Angola

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

## # A tibble: 86 x 2
##      age  `2014`
##    <dbl>   <dbl>
## 1      0 438929
## 2      1 529096.
## 3      2 512564
## 4      3 503159.
## 5      4 482890.
## 6      5 467691.
## 7      6 444757.
## 8      7 420007.
## 9      8 395598
## 10     9 371973.
## # ... 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 2
##      age  `2014`
##    <dbl>   <dbl>
## 1      0 435201
## 2      1 523750.
## 3      2 506322.
## 4      3 496824.
## 5      4 476364.
## 6      5 461347.
```

```
## 7       6 438334.
## 8       7 412996.
## 9       8 388362.
## 10      9 364539.
## # ... 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
##       3.957804e+00       5.349724e+00       3.723489e+00       5.264862e+00       4.224987e+00       1.
##       log_lambda_tp           tp_slope          tp_params_5         tp_params_10      log_lambda_phi    log_
##       3.077213e+00       5.246125e-04       1.559883e-01       4.422028e-01       1.261324e+01       1.
## log_lambda_lambda   log_lambda_delta log_lambda_epsilon
##       5.183537e+00       8.535720e+00       8.024979e+00
```
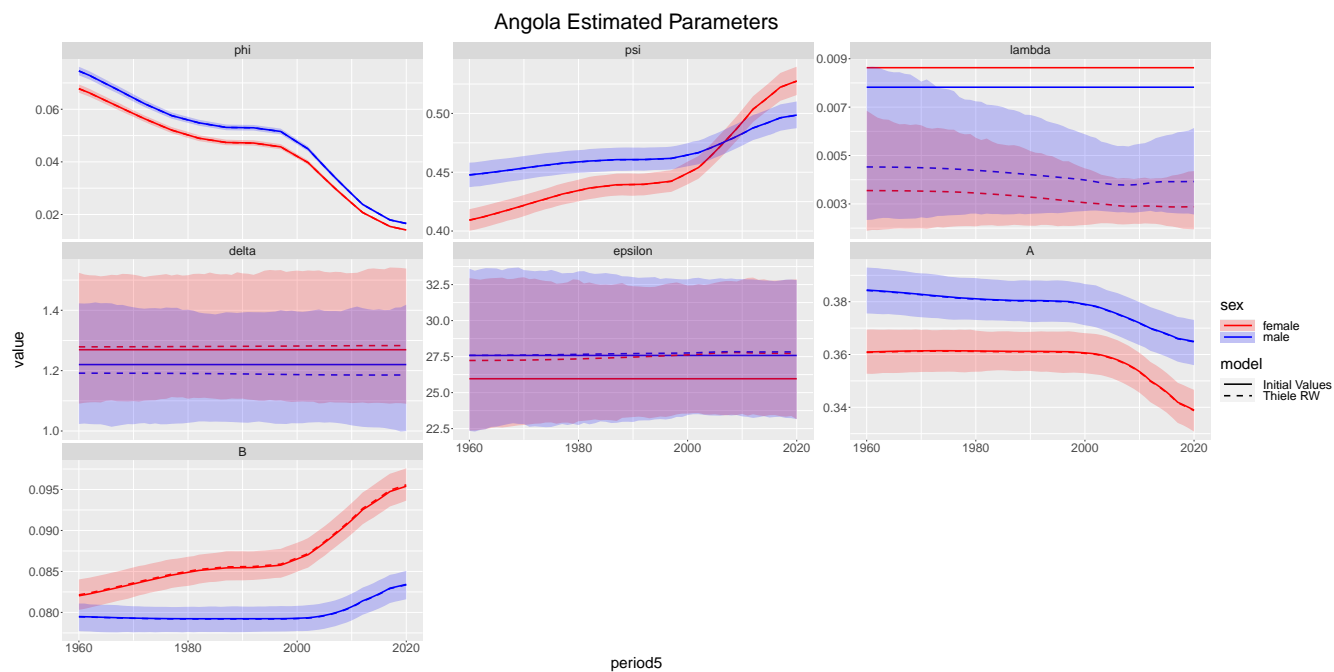
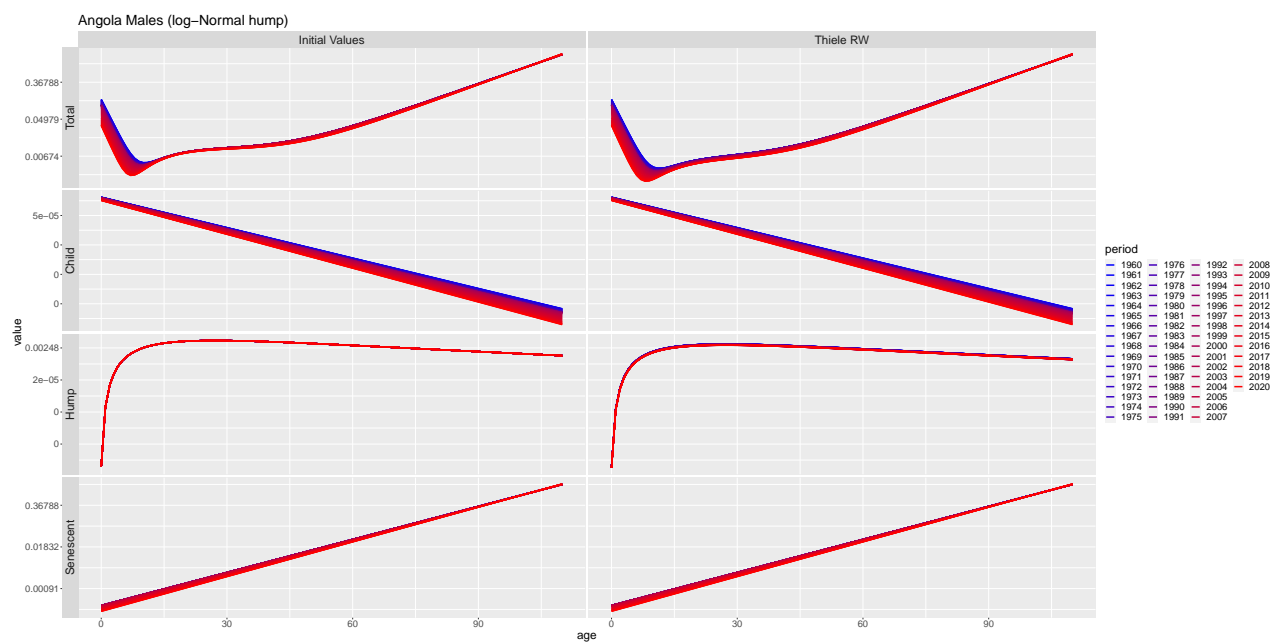Figure 1: Estimated parameters
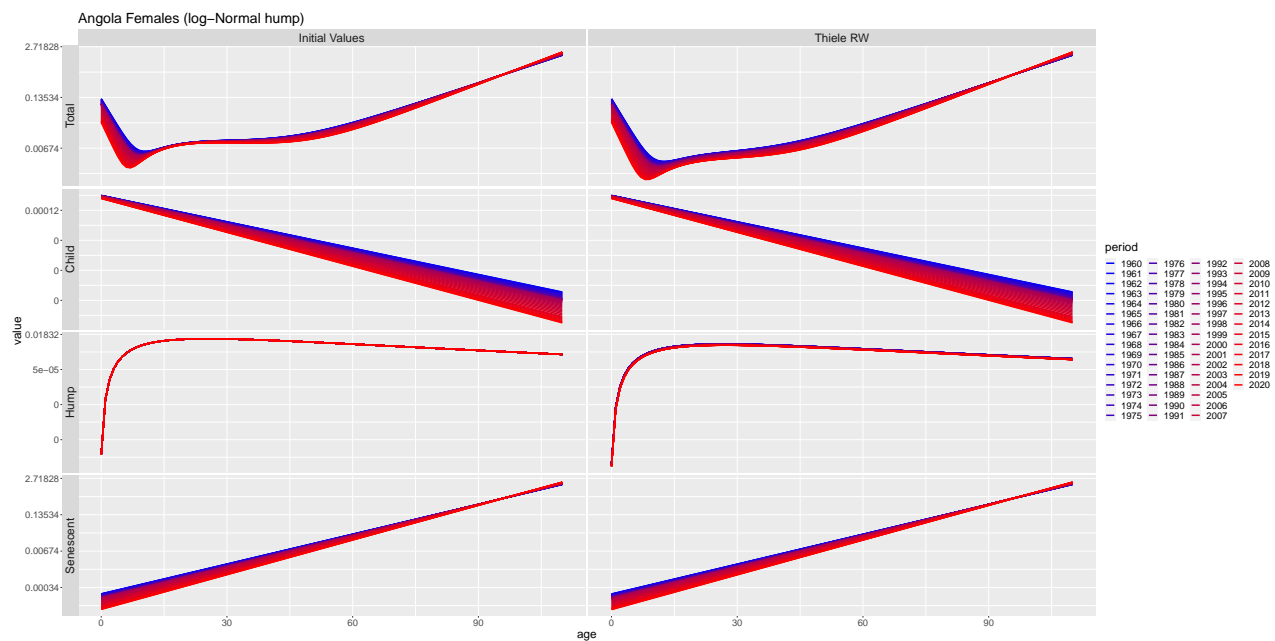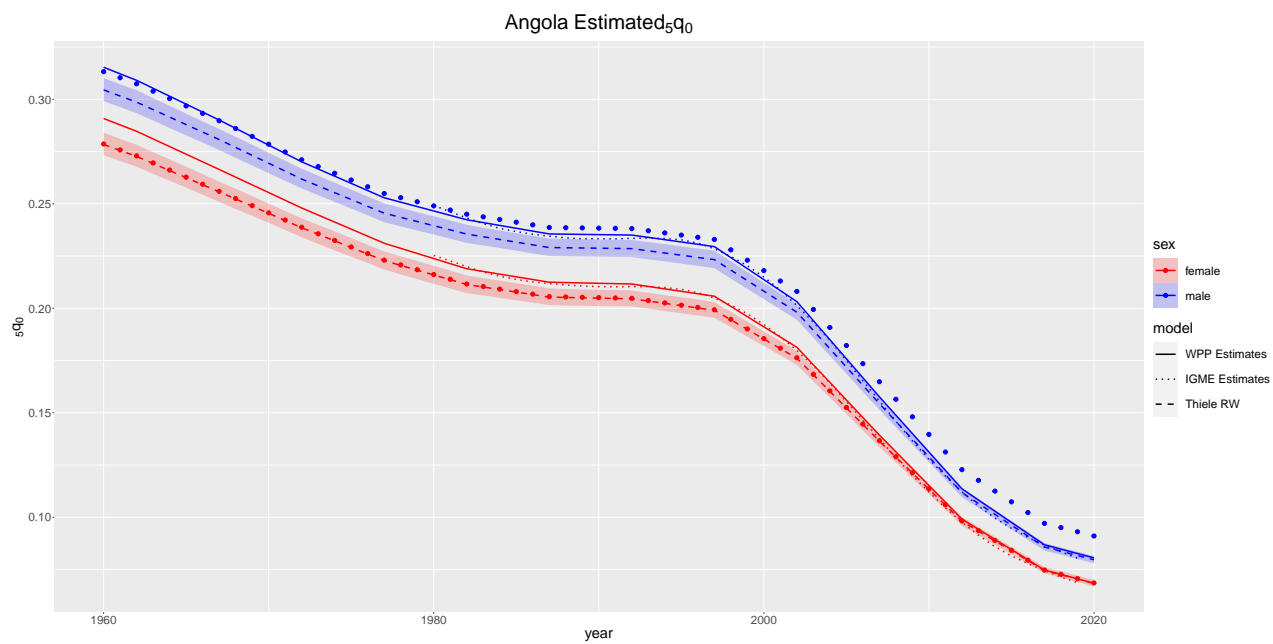

