

Zimbabwe

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

## # A tibble: 18 x 6
##   aggr.age `1969` `1982` `1992` `2002` `2012`
## *   <dbl>   <dbl>   <dbl>   <dbl>   <dbl>   <dbl>
## 1     0 1100.   666513. 798430. 841551. 994095.
## 2     5 1252.   606731. 800838. 786853. 888042.
## 3    10 1181.   518252. 734654. 766089. 816383.
## 4    15  935.   427787. 632121. 740696. 732628.
## 5    20  709.   356139. 515526. 652354. 658733.
## 6    25  541.   283765. 401947. 513851. 589595.
## 7    30  437.   216565. 323256. 377382. 486213.
## 8    35  379.   171958. 259608. 285606. 371333.
## 9    40  303.   140150. 196167. 235848. 269013.
## 10   45  227.   112995. 156462. 199664. 210869.
## 11   50  168.    88392. 131658. 163218. 193389.
## 12   55  124.    69556. 101596. 124937. 166578.
## 13   60  95.4    57646.  76774.  95198. 129163.
## 14   65  67.1    43446.  62335.  74711.  98600.
## 15   70  35.5    30553.  62691.  57053.  73611.
## 16   75  17.0    46842.  68635.  41096.  53541.
## 17   80   9.26      NA      NA  27715.  37440.
## 18   85  13.4      NA      NA  29432.  44517.
```

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

## # A tibble: 18 x 6
##   aggr.age `1969` `1982` `1992` `2002` `2012`
## *   <dbl>   <dbl>   <dbl>   <dbl>   <dbl>   <dbl>
## 1     0 1156.   644716. 791447. 840935. 988570.
## 2     5 1278.   600942. 791611. 783064. 883312.
## 3    10 1207.   516716. 723986. 755159. 812432.
## 4    15  931.   400975. 607706. 700391. 699246.
## 5    20  636.   304239. 472762. 586689. 577653.
## 6    25  459.   241174. 355698. 472073. 507682.
## 7    30  389.   190946. 282187. 363579. 443238.
## 8    35  341.   156158. 228982. 259868. 359967.
## 9    40  280.   137423. 181401. 198311. 265699.
## 10   45  229.   121965. 150071. 163962. 182884.
## 11   50  186.   102082. 127067. 130424. 140339.
## 12   55  142.    81032. 104878. 105187. 119597.
## 13   60  97.1    65118.  84499.  88204.  97041.
## 14   65  60.0    46169.  64250.  71083.  76432.
## 15   70  32.4    29874.  58462.  53914.  59566.
## 16   75  15.2    39495.  52190.  36893.  43527.
## 17   80   8.24      NA      NA  22891.  28936.
## 18   85   7.21      NA      NA  19019.  28690.
```

Thiele log-Normal Hump RW

```
##   user  system elapsed
## 57.48   0.52   58.53
```

