Uganda

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

## # A tibble: 18 x 5
##    aggr.age  `1969`    `1991`    `2002`    `2014`
## *     <dbl>   <dbl>     <dbl>     <dbl>     <dbl>
## 1         0 930129. 1588010.  2272297   2957078
## 2         5 731111. 1300185.  2007532.  2712294
## 3        10 549558. 1094822.  1722724   2417842.
## 4        15 434495.  945137.  1428367   2069875.
## 5        20 390729.  810596.  1179626.  1717473.
## 6        25 361647.  660747.   950086.  1368221.
## 7        30 305570.  496738.   724970.  1059694.
## 8        35 242940.  366751.   549253.   829410.
## 9        40 193769.  286792.   417383    647323.
## 10       45 159740.  241832.   315234.   507612.
## 11       50 130663.  200909.   246670.   399629
## 12       55 100014.  157153.   201330.   298196.
## 13       60  78521.  128719.   166978.   227526.
## 14       65  59246.  101687.   131660.   184058.
## 15       70  40716.   73663.    97664.   142292.
## 16       75  27101.   40110.    69288.   100882
## 17       80  20993.   62896.    47141     67594.
## 18       85  22249.      NA     51094.    87729

## [1] "Census Males"

## # A tibble: 18 x 5
##    aggr.age  `1969`    `1991`    `2002`    `2014`
## *     <dbl>   <dbl>     <dbl>     <dbl>     <dbl>
## 1         0 909559. 1566538.  2272126   3173950
## 2         5 739528. 1297857.  2006388.  2826413.
## 3        10 575597. 1093664.  1709150.  2419458.
## 4        15 436525.  893378.  1346887.  1935705.
## 5        20 361659.  724412.  1029835.  1487535
## 6        25 337569.  599335.   838098.  1159955.
## 7        30 306226.  470448.   684944.   921679
## 8        35 256342.  351489.   523329.   744548.
## 9        40 207287.  271554.   387733    603126
## 10       45 172495.  229568.   284792.   473080.
## 11       50 141999.  194606.   213544.   354774.
## 12       55 111405.  154572.   174064.   253985.
## 13       60  89880.  123911.   152881.   187860.
## 14       65  69752.   97836.   126586.   145840.
## 15       70  50089.   73178.    93752.   109232.
## 16       75  34483.   45277.    65857.    76481.
## 17       80  26779.   69483.    43377     48602.
## 18       85  34082.      NA     44460     58889
```

Thiele log-Normal Hump RW

```
##    user  system elapsed
##   34.25    0.97   35.36
```

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

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

```
## Warning in fit_tmb(input.thiele.loghump.oag.vec.RW.re, inner_verbose = FALSE, :
## convergence error: false convergence (8)
```

```
##    user  system elapsed
##   62.11    0.73   63.11
```
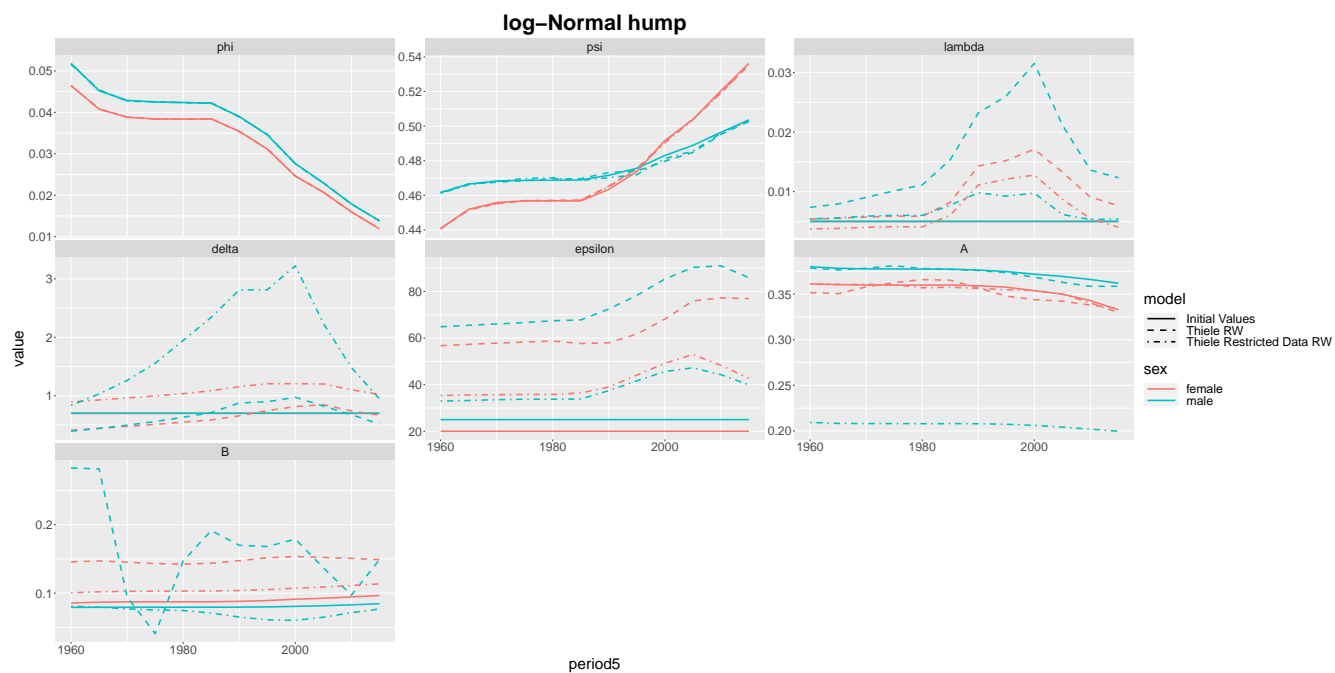
```
## [1] "false convergence (8)"
```

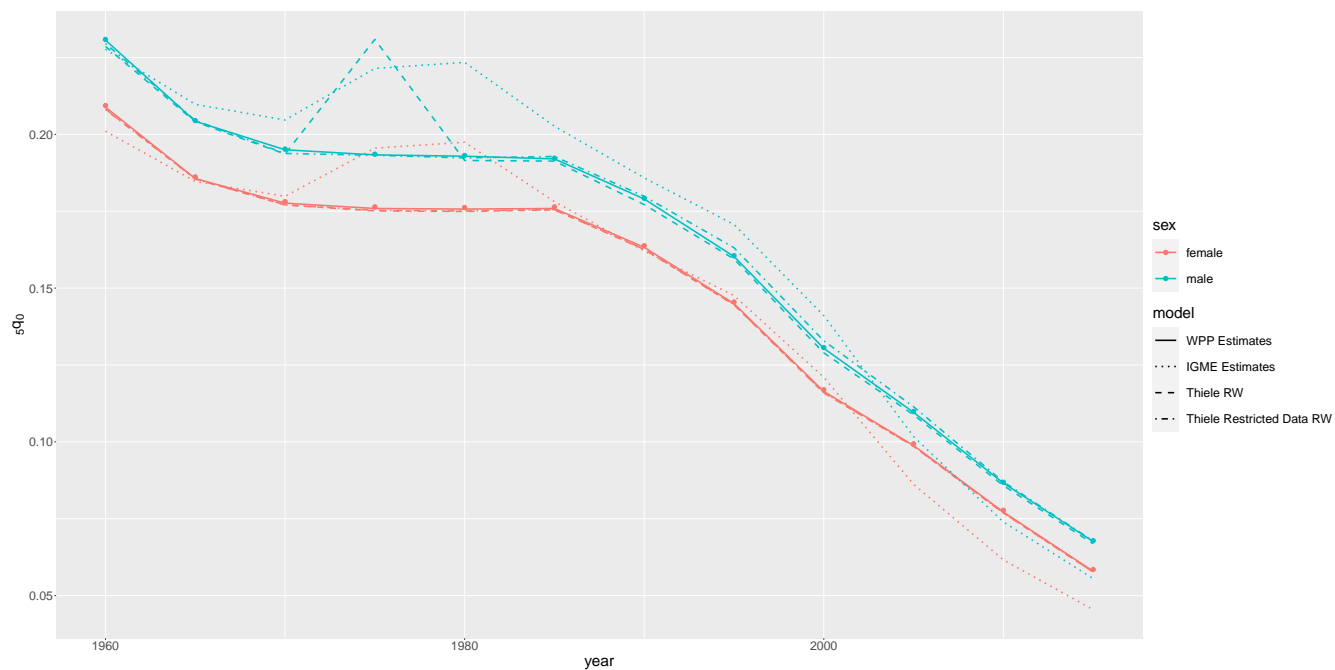Figure 1: Estimated parameters

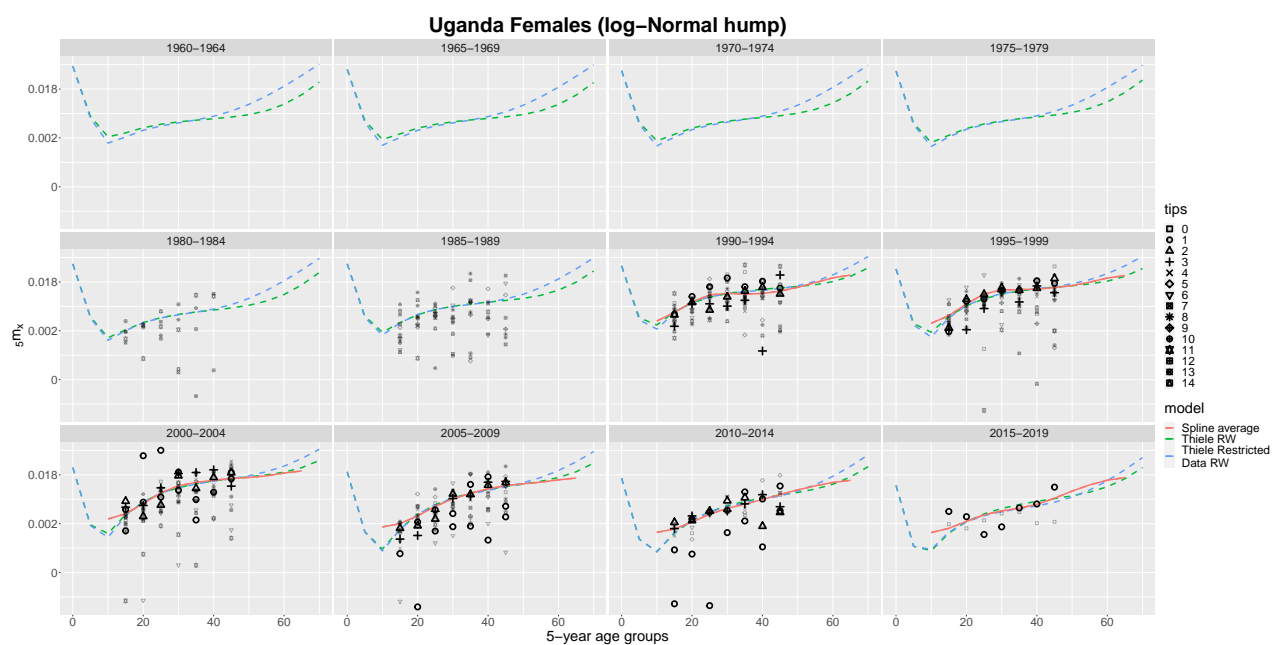Figure 2: Estimated $_{45}q_{15}$

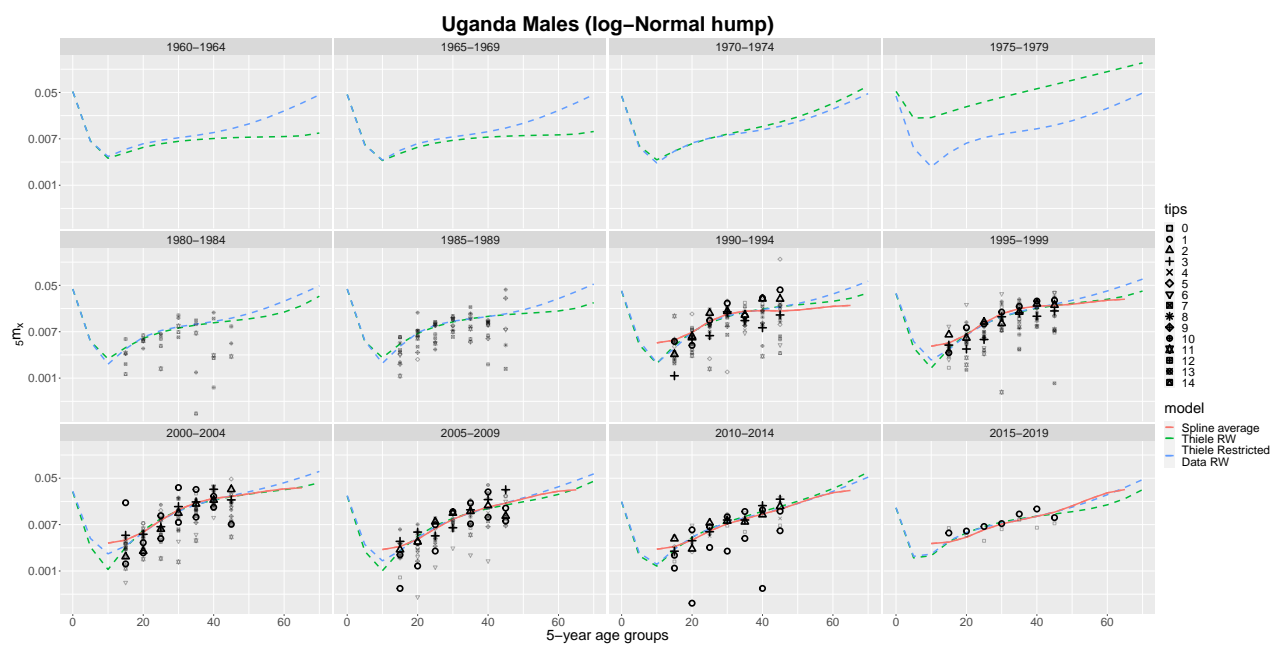Figure 3: Estimated $_5q_0$