Figure 2: Thiele Decomposed
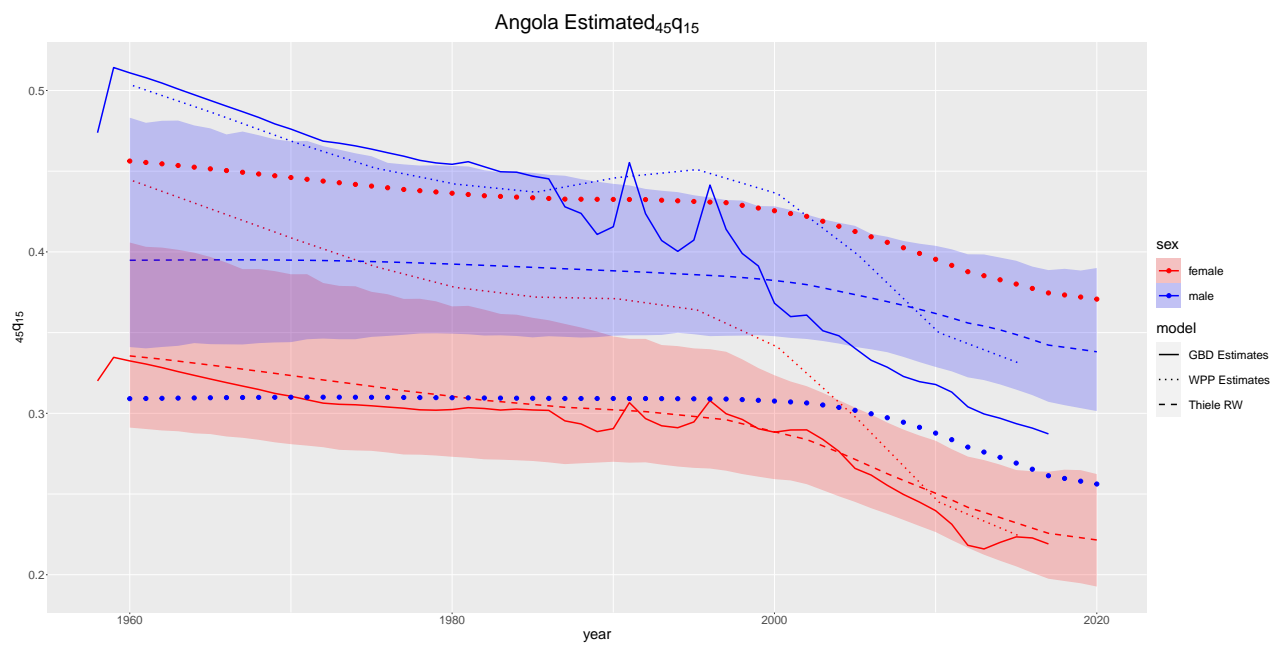
Figure 3: Thiele Decomposed

Figure 4: Estimated $_5q_0$

Figure 5: Estimated $_{45}q_{15}$

Angola Females (log–Normal hump)

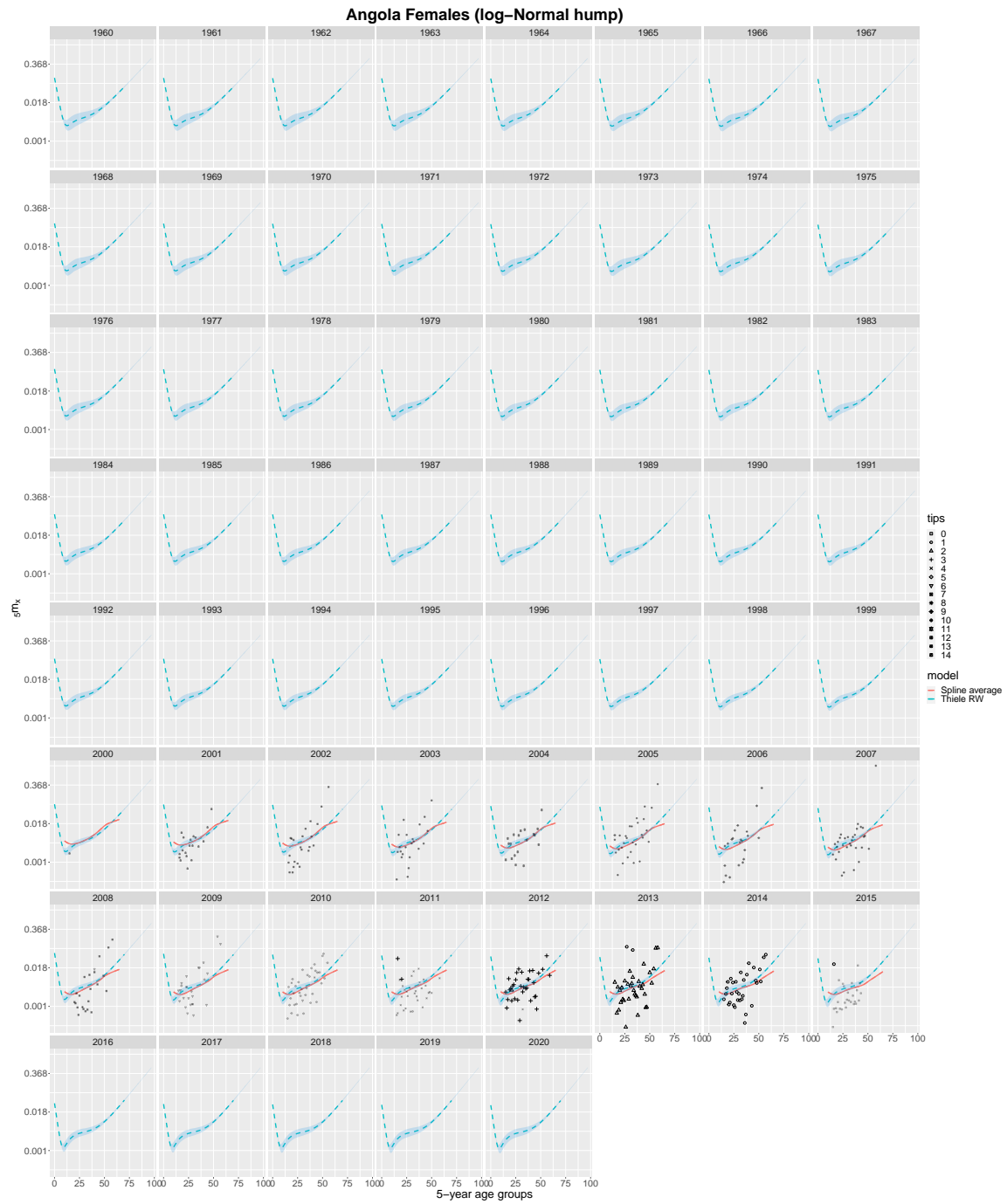

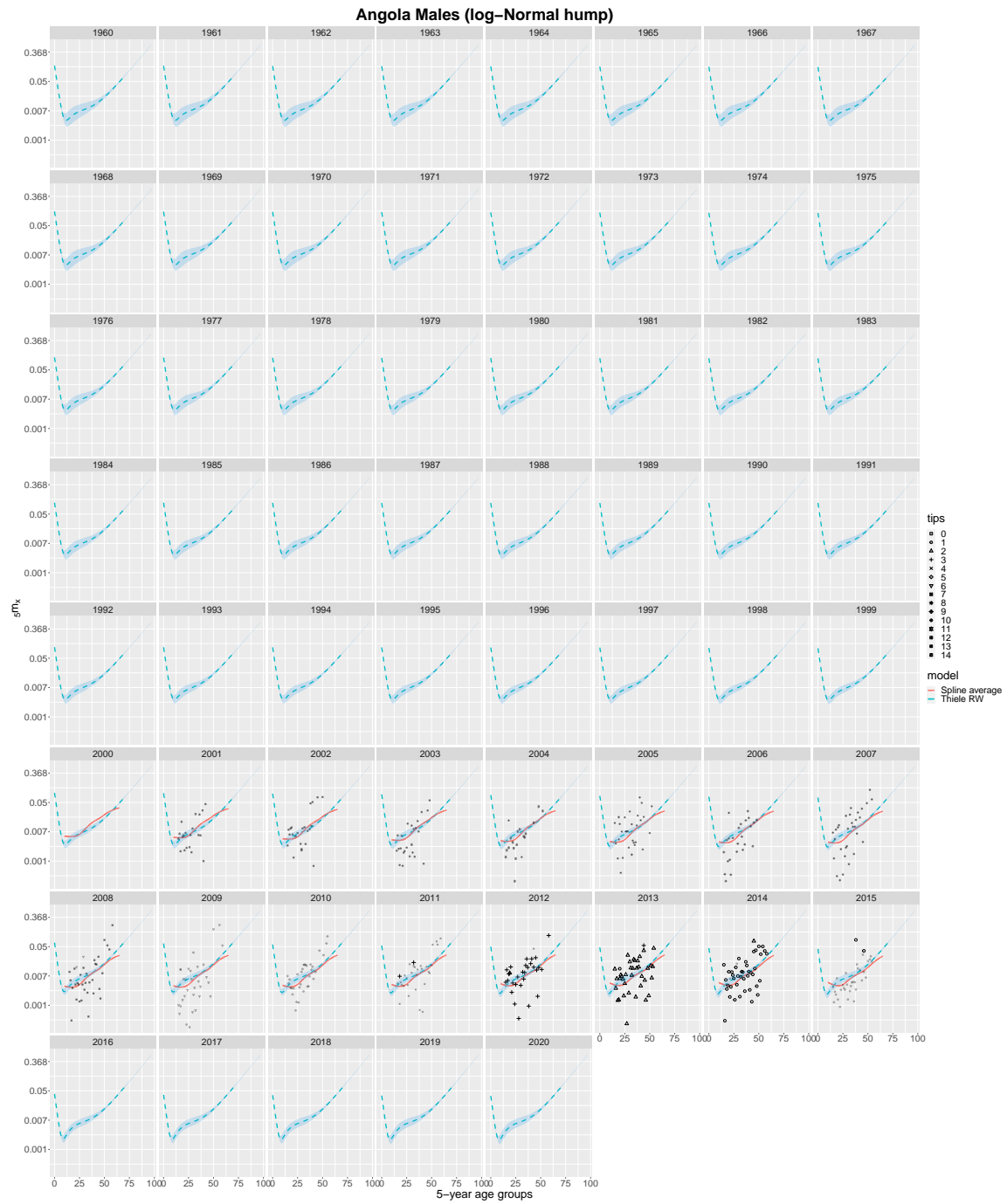Figure 6: Mortality Schedules

