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_f          log_tau2_logpop_f        log_tau2_logpop_m              log_tau2_
##                 5.3176011                  4.1563891                5.3304031                      4
##           log_tau2_gx_m          log_lambda_gx_age_f        log_lambda_gx_age_m             log_lambda_g
##                 3.6790629                  7.6587867                7.7999932                      7
##     log_lambda_gx_agetime_m            log_lambda_tp log_lambda_tp_0_inflated_sd             log_disp
##                 6.9077755                  2.4550861                0.6454854                      0
##     log_marginal_prec_psi_f        log_marginal_prec_A_f      log_marginal_prec_B_f        log_marginal_pr
##                 6.8097906                  6.7909174                6.6497713                      6
##       log_marginal_prec_B_m            log_lambda_phi_f           log_lambda_psi_f            log_lambda_
##                 6.9416686                  4.3081517                4.3075770                      4
##             log_lambda_A_f             log_lambda_B_f           log_lambda_phi_m                log_lamb
##                 4.3063783                  4.2985370                4.3090807                      4
##         log_lambda_epsilon_m             log_lambda_A_m             log_lambda_B_m         logit_lambda_slo
##                 4.3535642                  4.3070820                4.3122522                     -1
##     logit_lambda_slope_rho_m     logit_delta_slope_rho_m  logit_epsilon_slope_rho_m
##                -1.2232330                  3.5230357               -1.1658594
```
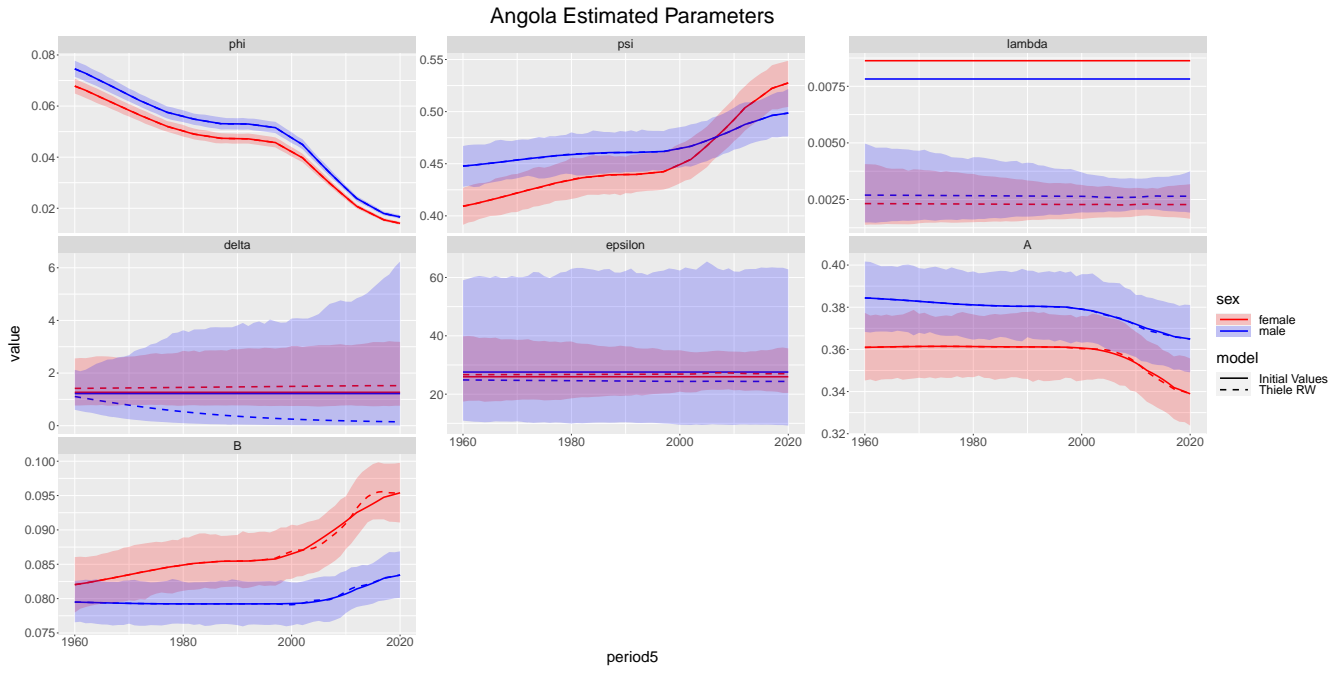
Figure 1: Estimated parameters
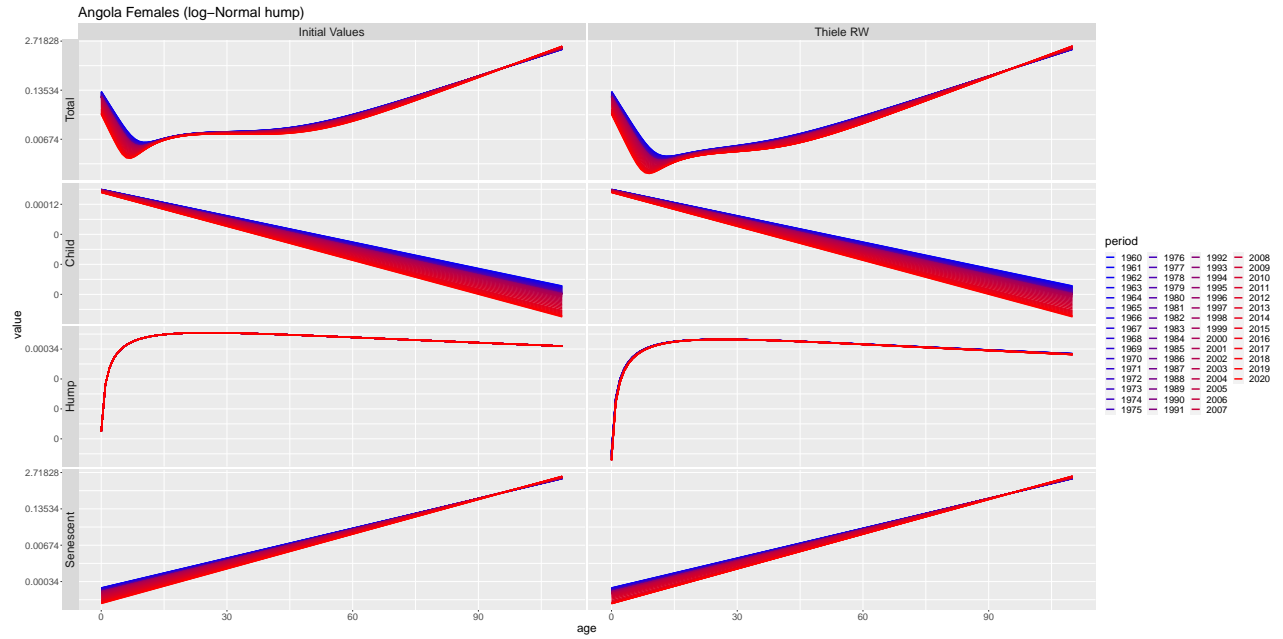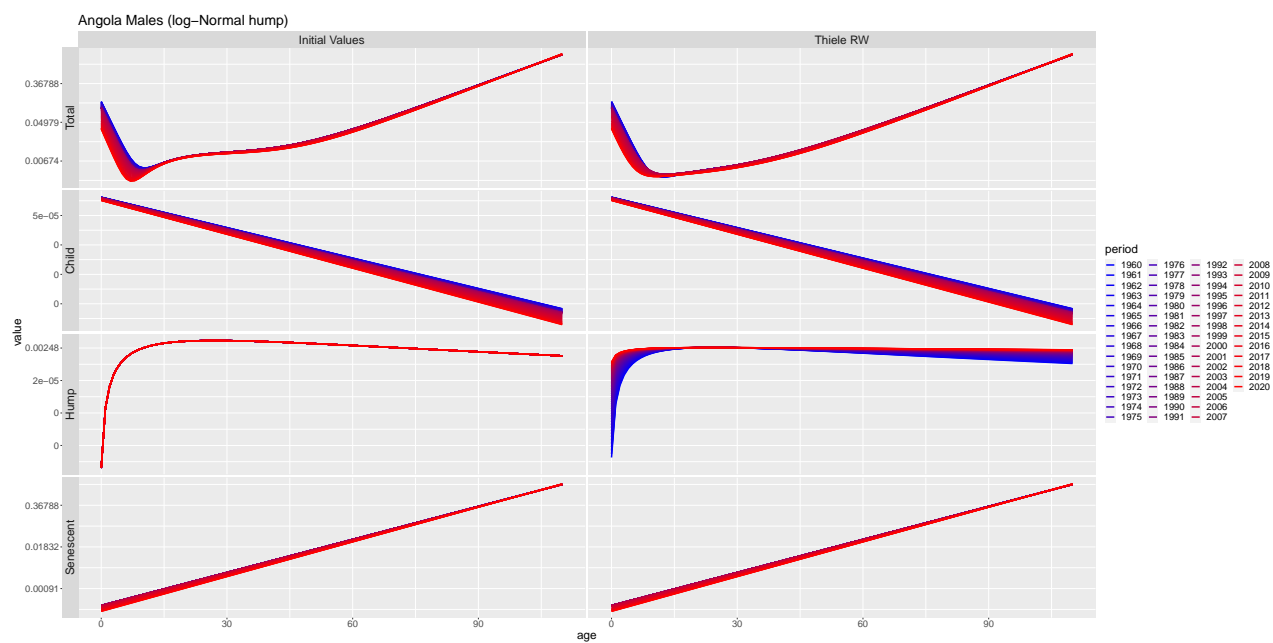

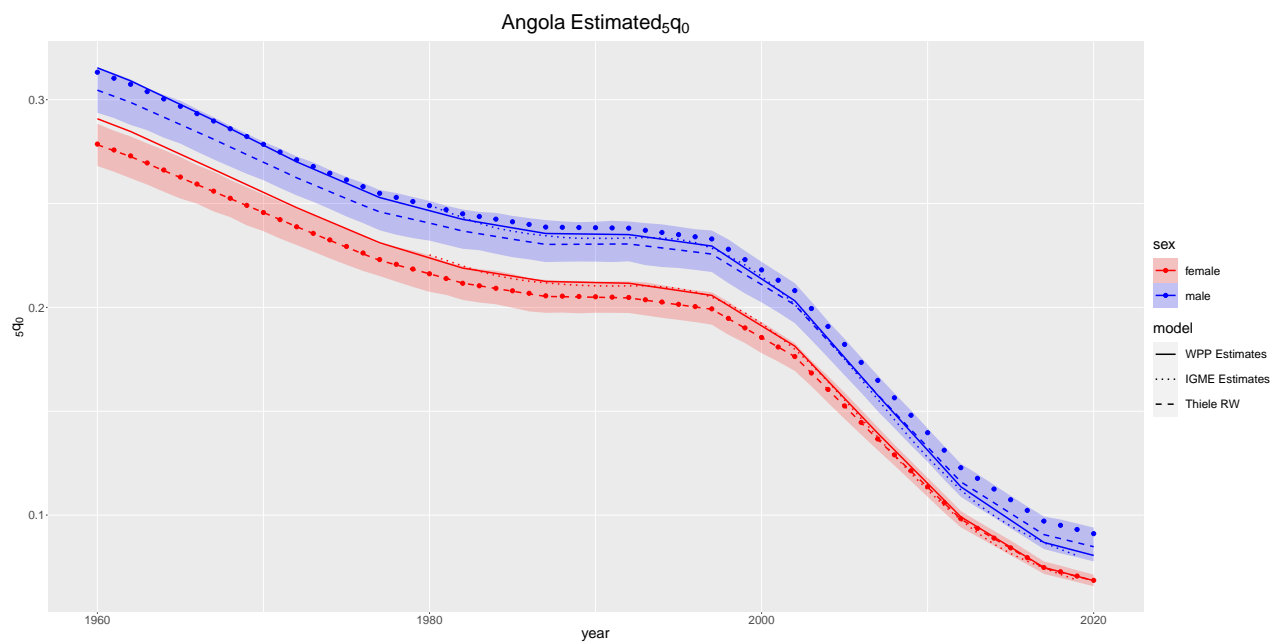Figure 2: Thiele Decomposed

