

# Madagascar

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

## # A tibble: 87 x 2
##   age `2018`
##   <dbl>   <dbl>
## 1     0 357691
## 2     1 357578.
## 3     2 373911.
## 4     3 374850.
## 5     4 369952.
## 6     5 364669.
## 7     6 364563.
## 8     7 359866.
## 9     8 353366.
## 10    9 345975.
## # ... with 77 more rows
```

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

## # A tibble: 87 x 2
##   age `2018`
##   <dbl>   <dbl>
## 1     0 354033
## 2     1 354710
## 3     2 370674.
## 4     3 373731.
## 5     4 370242.
## 6     5 366466.
## 7     6 367552.
## 8     7 364041.
## 9     8 358959.
## 10    9 352327.
## # ... with 77 more rows
```

## *Thiele log-Normal Hump Spline*

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

##	log_tau2_logpop_f	log_tau2_logpop_f	log_tau2_logpop_m	log_tau2_
##	5.457605744	4.250263045	5.452648959	4.2
##	log_tau2_gx_m	log_lambda_gx_age_f	log_lambda_gx_age_m	log_lambda_g
##	3.616495579	8.063215129	8.052820028	7.8
##	log_lambda_gx_agemtime_m	log_lambda_tp	log_lambda_tp_0_inflated_sd	log_disp
##	6.907717097	1.838329153	0.027334777	0.2
##	log_marginal_prec_psi_f	log_marginal_prec_A_f	log_marginal_prec_B_f	log_marginal_pr
##	4.328538893	6.810138460	0.038546595	4.3
##	log_marginal_prec_B_m	log_lambda_phi_f	log_lambda_psi_f	log_lambda_
##	-0.531197714	4.338093447	4.327647243	3.8
##	log_lambda_A_f	log_lambda_B_f	log_lambda_phi_m	log_lamb
##	4.307491688	4.190179963	4.342624290	4.3
##	log_lambda_epsilon_m	log_lambda_A_m	log_lambda_B_m	
##	-0.007227695	4.307894930	3.990226409	

