

Nigeria

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

## # A tibble: 86 x 3
##   age `1963` `1991`
##   <dbl>   <dbl>   <dbl>
## 1     0 786009 1033144
## 2     1 926229. 1335771.
## 3     2 986236. 1425667.
## 4     3 962645. 1461804.
## 5     4 955975 1503427.
## 6     5 924205. 1507044.
## 7     6 873599. 1478943.
## 8     7 829089. 1451870.
## 9     8 765969. 1389486.
## 10    9 707596 1299958.
## # ... with 76 more rows

## [1] "Census Females 5-year"

## # A tibble: 18 x 2
##   age `2006`
##   <dbl>   <dbl>
## 1     0 11025750.
## 2     5  9472730.
## 3    10  8060730.
## 4    15  7388734.
## 5    20  7108729.
## 6    25  6378455.
## 7    30  5068074.
## 8    35  3841144.
## 9    40  2955588.
## 10   45  2251449.
## 11   50  1669202.
## 12   55  1181326.
## 13   60   893306.
## 14   65   674225.
## 15   70   476063.
## 16   75   355207.
## 17   80   351373.
## 18   85   311204.

## [1] "Census Males"

## # A tibble: 86 x 3
##   age `1963` `1991`
##   <dbl>   <dbl>   <dbl>
## 1     0 760072 1101442
## 2     1 905768. 1425838.
## 3     2 960435 1494162.
## 4     3 945542. 1525346.
## 5     4 951237. 1559762.
## 6     5 933464. 1555965.
```

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## 7      6 902693. 1529667
## 8      7 888787. 1512333
## 9      8 850208. 1457972.
## 10     9 811283. 1376666.
## # ... with 76 more rows
```

```
## [1] "Census Males 5-year"
```

```
## # A tibble: 18 x 2
```

```
##   age    `2006`
##   <dbl>    <dbl>
```

```
## 1      0 11569219.
## 2      5 10212690.
## 3     10  8733445.
## 4     15  7453733
## 5     20  6386522
## 6     25  5452913.
## 7     30  4551491.
## 8     35  3805735.
## 9     40  3253409.
## 10    45  2720620.
## 11    50  2119792.
## 12    55  1526674
## 13    60  1136161
## 14    65   846520.
## 15    70   621957
## 16    75   457375
## 17    80   408680
## 18    85   404021
```

Thiele log-Normal Hump Spline

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

##	log_tau2_logpop	log_tau2_logpop	log_tau2_logpop	log_tau2_logpop	log_lambda_fx	log
##	3.83242085	3.83174991	3.76037313	3.42942997	7.69472853	
##	log_lambda_tp	tp_slope	tp_params_5	tp_params_10	log_lambda_phi	log
##	2.81695616	-0.03503107	0.27060178	0.82521331	11.31591111	1
##	log_lambda_lambda	log_lambda_delta	log_lambda_epsilon			
##	3.89552533	5.65665012	7.68356263			

