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
##
              5 62869. 80165. 109553. 117963. 105316. 107586.
            10 55535. 75752. 100753. 123895. 110040. 107761.
##
    3
            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.
            35 25754. 31921.
                                39635.
                                        50726.
                                                 49704
##
    8
                                                          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
                 8802. 10347.
##
  15
            70
                                12161.
                                         12968.
                                                 18733.
                                                          18834
## 16
                 6078. 8706.
                                 8324.
                                         10184.
                                                 13276
                                                          15850.
            75
## 17
            80
                 3646.
                        4372.
                                 5725.
                                          5257.
                                                  7928.
                                                          11826.
                 5207.
                                 7621.
                                          6397.
                                                  7309
## 18
            85
                        4445.
                                                          10006.
## [1] "Census Males"
   # A tibble: 18 x 7
##
      aggr.age `1966`
                       1976
                                1986
                                         1996
                                                 2006
                                                          2016
##
         <dbl>
                <dbl>
                        <dbl>
                                 <dbl>
                                          <dbl>
                                                  <dbl>
                                                           <dbl>
##
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              0 60656. 85931. 113851. 104230. 101397
                                                        100793
              5 63464. 80153. 110687. 120469. 106391. 107144.
##
    2
                                99977. 125098. 110763. 107981.
            10 50819. 73397.
##
    3
            15 39157. 61668.
                                82770. 111192. 110441. 104784.
##
    4
##
    5
            20 27256. 50032.
                                        86836.
                                                 99943
                                67354.
                                                          99918.
##
    6
            25 18271. 41339.
                                55999.
                                        66645.
                                                 81474
                                                          94347.
            30 14614. 34579.
##
    7
                                47098.
                                        55028.
                                                 62015.
                                                          84490
##
    8
            35 14565. 31374.
                                39678.
                                        47007.
                                                 47748.
                                                          68028.
##
   9
                                        40089.
                                                 39735.
            40 14724. 29008.
                                33697.
                                                          50500.
## 10
            45 14038. 24309.
                                30380.
                                        33831.
                                                 34131.
                                                          38325
            50 12961. 20635.
## 11
                                26824.
                                        27505.
                                                 28693.
                                                          31438.
## 12
            55 11384. 18142.
                                20728.
                                        22931.
                                                 22974.
                                                          26018.
##
  13
                 9231. 13537.
                                16158.
                                         18947.
                                                 17510.
                                                          20652.
                 7017.
                        9024.
                                13203.
                                         13353.
                                                 14210.
##
  14
            65
                                                          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

37.71

system elapsed

39.43

1.38

[1] "relative convergence (4)"

Thiele log-Normal Hump RW (Pop 5-9 to 70-74, DHS 15-19 to 45-49)

