Liberia

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

## # A tibble: 18 x 5
##    aggr.age `1962` `1974` `1984` `2008`
## *     <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
## 1         0  83757 112473 175096 263911
## 2         5  64953 101734. 148912. 242940.
## 3        10 52698.  86102. 124522. 212606.
## 4        15 47194.  77449. 113220. 190090.
## 5        20 47225.  71126. 102939. 174774.
## 6        25  47357  64640.  84985. 148747.
## 7        30 43429.  57040.  66985. 119966
## 8        35 36193.  45099.  53004  98793.
## 9        40  27916  33255.  40937.  76878.
## 10       45  20892  25422.  31991.  55524.
## 11       50 15643.  19339.  25344  39151.
## 12       55 12050.  14584  19994.  29099.
## 13       60  9246.  12546.  17390  25189
## 14       65   7298   9567  13581.  20468.
## 15       70   4358   5539   7838  14674
## 16       75   6865   8263  15661  10667
## 17       80     NA     NA     NA   6599
## 18       85     NA     NA     NA   8749

## [1] "Census Males"

## # A tibble: 18 x 5
##    aggr.age `1962` `1974` `1984` `2008`
## *     <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
## 1         0  81625 115252 175525 270564
## 2         5  68809 107996. 156238. 247061.
## 3        10 52433.  91310. 132812. 217634
## 4        15 43001.  73288 111146. 188906
## 5        20 38585.  59558.  93543. 163579.
## 6        25  37145  52254.  78034. 137822.
## 7        30 36123.  48819.  63022. 113698.
## 8        35 33761.  44476  51116.  96817
## 9        40  29697. 37813.  42878  81576.
## 10       45 24926.  31391.  36068.  63548.
## 11       50 20001.  25404  29160.  46136.
## 12       55 15733.  20186  24042.  33073.
## 13       60 11897.  17028  21570.  25293.
## 14       65   8808  13044.  17269.  19079
## 15       70   4963   8855  11361  13879
## 16       75   8212  11788  21859  10228.
## 17       80     NA     NA     NA   5408
## 18       85     NA     NA     NA   8889
```

Thiele Normal Hump

```
##    user  system elapsed
## 68.24    0.75   69.22
```

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

Thiele log-Normal Hump

```
##    user  system elapsed
##   70.20    0.62   71.60
```

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

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

```
##    user  system elapsed
##   63.09    0.50   64.05
```
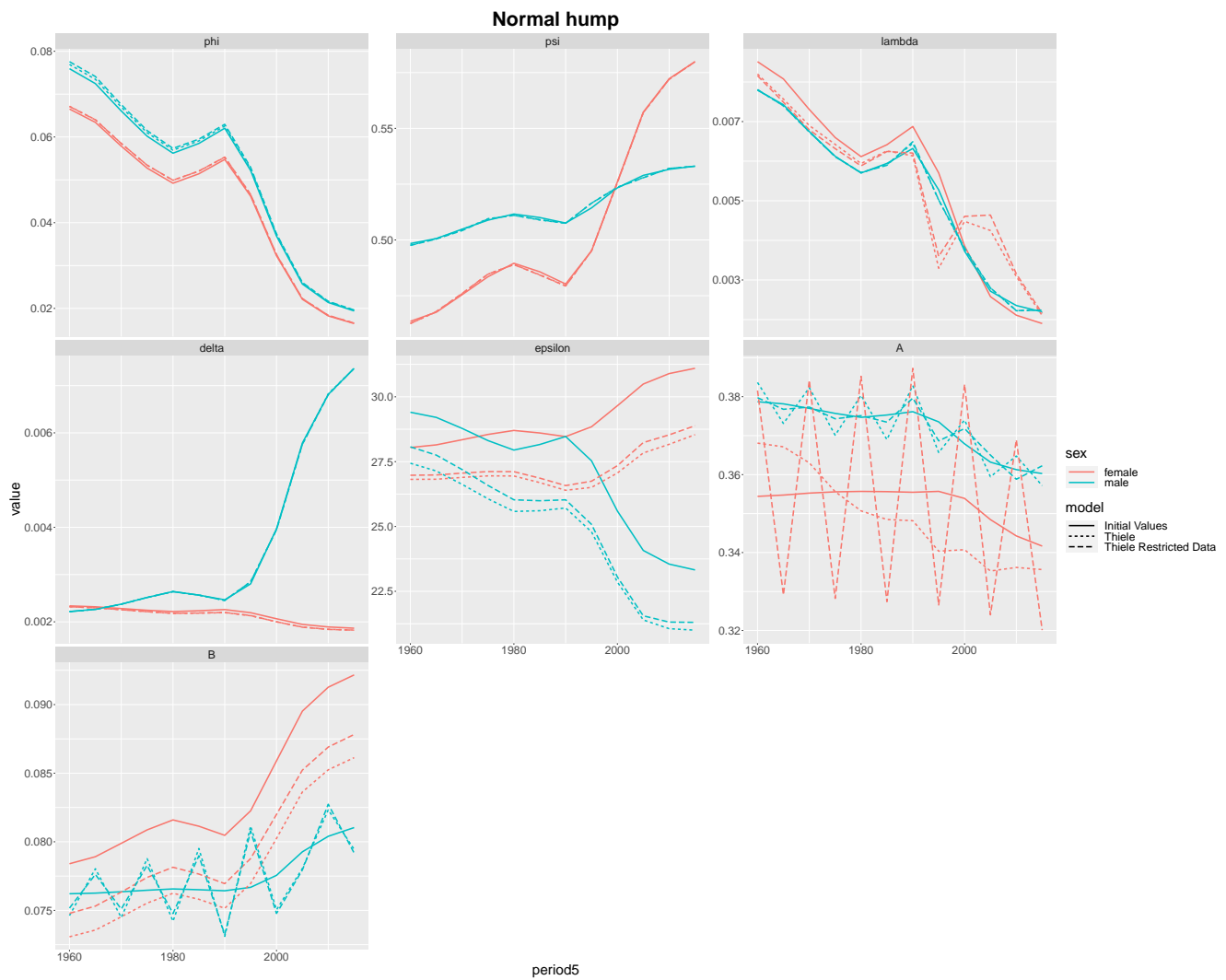
```
## [1] "relative convergence (4)"
```

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

```
##    user  system elapsed
##   59.58    0.43   60.69
```

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

Figure 1: Estimated parameters

```
## Using Sex as id variables
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## Warning: Removed 24 rows containing missing values (geom_point).

