Zimbabwe

```
## [1] "Census Females"
  # A tibble: 18 x 6
##
                `1969`
                         1982
                                  `1992`
                                          `2002`
                                                   `2012`
      aggr.age
##
         <dbl>
                  <dbl>
                          <dbl>
                                   <dbl>
                                           <dbl>
                                                    <dbl>
##
   1
             0 1100.
                        666513. 798430. 841551. 994095.
##
             5 1252.
                        606731. 800838. 786853. 888042.
                        518252. 734654. 766089. 816383.
##
   3
            10 1181.
##
                 935.
                        427787. 632121. 740696. 732628.
            15
##
   5
                709.
                        356139. 515526. 652354. 658733.
            20
##
   6
                 541.
                        283765. 401947. 513851. 589595.
##
   7
            30
                437.
                        216565. 323256. 377382. 486213.
##
   8
            35
                379.
                        171958. 259608. 285606. 371333.
##
   9
                303.
            40
                        140150. 196167. 235848. 269013.
                        112995. 156462. 199664. 210869.
## 10
            45
                227.
                         88392. 131658. 163218. 193389.
## 11
            50
                168.
##
  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.
                                          29432.
## 18
            85
                  13.4
                            NA
                                     NA
                                                   44517.
## [1] "Census Males"
   # A tibble: 18 x 6
##
                1969
                         `1982`
                                  `1992`
                                          `2002`
                                                   `2012`
      aggr.age
##
         <dbl>
                  <dbl>
                          <dbl>
                                   <dbl>
                                           <dbl>
                                                    <dbl>
##
   1
             0 1156.
                        644716. 791447. 840935. 988570.
   2
                        600942. 791611. 783064. 883312.
##
             5 1278.
                        516716. 723986. 755159. 812432.
##
   3
            10 1207.
                        400975. 607706. 700391. 699246.
##
    4
            15
                931.
##
   5
                 636.
                        304239. 472762. 586689. 577653.
            20
##
    6
            25
                459.
                        241174. 355698. 472073. 507682.
##
   7
            30
                 389.
                        190946. 282187. 363579. 443238.
##
   8
            35
                 341.
                        156158. 228982. 259868. 359967.
##
   9
                280.
                        137423. 181401. 198311. 265699.
            40
## 10
            45
                229.
                        121965. 150071. 163962. 182884.
                        102082. 127067. 130424. 140339.
## 11
            50
                186.
## 12
                 142.
                         81032. 104878. 105187. 119597.
            55
## 13
            60
                  97.1
                         65118.
                                 84499.
                                          88204.
                                                   97041.
## 14
                  60.0
                         46169.
                                 64250.
                                          71083.
                                                   76432.
            65
## 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
```

system elapsed user ## 43.83 0.61 44.41 ## [1] "relative convergence (4)"

