

Kenya

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

```
## # A tibble: 86 x 7
```

```
##   age `1962` `1969` `1989` `1999` `2009` `2019`
##   <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
## 1 0 114962. 180506 401598. 543989. 605394. 549078.
## 2 1 124197. 208046. 365428. 433581. 566581. 575921.
## 3 2 141646. 212504. 376228. 440024. 584414. 597634.
## 4 3 141163. 208169. 374954. 428539. 590820. 611884.
## 5 4 137277. 206301. 369718. 422904. 593132. 619616.
## 6 5 132355. 198945. 364496. 409859. 579842. 620166.
## 7 6 130667. 189674. 354931. 397985. 565593. 616144.
## 8 7 125741. 180390. 348116. 395986. 553310. 615971.
## 9 8 118982. 169485. 337418. 406667. 547863. 622445.
## 10 9 110984. 158670. 325087. 410989. 535936. 626357.
## # ... with 76 more rows
```

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

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

```
##   age `1979`
##   <dbl> <dbl>
## 1 0 1423936.
## 2 5 1235895.
## 3 10 1046913.
## 4 15 872886.
## 5 20 701504.
## 6 25 546283.
## 7 30 423762.
## 8 35 334882.
## 9 40 274175.
## 10 45 227571.
## 11 50 184967.
## 12 55 142658.
## 13 60 109394.
## 14 65 84777.
## 15 70 62651.
## 16 75 86752.
## 17 80 NA
## 18 85 NA
```

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

```
## # A tibble: 86 x 7
```

```
##   age `1962` `1969` `1989` `1999` `2009` `2019`
##   <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
## 1 0 110490. 181280 407366. 559955. 617213. 548946.
## 2 1 119896. 209856. 370701. 444554. 579266. 580058.
## 3 2 137308. 214870. 380545. 449449. 596090. 601059.
## 4 3 136838. 211596. 380154. 438004. 604392. 617870.
## 5 4 134196. 210258. 374474. 432305. 607876. 626295.
## 6 5 130987. 203113. 368800. 419618. 595609. 627665.
```

```
## 7      6 130752. 194028. 358900. 407236. 580858. 623689.
## 8      7 127766. 185536. 352312. 403393. 566023. 621037.
## 9      8 123091. 175184. 340718. 414324. 561125. 628883.
## 10     9 117015. 165066. 327739. 416104. 548548. 632145.
## # ... with 76 more rows
```

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

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

```
##   age   `1979`
```

```
##   <dbl>   <dbl>
```

```
## 1      0 1424953.
```

```
## 2      5 1244344.
```

```
## 3     10 1052936.
```

```
## 4     15  851898.
```

```
## 5     20  664211.
```

```
## 6     25  519992.
```

```
## 7     30  404695.
```

```
## 8     35  312473.
```

```
## 9     40  258557.
```

```
## 10    45  221009.
```

```
## 11    50  181751.
```

```
## 12    55  143338.
```

```
## 13    60  114261.
```

```
## 14    65   93665.
```

```
## 15    70   66506.
```

```
## 16    75   87947.
```

```
## 17    80      NA
```

```
## 18    85      NA
```

Thiele log-Normal Hump Spline

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

##	log_tau2_logpop	log_tau2_logpop	log_tau2_logpop	log_tau2_logpop	log
##	5.190086921	6.218338543	5.029344544	5.847353705	4
##	log_dispersion	log_dispersion	log_lambda_tp	tp_slope	1
##	0.741073646	0.629388506	3.128365104	-0.001393496	0
##	log_lambda_phi	log_lambda_psi	log_lambda_A	log_lambda_B	log_lambda
##	11.312396244	11.284424072	11.274103552	7.185295065	3
##	log_lambda_epsilon				
##	5.362144296				