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```
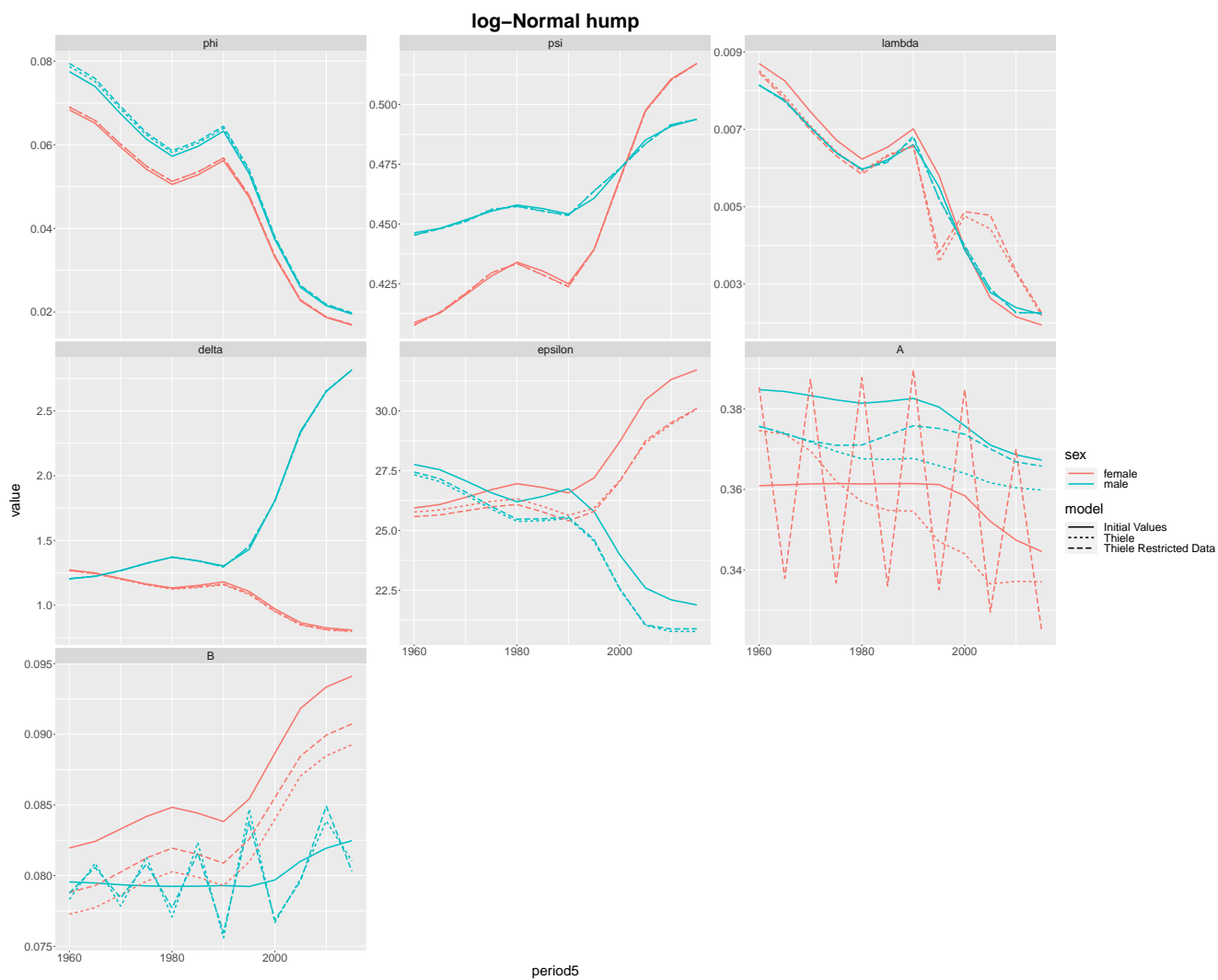
Figure 2: Estimated parameters
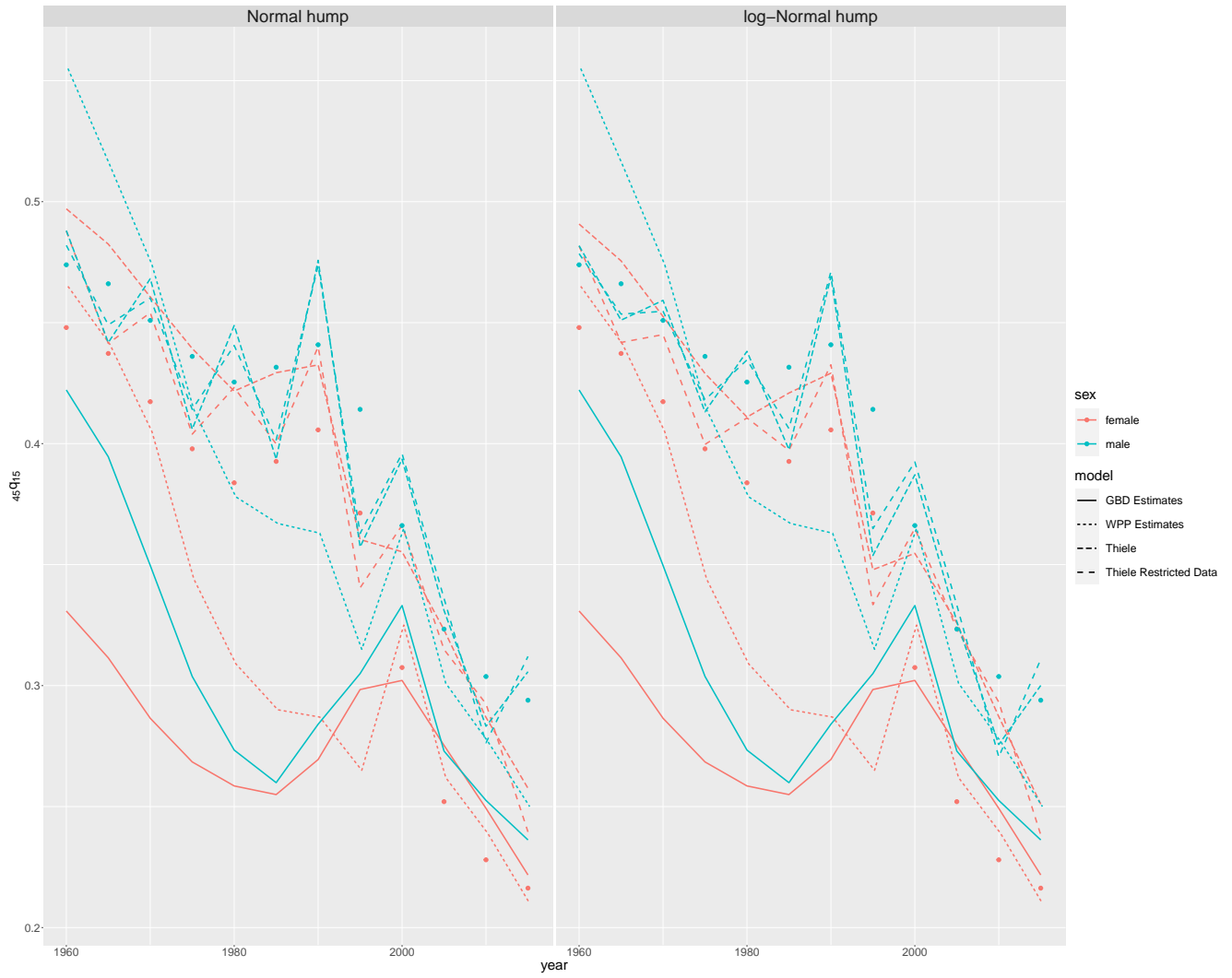
Figure 3: Estimated $_{45}q_{15}$
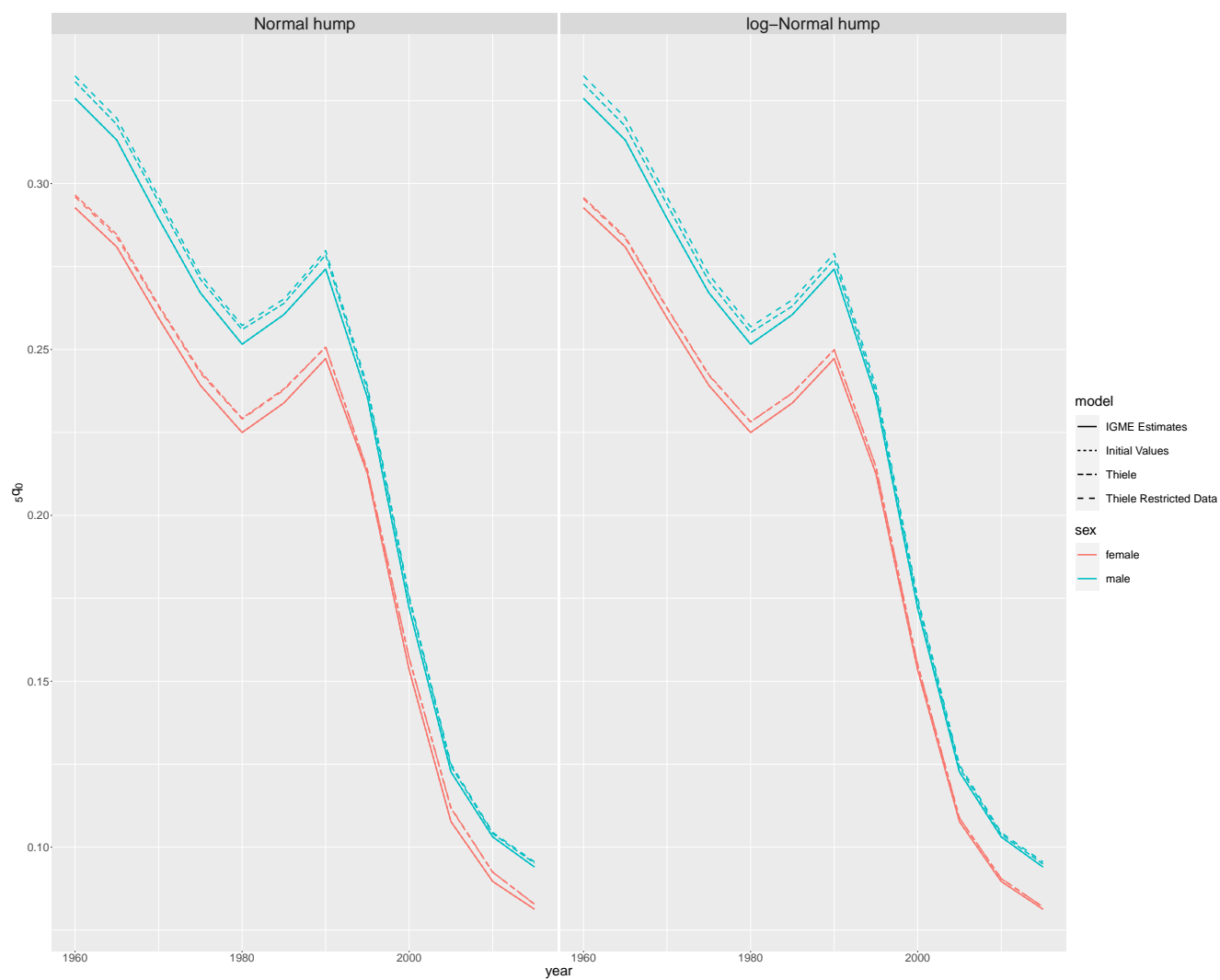
