

Lesotho

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

## # A tibble: 87 x 3
##   age `1966` `2006`
##   <dbl> <dbl> <dbl>
## 1     0 11404. 21444
## 2     1 12221. 20638.
## 3     2 12447. 20098
## 4     3 12723. 19879.
## 5     4 12778. 20123.
## 6     5 12750. 20443.
## 7     6 12695. 20836.
## 8     7 12634. 21032.
## 9     8 12376. 21056.
## 10    9 12098. 21170
## # ... with 77 more rows
```

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

## # A tibble: 87 x 3
##   age `1966` `2006`
##   <dbl> <dbl> <dbl>
## 1     0 11127. 21916
## 2     1 12005. 20846
## 3     2 12219. 20228.
## 4     3 12562. 19983.
## 5     4 12689. 20290.
## 6     5 12720. 20698.
## 7     6 12726. 21134.
## 8     7 12782. 21314.
## 9     8 12600. 21319.
## 10    9 12368. 21394.
## # ... 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_
##	5.606128	4.882985	5.539616	
##	log_tau2_gx_m	log_lambda_gx_age_f	log_lambda_gx_age_m	log_lambda_g
##	2.588029	4.664285	3.673576	
##	log_lambda_gx_agemtime_m	log_lambda_tp	log_lambda_tp_0_inflated_sd	log_disp
##	6.907767	3.578030	0.448513	
##	log_marginal_prec_psi_f	log_marginal_prec_A_f	log_marginal_prec_B_f	log_marginal_pr
##	4.299696	6.809511	6.815371	
##	log_marginal_prec_B_m	log_lambda_phi_f	log_lambda_psi_f	log_lambda_
##	6.829807	4.318135	4.308925	
##	log_lambda_A_f	log_lambda_B_f	