Angola Males (log–Normal hump)
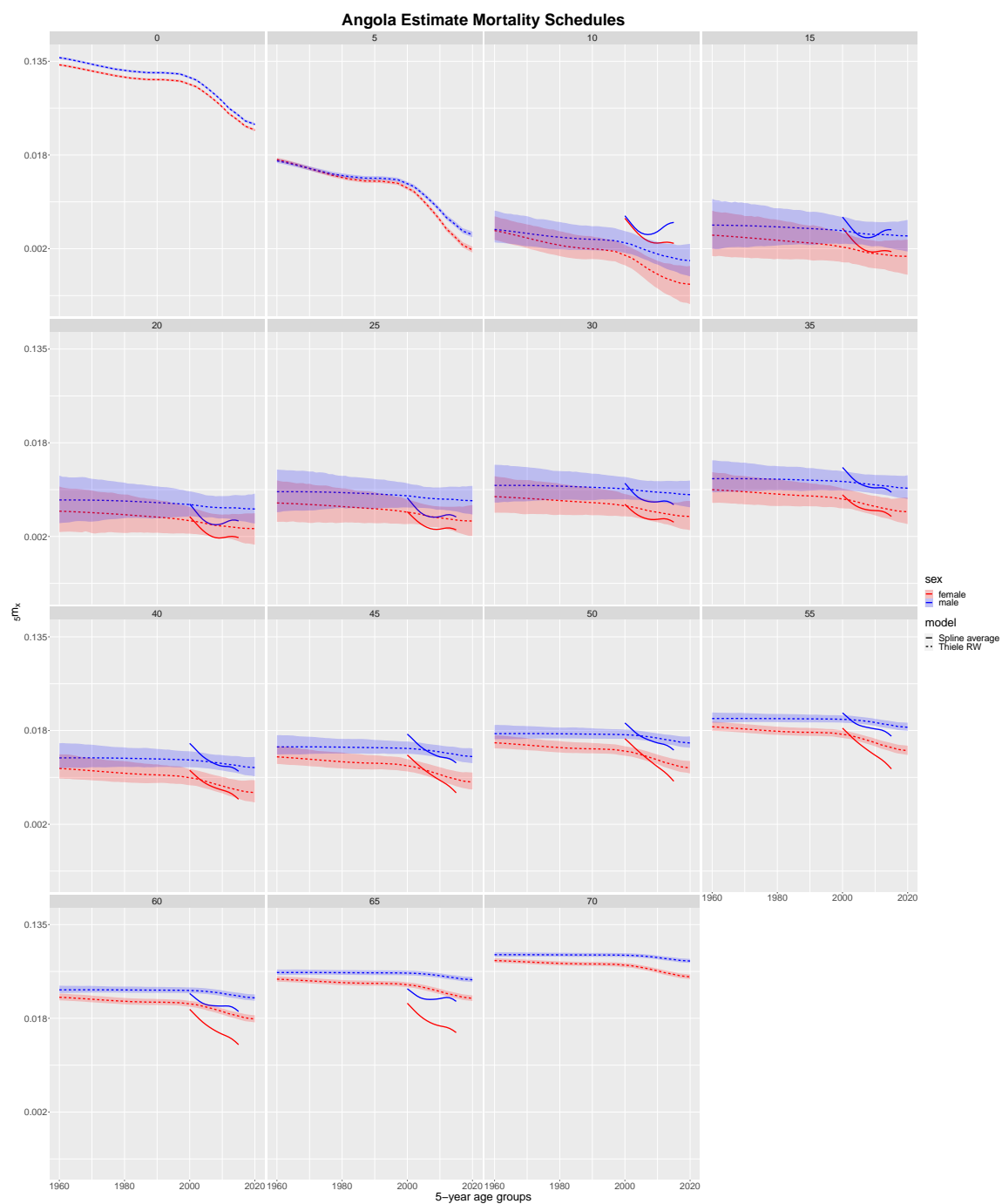

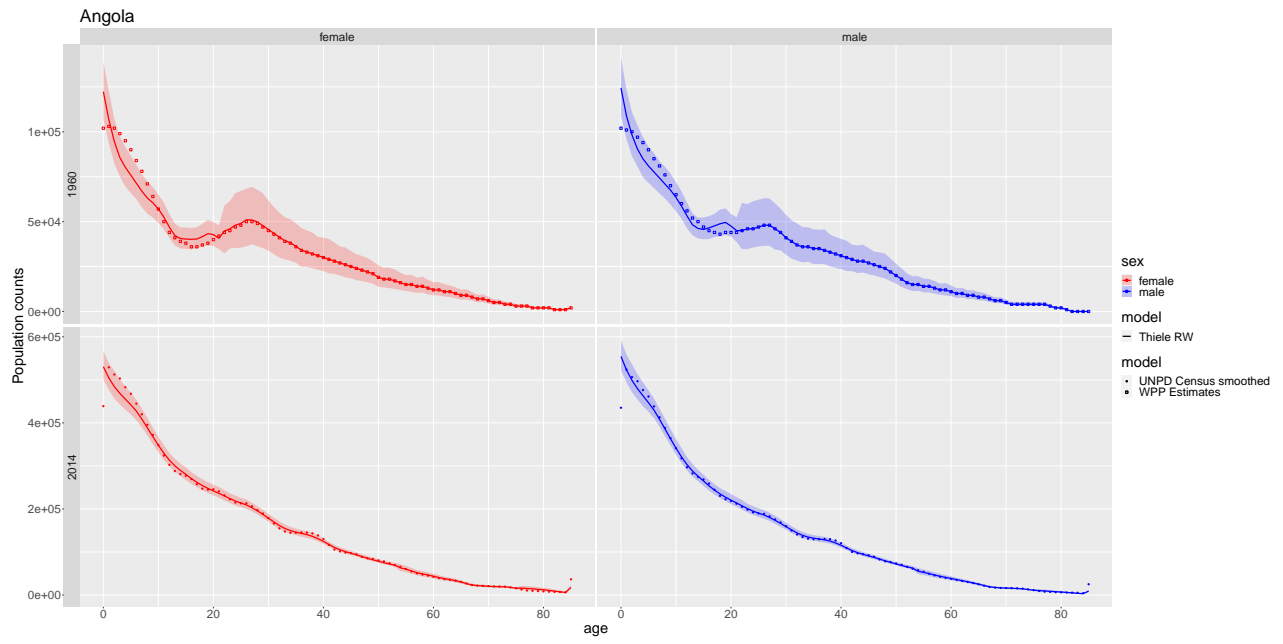Figure 7: Mortality Schedules

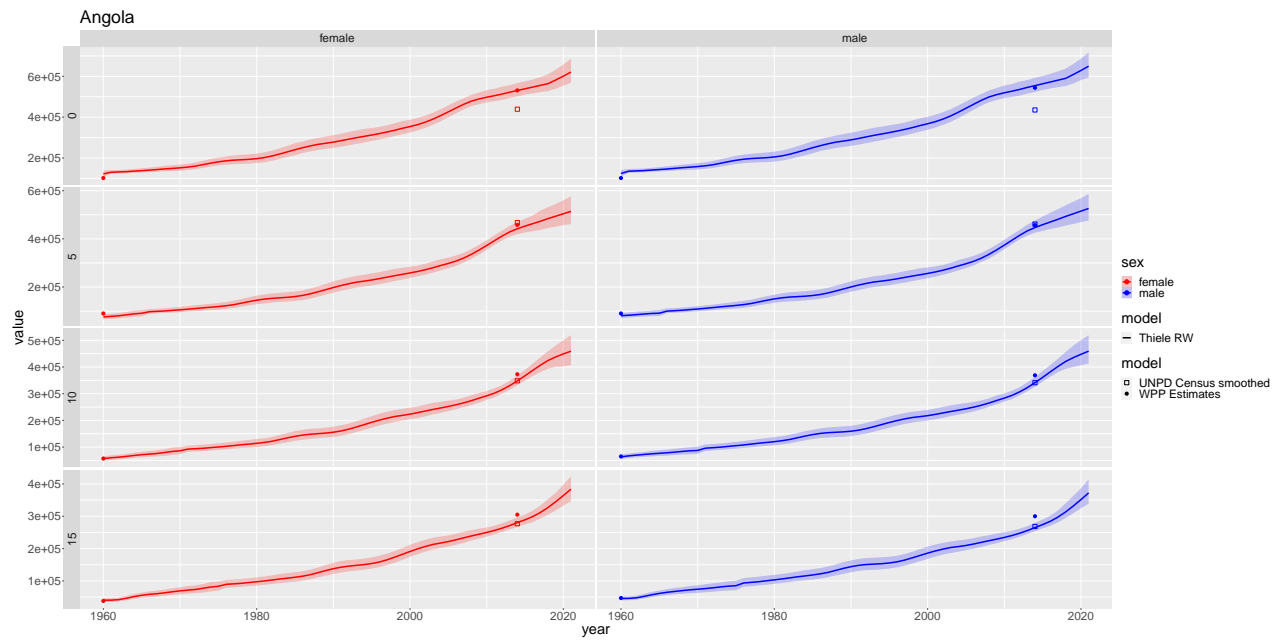Figure 8: Mortality Schedules
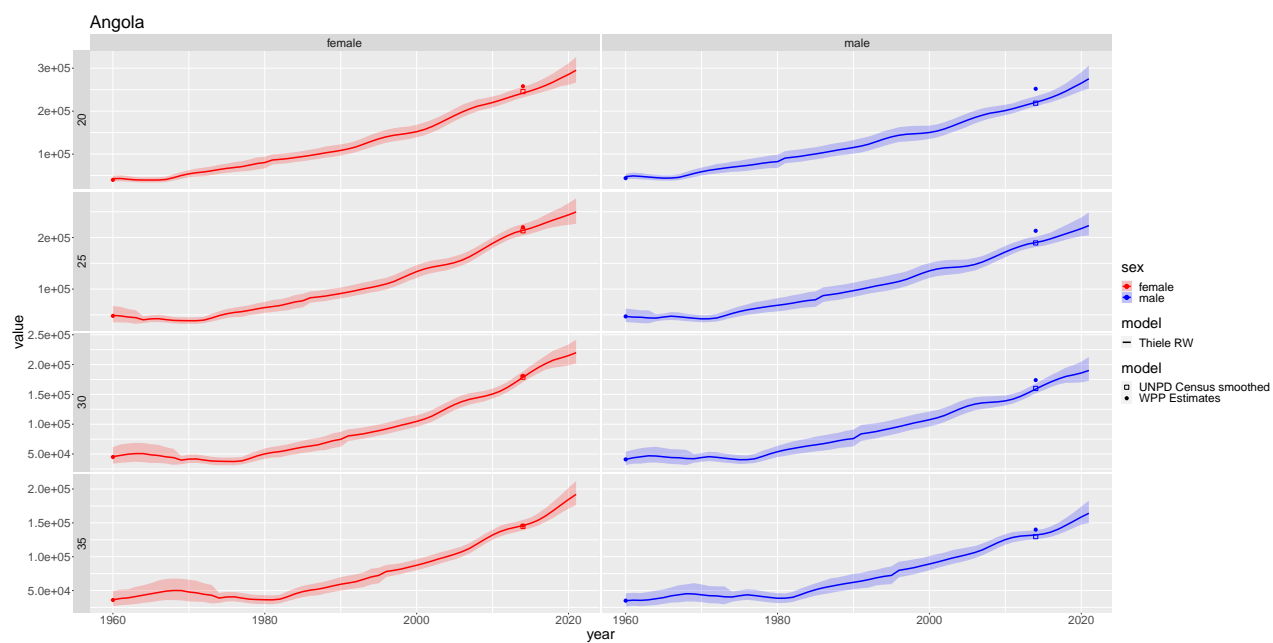
Figure 9: Population