Figure 4: Estimated $_5q_0$
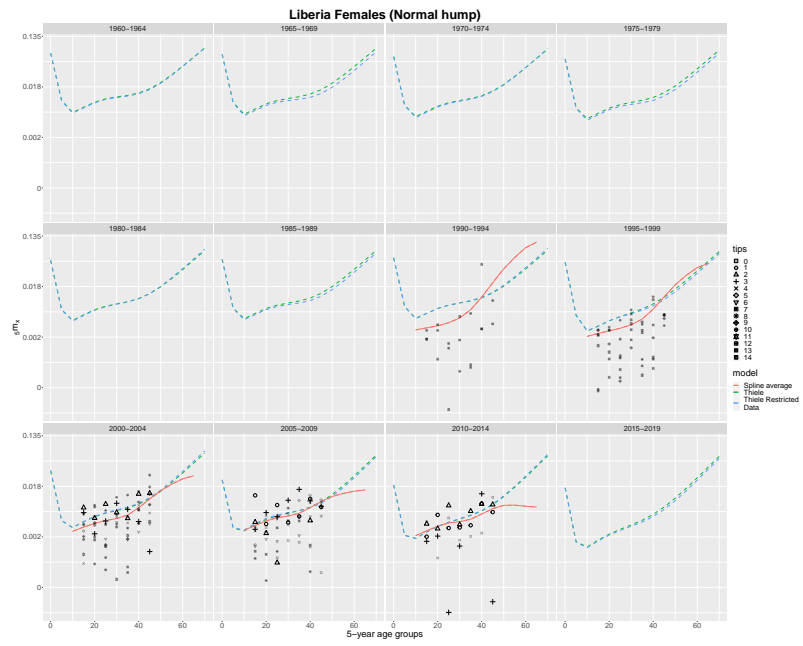
Figure 5: Mortality Schedules
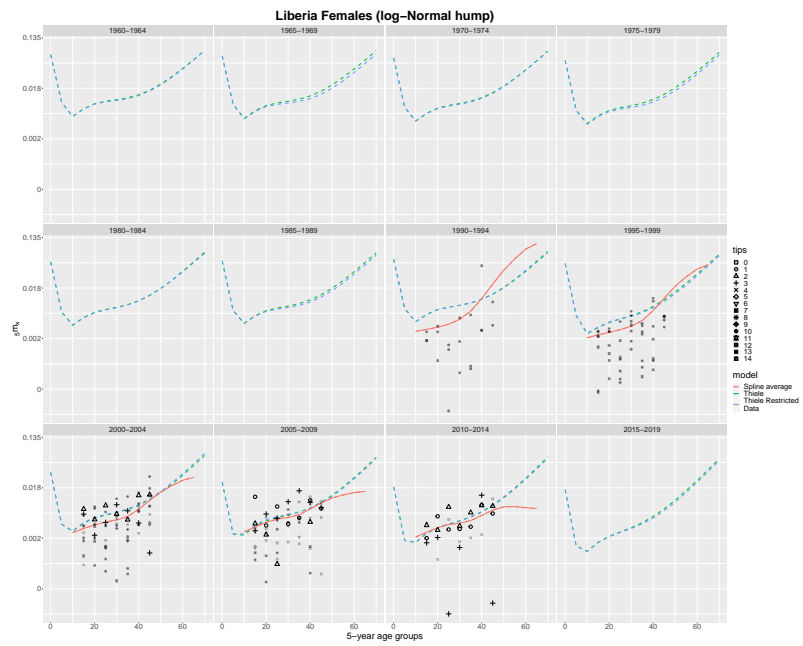
Figure 6: Mortality Schedules
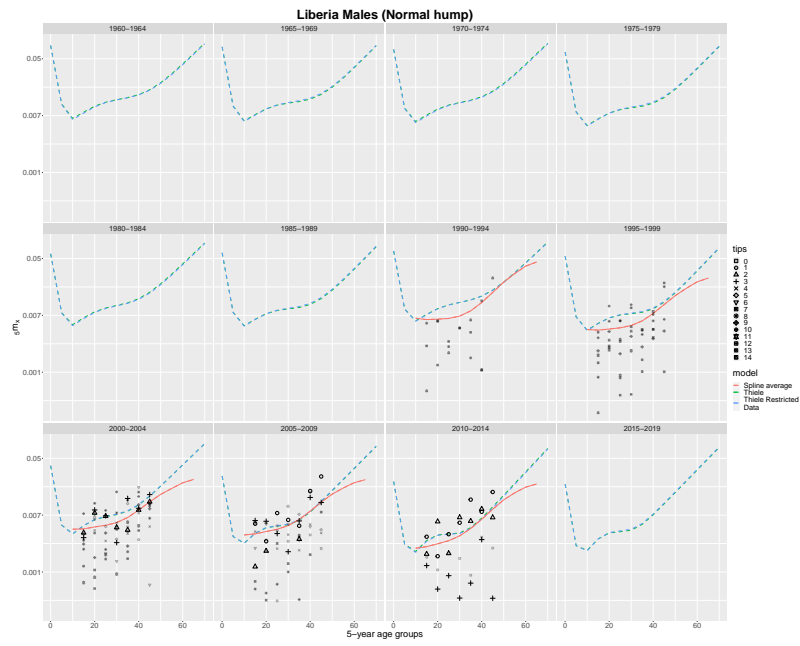