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

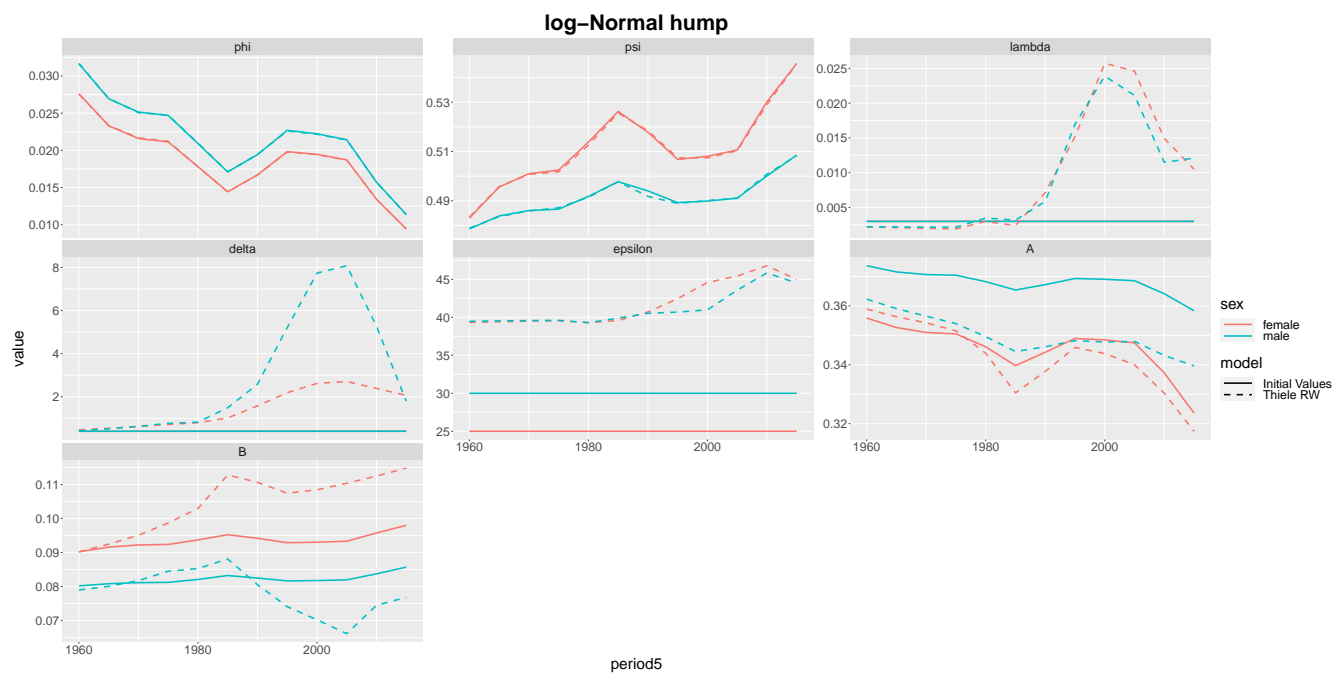


Figure 1: Estimated parameters



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