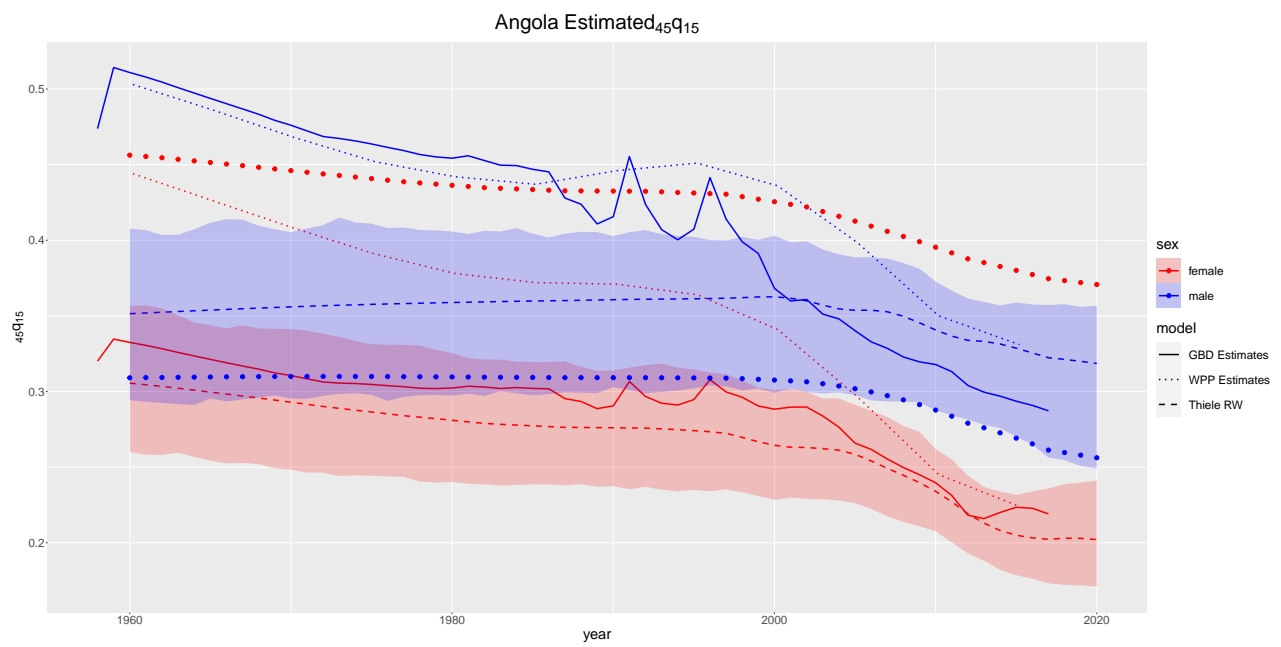Figure 3: Thiele Decomposed

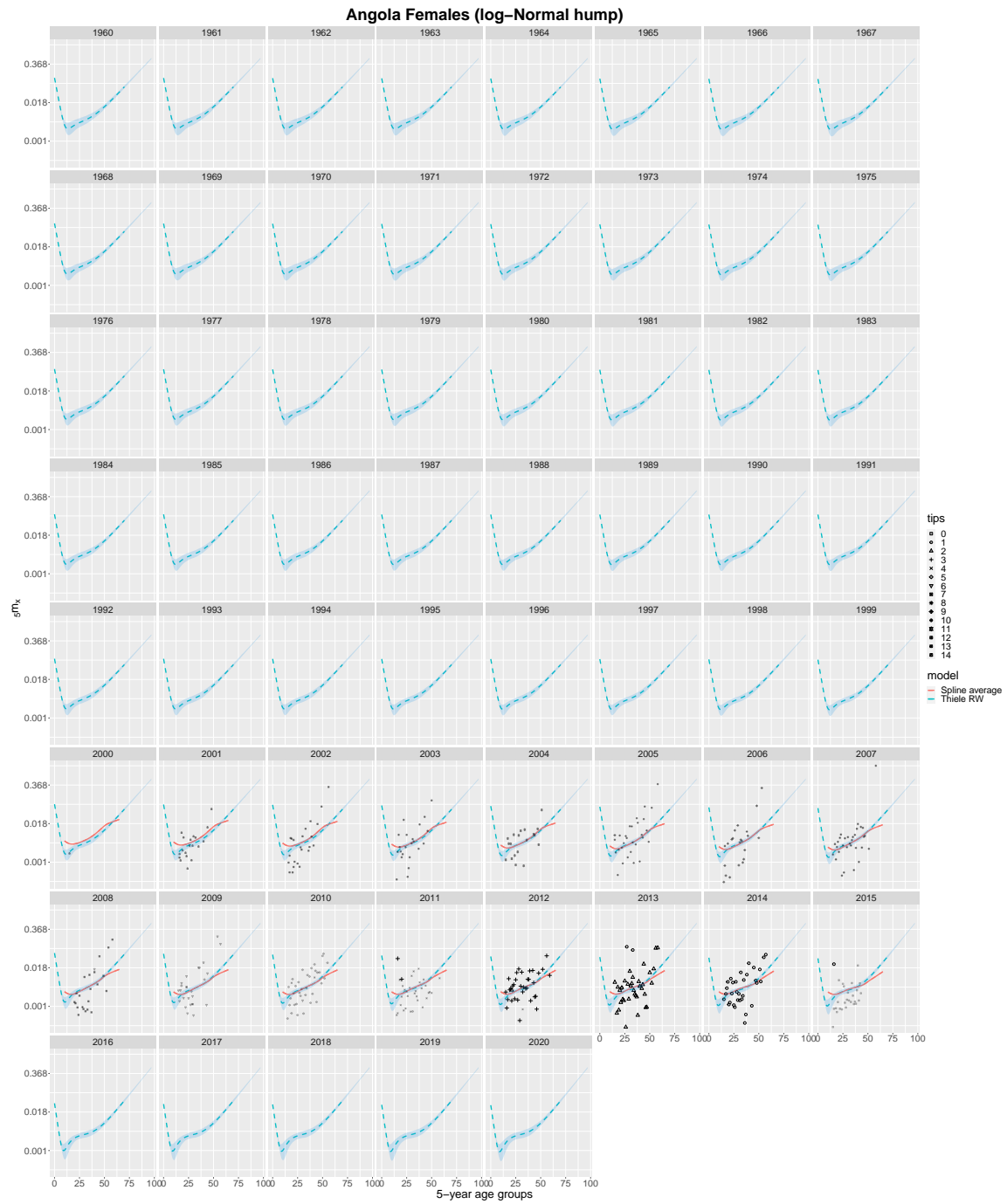Figure 4: Estimated $_5q_0$

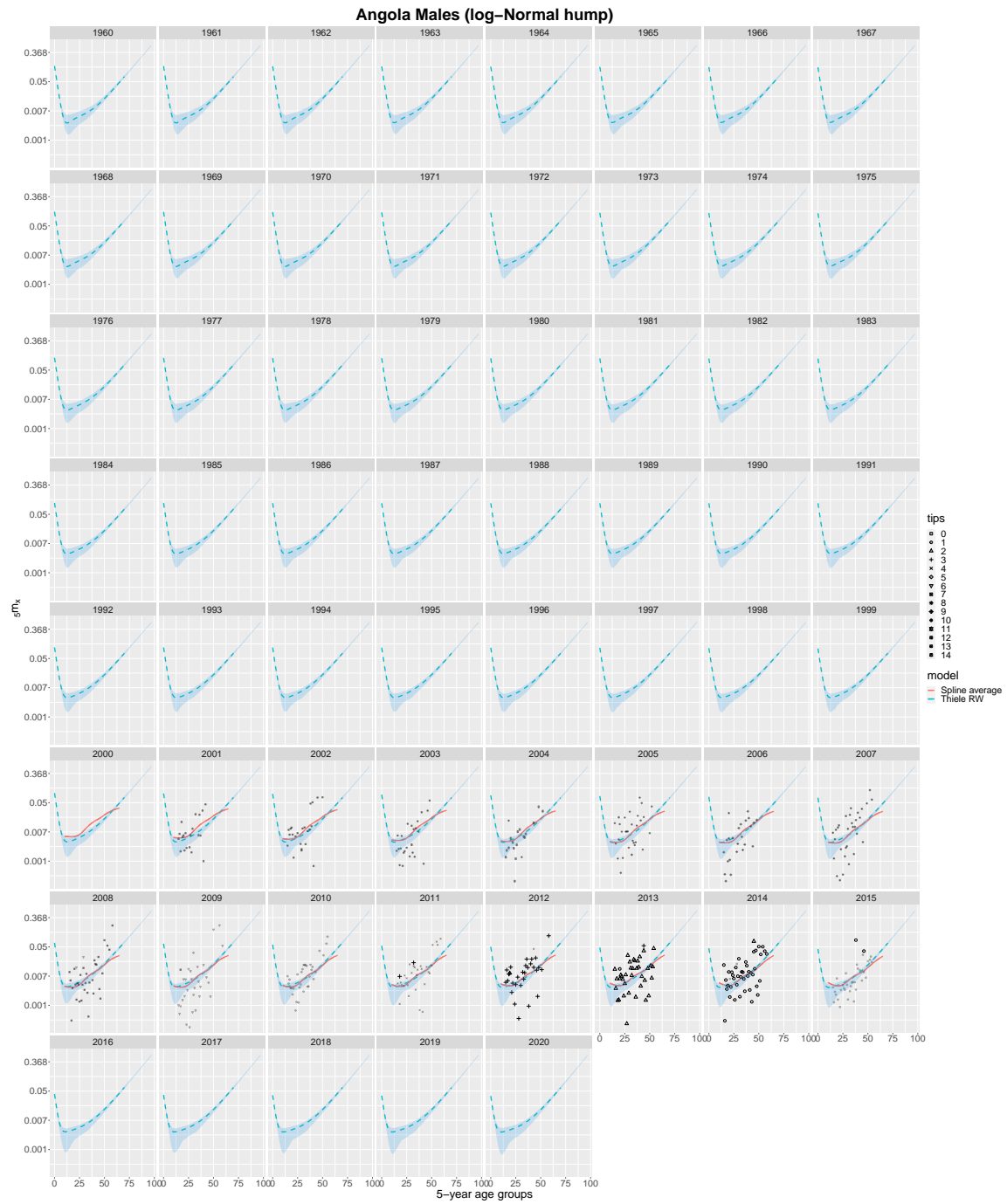Figure 5: Estimated $_{45}q_{15}$

Figure 6: Mortality Schedules
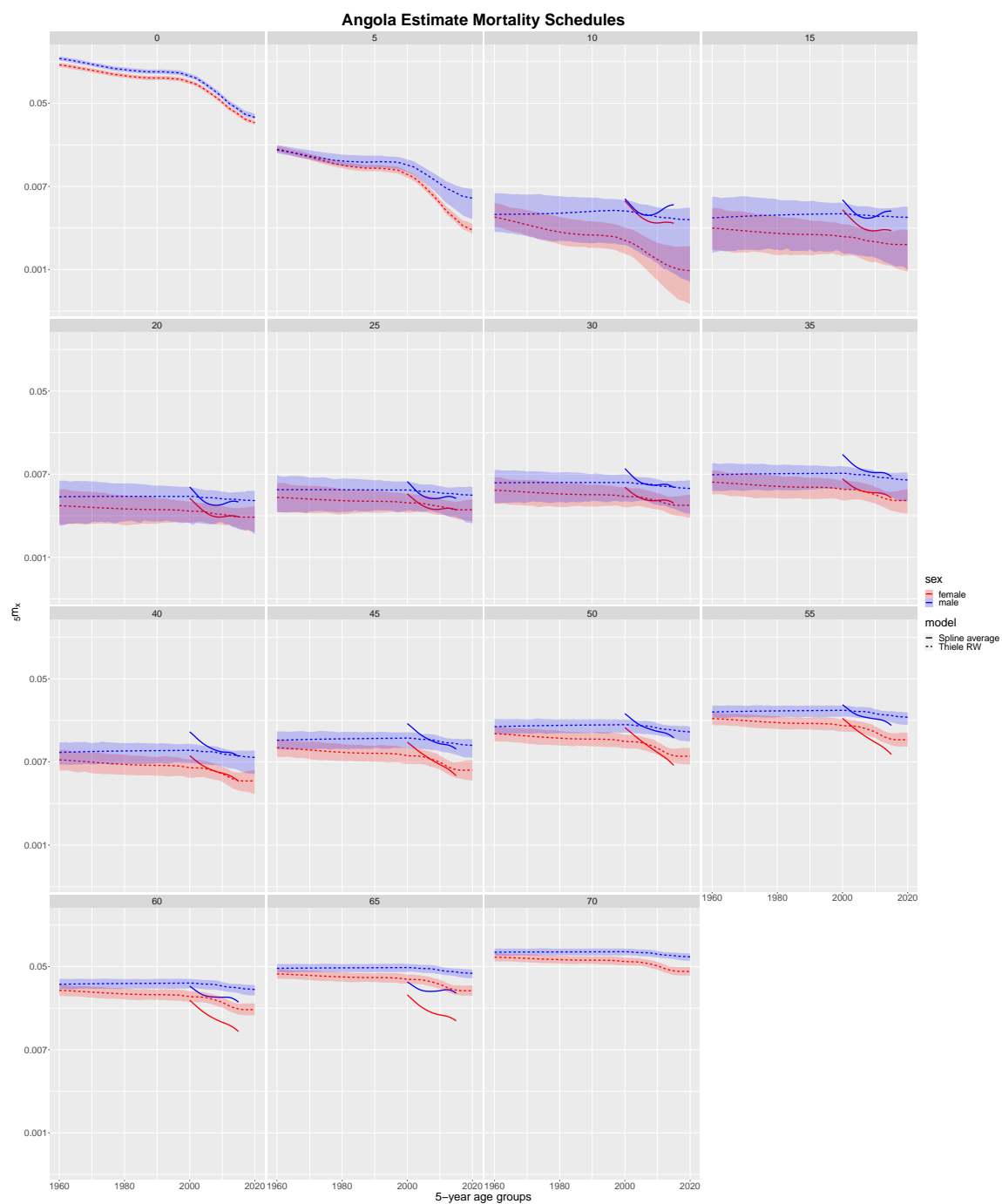
Figure 7: Mortality Schedules
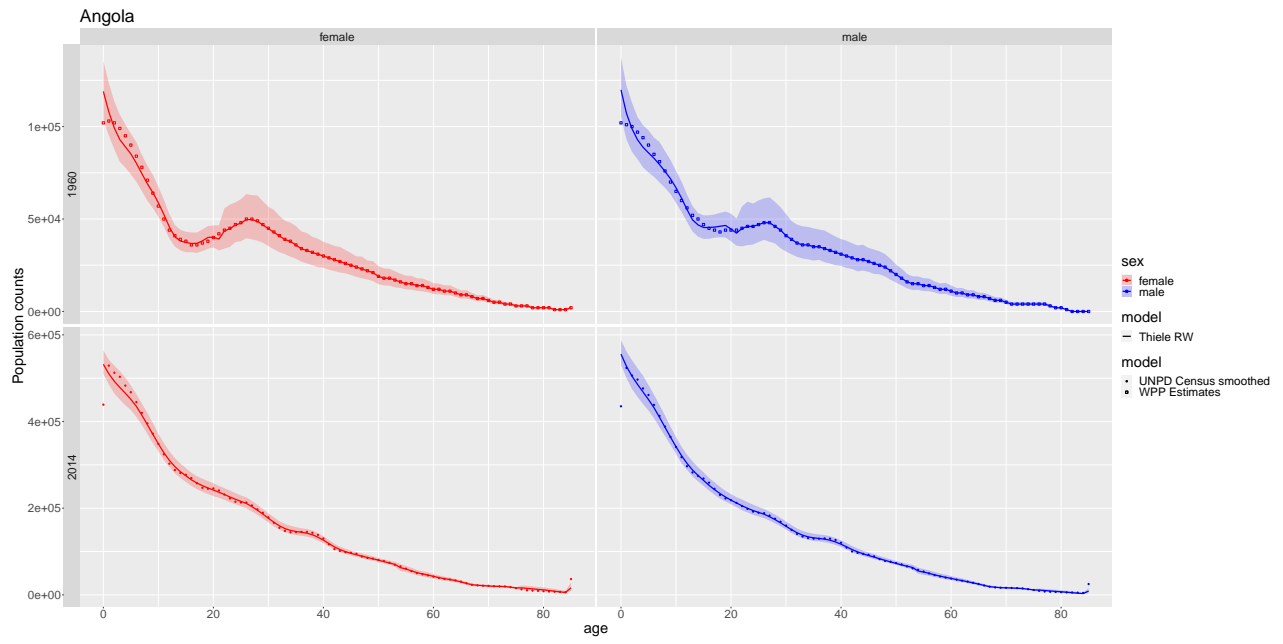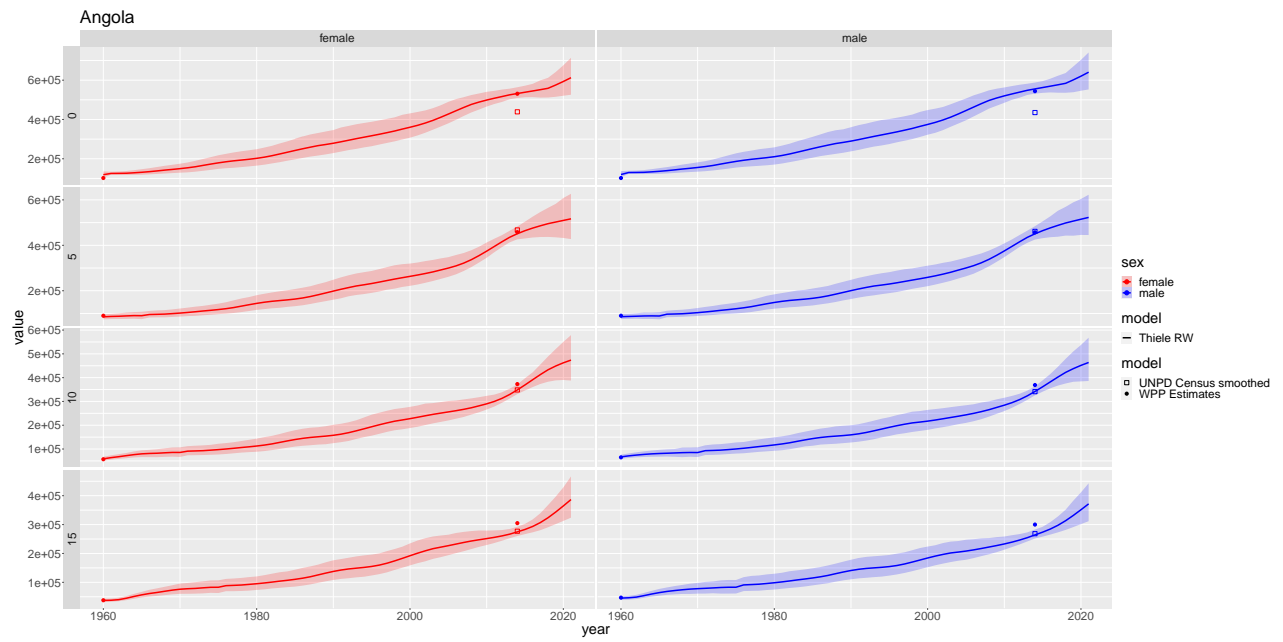