Figure 7: Mortality Schedules
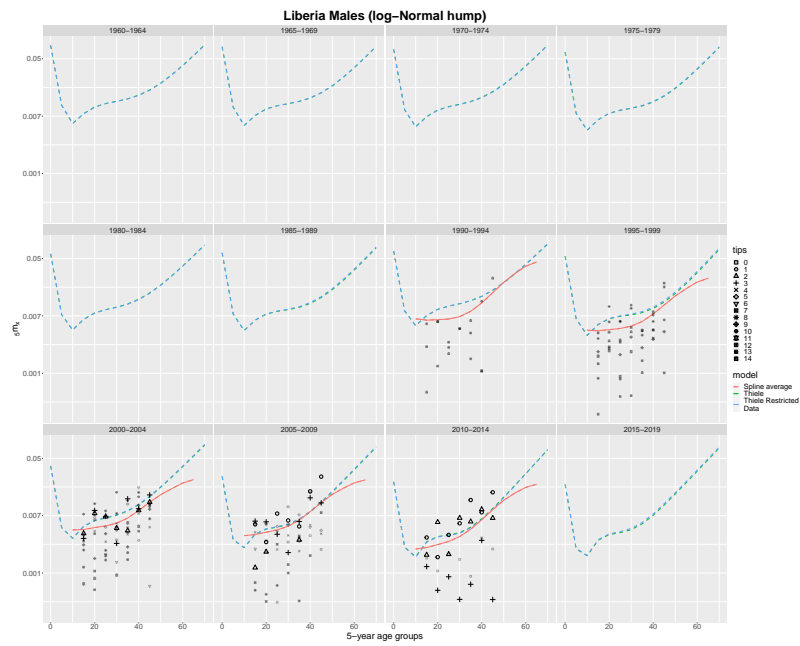
Figure 8: Mortality Schedules
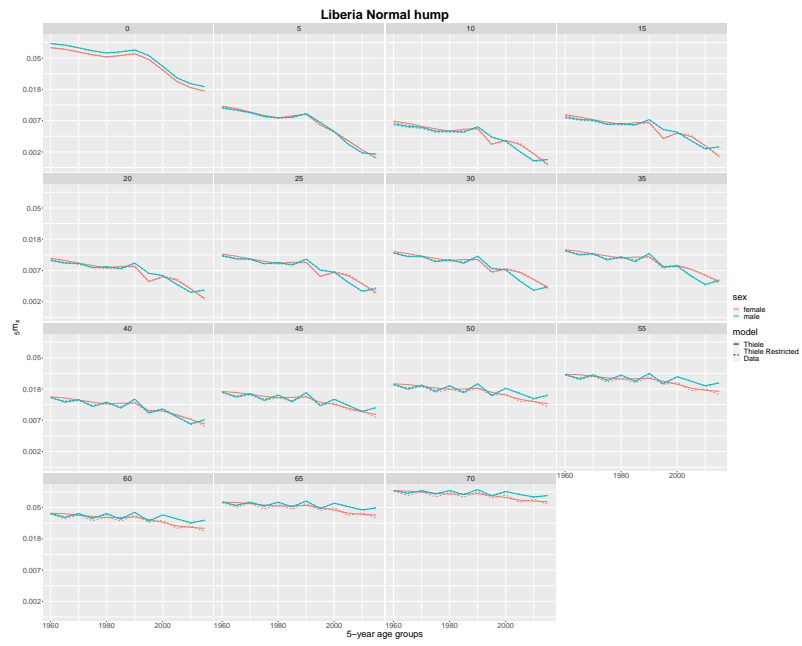
Figure 9: Mortality Schedules
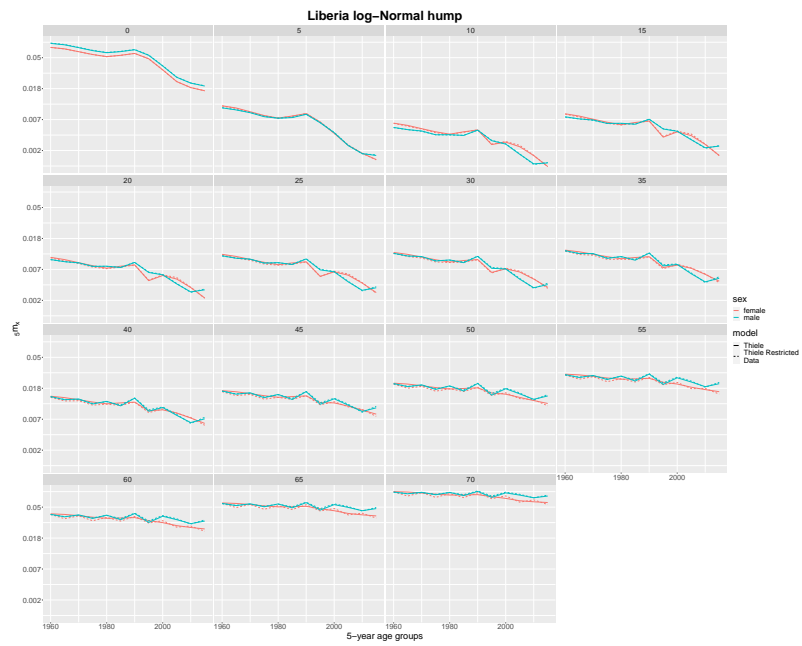
Figure 10: Mortality Schedules

