

Complete results

Giacomo Lanfiuti Baldi

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Italian Data from WHO. 5-years ages classes from 0 to 80+.

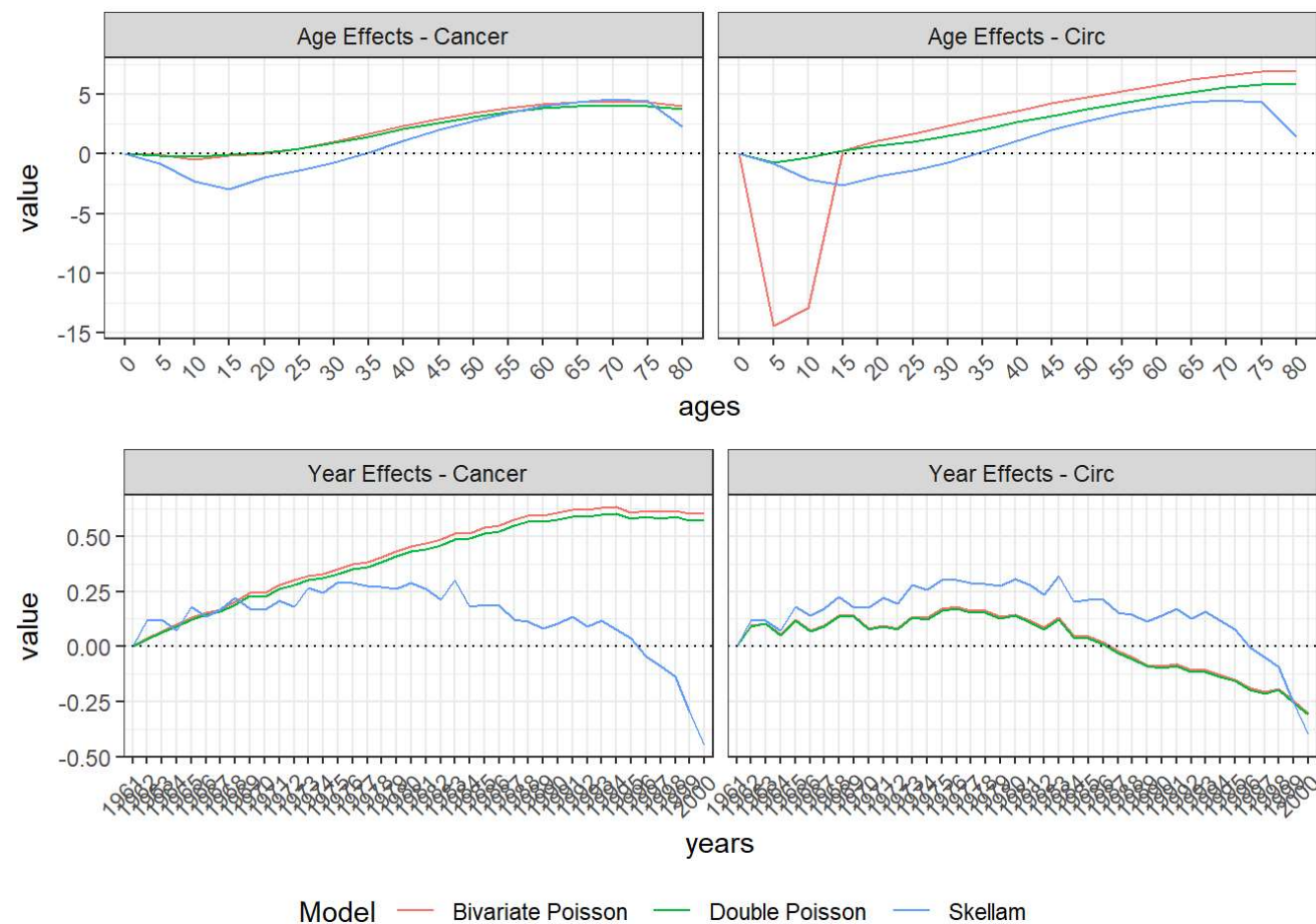
3 baseline period: 1961-2000 (40 years) 1971-2000 (30 years) 1981-2000 (20 years)

15 years of forecasting window: 2001-2015

Analysis for All-ages:

PERIOD 1: Baseline 1961-2000, forecasting 2001-2015

Visualization estimated Age-Period Effects



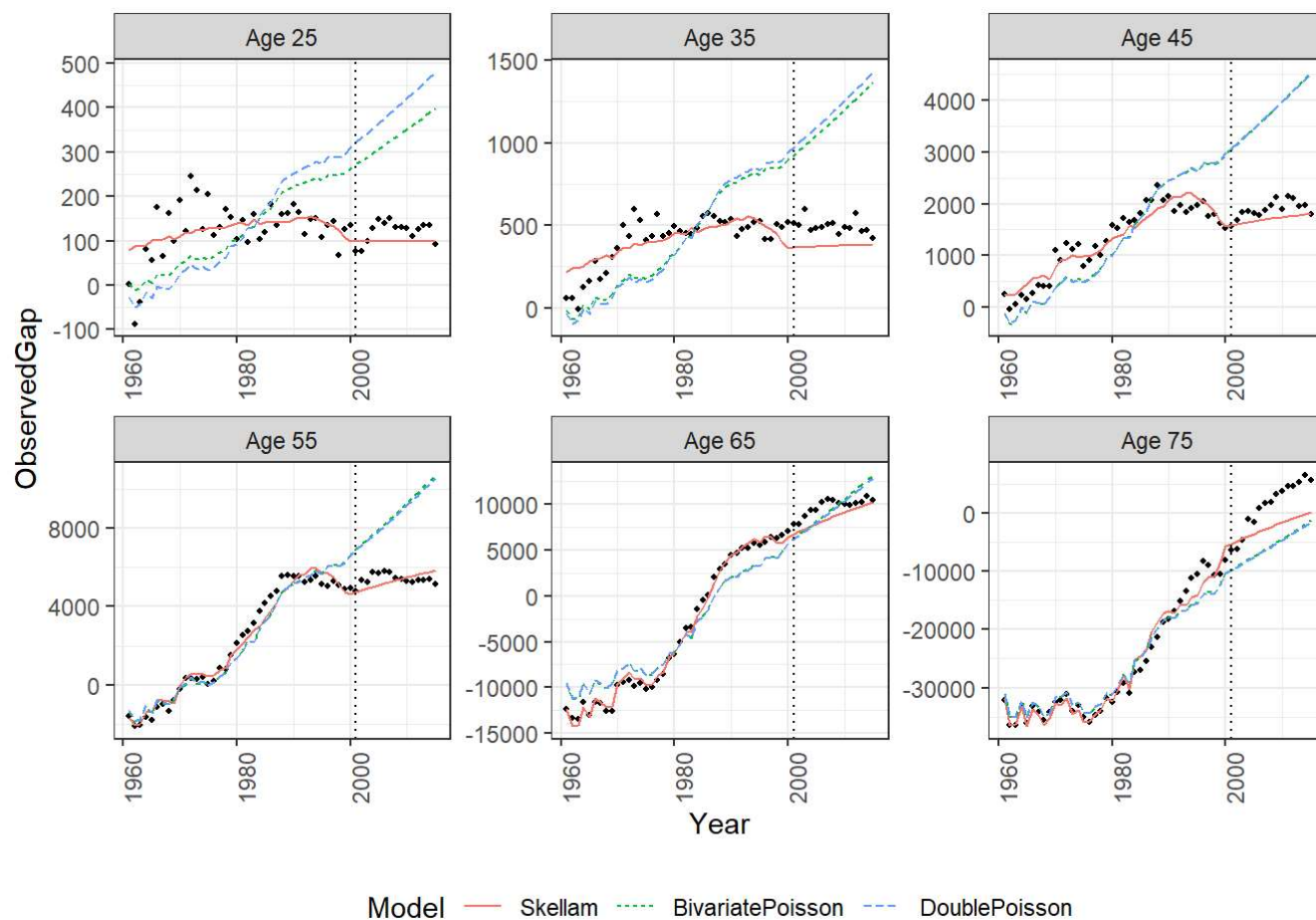
Accuracy in-sample fitting:

##	RMSE	MAE	MAPE
## Skellam	459.9421	234.4575	0.8942690
## Double Poisson	1557.1810	813.0671	0.9761192
## Bivariate Poisson	1539.0191	791.4998	0.8517086