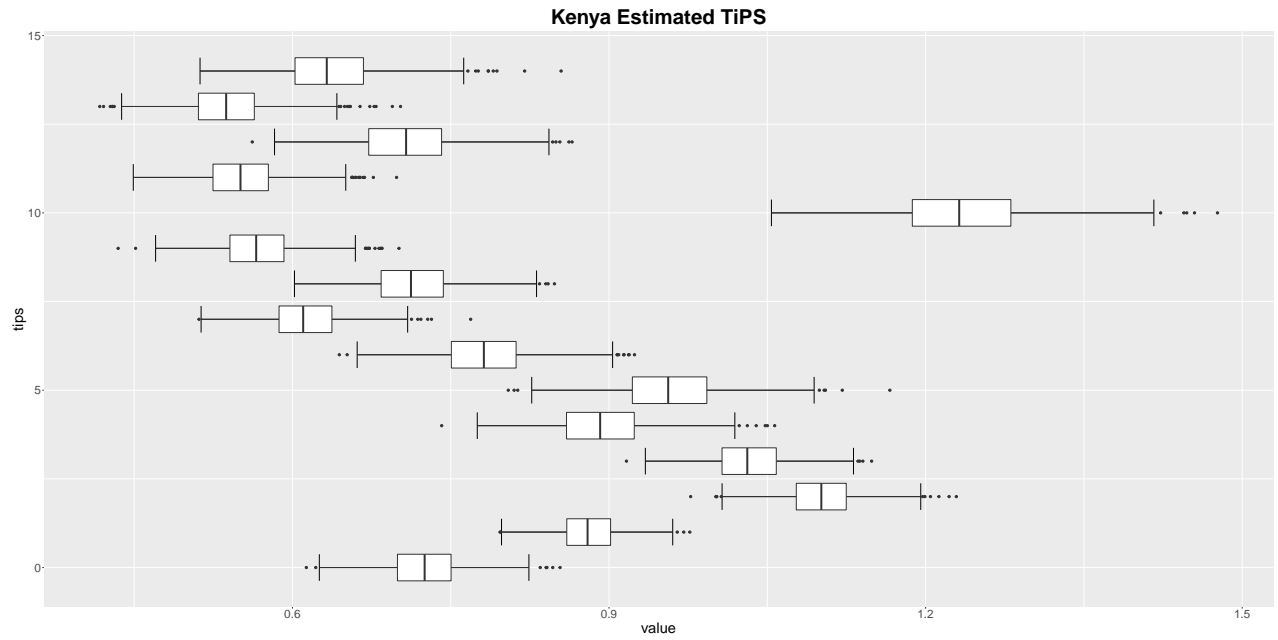


Figure 1: Estimated TiPS

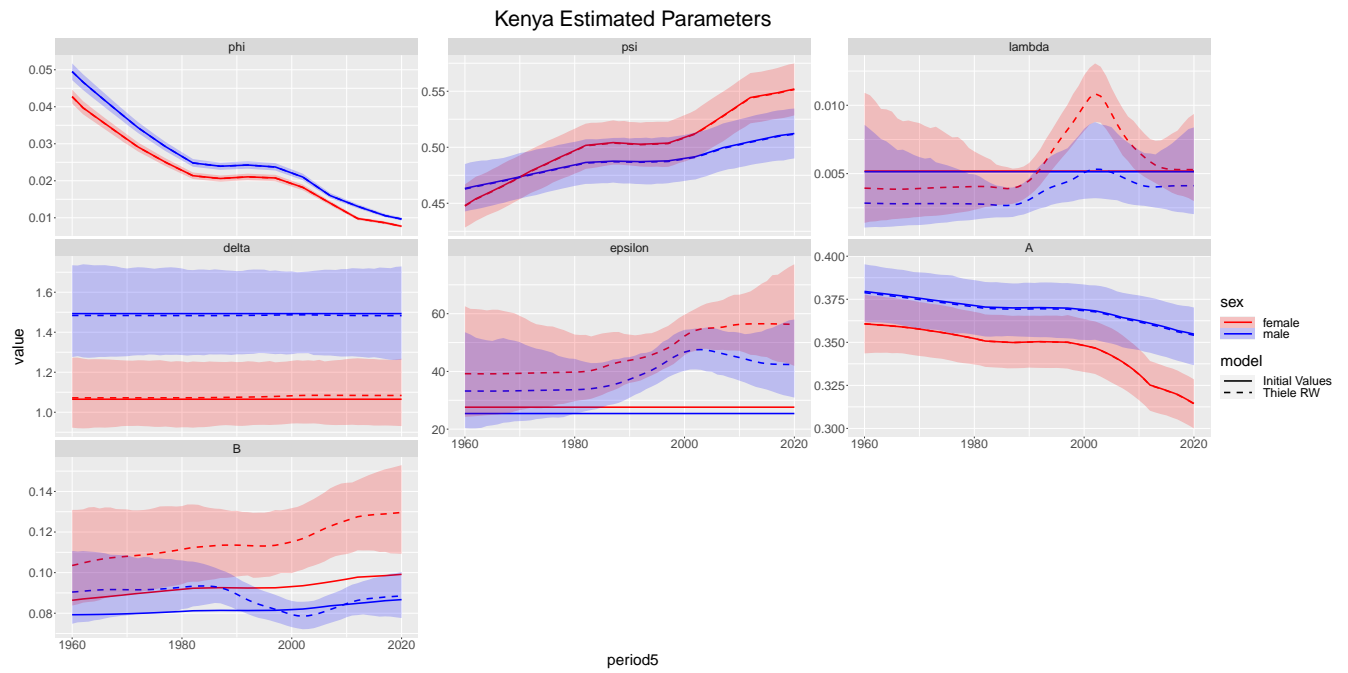


Figure 2: Estimated parameters

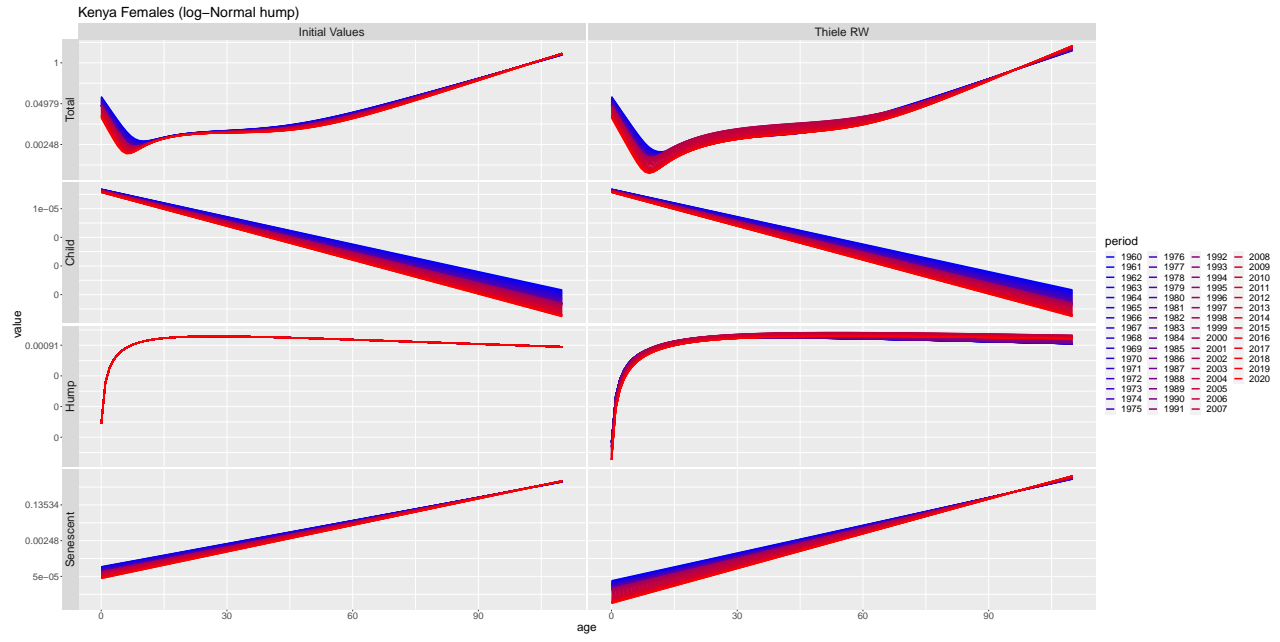


Figure 3: Thiele Decomposed