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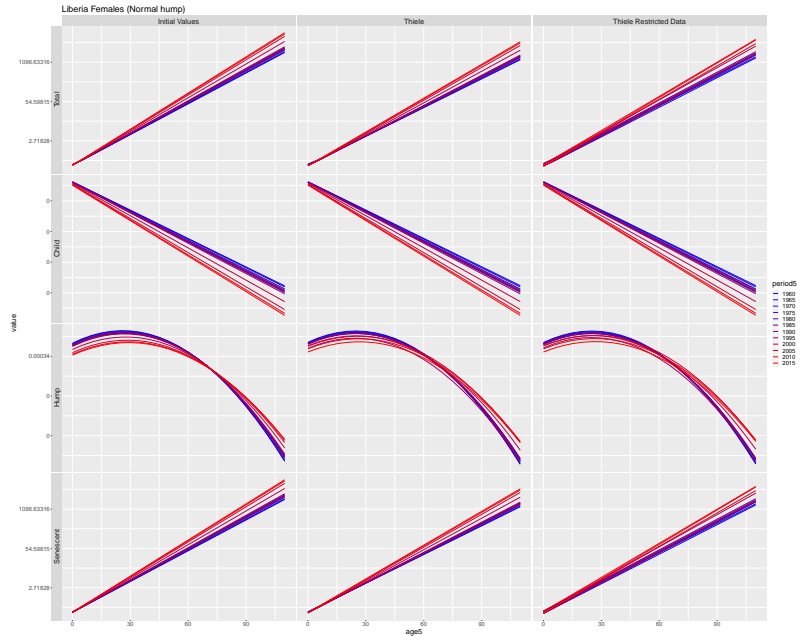
Figure 11: Thiele Decomposed
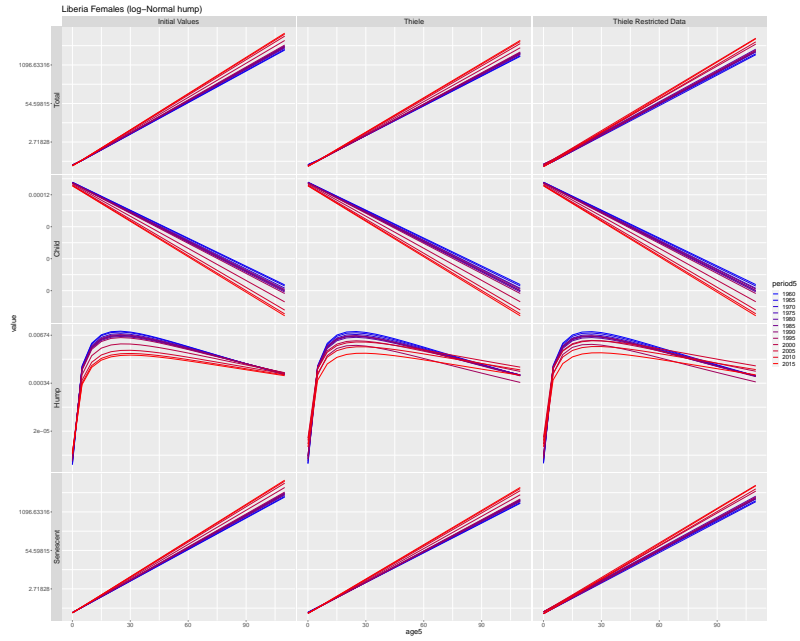