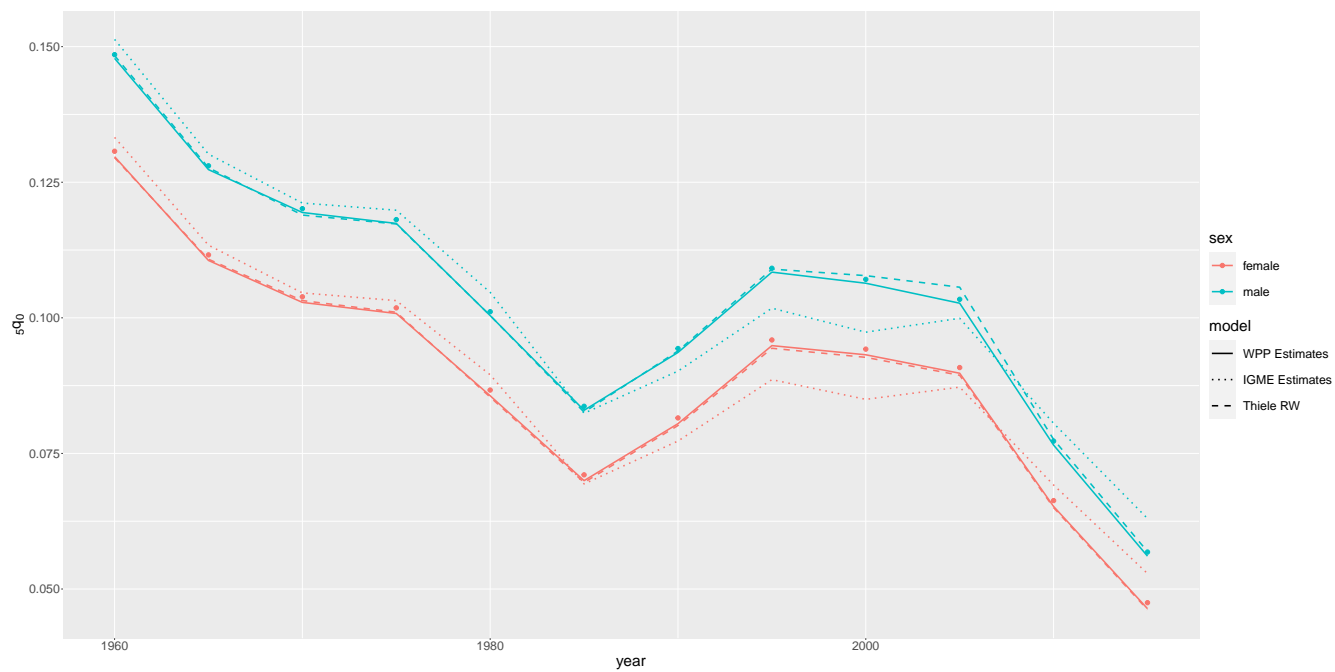


Figure 3: Estimated $_{5}q_0$

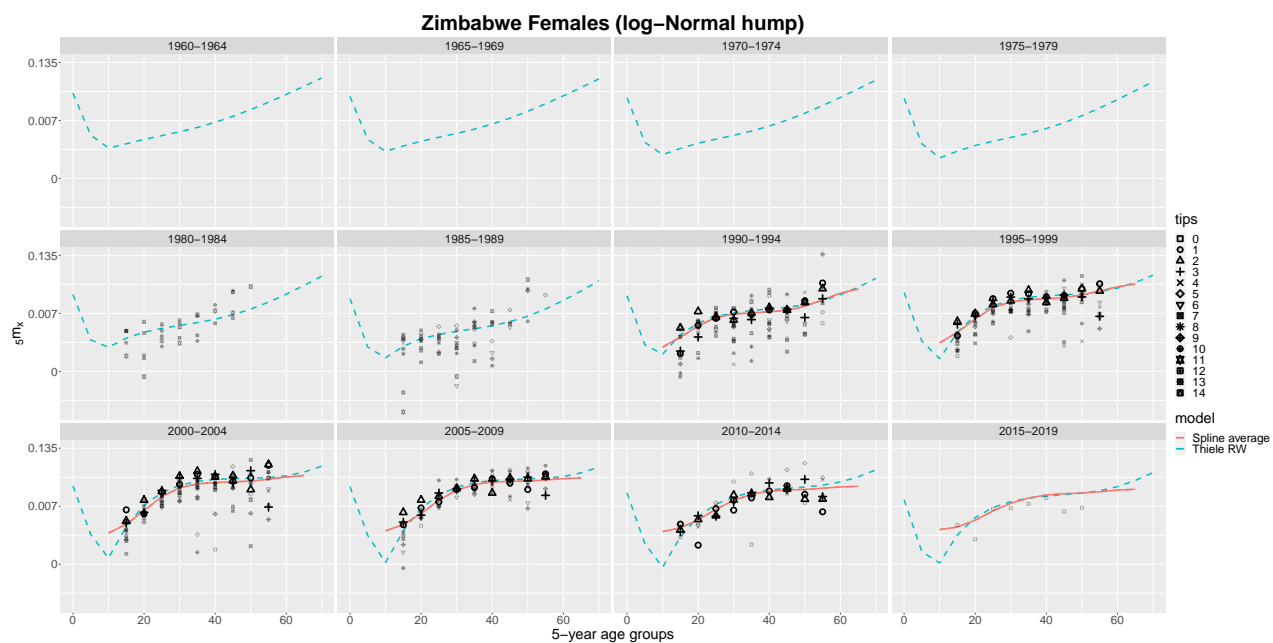


Figure 4: Mortality Schedules

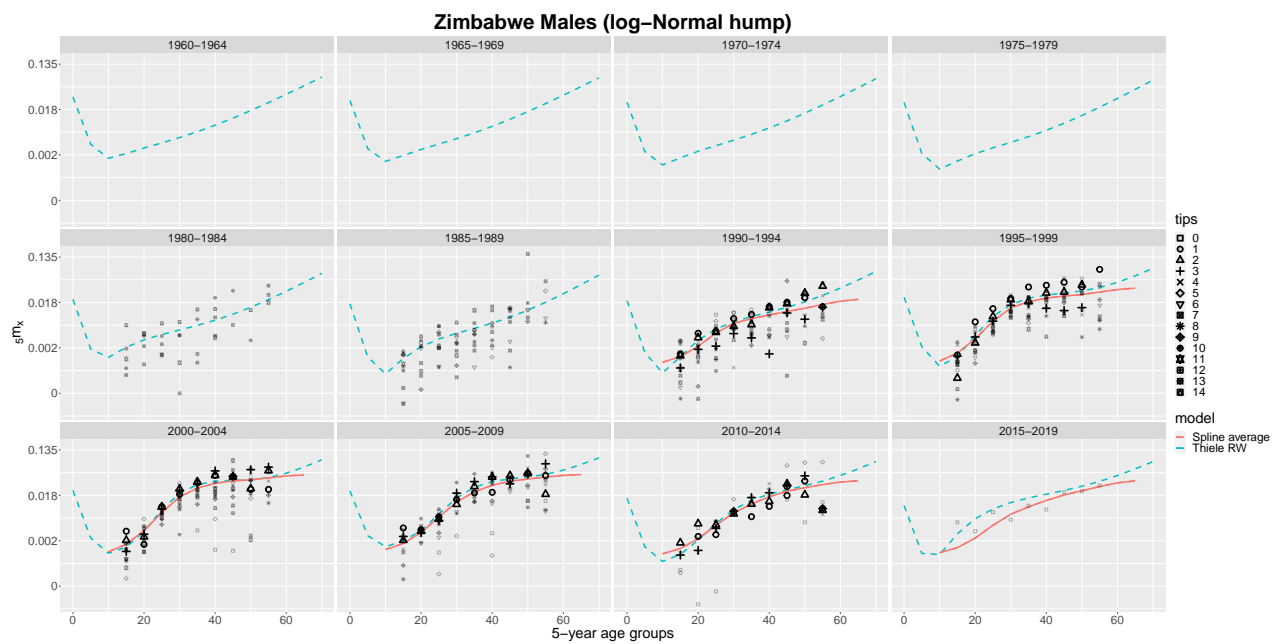