log_lambda_phi_m	log_lamb
##	4.306437	4.301340	4.318823	
##	log_lambda_epsilon_m	log_lambda_A_m	log_lambda_B_m	
##	4.303843	4.307074	4.309892	

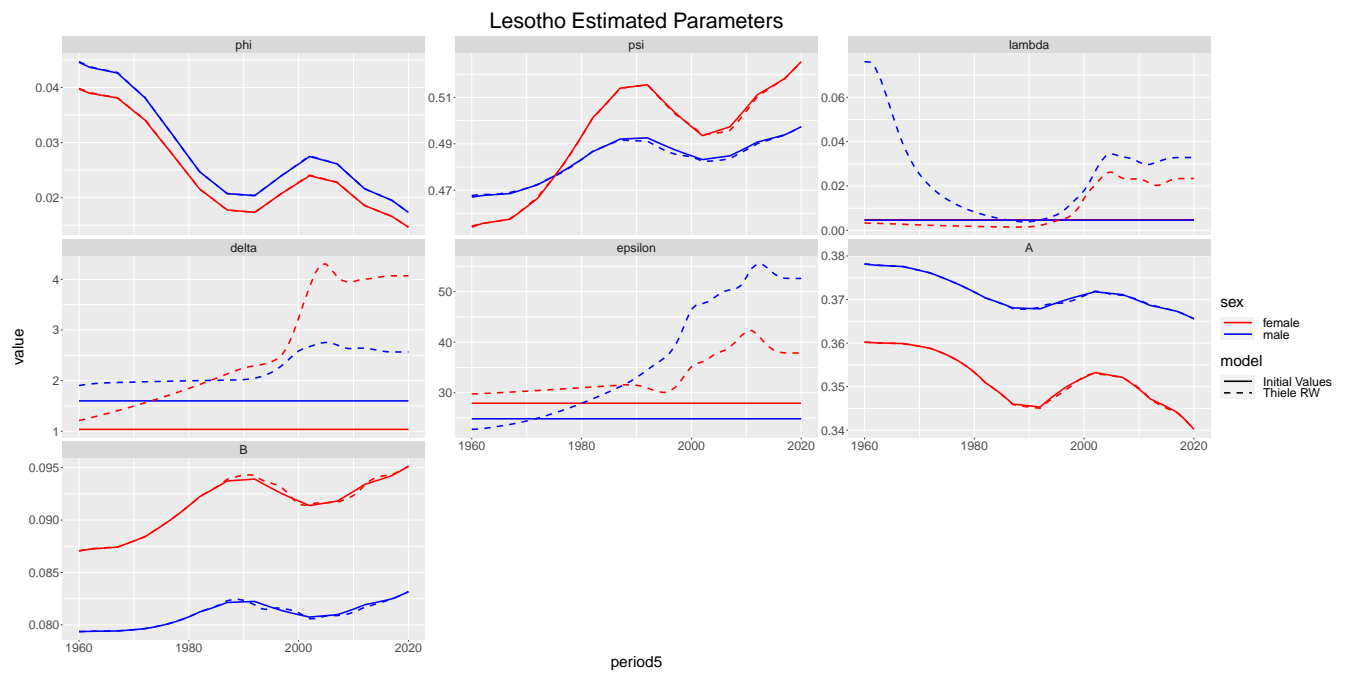


Figure 1: Estimated parameters

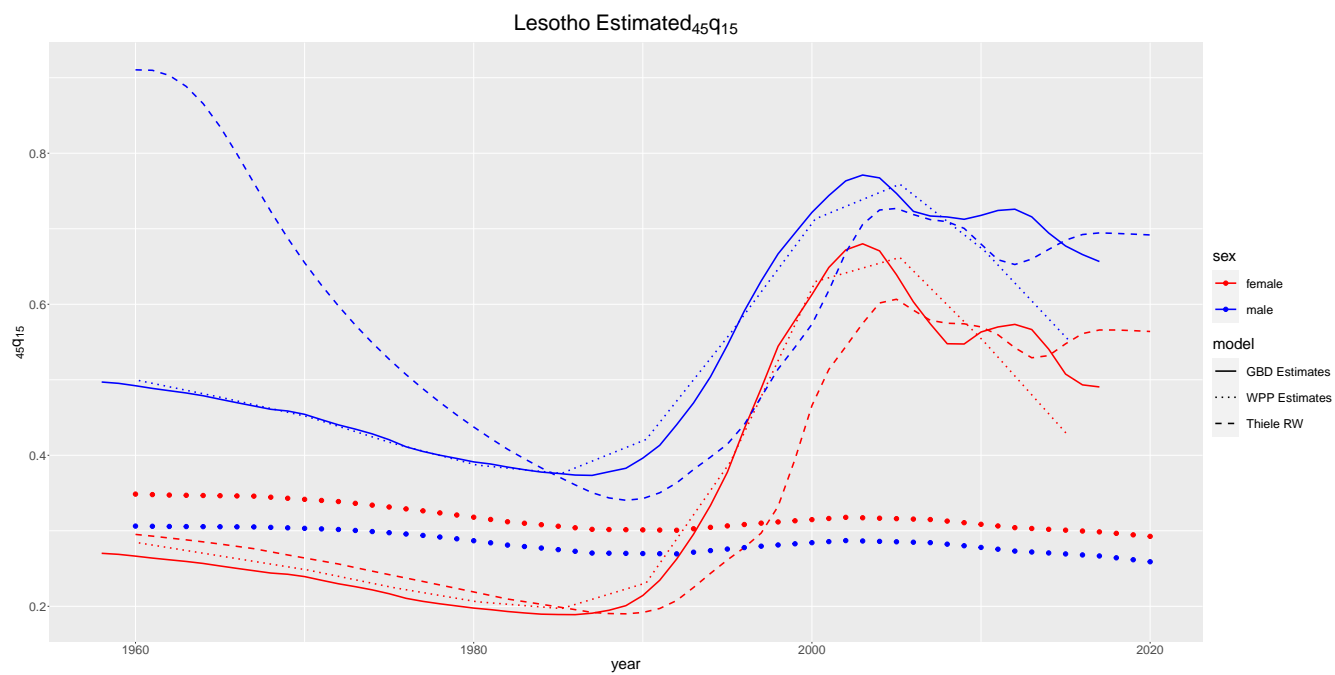


Figure 2: Estimated $_{45}q_{15}$

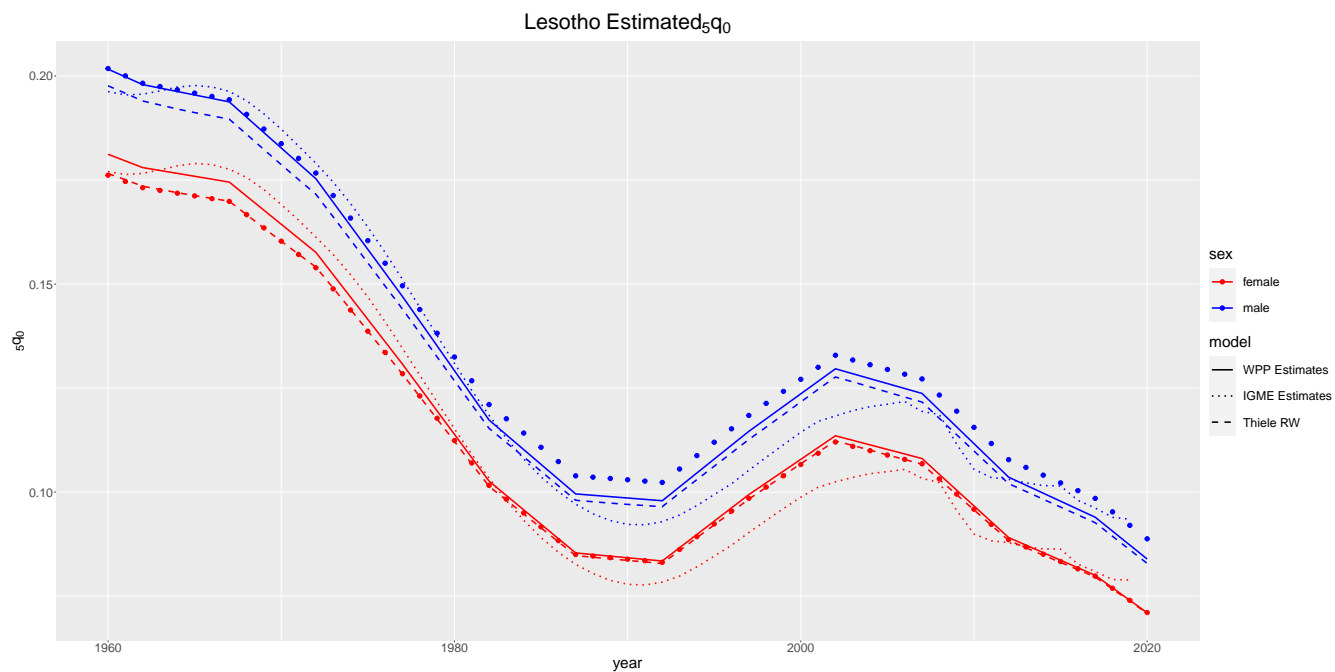