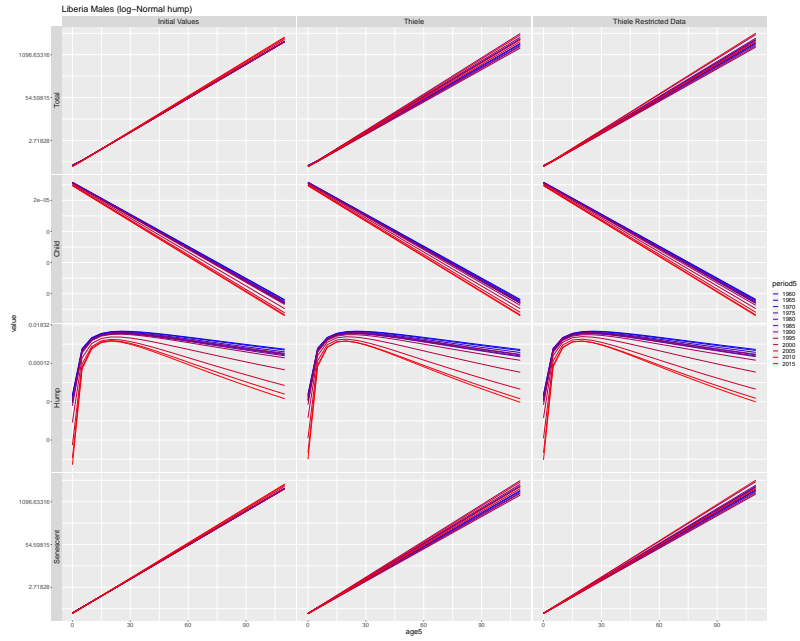Figure 12: Thiele Decomposed
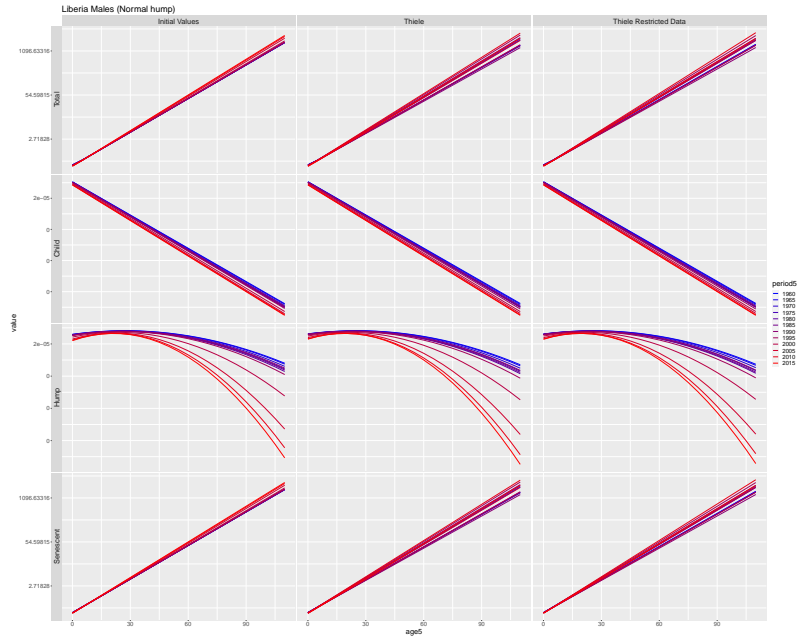
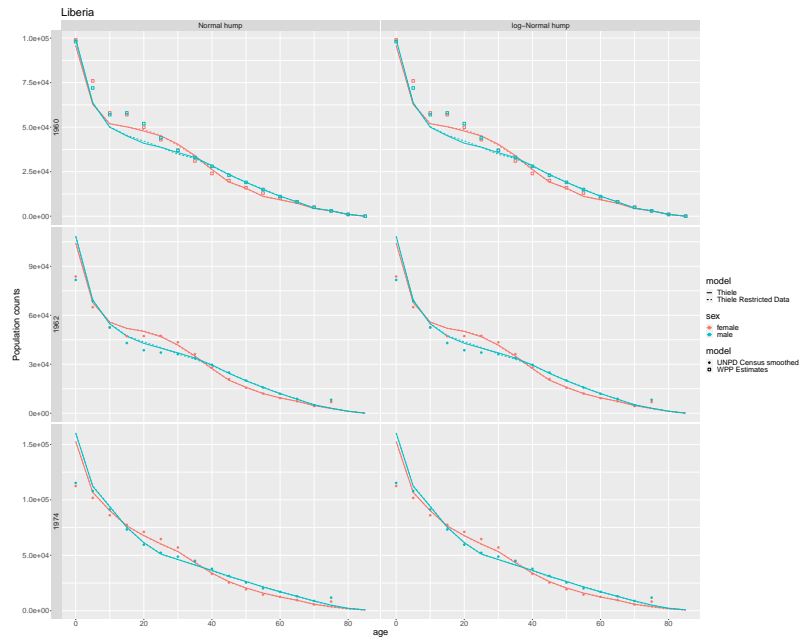Figure 13: Thiele Decomposed
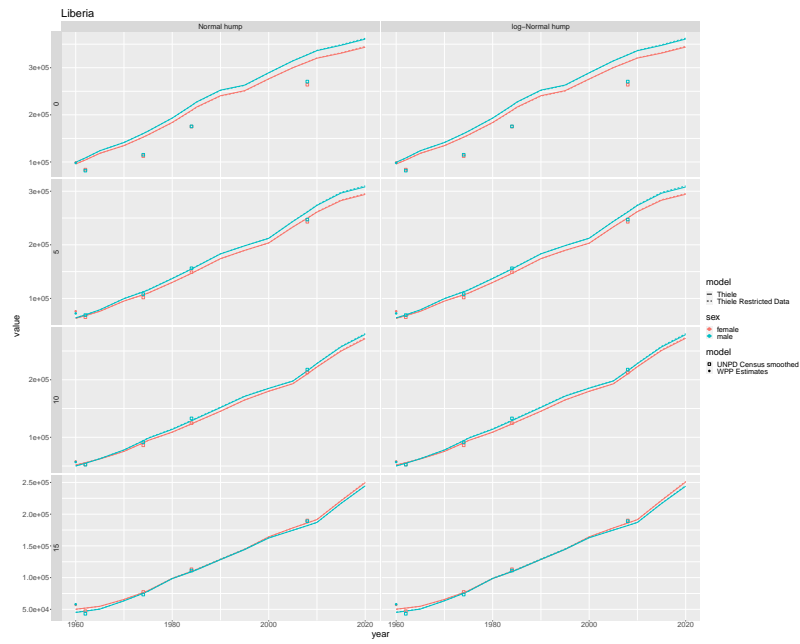