Figure 8: Mortality Schedules
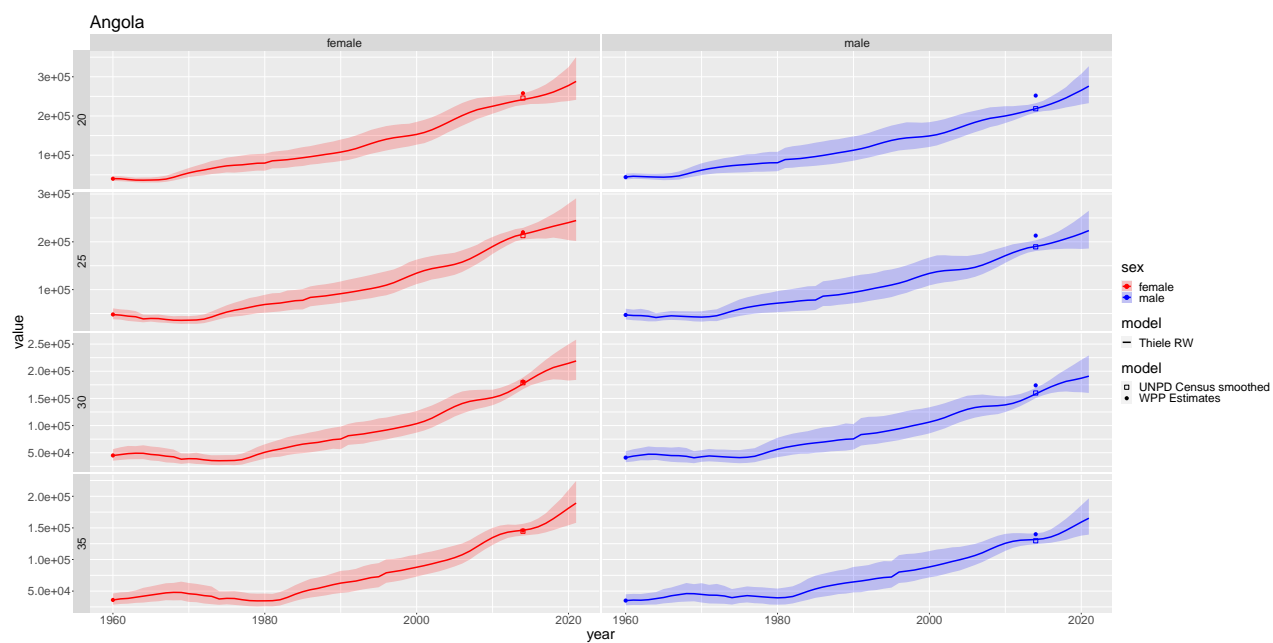
Figure 9: Population

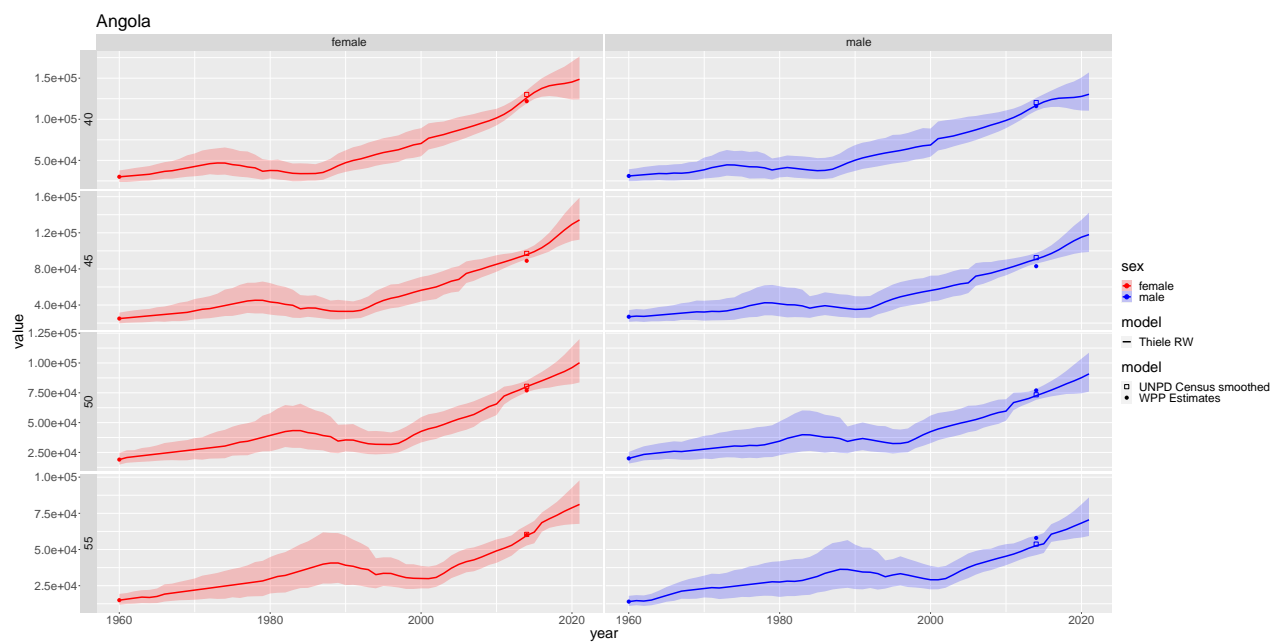Figure 10: Population

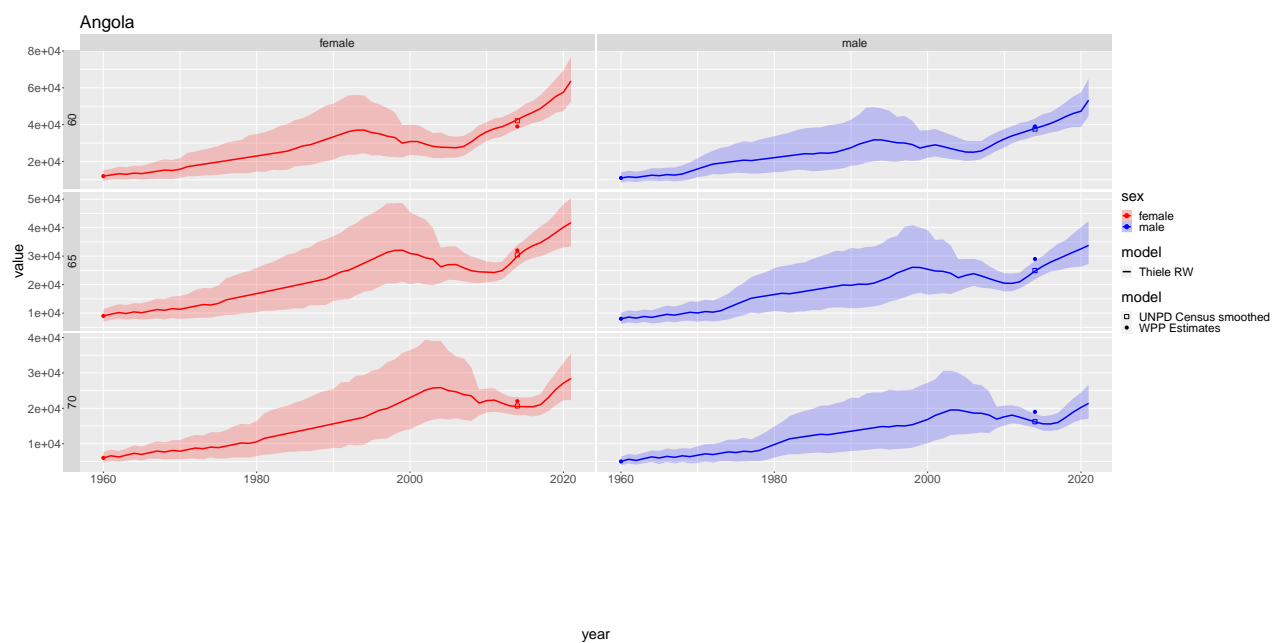Figure 11: Population
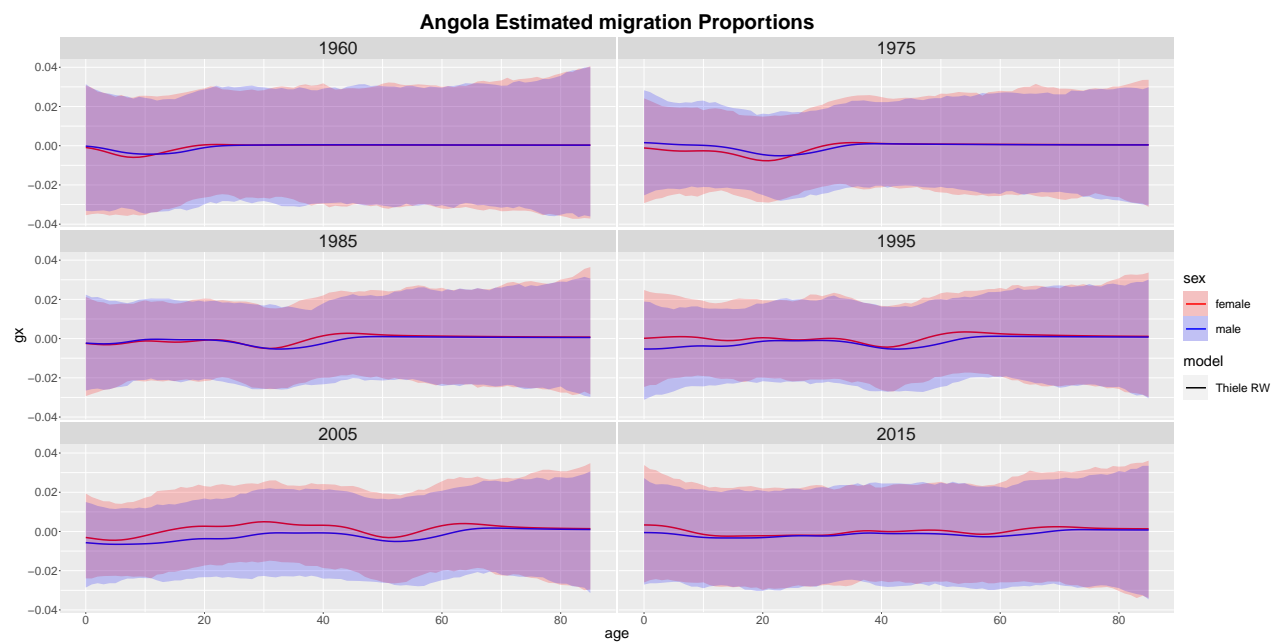

Figure 12: Population

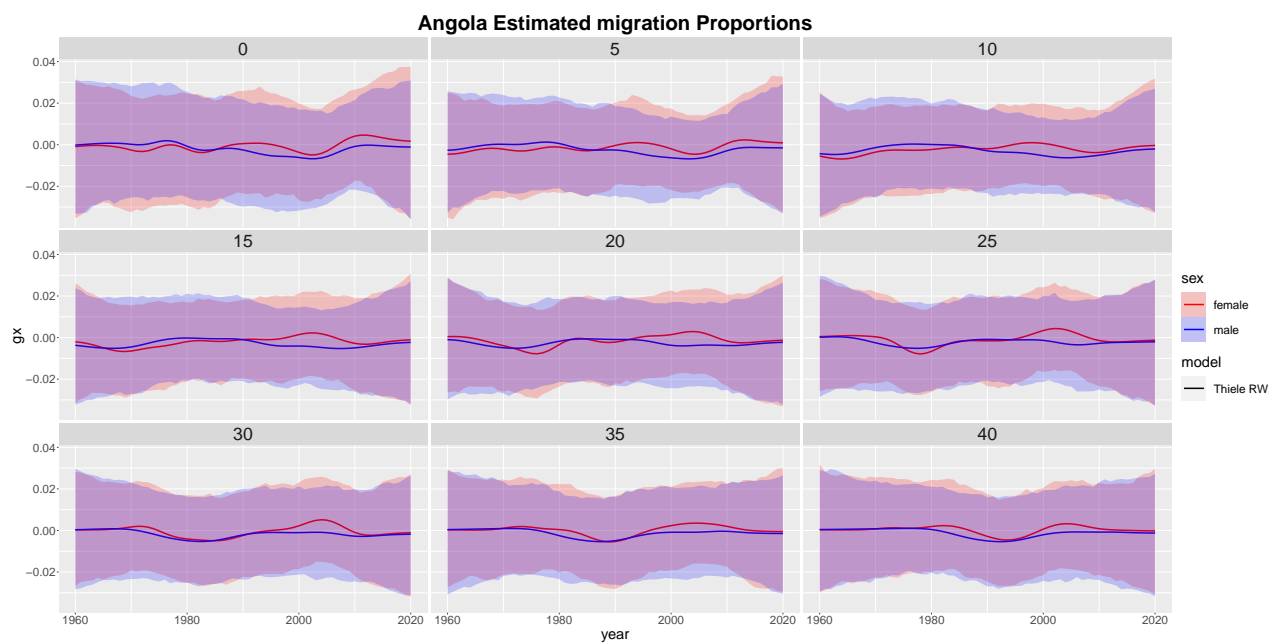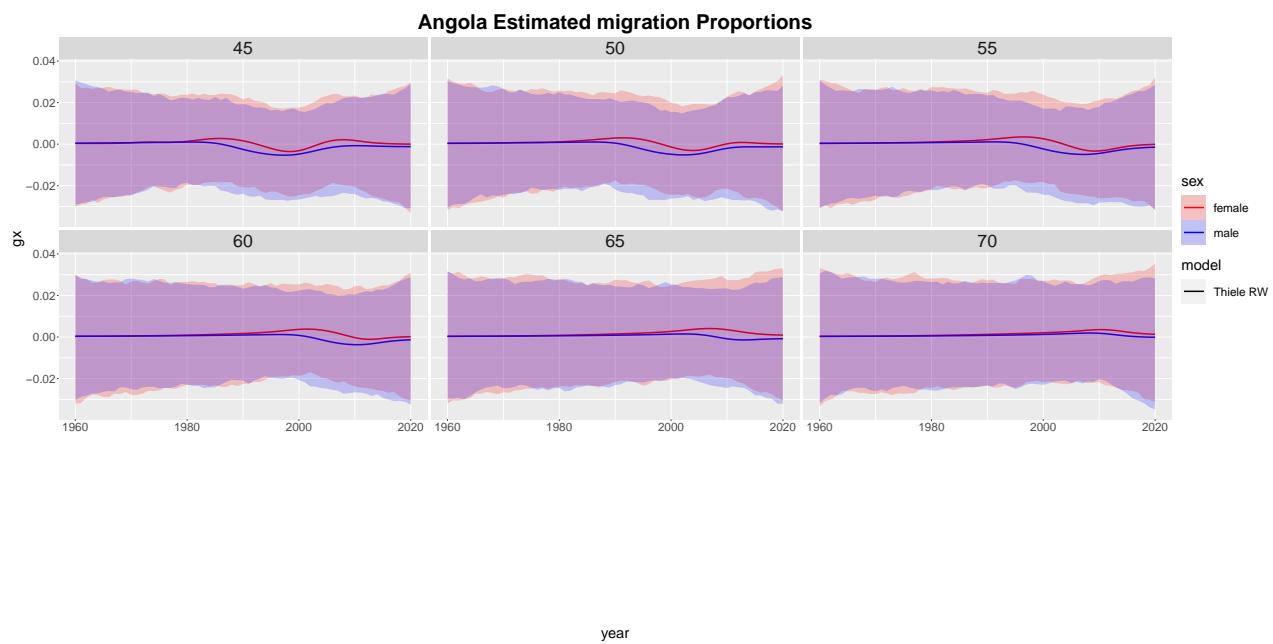Figure 13: Population

