

Burkina Faso

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

## # A tibble: 86 x 4
##   age `1985` `1996` `2006`
##   <dbl>   <dbl>   <dbl>   <dbl>
## 1     0 168022. 172870 232734.
## 2     1 123865. 158974. 223944.
## 3     2 142053. 174410. 242692.
## 4     3 146137. 184285. 249931.
## 5     4 150883. 189495. 251448.
## 6     5 154008. 188243. 246943.
## 7     6 148134. 185588. 240547.
## 8     7 142061. 176756. 231681.
## 9     8 131616. 171109. 223428.
## 10    9 121004. 159422. 206324.
## # ... with 76 more rows

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

## # A tibble: 18 x 2
##   age `1975`
##   <dbl>   <dbl>
## 1     0 479362.
## 2     5 417499.
## 3    10 327051.
## 4    15 262454.
## 5    20 237211.
## 6    25 221469.
## 7    30 189966.
## 8    35 154009.
## 9    40 126640.
## 10   45 103550.
## 11   50  83233.
## 12   55  63930.
## 13   60  48696.
## 14   65  35645.
## 15   70  25876.
## 16   75  17660.
## 17   80  10821.
## 18   85  13098.

## [1] "Census Males"

## # A tibble: 86 x 4
##   age `1985` `1996` `2006`
##   <dbl>   <dbl>   <dbl>   <dbl>
## 1     0 167871. 