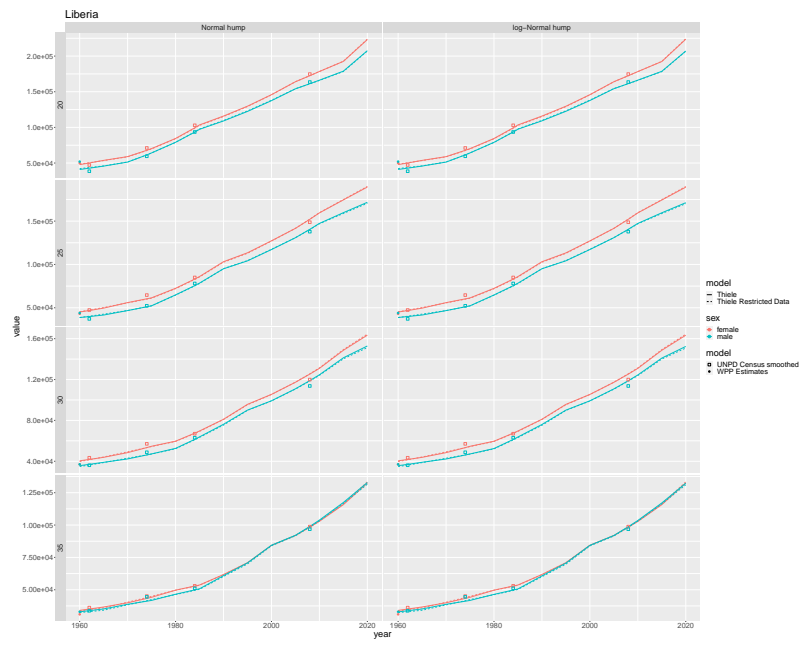Figure 14: Thiele Decomposed

Figure 15: Population
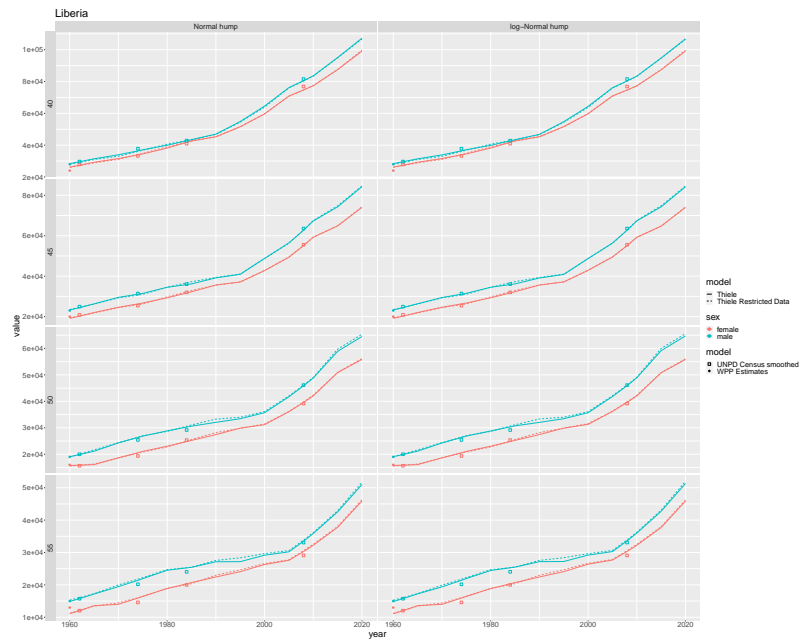

Figure 16: Population
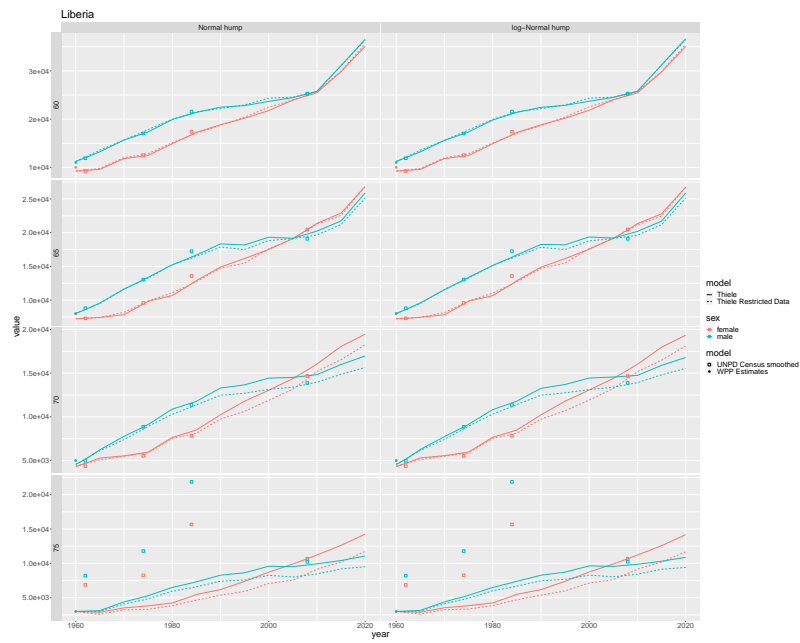
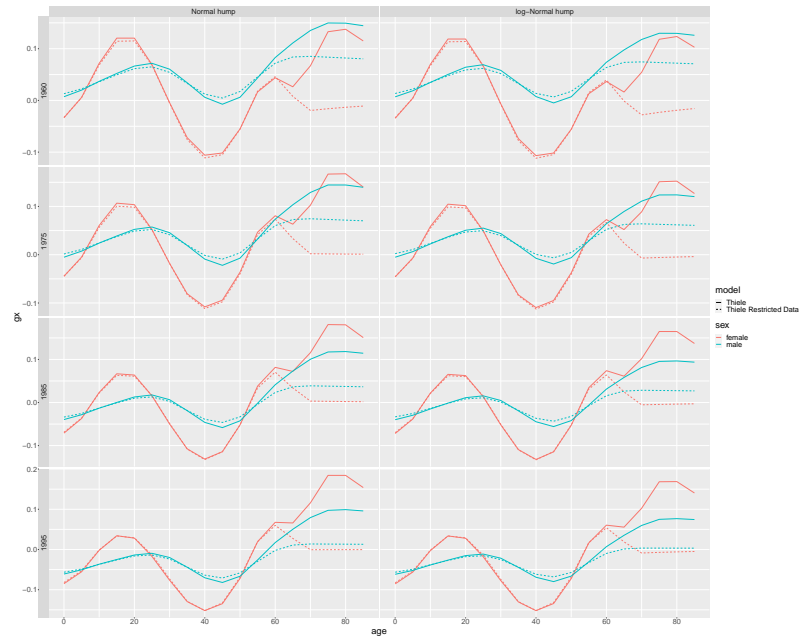Figure 17: Population