Figure 3: Estimated ${}_5q_0$

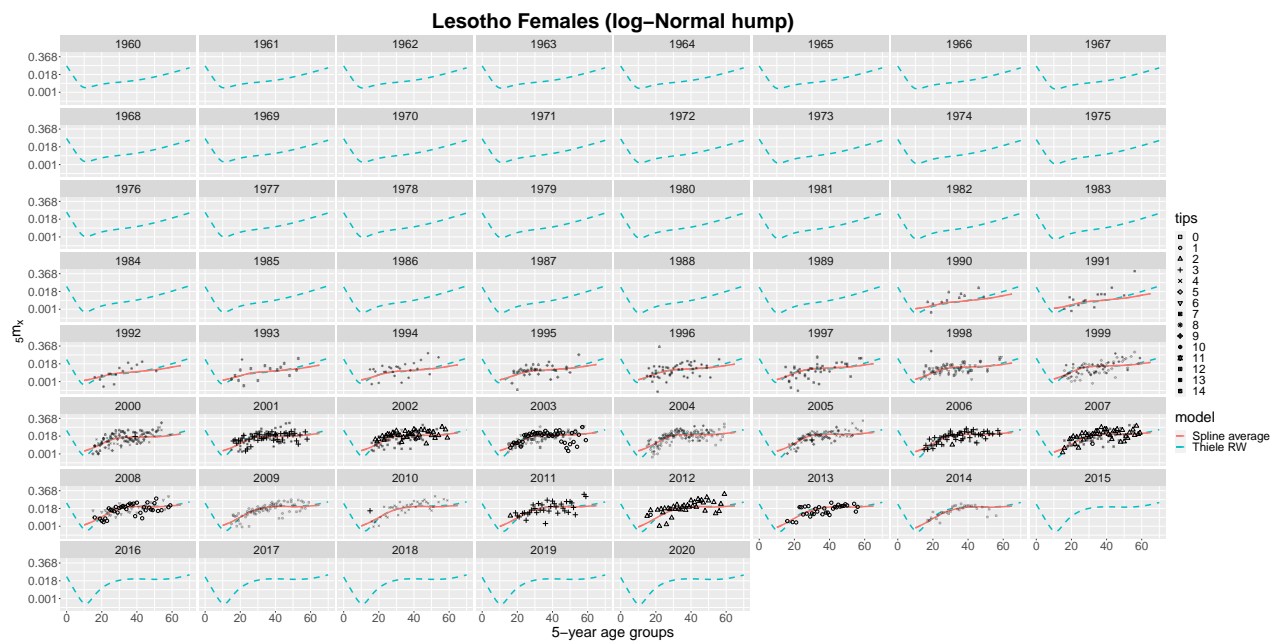


Figure 4: Mortality Schedules

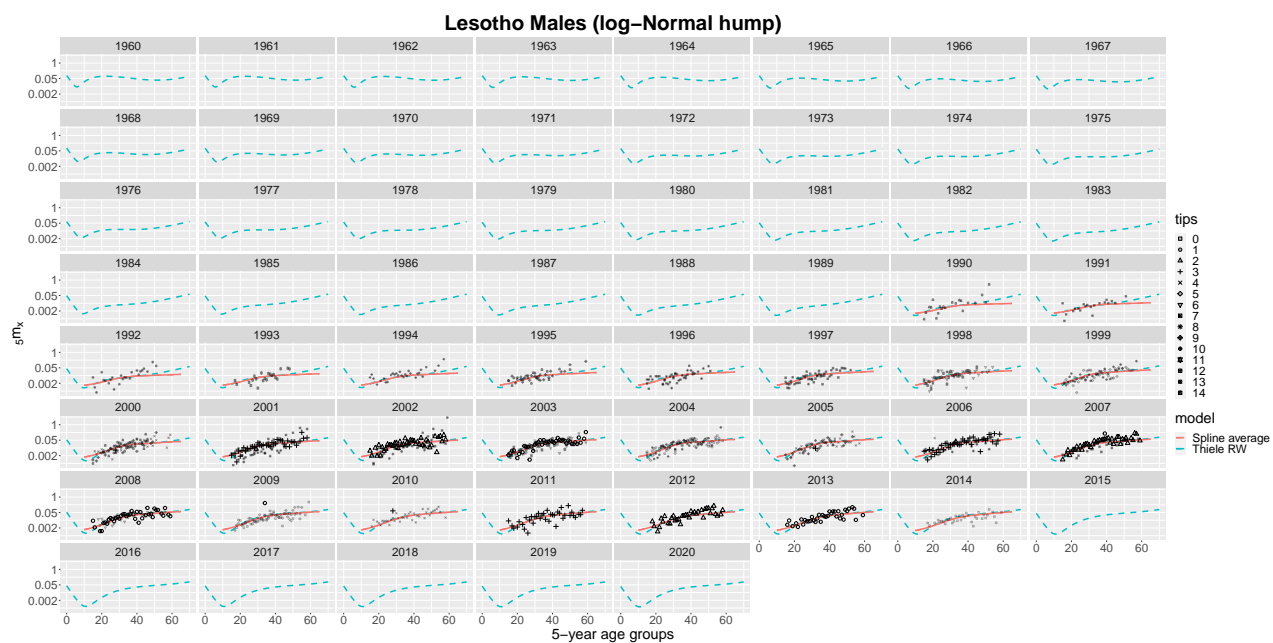


Figure 5: Mortality Schedules

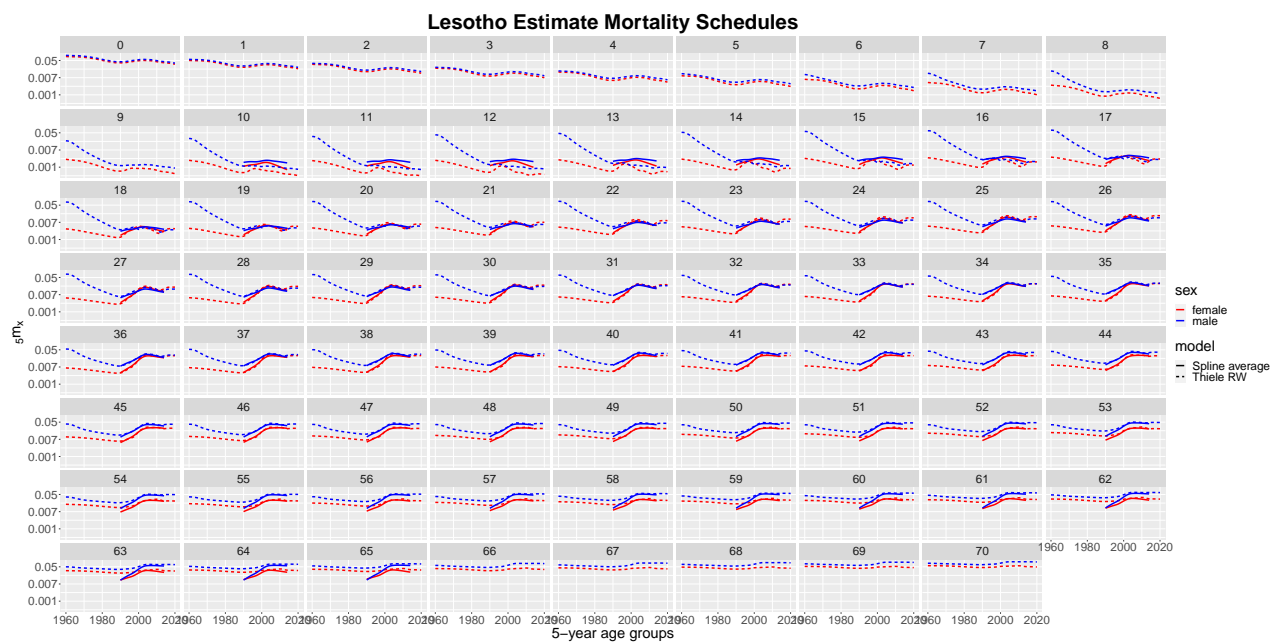


Figure 6: Mortality Schedules

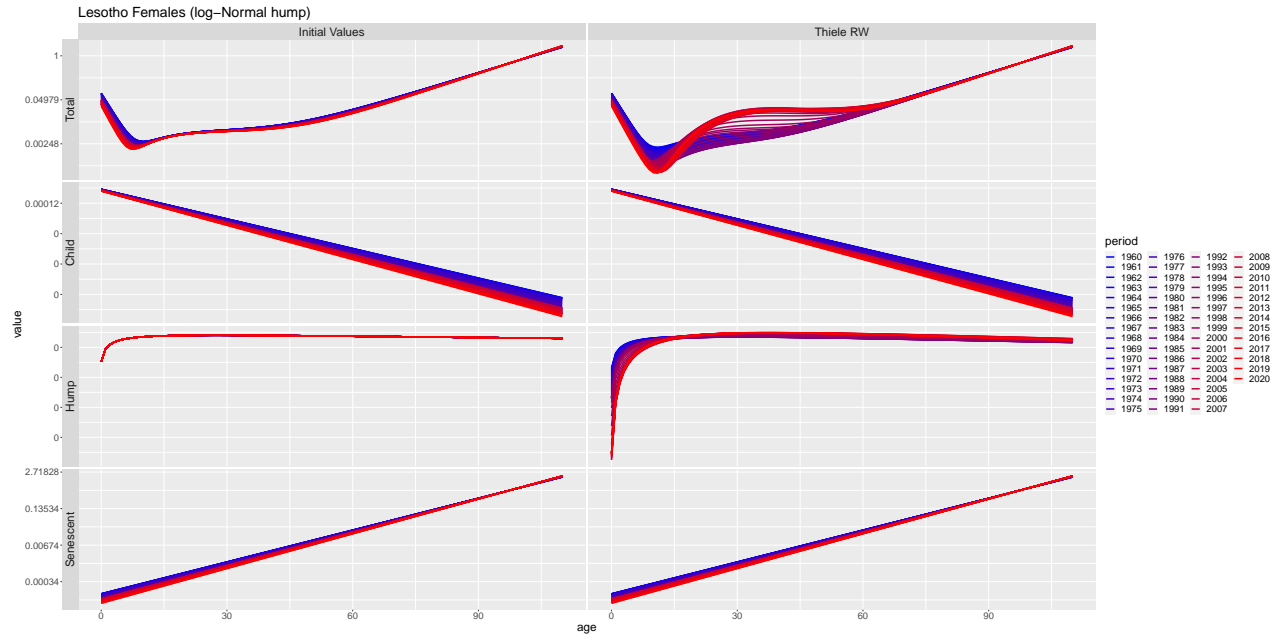


Figure 7: Thiele Decomposed

