# Uganda

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

## # A tibble: 86 x 5
##       age  `1969`  `1991`  `2002`  `2014`
##     <dbl>   <dbl>   <dbl>   <dbl>   <dbl>
## 1       0 139428. 340153. 502401  586516
## 2       1 186993. 308159. 447336. 574071.
## 3       2 191510. 314681. 450246. 591449
## 4       3 184954. 306938. 443253. 592649.
## 5       4 181866. 298637. 441935. 590639.
## 6       5 171741. 289064. 430734. 578980.
## 7       6 160554. 273462. 417834. 563422.
## 8       7 149220. 258883. 404547. 548996.
## 9       8 137717. 245903. 389734. 534496.
## 10      9 127022. 233325. 375940. 513891.
## # ... with 76 more rows

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

## # A tibble: 18 x 1
##       age
##     <dbl>
## 1       0
## 2       5
## 3      10
## 4      15
## 5      20
## 6      25
## 7      30
## 8      35
## 9      40
## 10     45
## 11     50
## 12     55
## 13     60
## 14     65
## 15     70
## 16     75
## 17     80
## 18     85

## [1] "Census Males"

## # A tibble: 86 x 5
##       age  `1969`  `1991`  `2002`  `2014`
##     <dbl>   <dbl>   <dbl>   <dbl>   <dbl>
## 1       0 135287. 334426. 505006  636238
## 2       1 183048. 306161. 449339. 621512.
## 3       2 187557. 310898. 450300. 634773.
## 4       3 182062. 303750. 442612. 633398.
## 5       4 179610. 295341. 441206. 627695.
## 6       5 169936. 285010. 430266. 612267.
```

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## 7      6 159365. 269372. 417144. 591845.
## 8      7 149658. 256683. 402868. 571051.
## 9      8 139504. 245108. 388078. 553863.
## 10     9 130558. 