Figure 14: Migration

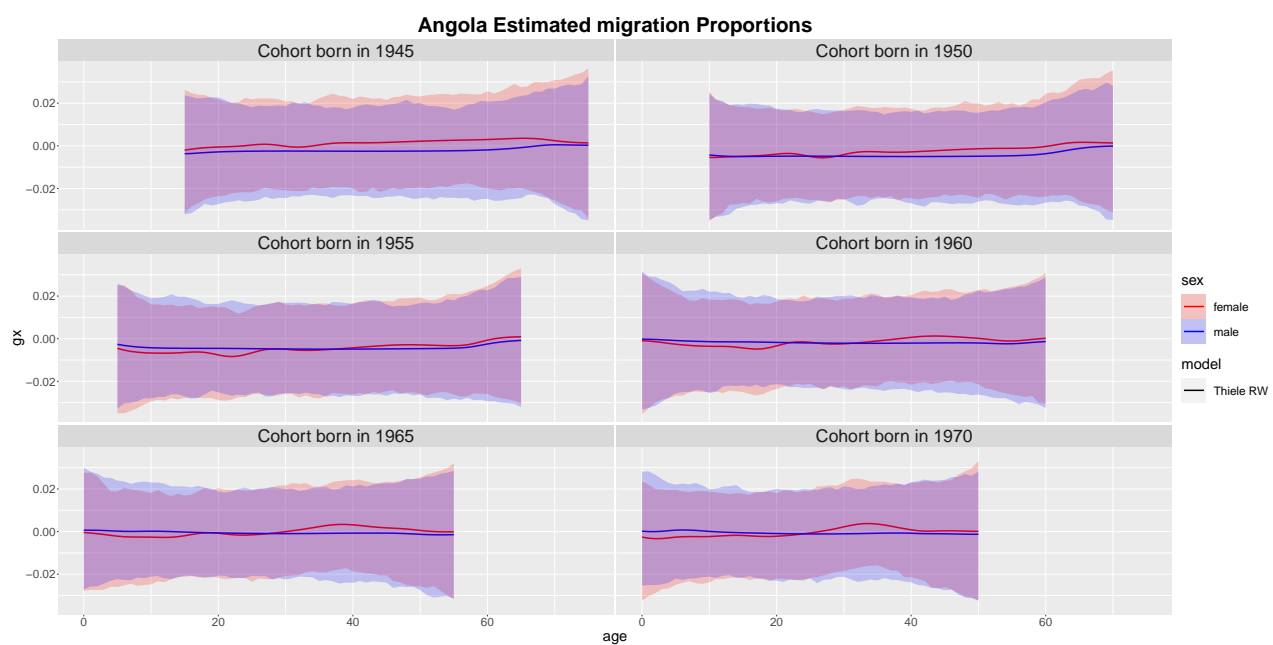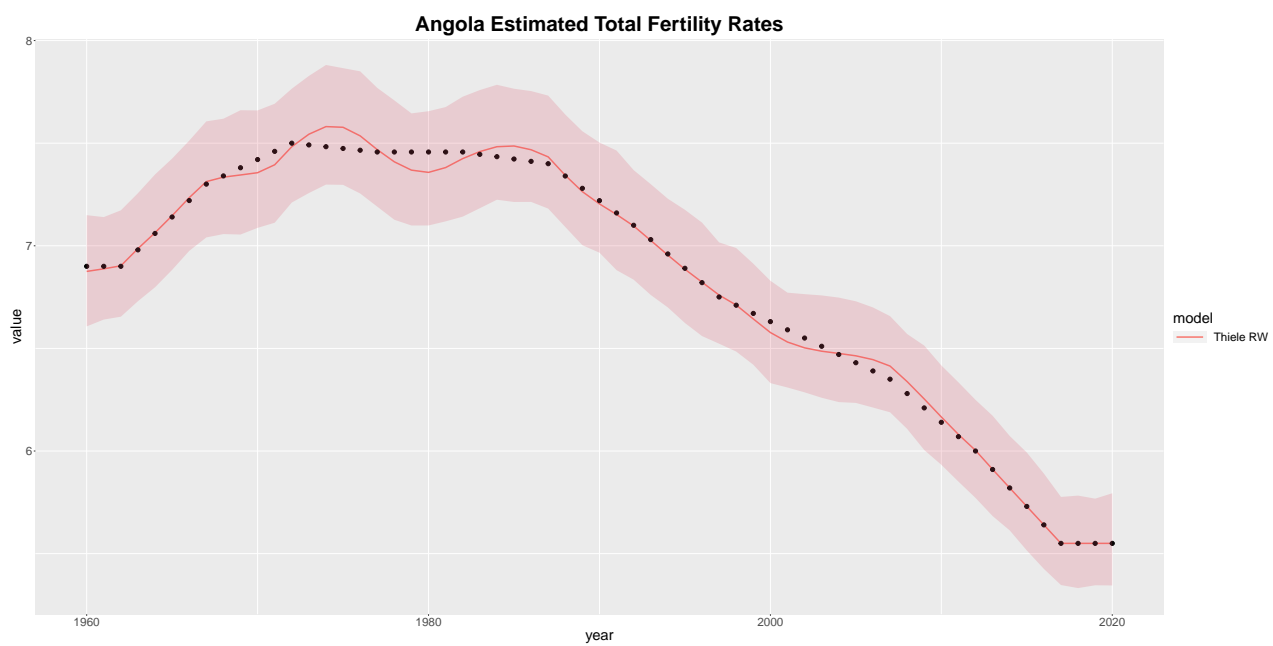Figure 15: Migration

Figure 16: Migration
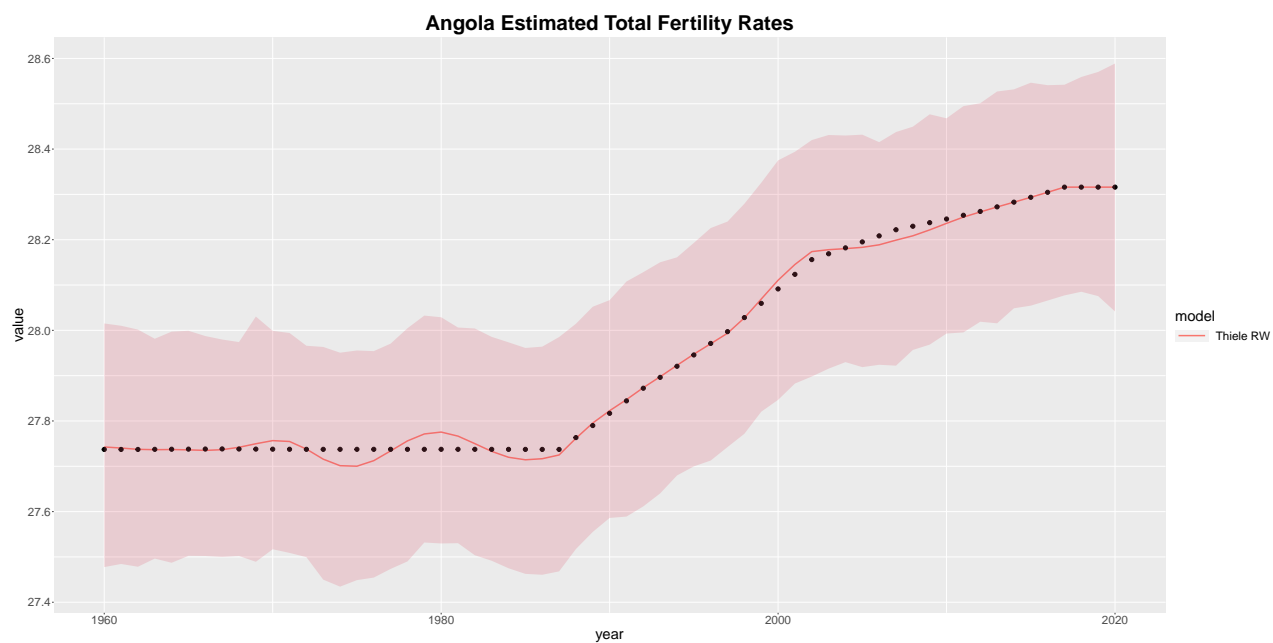
Figure 17: Migration

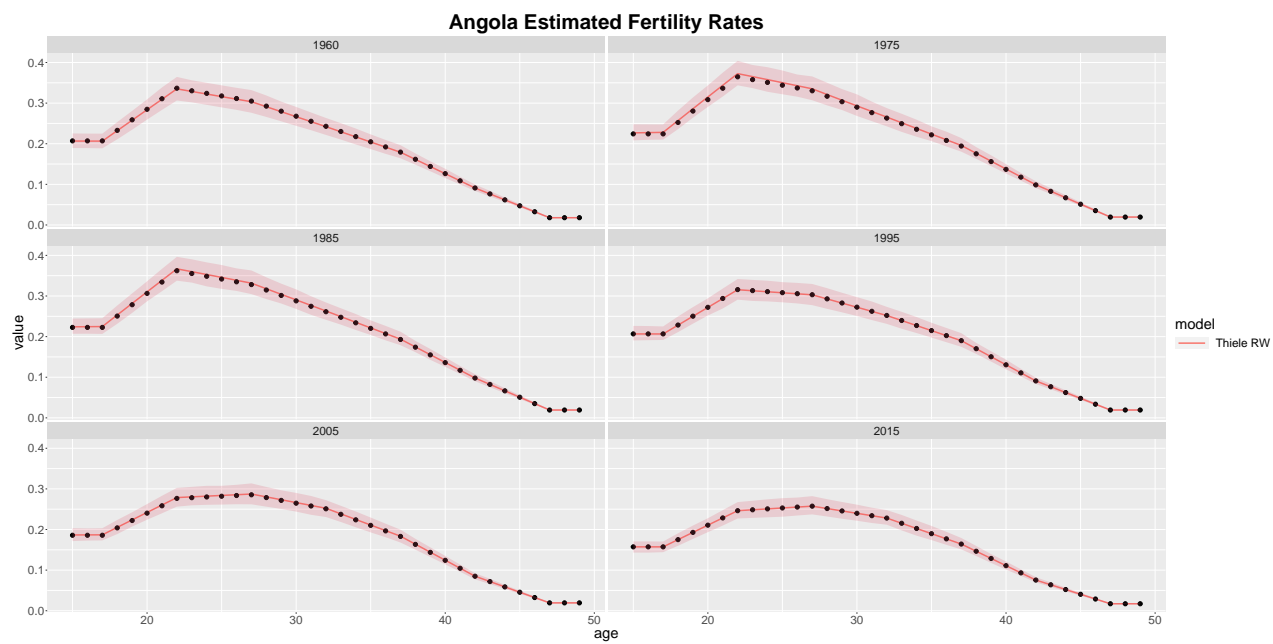Figure 18: Total Fertility

13

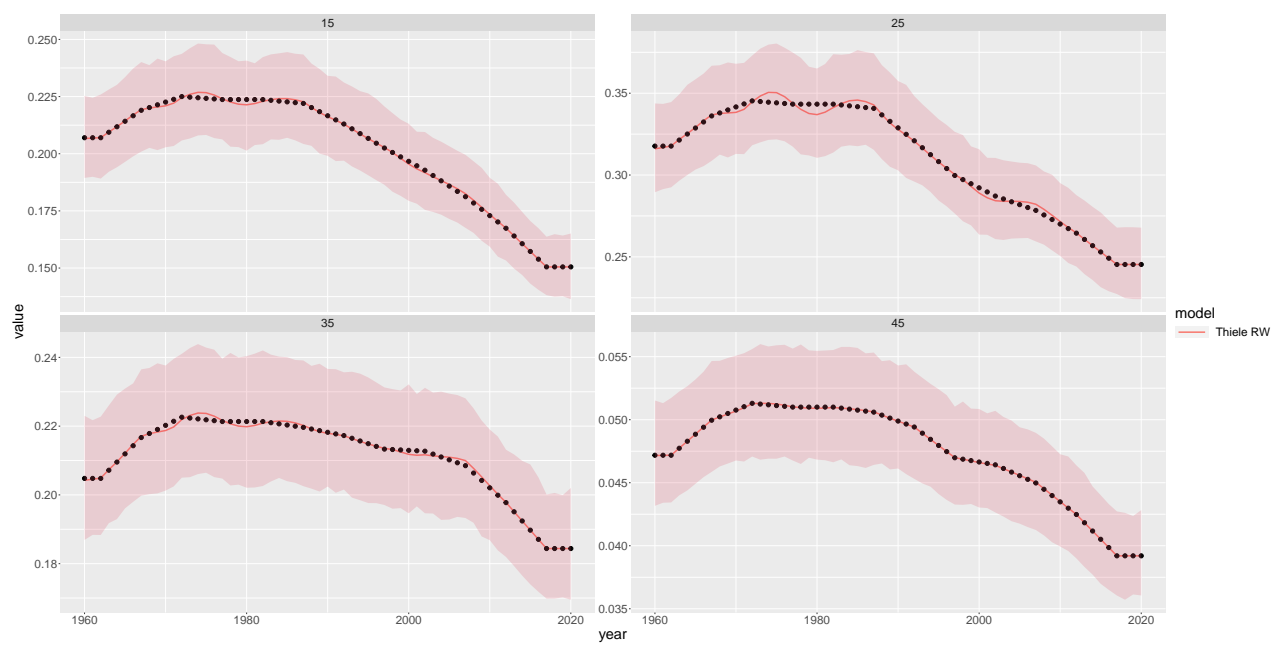Figure 19: Total Fertility

Figure 20: Fertility

14

Figure 21: Fertility