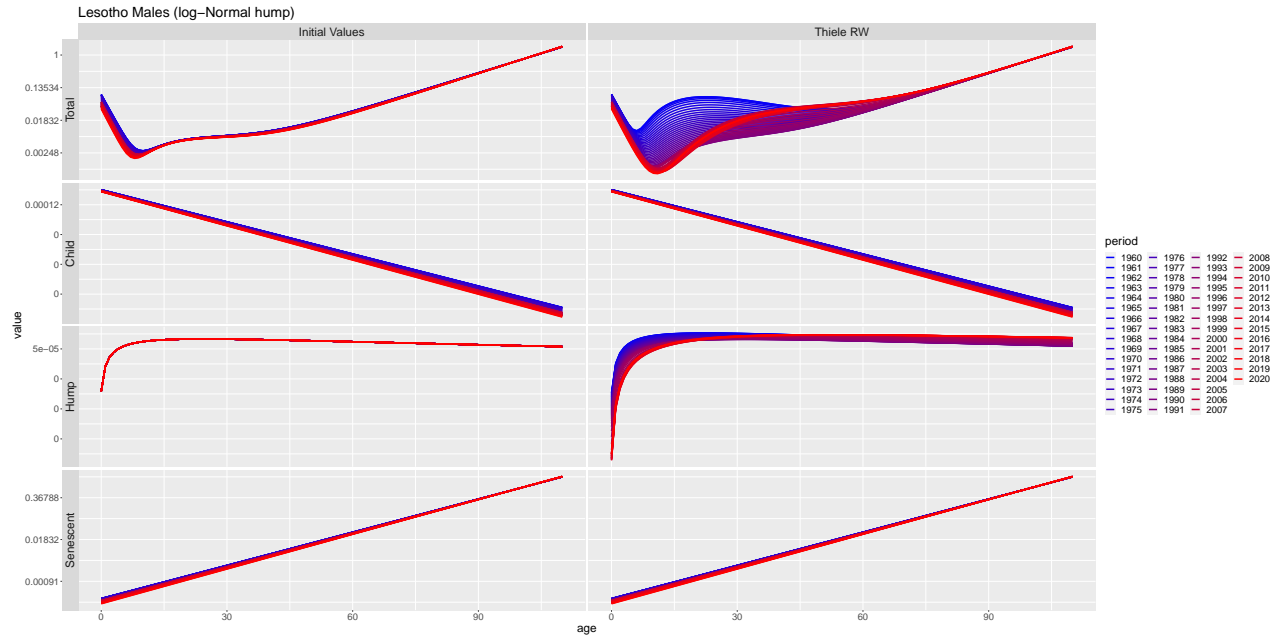


Figure 8: Thiele Decomposed

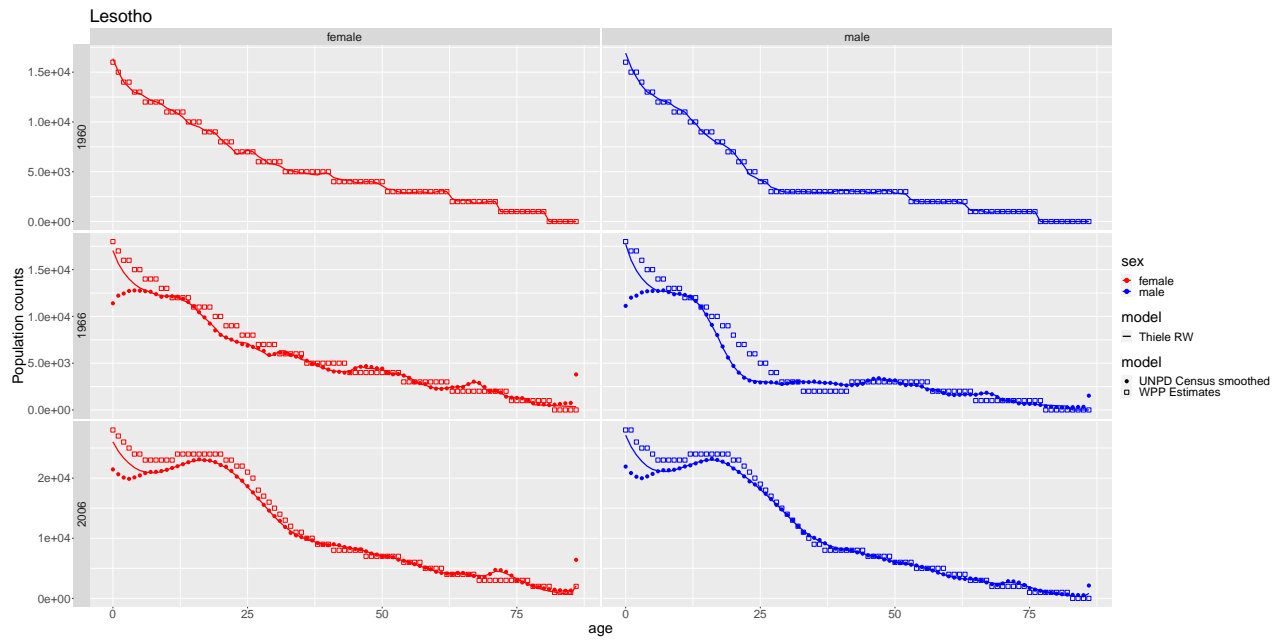


Figure 9: Population



Figure 10: Population

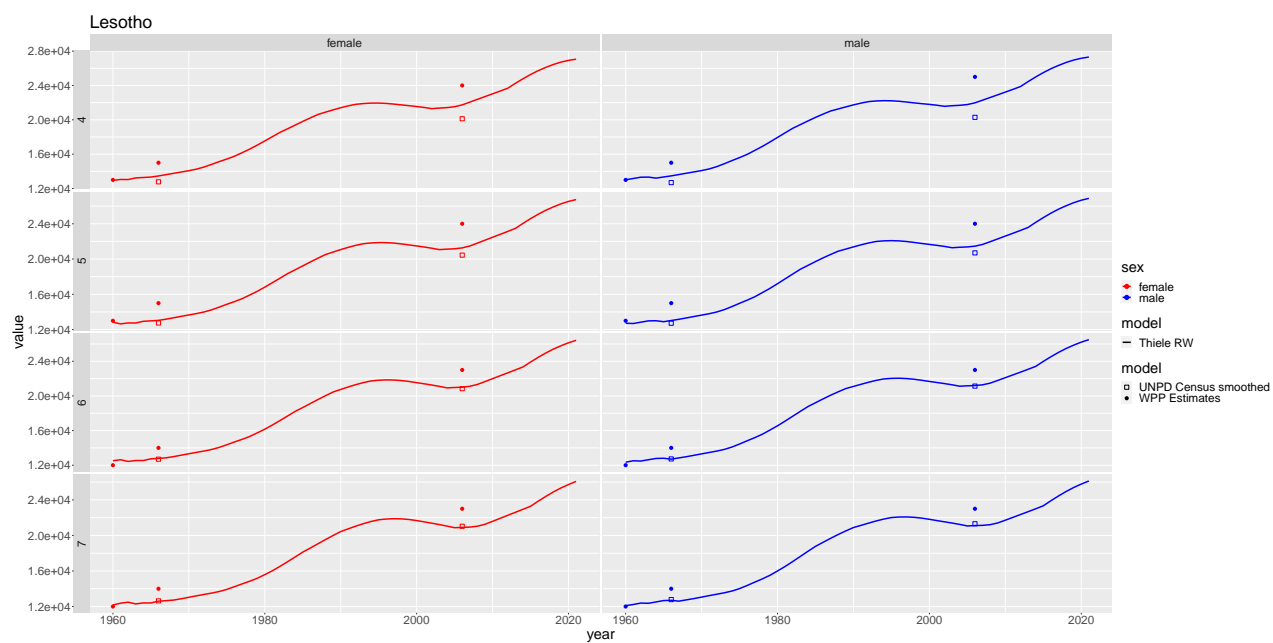


Figure 11: Population



Figure 12: Population



Figure 13: Population

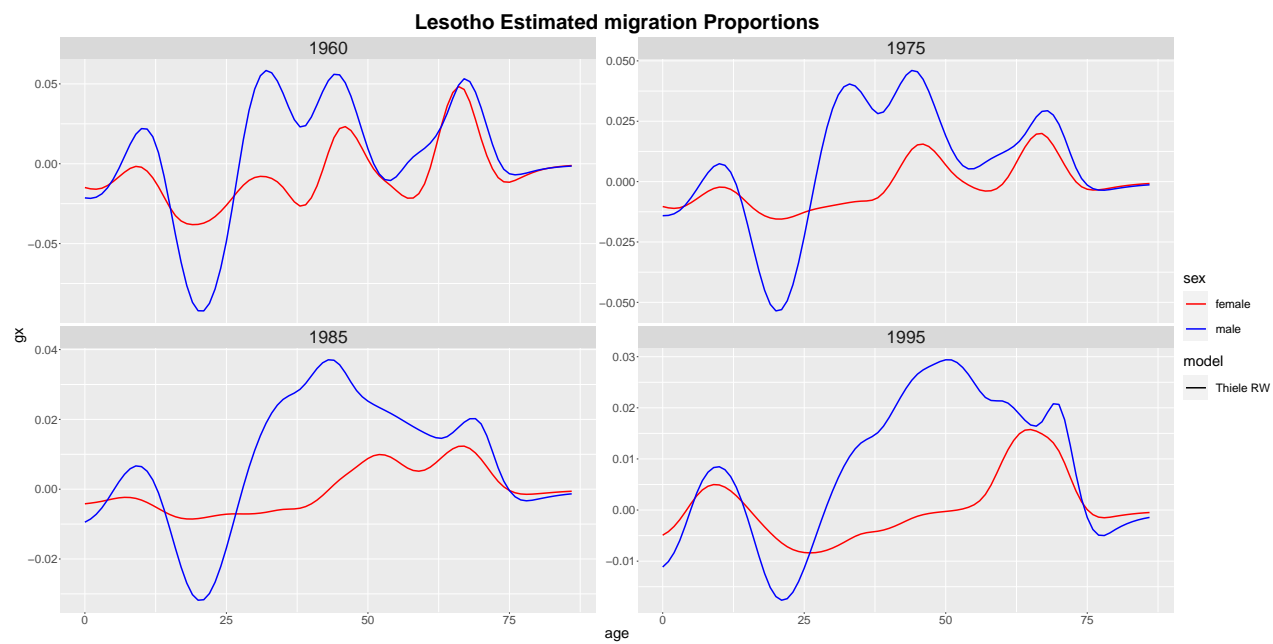


Figure 14: Migration