173583 236268.
## 2     1 125161. 161235 229350.
## 3     2 143298. 177204. 248241.
## 4     3 146815. 186865. 255136.
## 5     4 151703. 192377. 256830.
## 6     5 155111. 191497. 252191.
```

```
## 7      6 149342. 190015 246710.
## 8      7 144212. 182532 239014.
## 9      8 135460. 177876. 231703.
## 10     9 125896. 167372. 216278.
## # ... with 76 more rows
```

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

```
## # A tibble: 18 x 2
```

```
##   age `1975`
##   <dbl>   <dbl>
```

```
## 1      0 498118.
## 2      5 454940.
## 3     10 367257.
## 4     15 275547.
## 5     20 209858.
## 6     25 175866.
## 7     30 155352.
## 8     35 135026.
## 9     40 116652.
## 10    45 101729.
## 11    50  88268.
## 12    55  72765.
## 13    60  56927.
## 14    65  41731.
## 15    70  30718.
## 16    75  20445.
## 17    80  10919.
## 18    85  16960.
```

Thiele log-Normal Hump Spline

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

##	log_tau2_logpop_f	log_tau2_logpop_f	log_tau2_logpop_m	log_tau2_
##	5.1335792	4.3042981	5.8580661	4
##	log_tau2_gx_m	