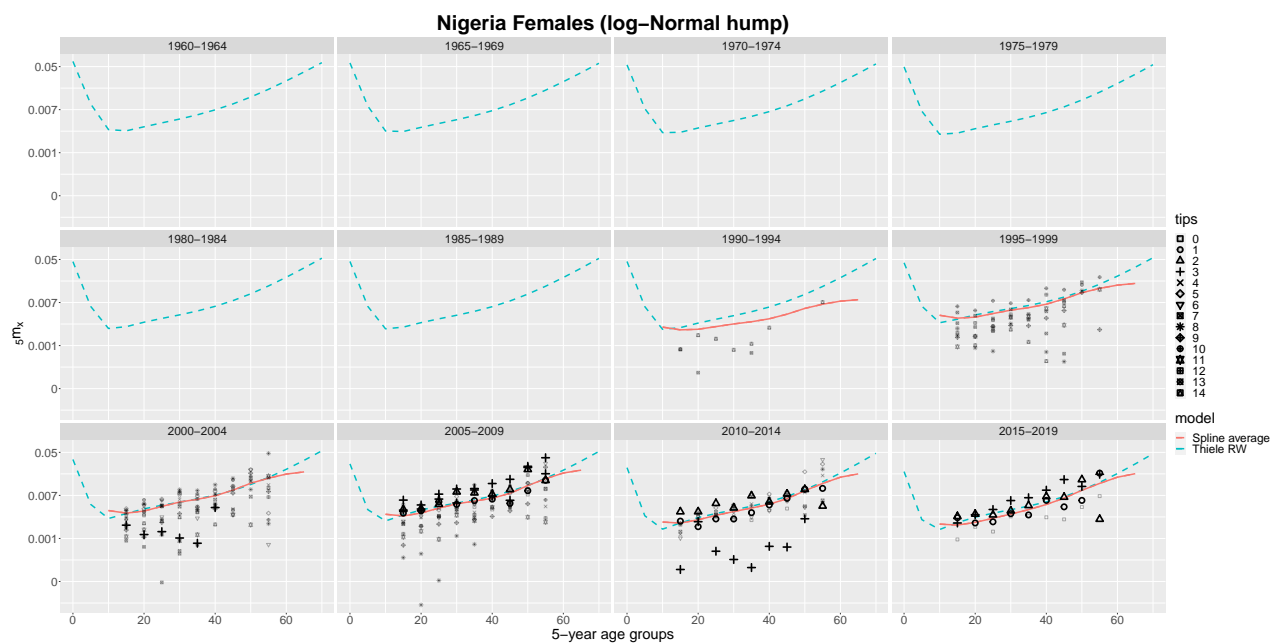


Figure 4: Mortality Schedules

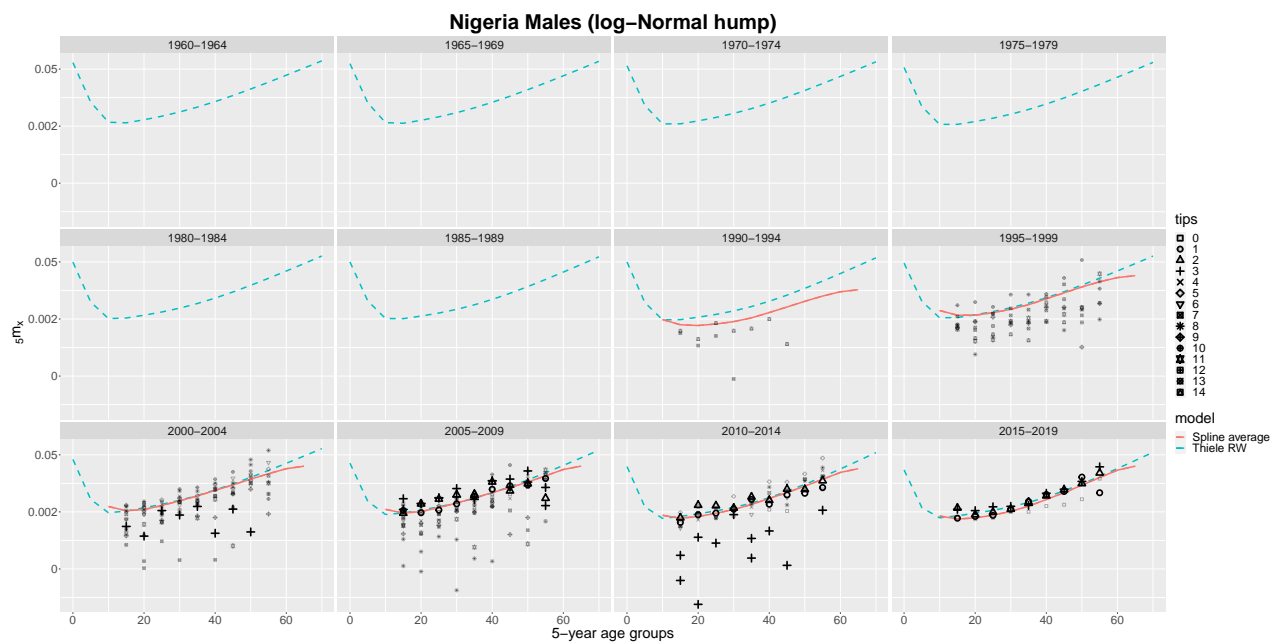