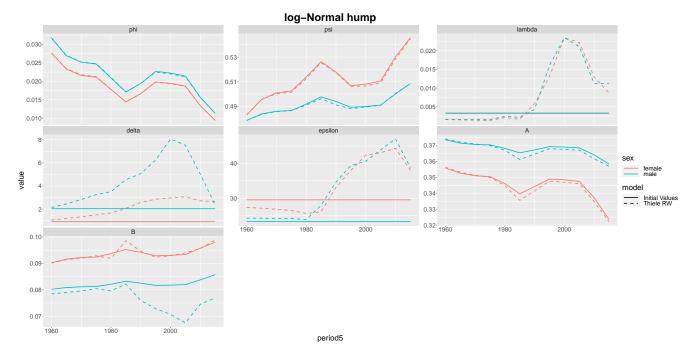


Figure 1: Estimated parameters

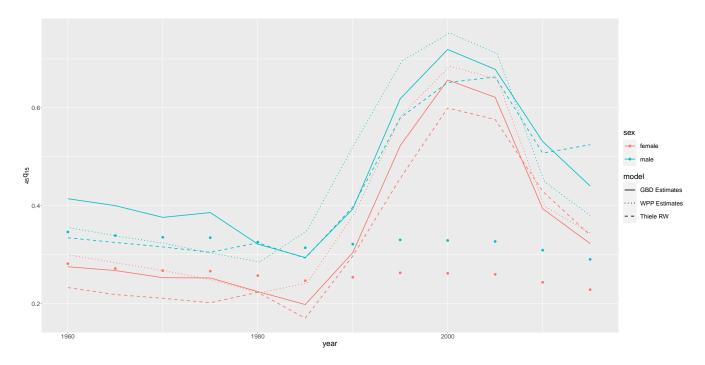


Figure 2: Estimated $_{45}q_{15}$

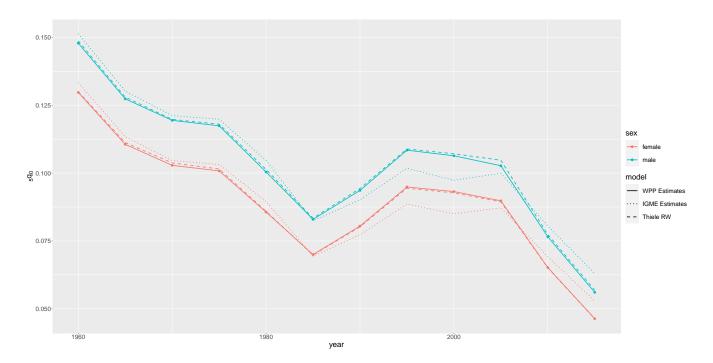


Figure 3: Estimated $_5q_0$

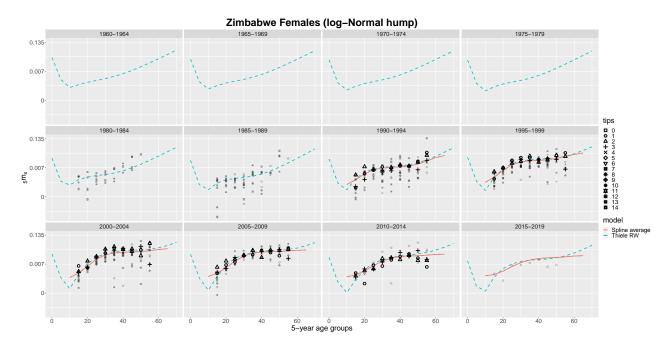


Figure 4: Mortality Schedules

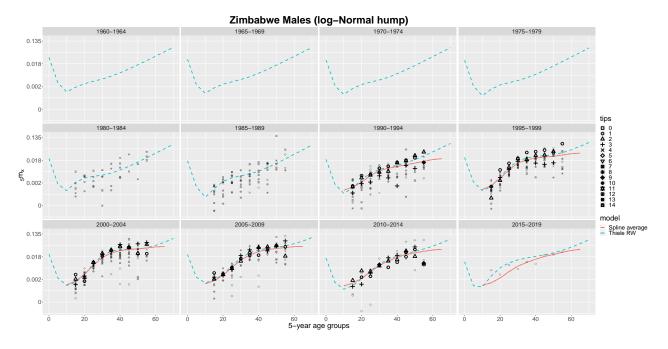


Figure 5: Mortality Schedules

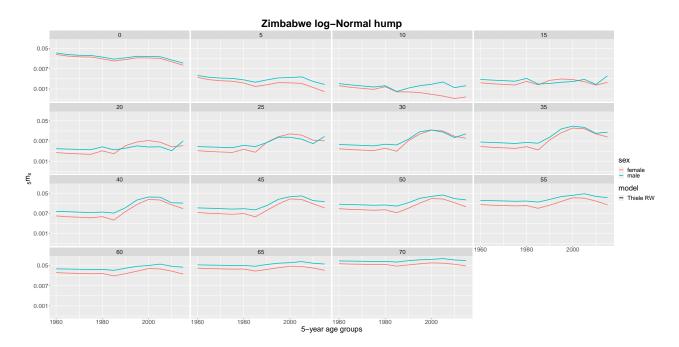