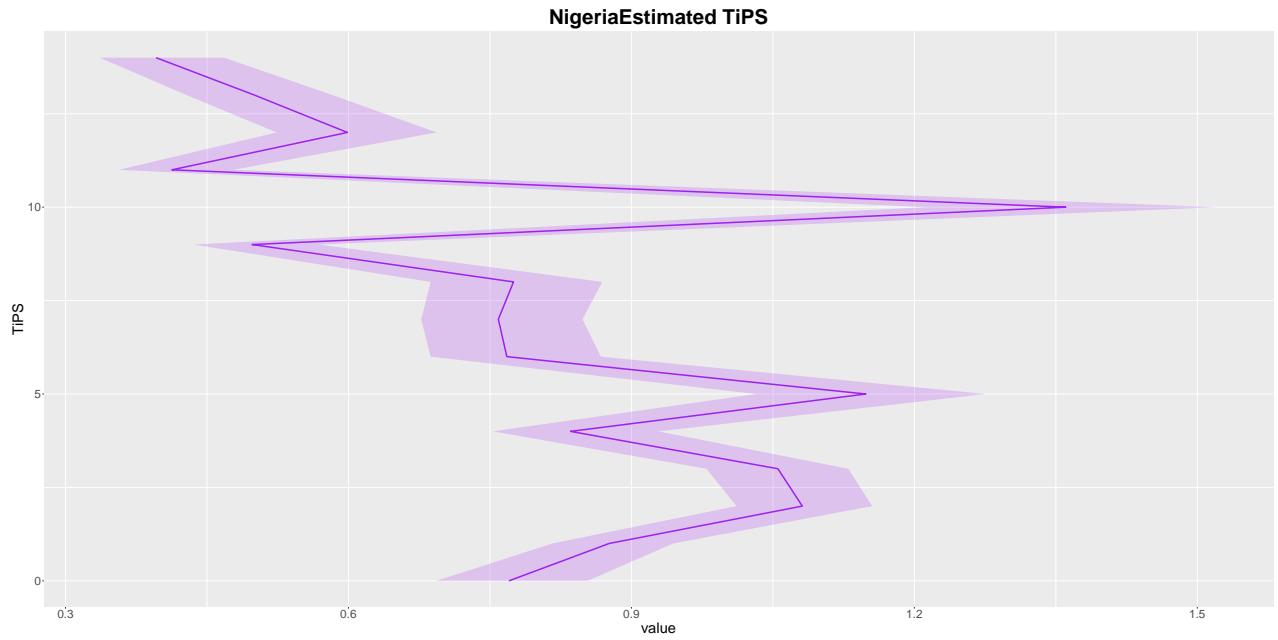


Figure 1: Estimated TiPS

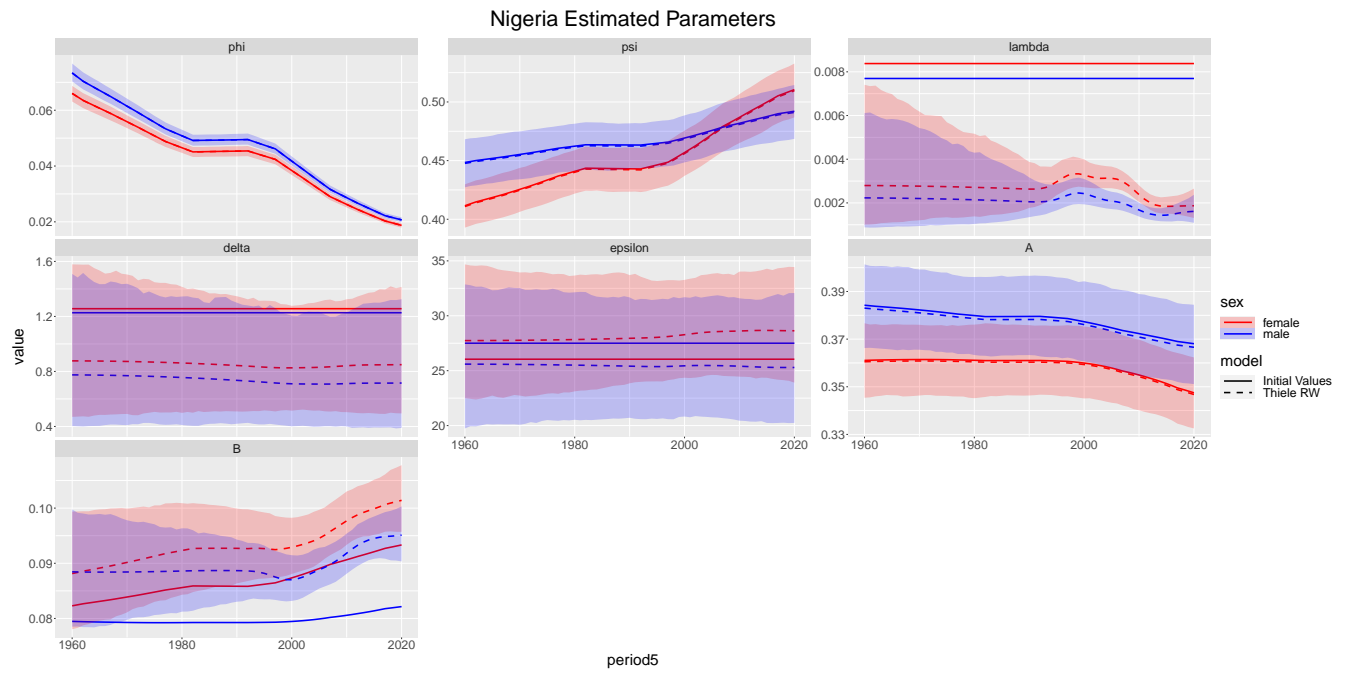


Figure 2: Estimated parameters

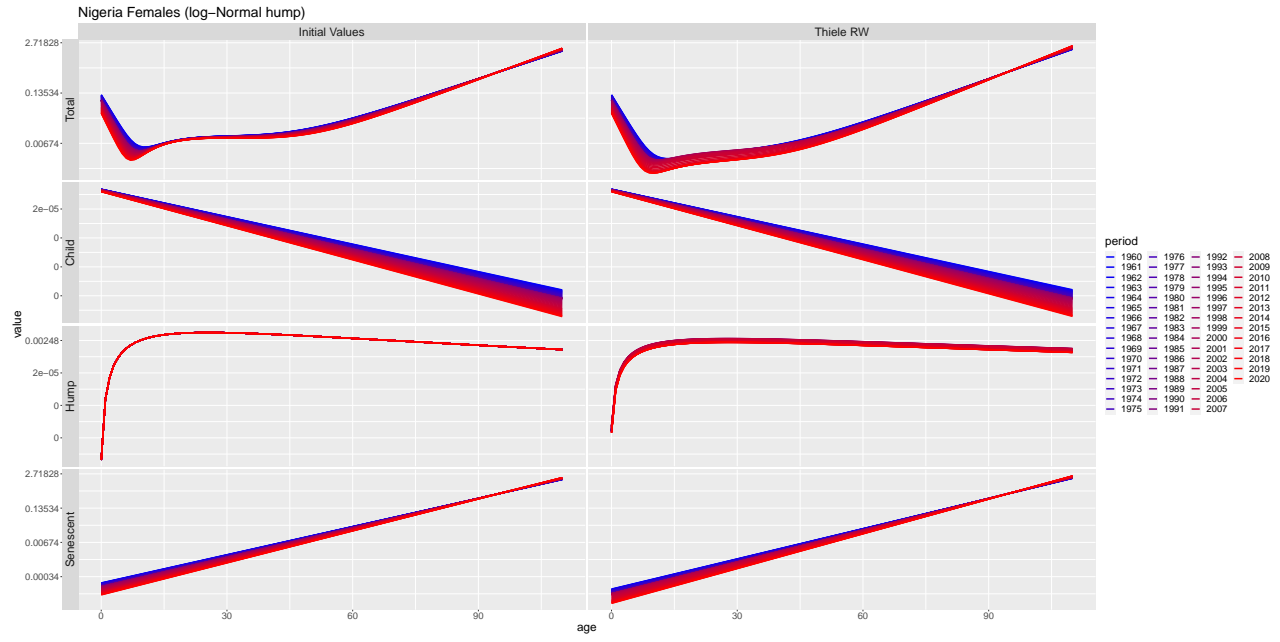


Figure 3: Thiele Decomposed

