

# Online Resource

## Bayesian Probabilistic Projections of Life Expectancy for All Countries

by Adrian E. Raftery, Jennifer L. Chunn, Patrick Gerland and Hana Ševčíková

Here we provide updated probabilistic projections of life expectancy at birth for both males and females for all 158 countries considered in the main text of our paper, using the methodology described there. The projections given here are based on the estimates in the 2010 revision of the *World Population Prospects*, updating the illustrative results in the main text, which were based on the 2008 revision. There was one additional area included in the 2010 revision, namely Taiwan (Province of China), and so we used 159 countries/areas for estimation.

We also added historical data for 30 countries prior to 1950, provided to us by the UN Population Division. When they were available, we included data back as far as 1870–1875. For a few countries, mostly in Europe, data earlier than 1870 were available, but they showed a different pattern than the later data, with more fluctuations and a less clear upward trend, and so they seemed less relevant to projecting current trends.

In the main text of the paper we gave results only for male life expectancy. Here we give results for female life expectancy also, using the same model, but with appropriately chosen prior distributions, chosen based on the same considerations as those for males.

We reestimated the model using the updated data. We modified the prior specification slightly. For females we used the prior parameters  $(a_1, \dots, a_6) = (13.22, 41.07, 9.24, 17.60, 2.84, 0.38)$ , equal to the parameters of the UN medium variant for females. For projecting both sexes, we set  $(\delta_1^2, \dots, \delta_6^2)$  equal to the variance of the UN variants for females, namely  $(14.78, 16.28, 133.13, 31.80, 0.81, 0.16)$ . We broadened the prior slightly by allowing  $\Delta_3$  and  $\Delta_3^c$  to take negative values, truncating them to the interval  $[-20, 100]$  for females and  $[-40, 100]$  for males. The lower limits were chosen so that the prior distributions cover the range of the UN variants.

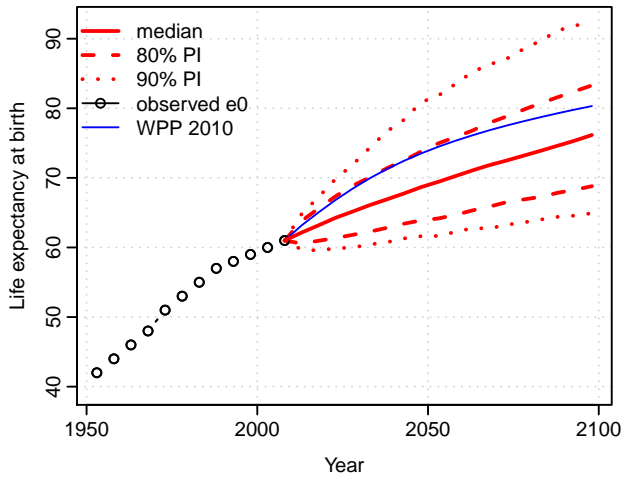
The quantities  $\sum_{i=1}^4 \Delta_i$  and  $\sum_{i=1}^4 \Delta_i^c$  correspond roughly to the average and country-specific ages at which the expected increase in life expectancy becomes approximately constant at its asymptote,  $z^c$ . We therefore restricted them to lie within the range of life expectancies that have either been historically observed or are plausible before 2100, taken to be  $[30, 110]$ . This eliminated a small number of implausible trajectories but did not noticeably change the results.

The projections were produced using the R package `bayesLife`, version 0.3-2 (Ševčíková and Raftery 2011).