233840. 374840. 530259.
## # ... with 76 more rows

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

## # A tibble: 18 x 1
##       age
##     <dbl>
## 1       0
## 2       5
## 3      10
## 4      15
## 5      20
## 6      25
## 7      30
## 8      35
## 9      40
## 10     45
## 11     50
## 12     55
## 13     60
## 14     65
## 15     70
## 16     75
## 17     80
## 18     85
```

*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_
##            4.2367382           5.8867155           4.0093914           5.1780514            5.0582432
##        log_lambda_tp            tp_slope           tp_params_5          tp_params_10       log_lambda_phi        log_
##            4.2160256          -0.0233209           0.1732663           0.5585294           11.3276368
##  log_lambda_lambda    log_lambda_delta  log_lambda_epsilon
##            2.9590297           7.2757054           4.6851714
```
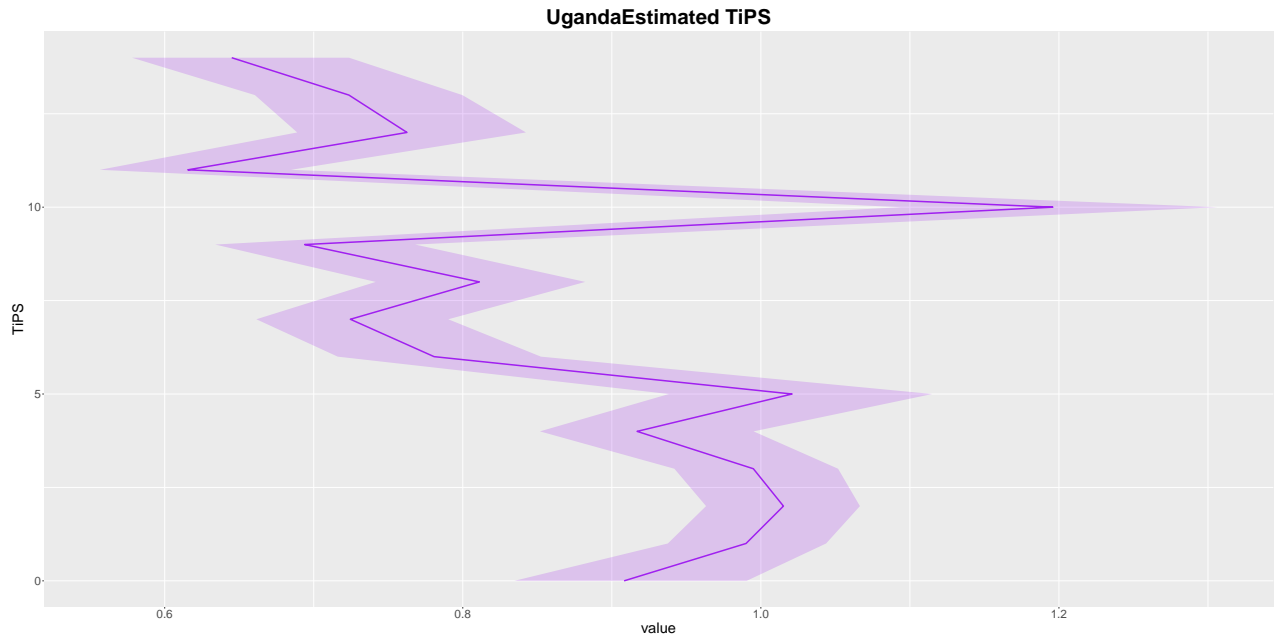
Figure 1: Estimated TiPS
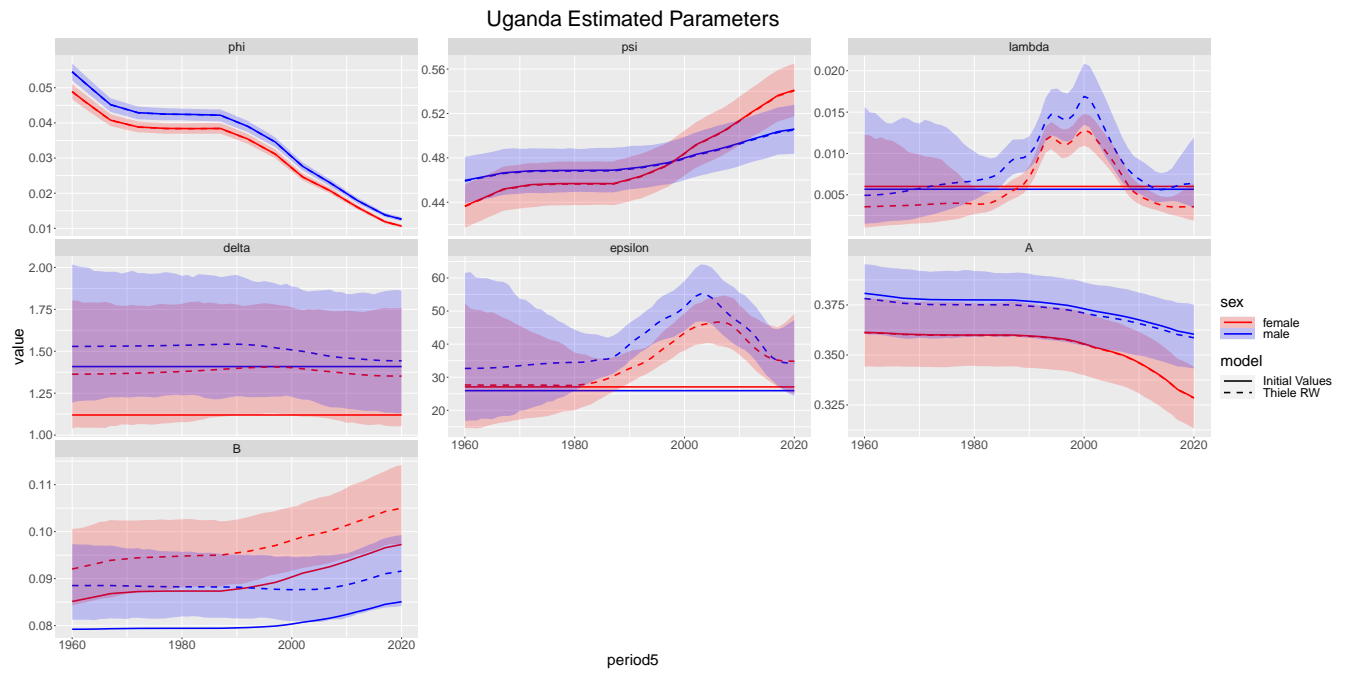


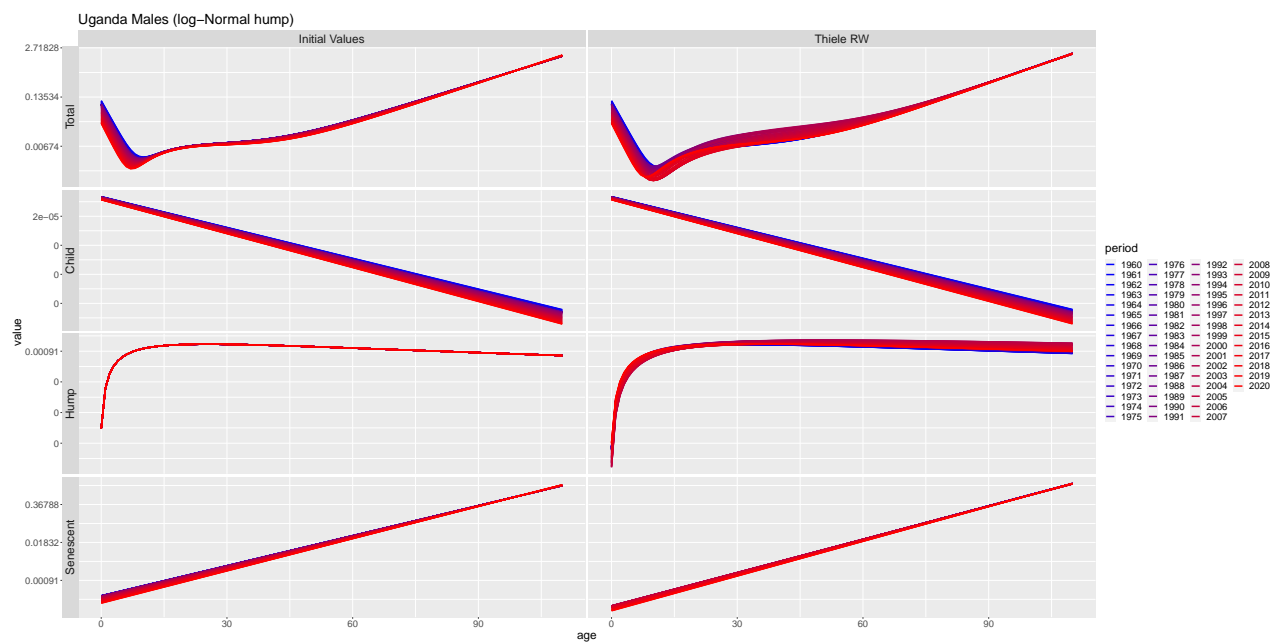Figure 2: Estimated parameters