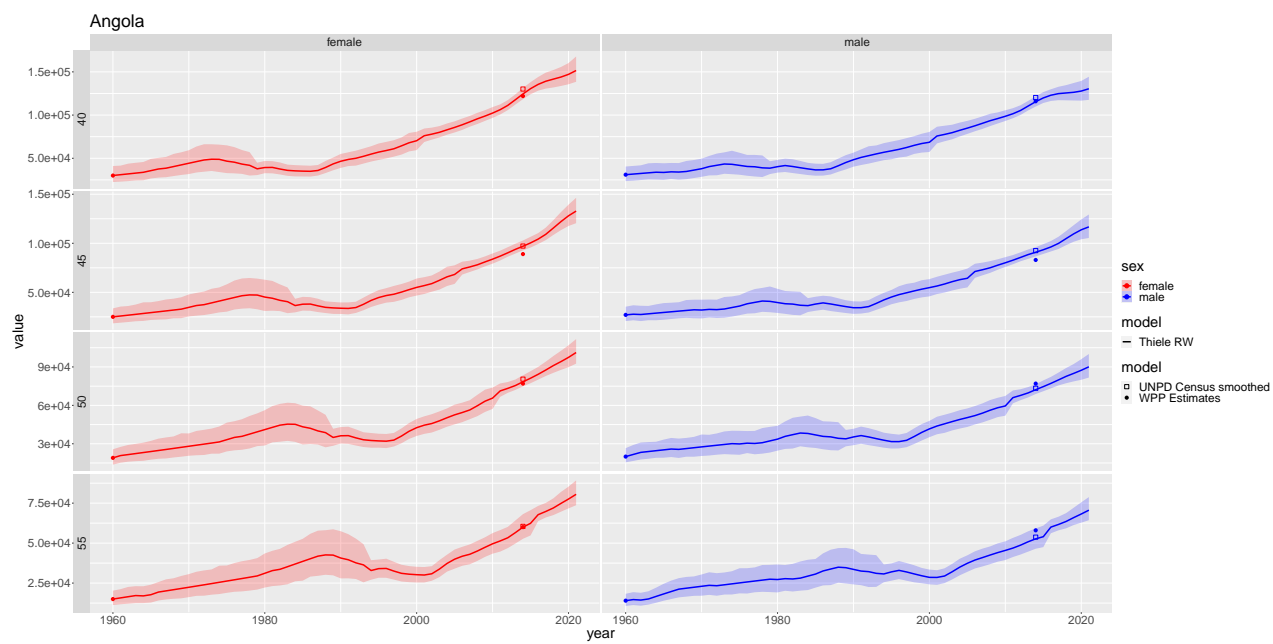Figure 10: Population

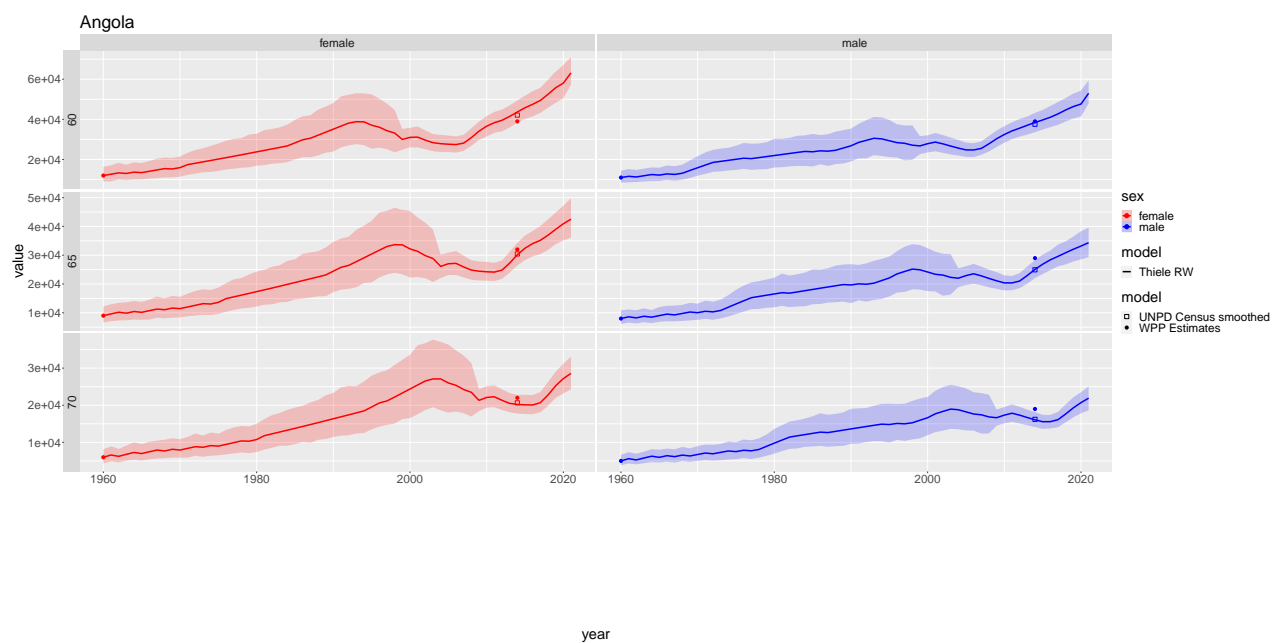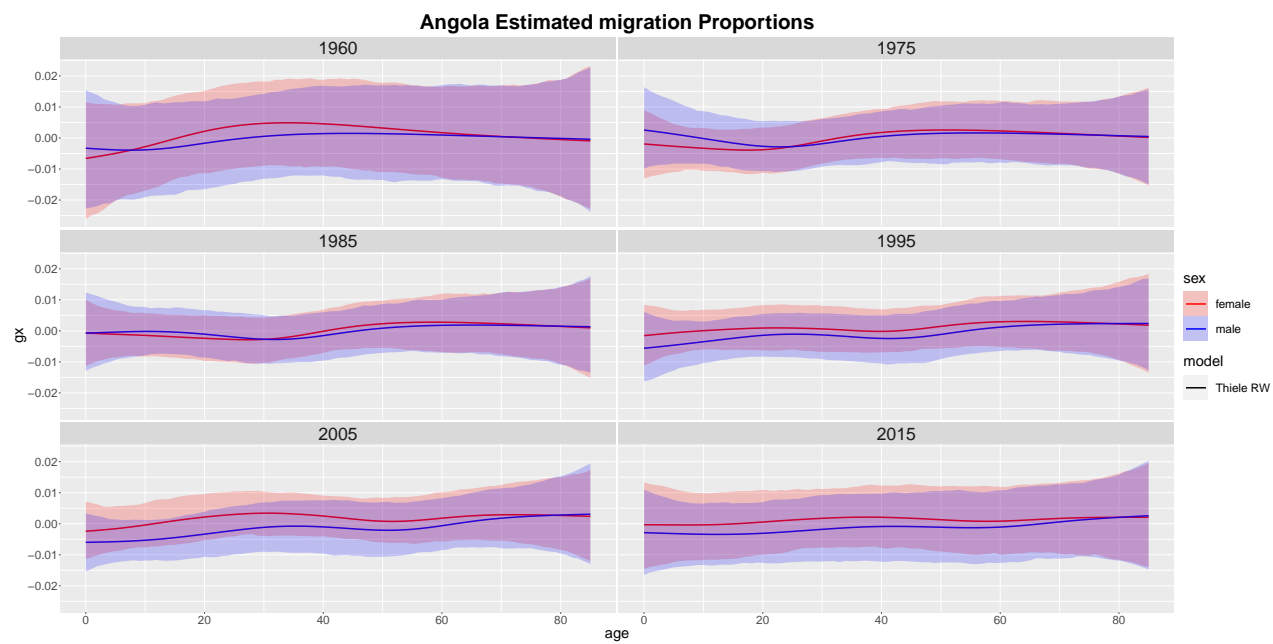Figure 11: Population

Figure 12: Population

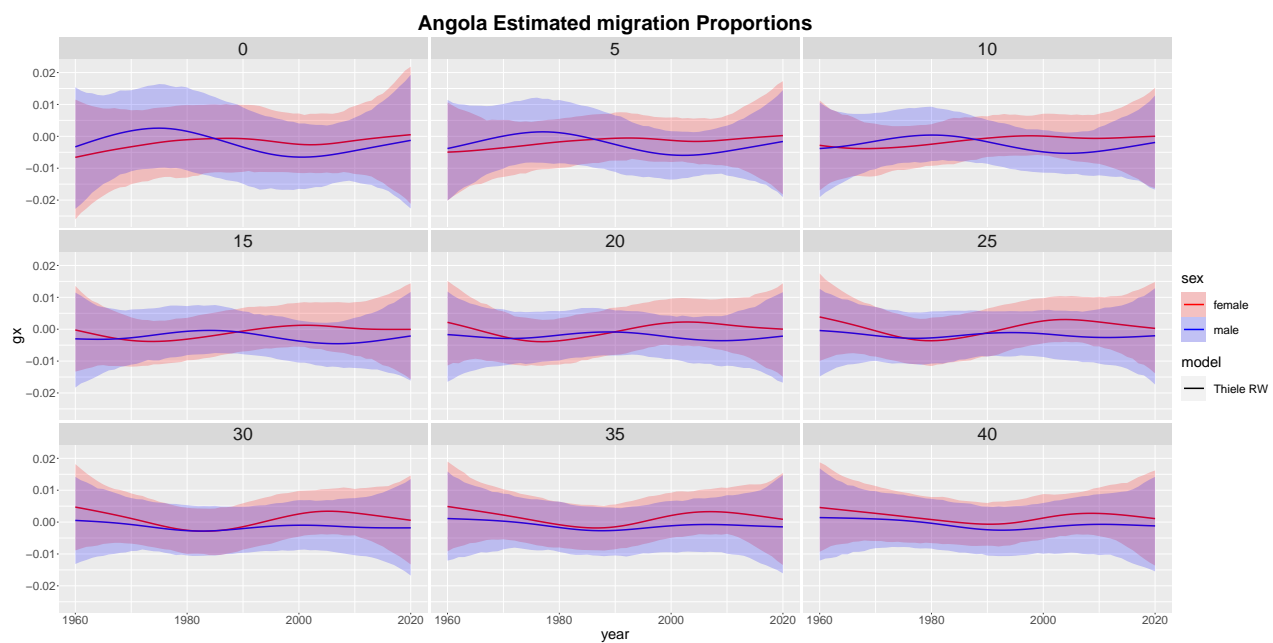Figure 13: Population
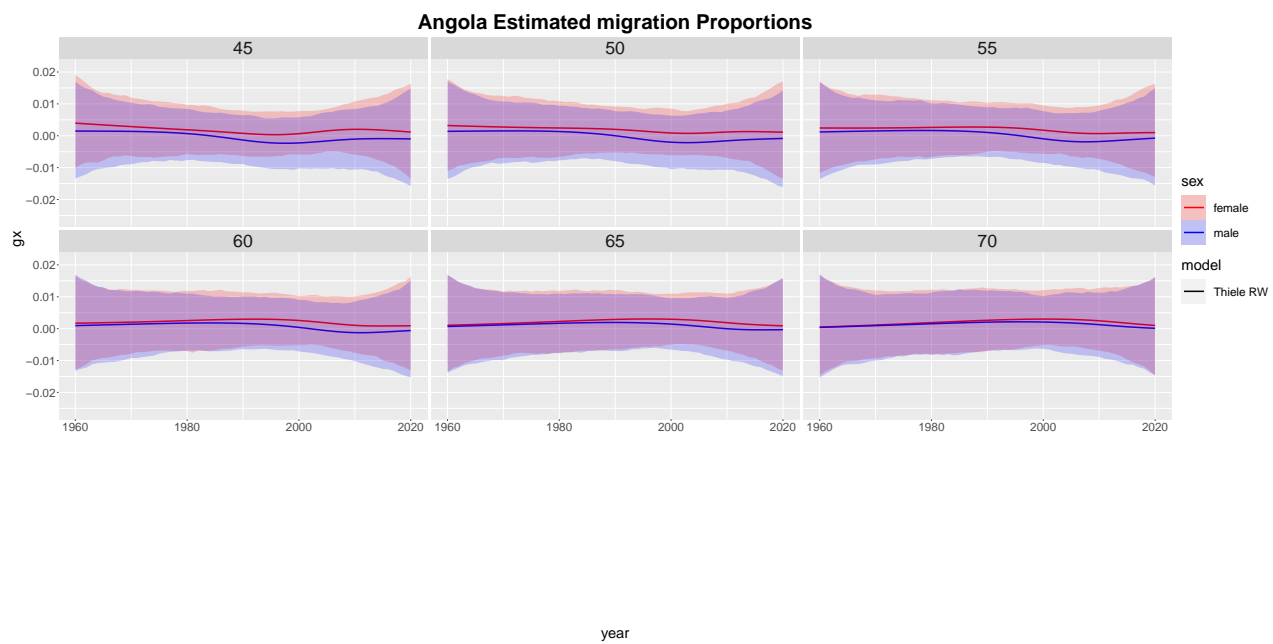

Figure 14: Migration

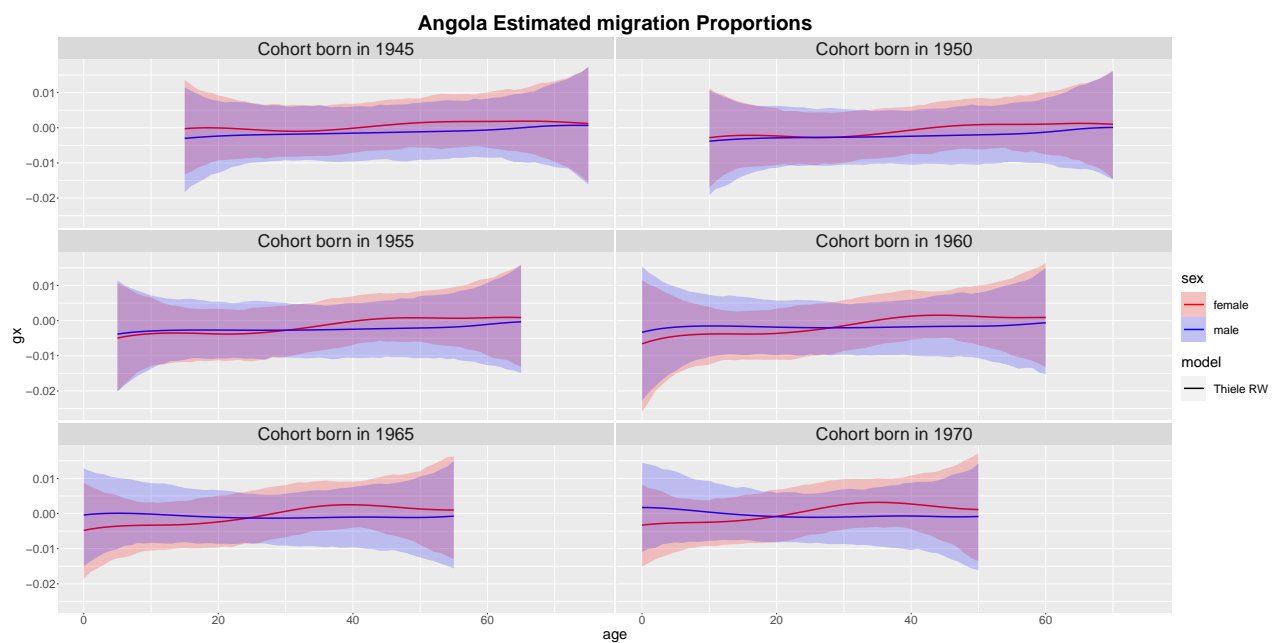Figure 15: Migration