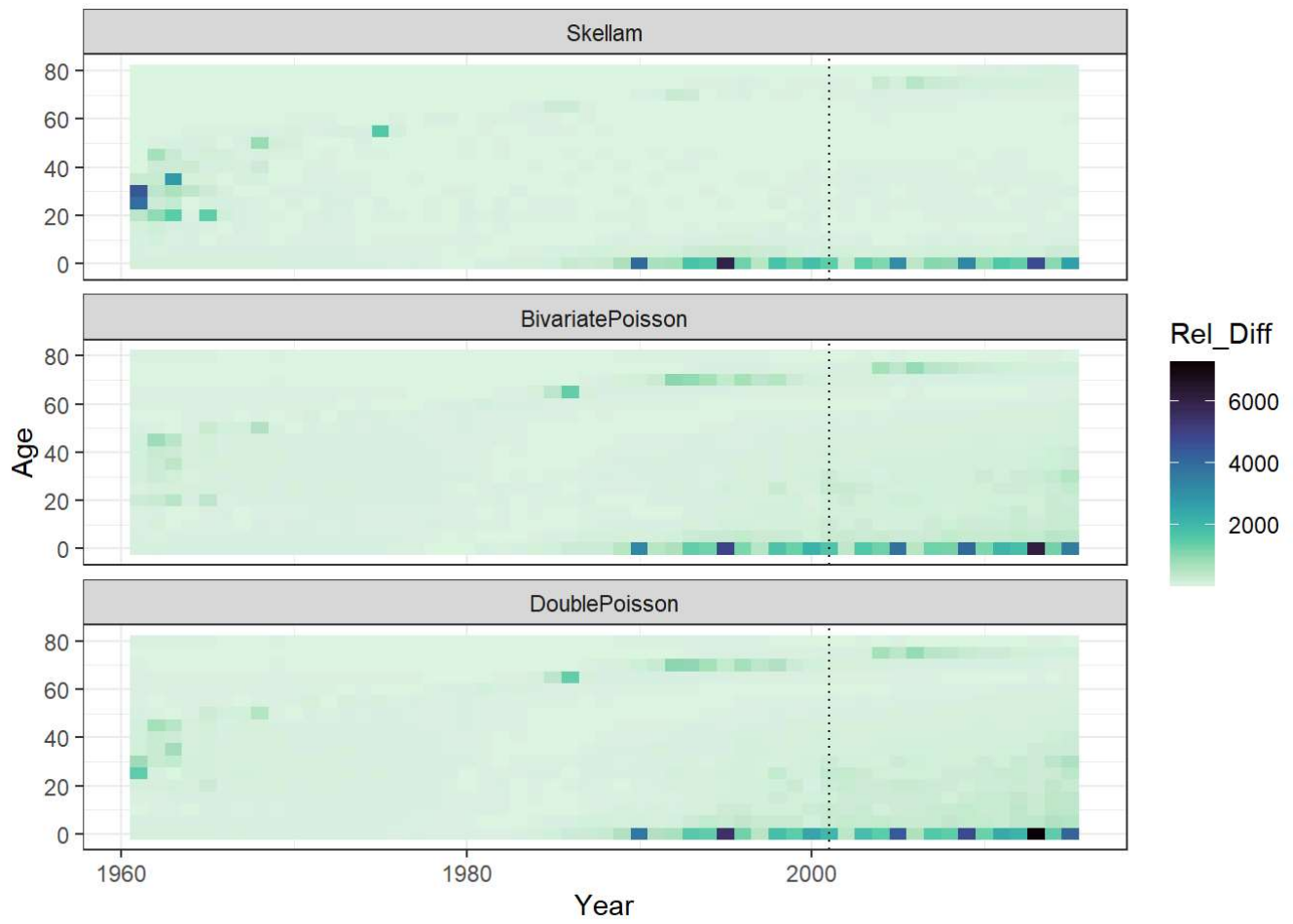
Accuracy out-of-sample fitting:

##	RMSE	MAE	MAPE
## Skellam	1602.012	754.1839	1.318624
## Double Poisson	2627.327	1700.5404	2.947077
## Bivariate Poisson	2593.861	1666.4443	2.487281