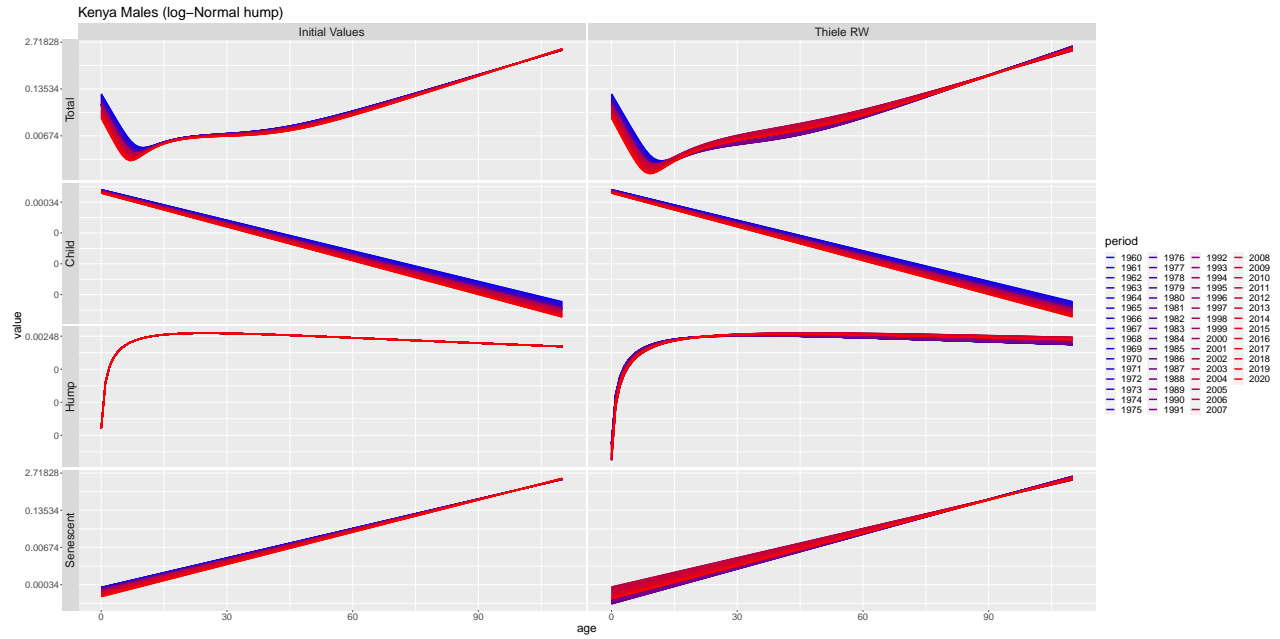


Figure 4: Thiele Decomposed

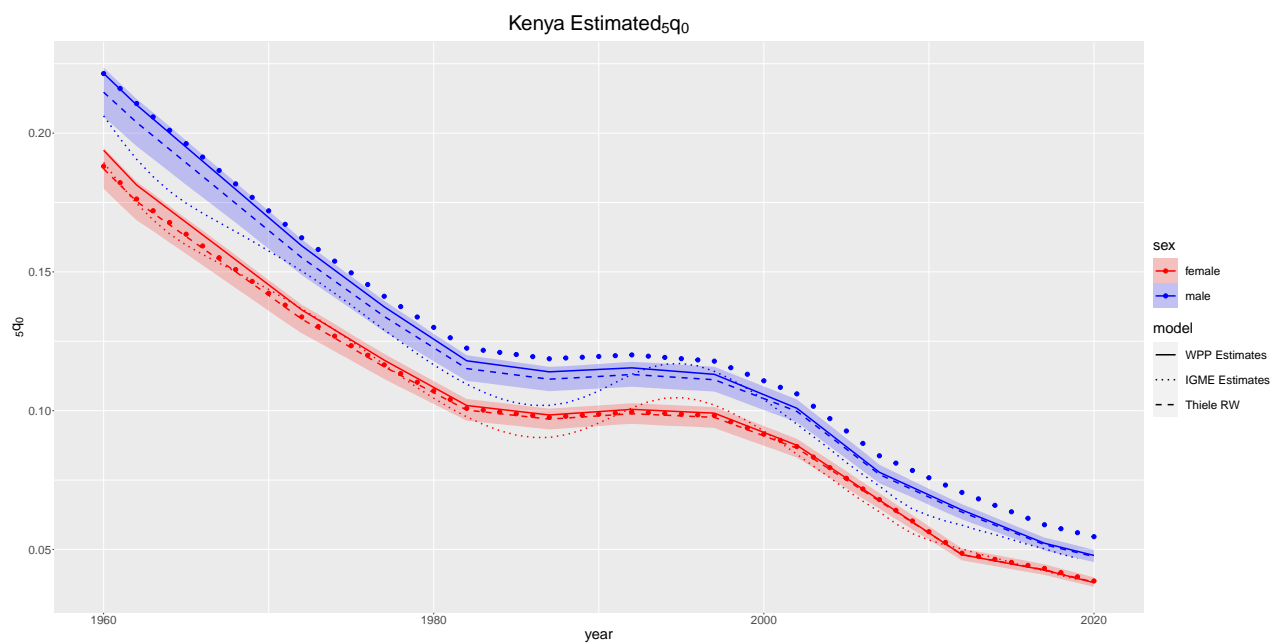


Figure 5: Estimated $_5q_0$

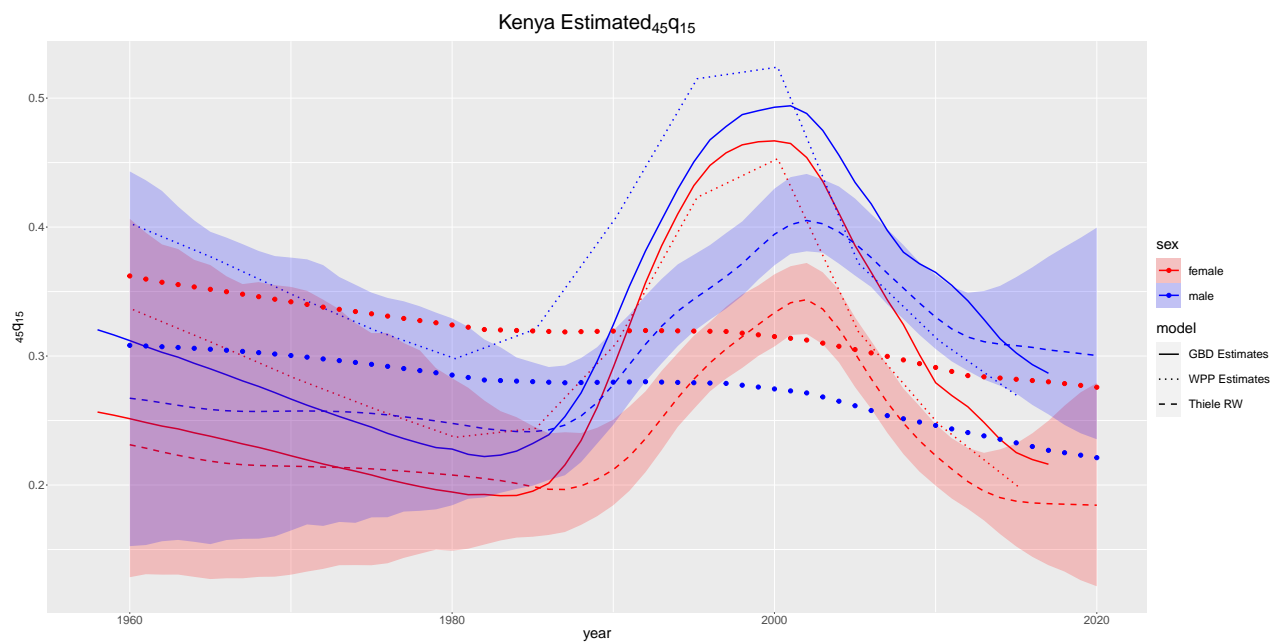


Figure 6: Estimated $_{45}q_{15}$