Madagascar Estimated Parameters

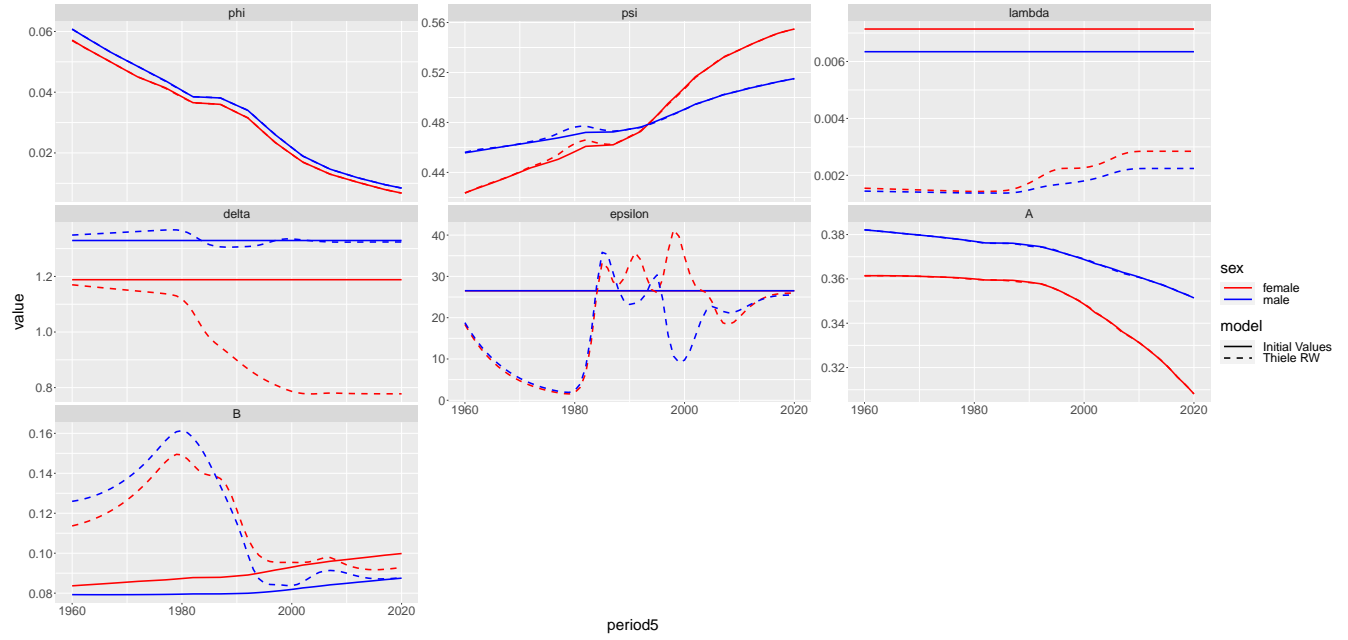


Figure 1: Estimated parameters

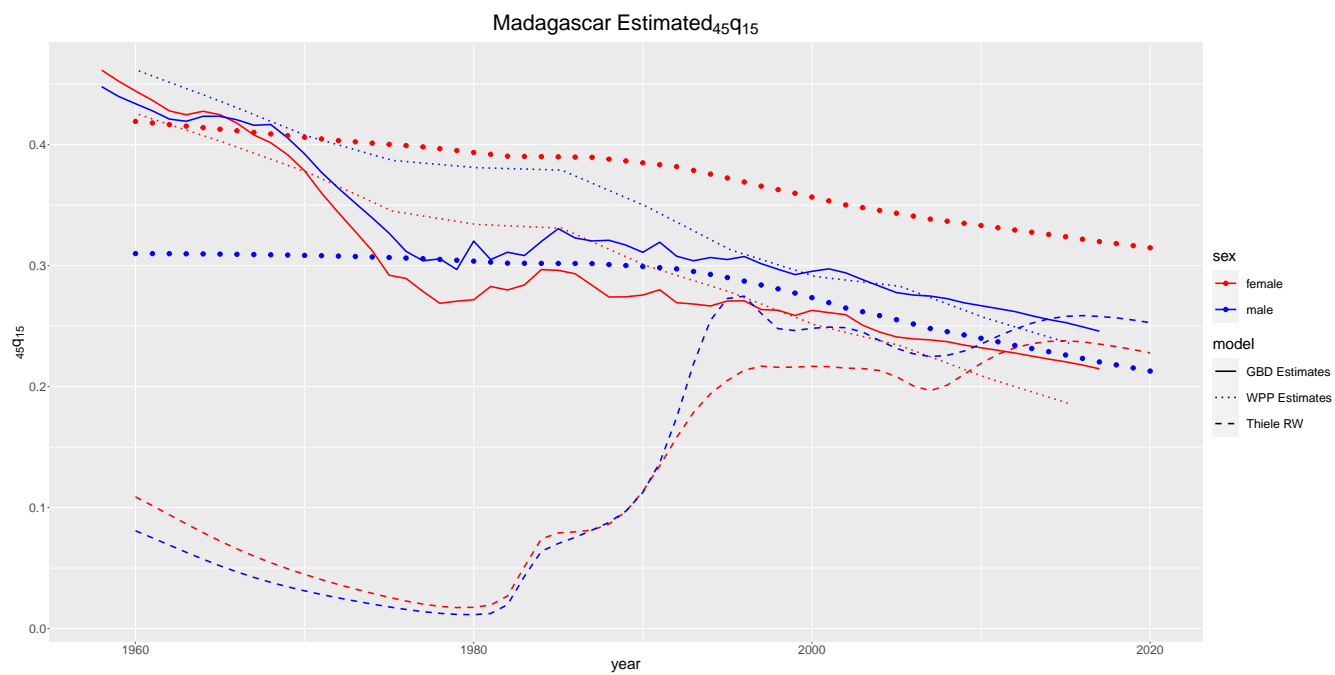


Figure 2: Estimated  ${}_{45}q_{15}$