Figure 5: Mortality Schedules

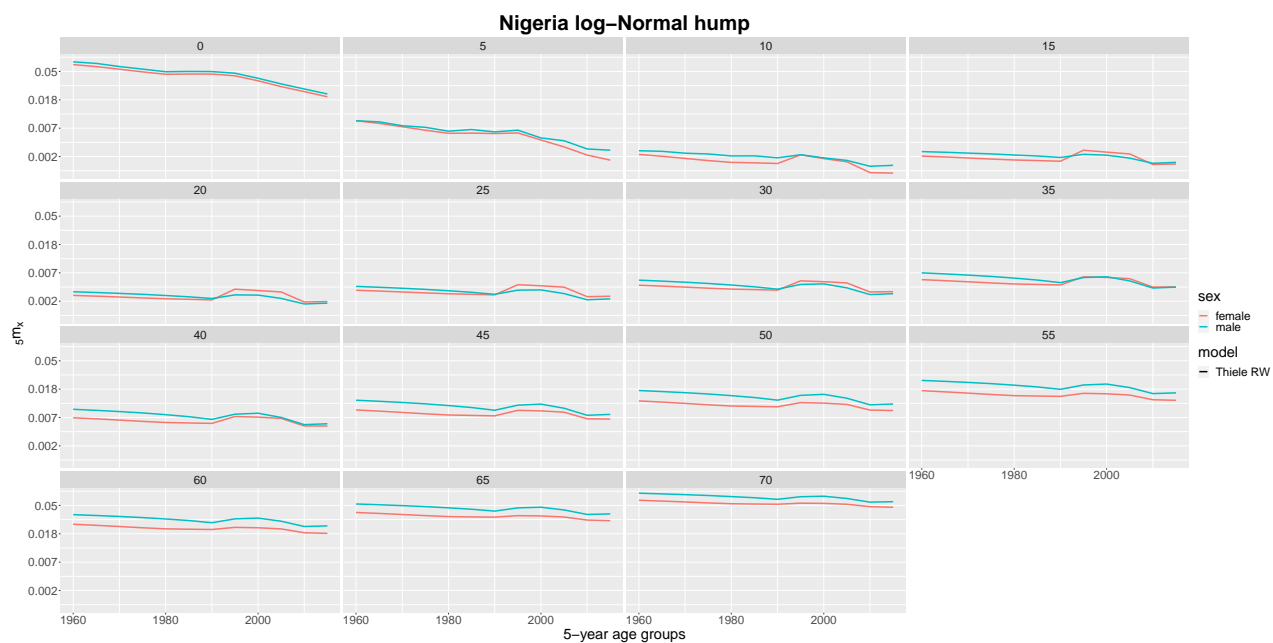


Figure 6: Mortality Schedules

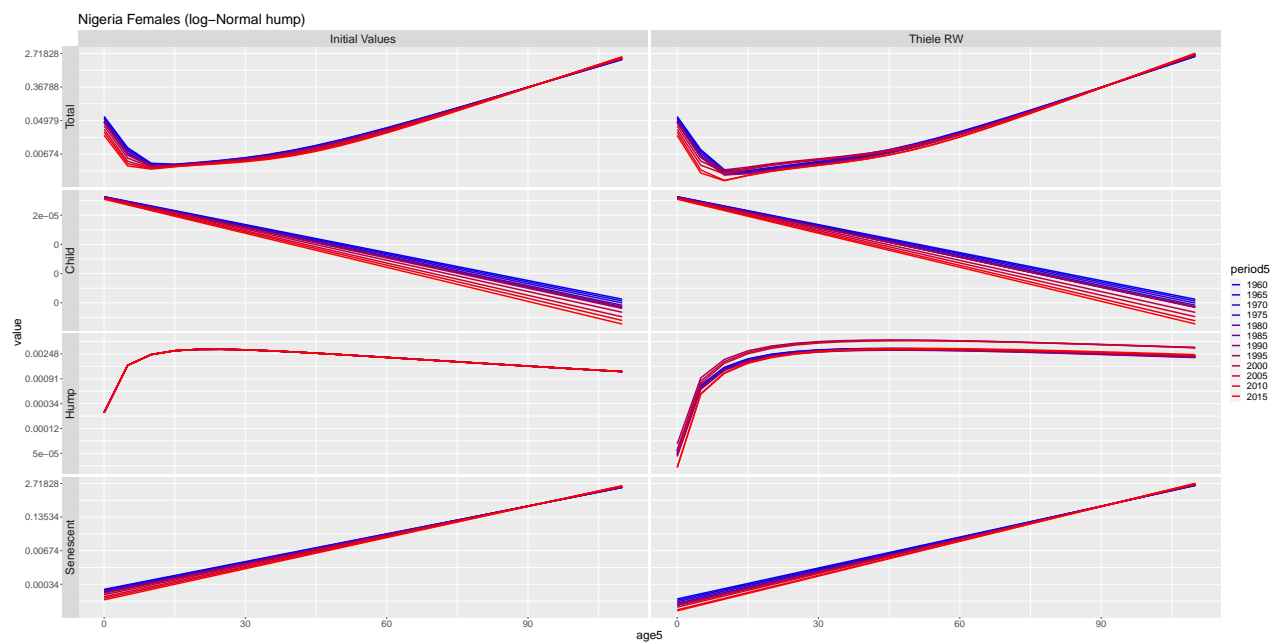