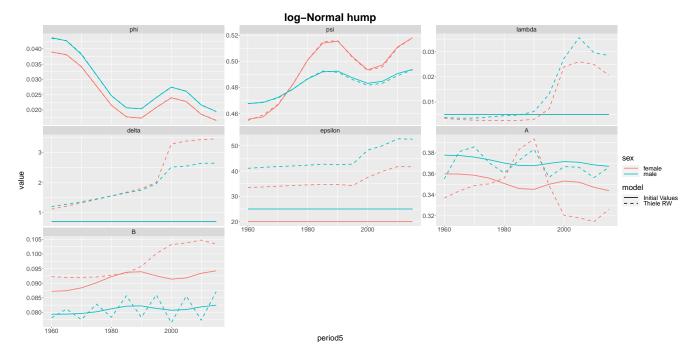


Figure 1: Estimated parameters

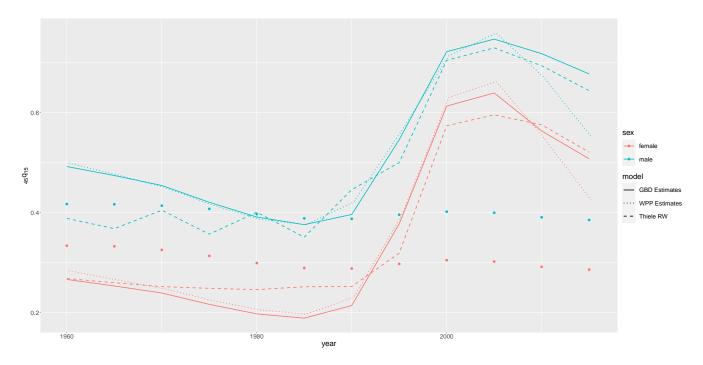


Figure 2: Estimated $_{45}q_{15}$

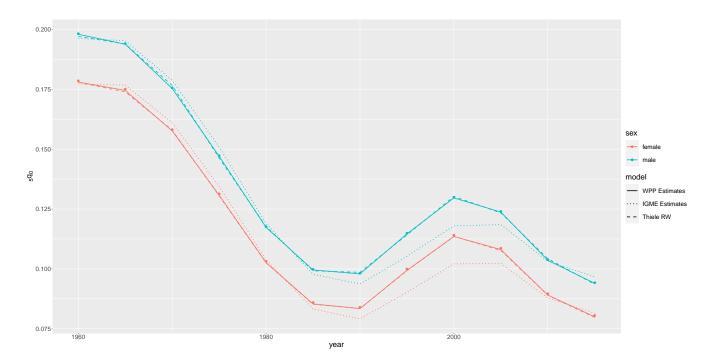


Figure 3: Estimated $_5q_0$

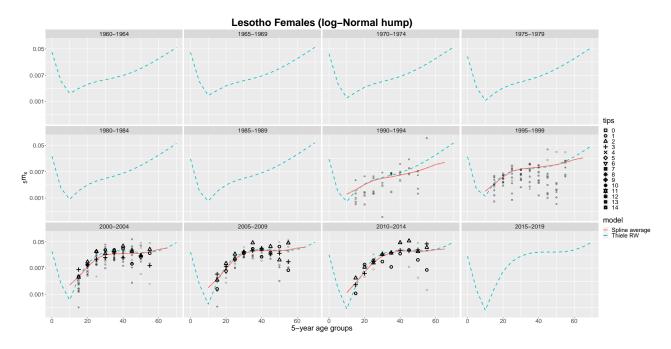


Figure 4: Mortality Schedules

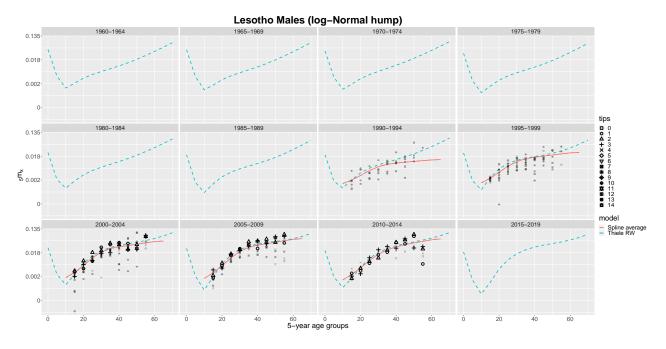


Figure 5: Mortality Schedules

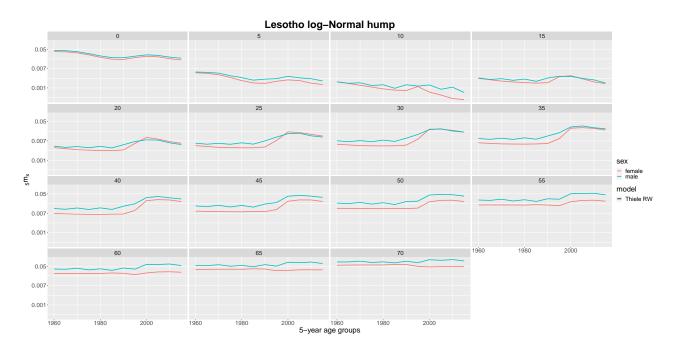