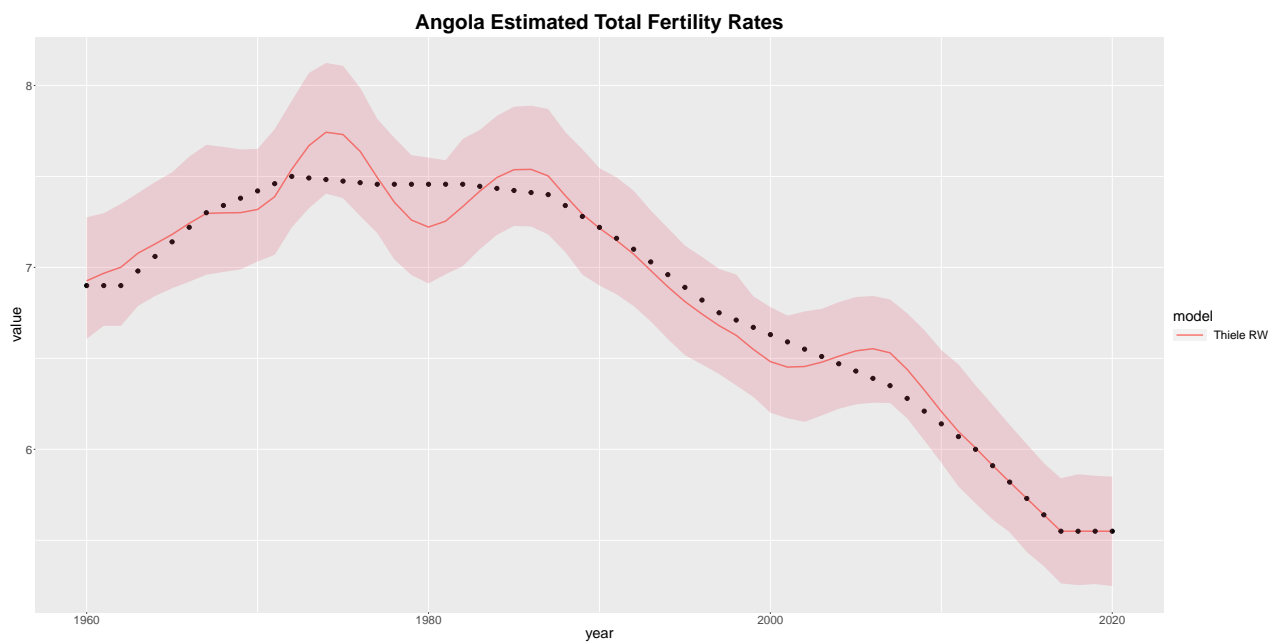Figure 16: Migration

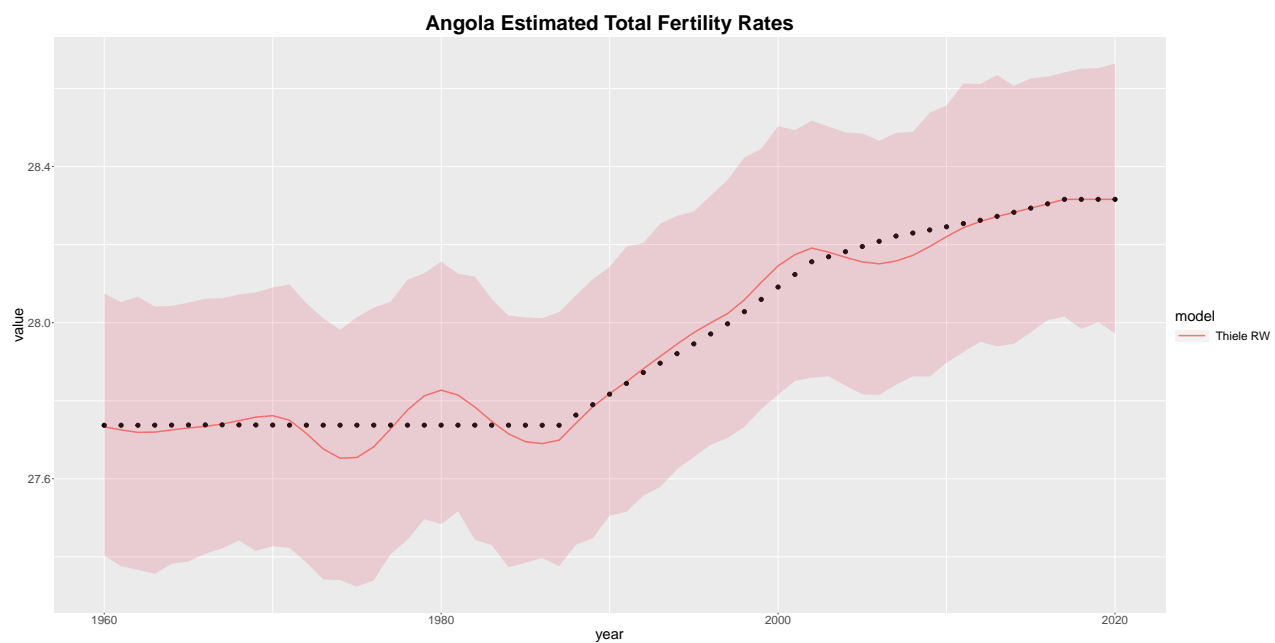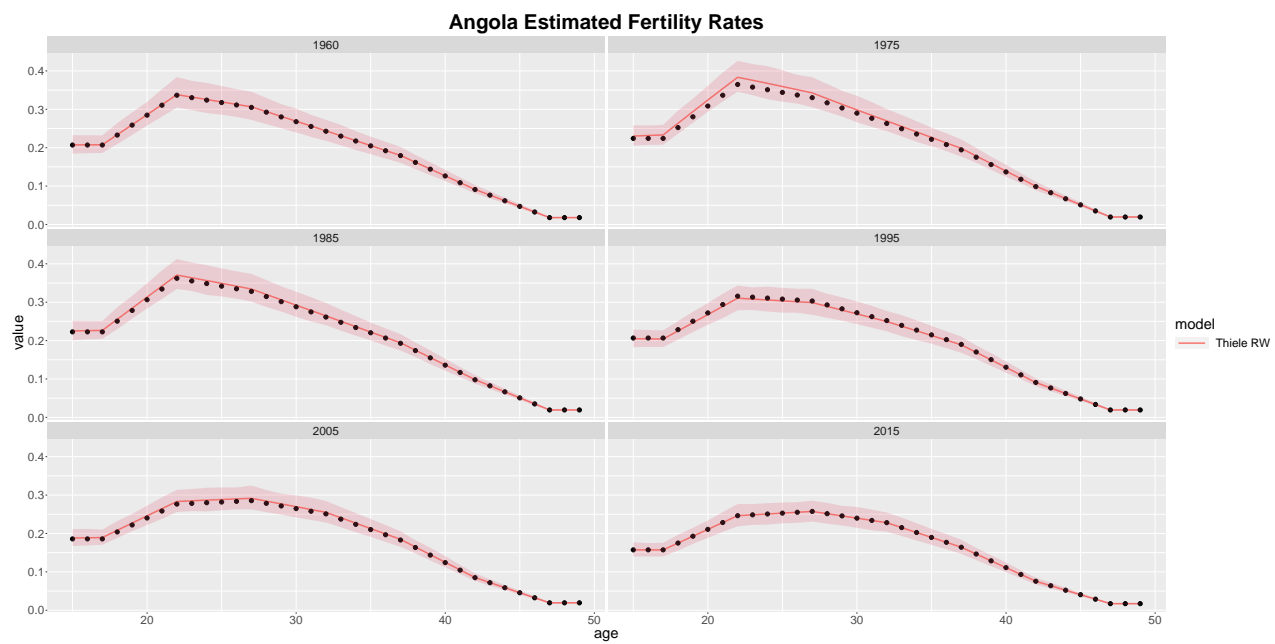Figure 17: Migration

Figure 18: Total Fertility

Figure 19: Mean age at births
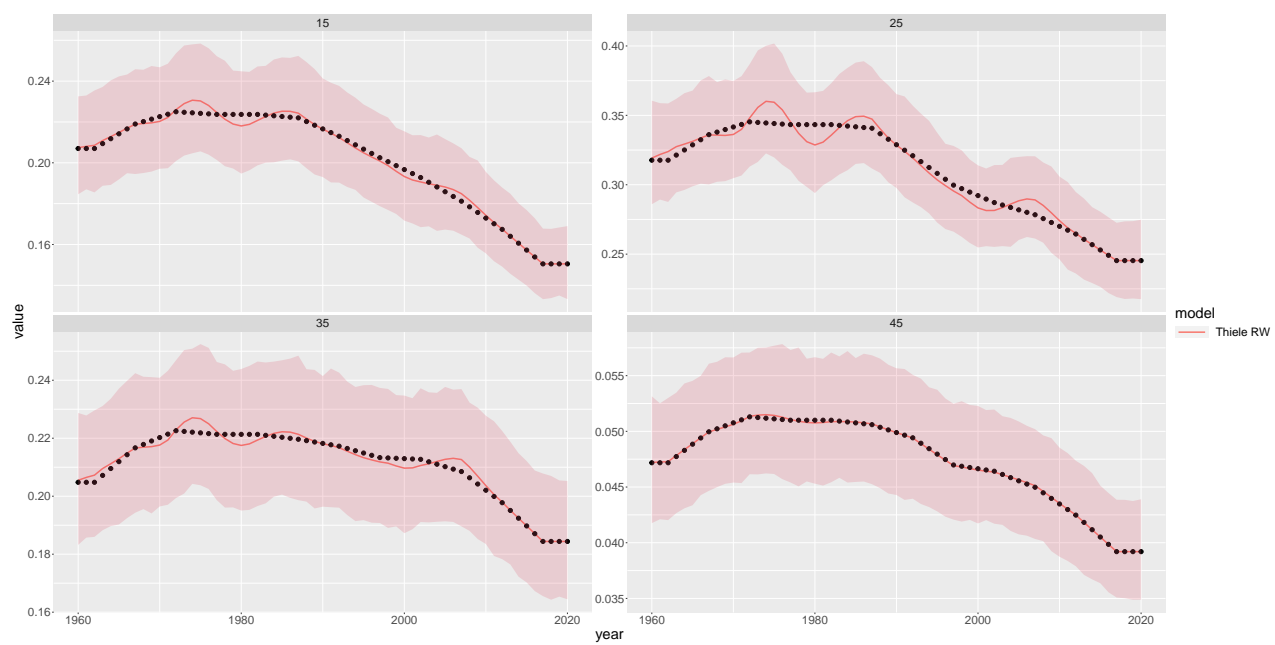

Figure 20: Fertility

Figure 21: Fertility