Figure 7: Thiele Decomposed

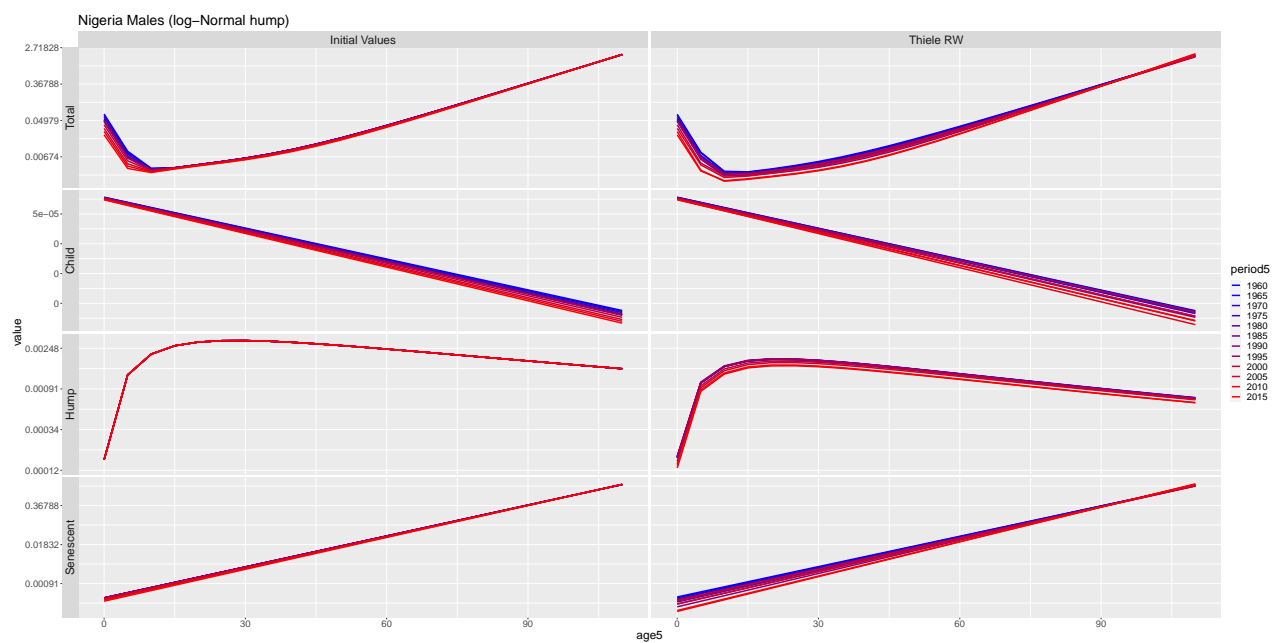


Figure 8: Thiele Decomposed