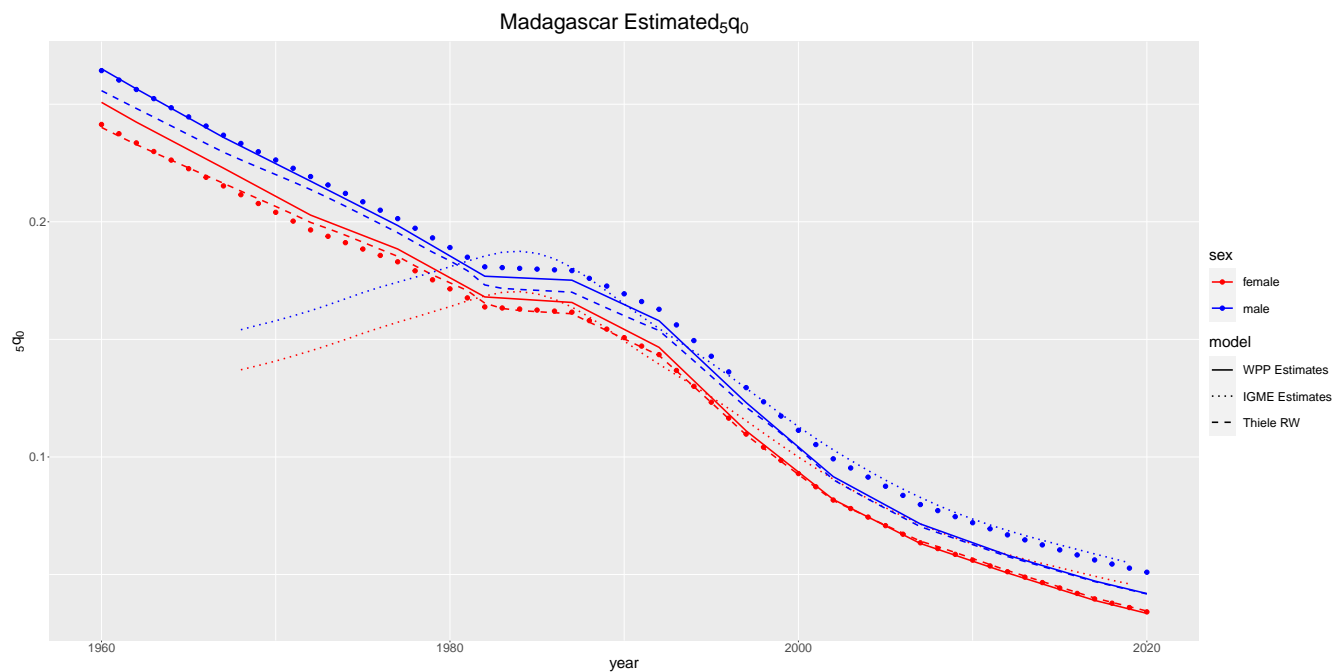


Figure 3: Estimated  ${}_5q_0$

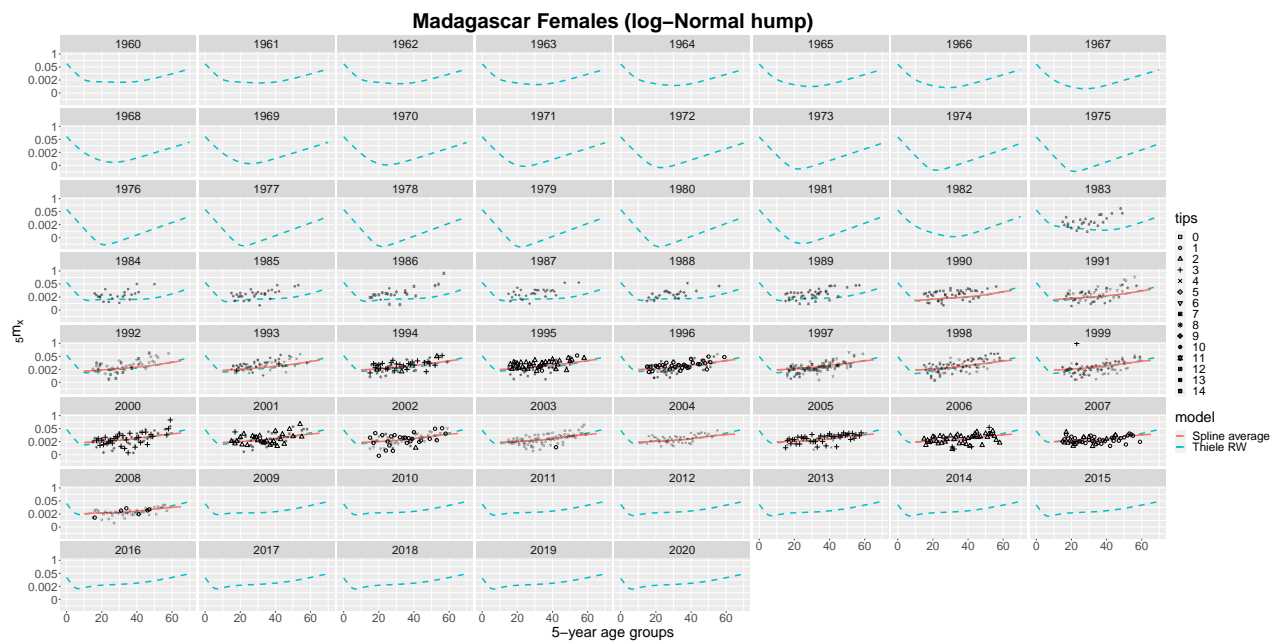


Figure 4: Mortality Schedules

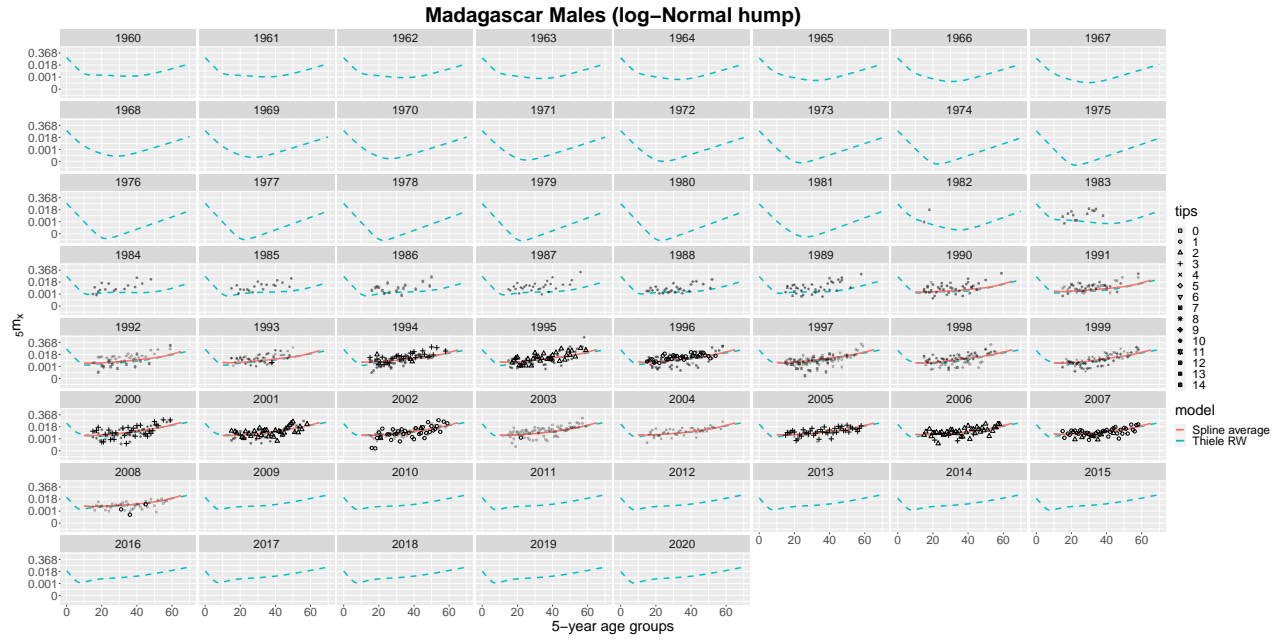