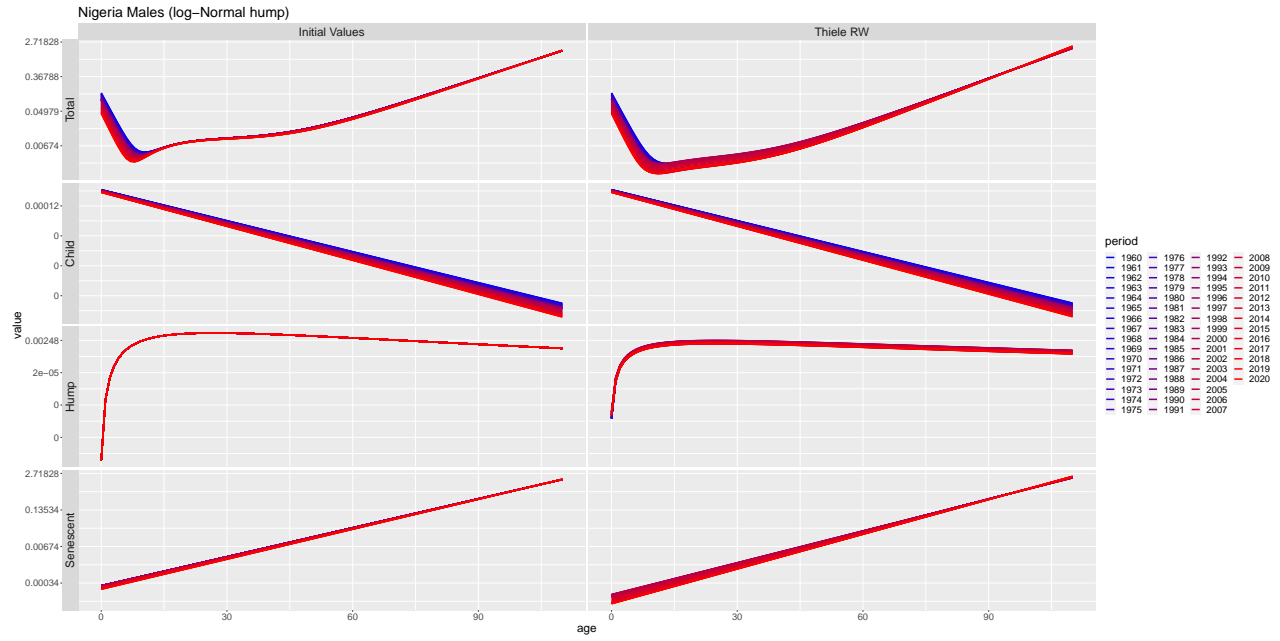


Figure 4: Thiele Decomposed

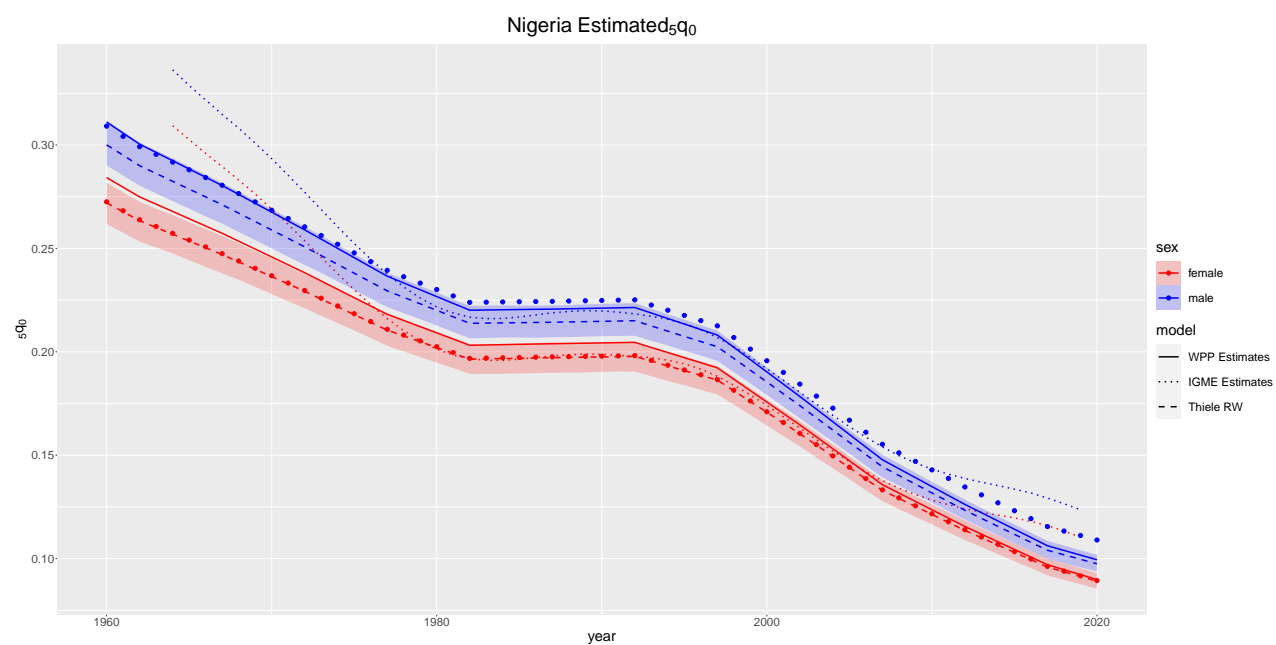


Figure 5: Estimated ${}_5q_0$

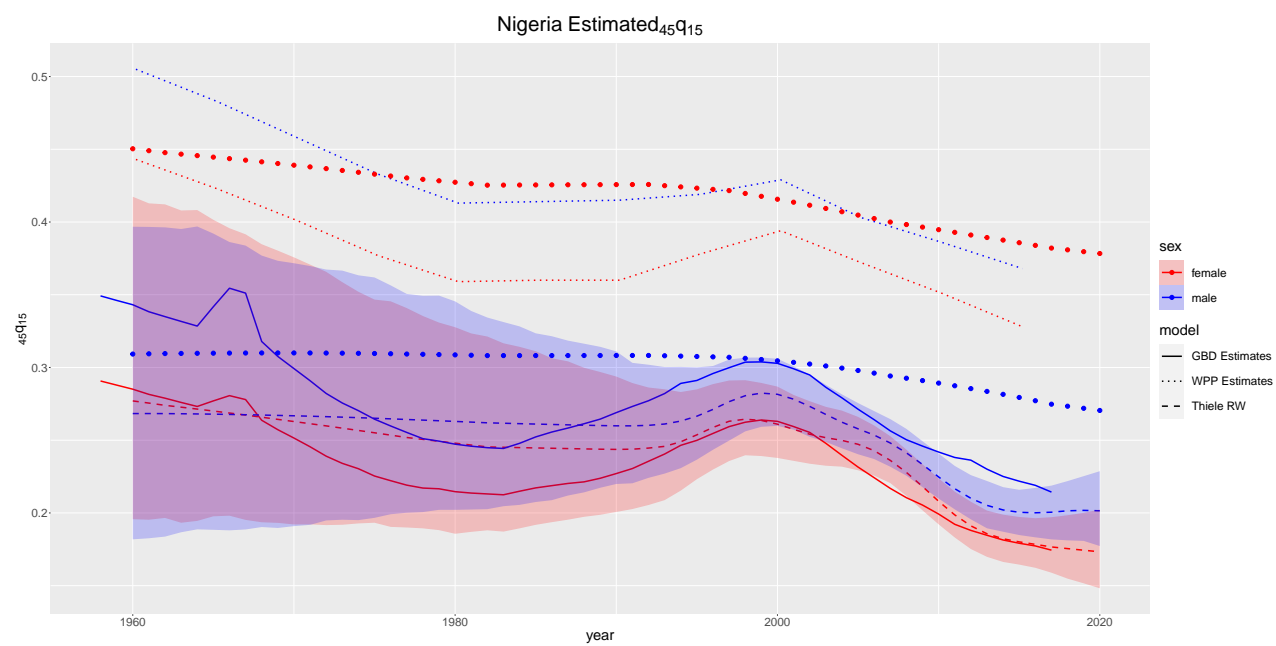


Figure 6: Estimated ${}_{45}q_{15}$