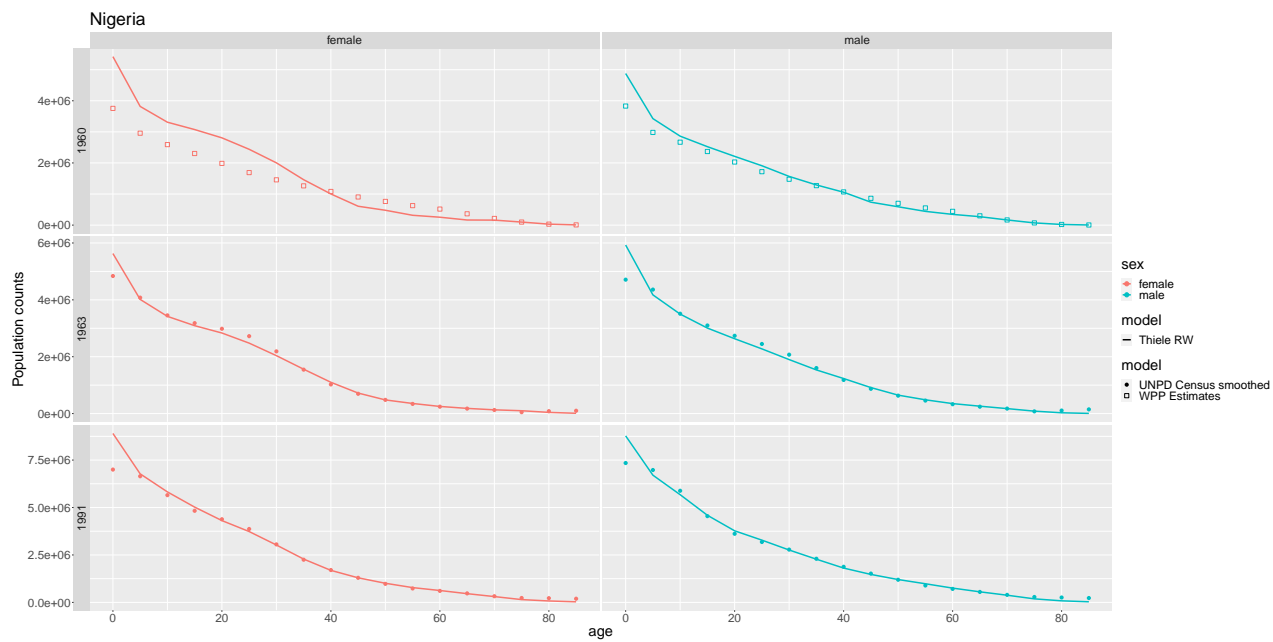


Figure 9: Population

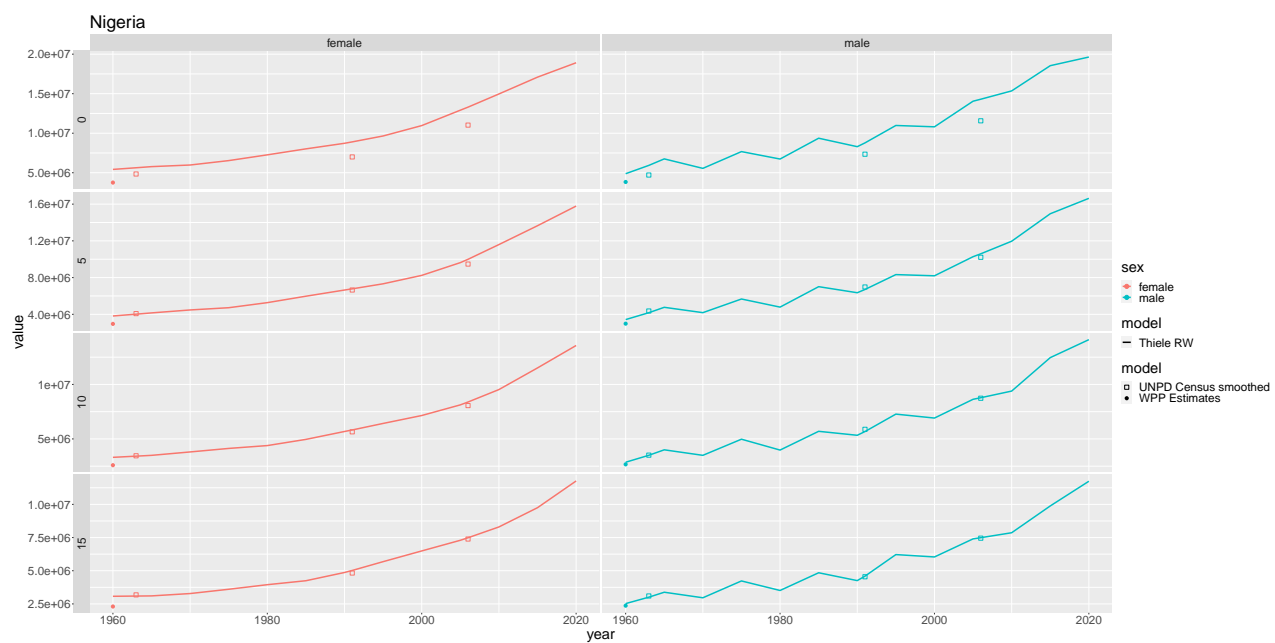


Figure 10: Population