Figure 5: Mortality Schedules

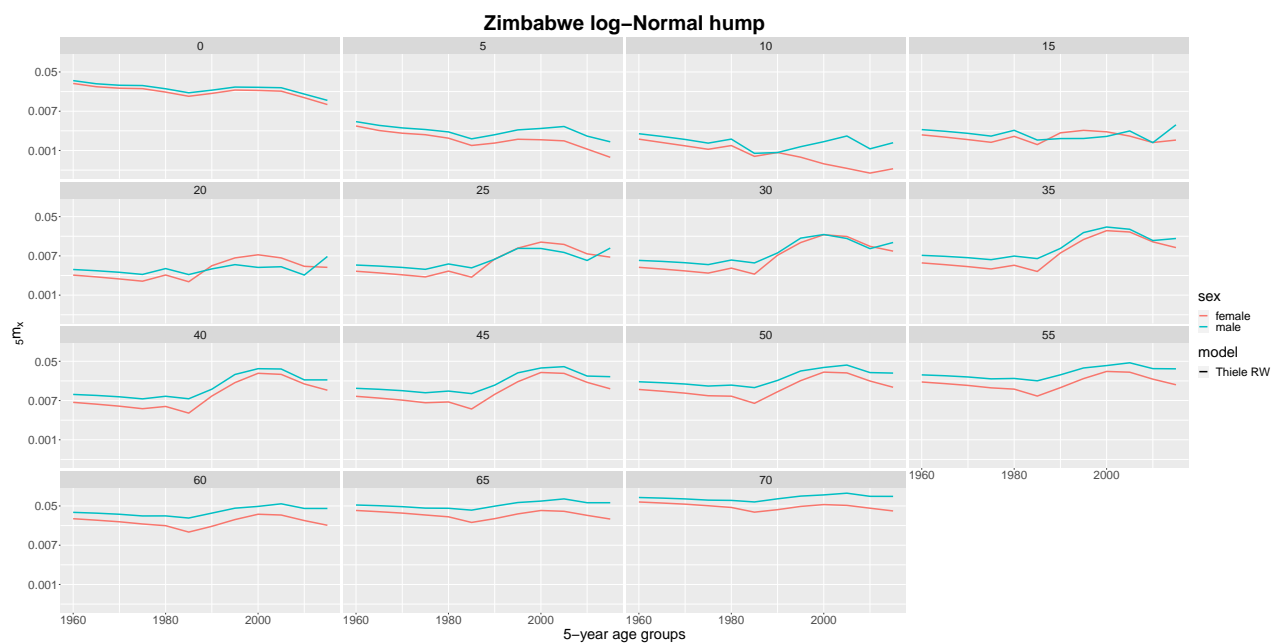


Figure 6: Mortality Schedules

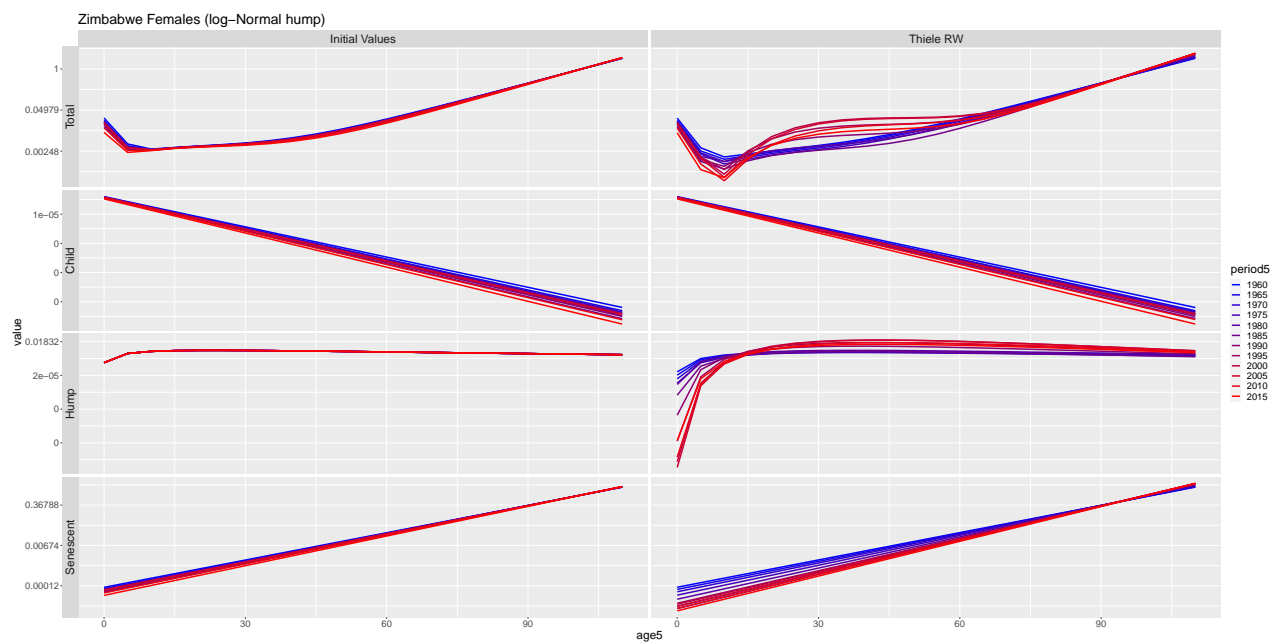


Figure 7: Thiele Decomposed