3
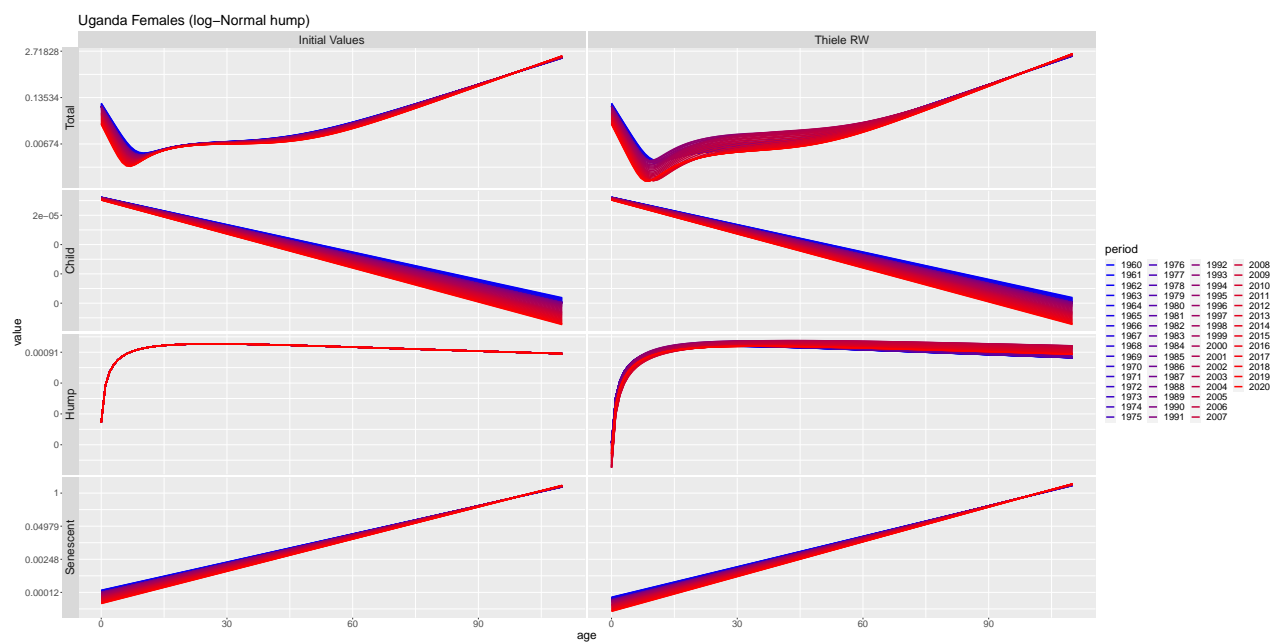
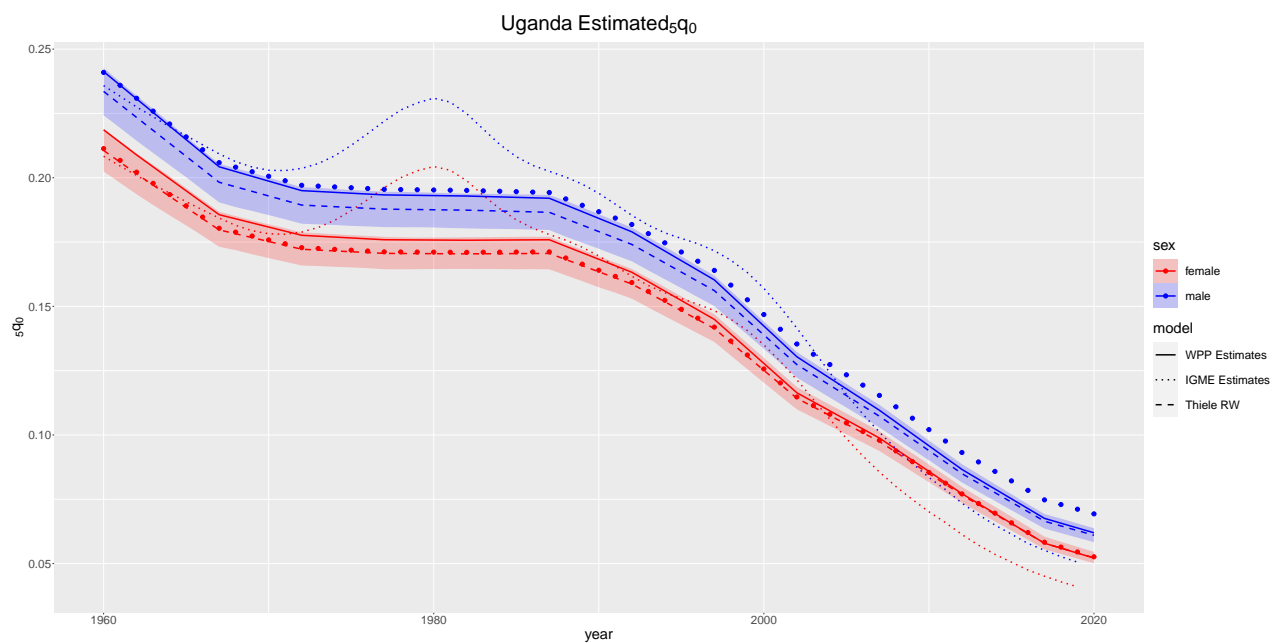Figure 3: Thiele Decomposed



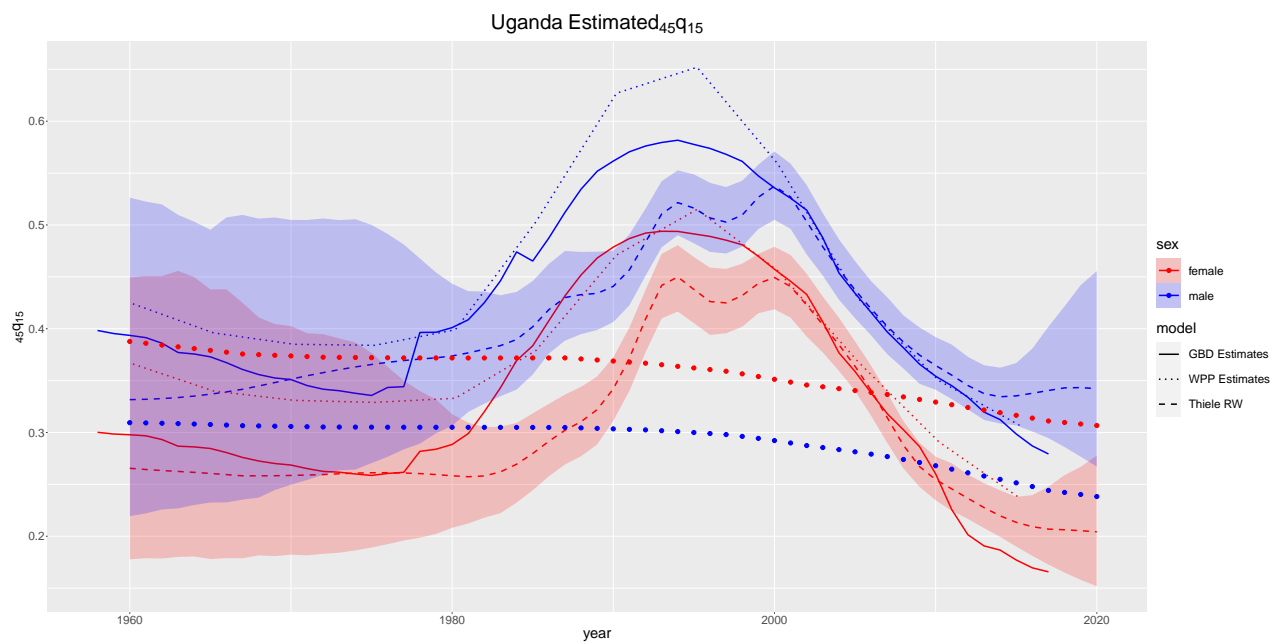Figure 4: Thiele Decomposed

4

Figure 5: Estimated $_5q_0$



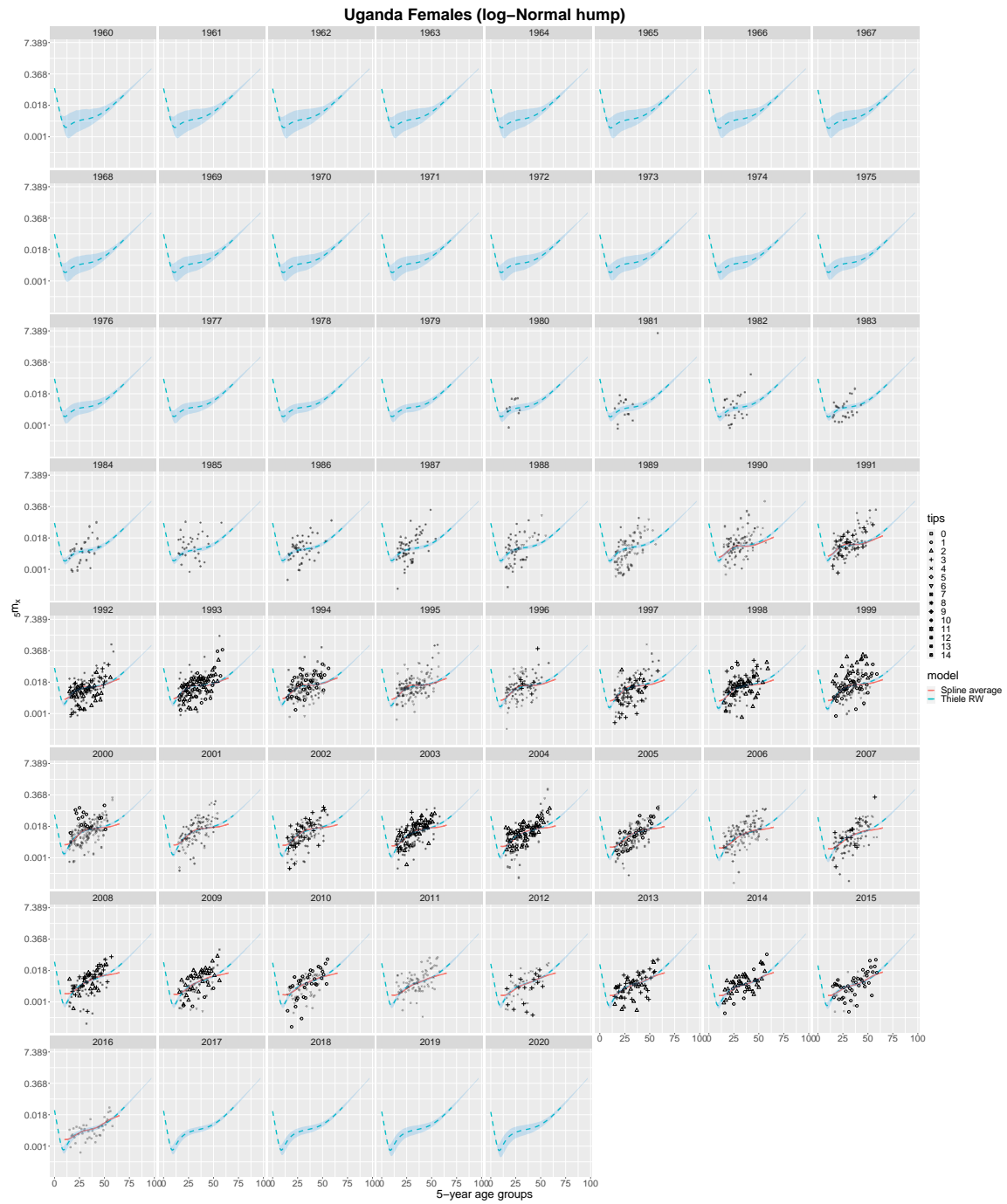Figure 6: Estimated $_{45}q_{15}$

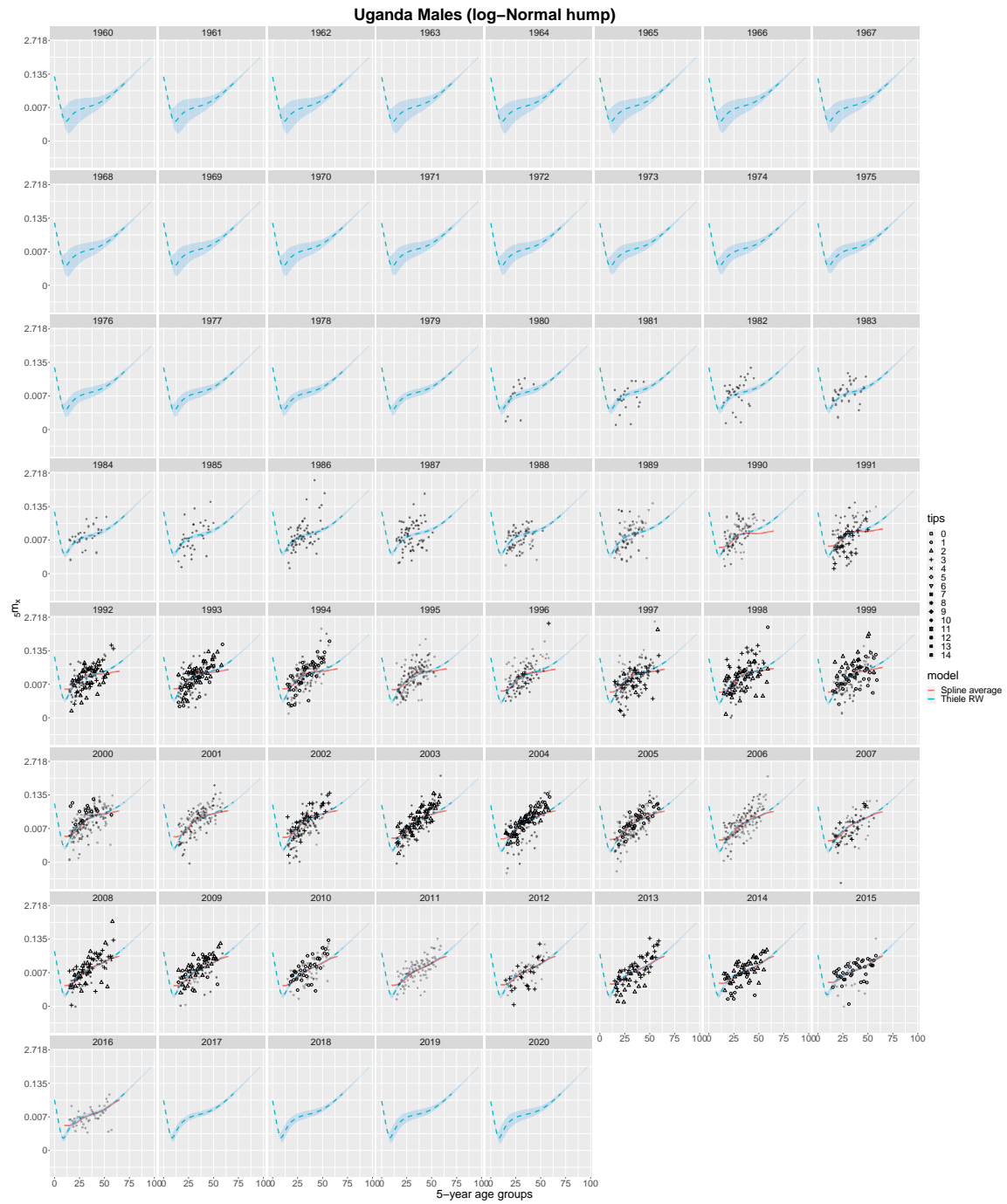Figure 7: Mortality Schedules

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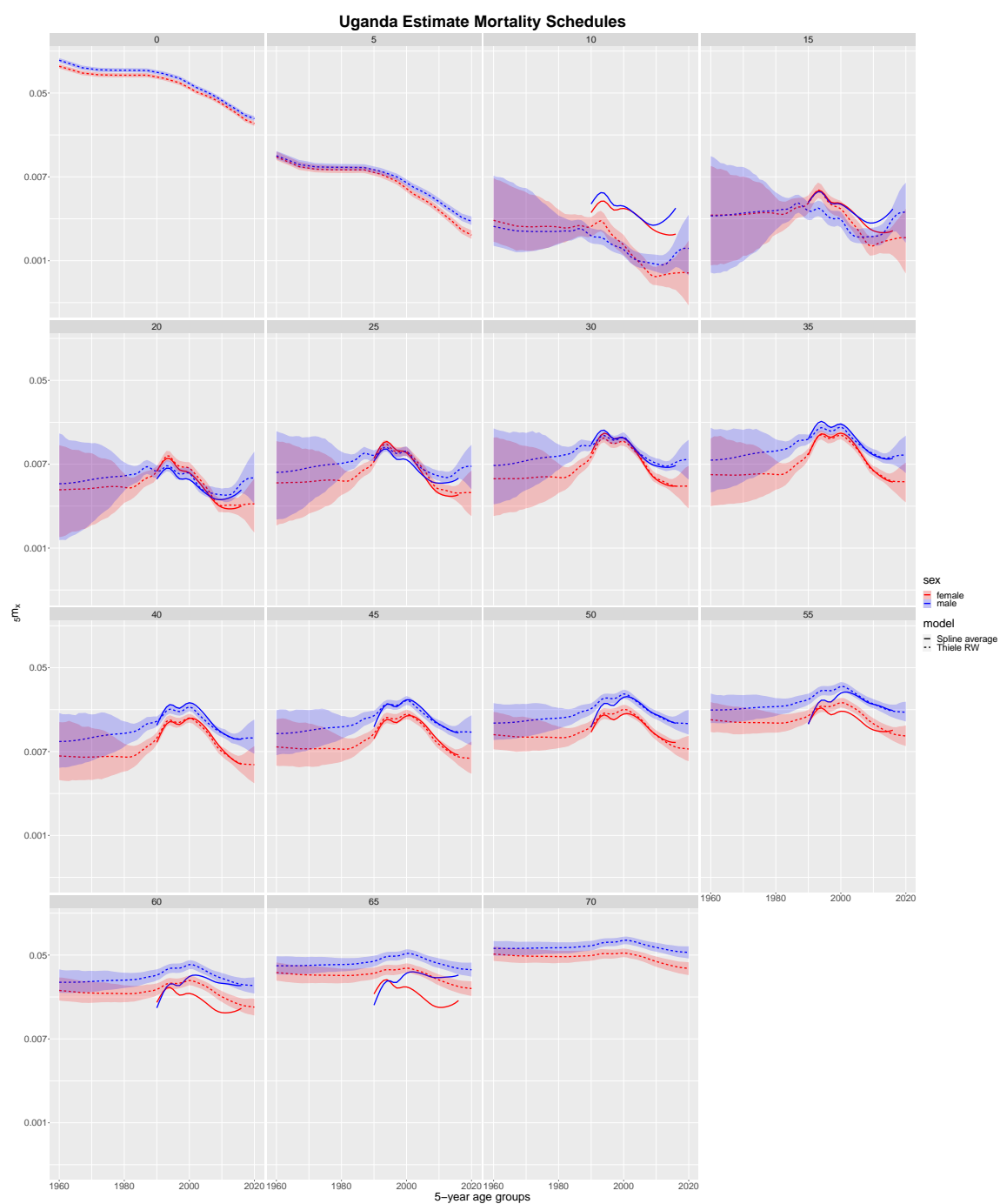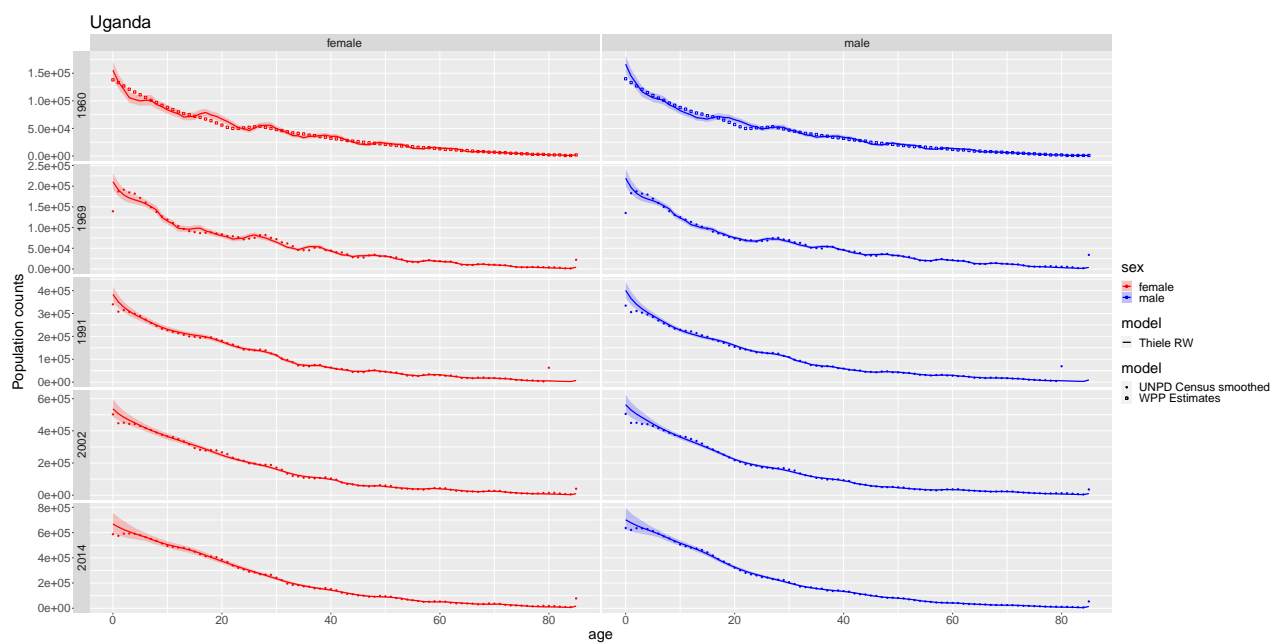Figure 8: Mortality Schedules