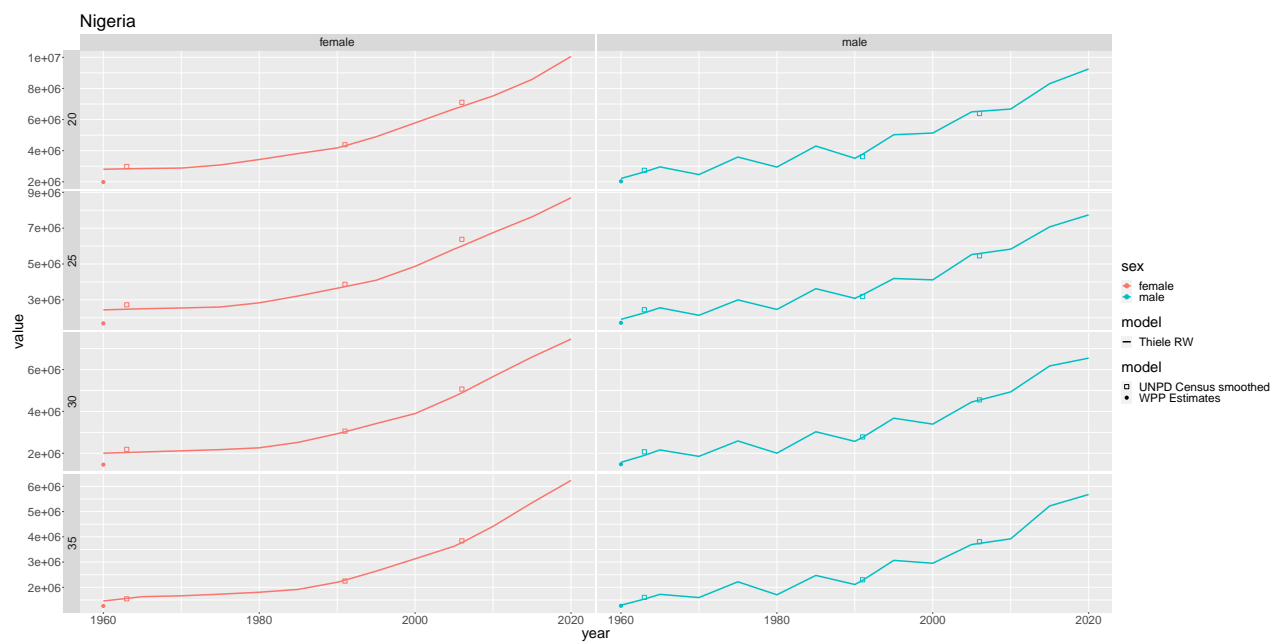


Figure 11: Population

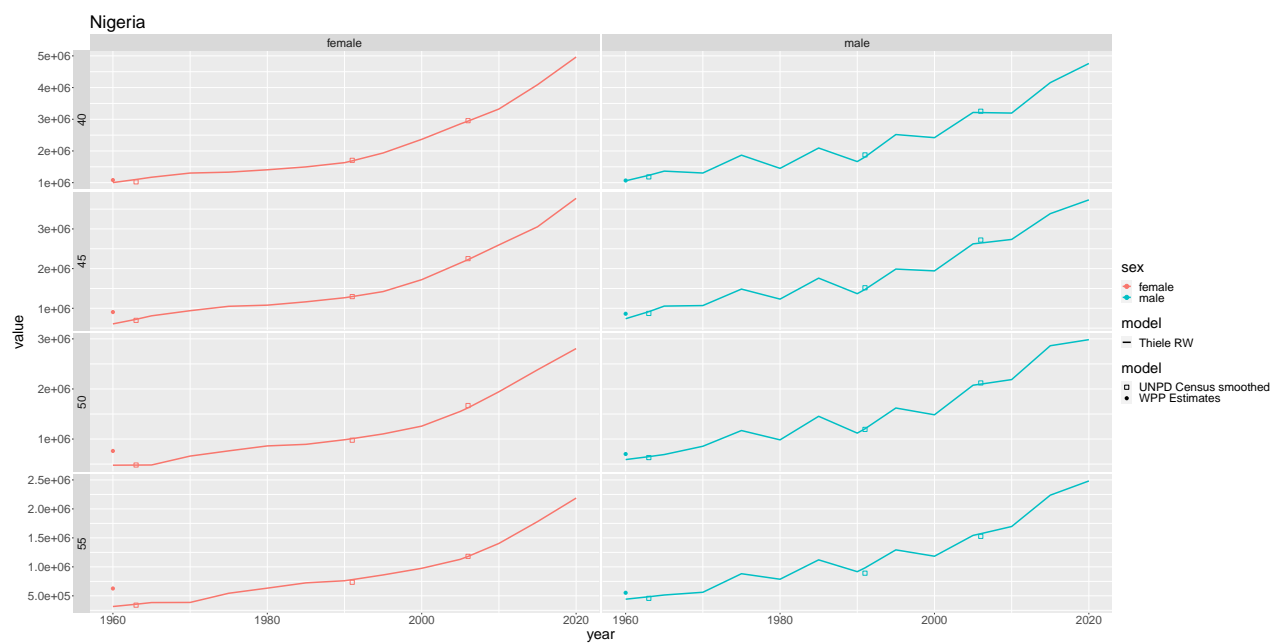


Figure 12: Population