Figure 6: Mortality Schedules

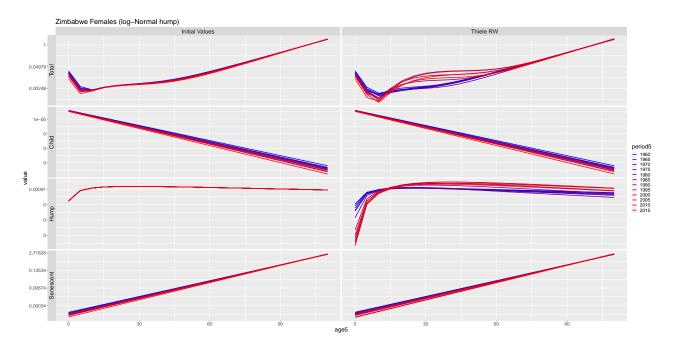


Figure 7: Thiele Decomposed

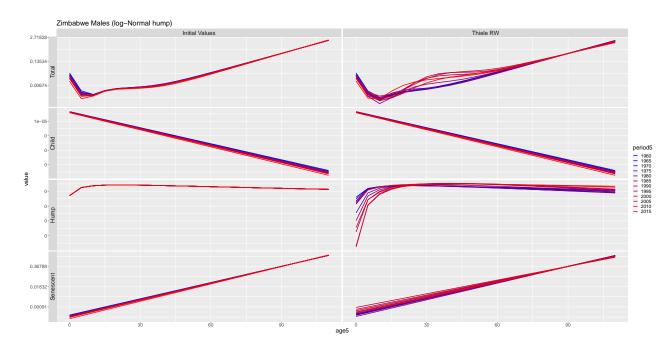


Figure 8: Thiele Decomposed

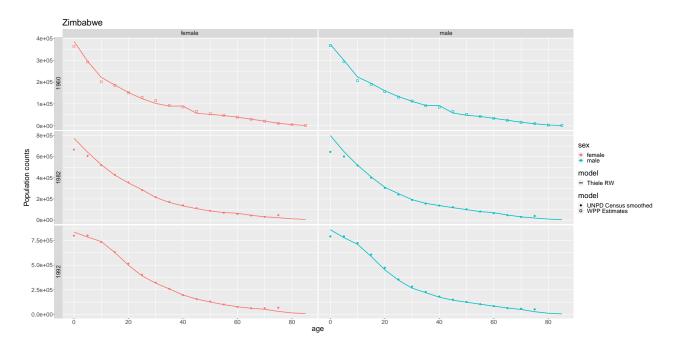


Figure 9: Population

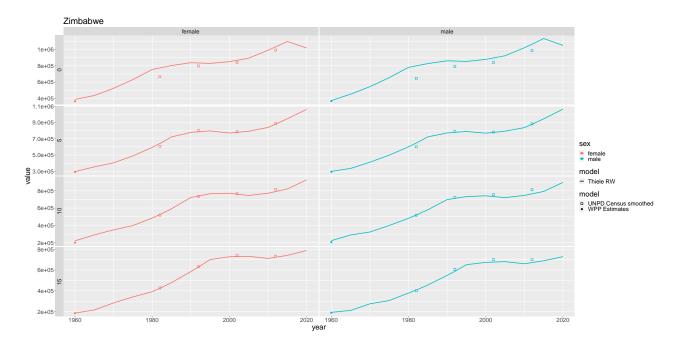


Figure 10: Population

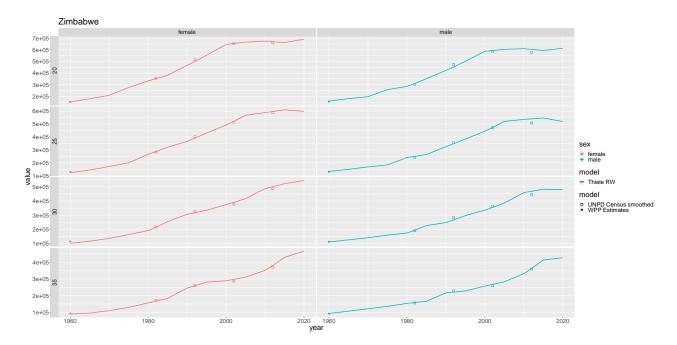


Figure 11: Population

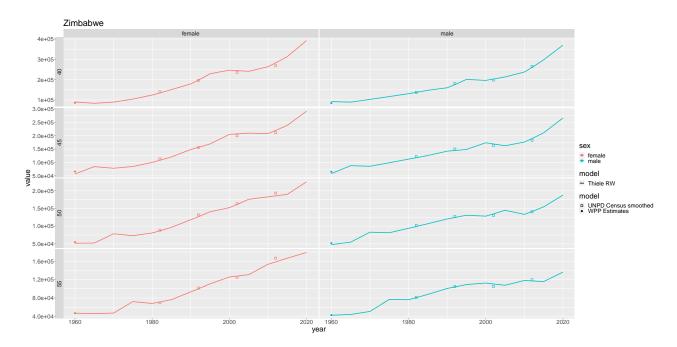