Figure 9: Mortality Schedules
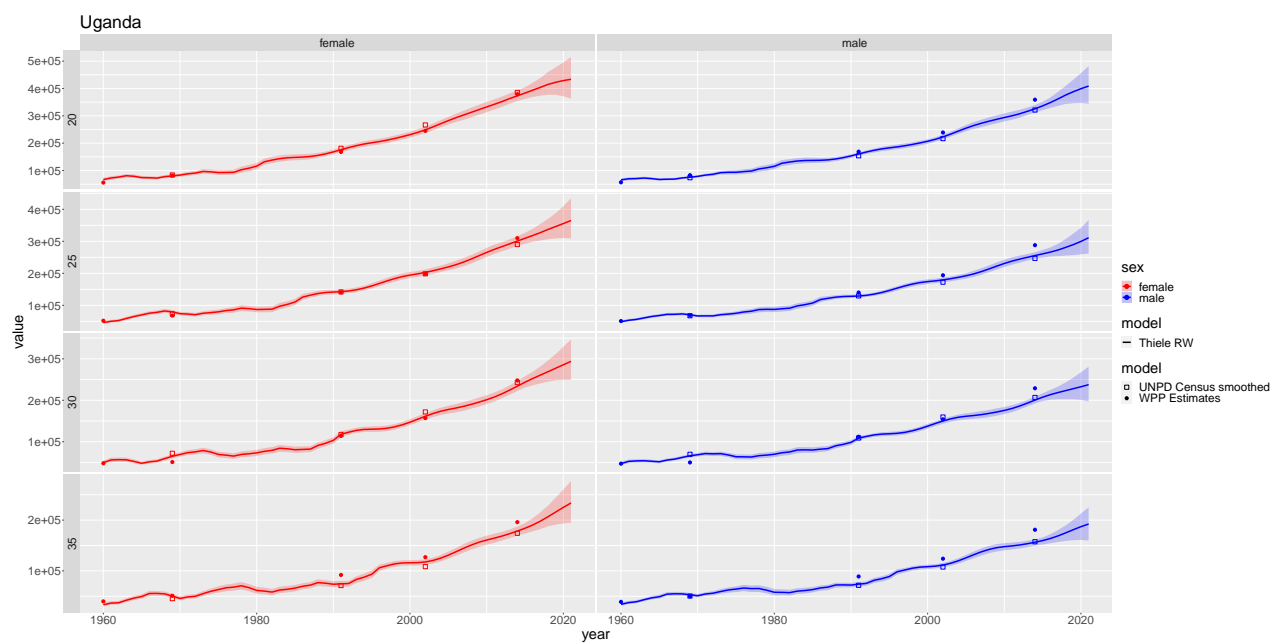
Figure 10: Population



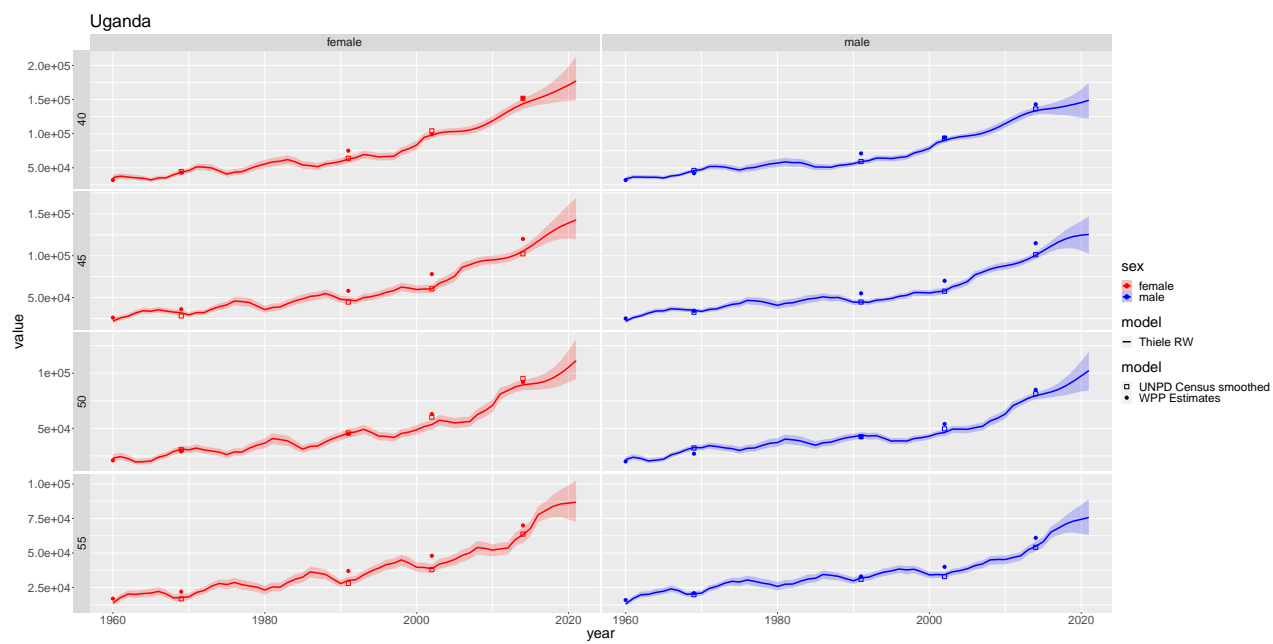Figure 11: Population

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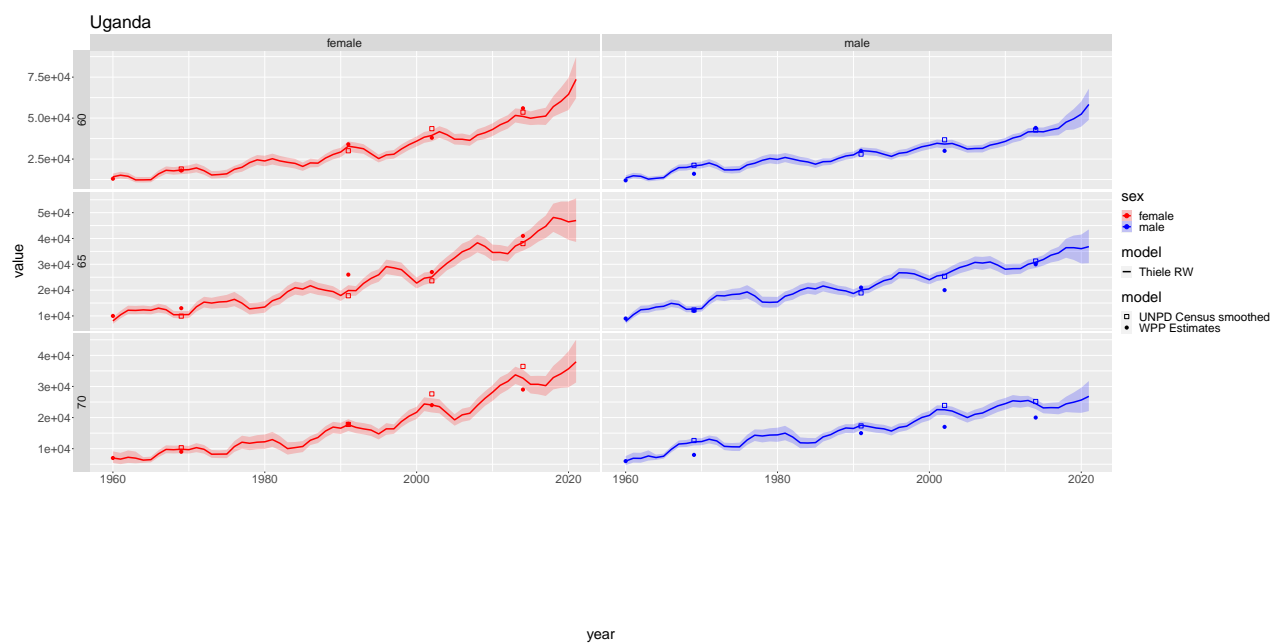Figure 12: Population

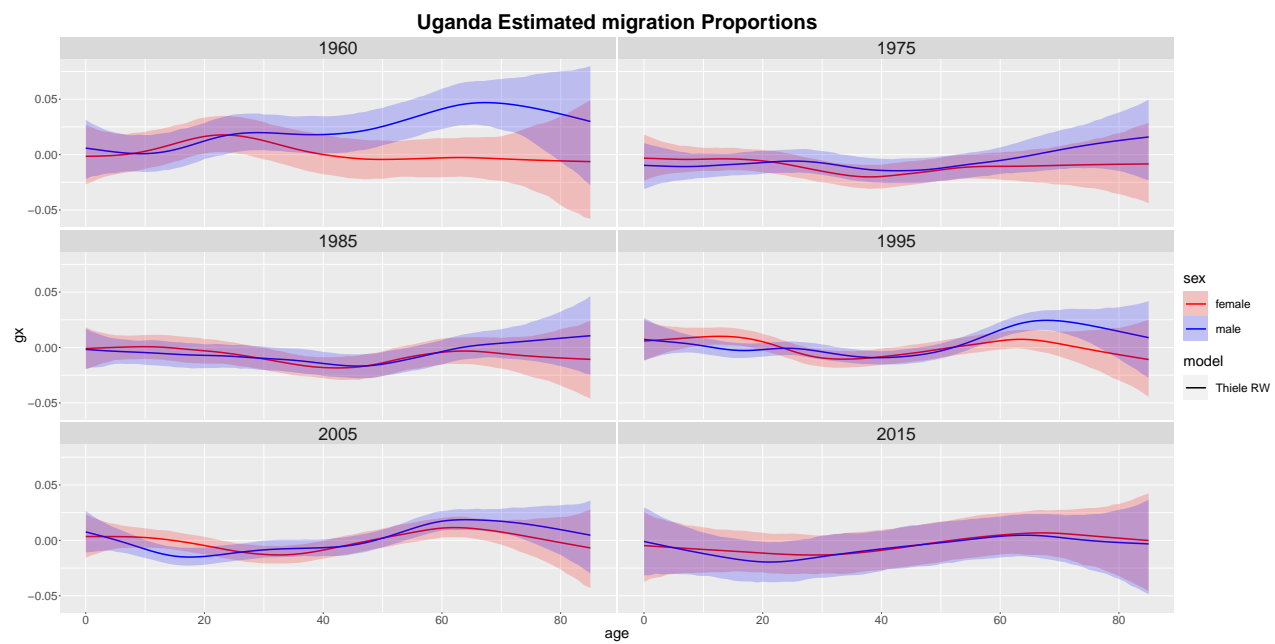

Figure 13: Population

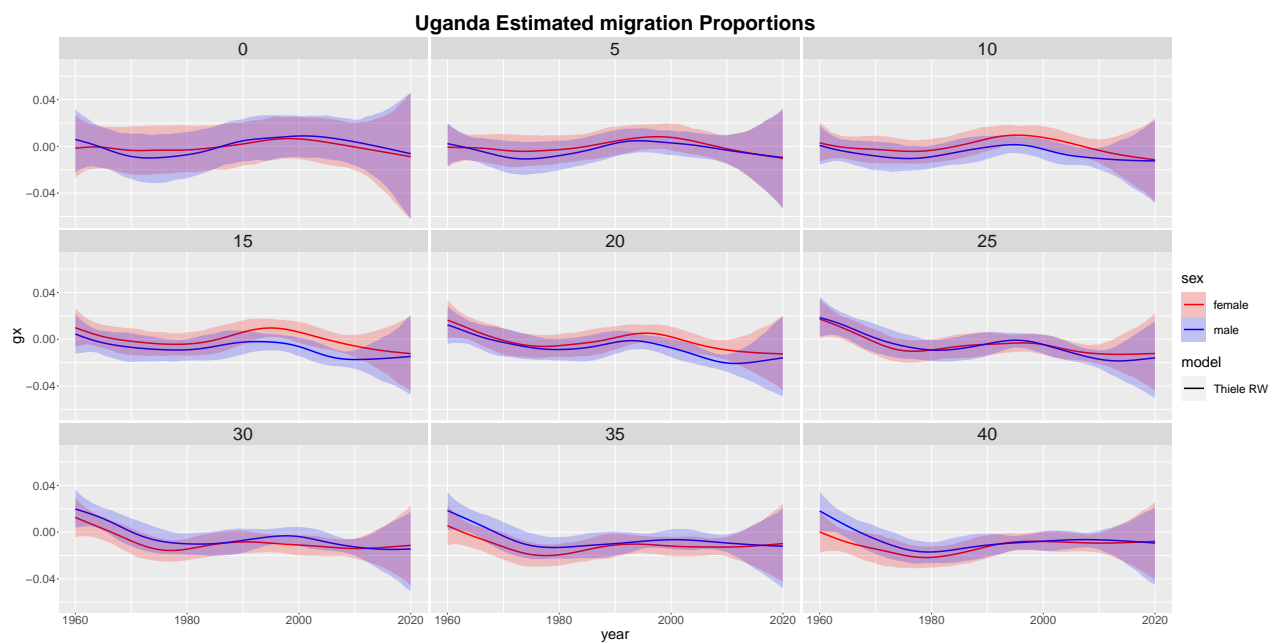Figure 14: Population
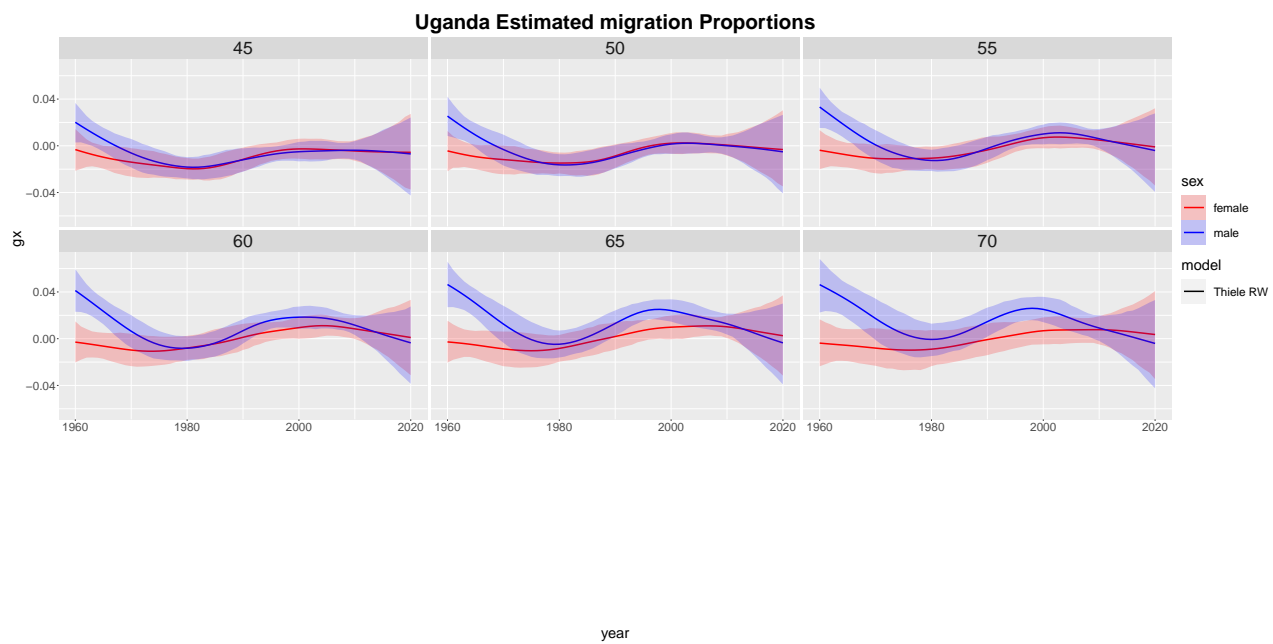


Figure 15: Migration