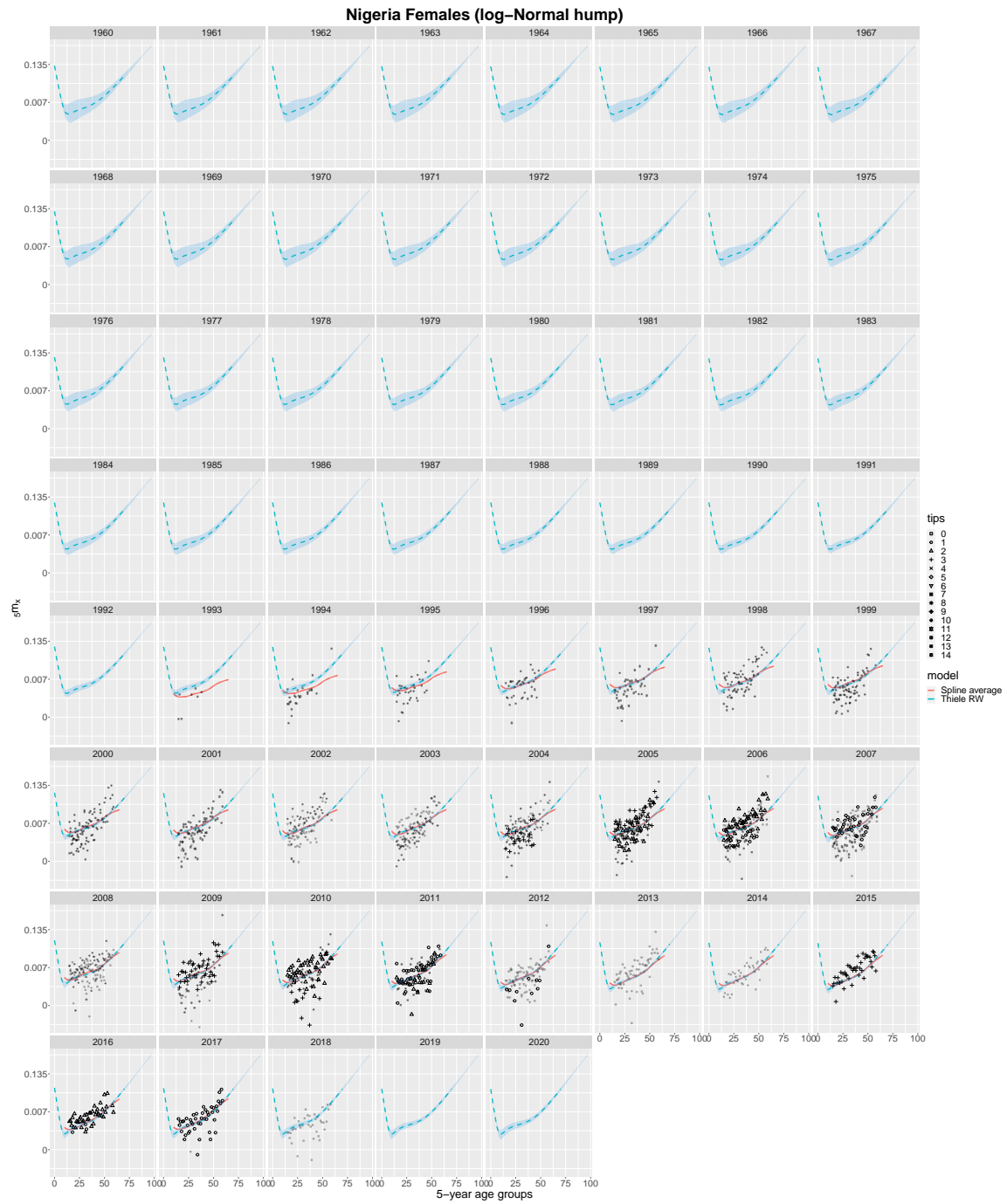


Figure 7: Mortality Schedules

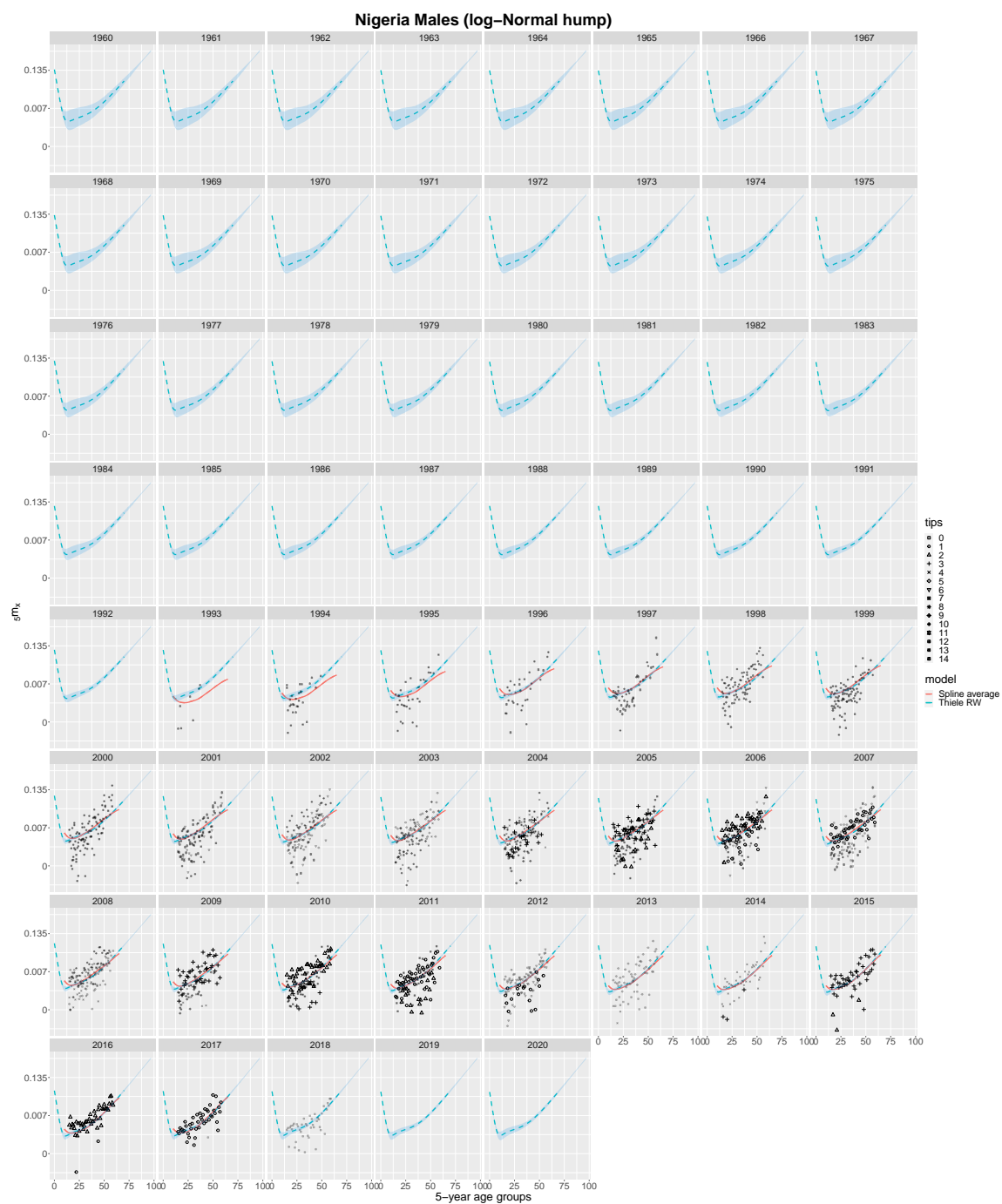


Figure 8: Mortality Schedules

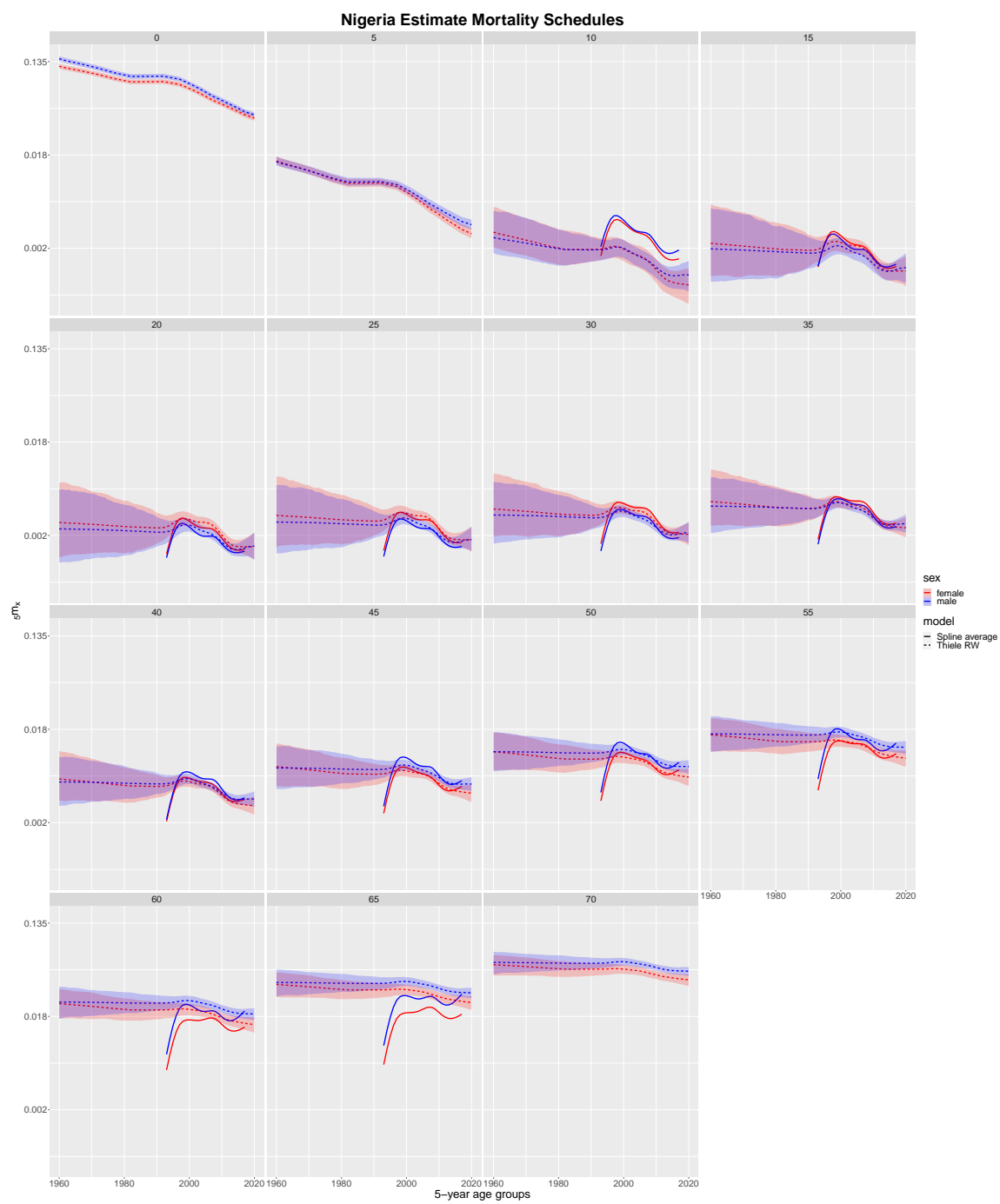


Figure 9: Mortality Schedules