Figure 6: Mortality Schedules

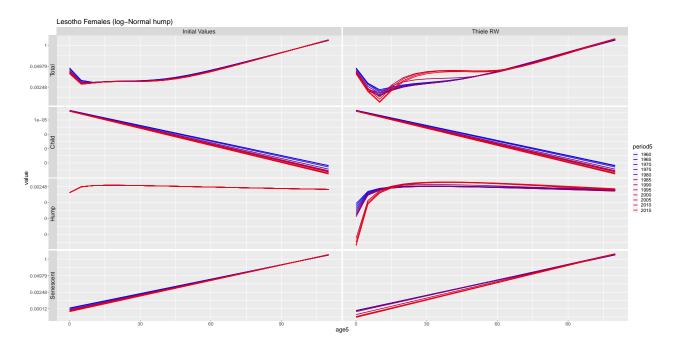


Figure 7: Thiele Decomposed

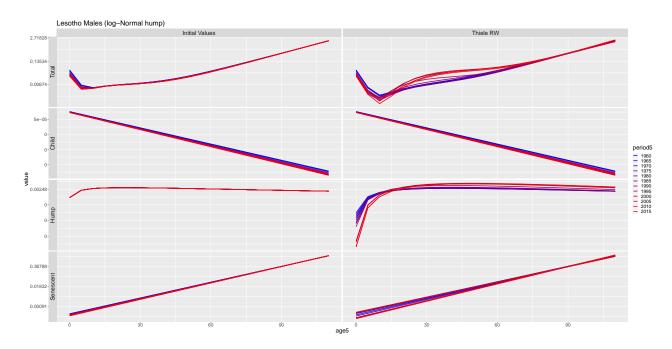


Figure 8: Thiele Decomposed

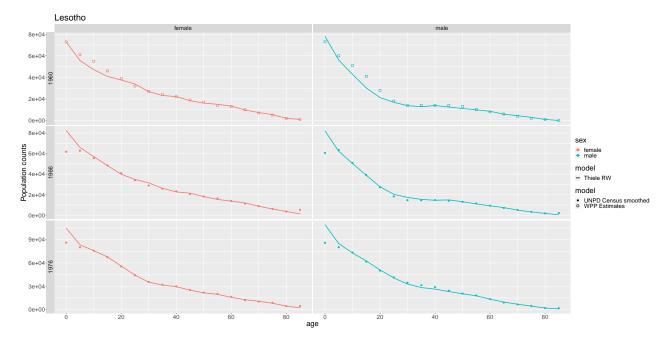


Figure 9: Population

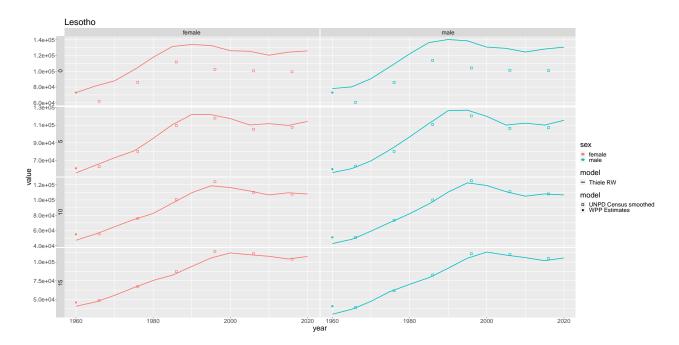


Figure 10: Population

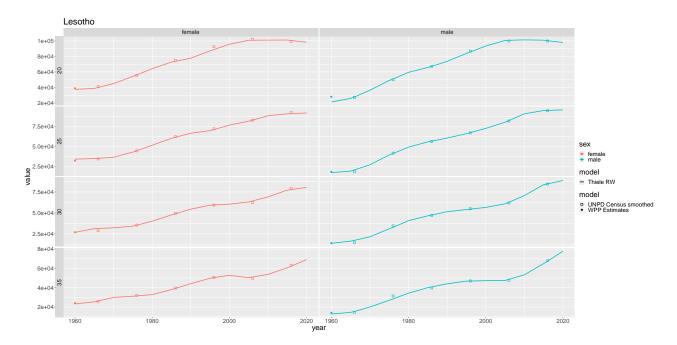


Figure 11: Population

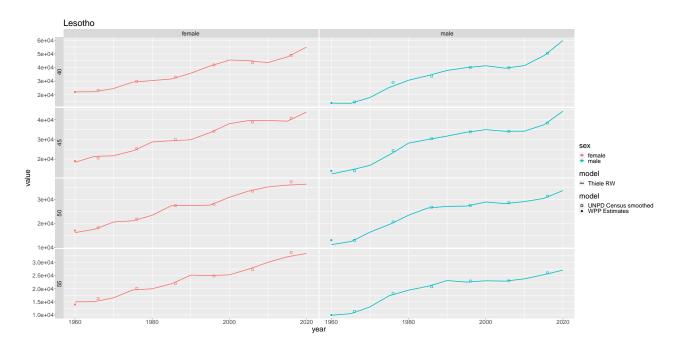