Figure 5: Mortality Schedules

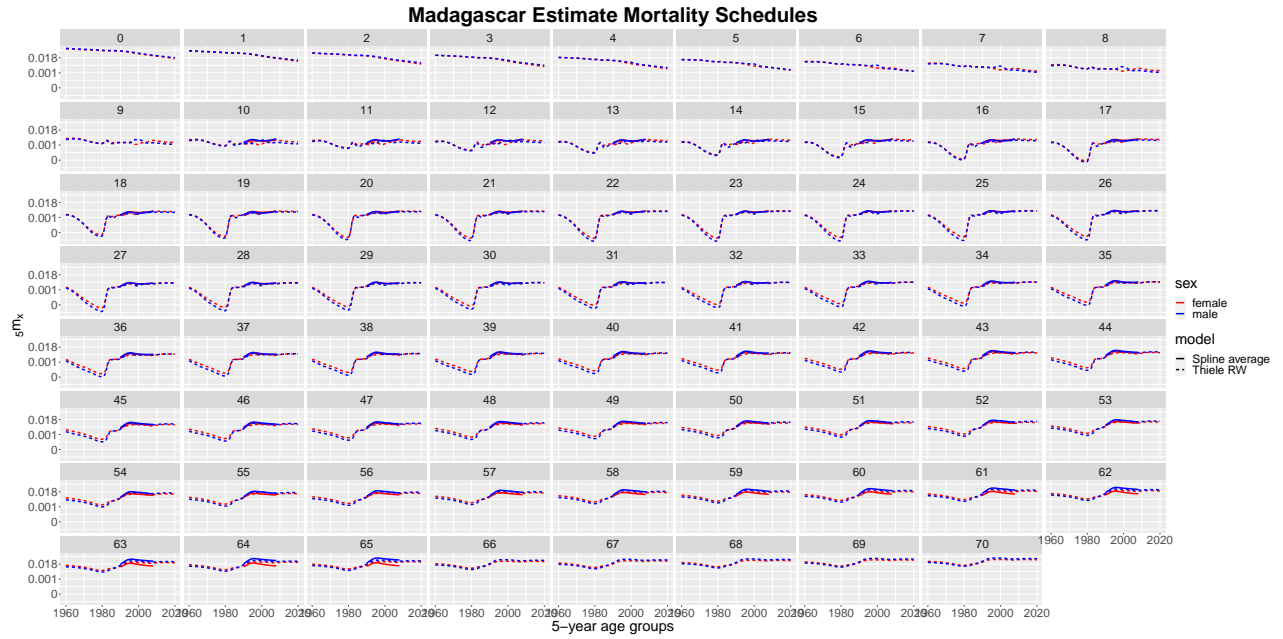


Figure 6: Mortality Schedules

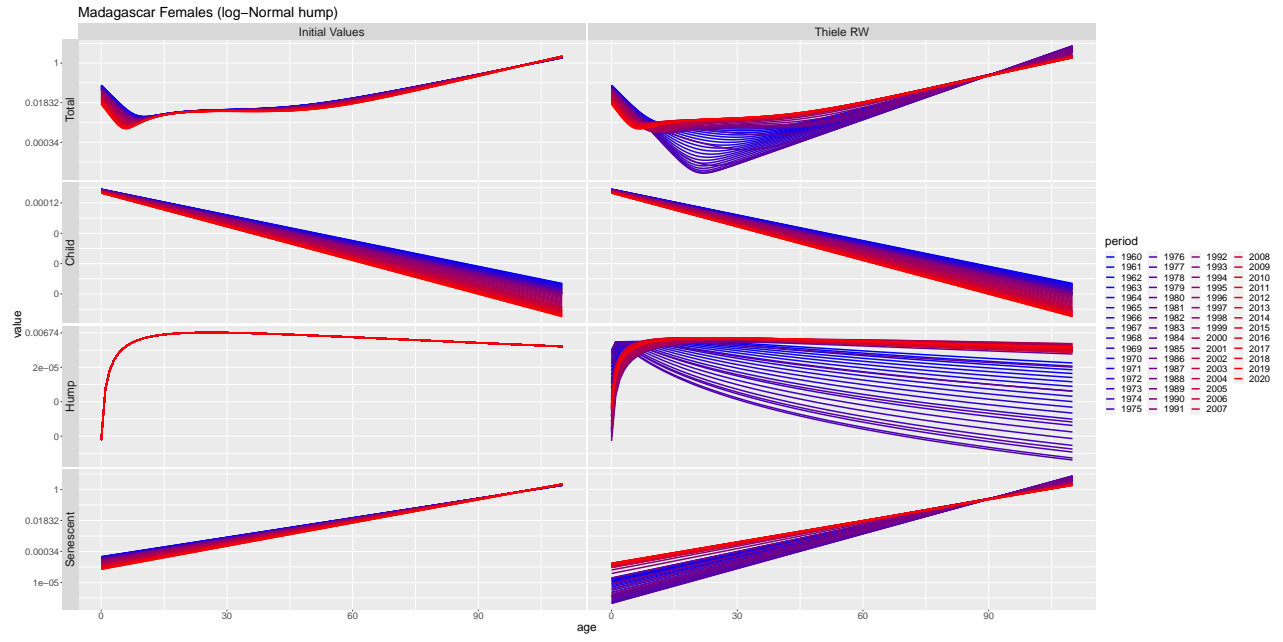


Figure 7: Thiele Decomposed

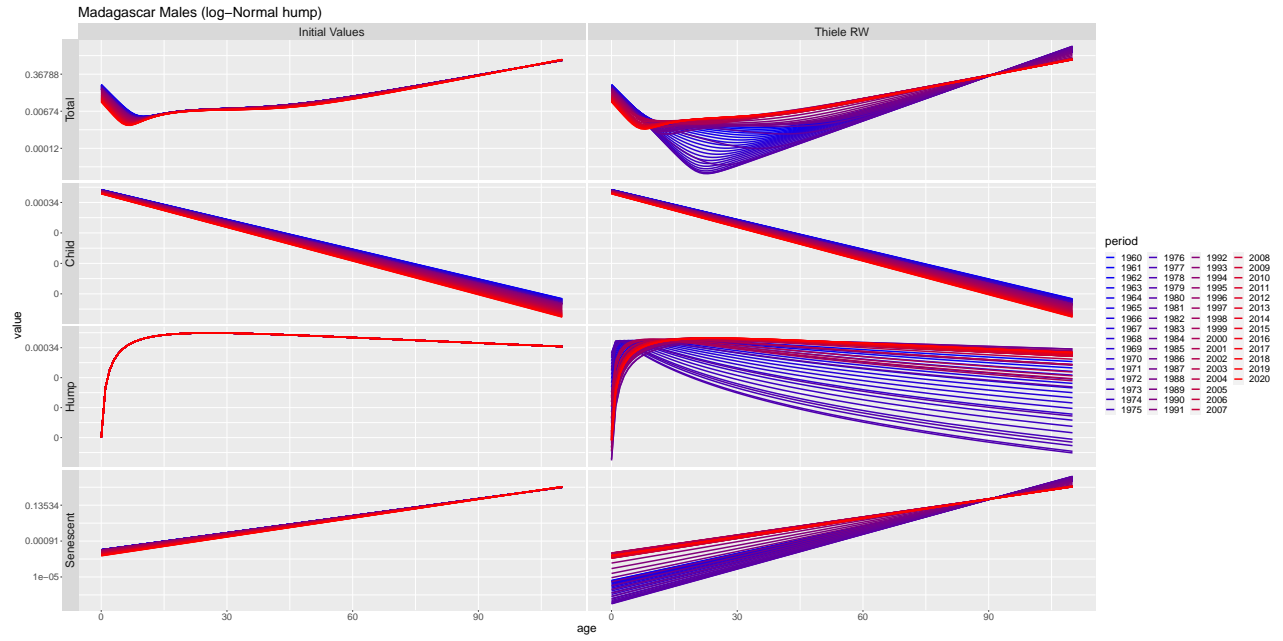