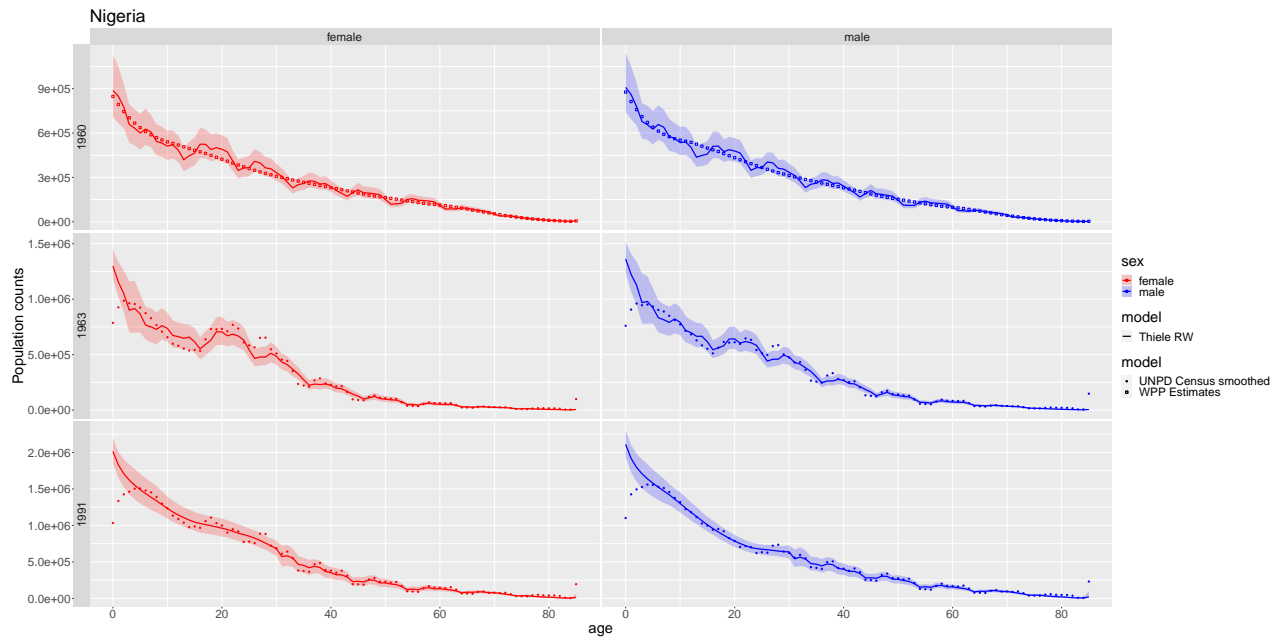


Figure 10: Population

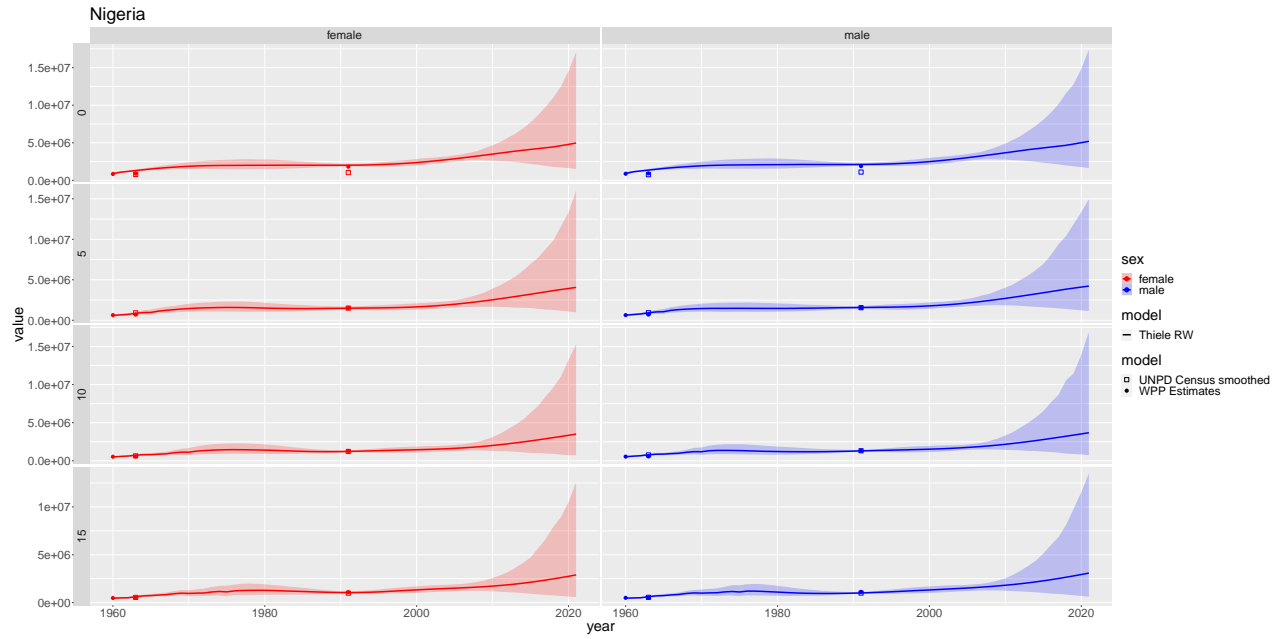


Figure 11: Population

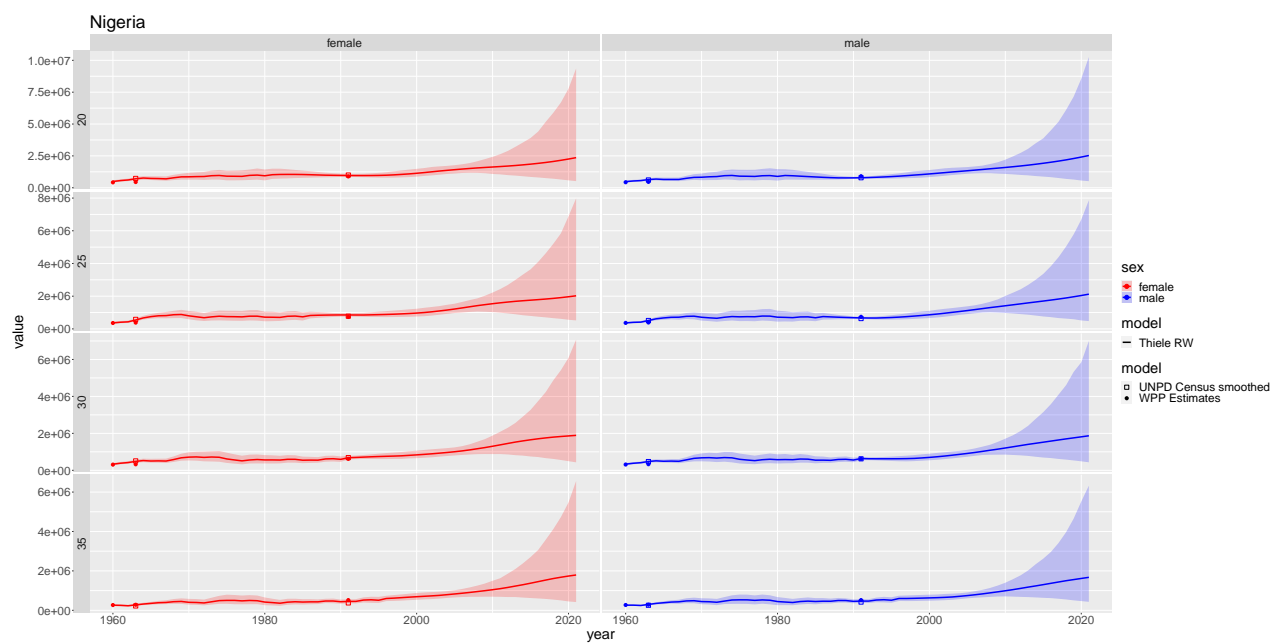


Figure 12: Population