Figure 12: Population

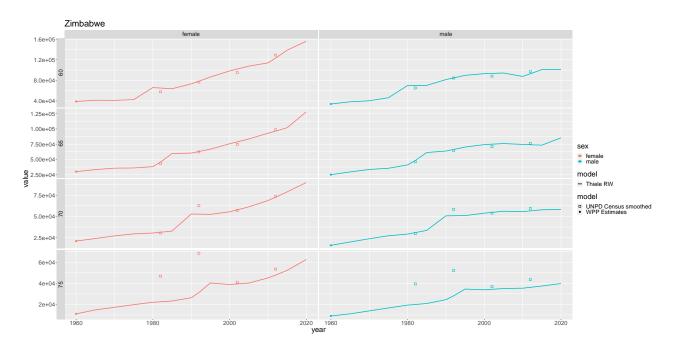


Figure 13: Population

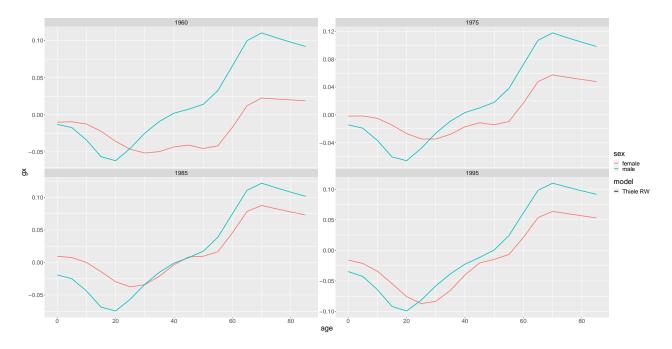


Figure 14: Migration

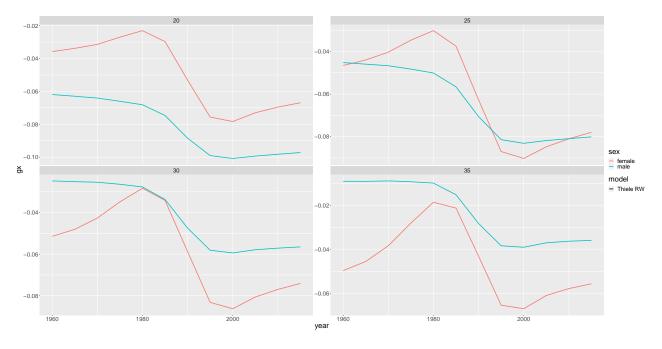


Figure 15: Migration

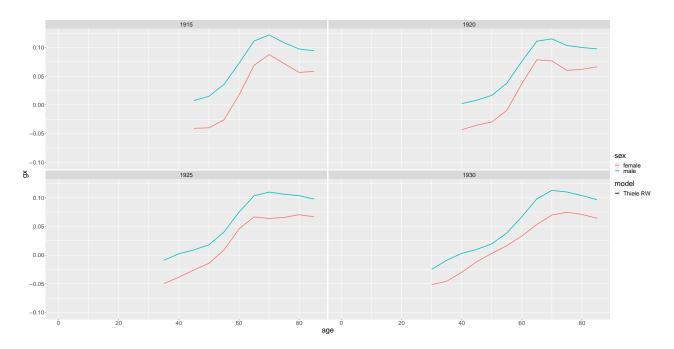


Figure 16: Migration

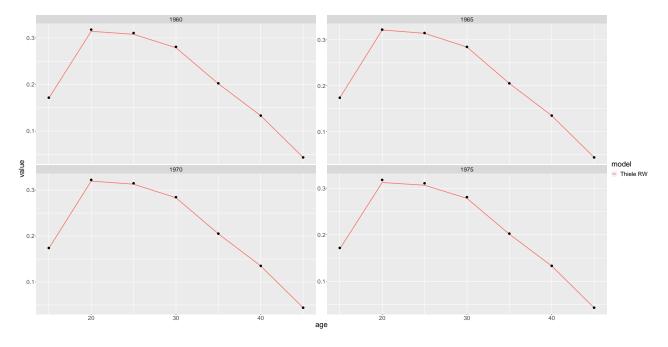


Figure 17: Fertility

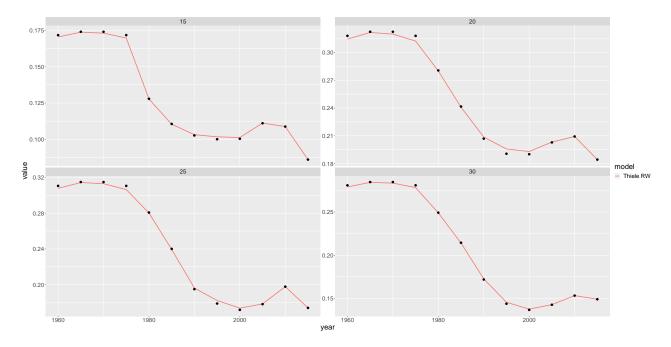


Figure 18: Fertility