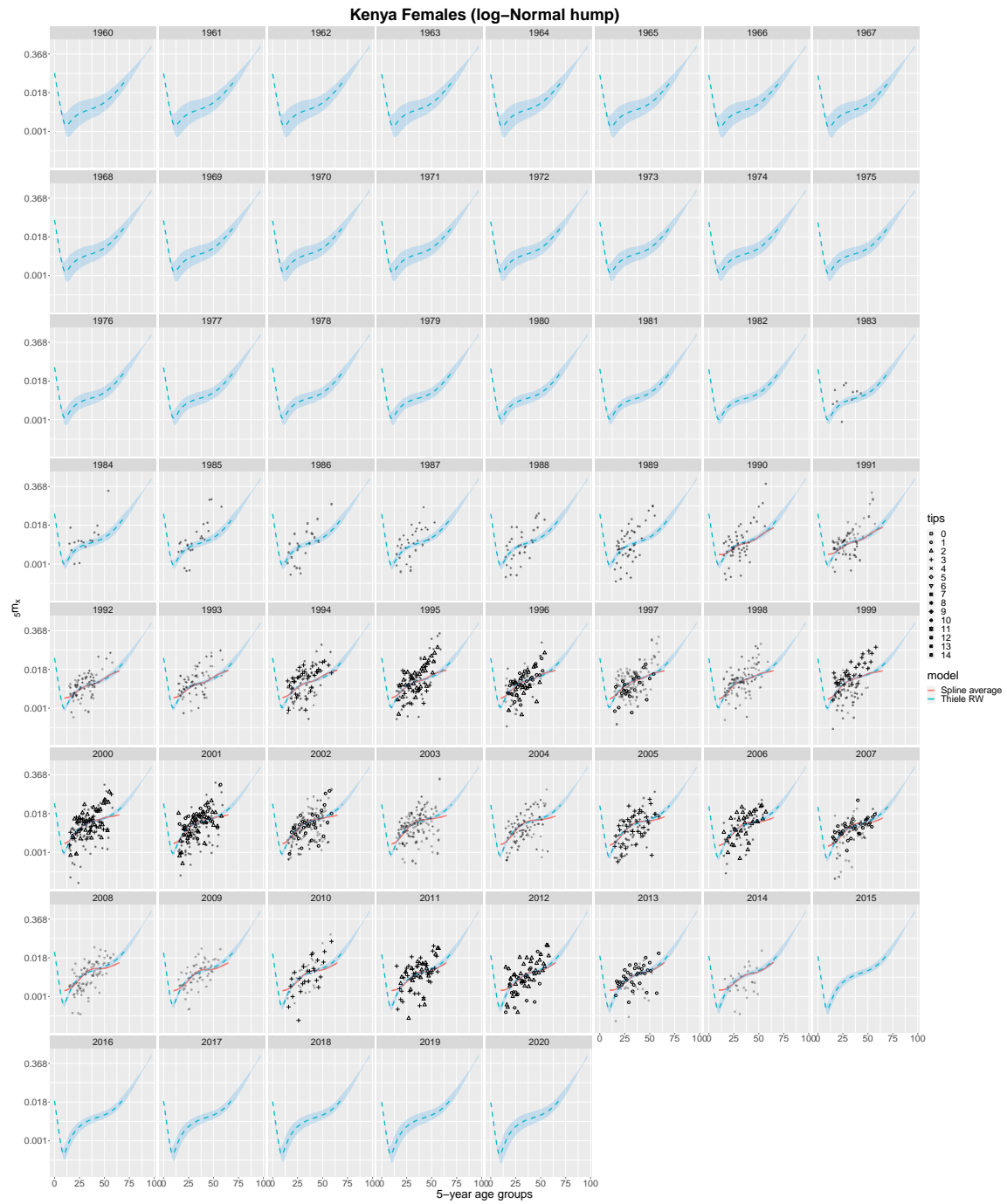


Figure 7: Mortality Schedules

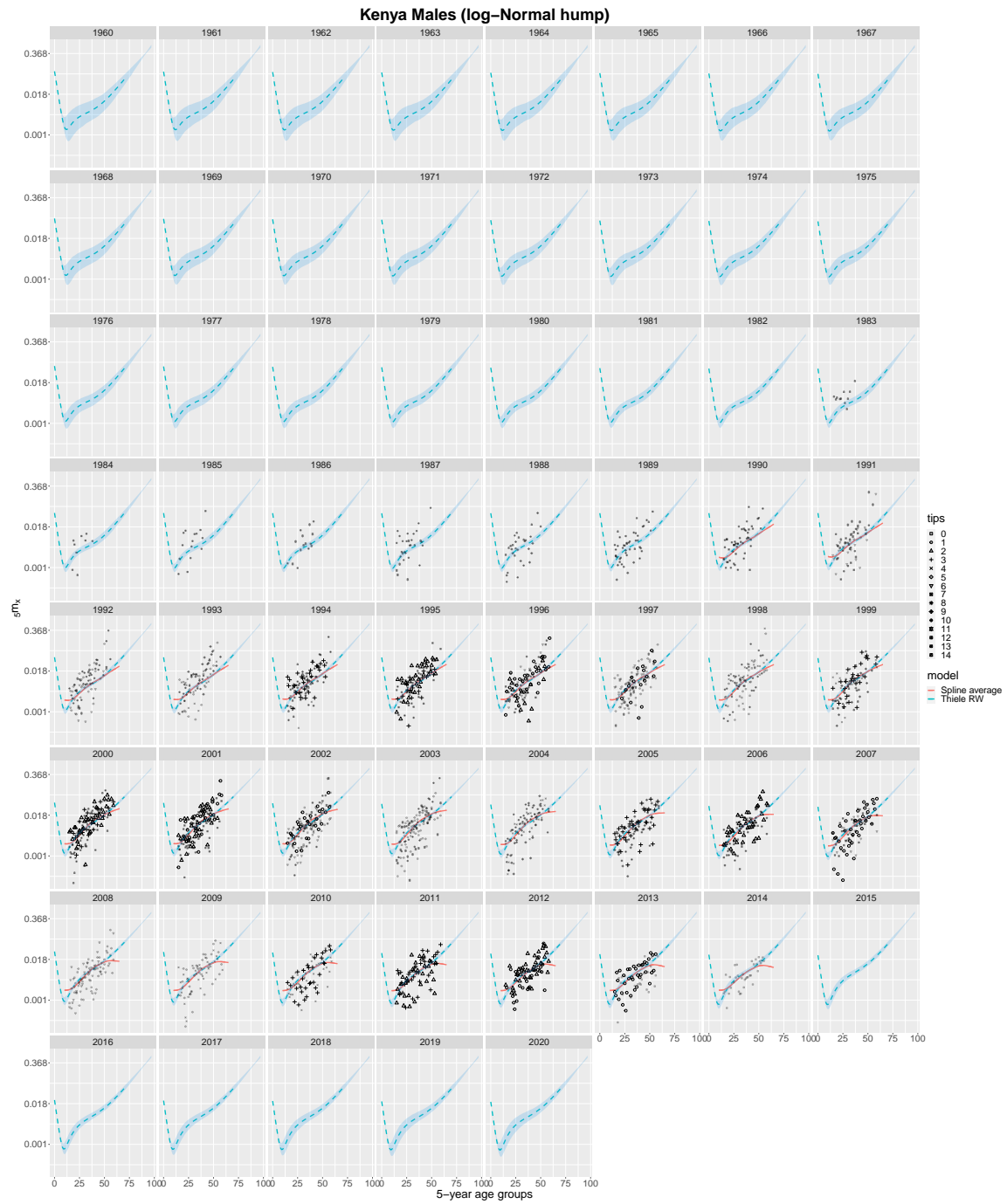


Figure 8: Mortality Schedules

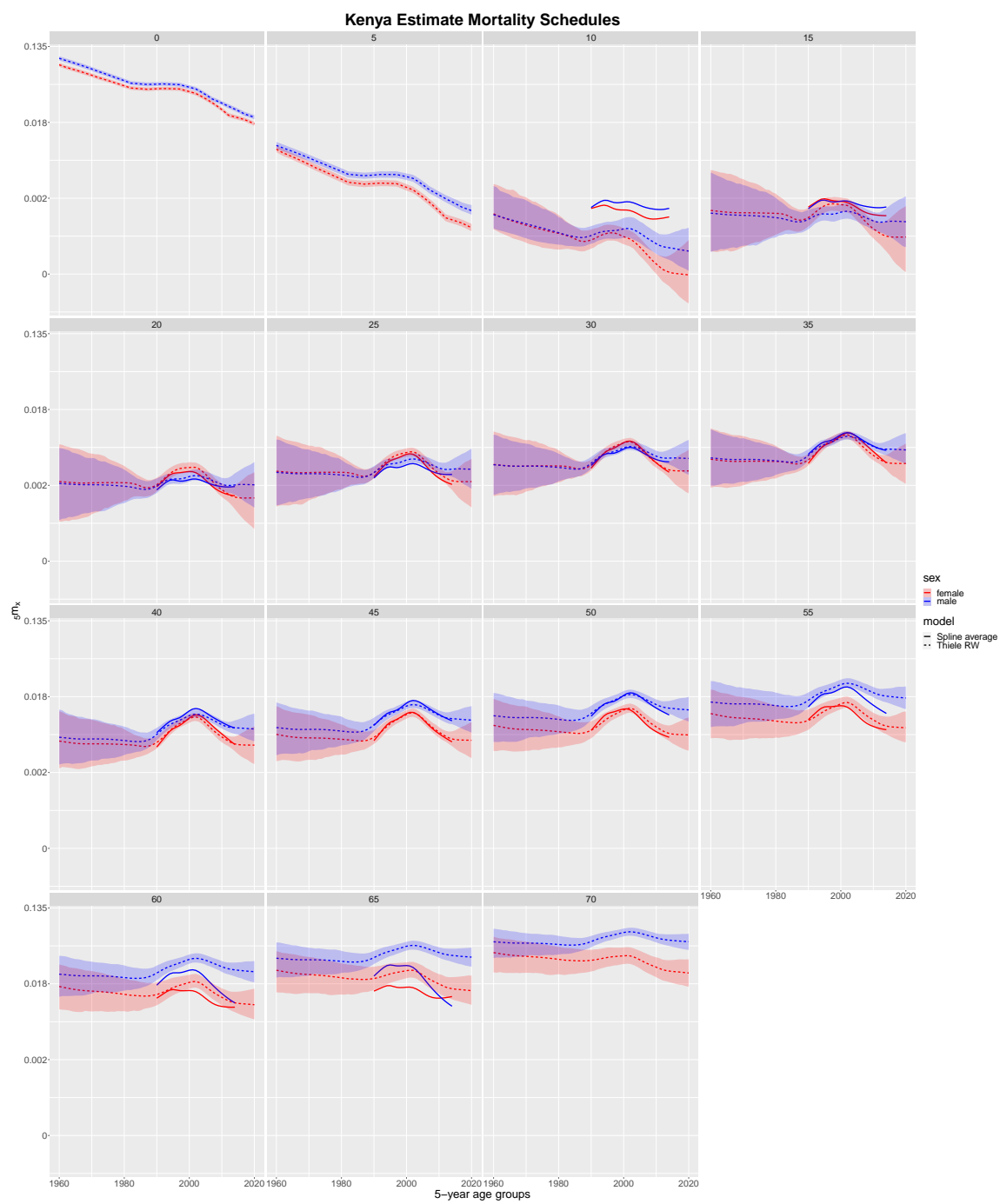