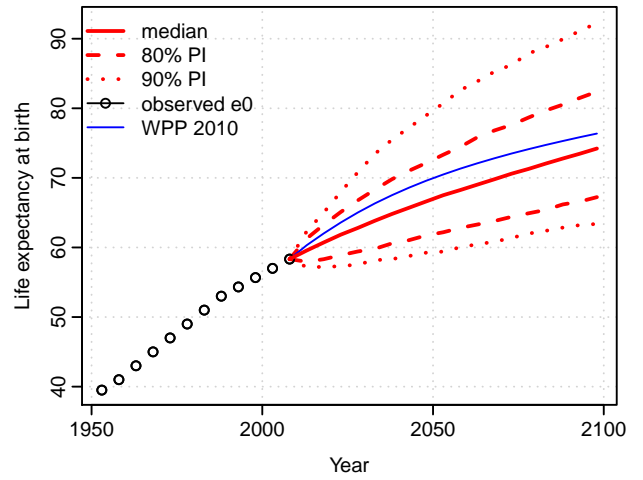
### Reference

Ševčíková, H. and Raftery, A. E. (2011). `bayesLife`: Bayesian Projection of Life Expectancy. R package version 0.3-2. Available at <http://CRAN.R-project.org/package=bayesLife>.

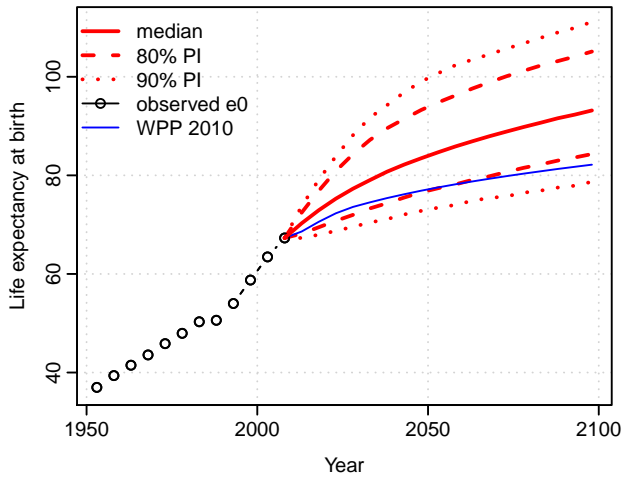
**Comoros – Female**



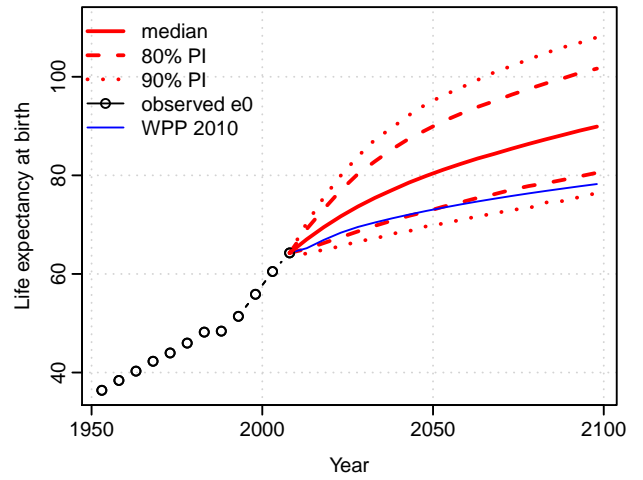
**Comoros – Male**



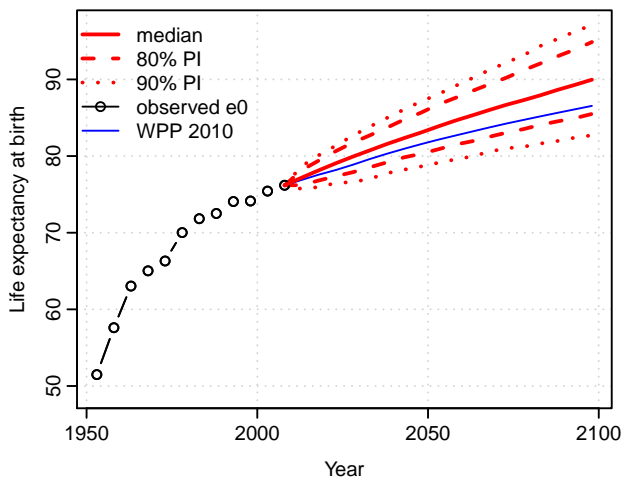