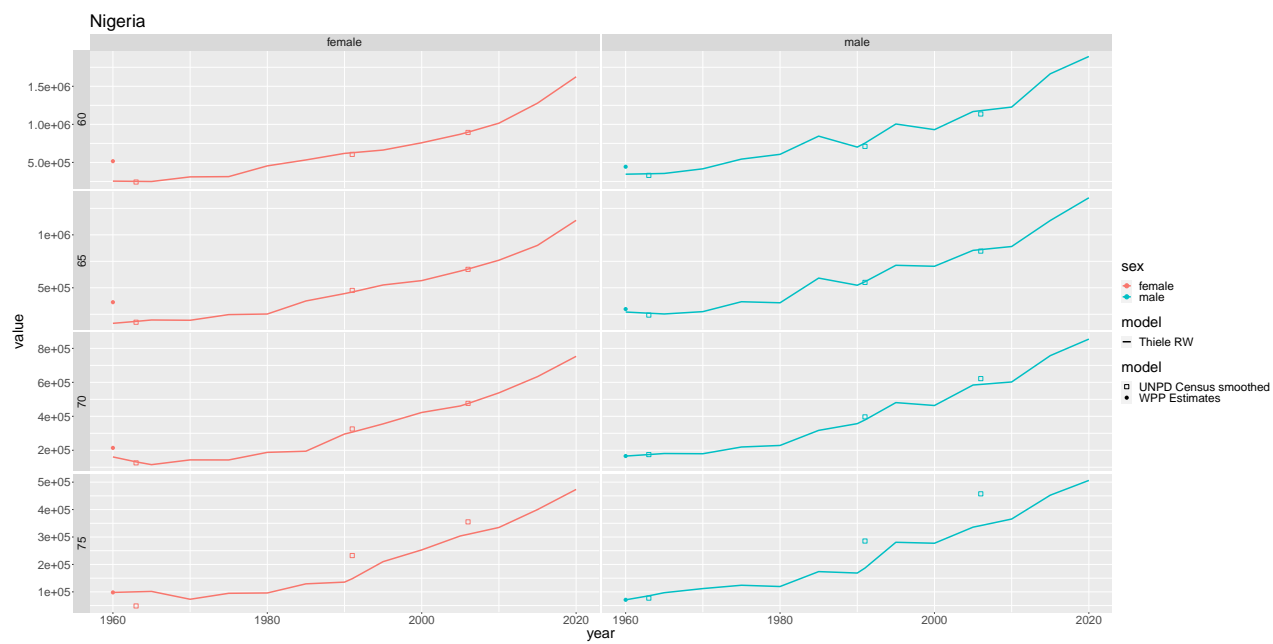


Figure 13: Population

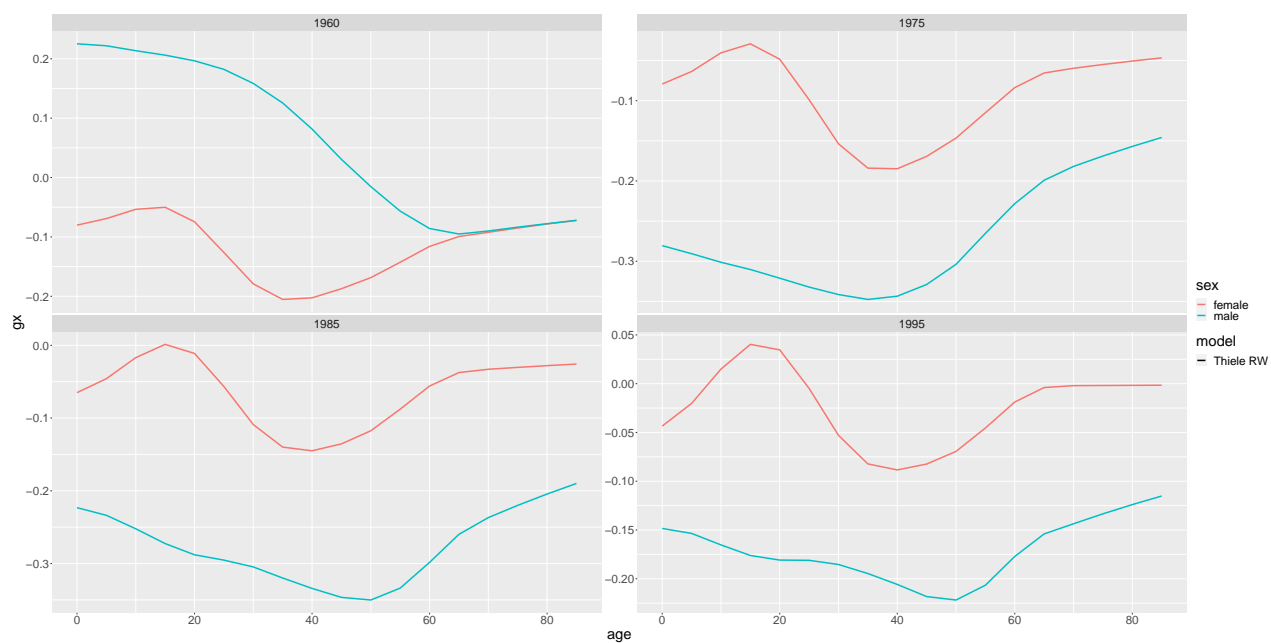


Figure 14: Migration