Plot of fitting and forecasting in-sample (till 2000) and out-of-sample (years>2000)

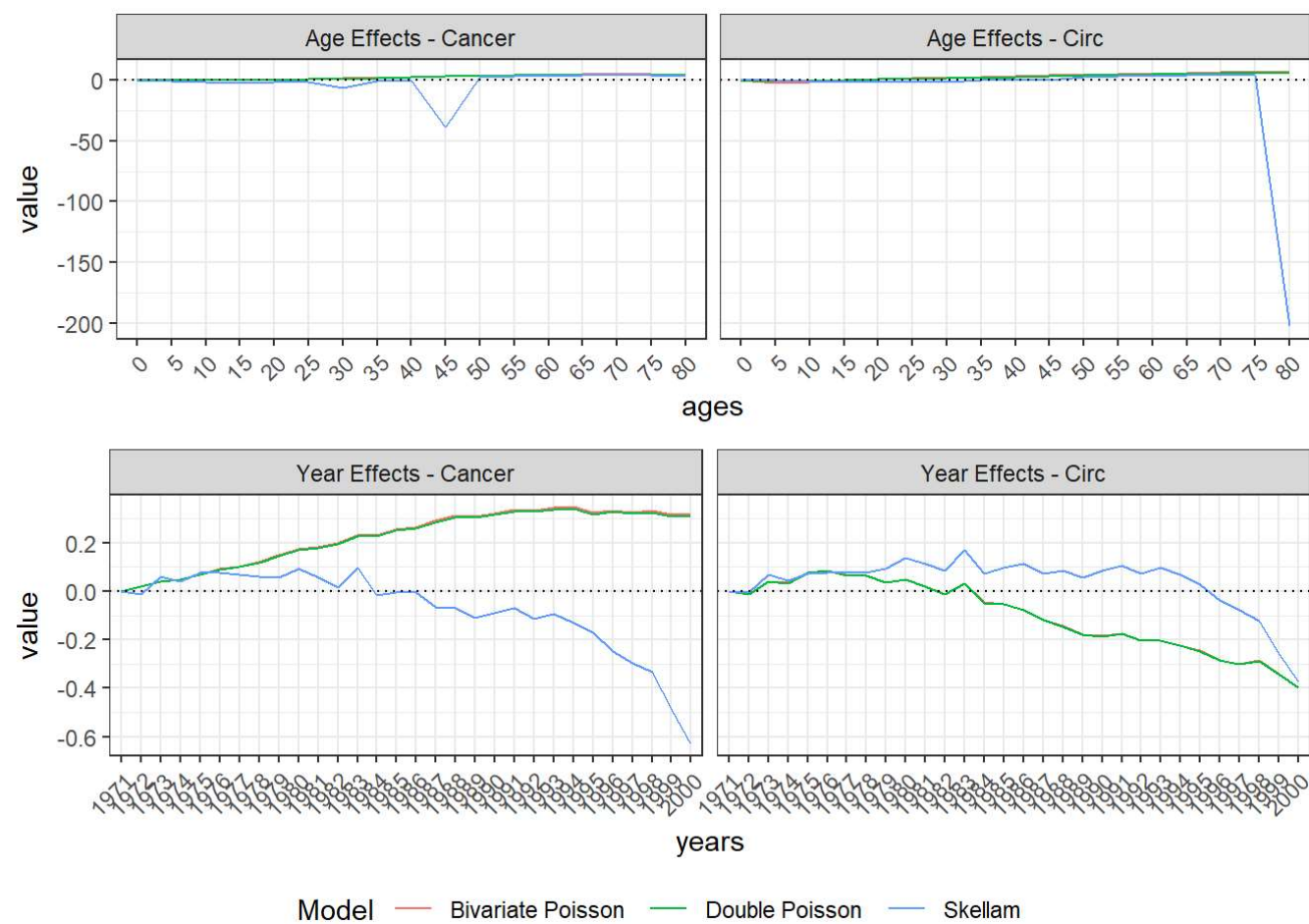


Heat map of absolute relative differences:



PERIOD 2: Baseline 1971-2000, forecasting 2001-2015

Visualization estimated Age-Period Effects:



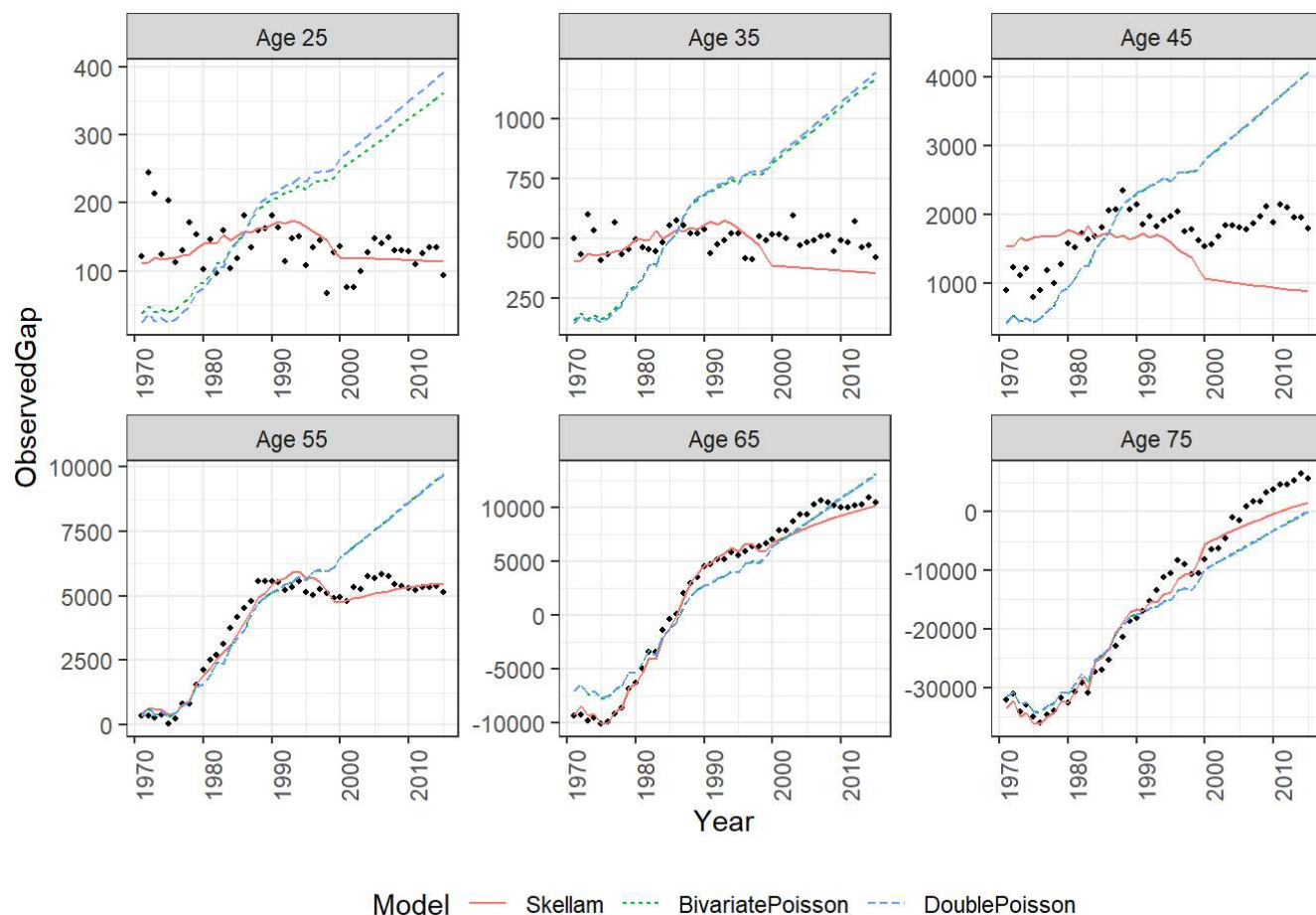
Accuracy in-sample fitting:

##	RMSE	MAE	MAPE
## Skellam	499.8313	265.2524	0.6475735
## Double Poisson	1380.3806	748.3146	0.7567413
## Bivariate Poisson	1375.3146	740.1779	0.7138892