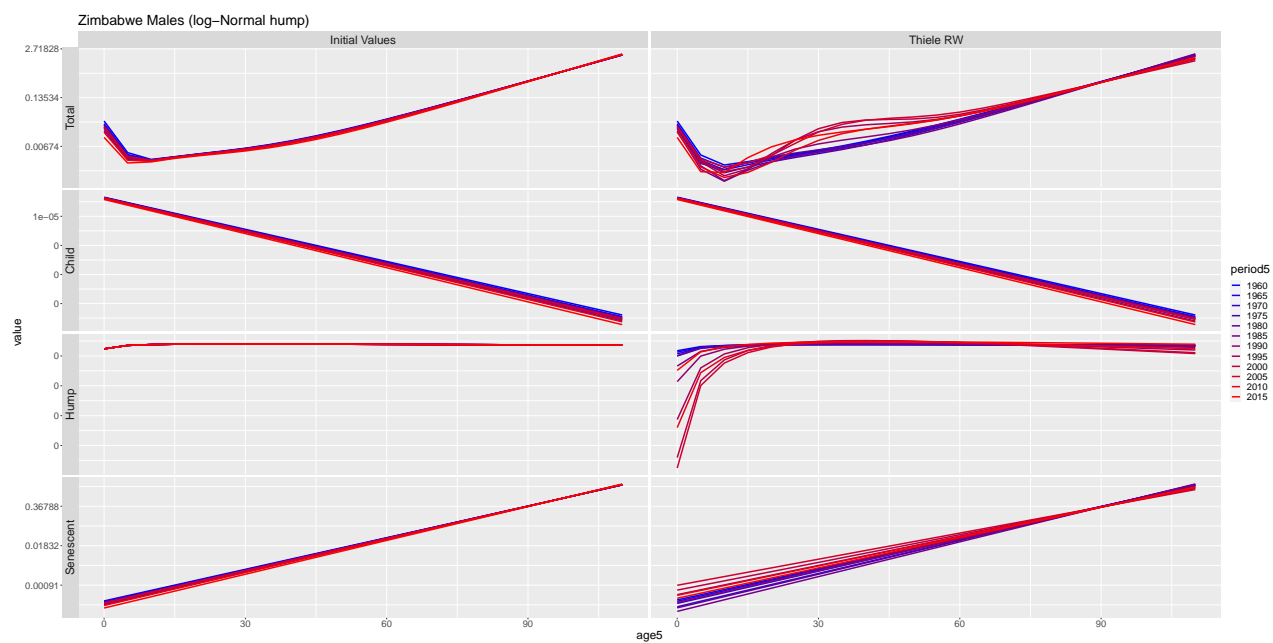


Figure 8: Thiele Decomposed

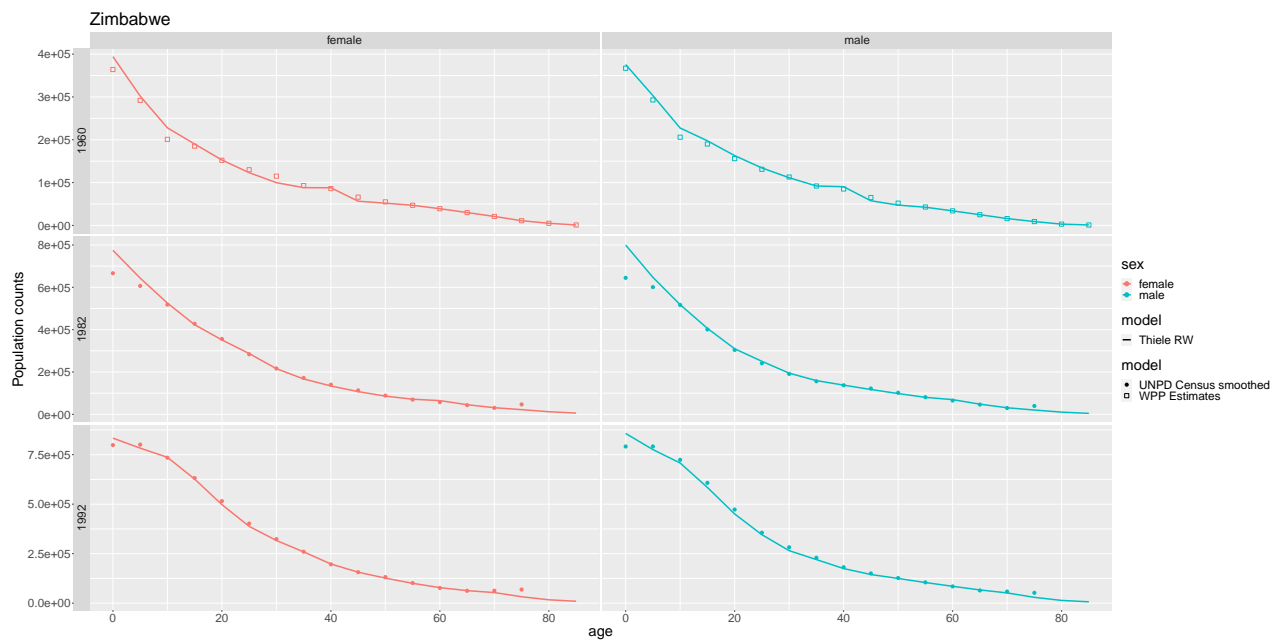


Figure 9: Population

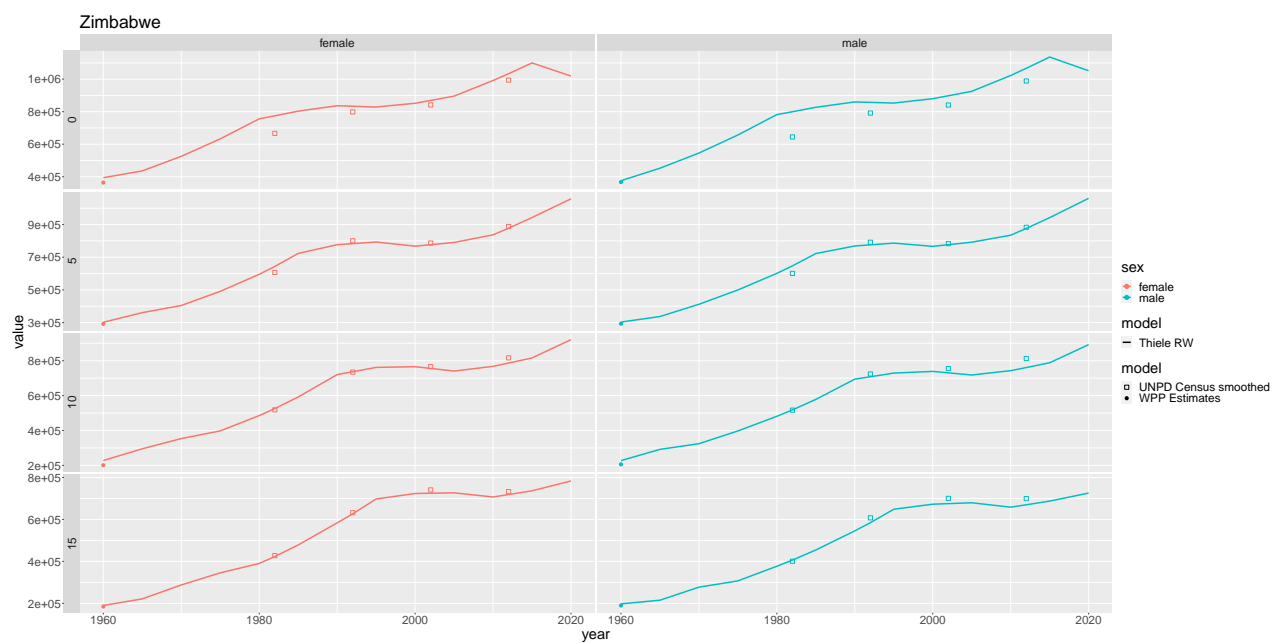