Figure 8: Thiele Decomposed

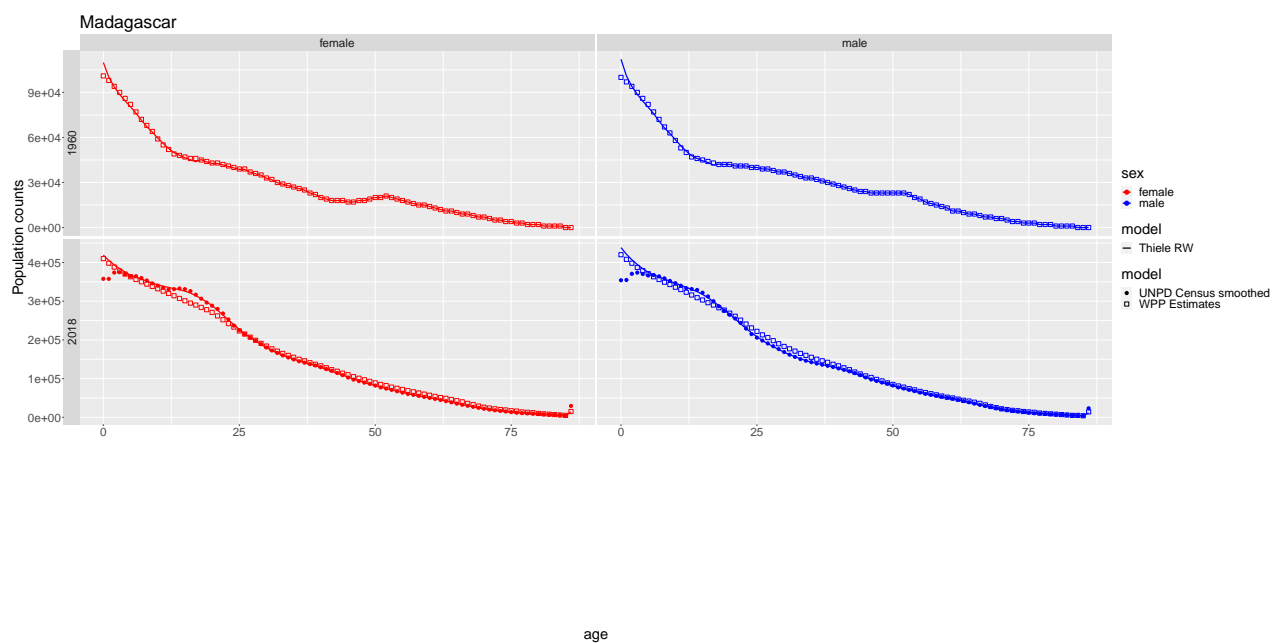


Figure 9: Population

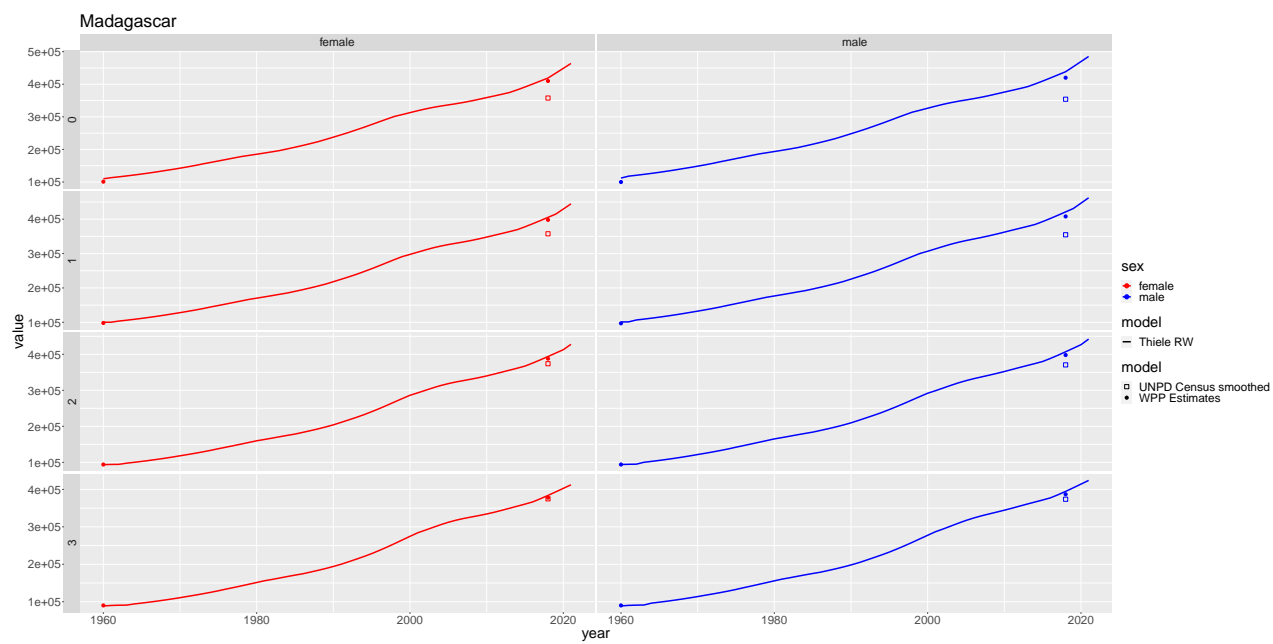


Figure 10: Population