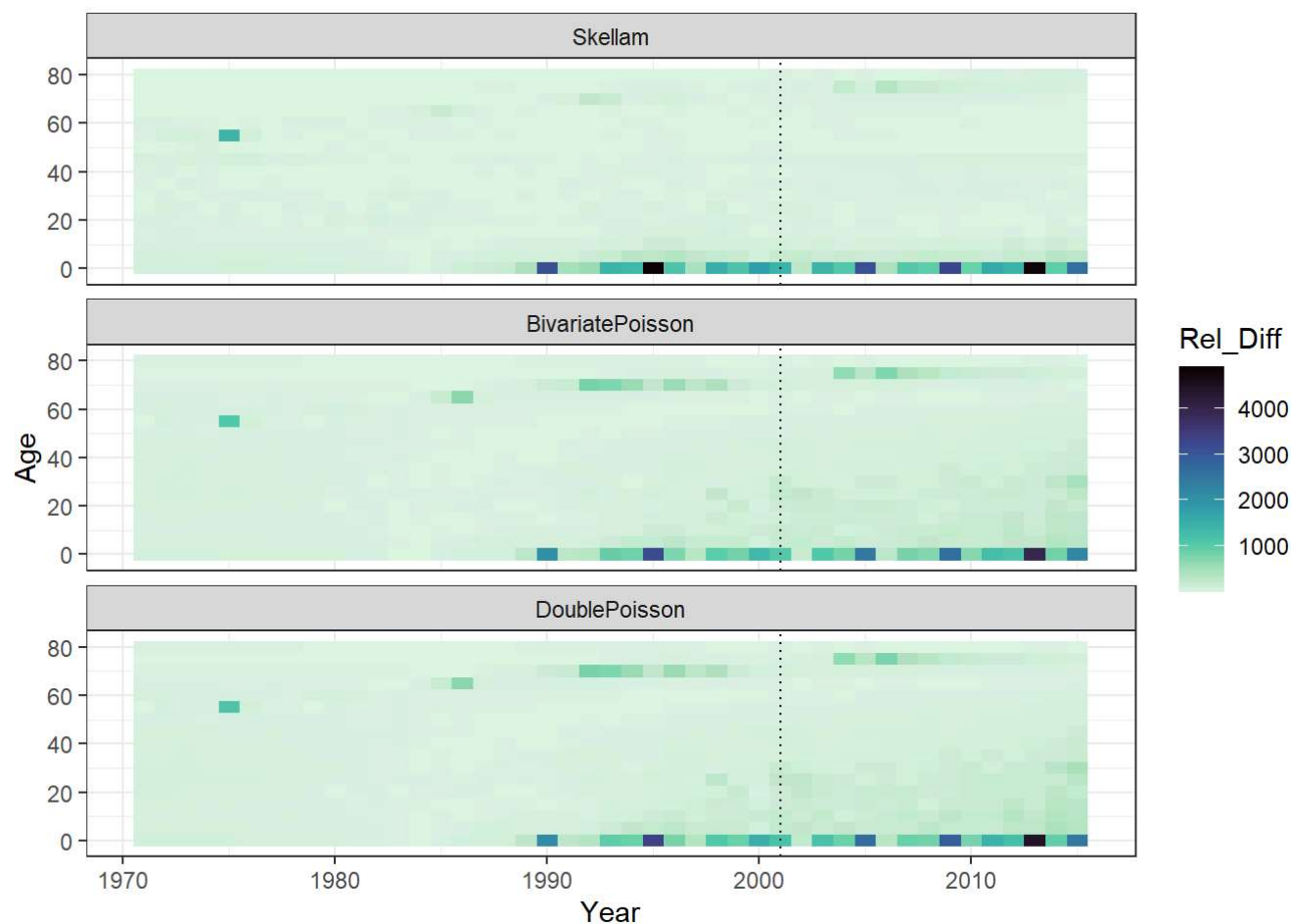
Accuracy out-of-sample fitting:

##	RMSE	MAE	MAPE
## Skellam	1286.486	674.5126	1.387711
## Double Poisson	2194.914	1413.1237	2.053279
## Bivariate Poisson	2182.502	1398.9320	1.866008

Plot of fitting and forecasting in-sample (till 2000) and out-of-sample (years>2000):