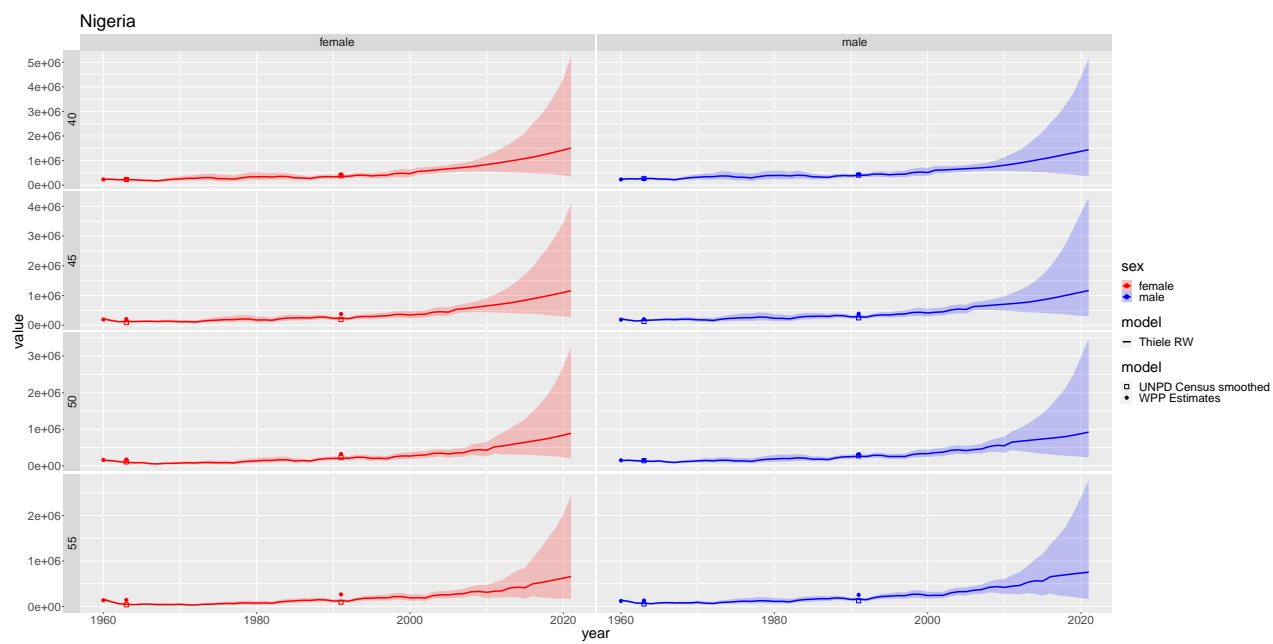


Figure 13: Population

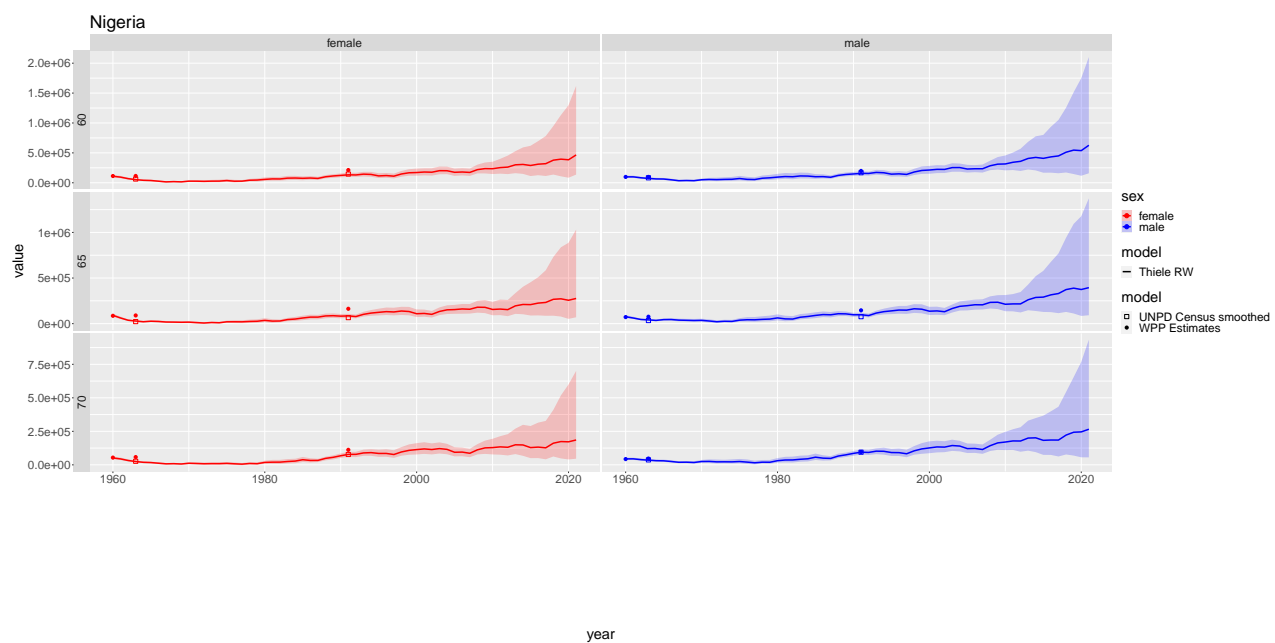


Figure 14: Population

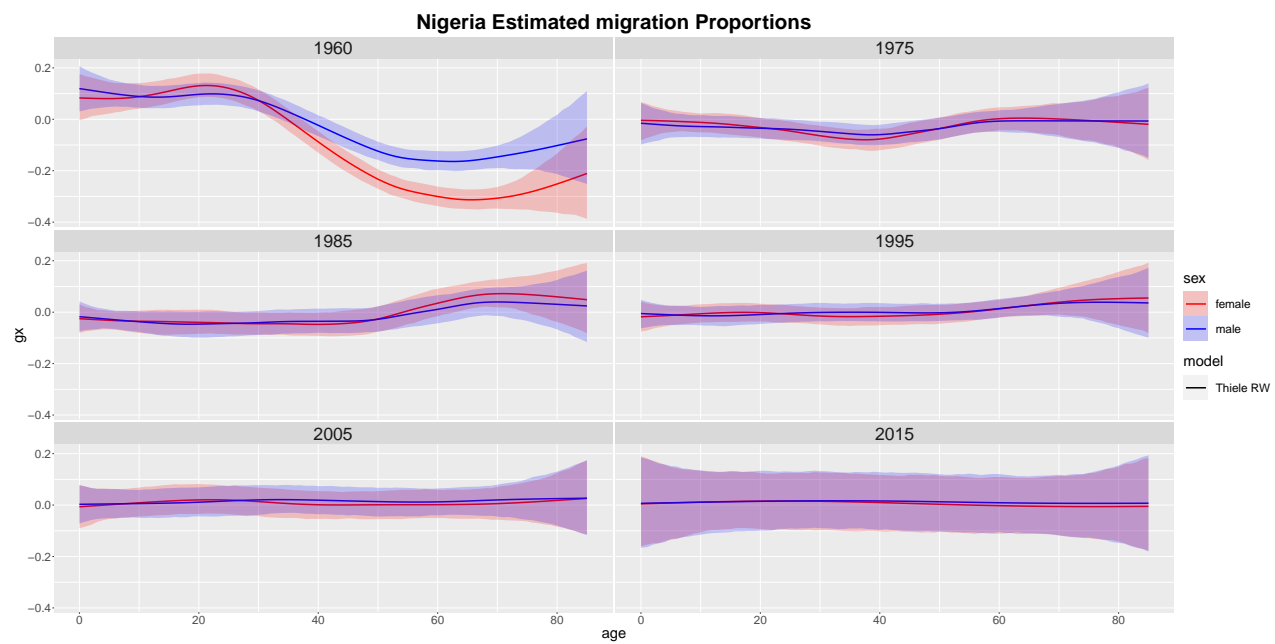


Figure 15: Migration

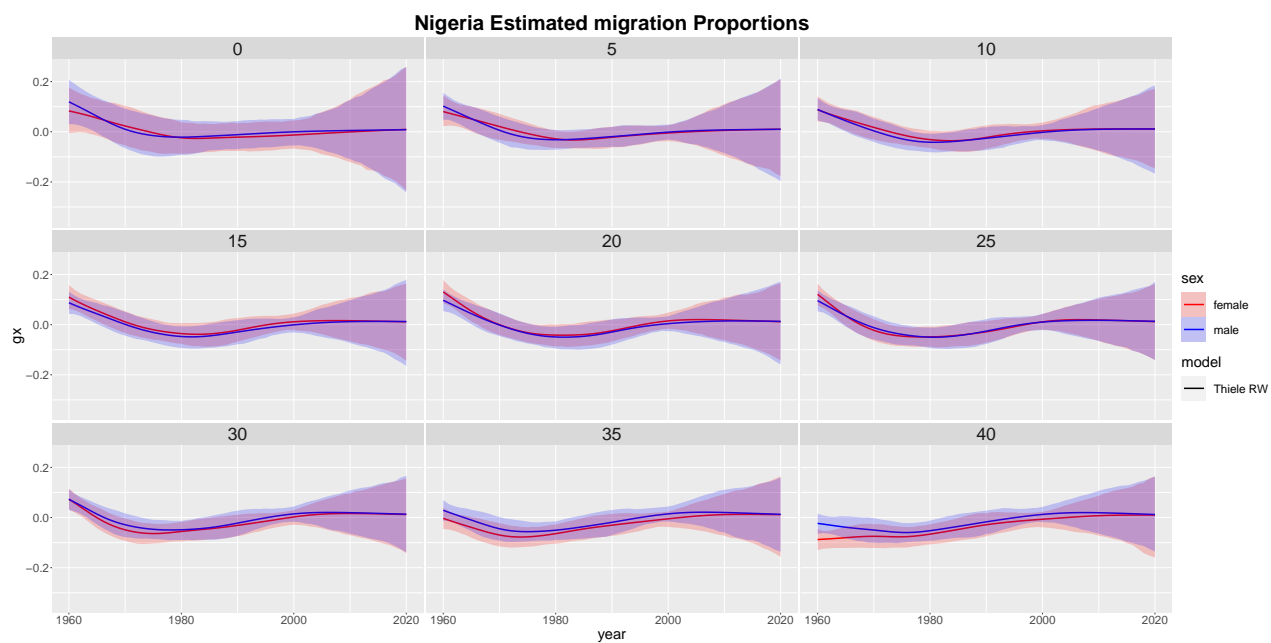