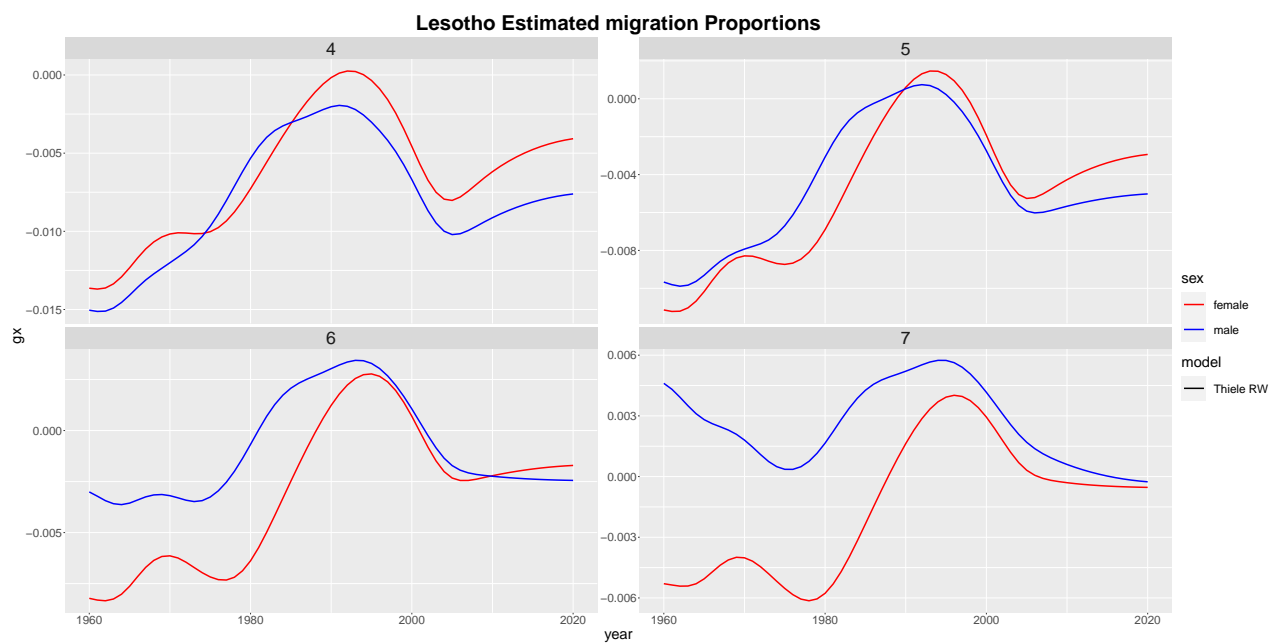


Figure 15: Migration

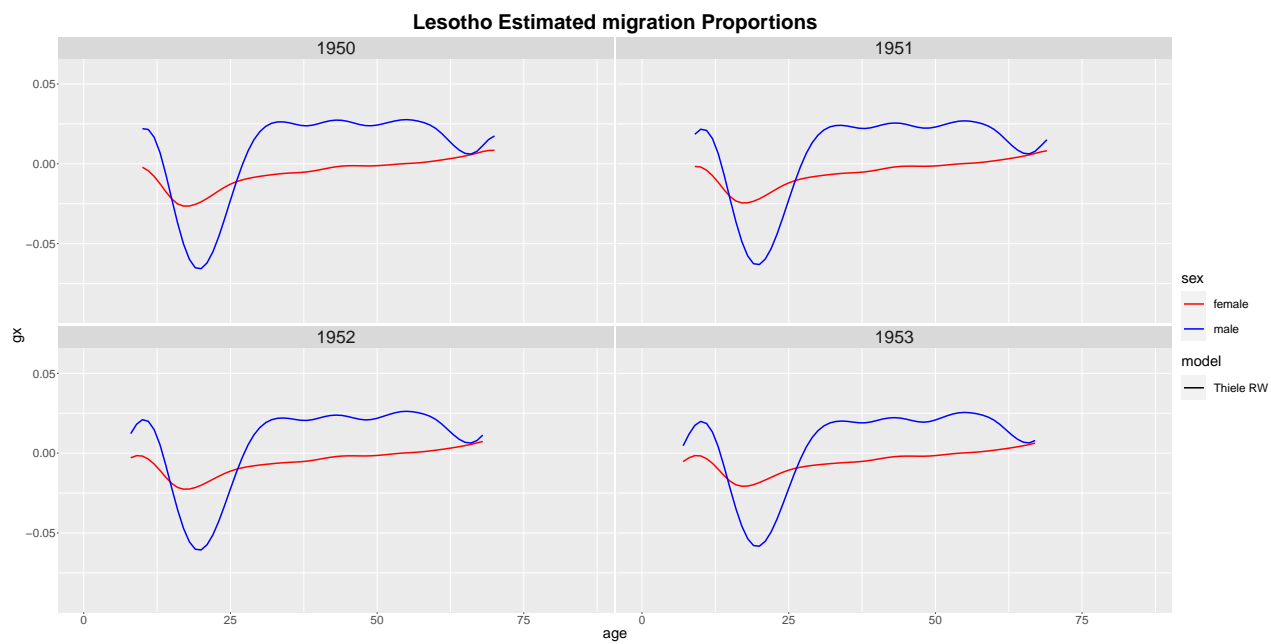


Figure 16: Migration

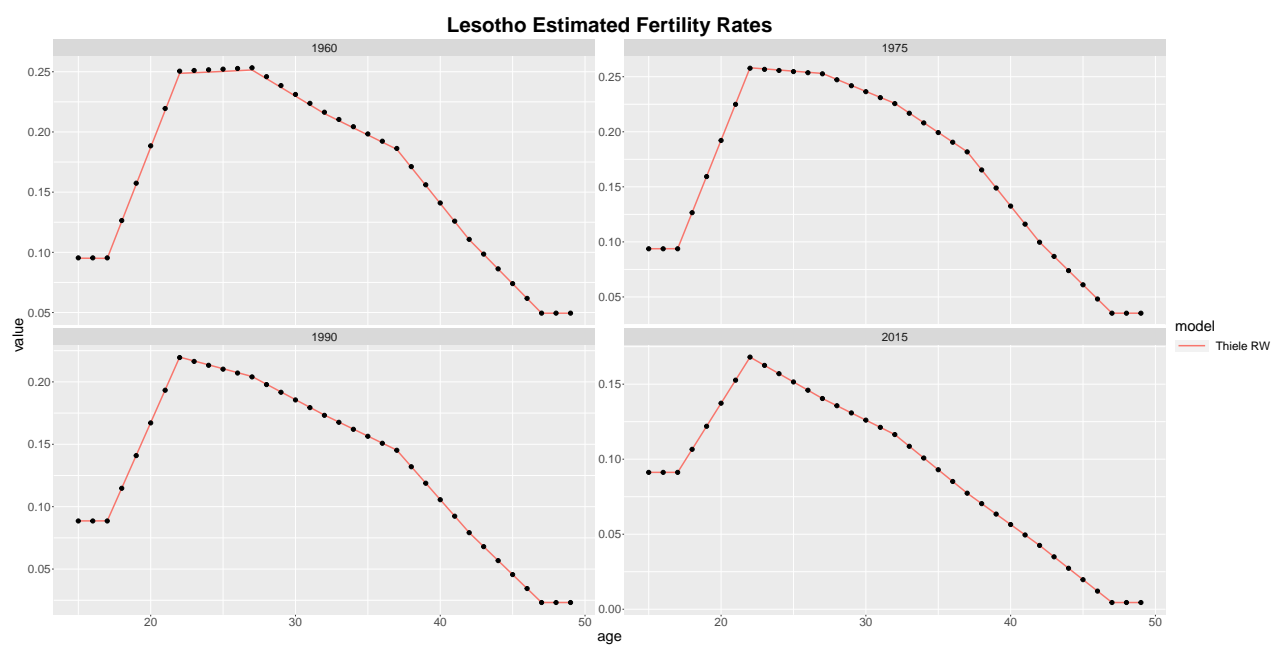


Figure 17: Fertility

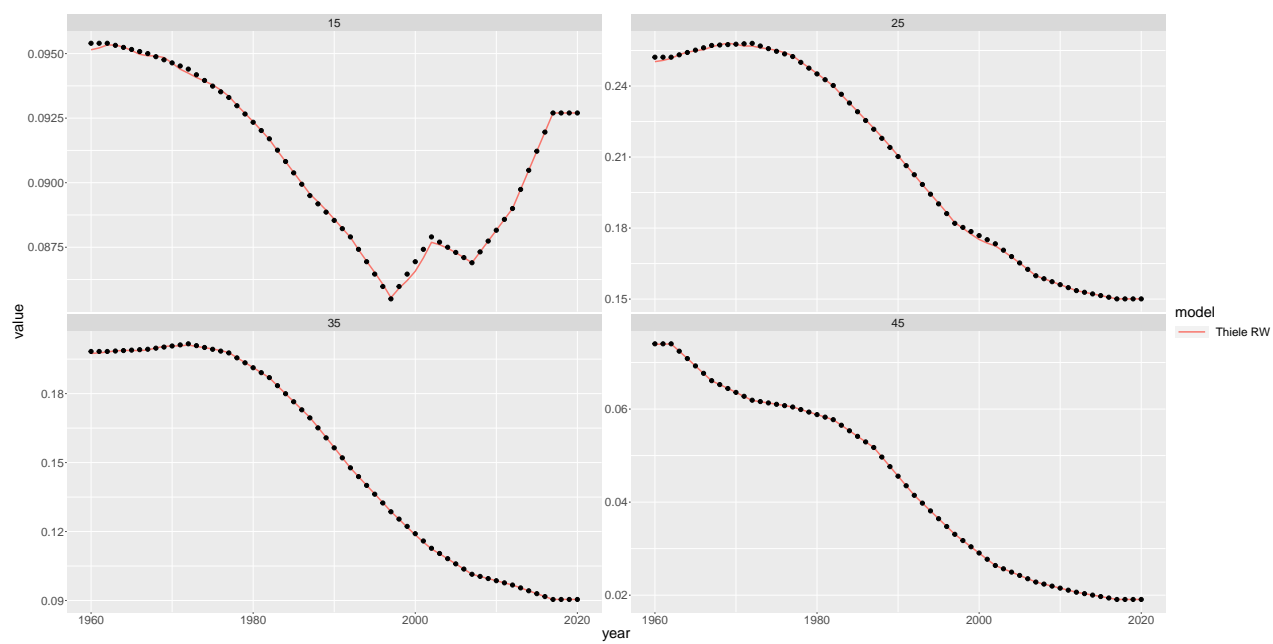


Figure 18: Fertility

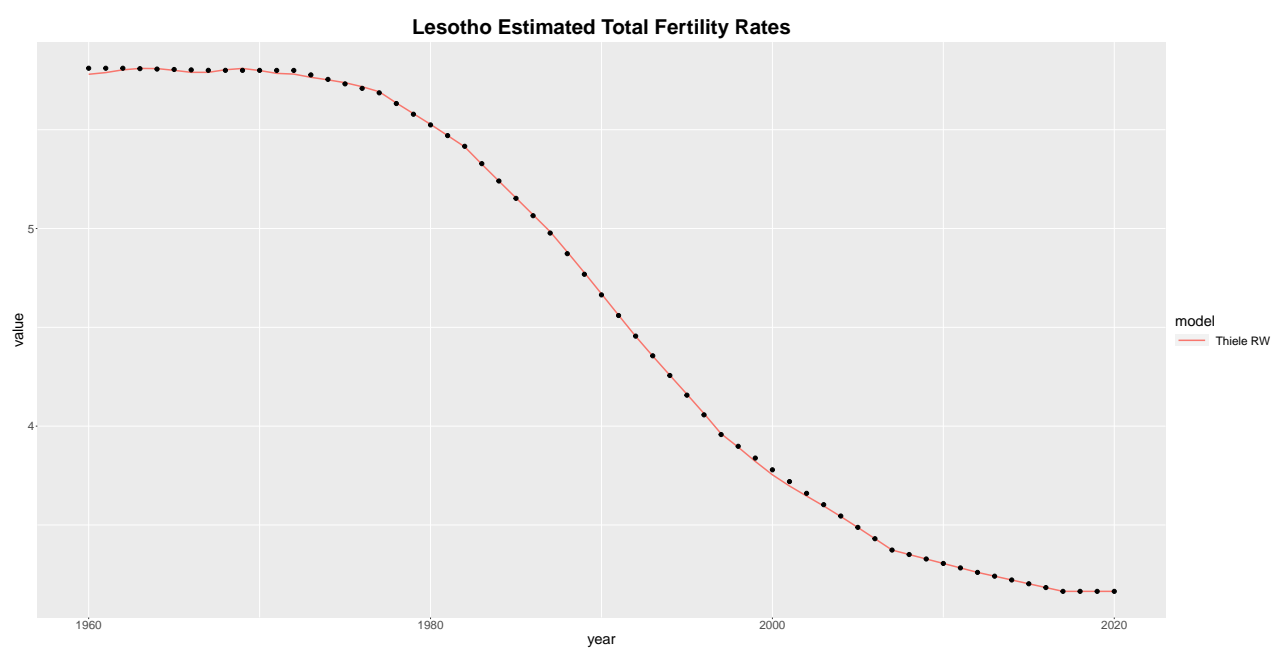


Figure 19: Total Fertility