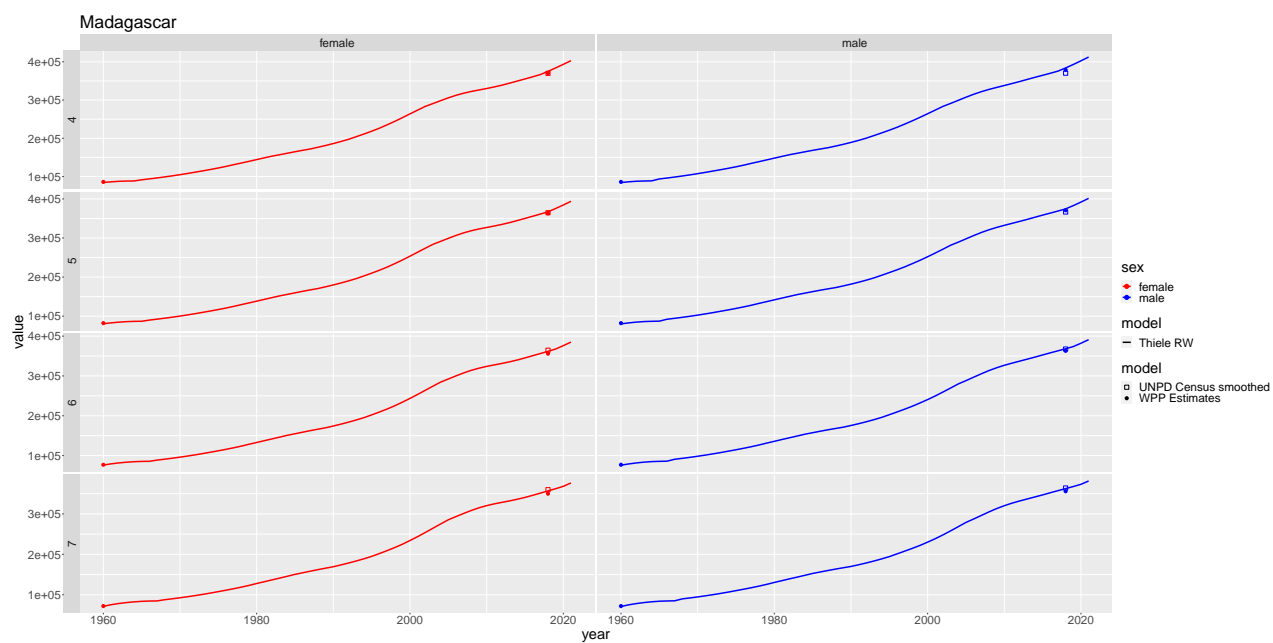


Figure 11: Population

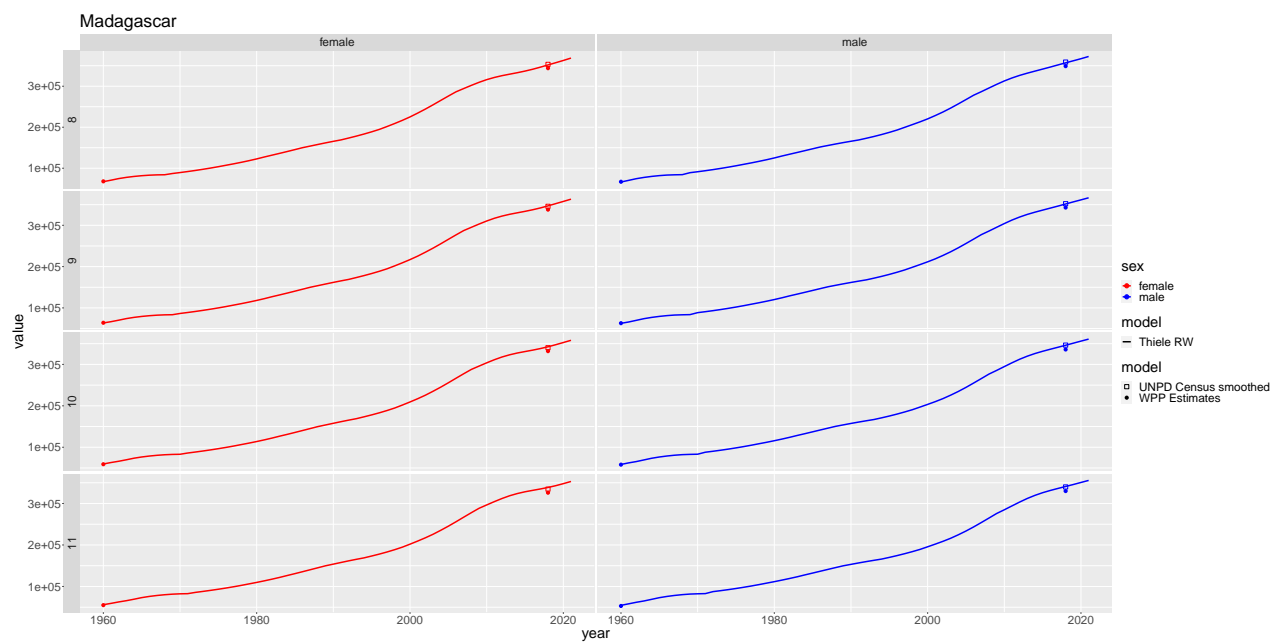


Figure 12: Population



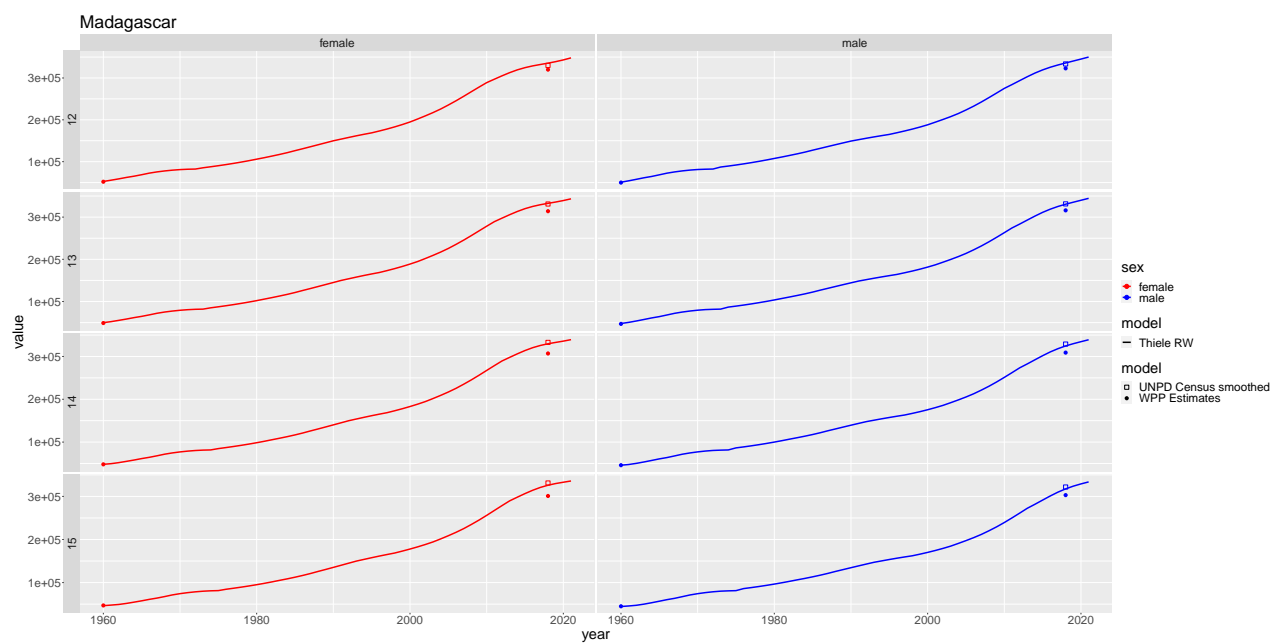


Figure 13: Population