4

Figure 4: Mortality Schedules

Figure 5: Mortality Schedules

5
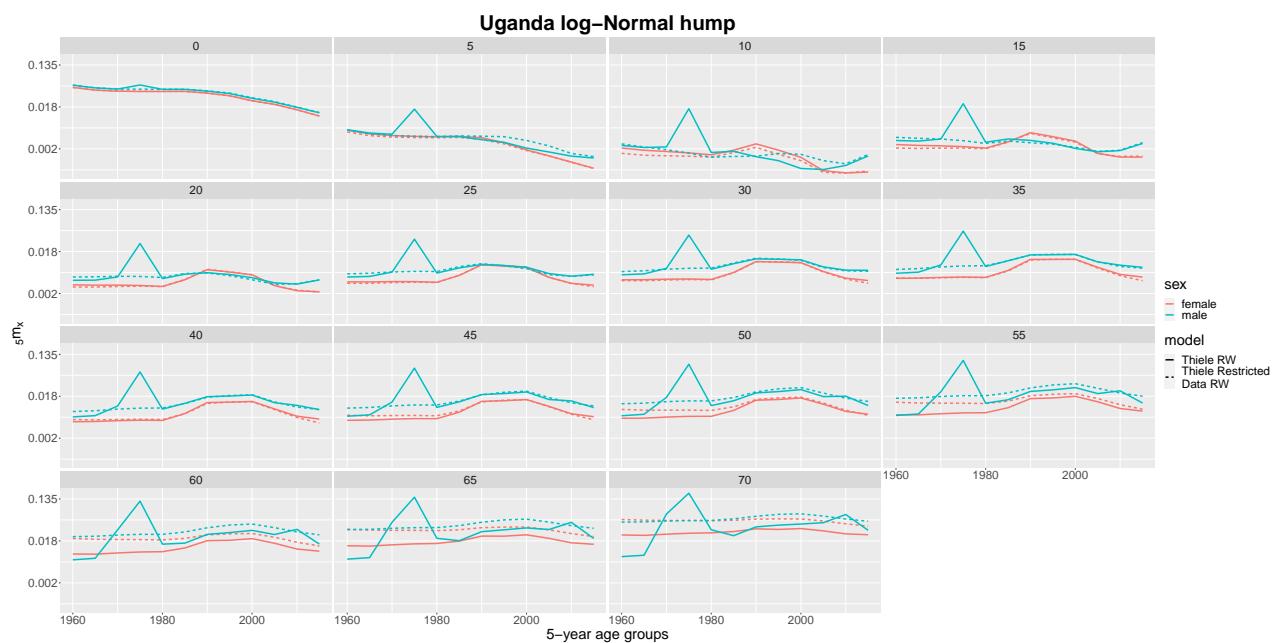
Figure 6: Mortality Schedules
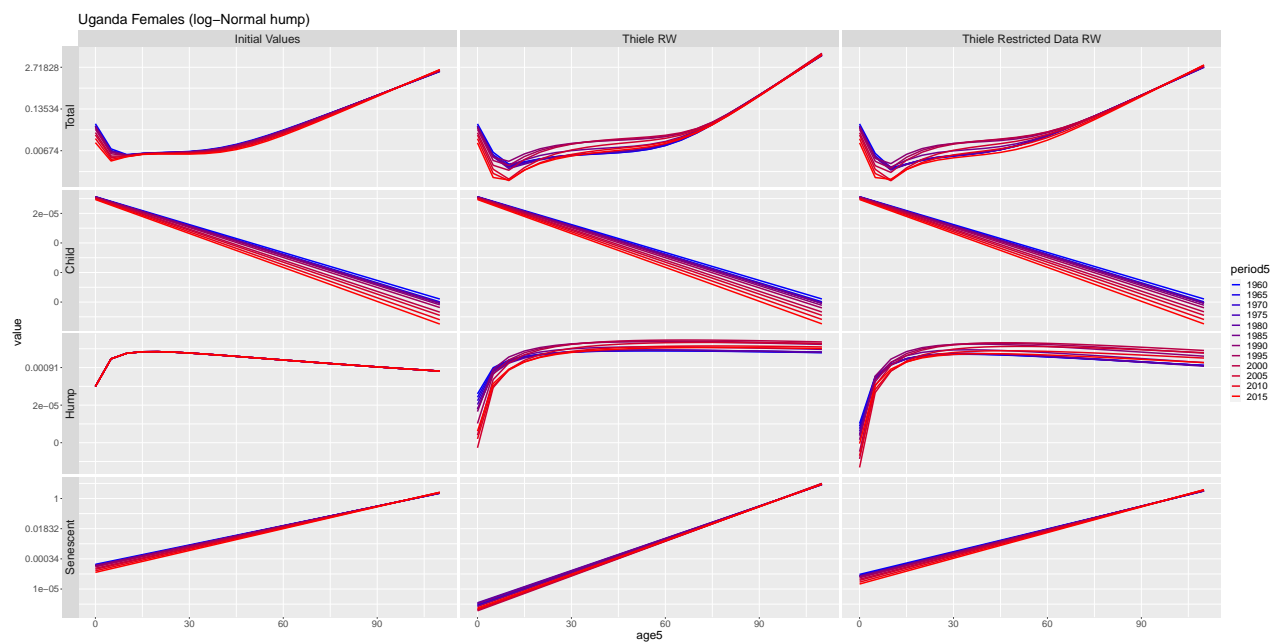
Figure 7: Thiele Decomposed
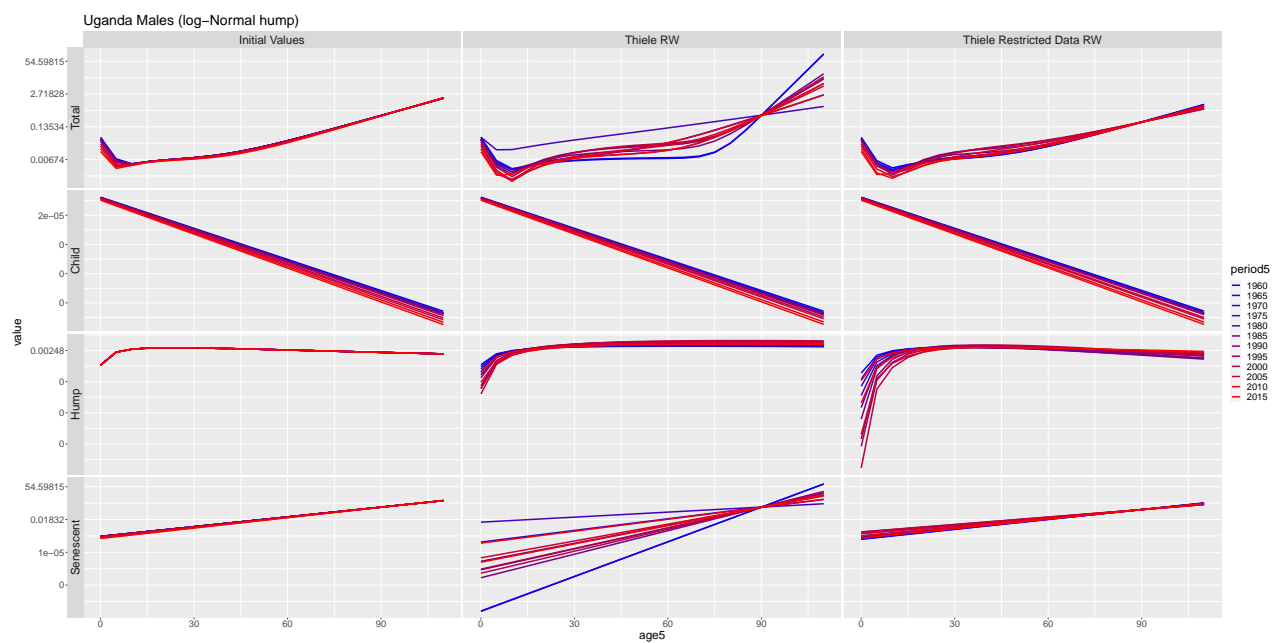
Figure 8: Thiele Decomposed
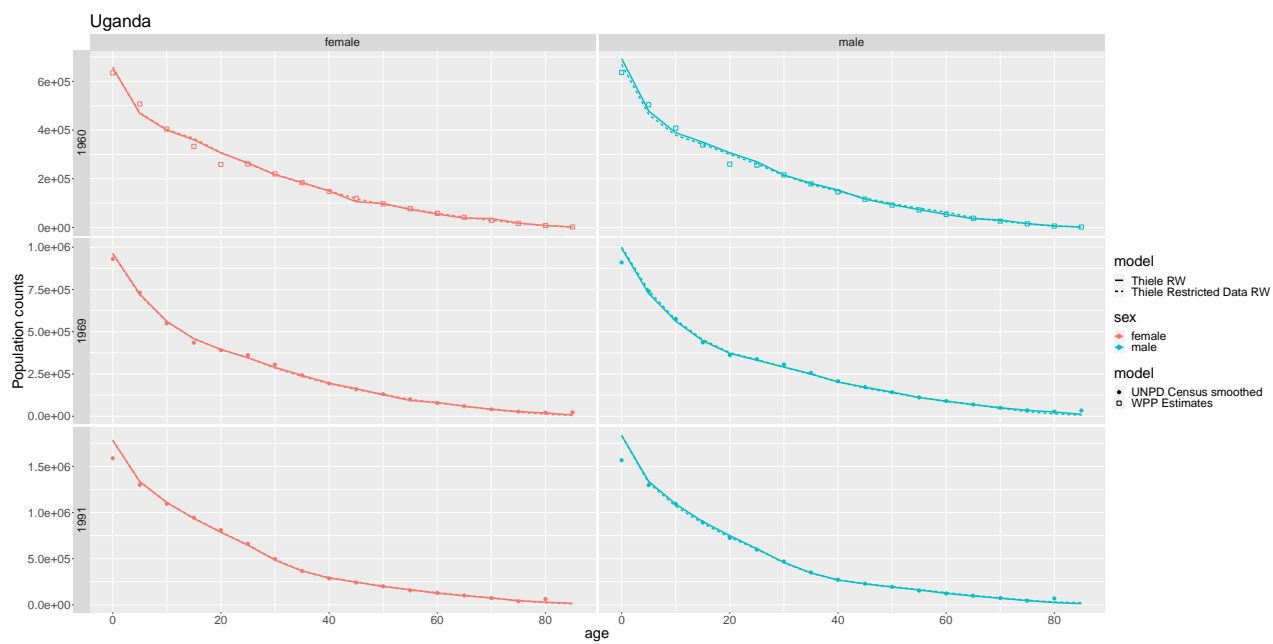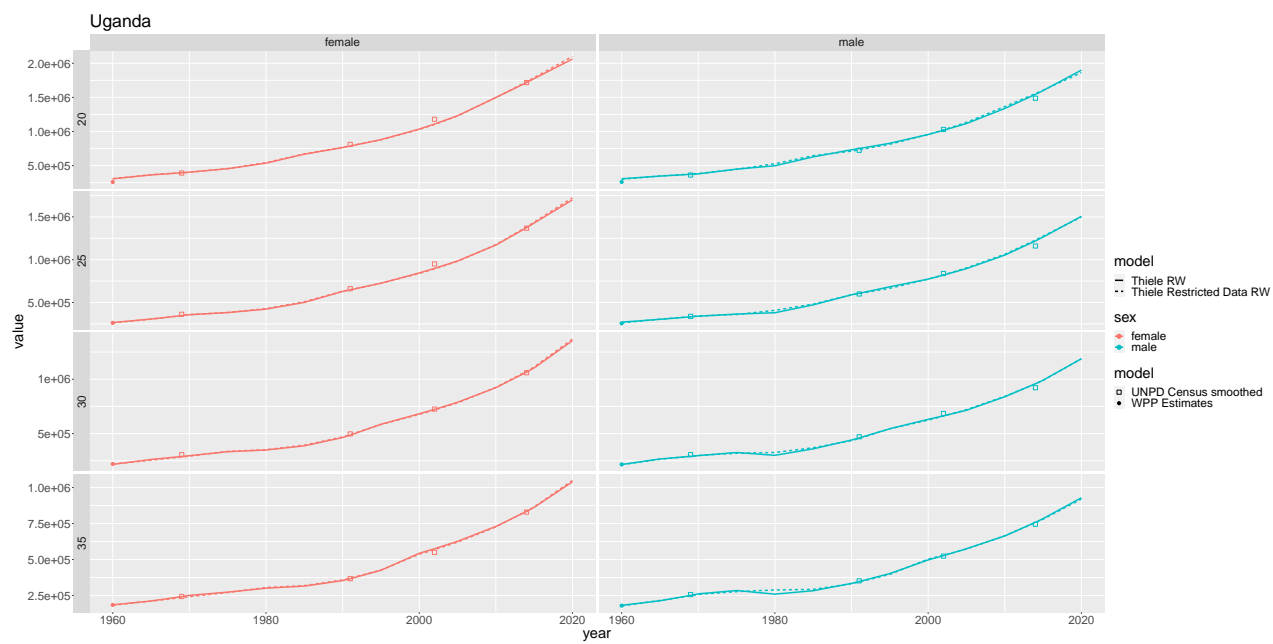

Figure 9: Population
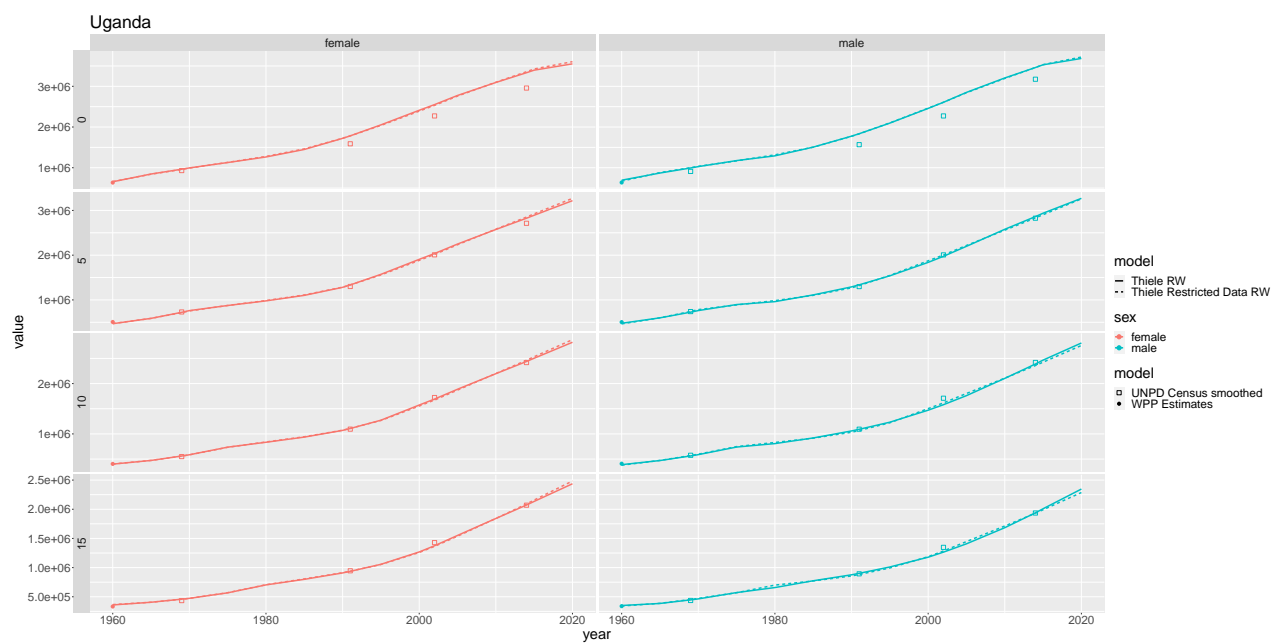
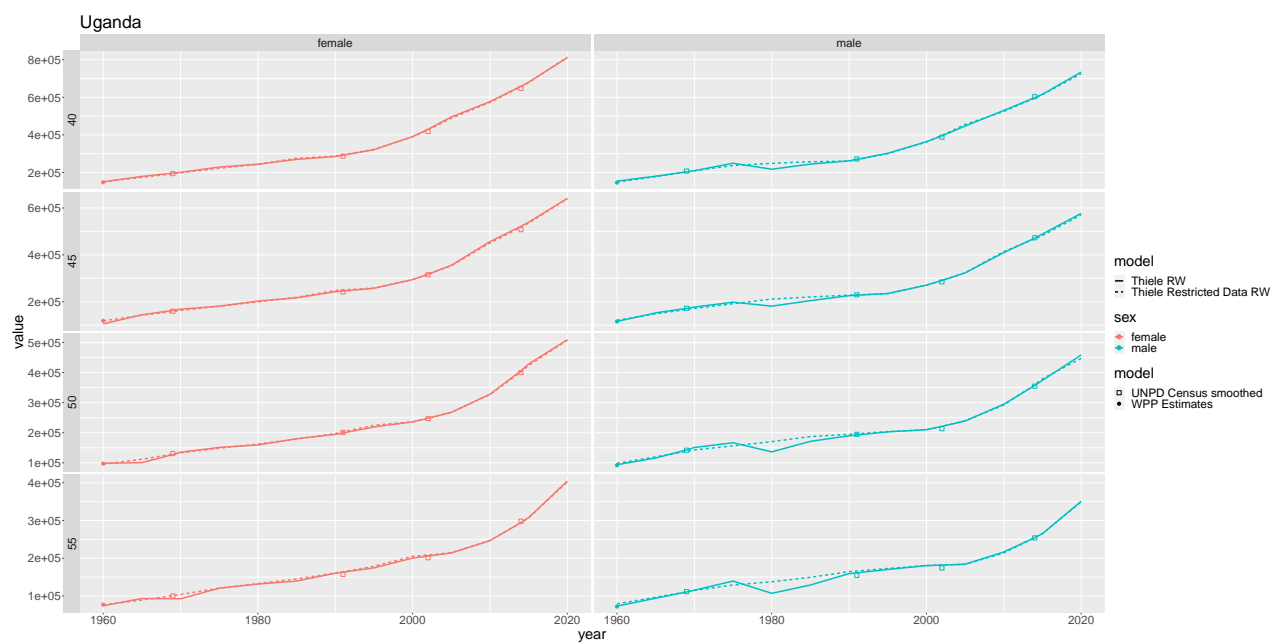Figure 10: Population