log_lambda_gx_age_f	log_lambda_gx_age_m	log_lambda_g
##	3.0564743	8.0828588	6.1815755	6
##	log_lambda_gx_agemtime_m	log_lambda_tp	log_lambda_tp_0_inflated_sd	log_disp
##	6.9077258	1.7232015	-0.5741970	0
##	log_marginal_prec_psi_f	log_marginal_prec_A_f	log_marginal_prec_B_f	log_marginal_pr
##	6.8066369	6.8100152	7.0498105	6
##	log_marginal_prec_B_m	log_lambda_phi_f	log_lambda_psi_f	log_lambda_
##	6.3653162	4.3080423	4.3071807	4
##	log_lambda_A_f	log_lambda_B_f	log_lambda_phi_m	log_lamb
##	4.3061809	4.3250763	4.3118552	4
##	log_lambda_epsilon_m	log_lambda_A_m	log_lambda_B_m	logit_lambda_slo
##	4.3311045	4.3046941	4.2732264	-1
##	logit_lambda_slope_rho_m	logit_delta_slope_rho_m	logit_epsilon_slope_rho_m	
##	0.7615573	2.8222691	-0.5367179	

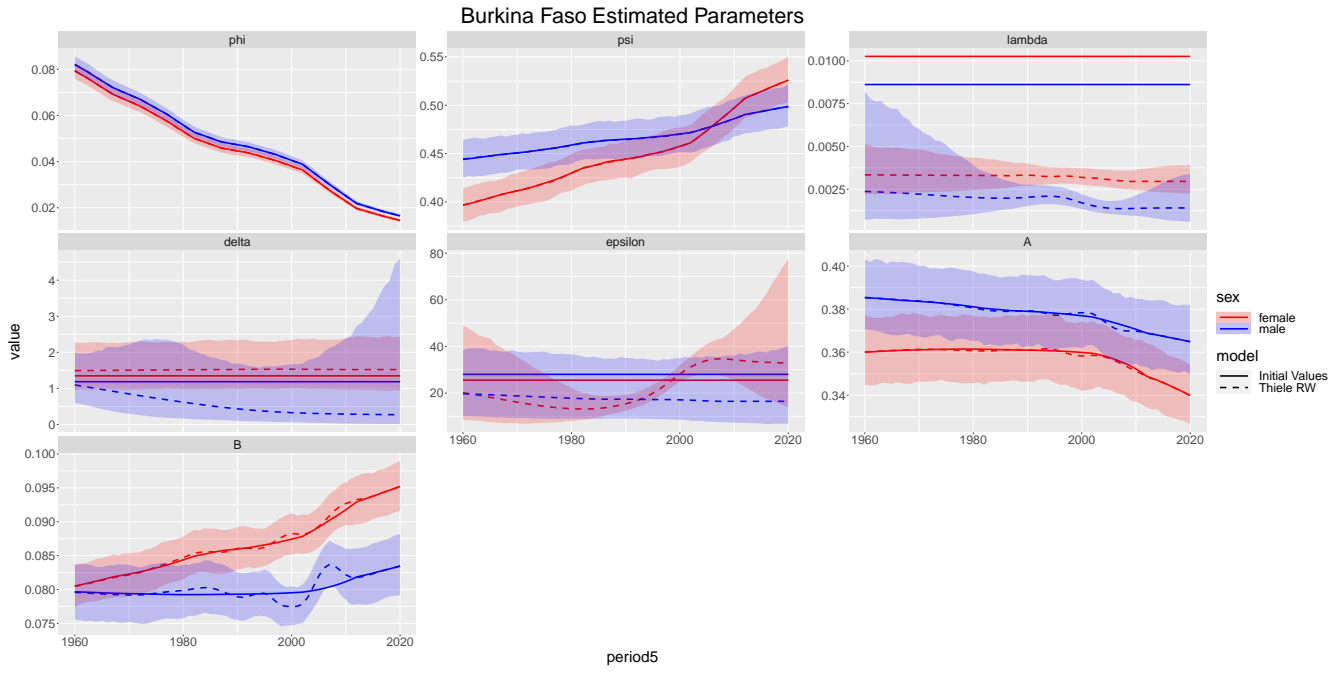


Figure 1: Estimated parameters

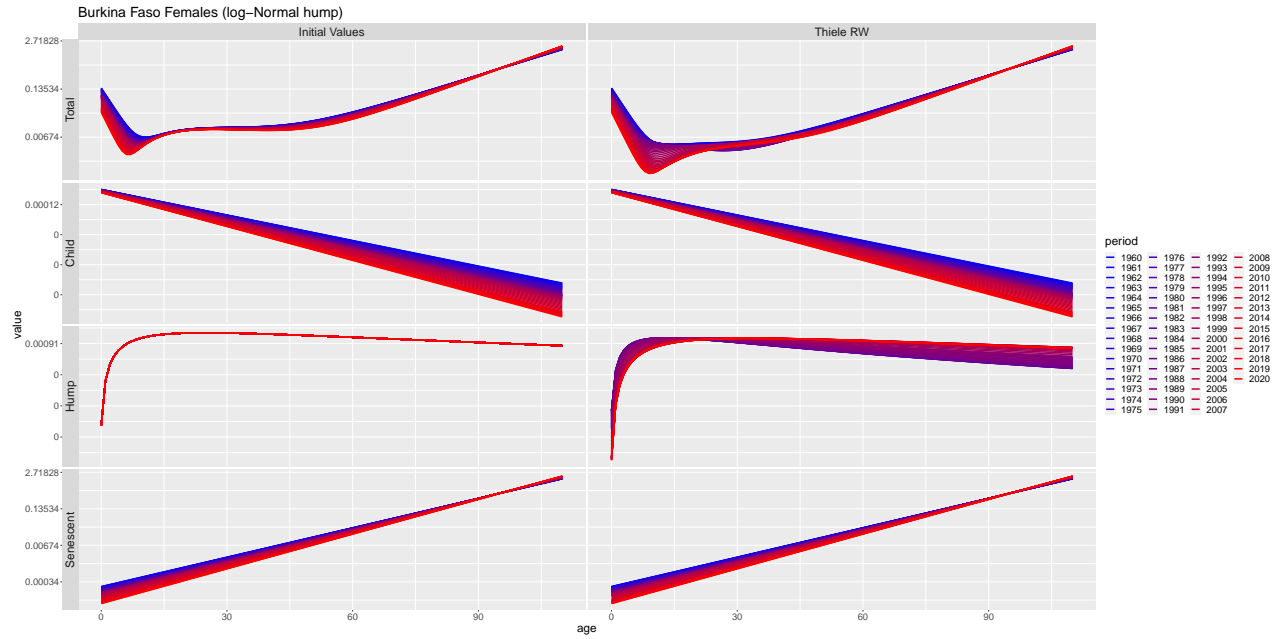


Figure 2: Thiele Decomposed

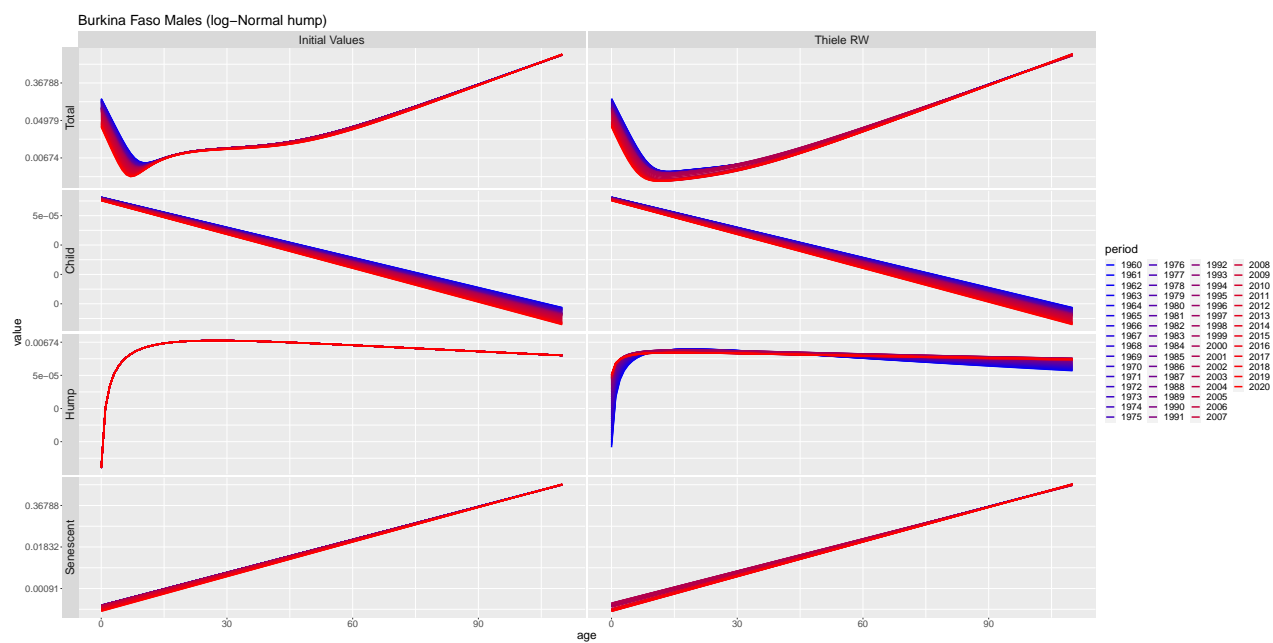


Figure 3: Thiele Decomposed

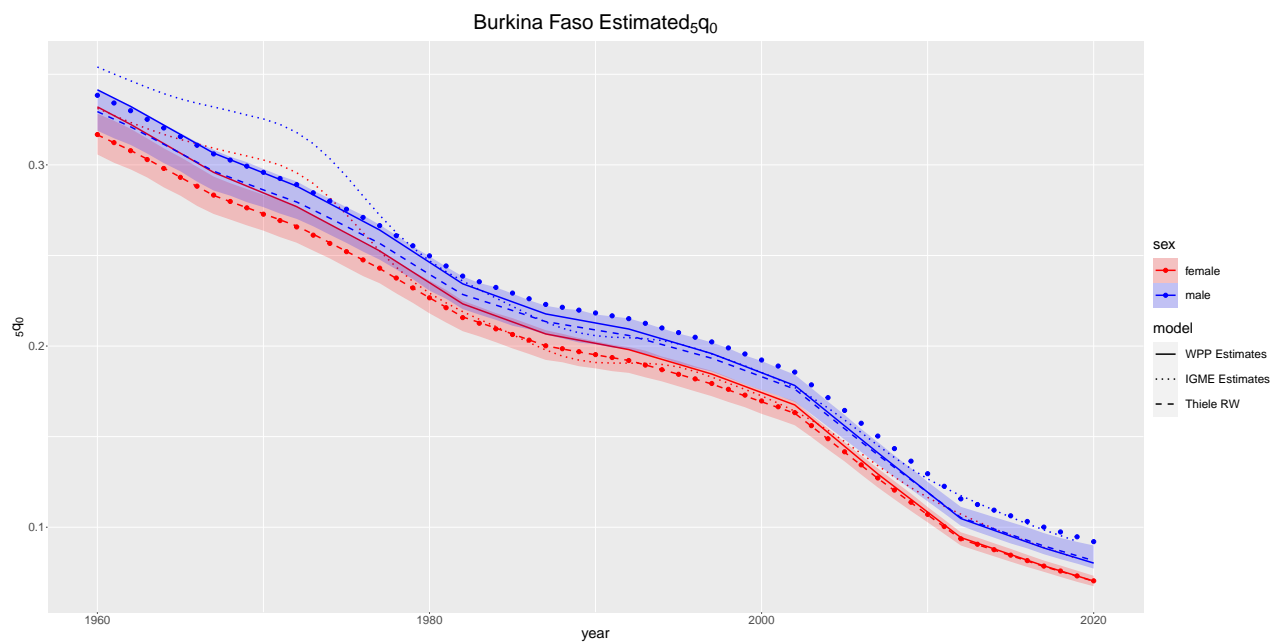


Figure 4: Estimated ${}_5q_0$

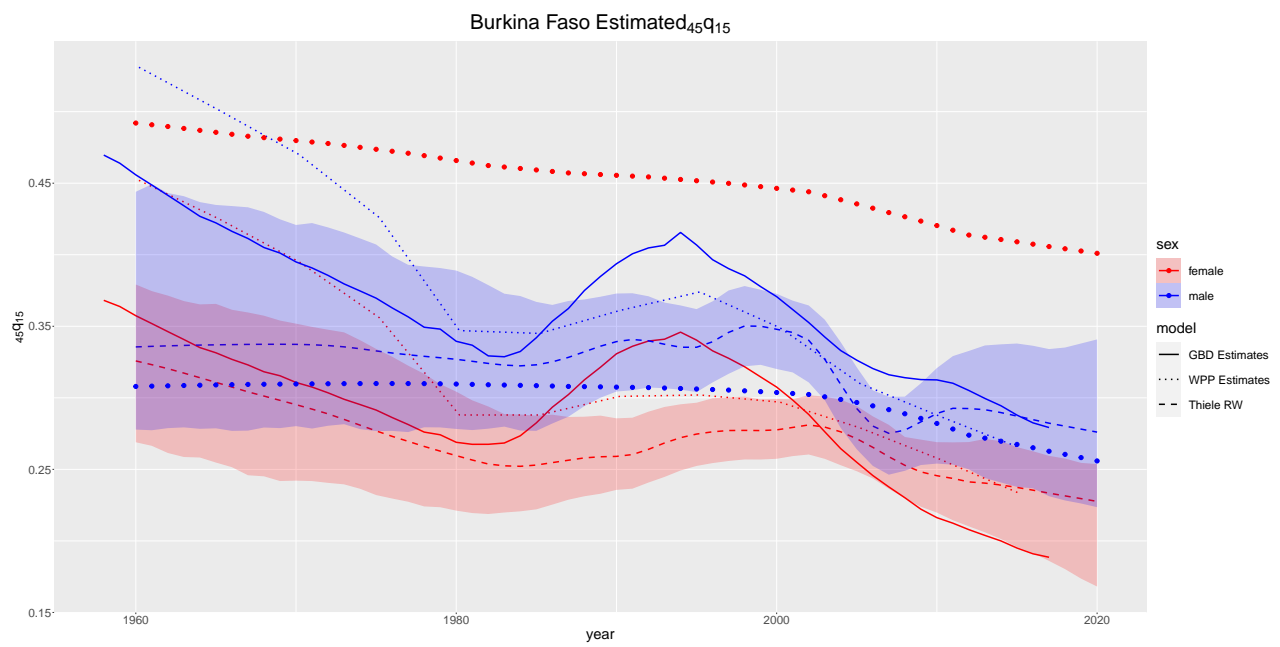


Figure 5: Estimated $_{45}q_{15}$