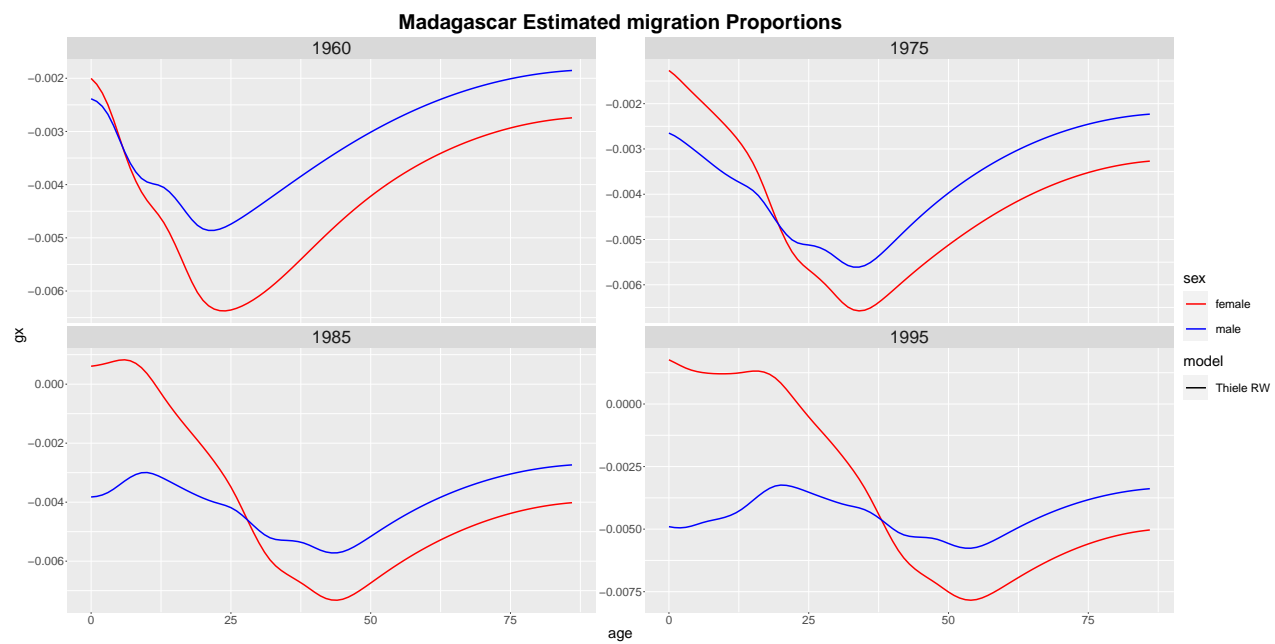


Figure 14: Migration

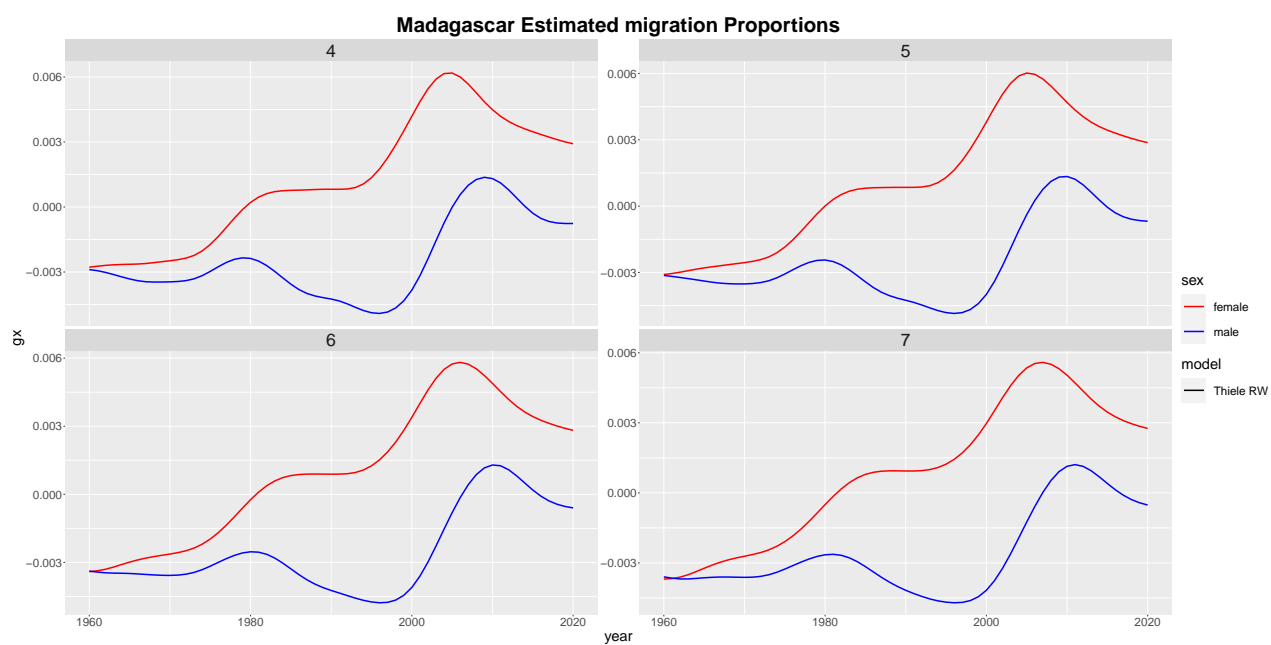


Figure 15: Migration

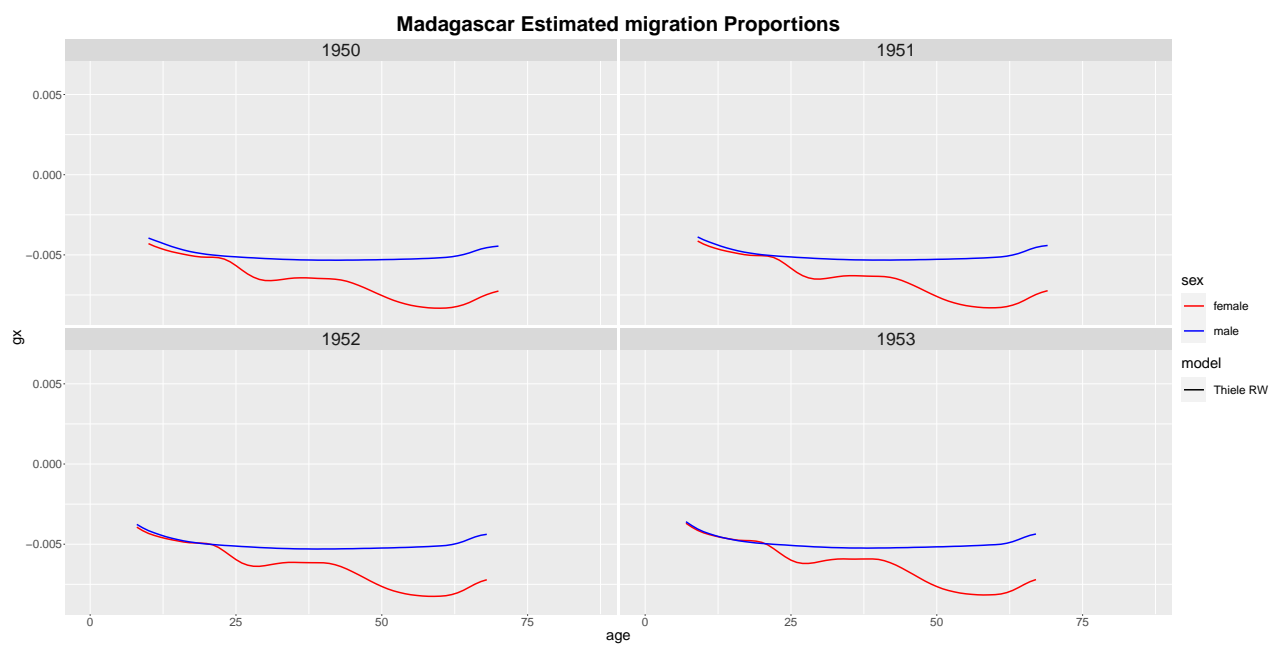


Figure 16: Migration