Figure 10: Population

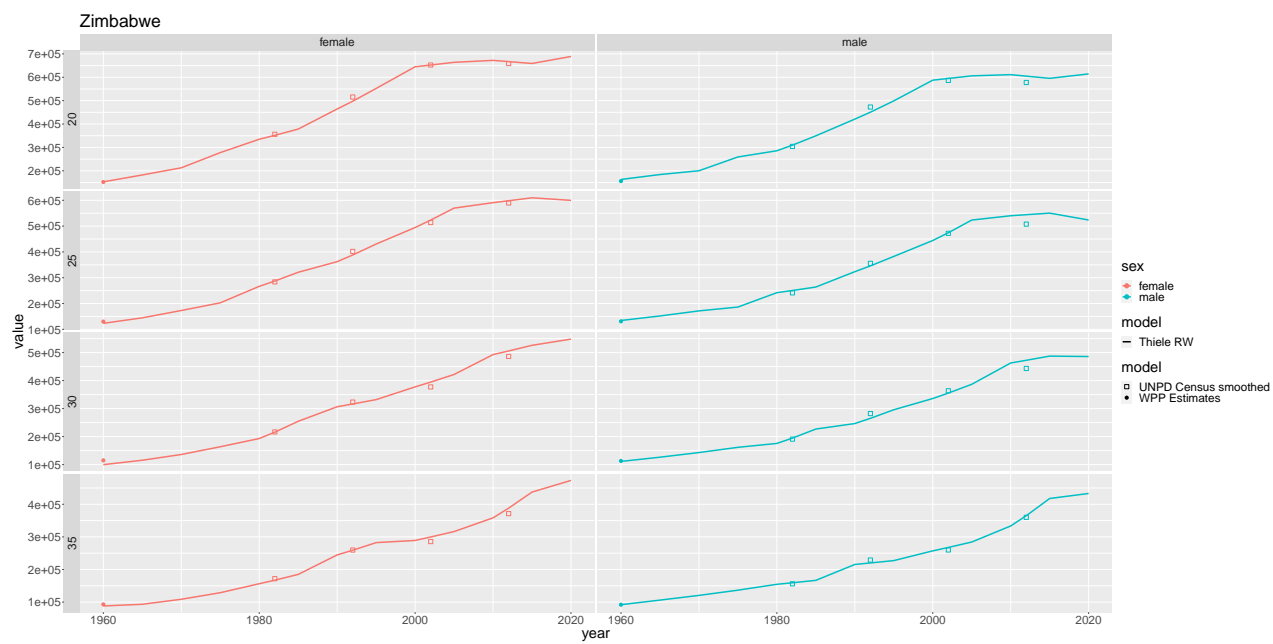


Figure 11: Population

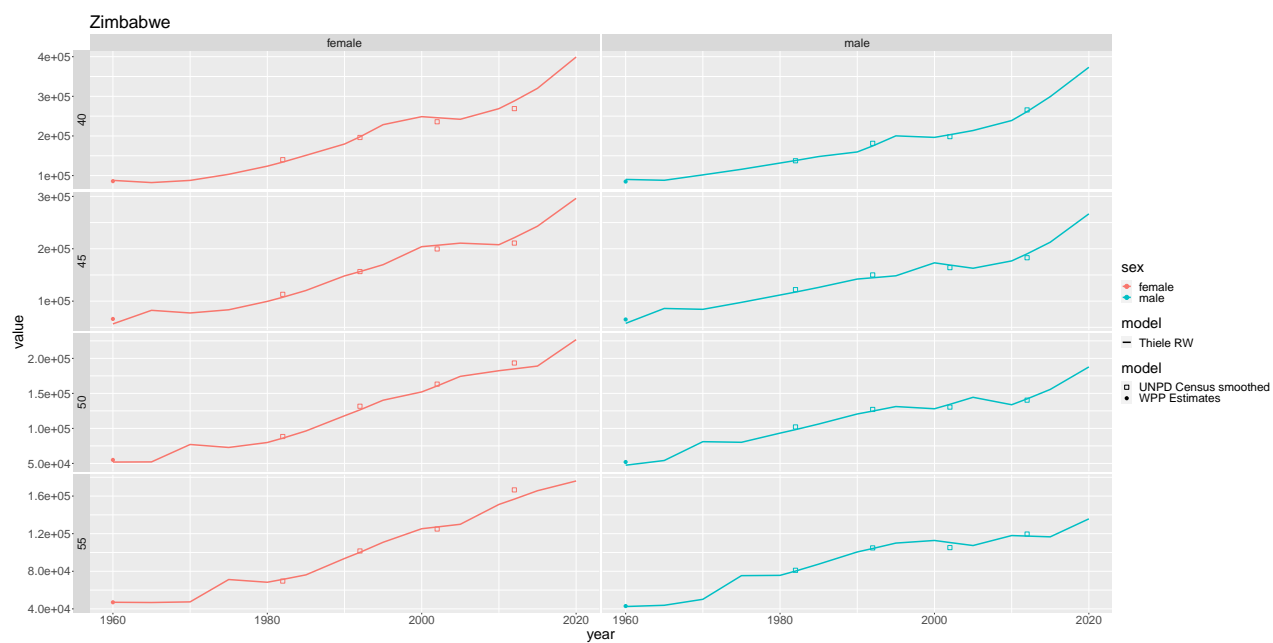


Figure 12: Population

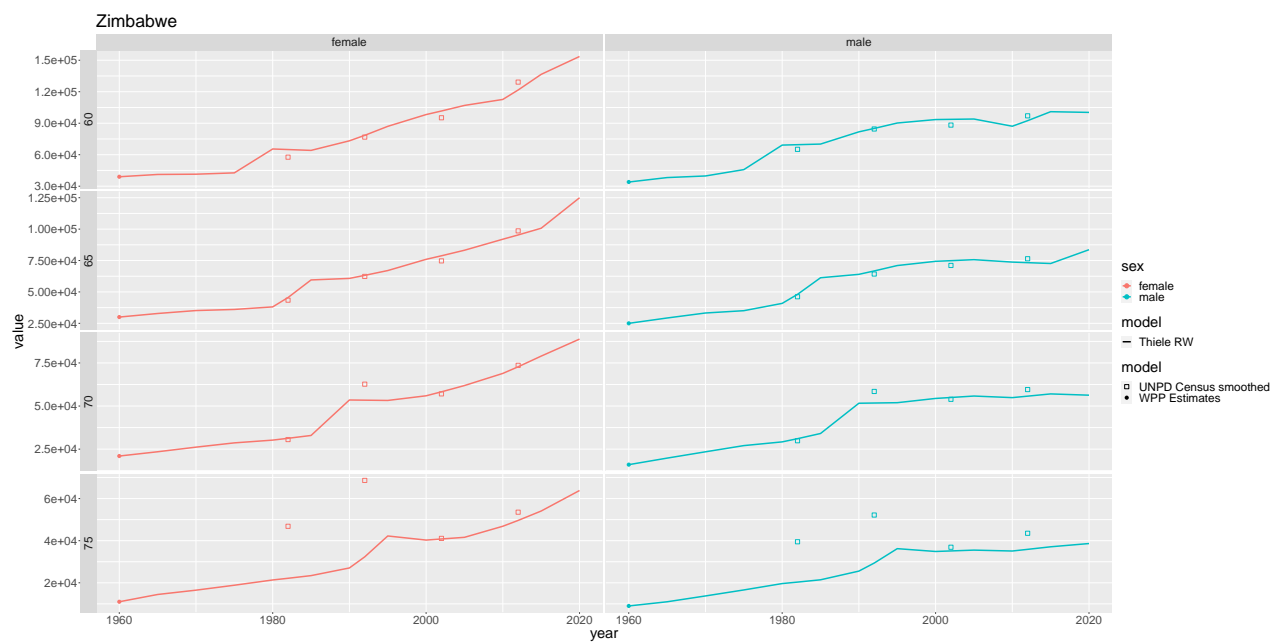