Figure 18: Population

13
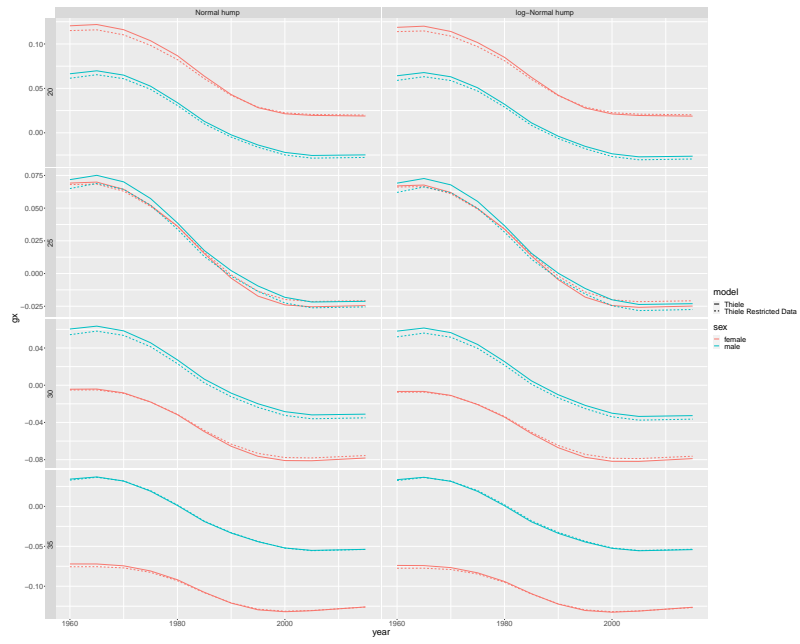
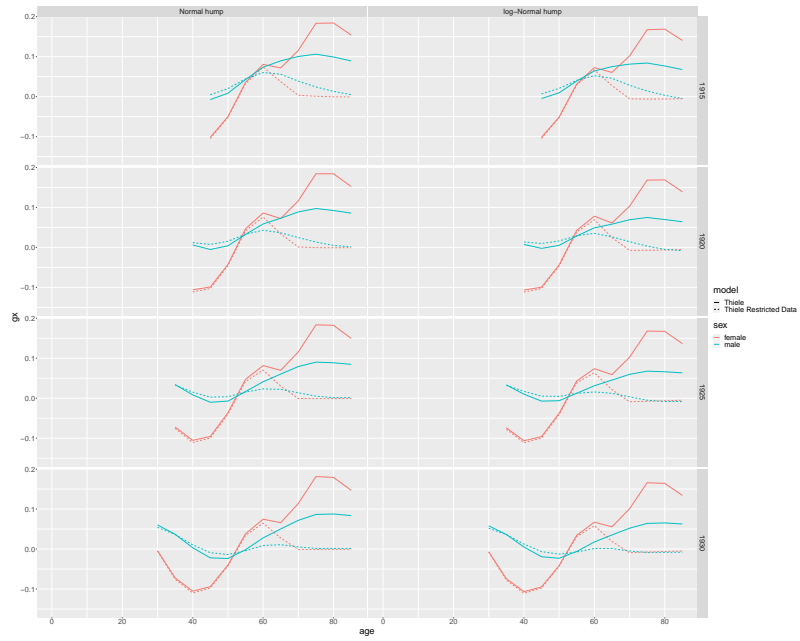Figure 19: Population

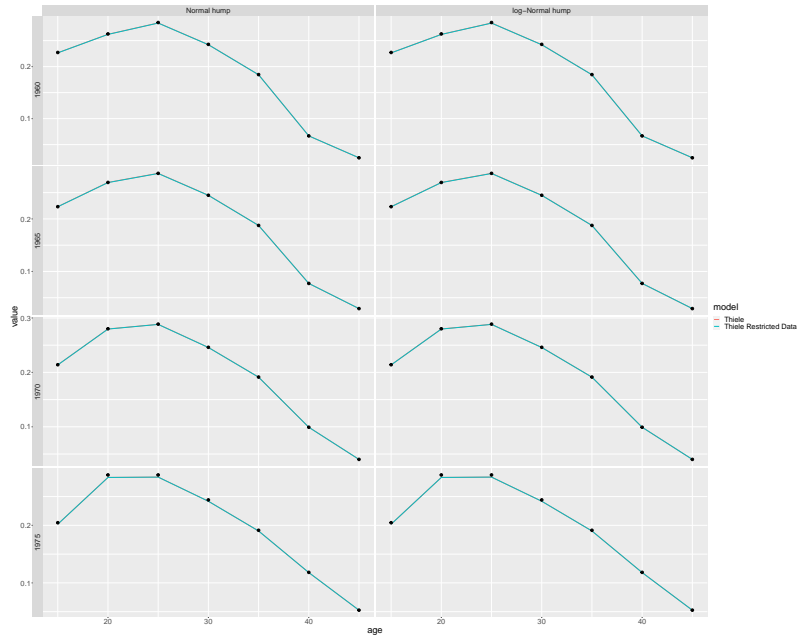Figure 20: Migration

14

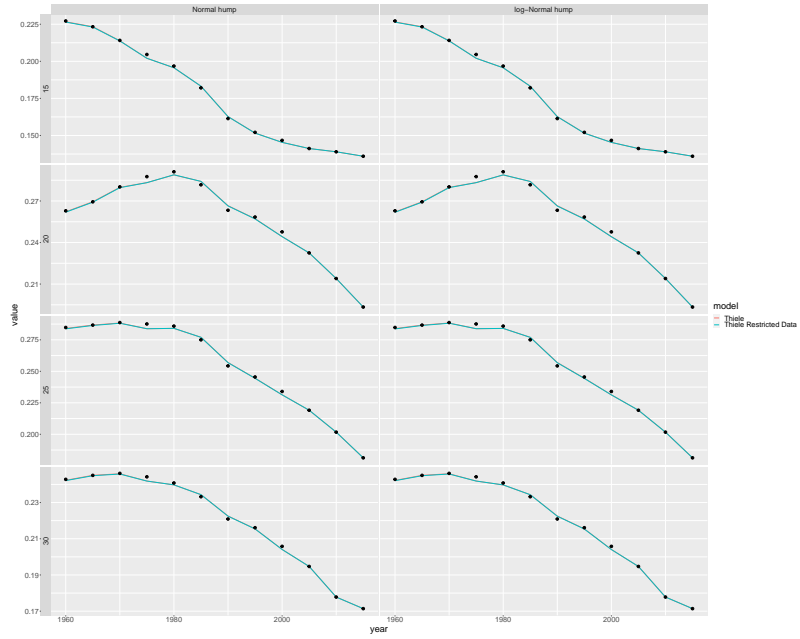Figure 21: Migration

Figure 22: Migration

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Figure 23: Fertility

Figure 24: Fertility