Figure 16: Migration

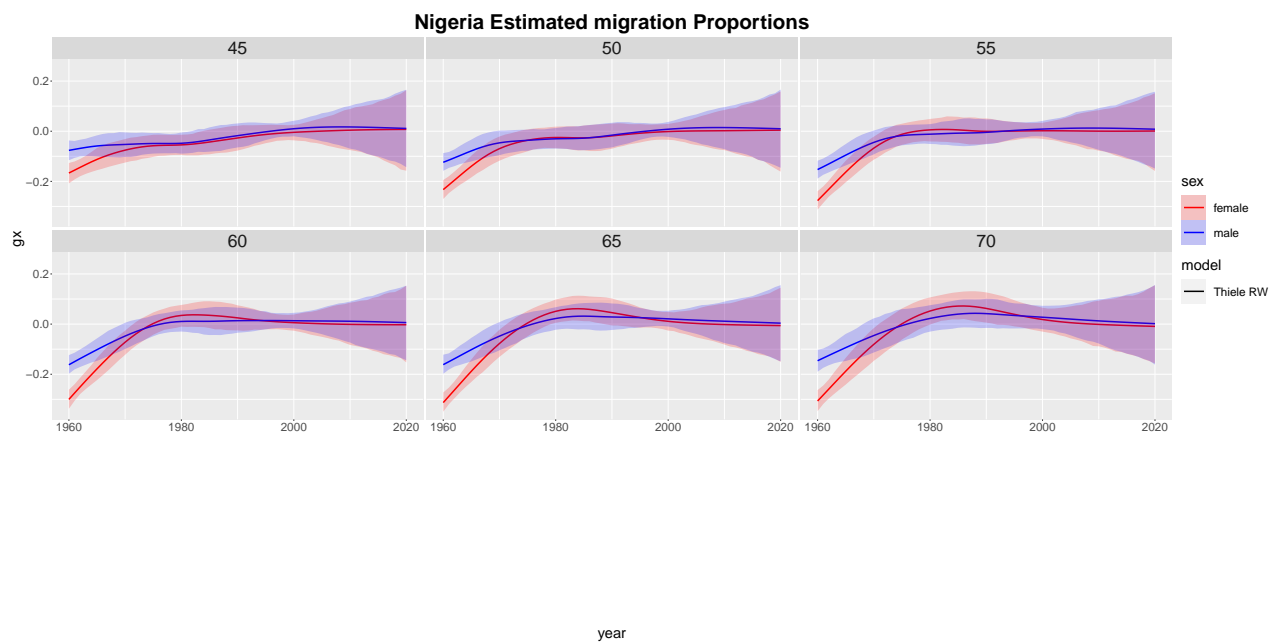


Figure 17: Migration

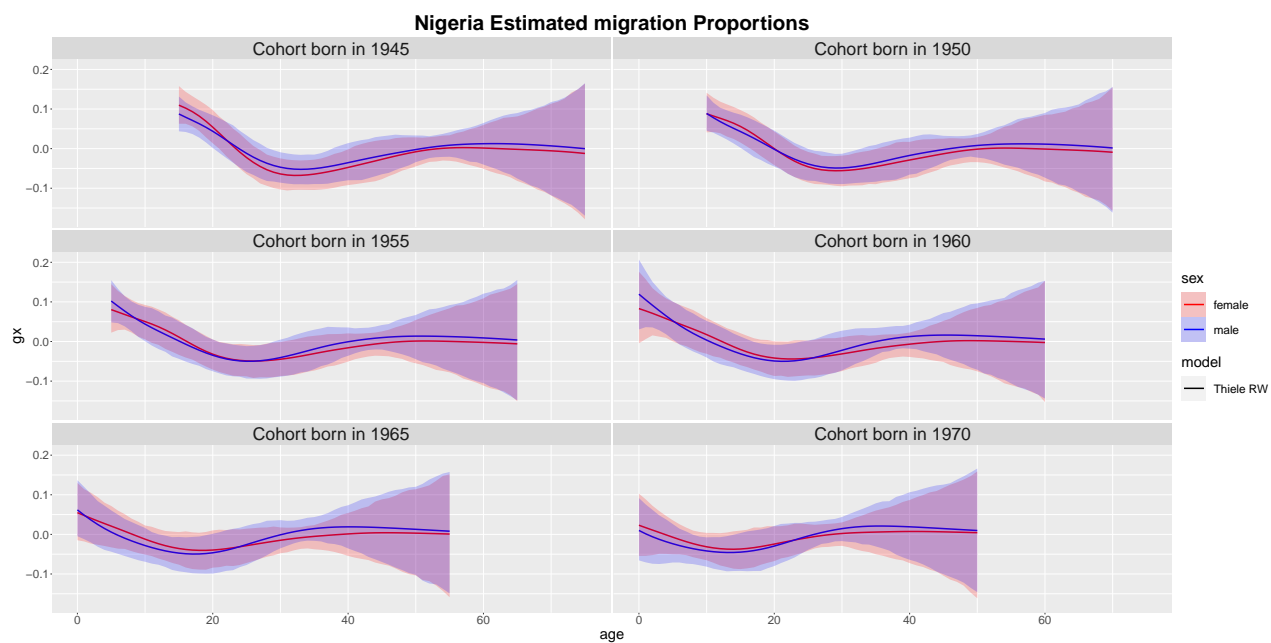


Figure 18: Migration

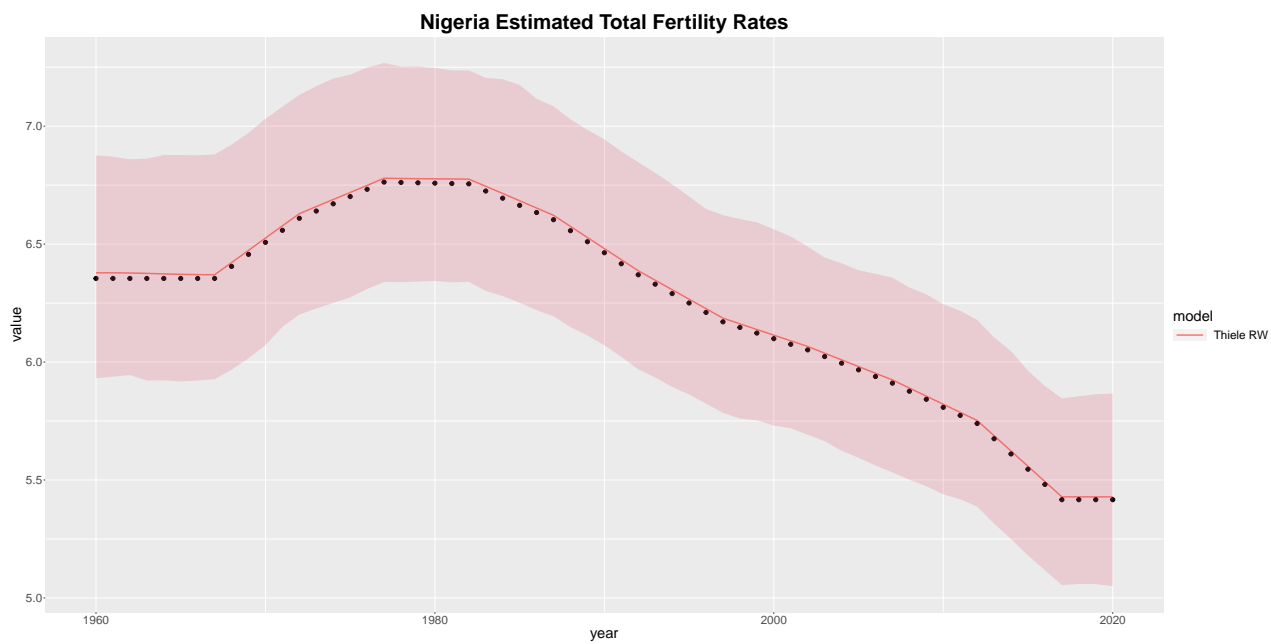