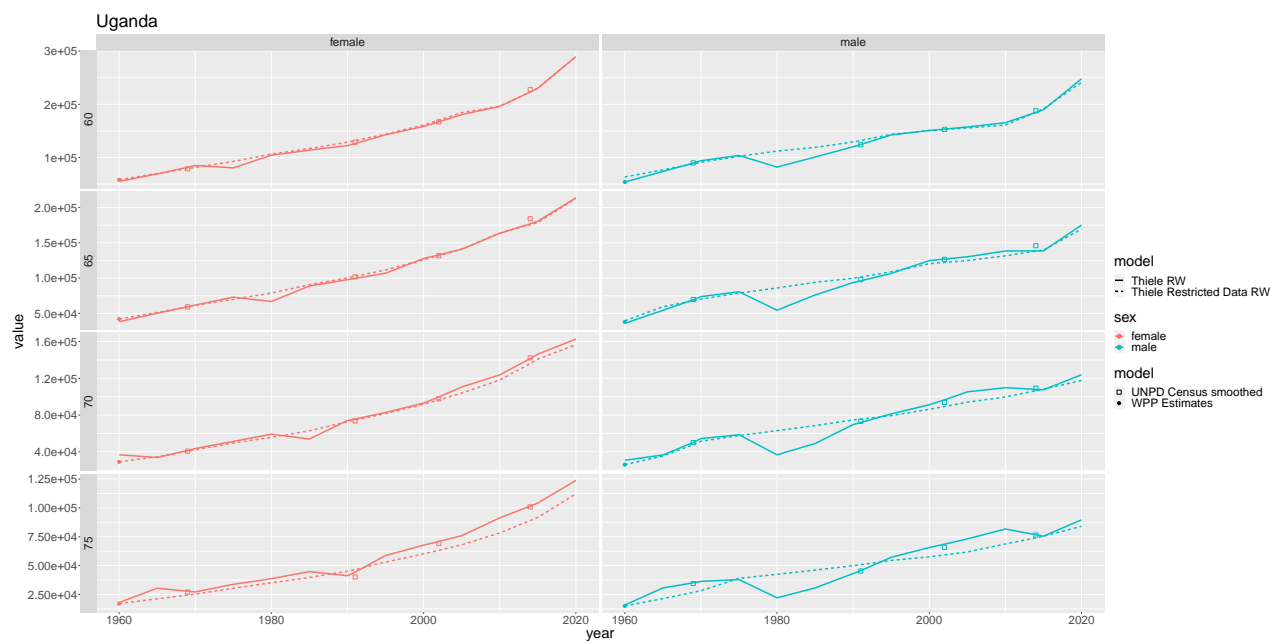

Figure 11: Population
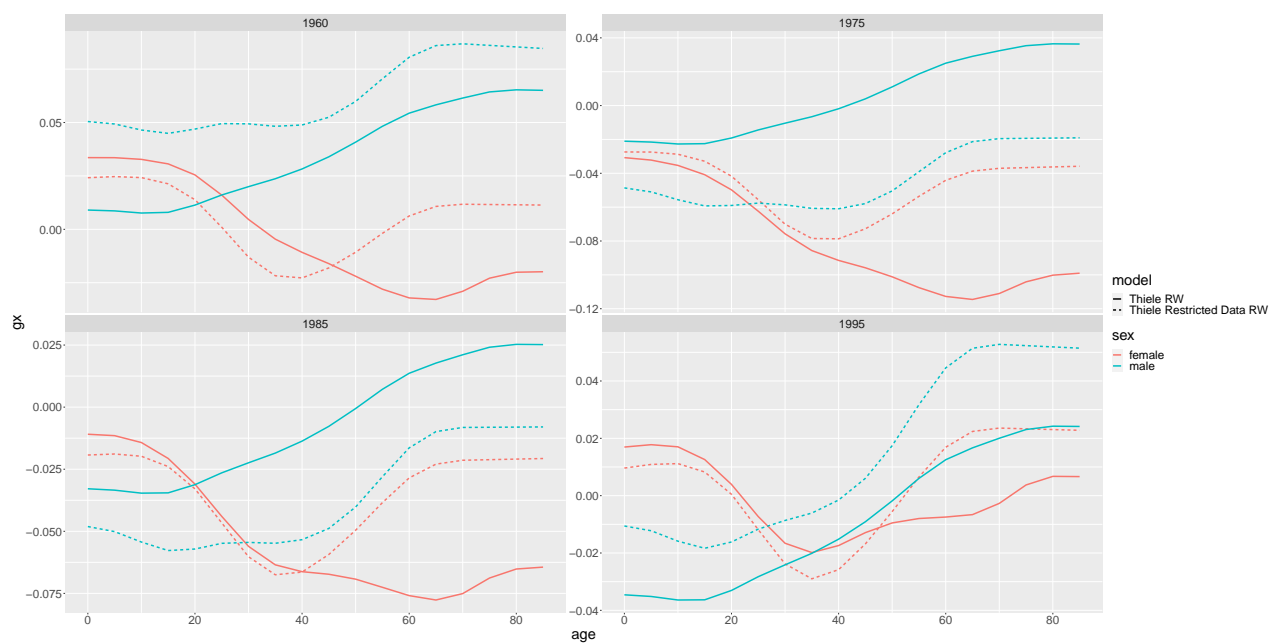
8

Figure 12: Population
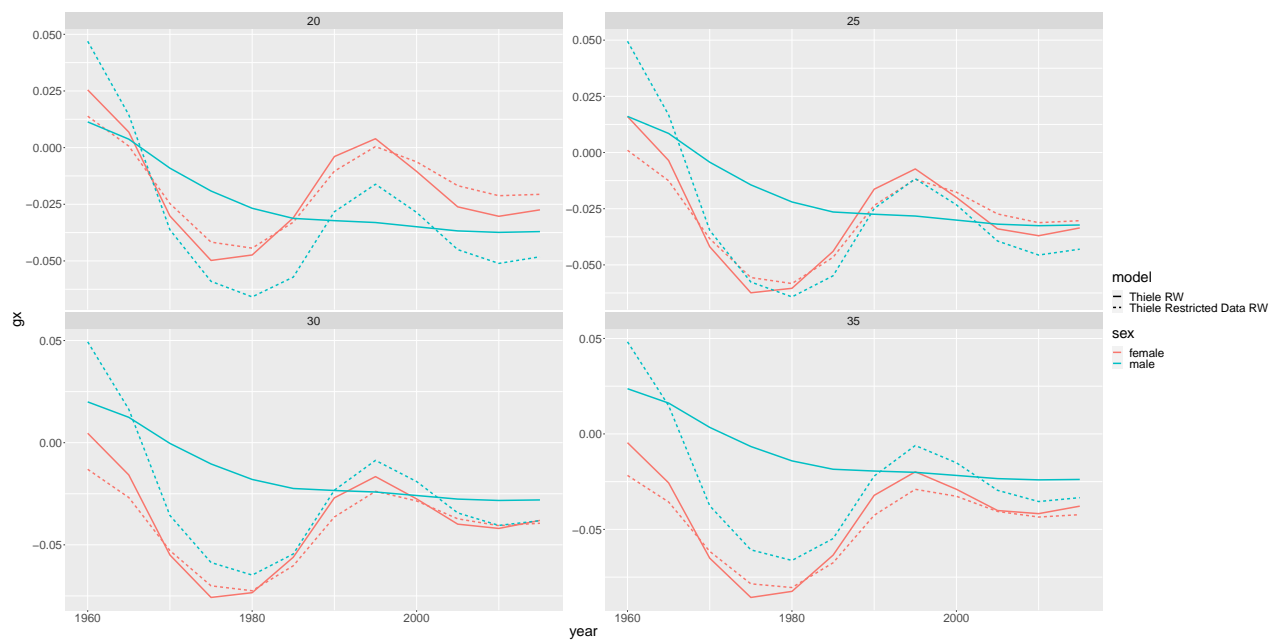

Figure 13: Population

9

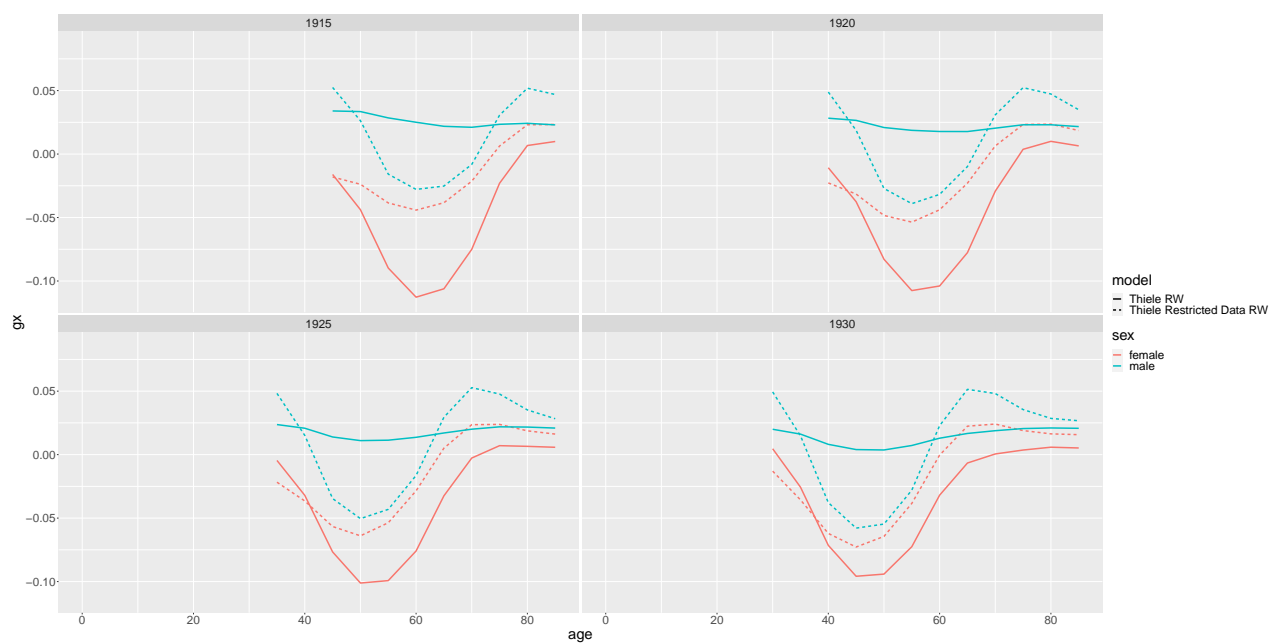Figure 14: Migration

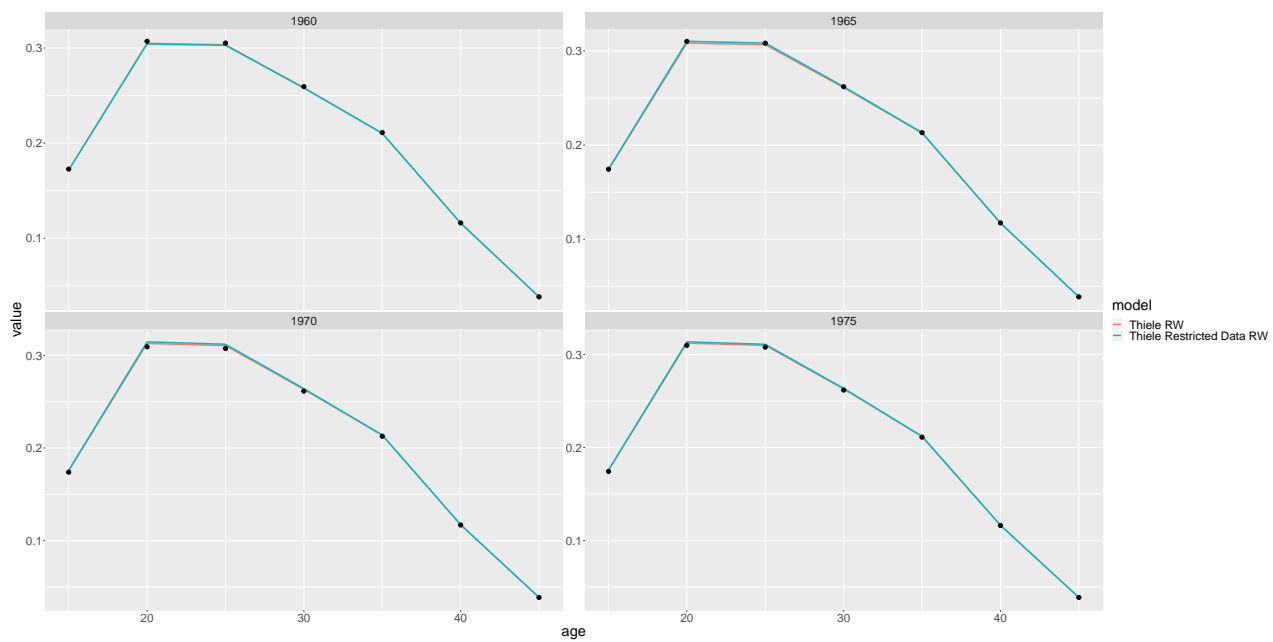Figure 15: Migration
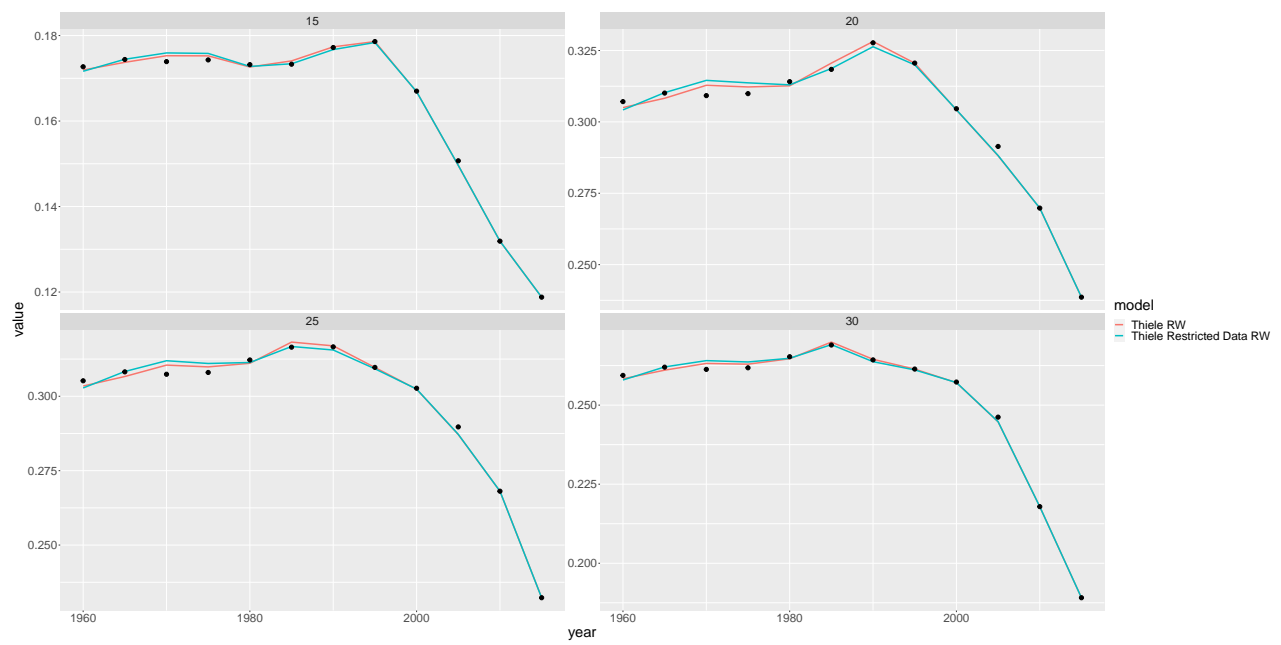
Figure 16: Migration

Figure 17: Fertility

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Figure 18: Fertility