

# Lesotho

## [1] "Census Females"

## # A tibble: 18 x 7

|       | aggr.age | `1966` | `1976` | `1986`  | `1996`  | `2006`  | `2016`  |
|-------|----------|--------|--------|---------|---------|---------|---------|
| *     | <dbl>    | <dbl>  | <dbl>  | <dbl>   | <dbl>   | <dbl>   | <dbl>   |
| ## 1  | 0        | 61790. | 86137. | 111810. | 102516. | 100598  | 99362   |
| ## 2  | 5        | 62869. | 80165. | 109553. | 117963. | 105316. | 107586. |
| ## 3  | 10       | 55535. | 75752. | 100753. | 123895. | 110040. | 107761. |
| ## 4  | 15       | 48562. | 67350. | 87571.  | 114216. | 111254. | 103920. |
| ## 5  | 20       | 40932. | 55461. | 74997.  | 92603.  | 102152  | 99418.  |
| ## 6  | 25       | 34107. | 44109. | 62020.  | 71754.  | 82608.  | 91978.  |
| ## 7  | 30       | 28874. | 35611. | 49448.  | 59416.  | 62339   | 79414.  |
| ## 8  | 35       | 25754. | 31921. | 39635.  | 50726.  | 49704   | 63272.  |
| ## 9  | 40       | 23274. | 29893. | 32901.  | 41871.  | 43442.  | 48964.  |
| ## 10 | 45       | 20512. | 25268. | 29931.  | 34156.  | 38776.  | 40782   |
| ## 11 | 50       | 18189. | 21805. | 27462.  | 28055.  | 33541   | 37417   |
| ## 12 | 55       | 16204. | 20177. | 22000.  | 24845.  | 27296.  | 33785.  |
| ## 13 | 60       | 13836. | 16357. | 18039.  | 22459.  | 21883   | 28252.  |
| ## 14 | 65       | 11212. | 12186. | 16038.  | 17256.  | 20130.  | 22834   |
| ## 15 | 70       | 8802.  | 10347. | 12161.  | 12968.  | 18733.  | 18834   |
| ## 16 | 75       | 6078.  | 8706.  | 8324.   | 10184.  | 13276   | 15850.  |
| ## 17 | 80       | 3646.  | 4372.  | 5725.   | 5257.   | 7928.   | 11826.  |
| ## 18 | 85       | 5207.  | 4445.  | 7621.   | 6397.   | 7309    | 10006.  |

## [1] "Census Males"

## # A tibble: 18 x 7

|       | aggr.age | `1966` | `1976` | `1986`  | `1996`  | `2006`  | `2016`  |
|-------|----------|--------|--------|---------|---------|---------|---------|
| *     | <dbl>    | <dbl>  | <dbl>  | <dbl>   | <dbl>   | <dbl>   | <dbl>   |
| ## 1  | 0        | 60656. | 85931. | 113851. | 104230. | 101397  | 100793  |
| ## 2  | 5        | 63464. | 80153. | 110687. | 120469. | 106391. | 107144. |
| ## 3  | 10       | 50819. | 73397. | 99977.  | 125098. | 110763. | 107981. |
| ## 4  | 15       | 39157. | 61668. | 82770.  | 111192. | 110441. | 104784. |
| ## 5  | 20       | 27256. | 50032. | 67354.  | 86836.  | 99943   | 99918.  |
| ## 6  | 25       | 18271. | 41339. | 55999.  | 66645.  | 81474   | 94347.  |
| ## 7  | 30       | 14614. | 34579. | 47098.  | 55028.  | 62015.  | 84490   |
| ## 8  | 35       | 14565. | 31374. | 39678.  | 47007.  | 47748.  | 68028.  |
| ## 9  | 40       | 14724. | 29008. | 33697.  | 40089.  | 39735.  | 50500.  |
| ## 10 | 45       | 14038. | 24309. | 30380.  | 33831.  | 34131.  | 38325   |
| ## 11 | 50       | 12961. | 20635. | 26824.  | 27505.  | 28693.  | 31438.  |
| ## 12 | 55       | 11384. | 18142. | 20728.  | 22931.  | 22974.  | 26018.  |
| ## 13 | 60       | 9231.  | 13537. | 16158.  | 18947.  | 17510.  | 20652.  |
| ## 14 | 65       | 7017.  | 9024.  | 13203.  | 13353.  | 14210.  | 15852.  |
| ## 15 | 70       | 5115.  | 6620.  | 8928.   | 9035.   | 11614   | 11953   |
| ## 16 | 75       | 3240.  | 4774.  | 5150.   | 6303.   | 7321.   | 8594.   |
| ## 17 | 80       | 1778.  | 1927.  | 2695.   | 2627.   | 3709    | 5297    |
| ## 18 | 85       | 2130.  | 1854.  | 3103.   | 2588.   | 2608.   | 3425    |

*Thiele log-Normal Hump RW*

| ## | user  | system | elapsed |
|----|-------|--------|---------|
| ## | 46.16 | 0.77   | 47.50   |