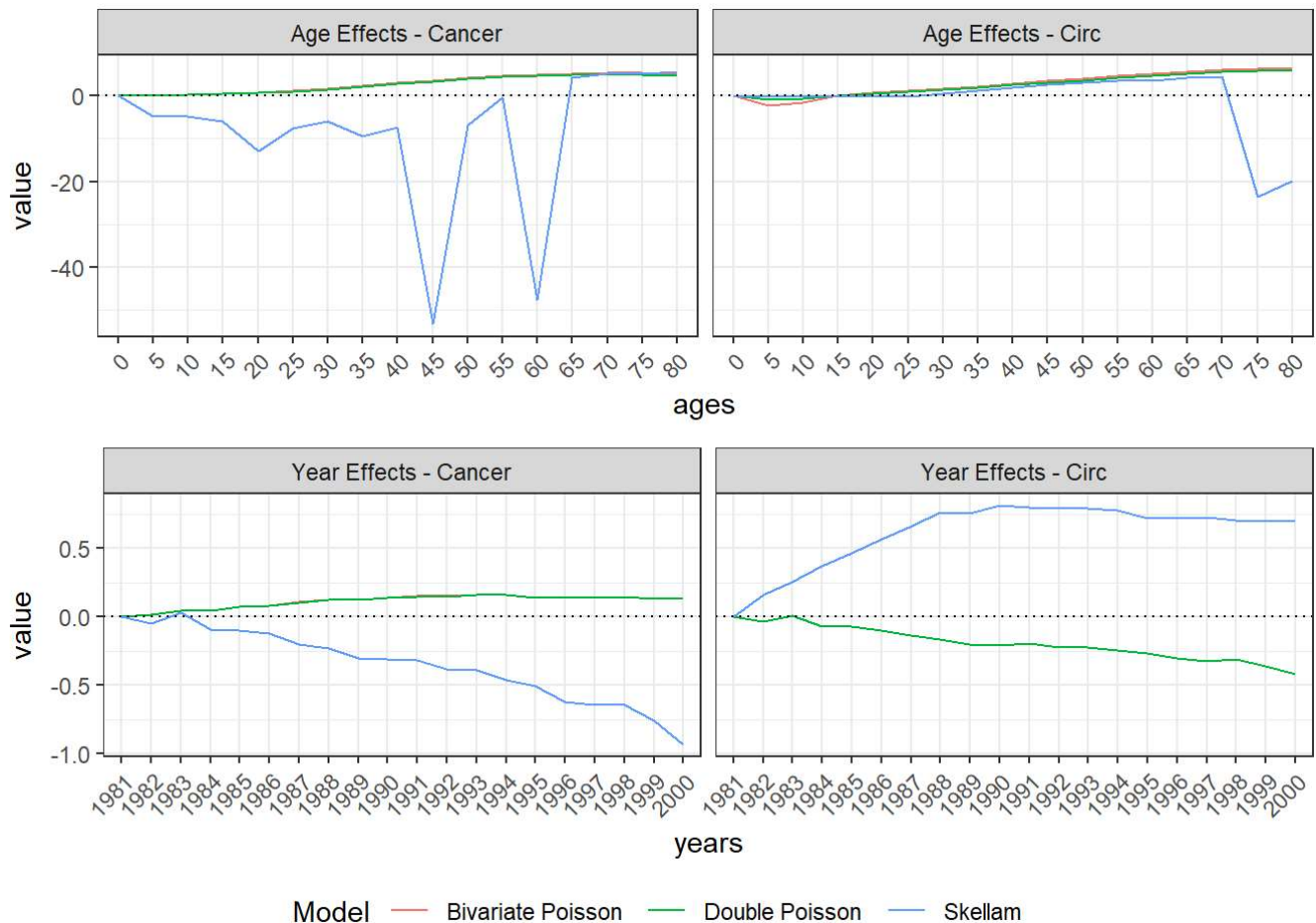


Heat map of absolute relative differences:



PERIOD 3: Baseline 1981-2000, forecasting 2001-2015

Visualization estimated Age-Period Effects:



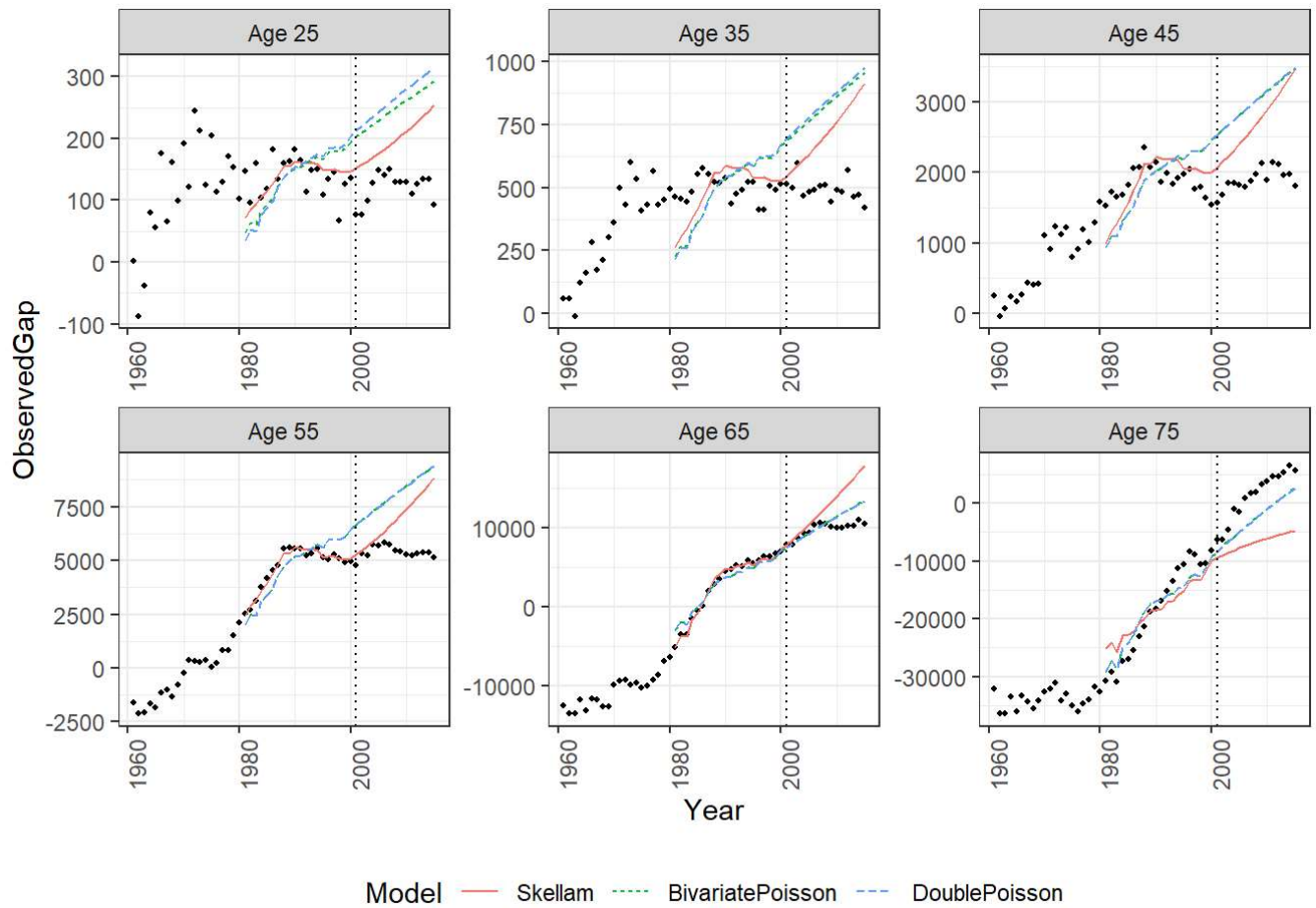
Accuracy in-sample fitting:

##	RMSE	MAE	MAPE
## Skellam	1273.360	535.8069	0.4555933
## Double Poisson	1124.214	589.5854	0.4698897
## Bivariate Poisson	1122.075	585.5959	0.4424464

Accuracy out-of-sample fitting:

##	RMSE	MAE	MAPE
## Skellam	2663.293	1347.798	1.618813
## Double Poisson	1691.549	1098.810	1.180280
## Bivariate Poisson	1687.158	1090.106	1.039373

Plot of fitting and forecasting in-sample (till 2000) and out-of-sample (years>2000):



Heat map of absolute relative differences:

