Mali

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

## # A tibble: 18 x 5
##    aggr.age  `1976`   `1987`   `1998`    `2009`
## *     <dbl>   <dbl>    <dbl>    <dbl>     <dbl>
## 1         0 589461.  713518.  824505  1320900.
## 2         5 469318.  587737.  752056. 1140163.
## 3        10 365111.  454909.  626383.  935907.
## 4        15 313740.  372253.  514432.  776702.
## 5        20 283085.  329380.  426025.  651759.
## 6        25 256486.  293568.  357175.  544213.
## 7        30 221242.  249780.  305540.  441083.
## 8        35 176439.  204643.  254144.  346151.
## 9        40 140031.  168372.  204333   279300.
## 10       45 112098.  138593.  164032.  230165.
## 11       50  92157.  114941.  134674.  187778.
## 12       55  77736.   96562.  110227.  148978.
## 13       60  65678.   81473.   90043   116856.
## 14       65  48225.   61222.   68496.   87673.
## 15       70  32268.   40138.   47588.   62602.
## 16       75  22262.   20646.   25240    36935.
## 17       80  17833.   28025.       0    44491.
## 18       85  14930.      NA       NA       NA

## [1] "Census Males"

## # A tibble: 18 x 5
##    aggr.age  `1976`   `1987`   `1998`    `2009`
## *     <dbl>   <dbl>    <dbl>    <dbl>     <dbl>
## 1         0 587090.  719841.  839795  1353138.
## 2         5 478652.  609625.  784428  1184616.
## 3        10 371670.  471434.  649420.  960509.
## 4        15 294640.  352163.  496697   741664.
## 5        20 236401.  274904.  378379.  570403.
## 6        25 201103.  230469.  303352.  461460.
## 7        30 183257.  202136.  263623.  393090.
## 8        35 162001.  178354.  231512.  332552.
## 9        40 137909.  156129.  194900.  279044.
## 10       45 116691.  134533.  161088.  233669.
## 11       50  99549.  115354.  134245   192469.
## 12       55  84109.   99363.  113027.  156346.
## 13       60  67783.   83852.   94609.  125246.
## 14       65  47273.   62772.   73709    94561.
## 15       70  30306.   40520.   52309.   67163.
## 16       75  20072.   21079.   29751    41651.
## 17       80  14093.   25047.       0    42759.
## 18       85  14057.      NA       NA       NA
```

Thiele log-Normal Hump RW

```
##    user  system elapsed
##   25.83    0.42   26.45
```

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

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

```
##    user  system elapsed
##   20.76    0.39   21.31
```
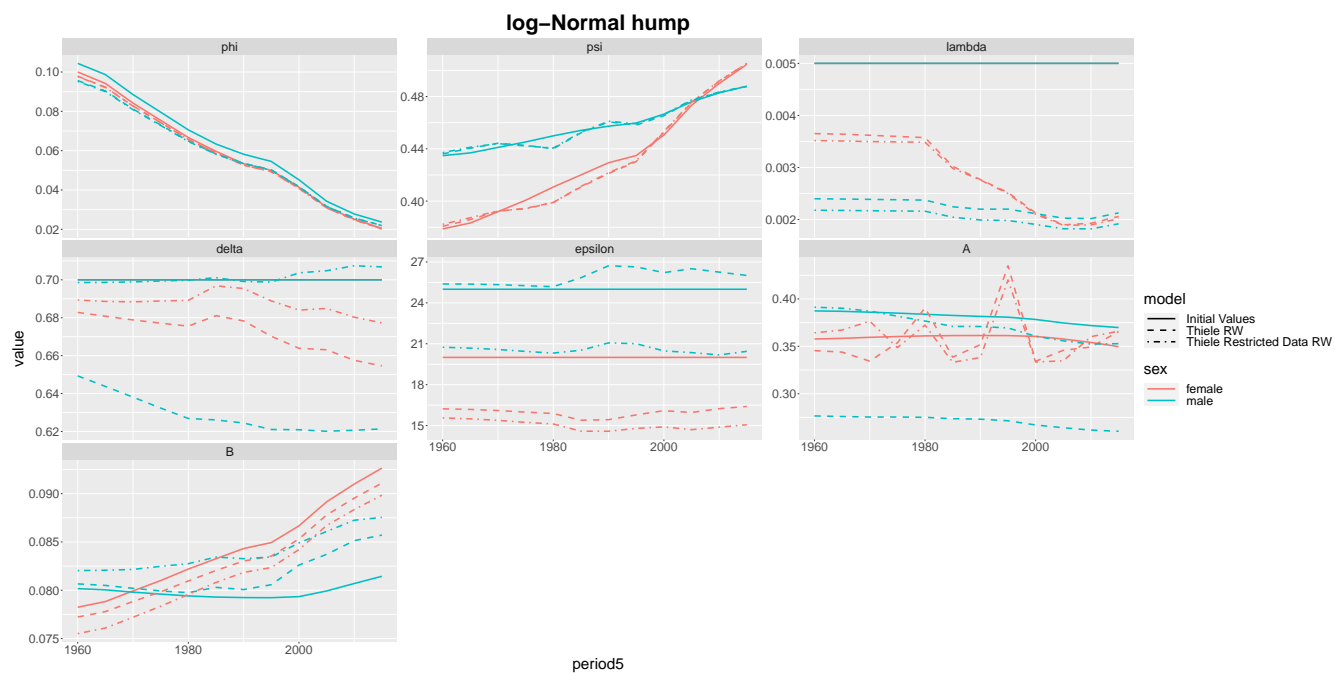
```
## [1] "relative convergence (4)"
```
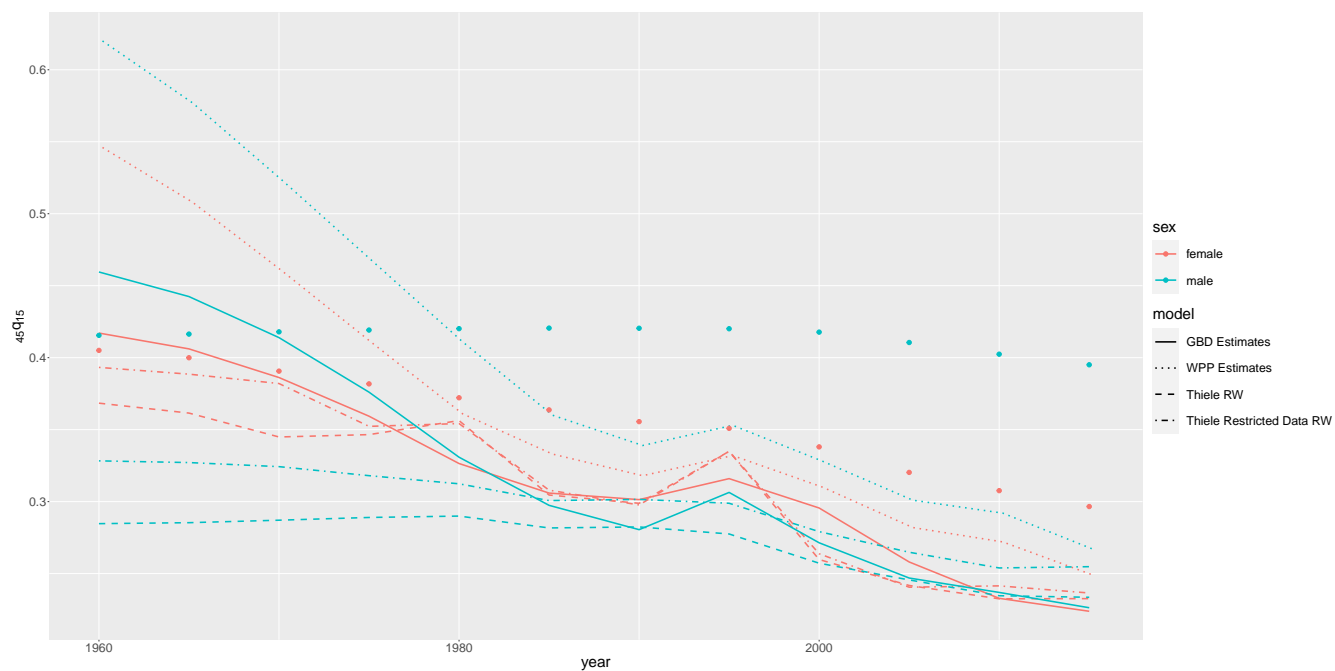
Figure 1: Estimated parameters

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

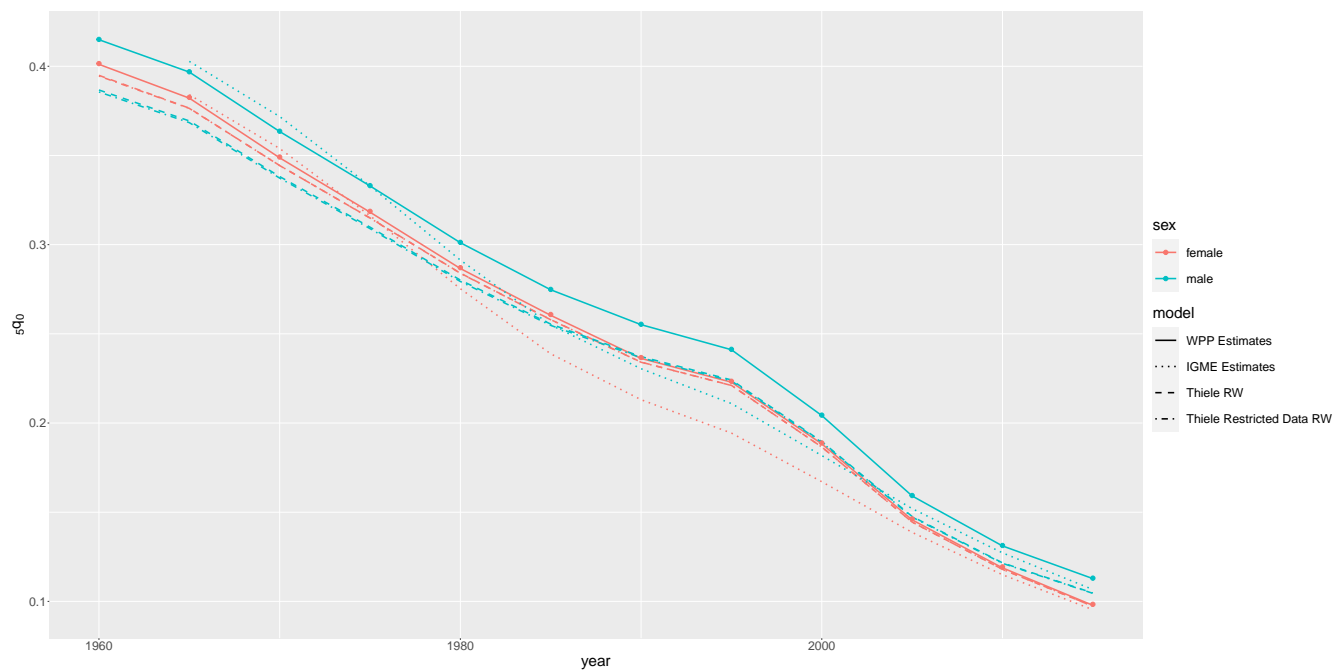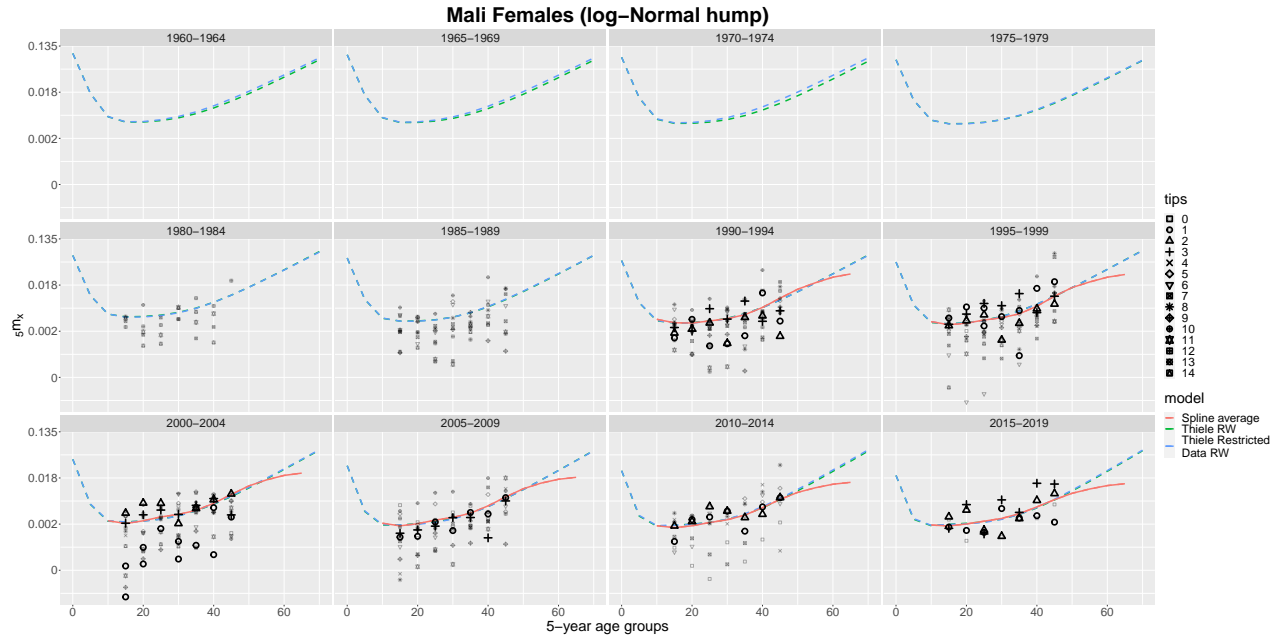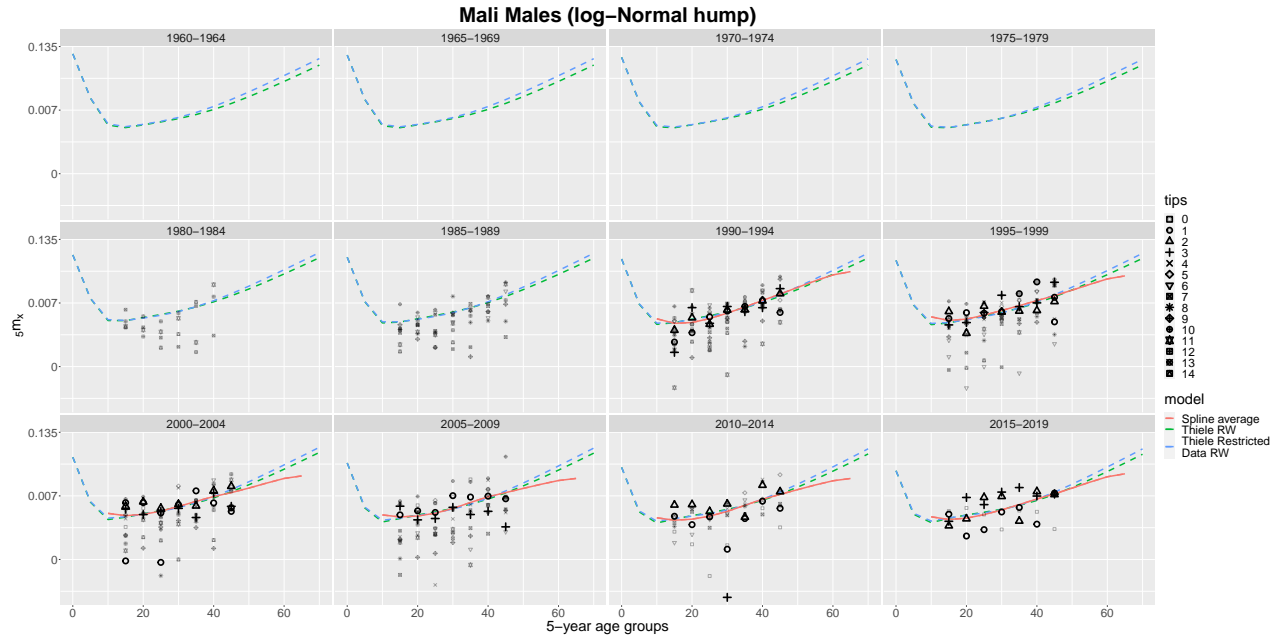Figure 3: Estimated $_5q_0$

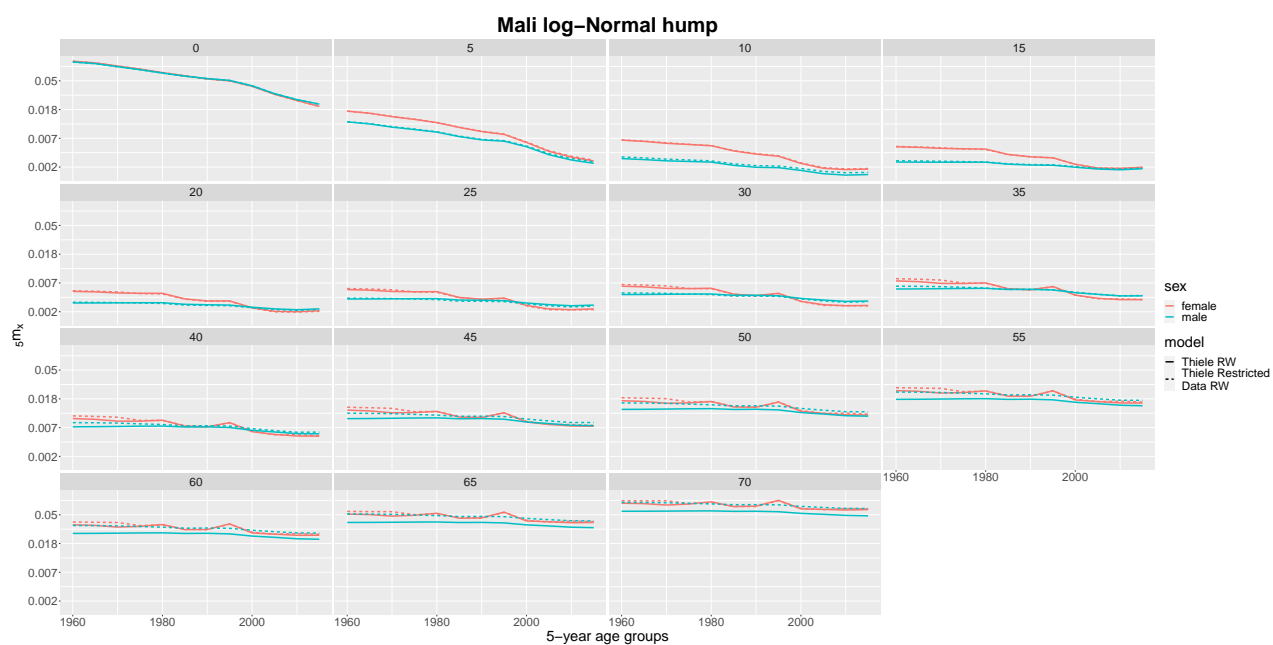Figure 4: Mortality Schedules

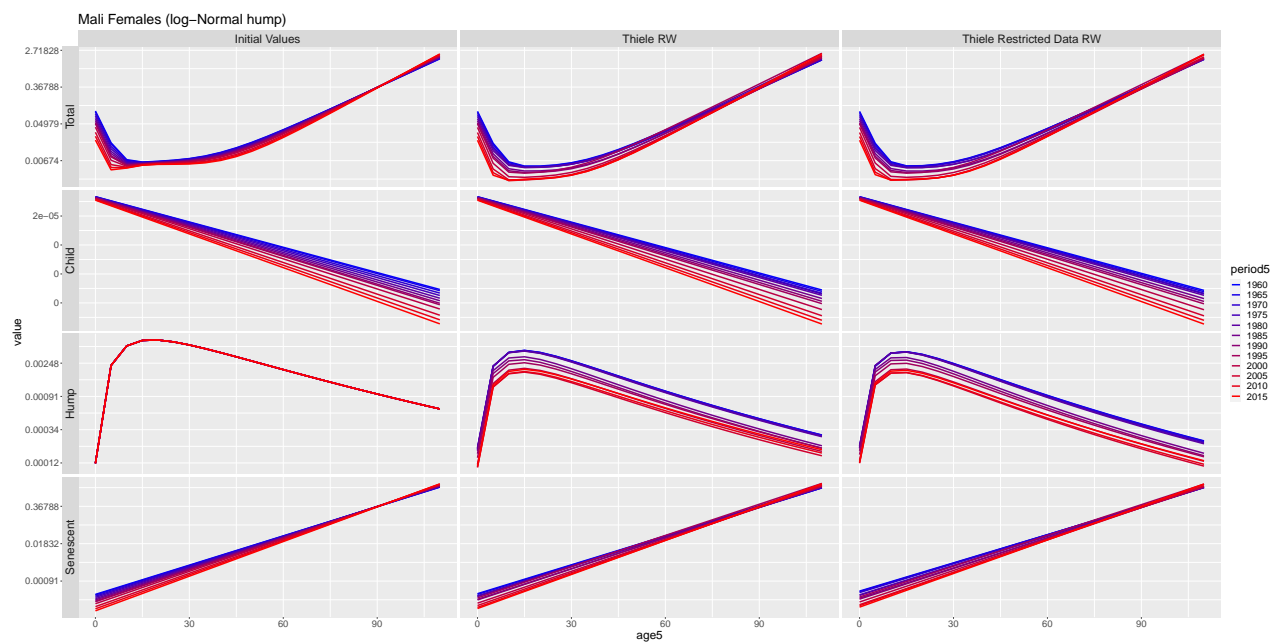Figure 5: Mortality Schedules

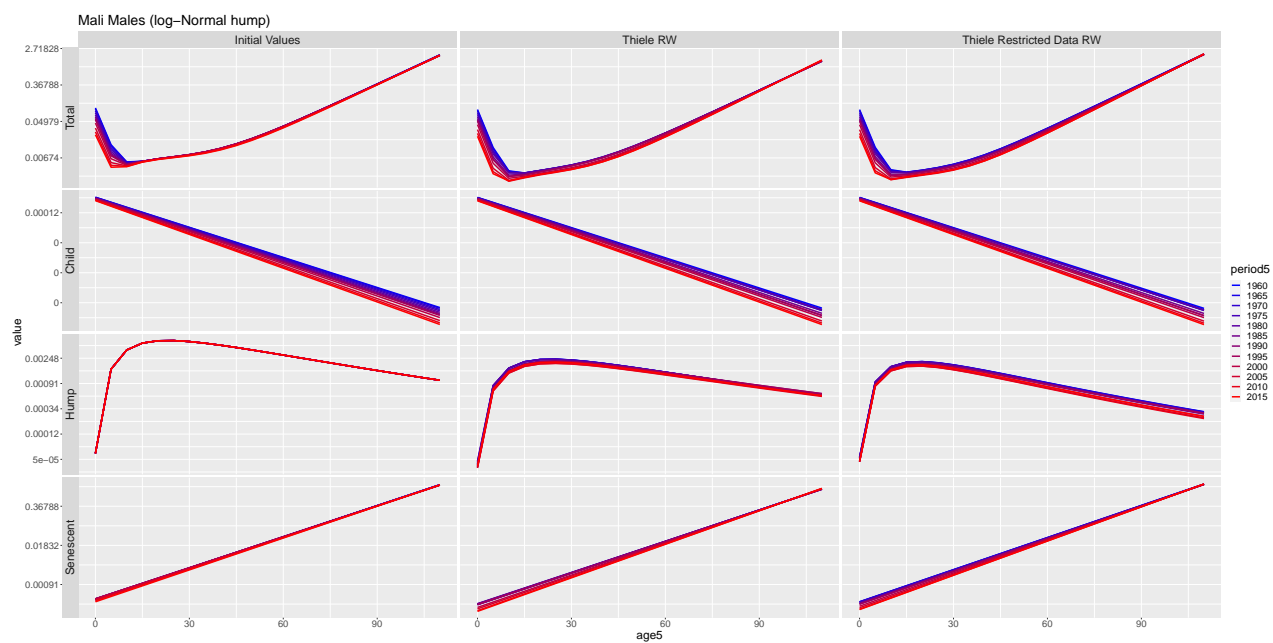Figure 6: Mortality Schedules
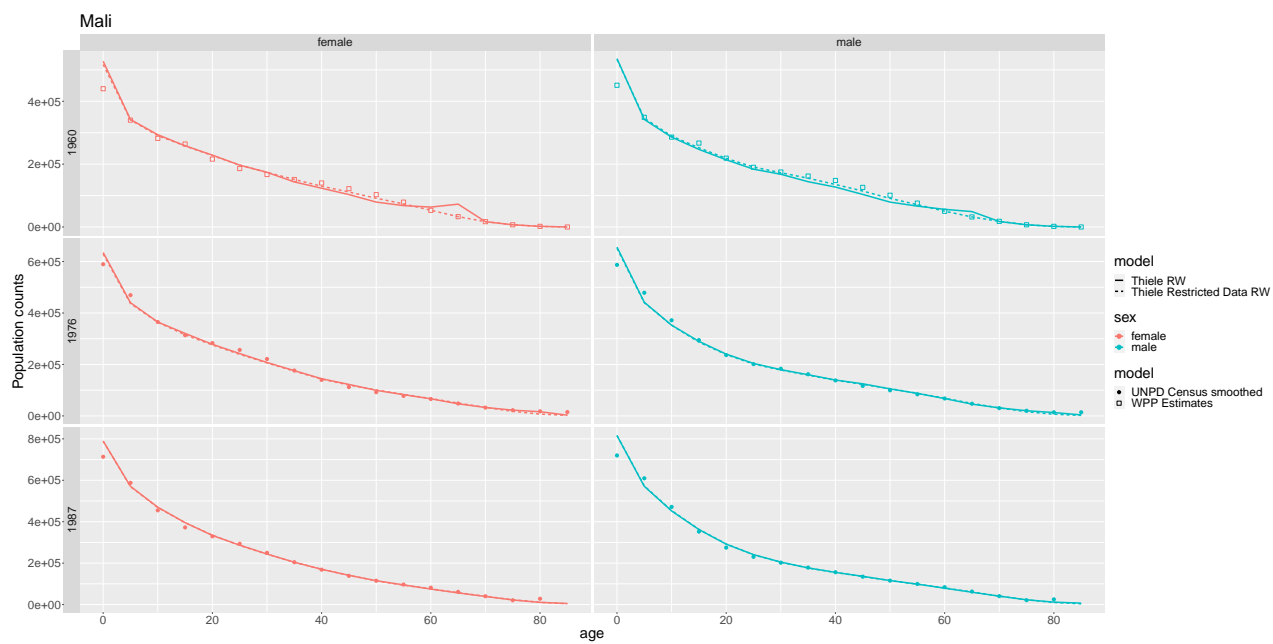

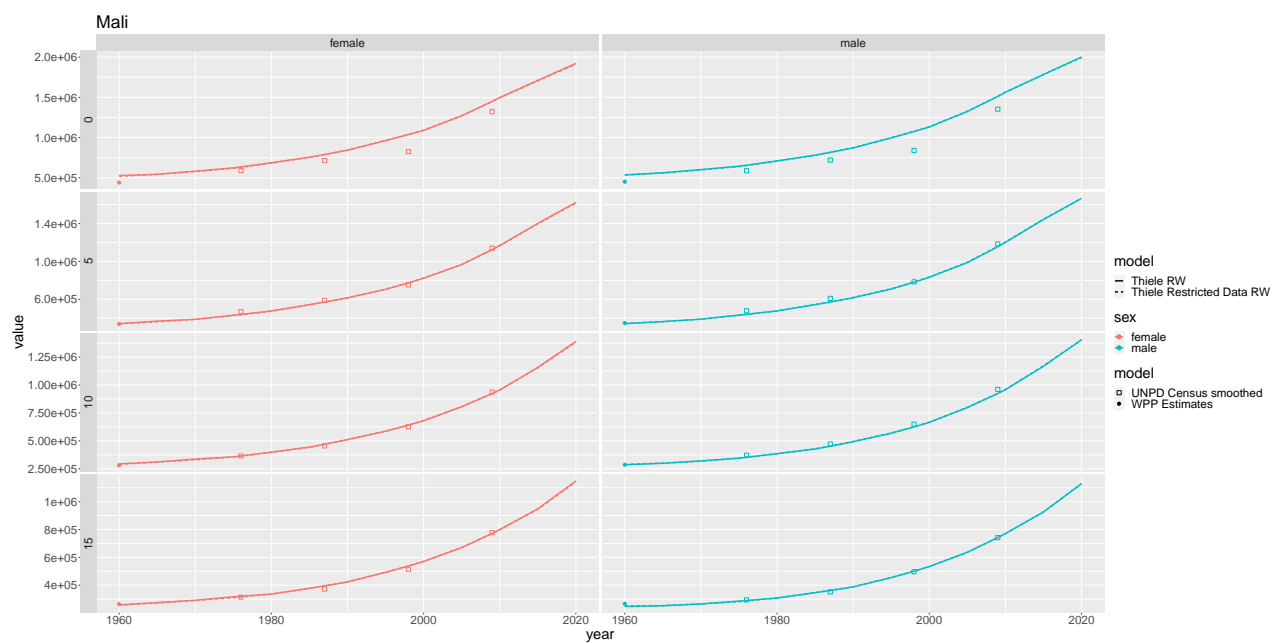Figure 7: Thiele Decomposed

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Figure 8: Thiele Decomposed

Figure 9: Population

Figure 10: Population
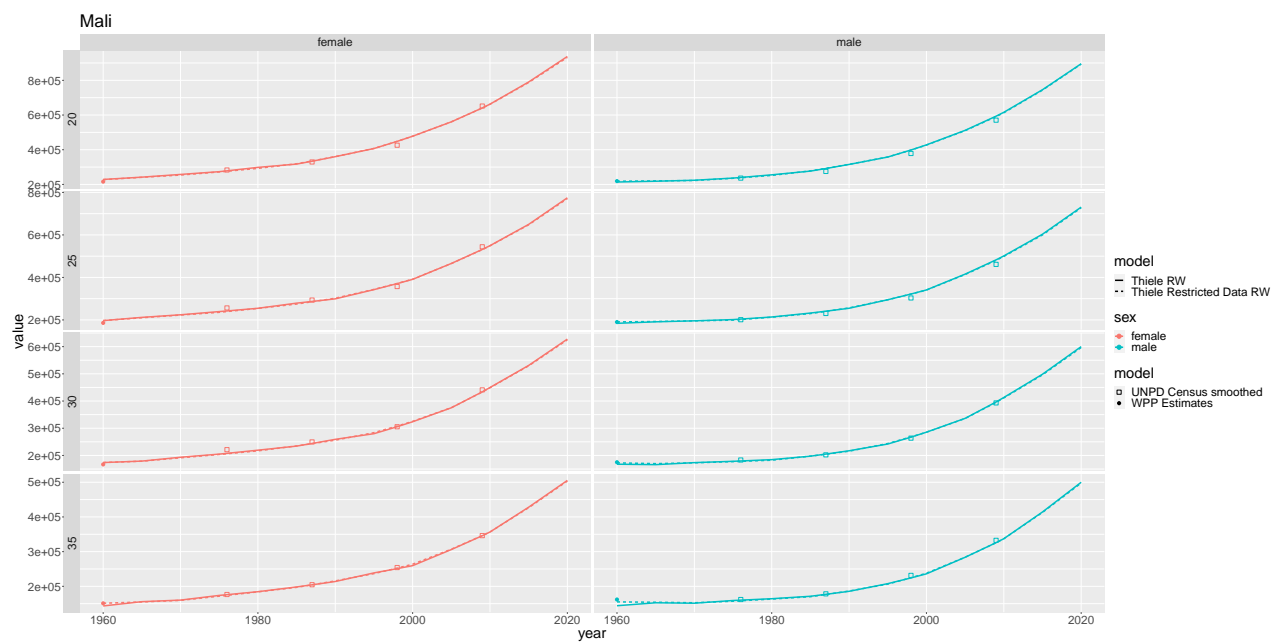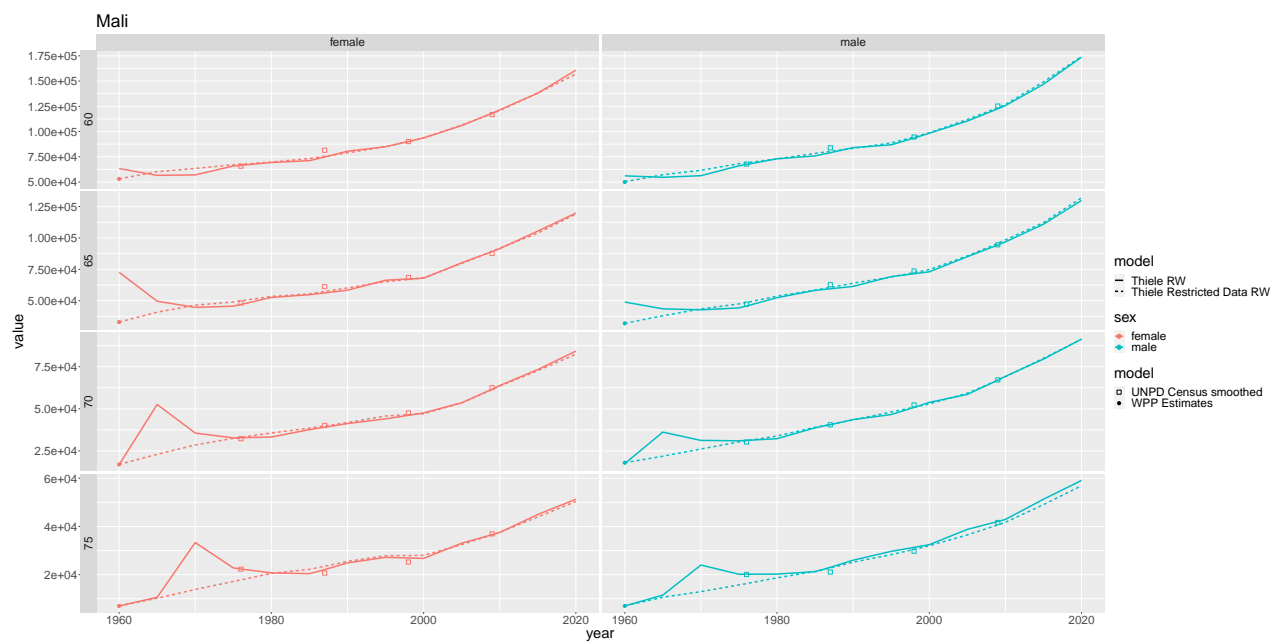

Figure 11: Population
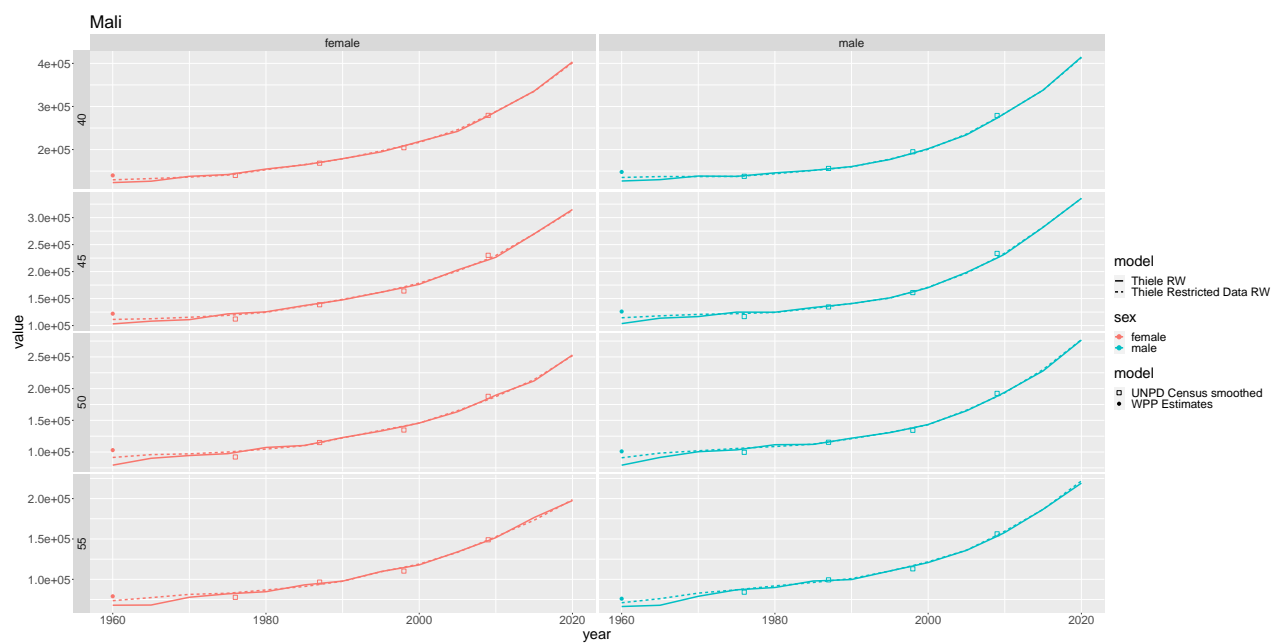