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

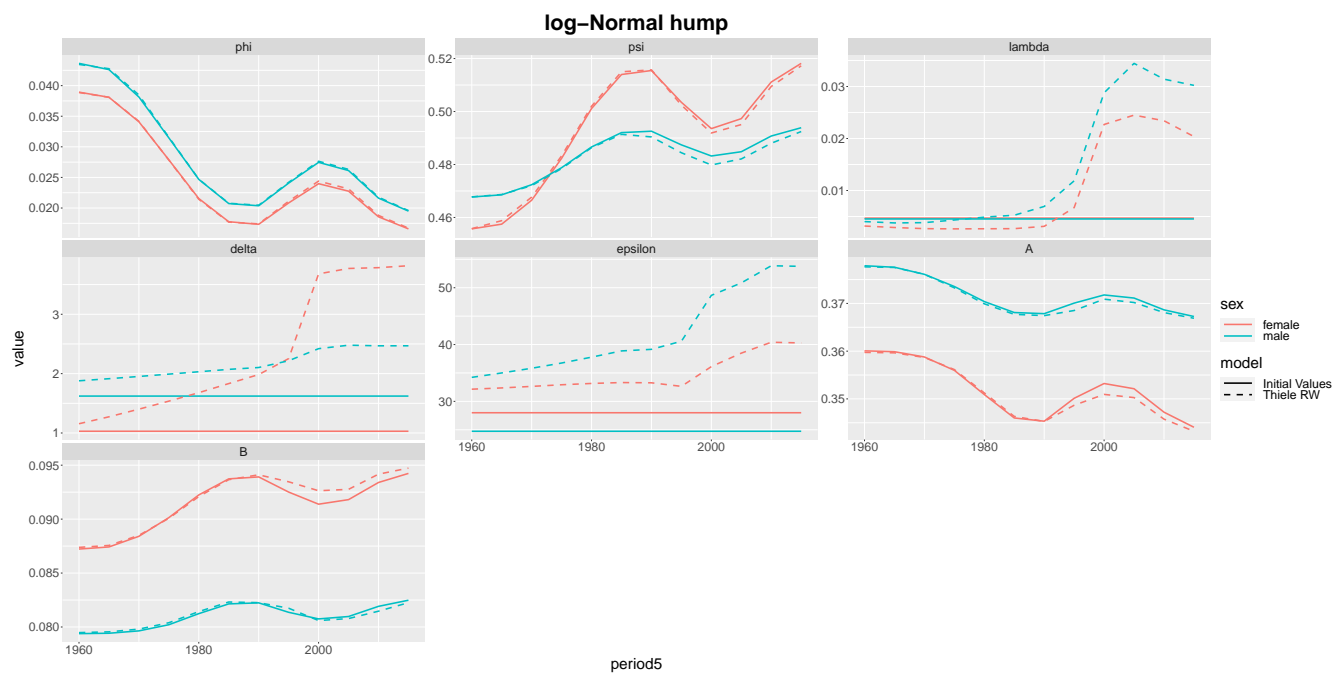


Figure 1: Estimated parameters

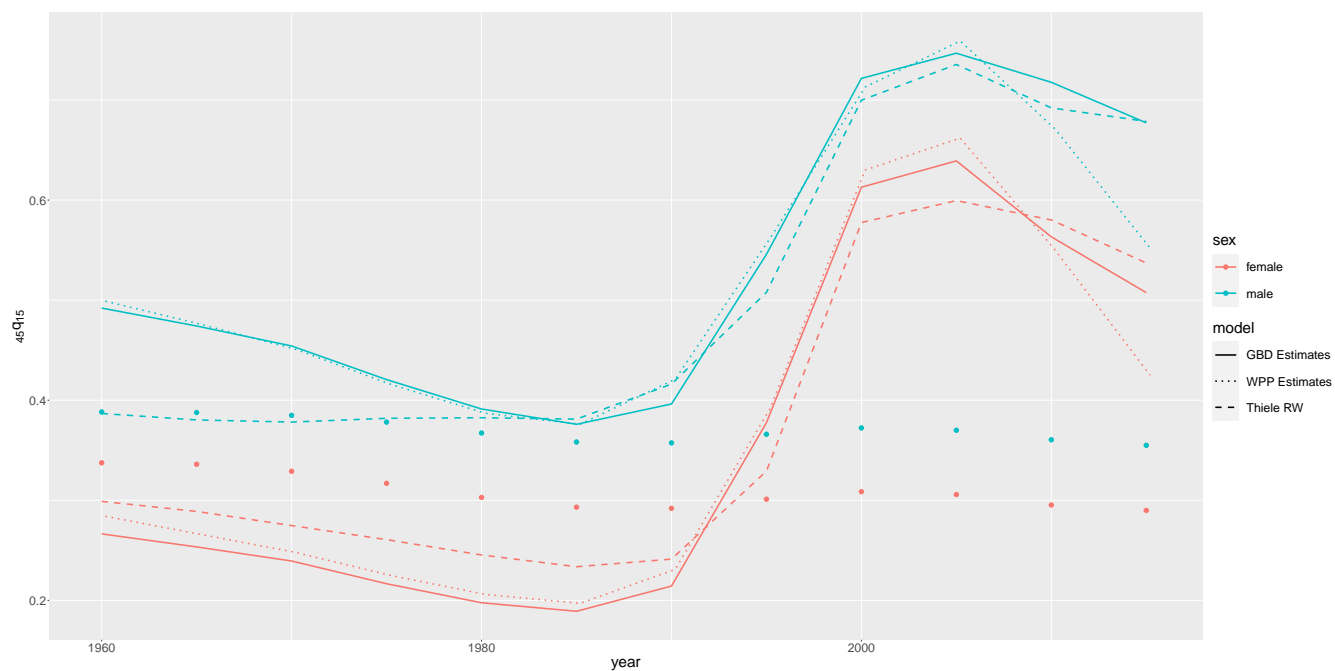


Figure 2: Estimated  $_{45}q_{15}$

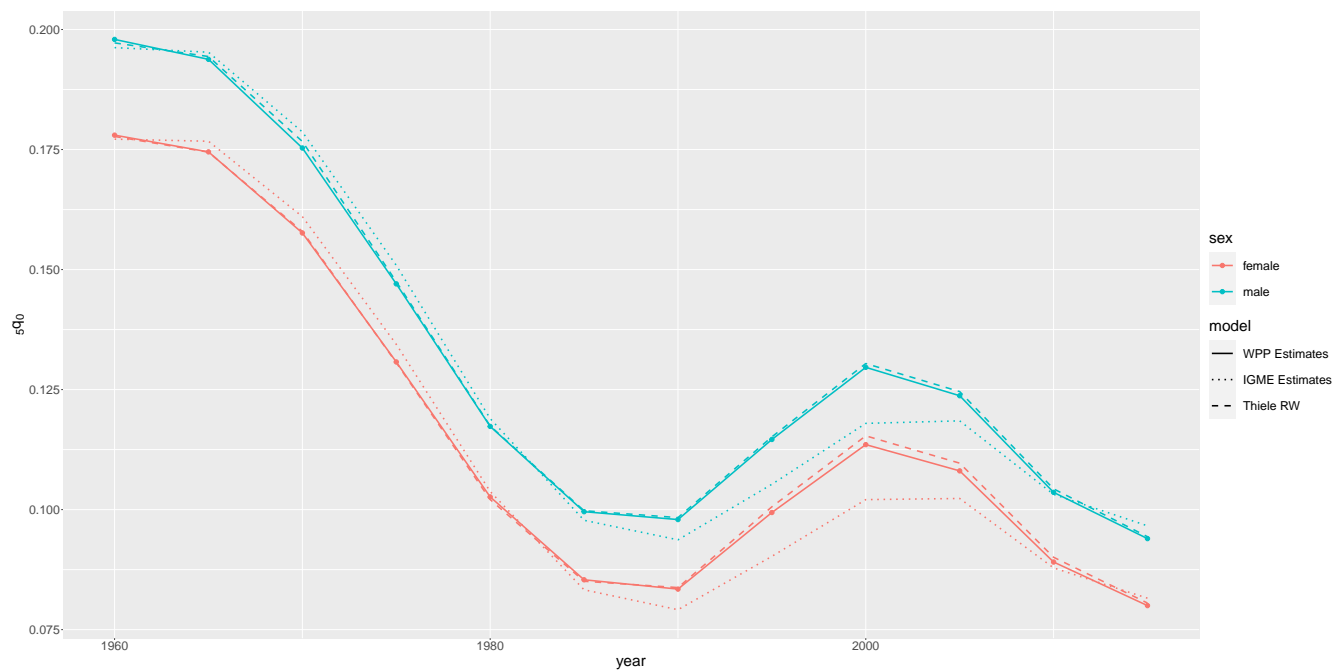


Figure 3: Estimated  $_{5}q_0$

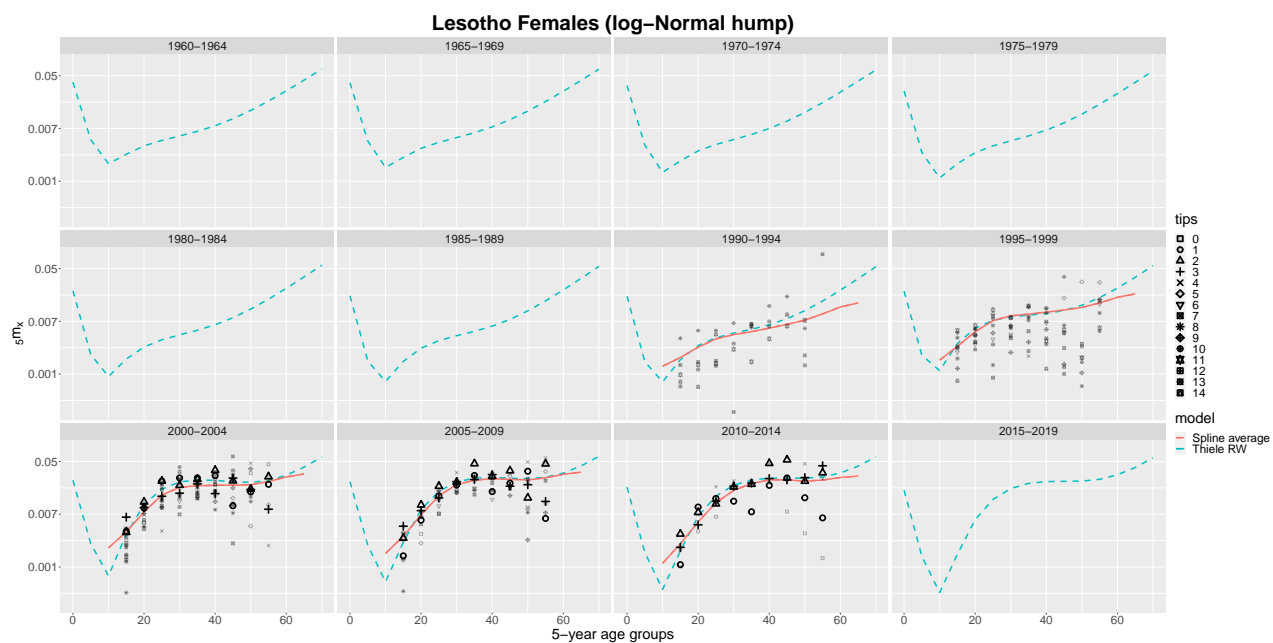


Figure 4: Mortality Schedules

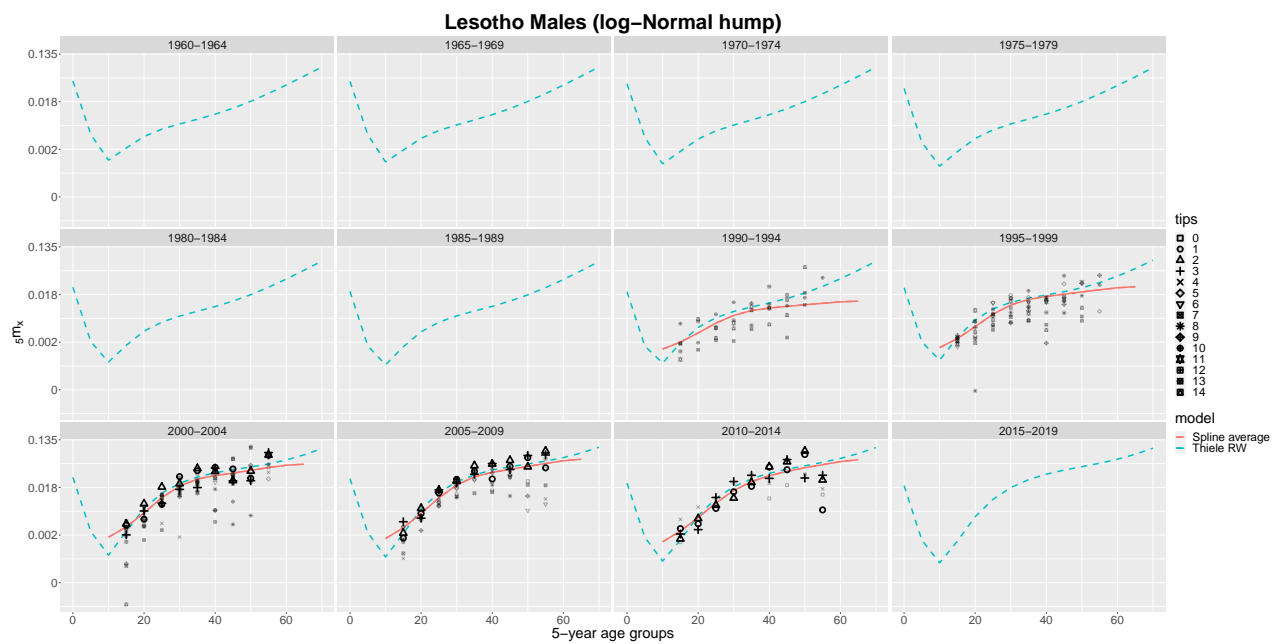


Figure 5: Mortality Schedules

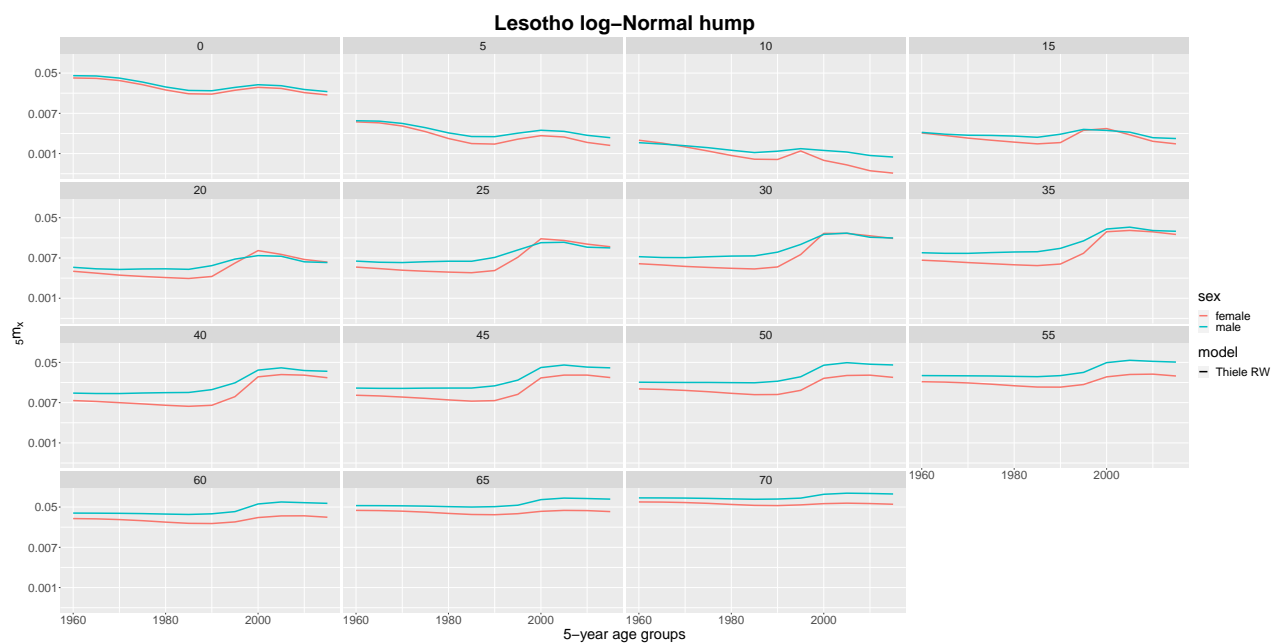


Figure 6: Mortality Schedules

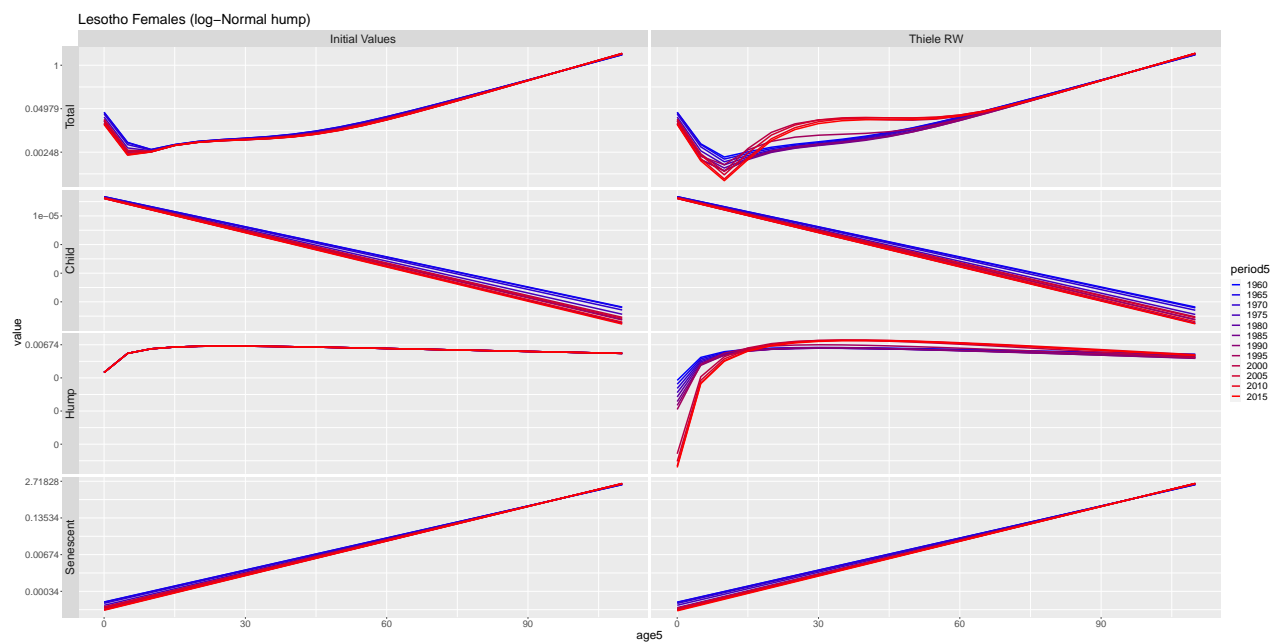


Figure 7: Thiele Decomposed

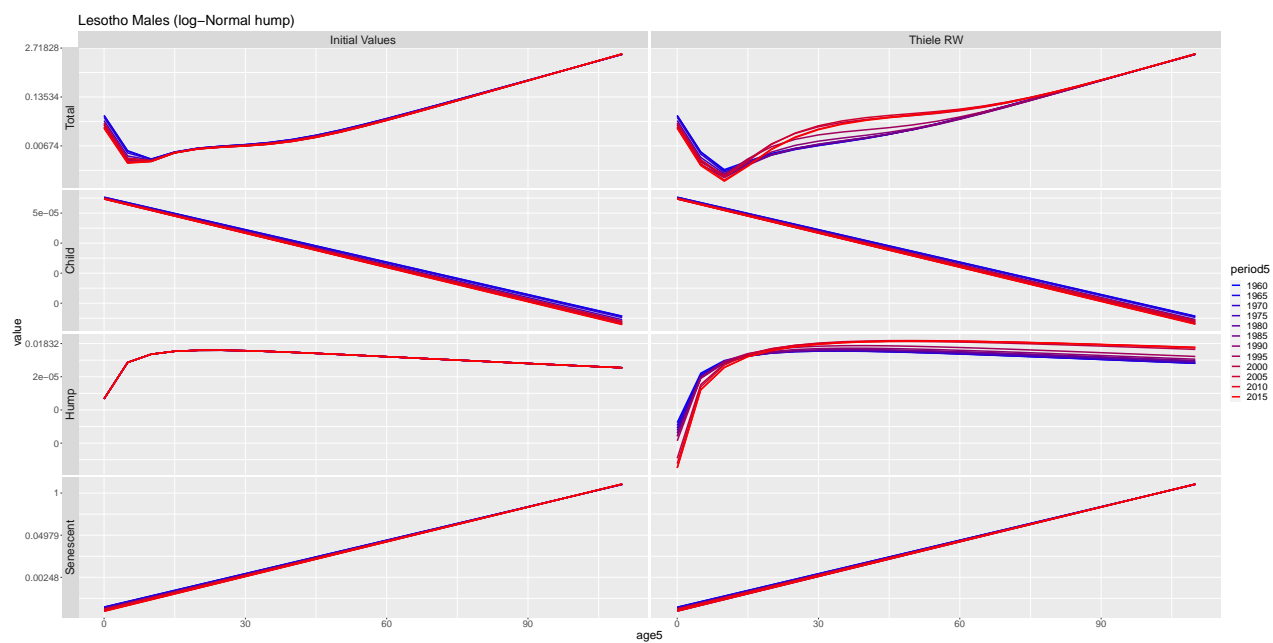


Figure 8: Thiele Decomposed

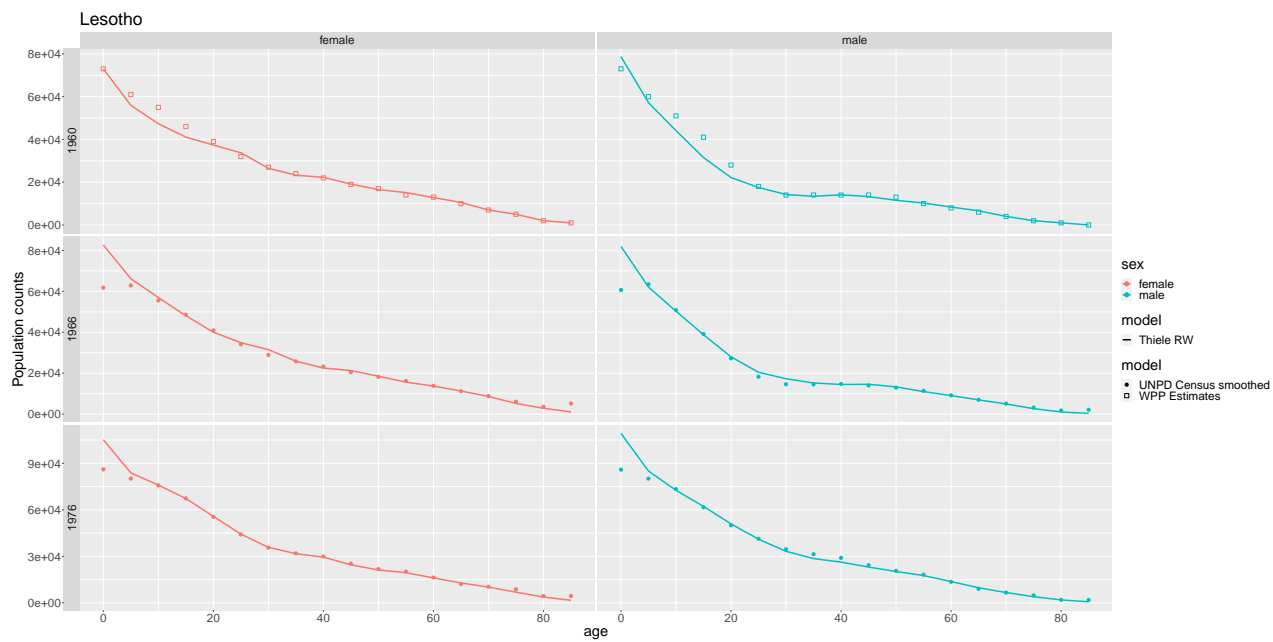


Figure 9: Population

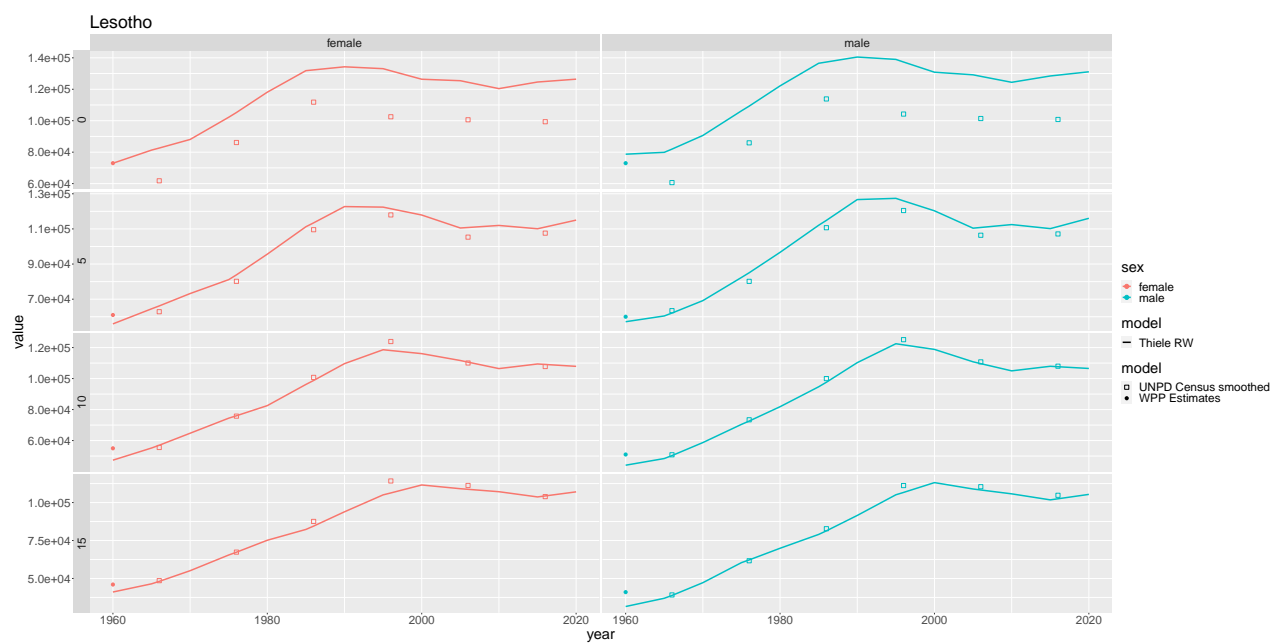


Figure 10: Population

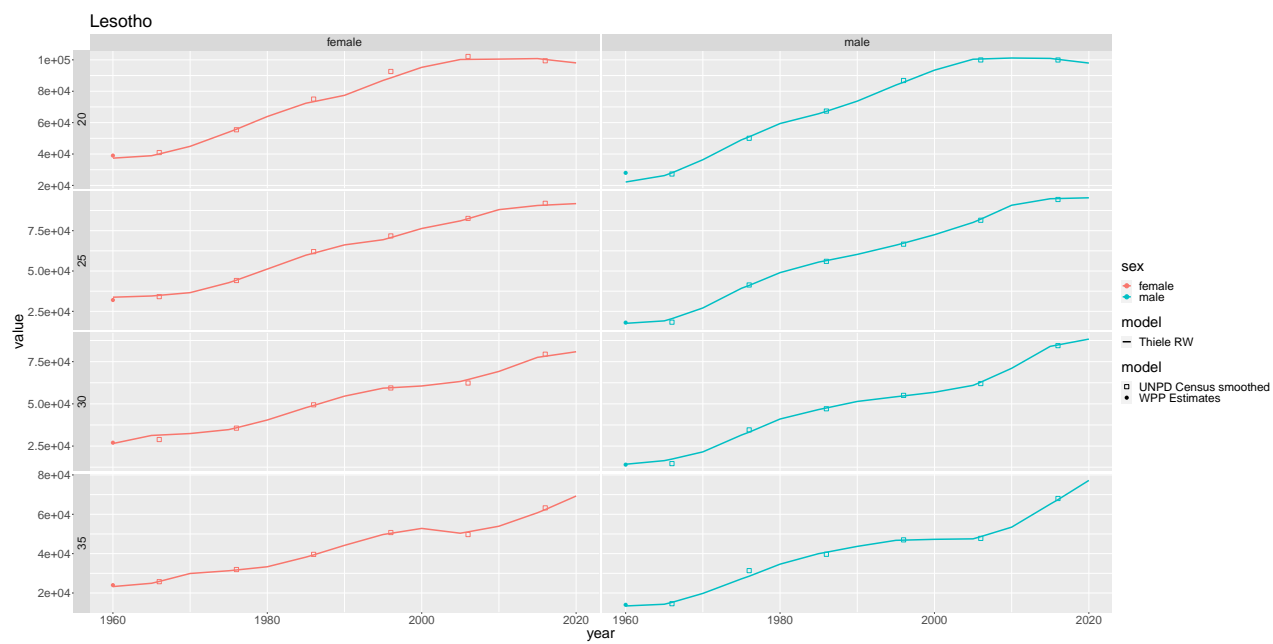


Figure 11: Population



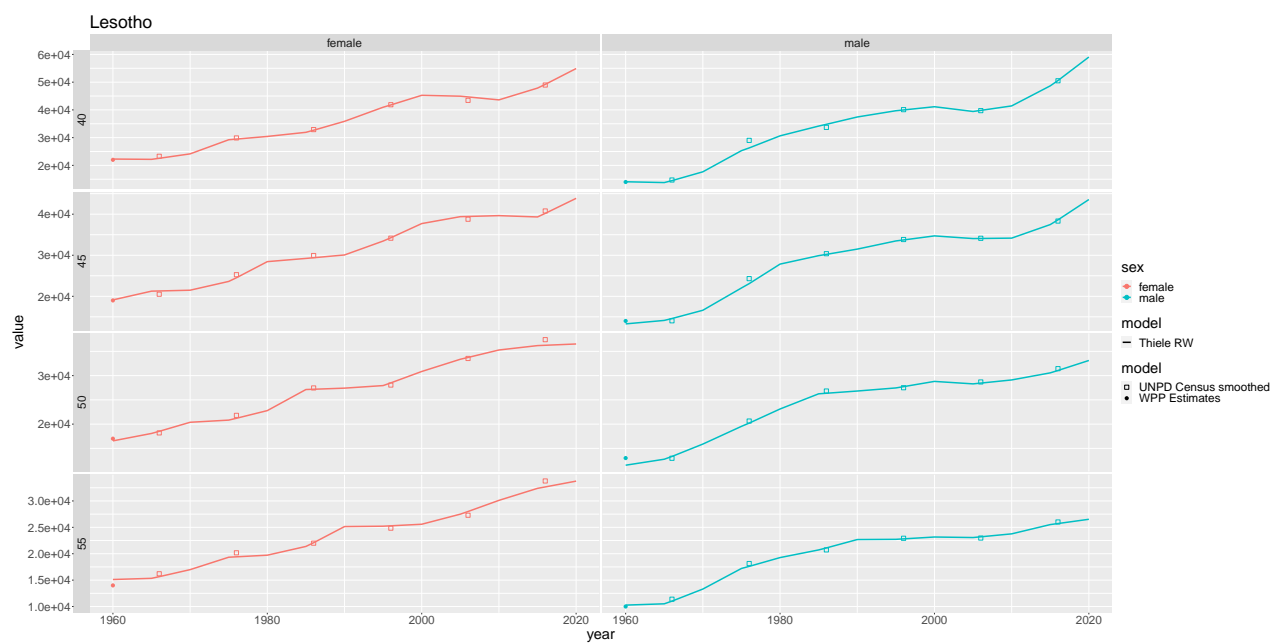


Figure 12: Population