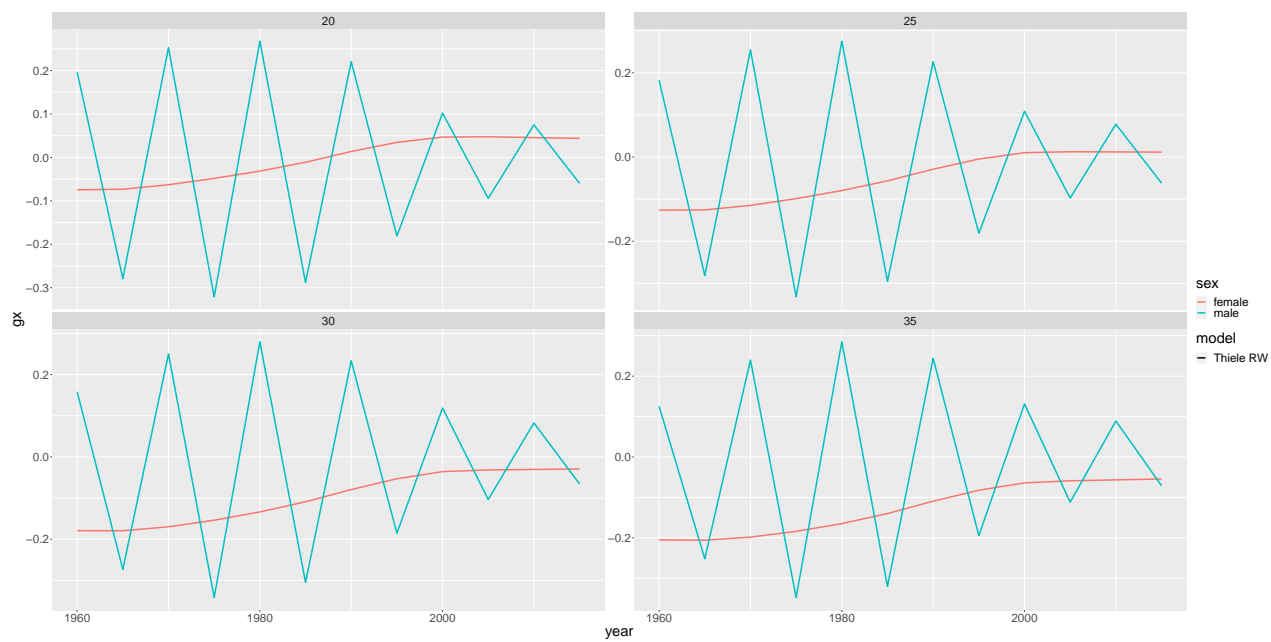


Figure 15: Migration

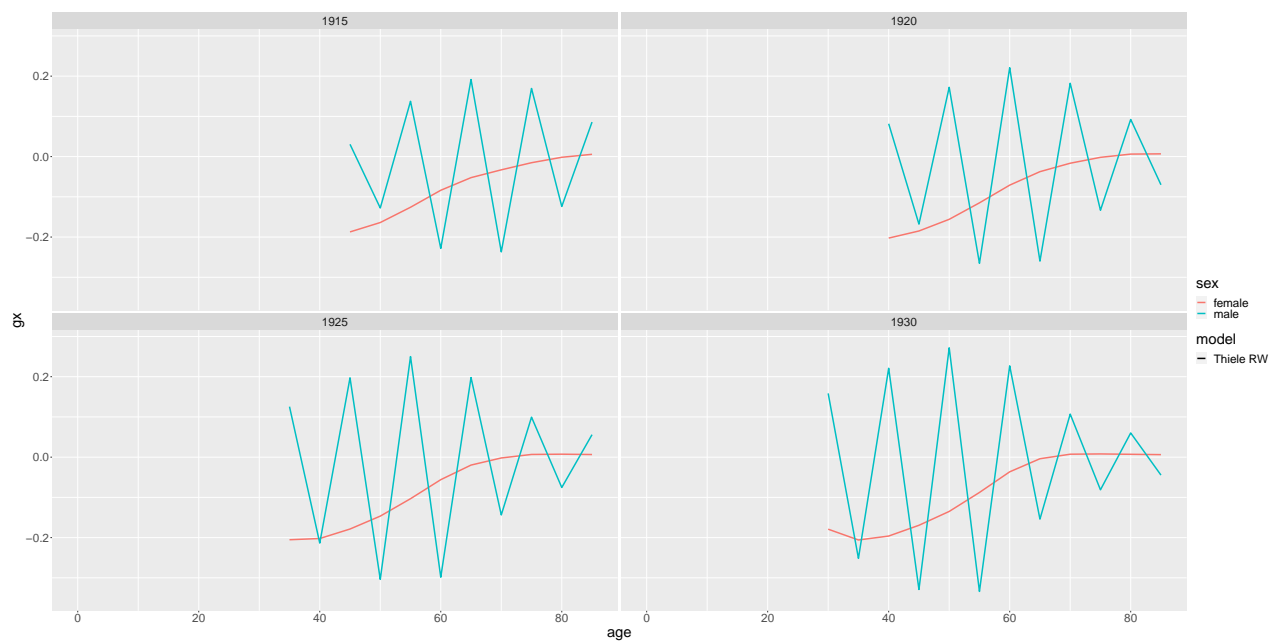


Figure 16: Migration