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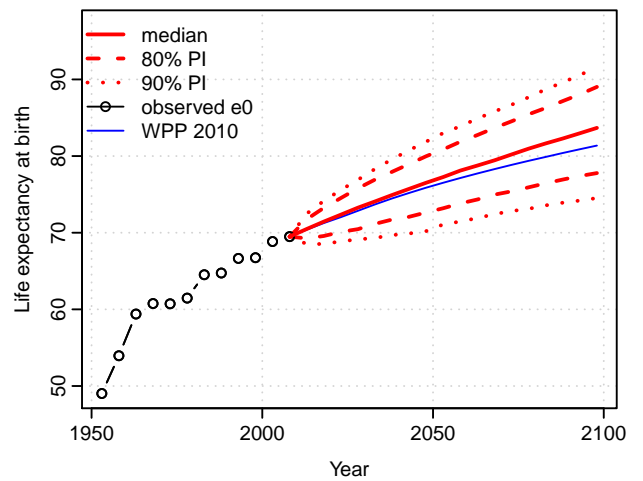
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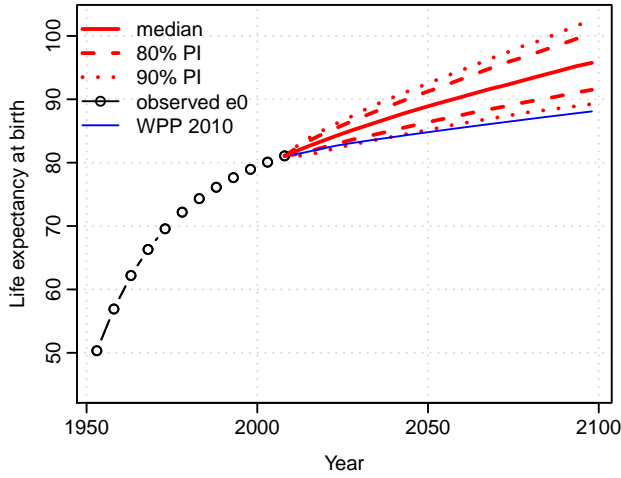
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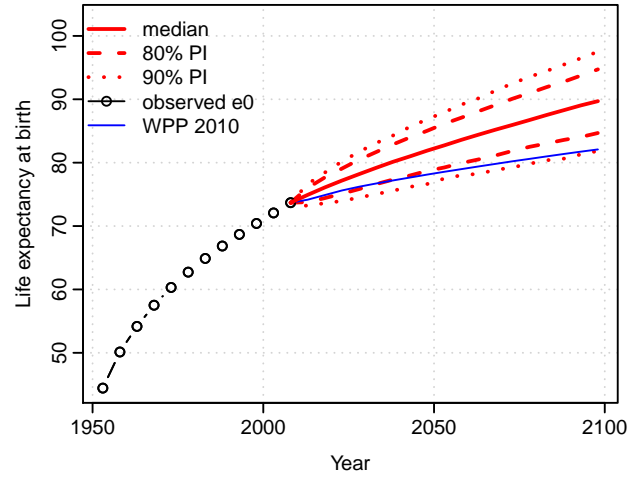
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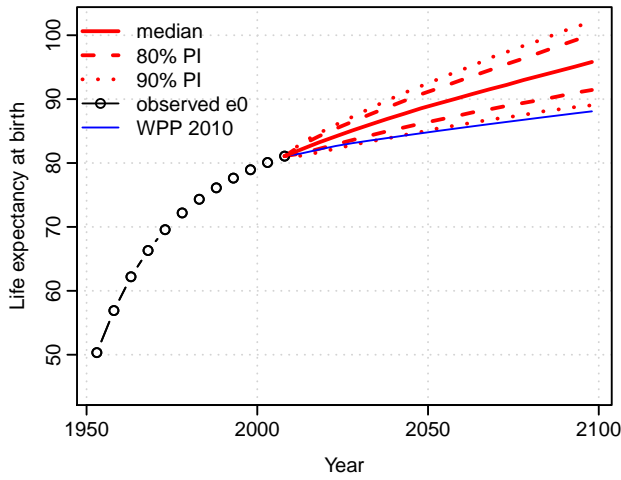
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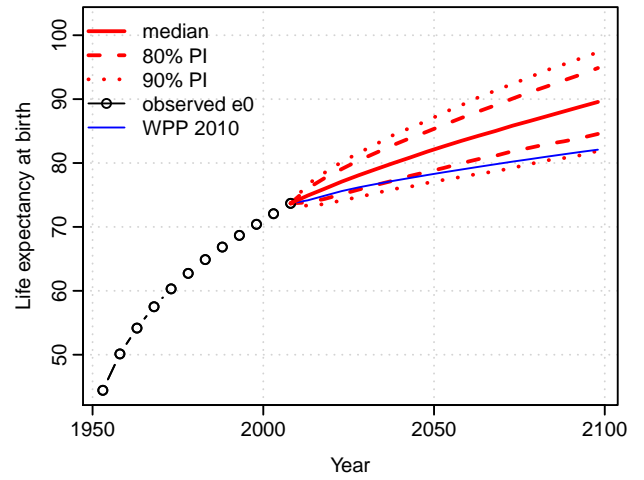
**Mayotte – Male**



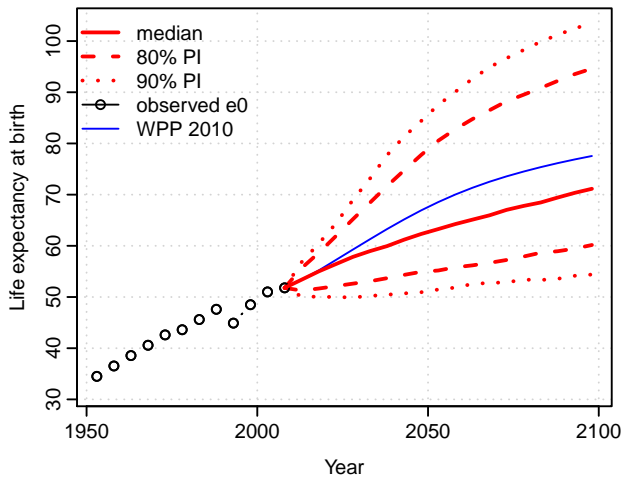
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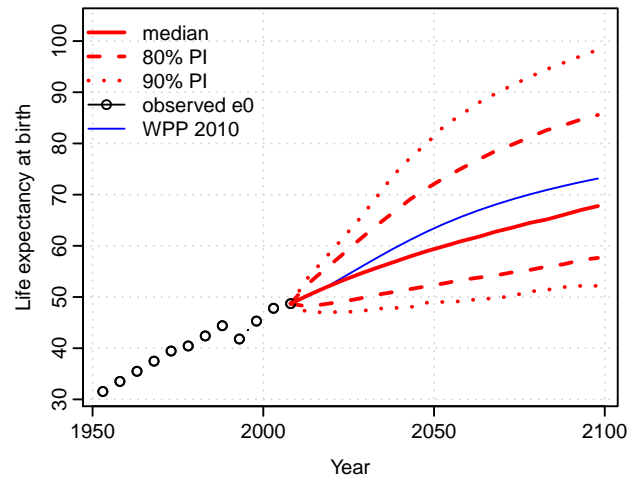
**Reunion – Male**