Figure 9: Mortality Schedules

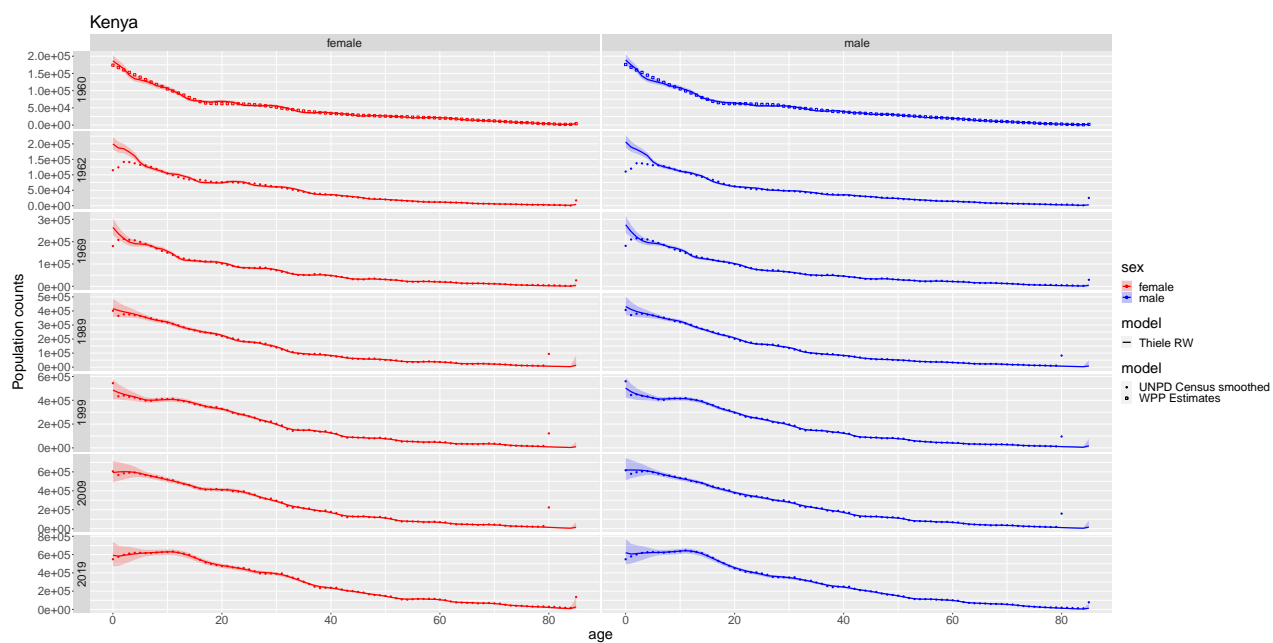


Figure 10: Population

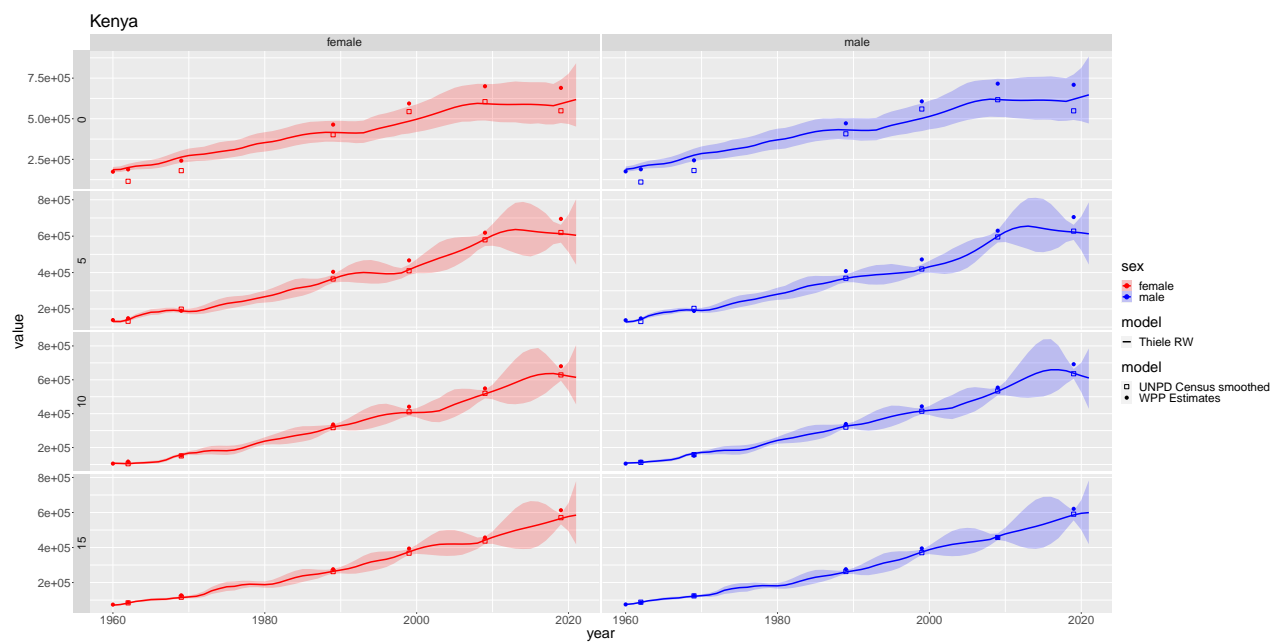


Figure 11: Population



Figure 12: Population

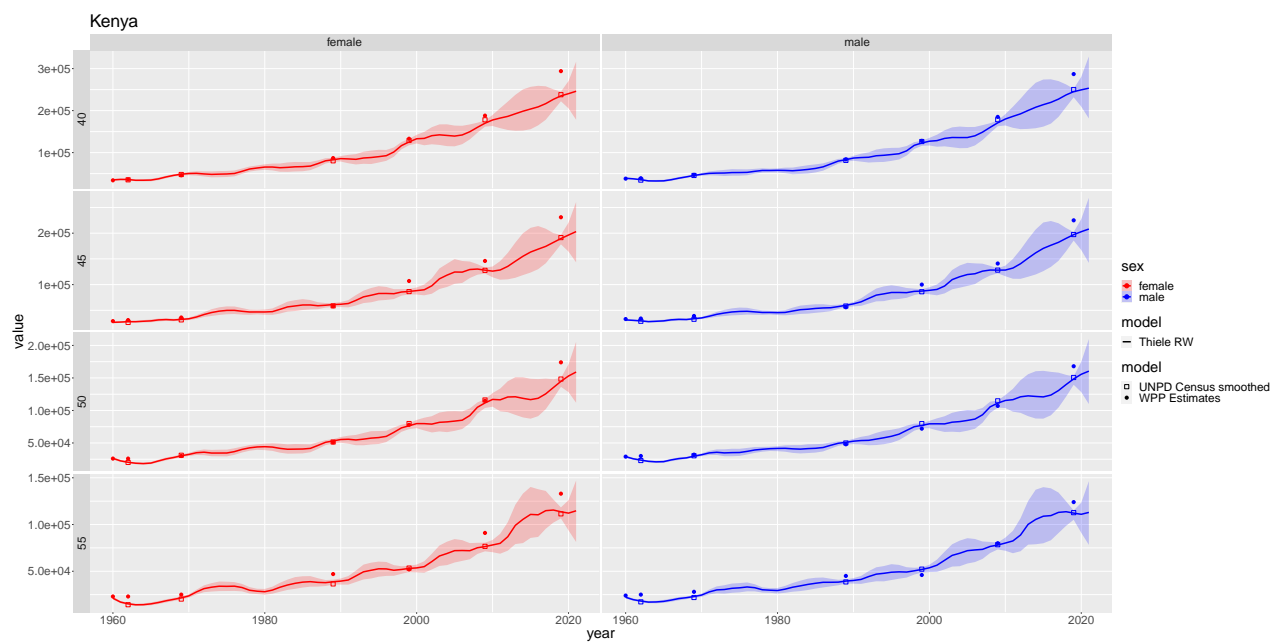