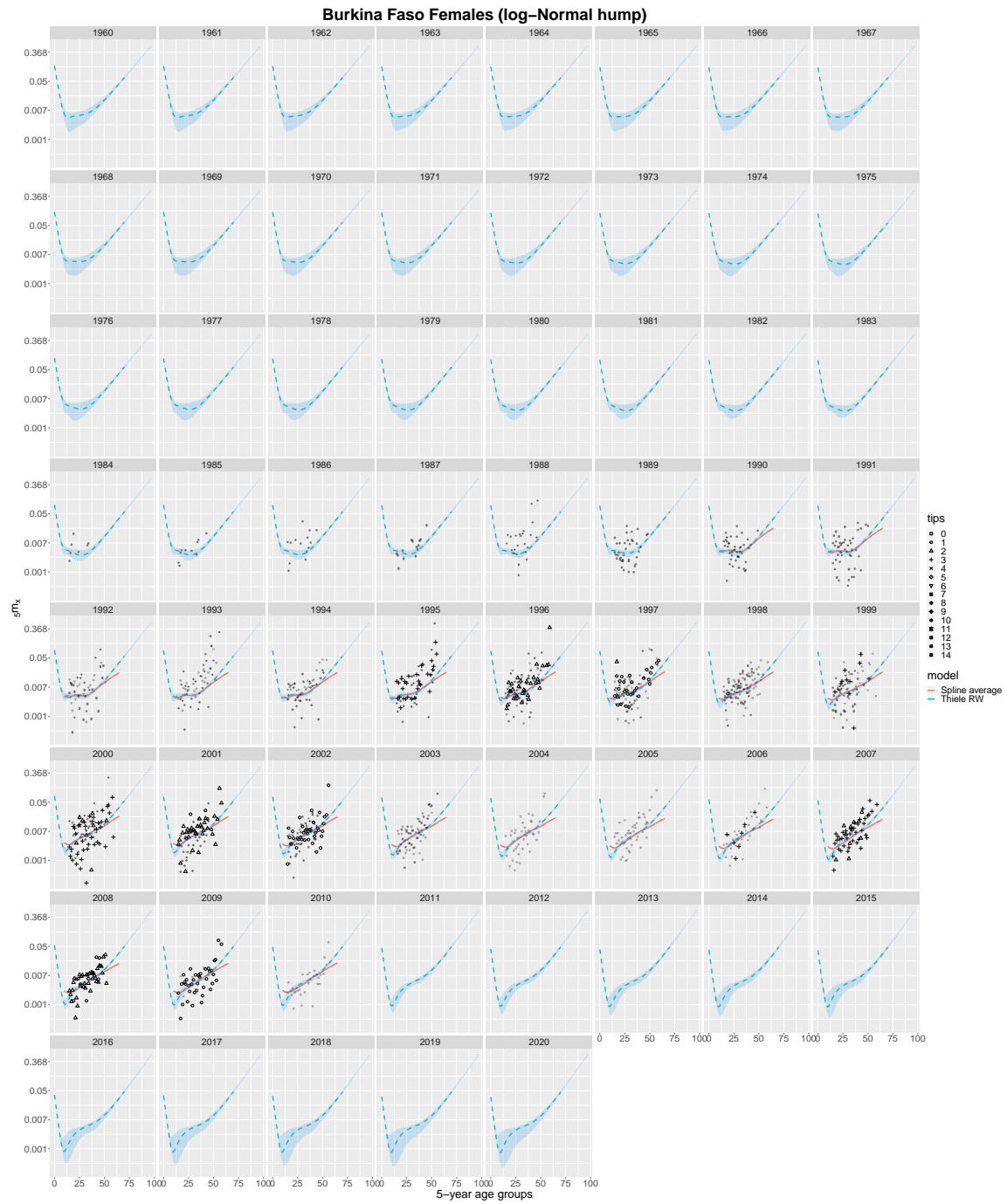


Figure 6: Mortality Schedules

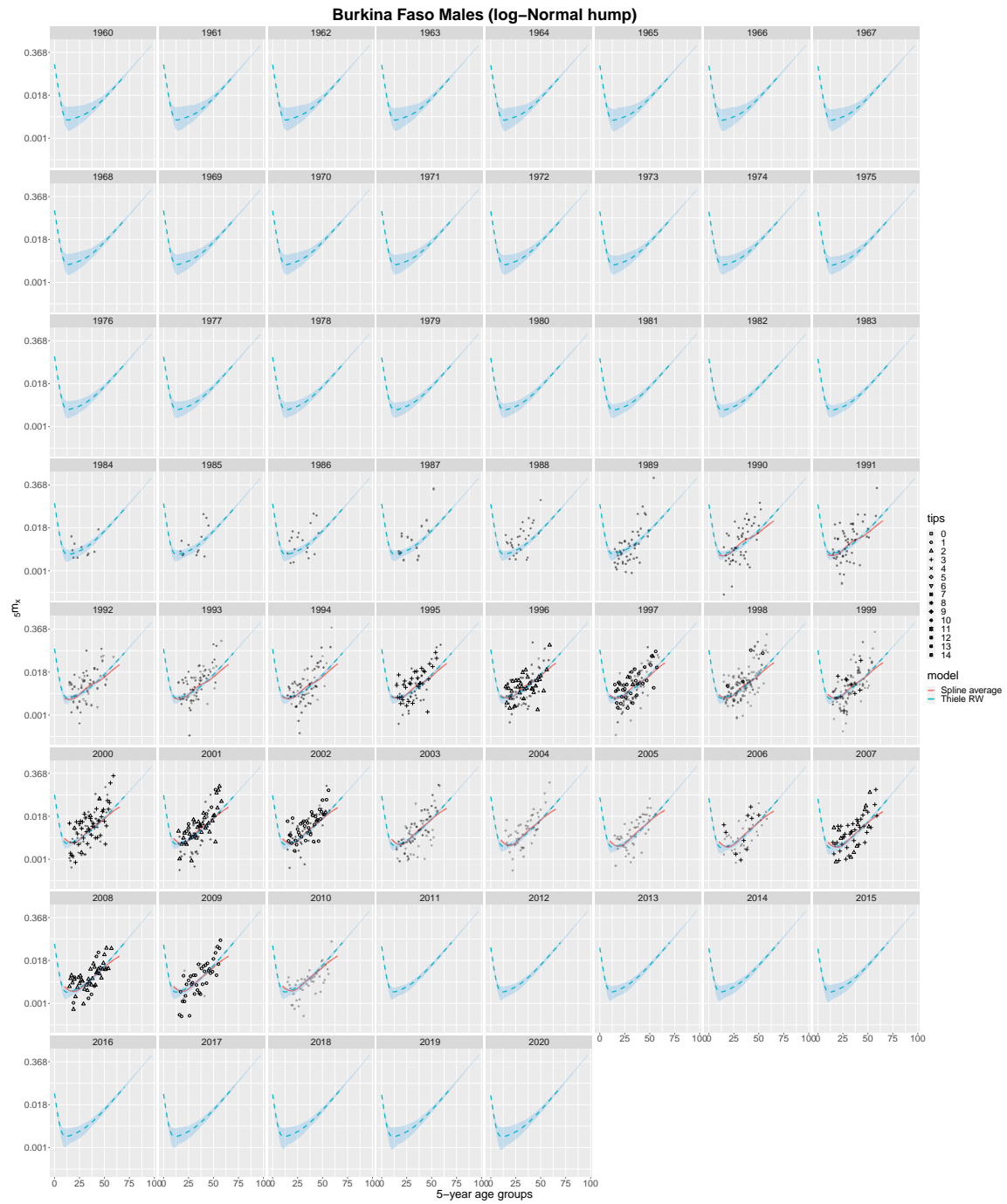


Figure 7: Mortality Schedules

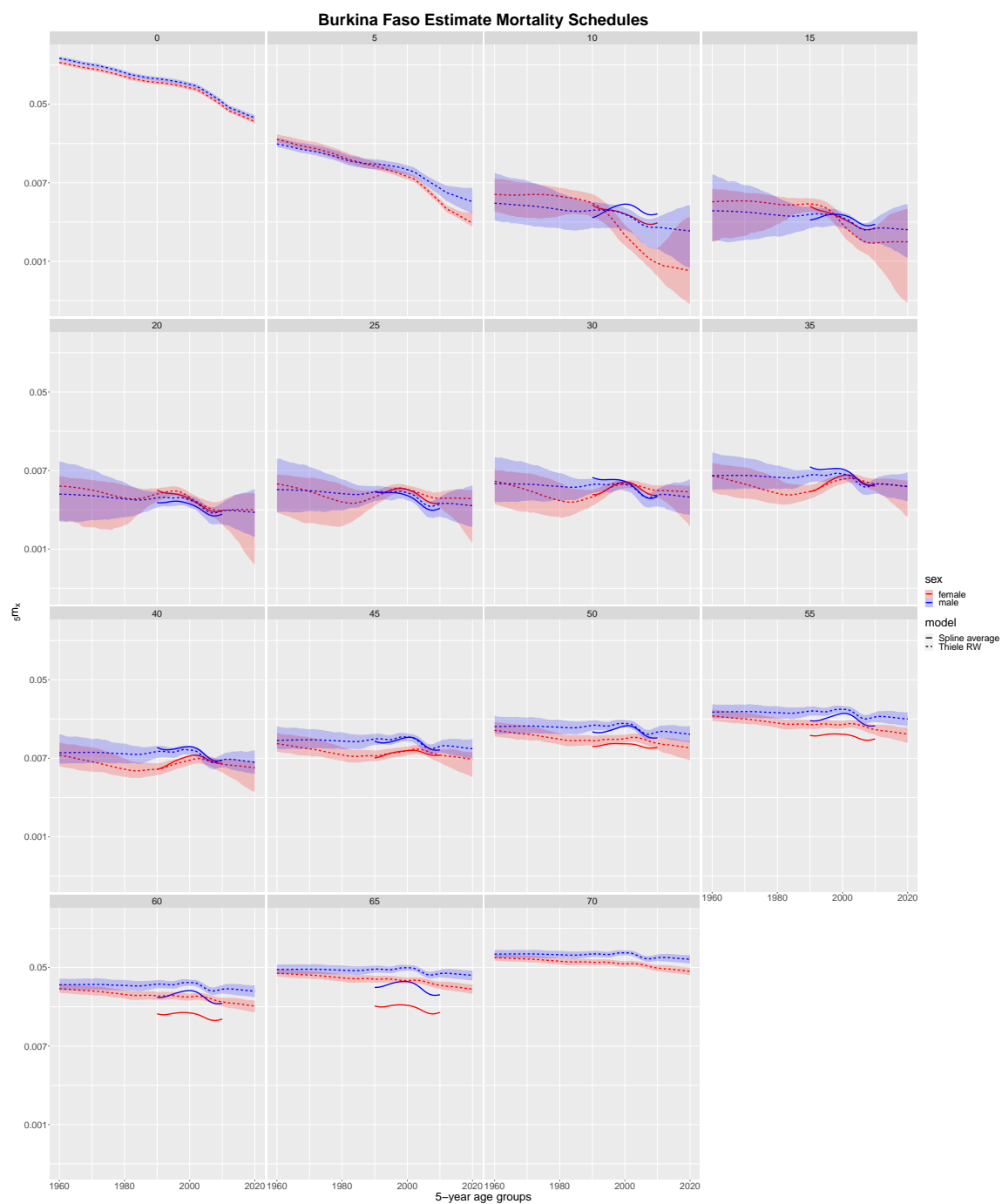


Figure 8: Mortality Schedules

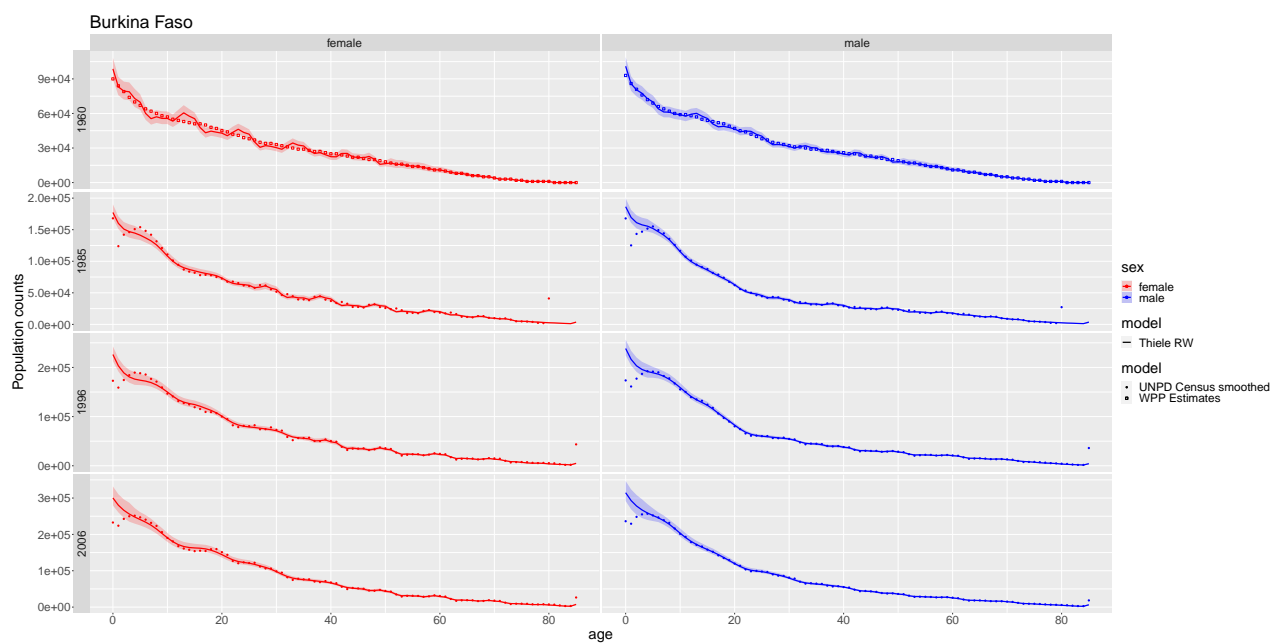


Figure 9: Population

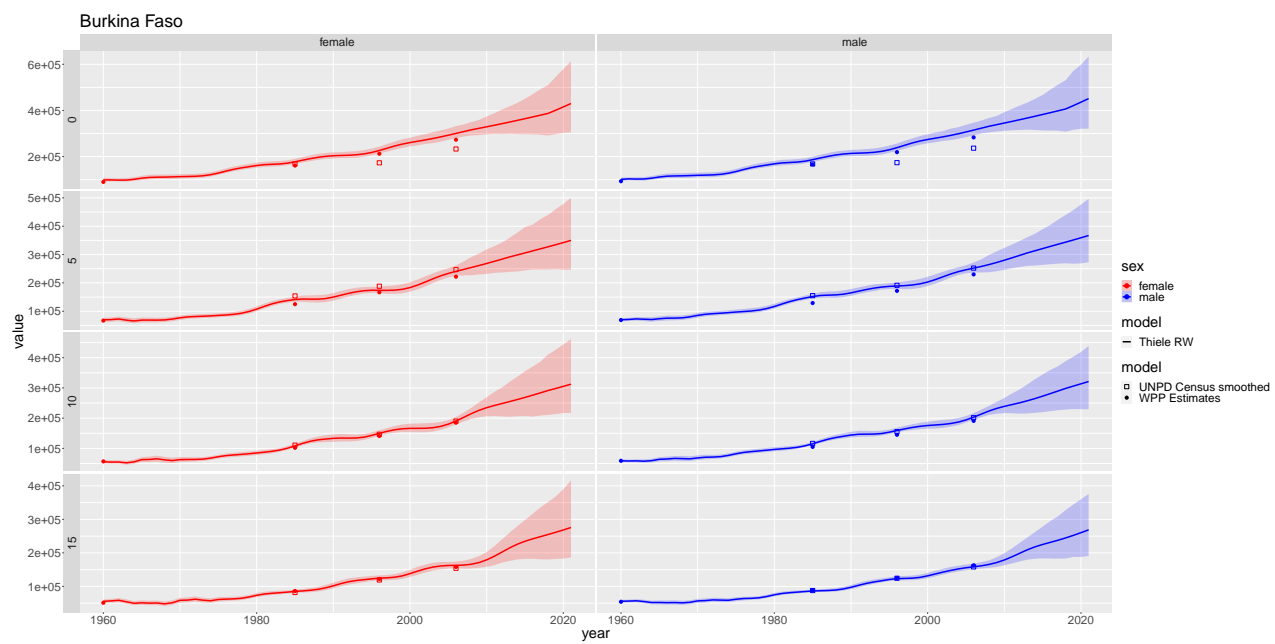


Figure 10: Population

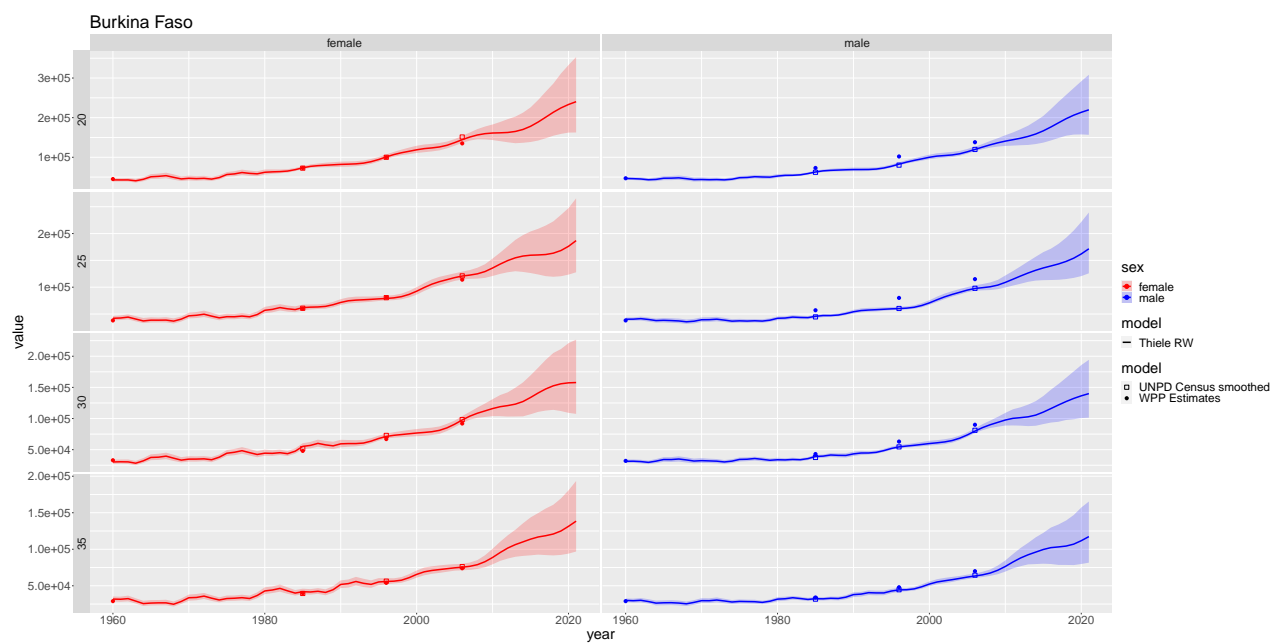


Figure 11: Population

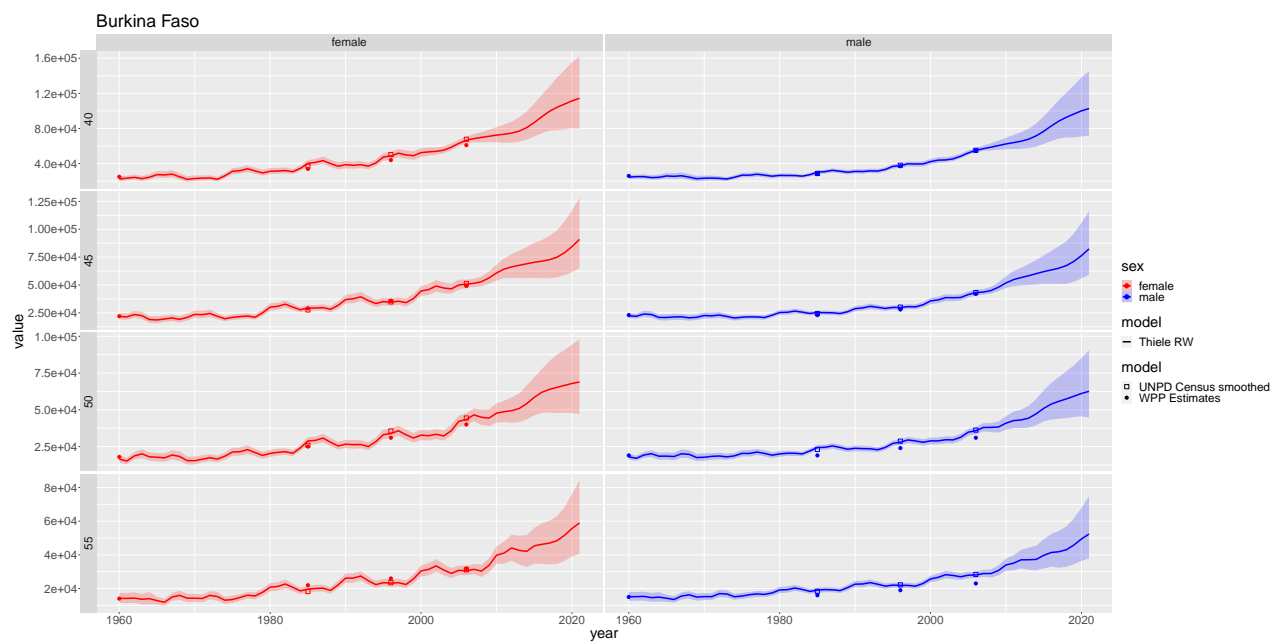


Figure 12: Population

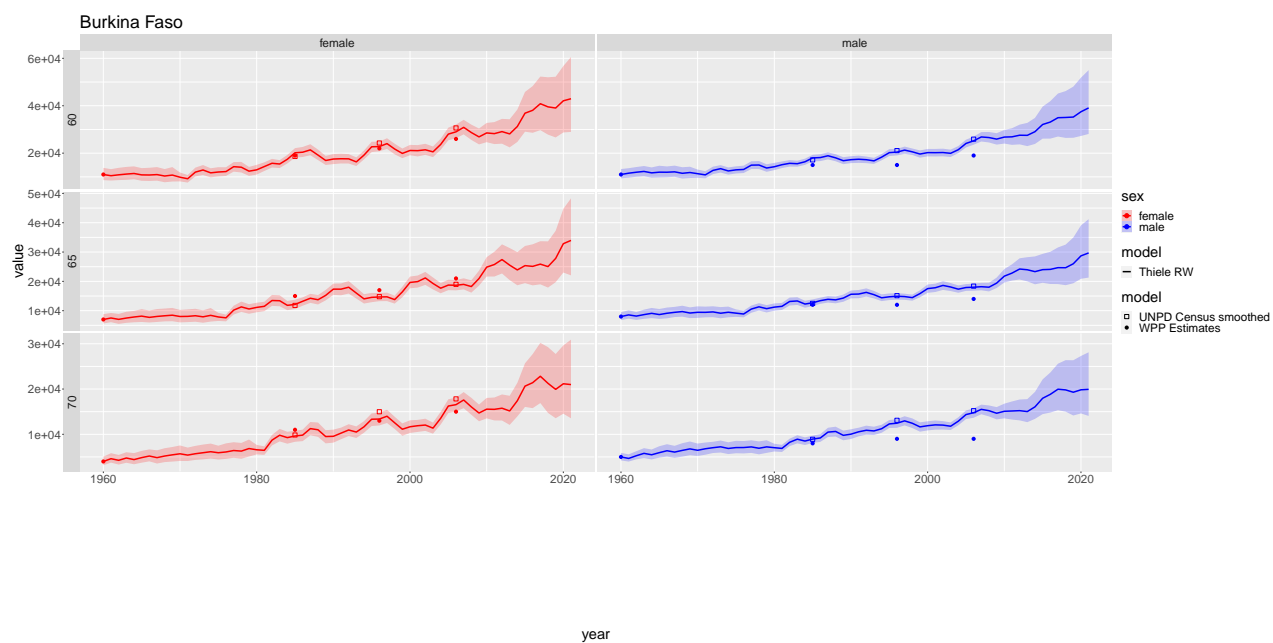