Figure 19: Total Fertility

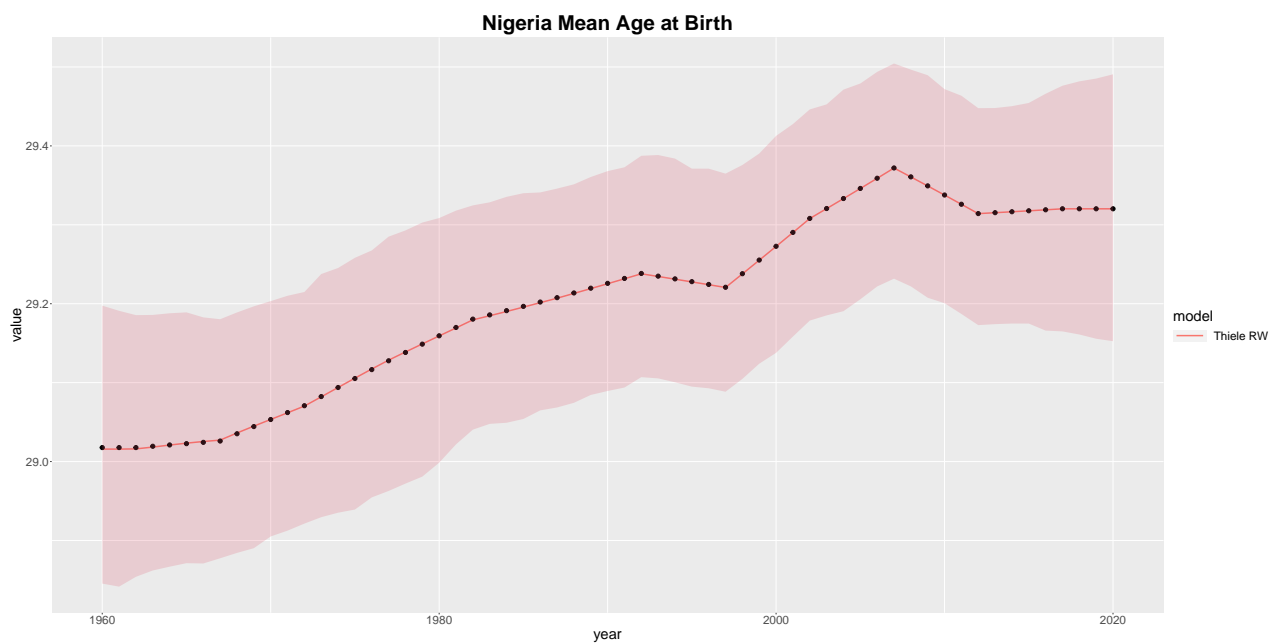


Figure 20: Mean age at births

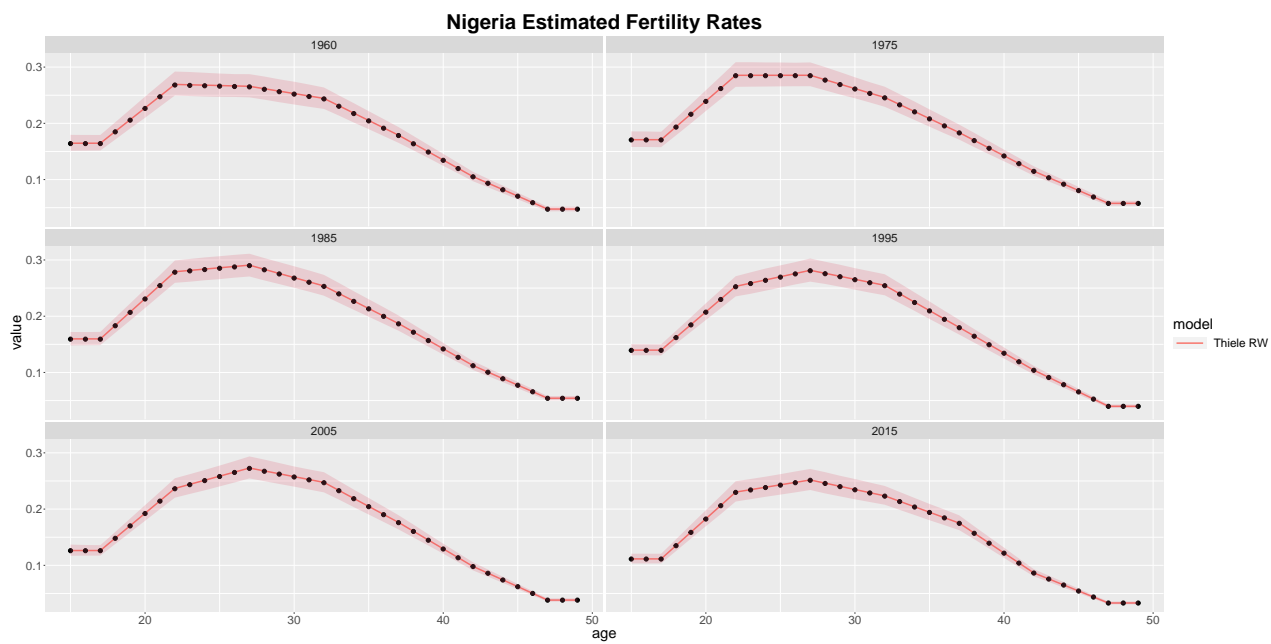


Figure 21: Fertility

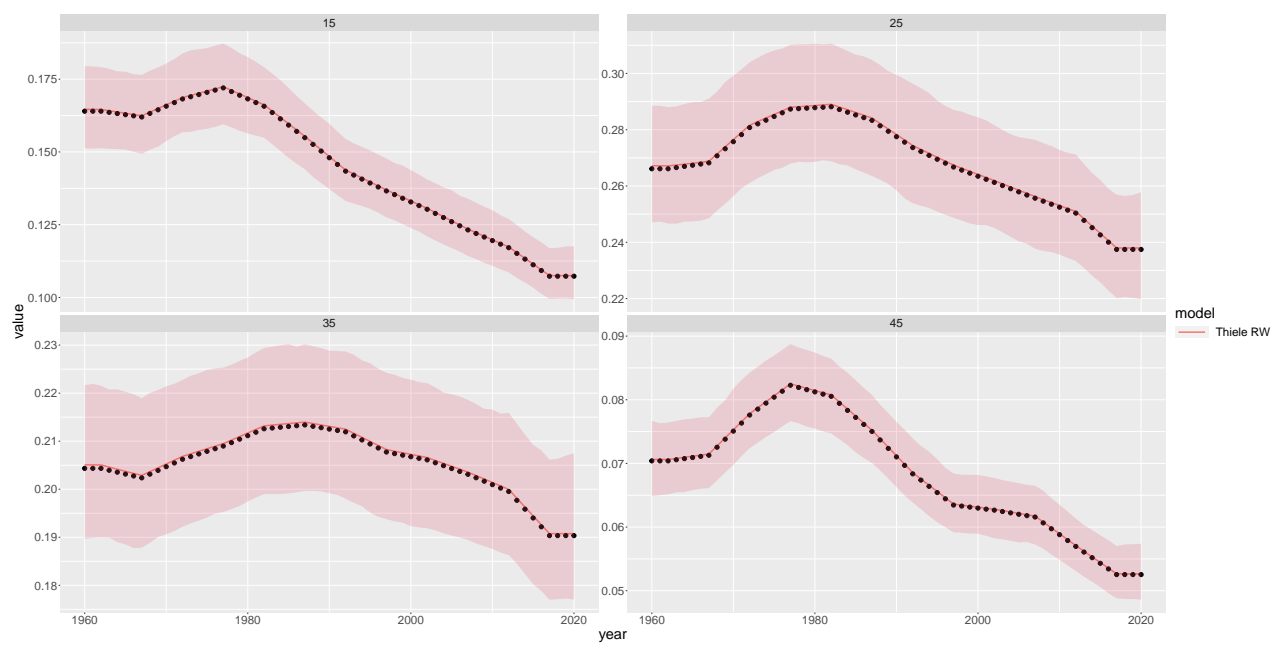


Figure 22: Fertility