Figure 13: Population

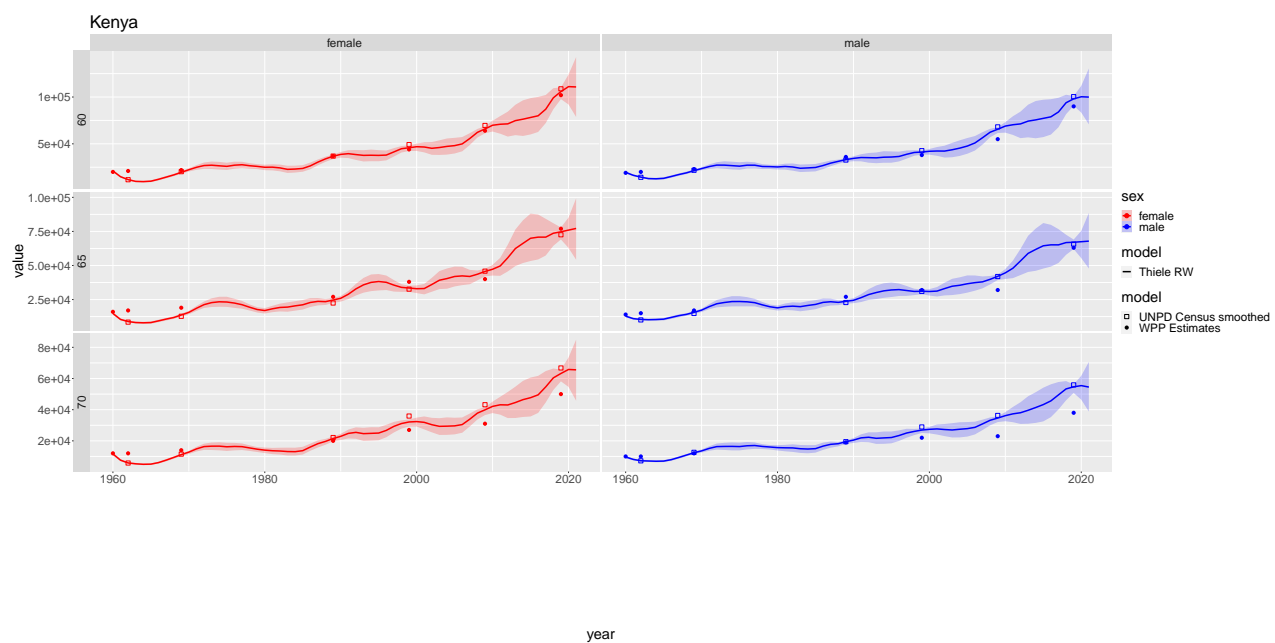


Figure 14: Population

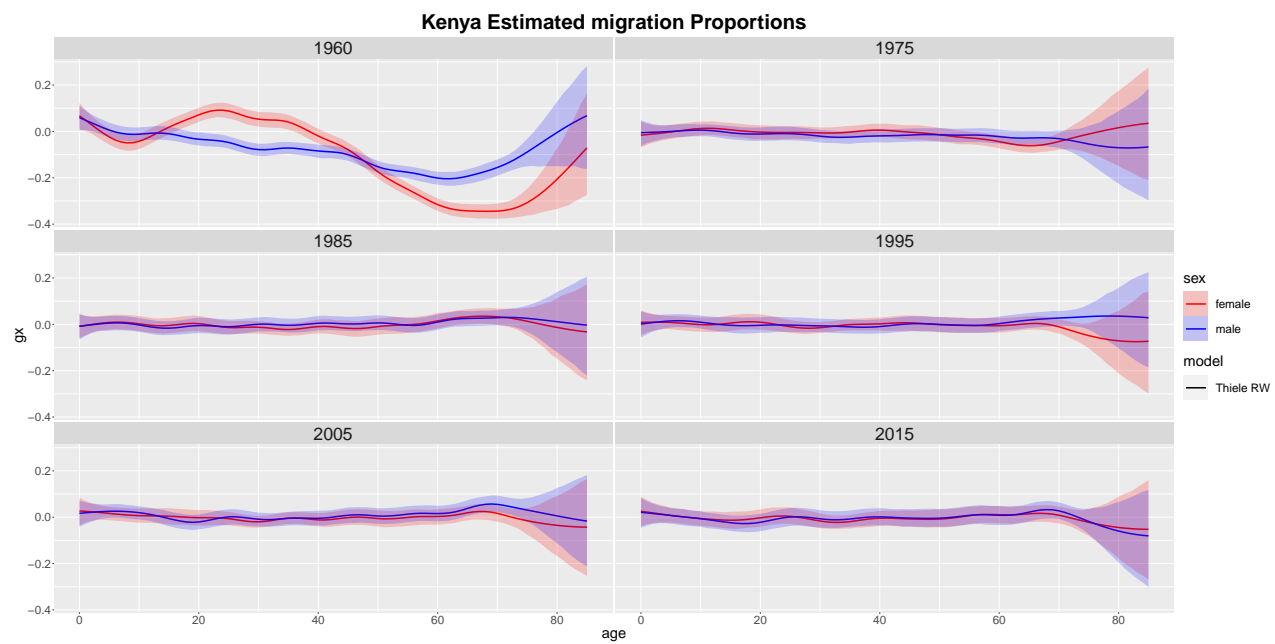


Figure 15: Migration

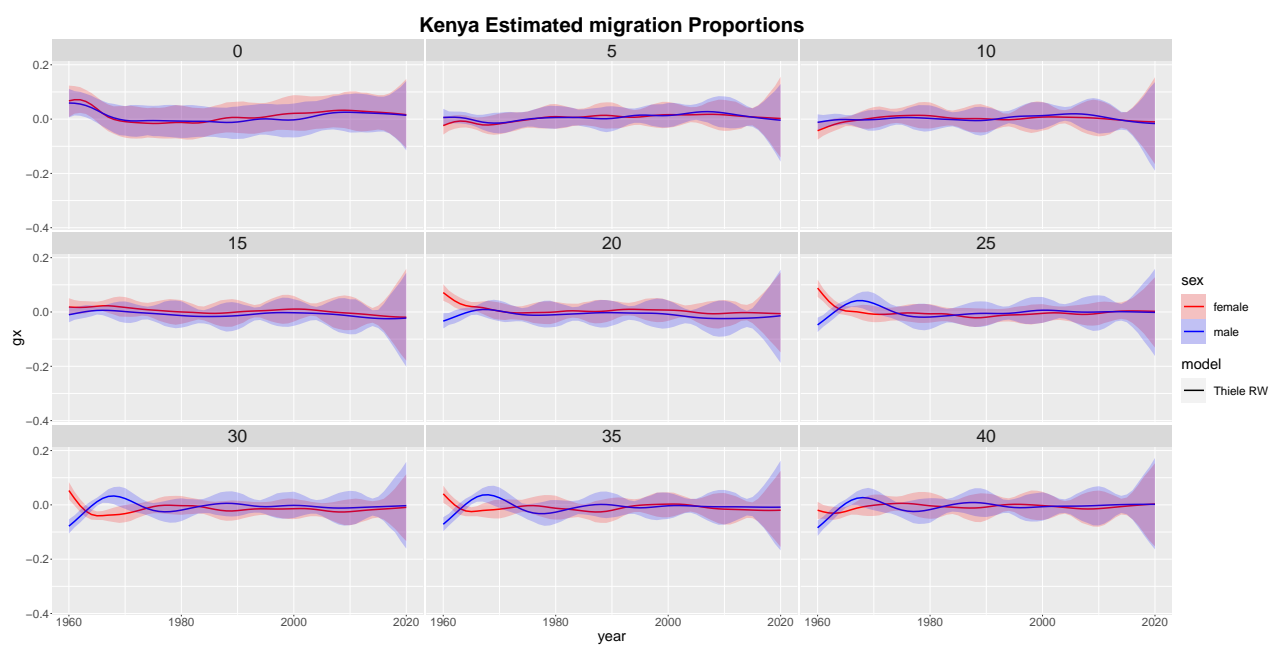


Figure 16: Migration

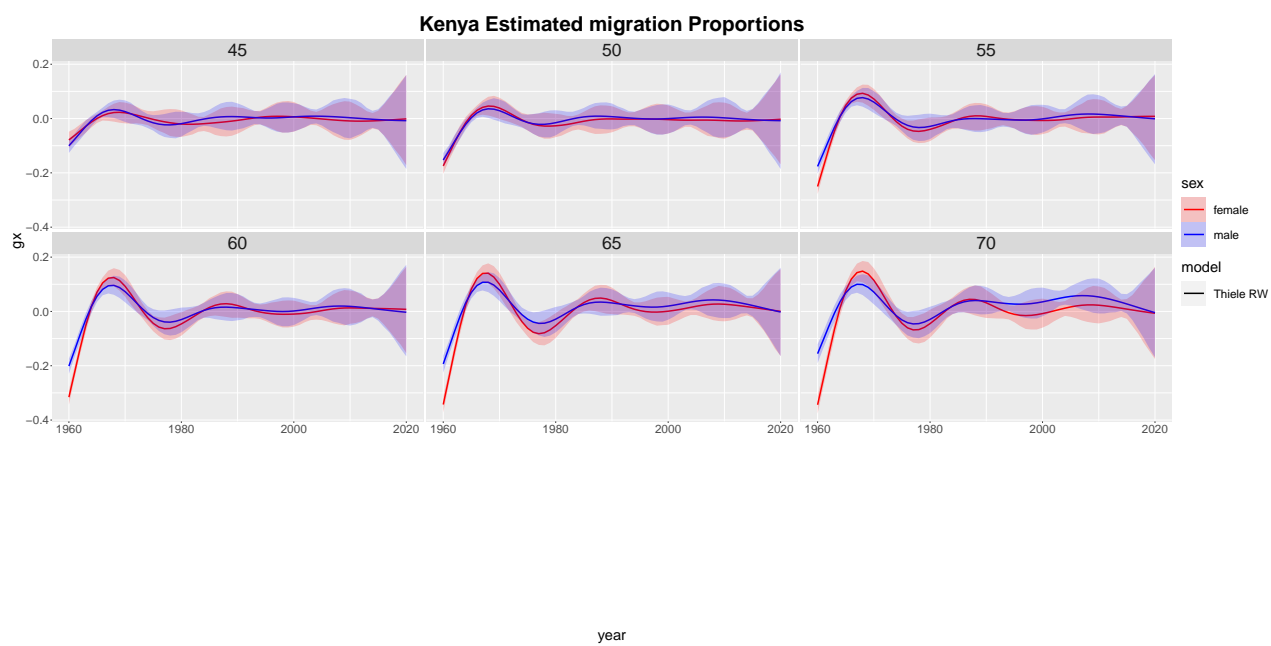


Figure 17: Migration

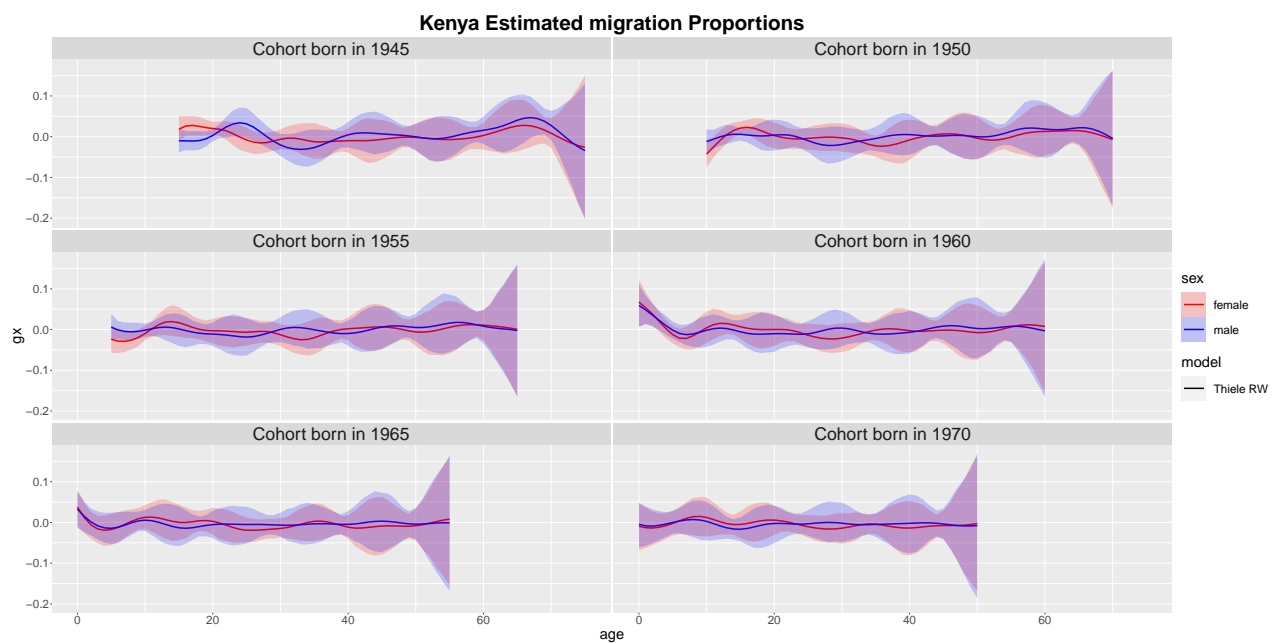


Figure 18: Migration

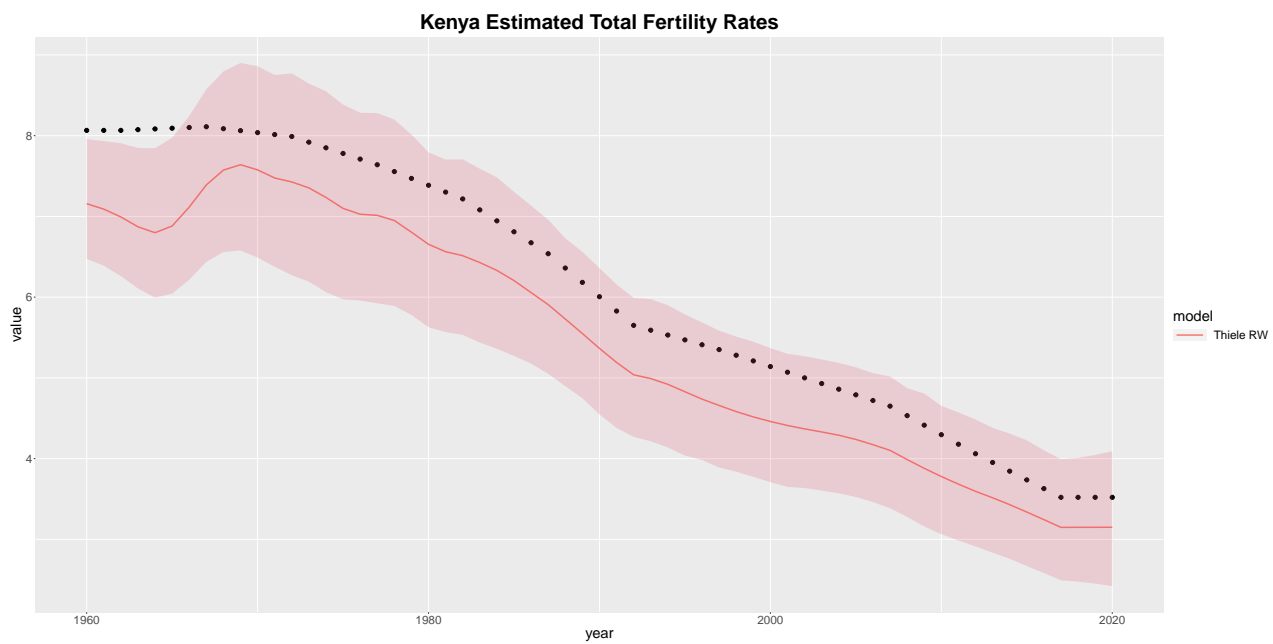


Figure 19: Total Fertility