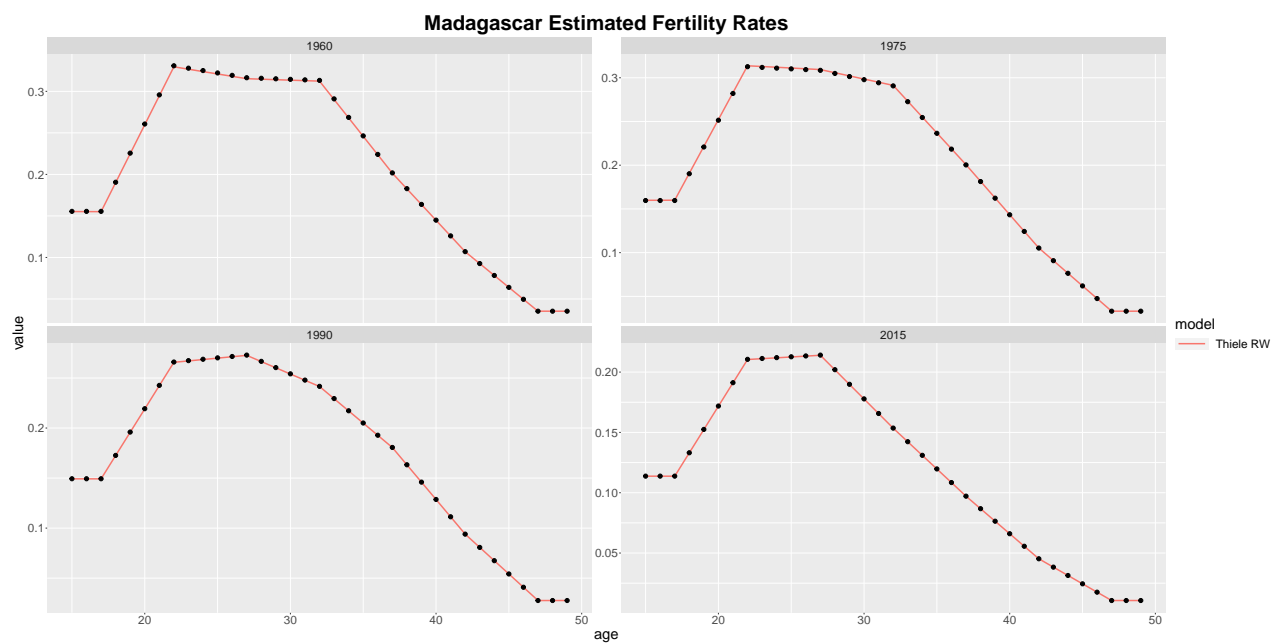


Figure 17: Fertility

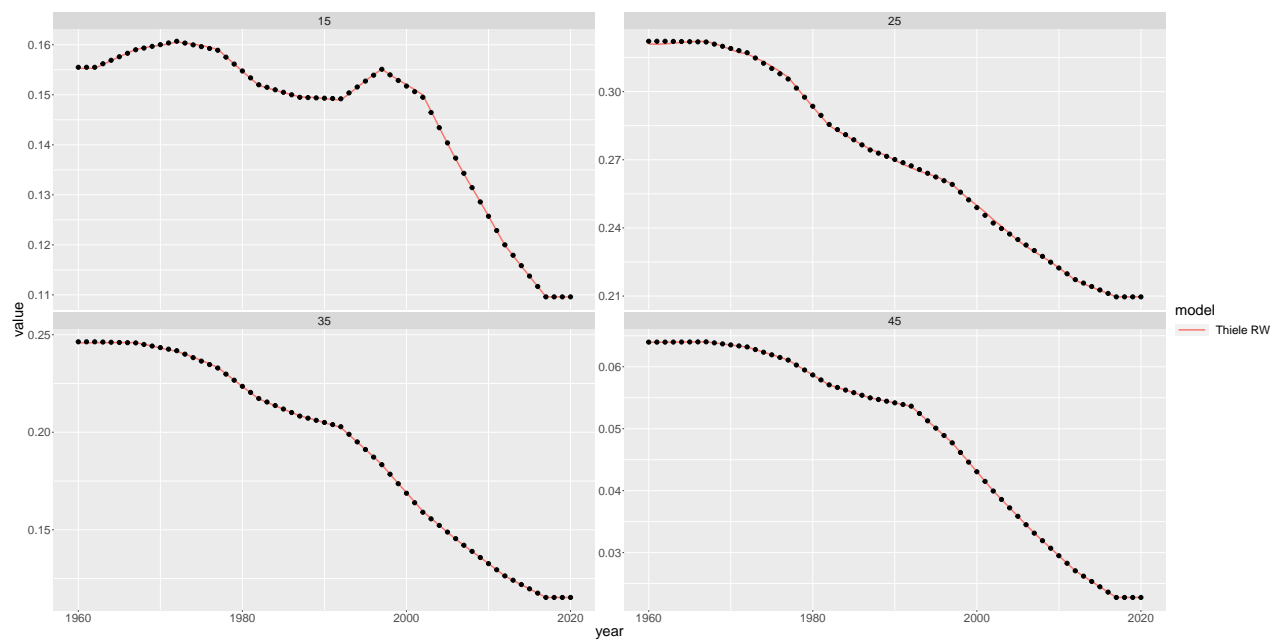


Figure 18: Fertility

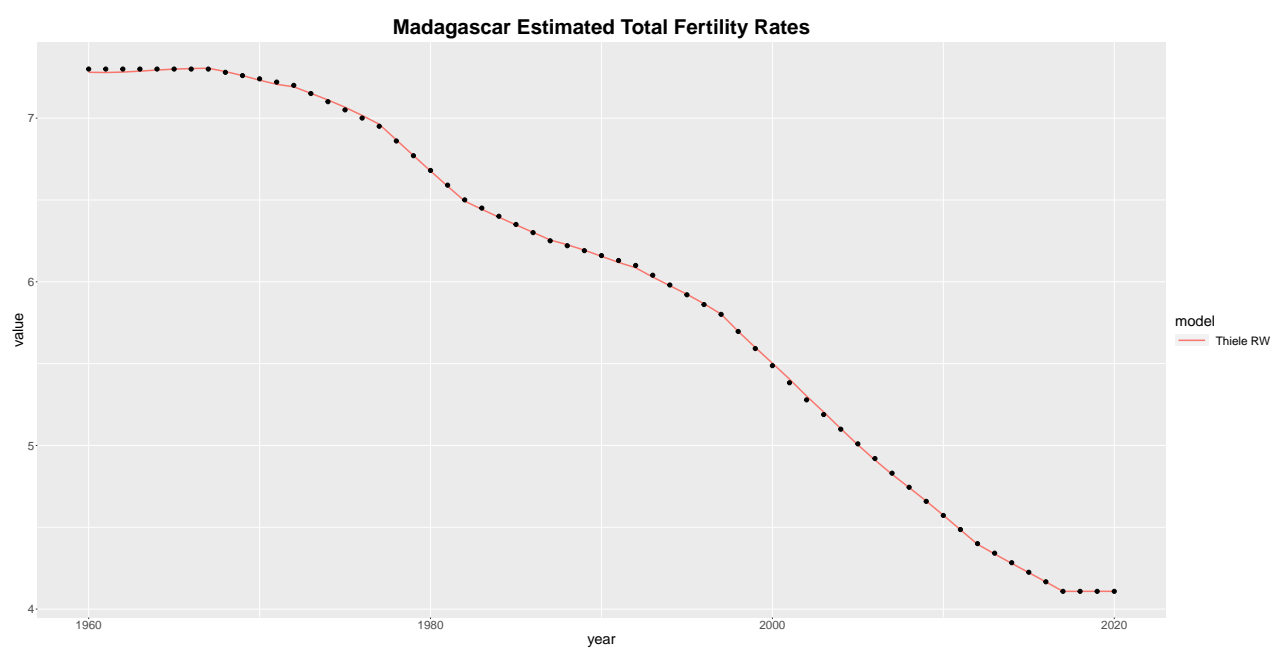


Figure 19: Total Fertility