Figure 13: Population

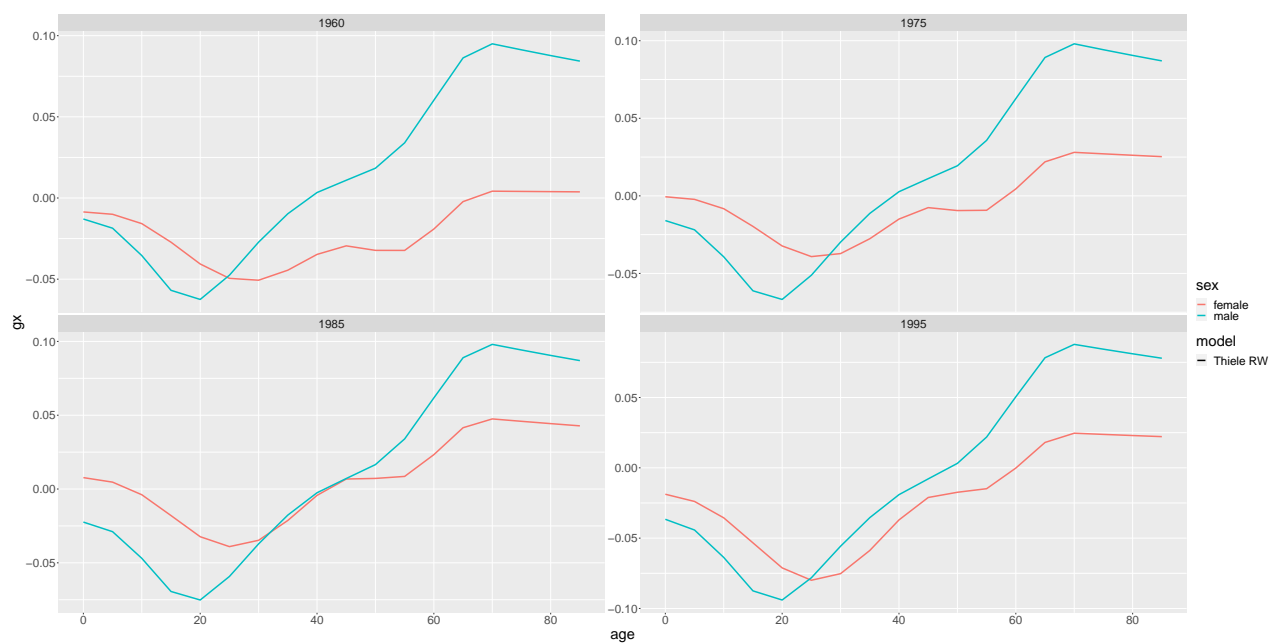


Figure 14: Migration

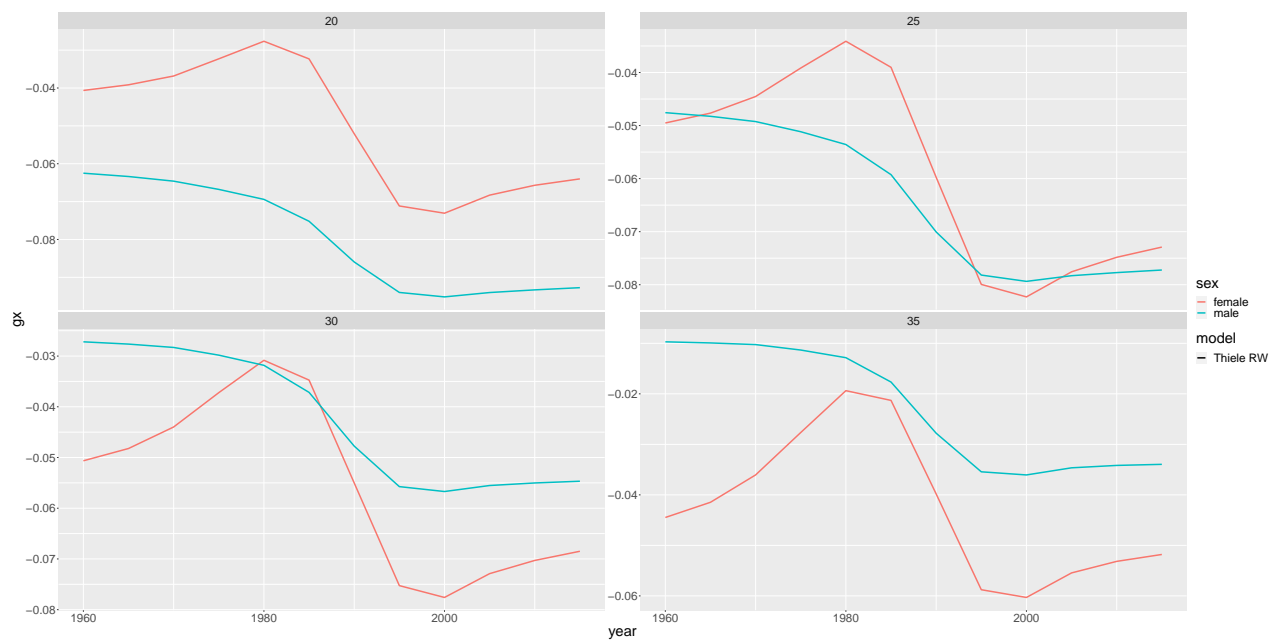


Figure 15: Migration