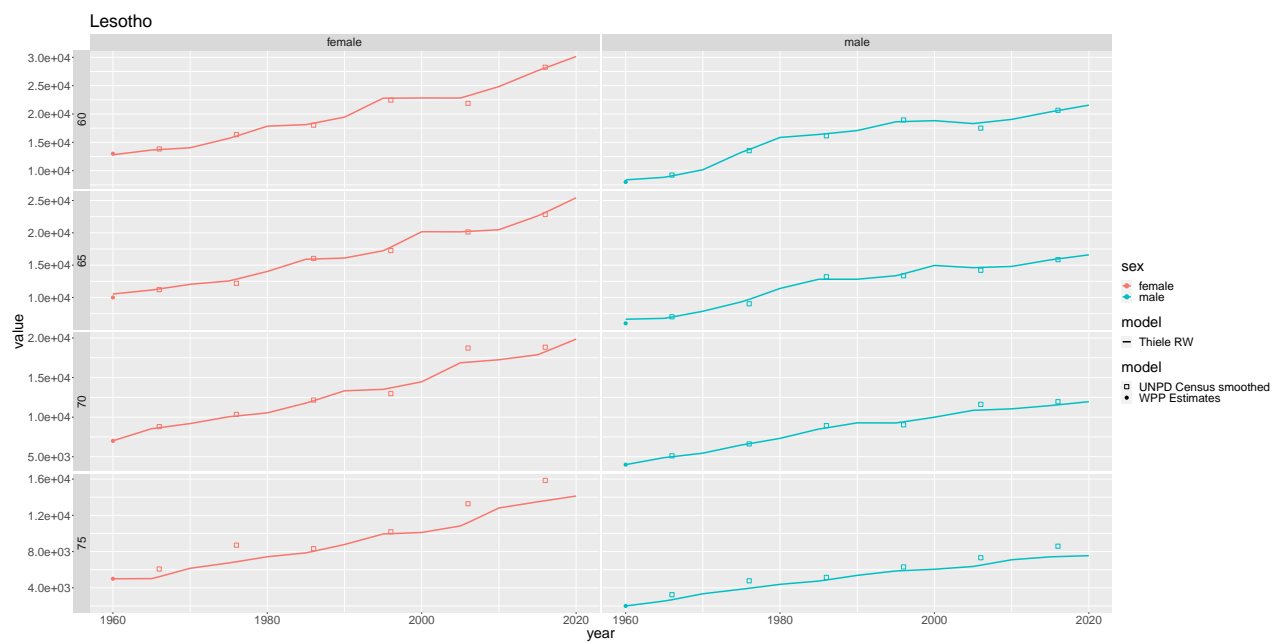


Figure 13: Population

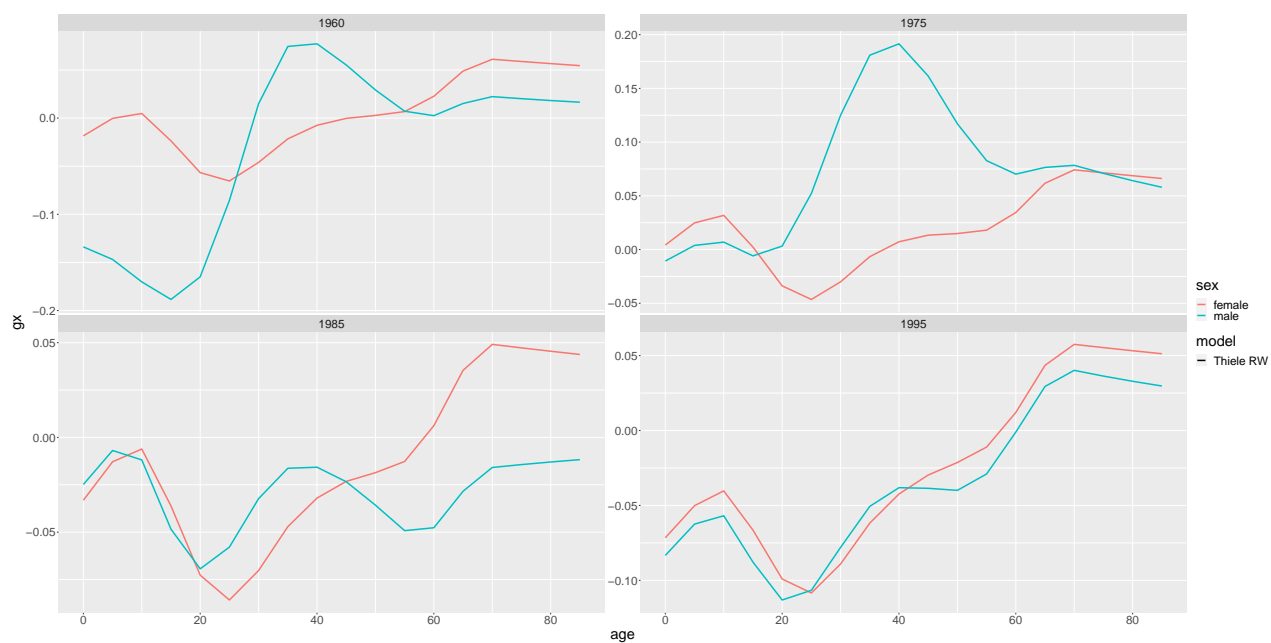


Figure 14: Migration

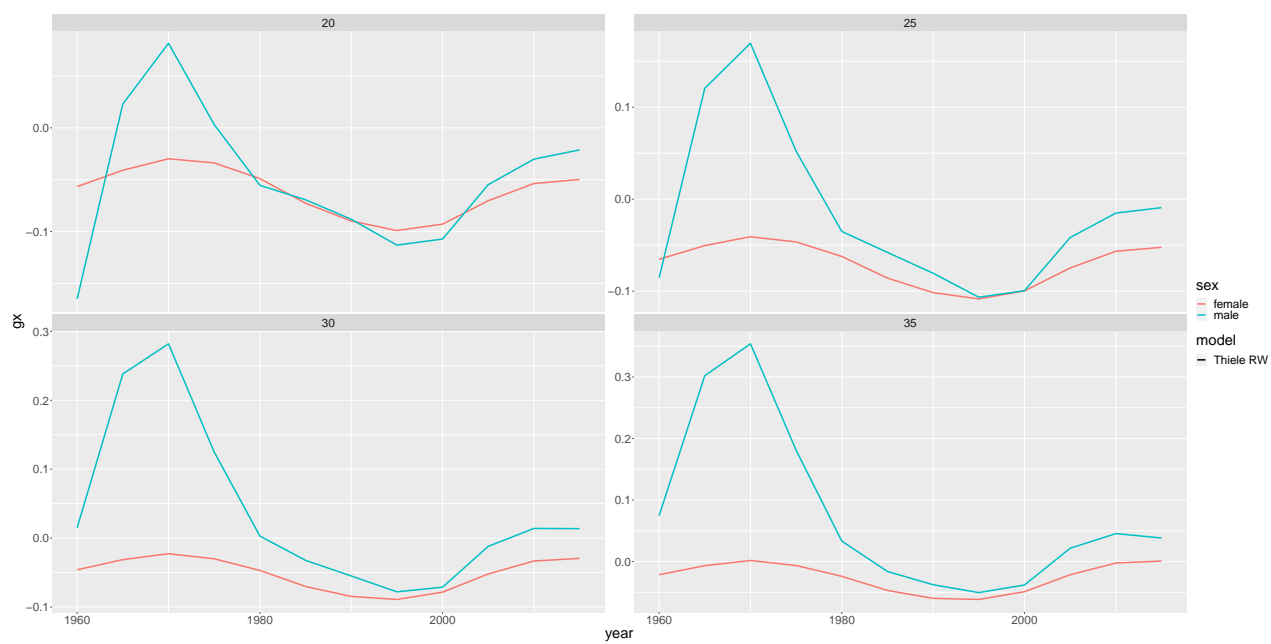


Figure 15: Migration