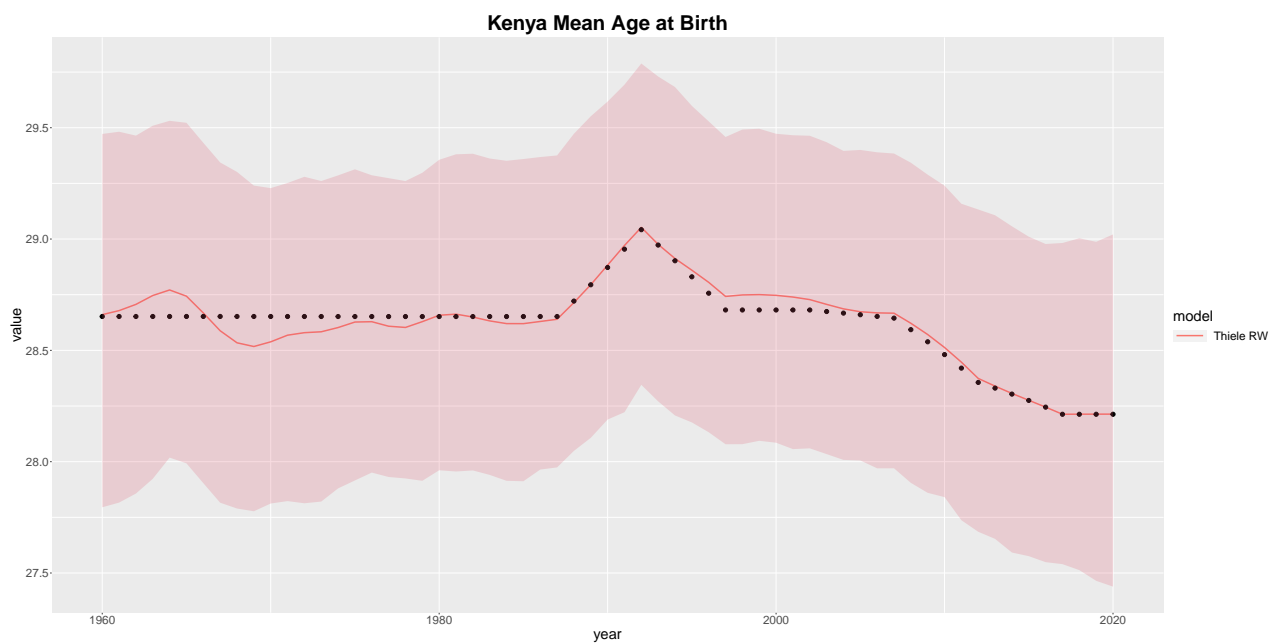


Figure 20: Mean age at births

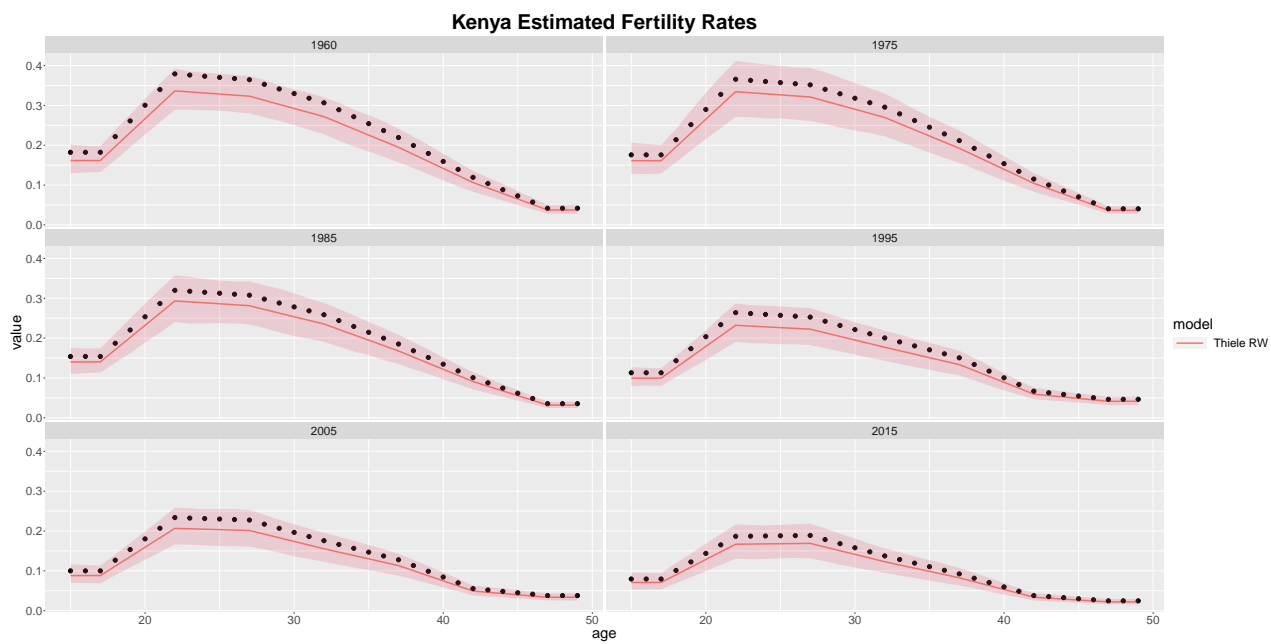


Figure 21: Fertility

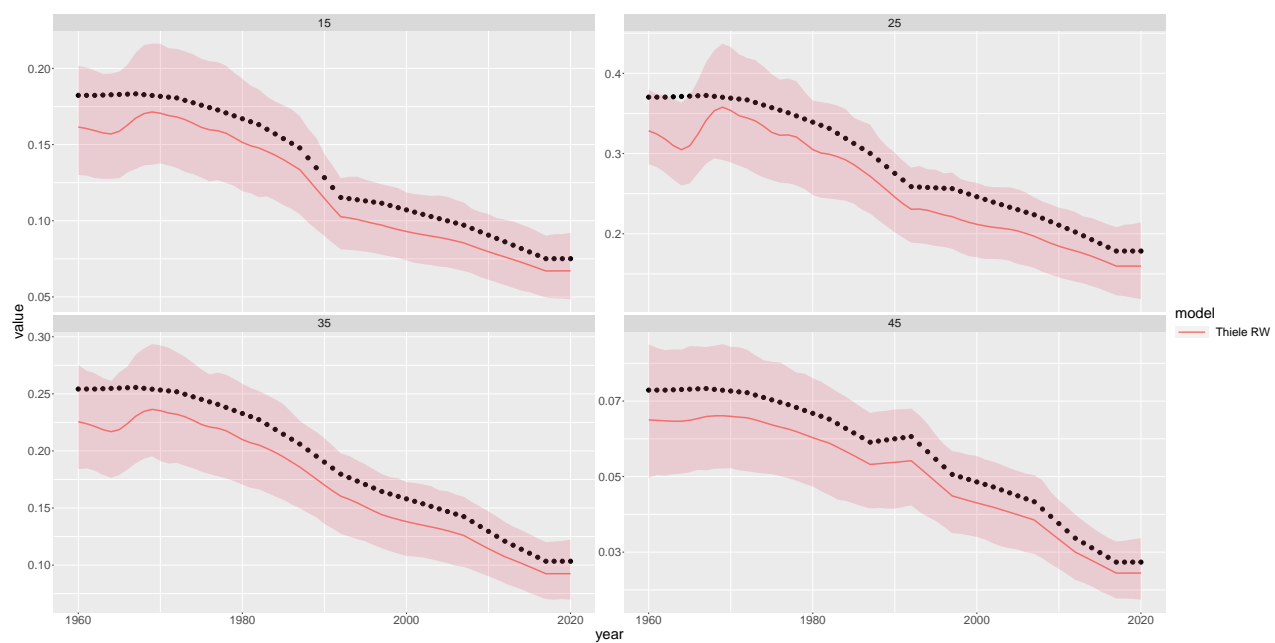


Figure 22: Fertility