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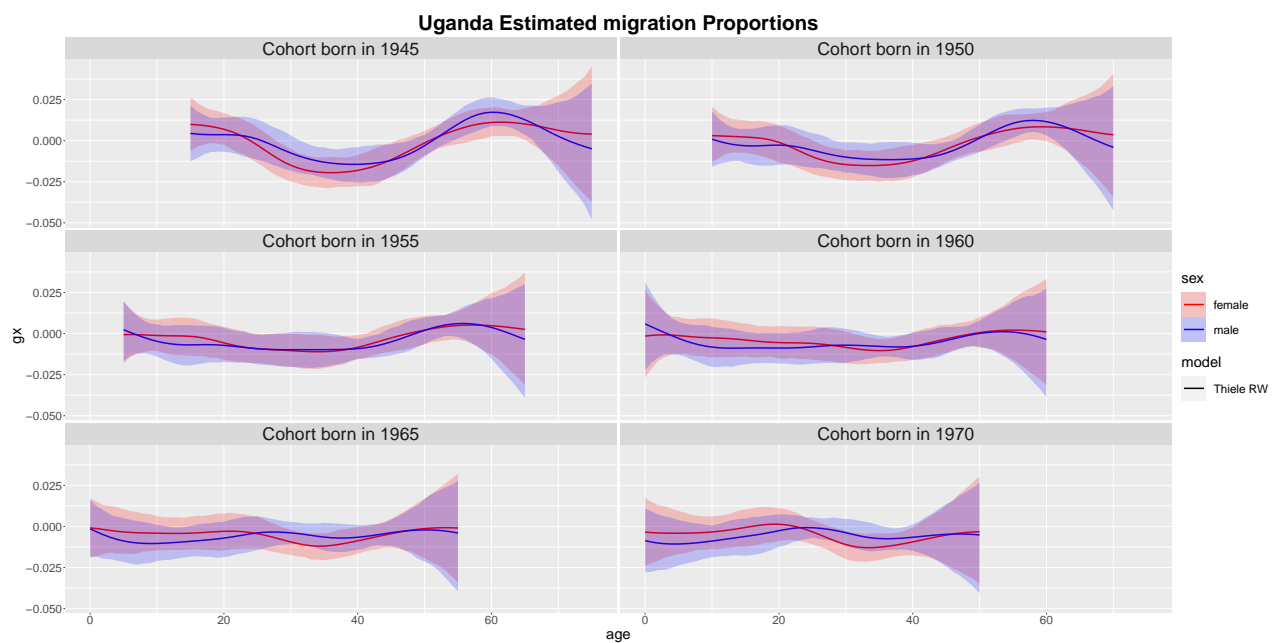Figure 16: Migration



Figure 17: Migration

**Uganda Estimated migration Proportions**



Figure 18: Migration
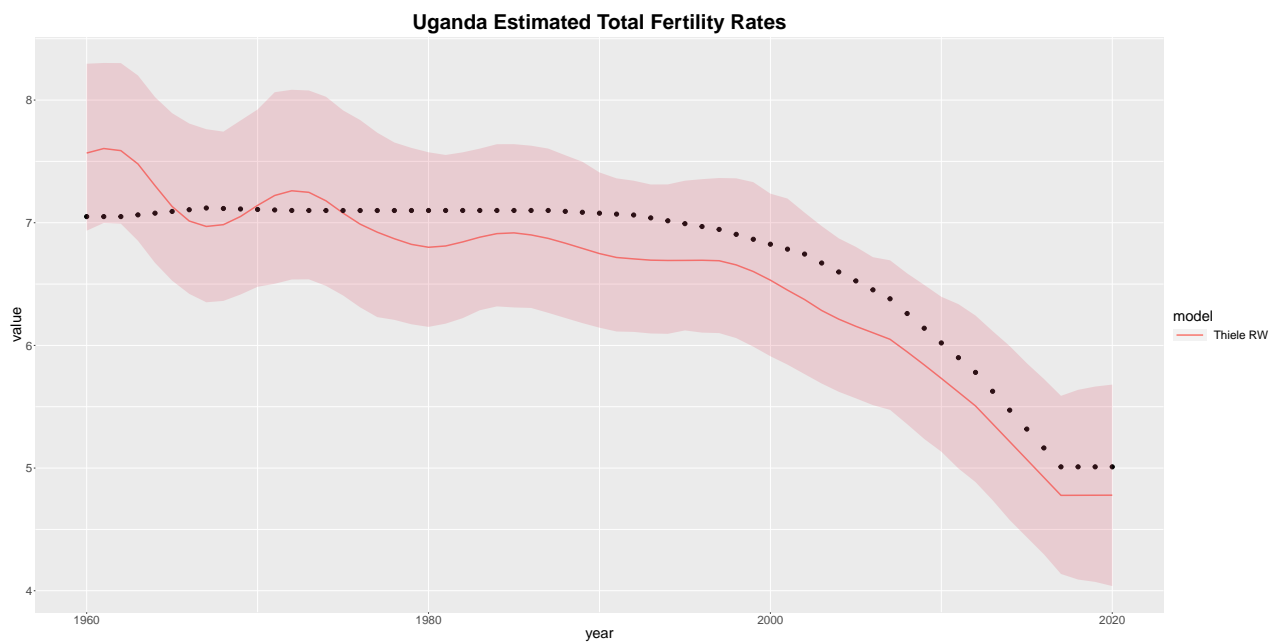
**Uganda Estimated Total Fertility Rates**
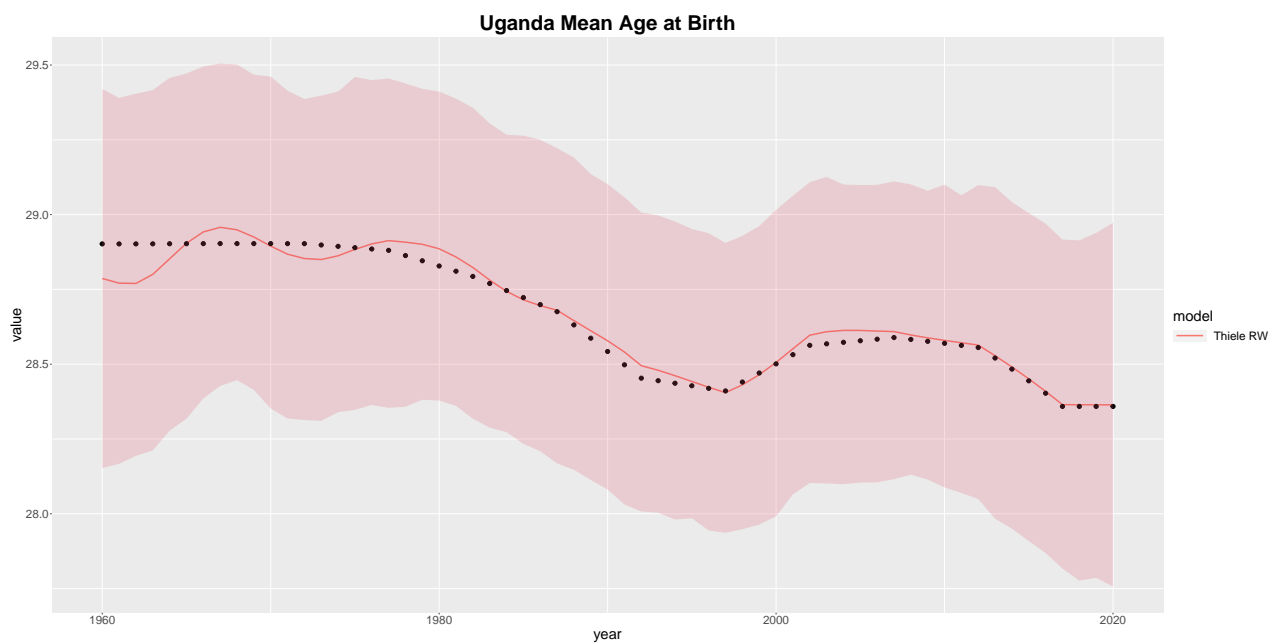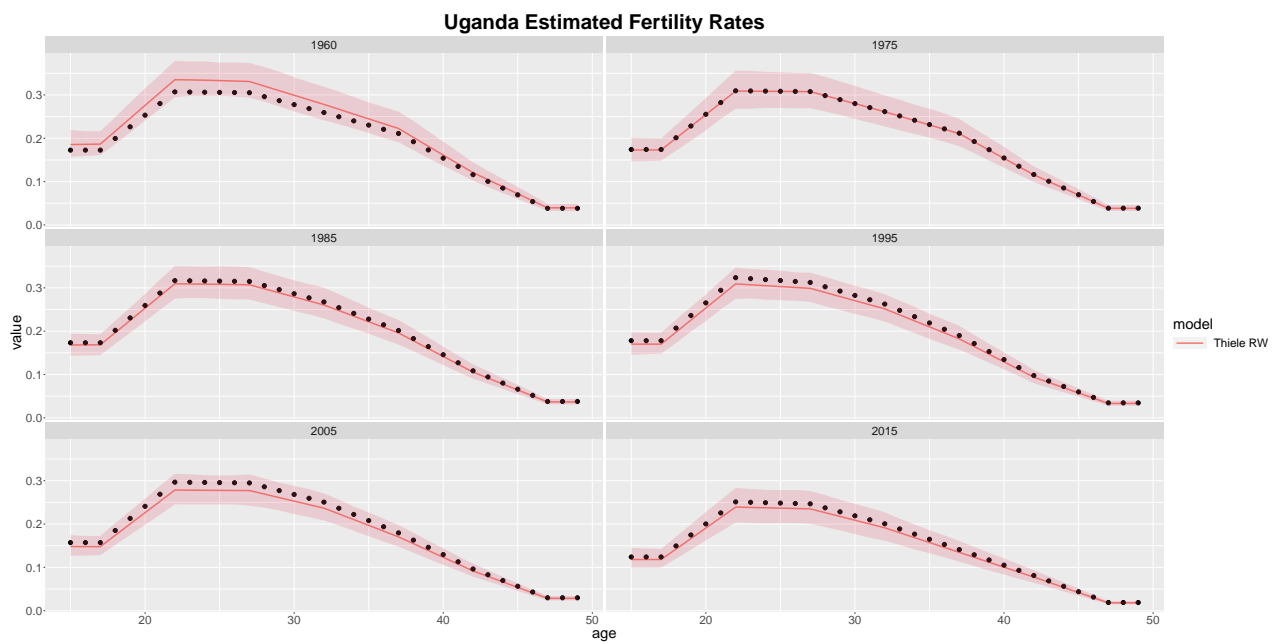


Figure 19: Total Fertility

Figure 20: Mean age at births
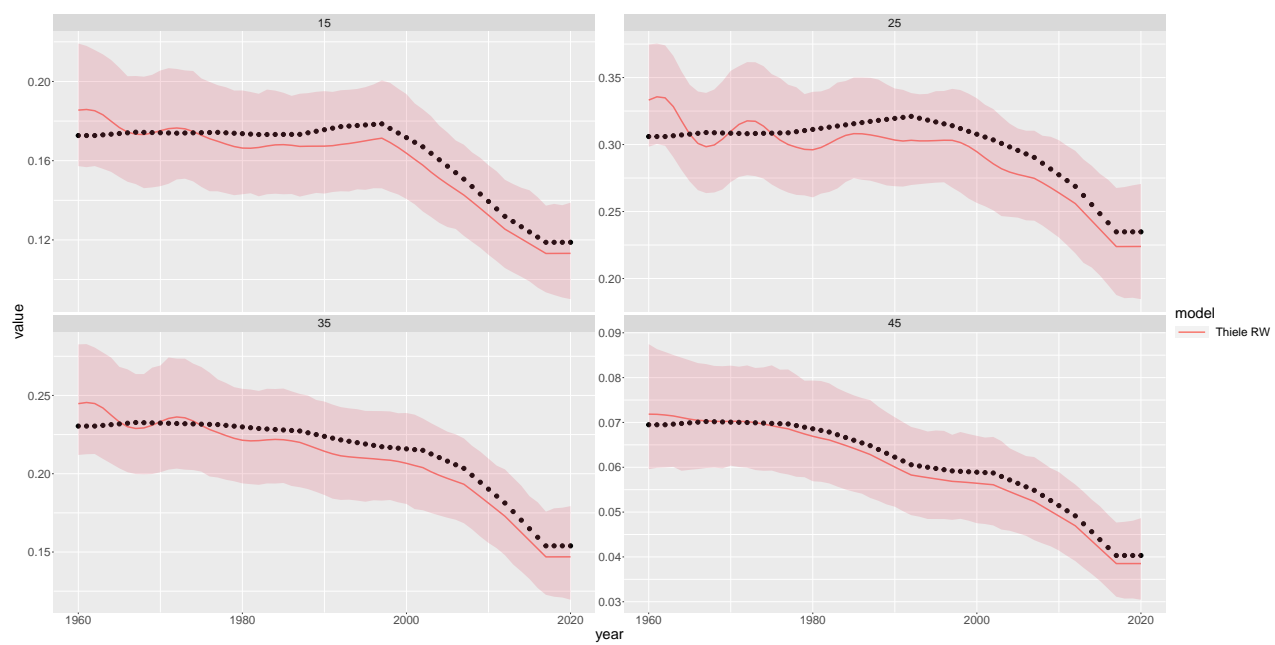


Figure 21: Fertility

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Figure 22: Fertility