Figure 13: Population

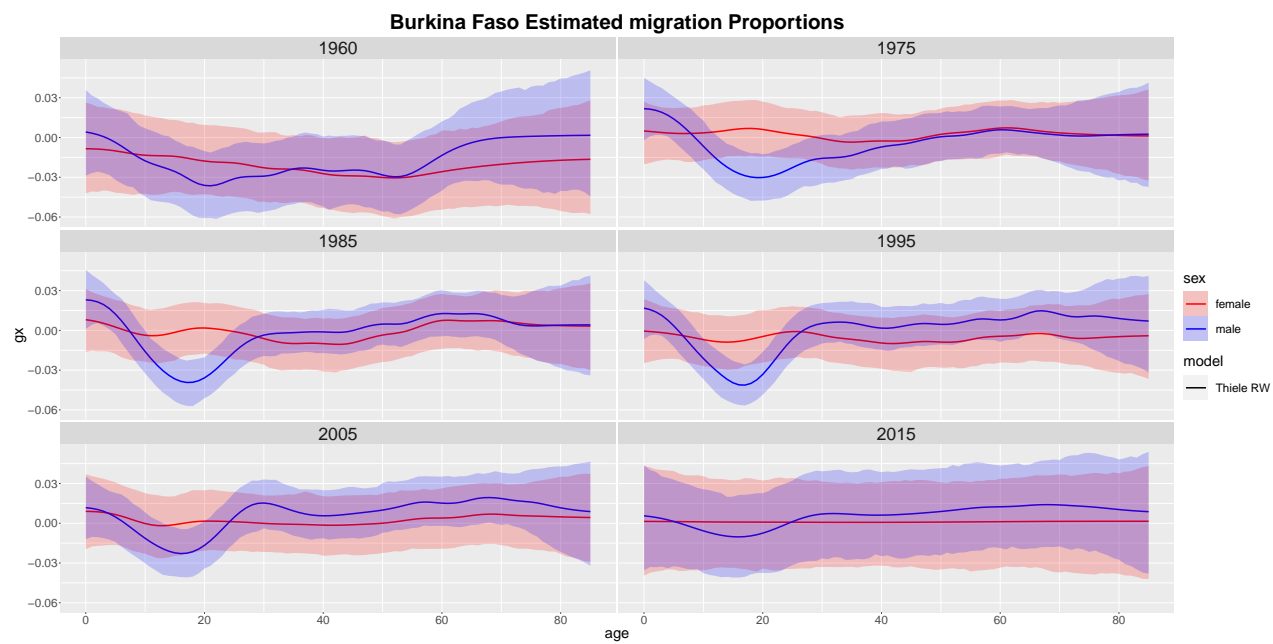


Figure 14: Migration

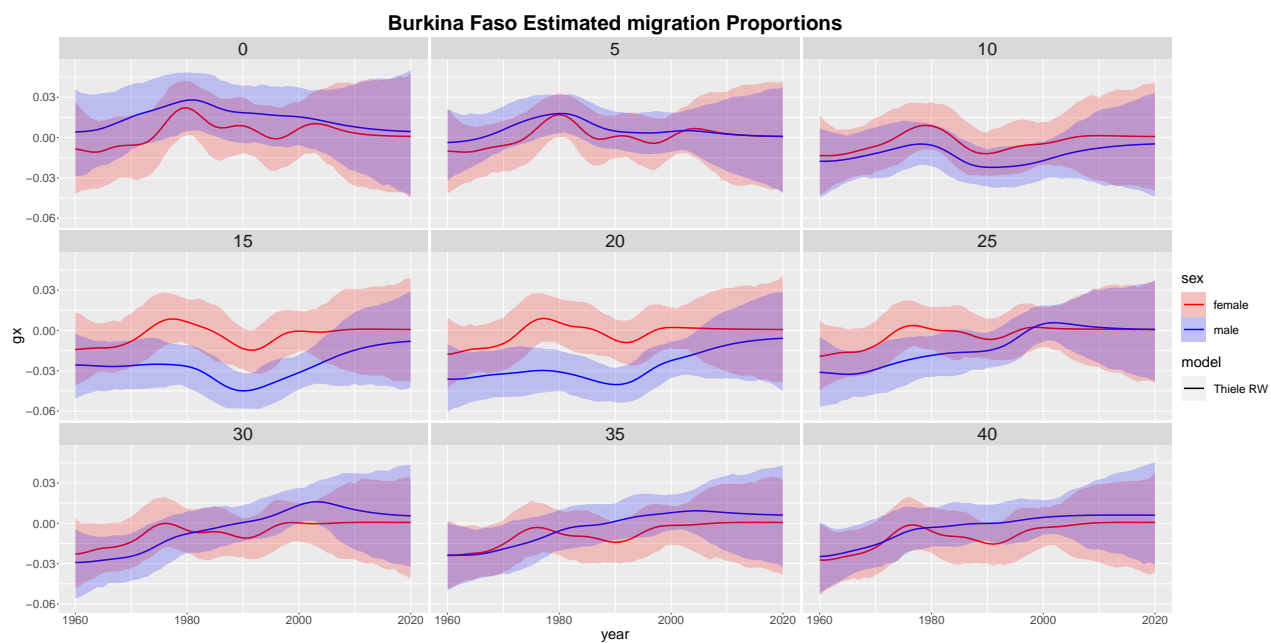


Figure 15: Migration

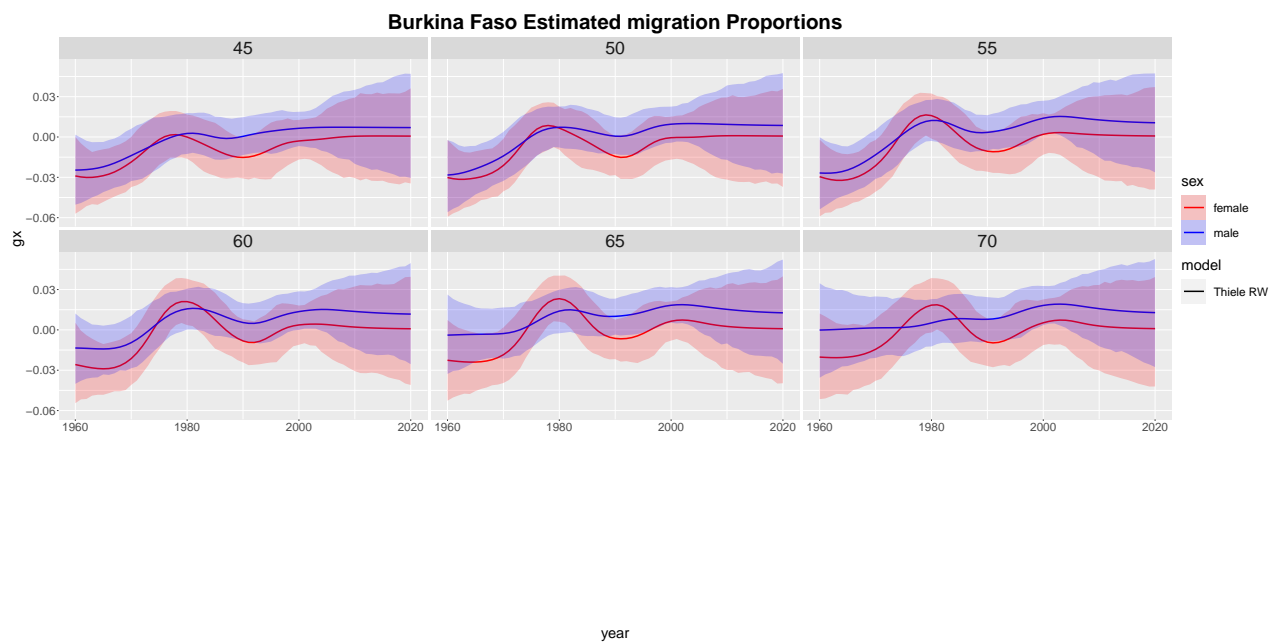


Figure 16: Migration

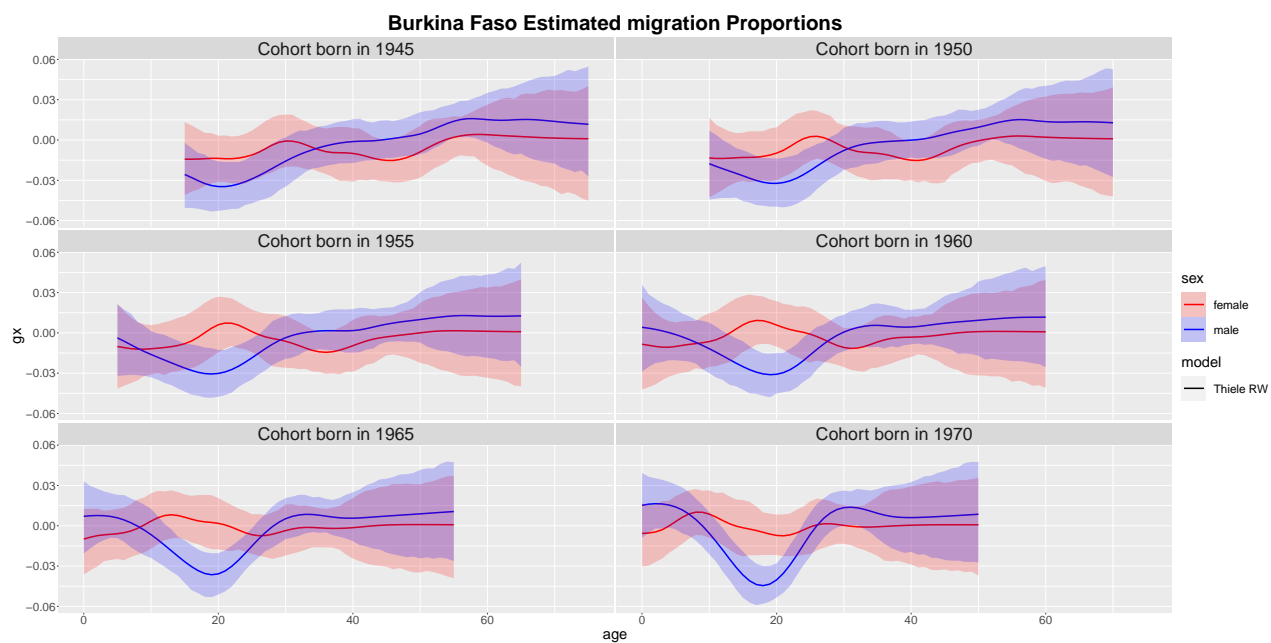


Figure 17: Migration

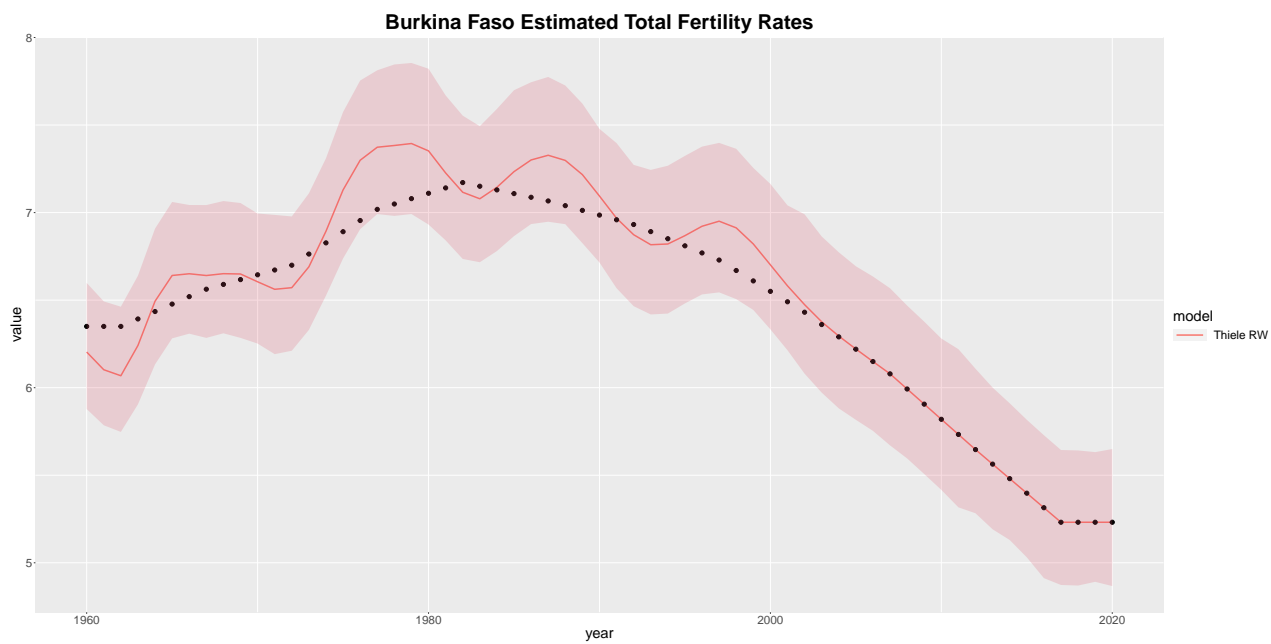


Figure 18: Total Fertility

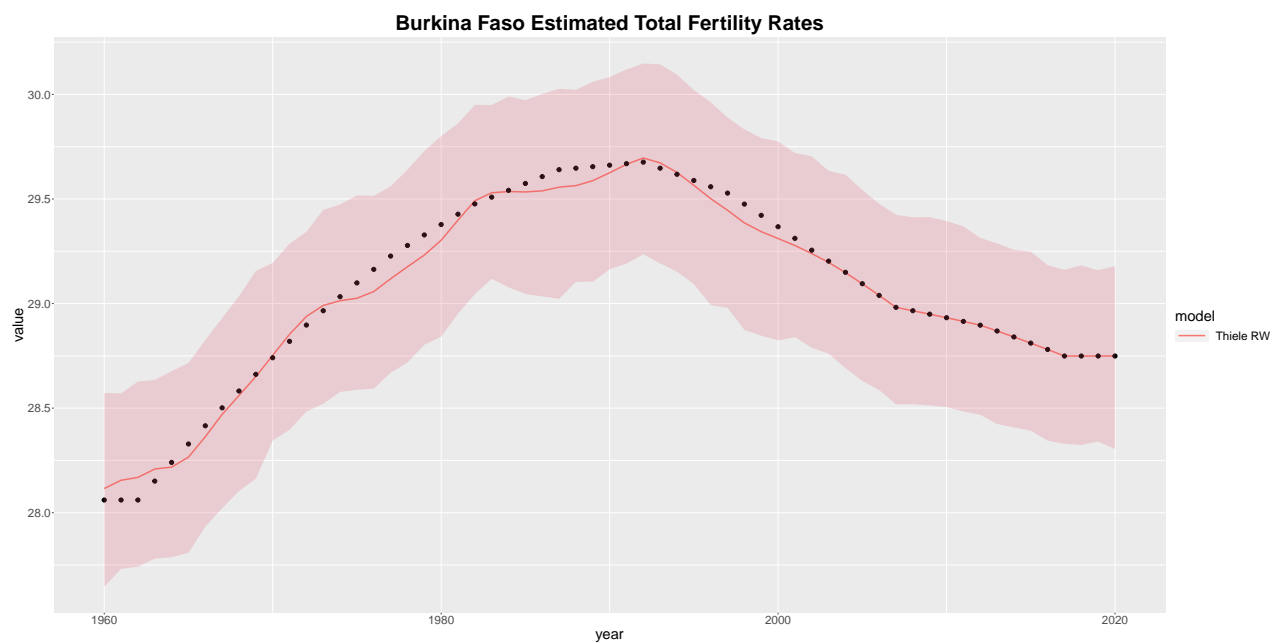


Figure 19: Mean age at births

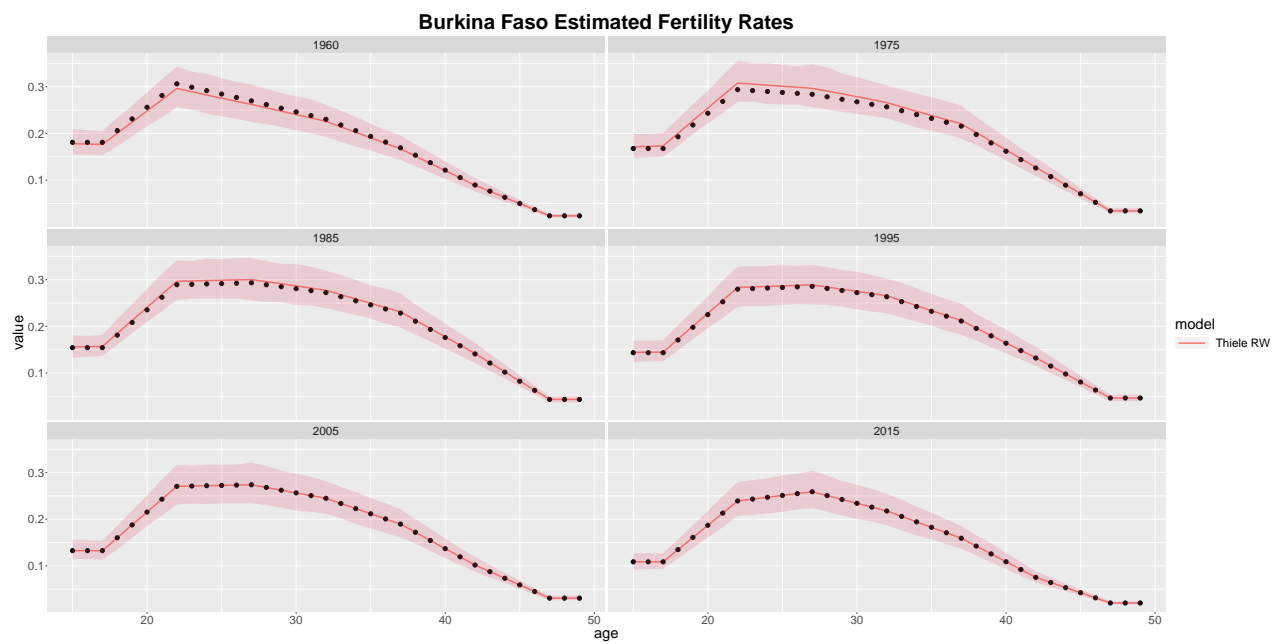


Figure 20: Fertility

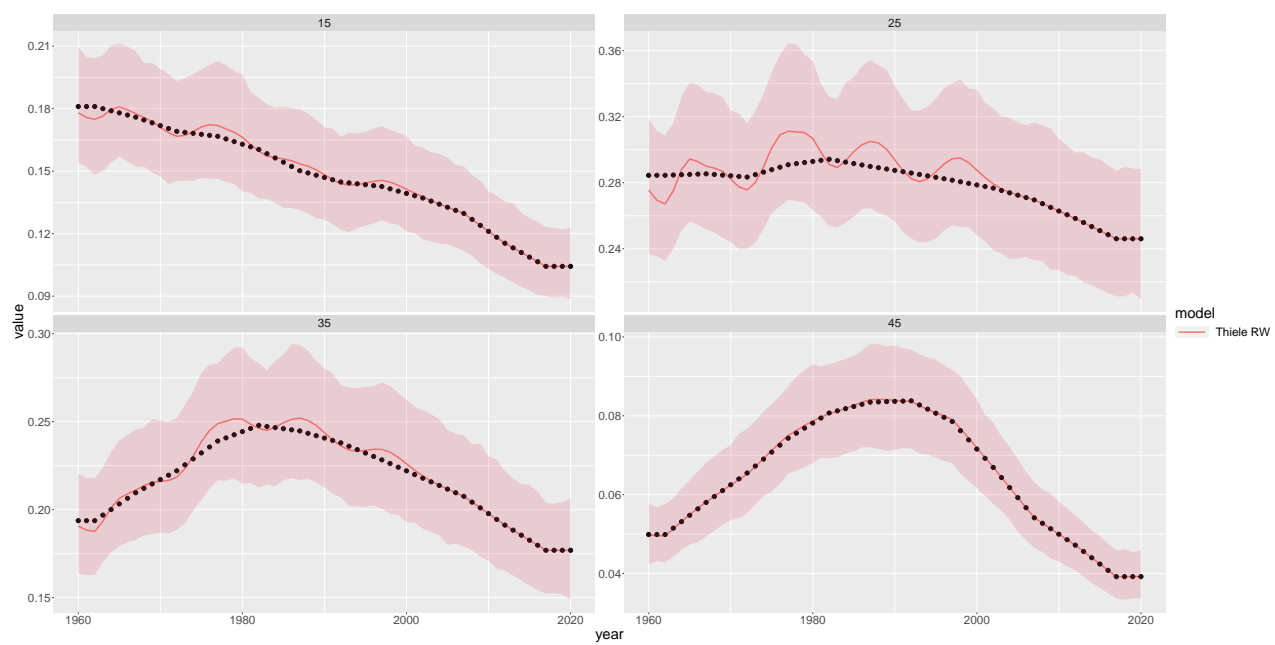


Figure 21: Fertility