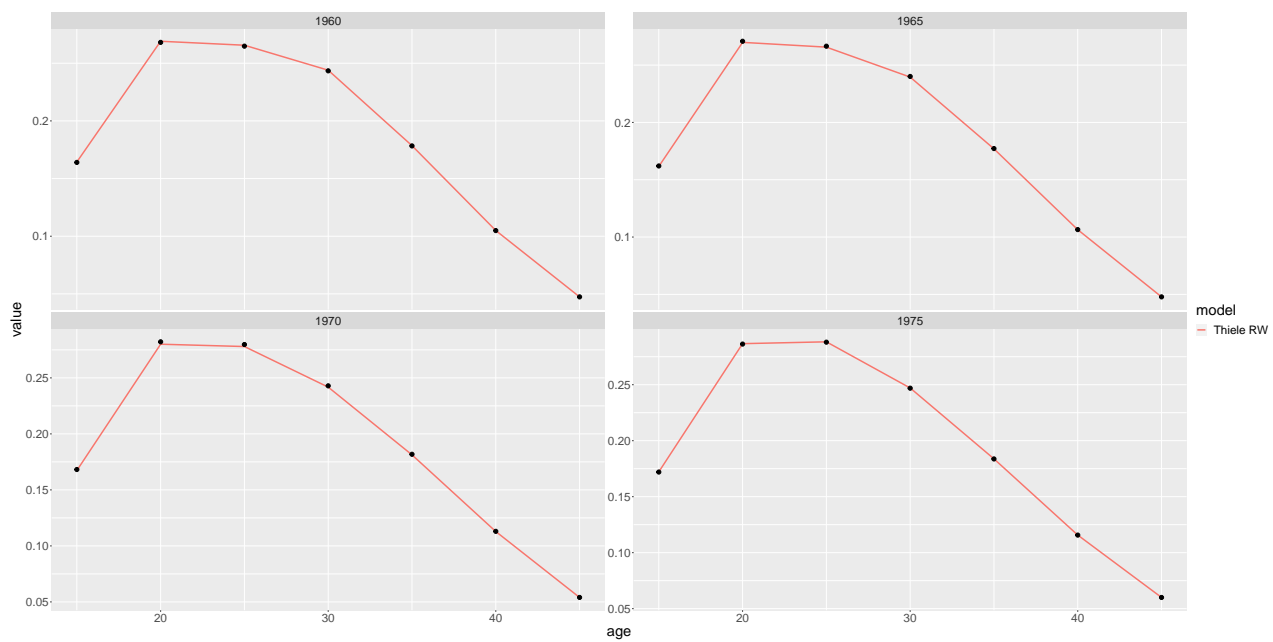


Figure 17: Fertility

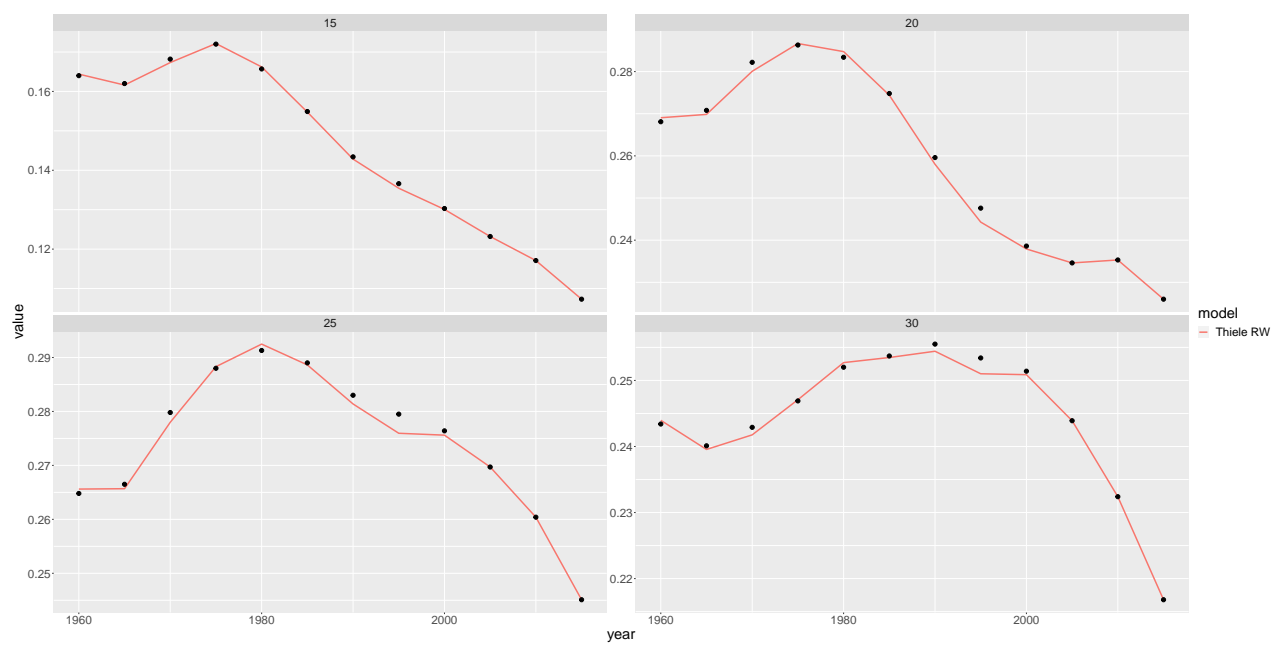


Figure 18: Fertility