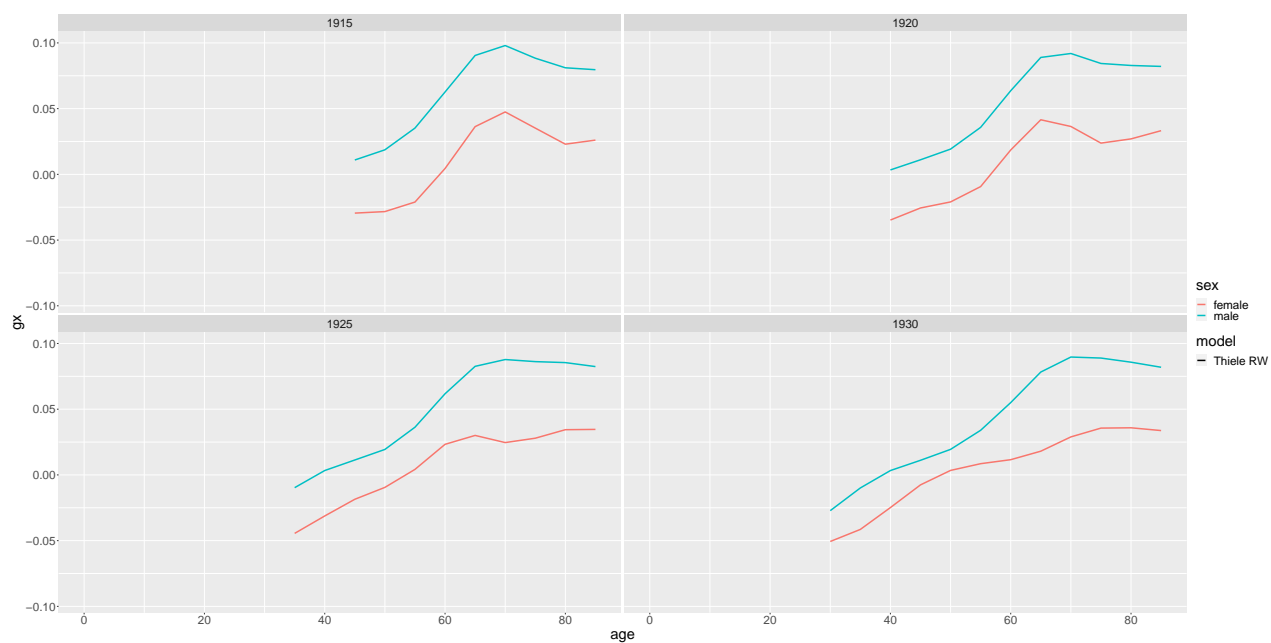


Figure 16: Migration

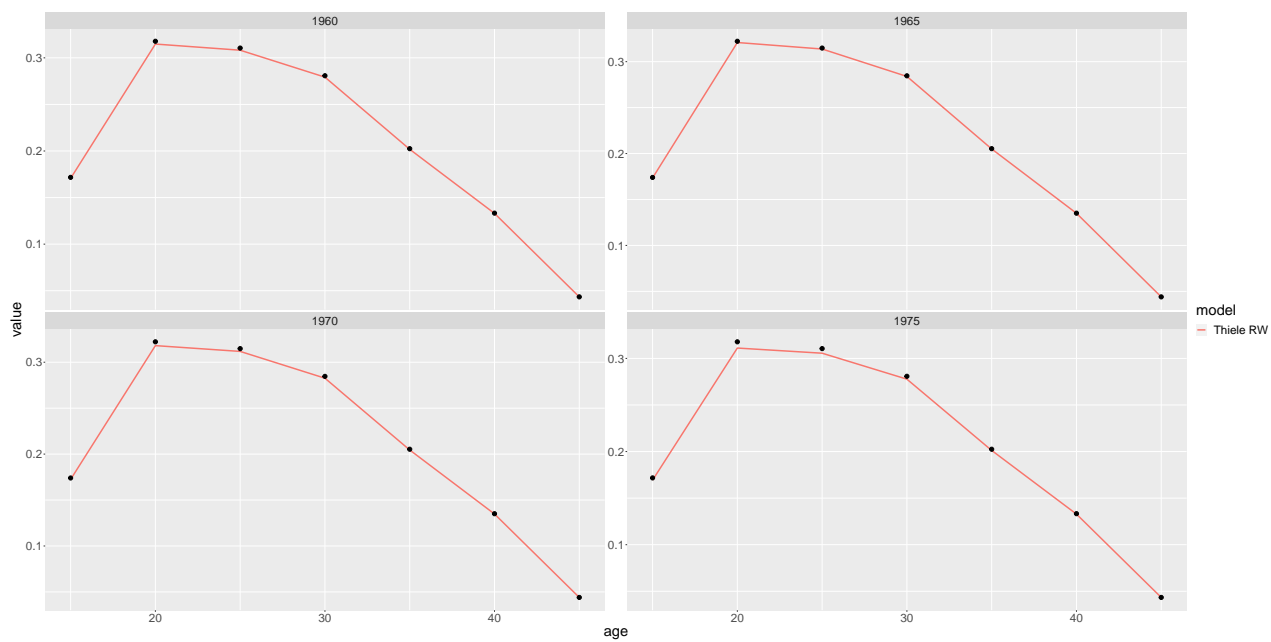


Figure 17: Fertility

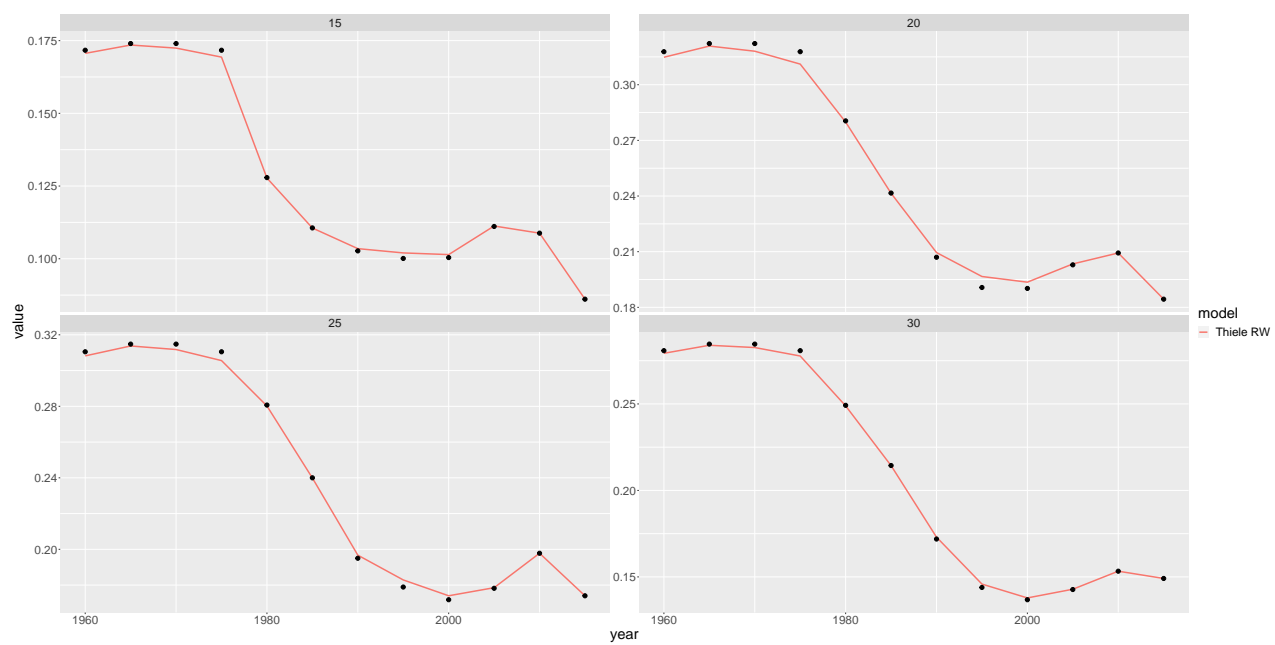


Figure 18: Fertility