Figure 12: Population

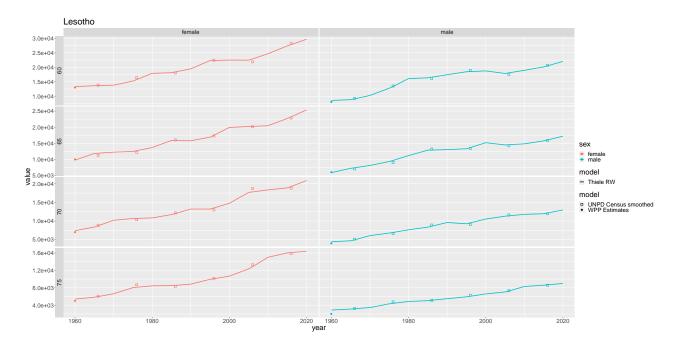


Figure 13: Population

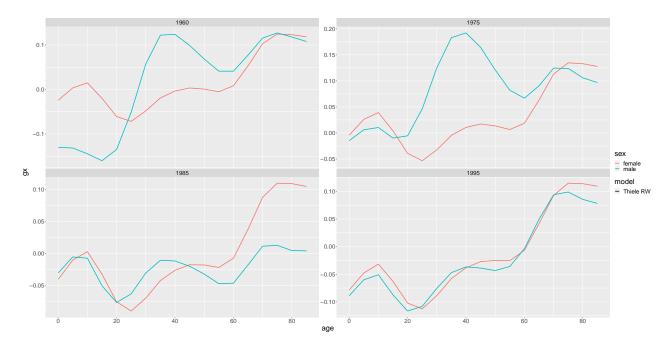


Figure 14: Migration

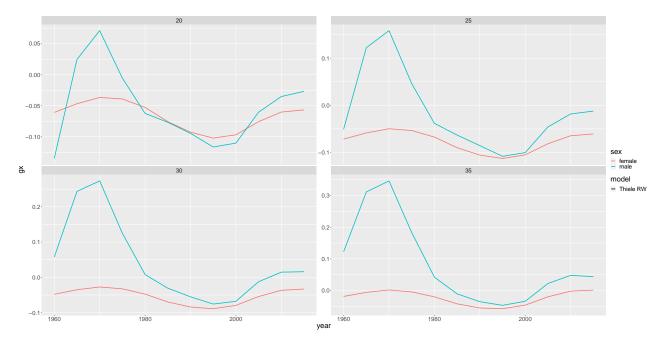


Figure 15: Migration

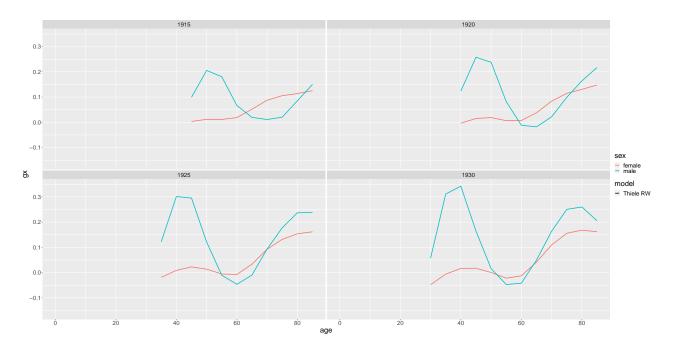


Figure 16: Migration

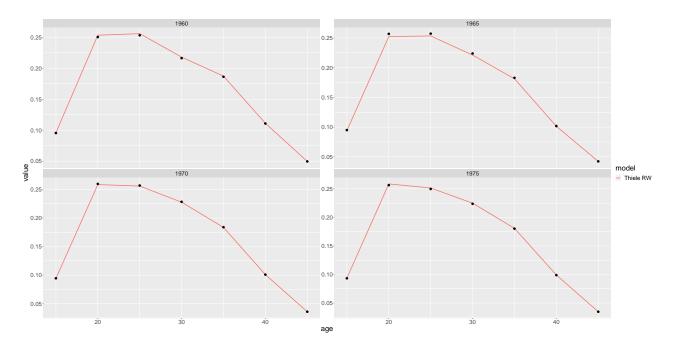


Figure 17: Fertility

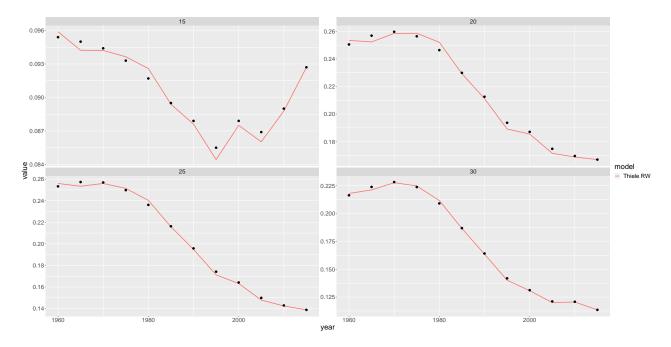


Figure 18: Fertility