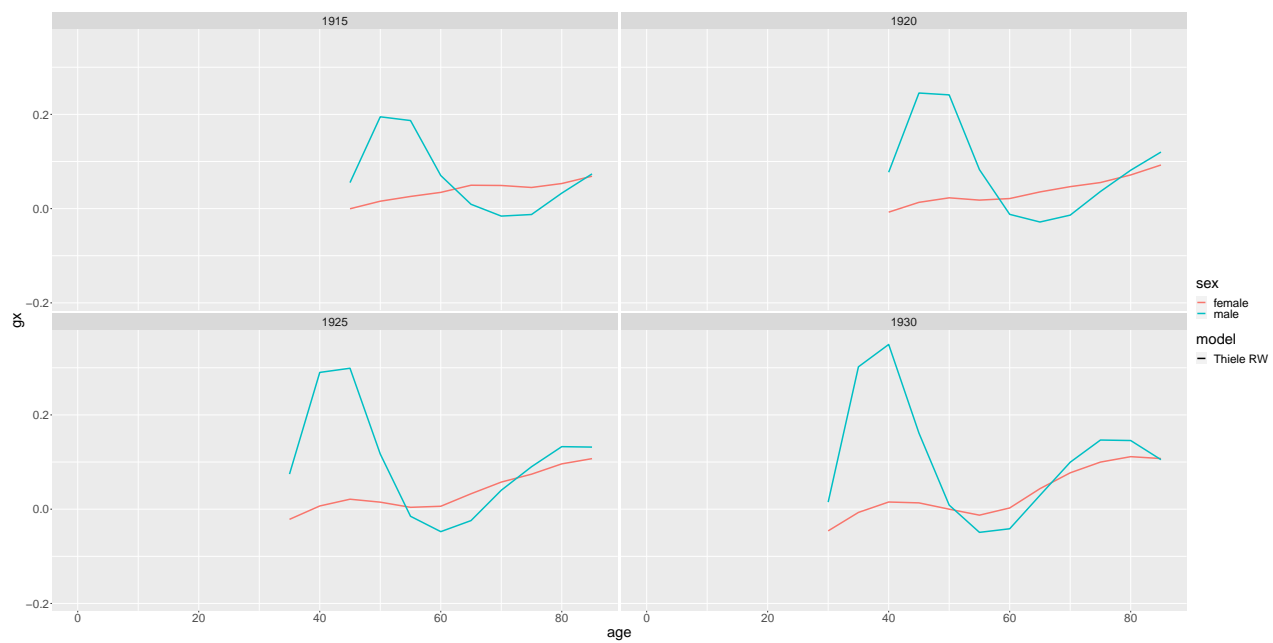


Figure 16: Migration

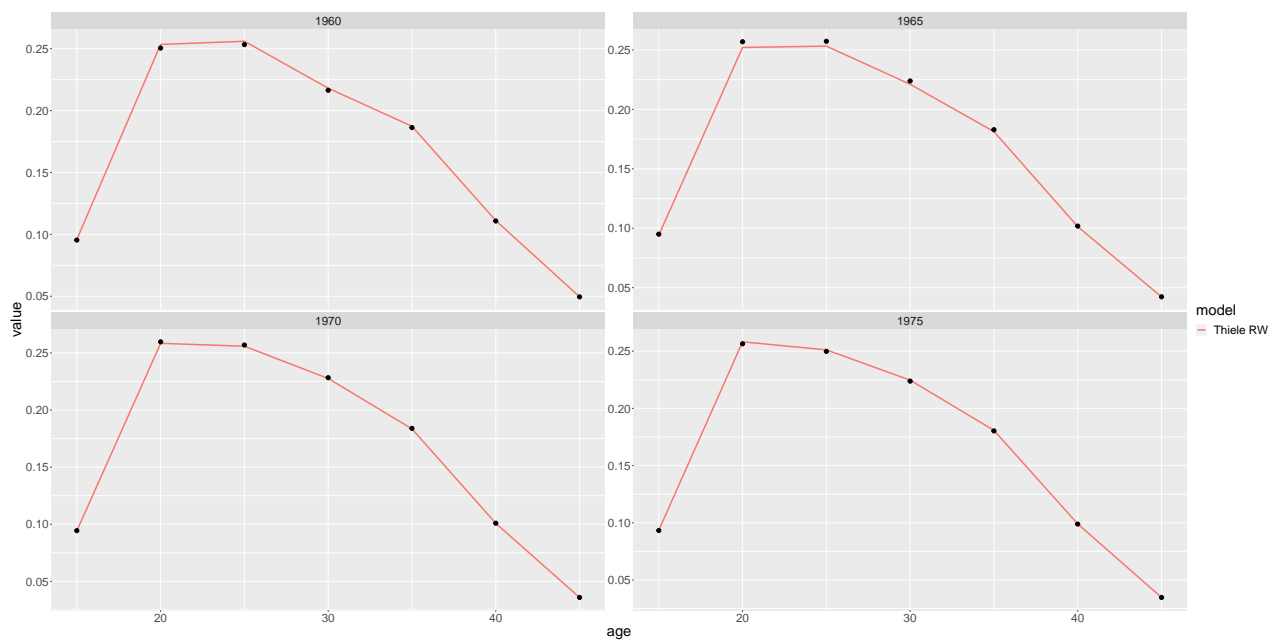


Figure 17: Fertility

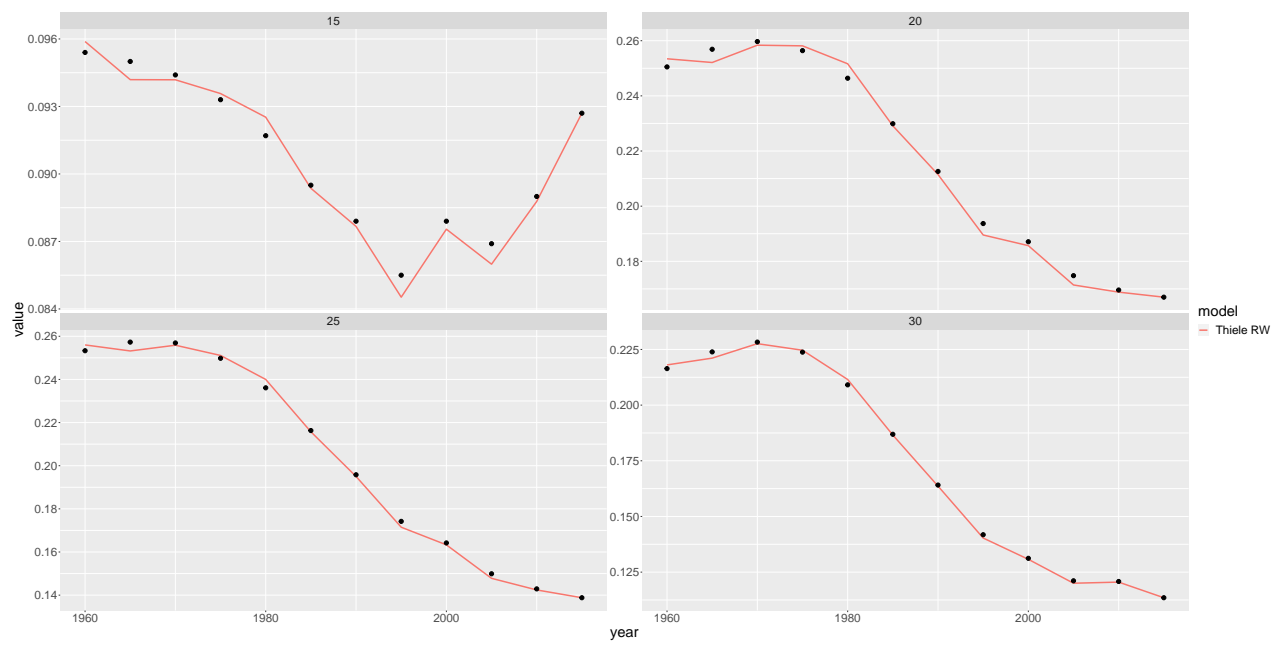


Figure 18: Fertility