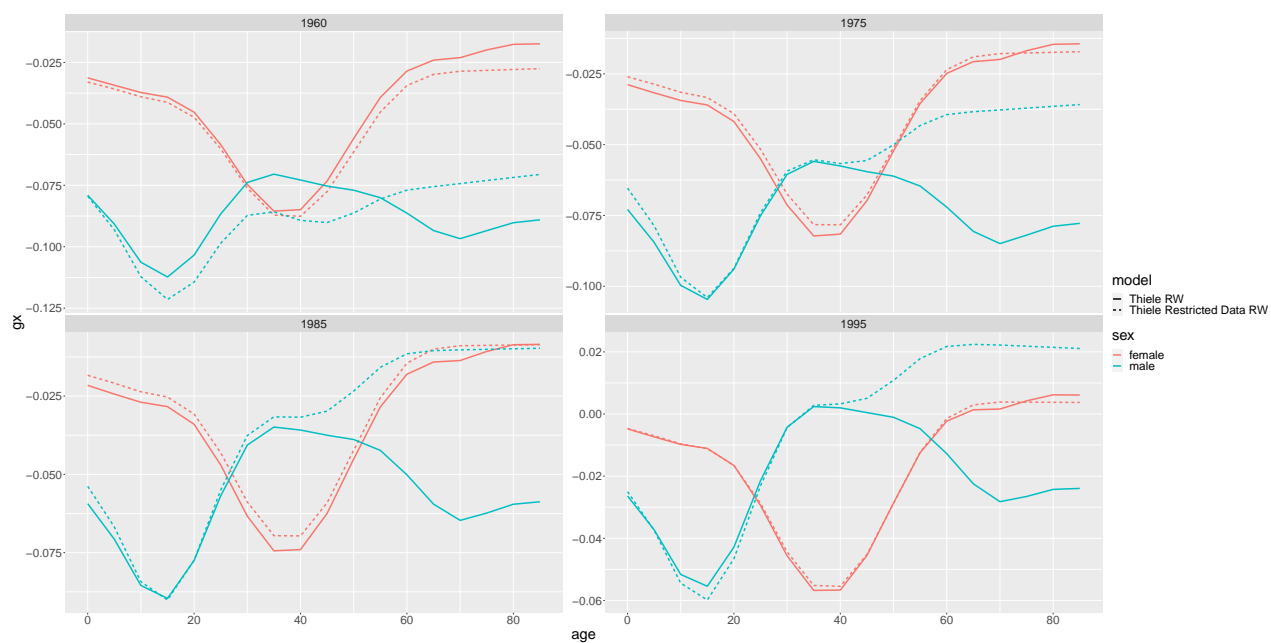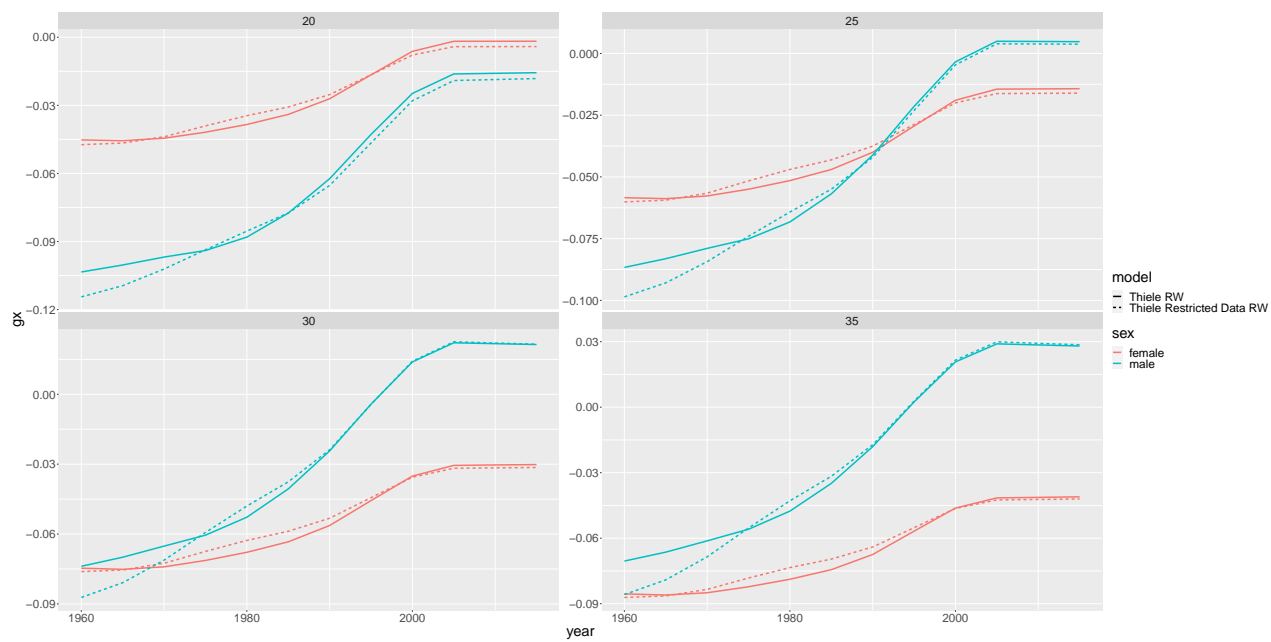Figure 12: Population

Figure 13: Population

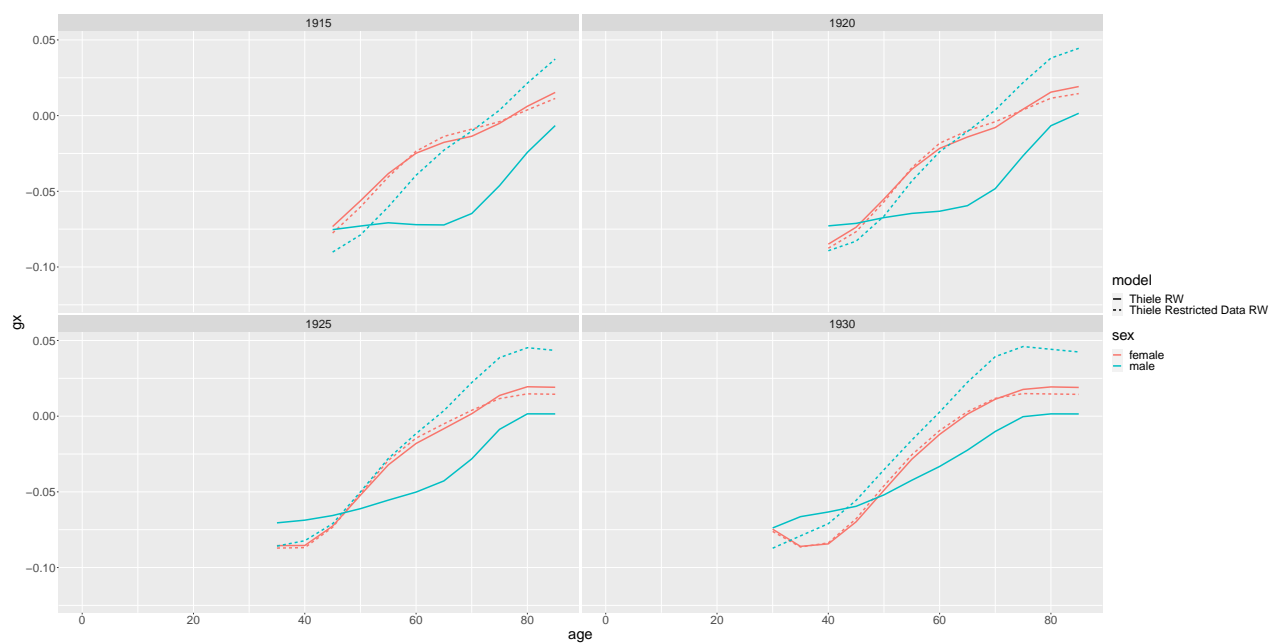Figure 14: Migration

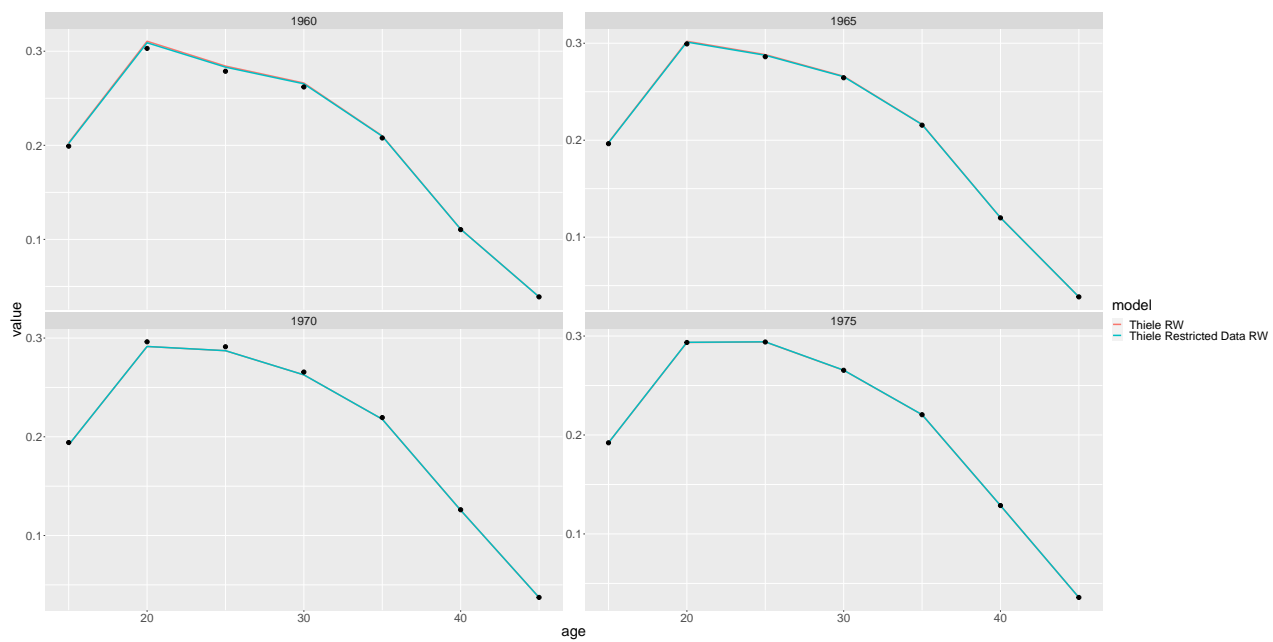Figure 15: Migration
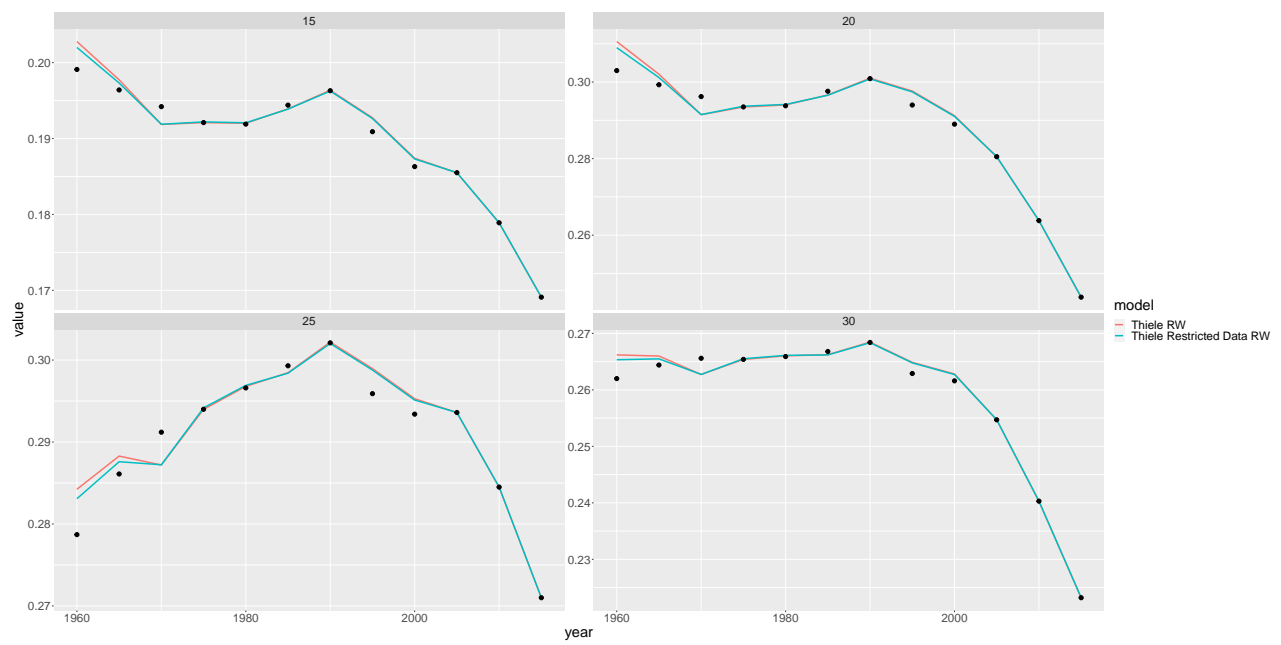
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Figure 16: Migration

Figure 17: Fertility

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Figure 18: Fertility