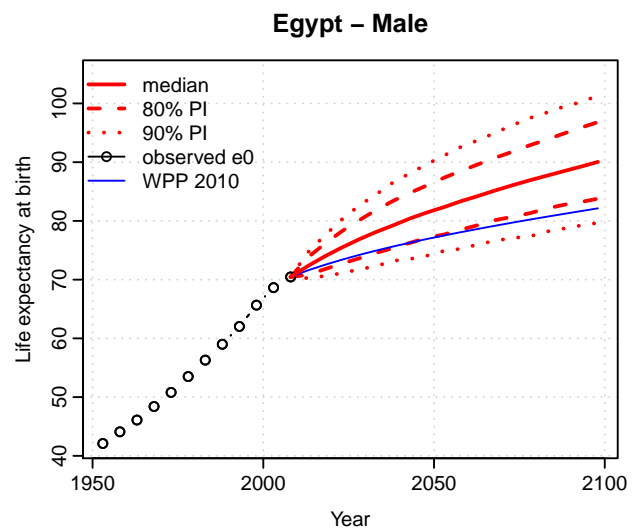
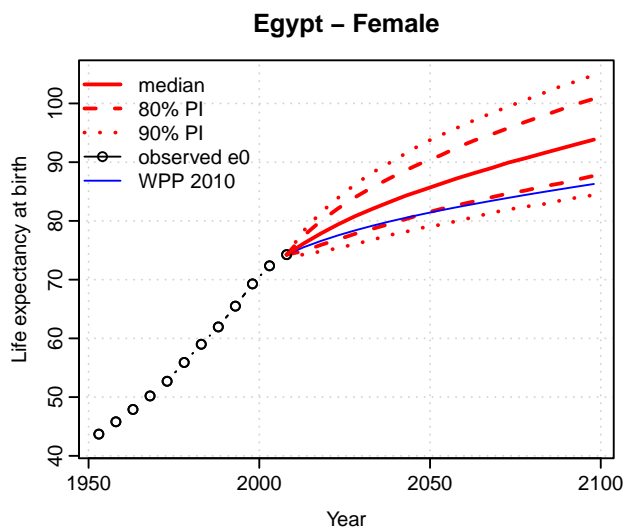
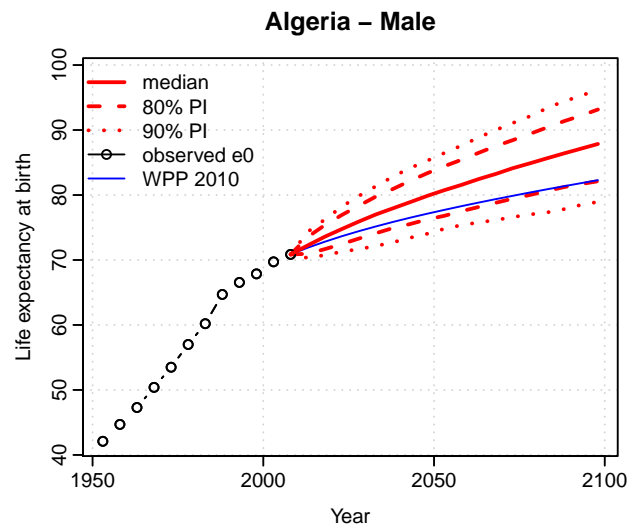
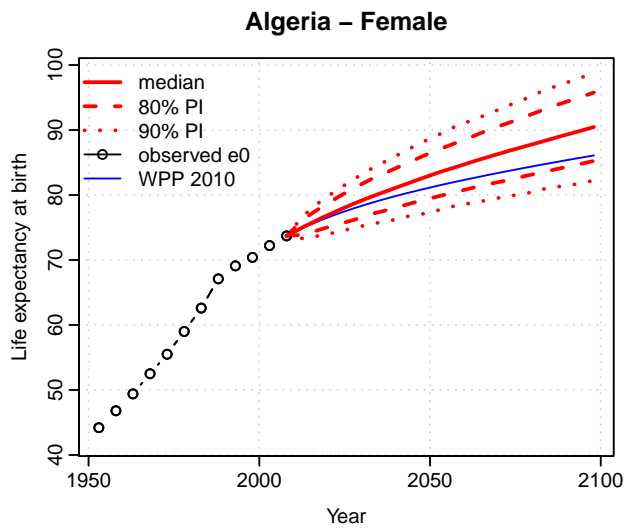
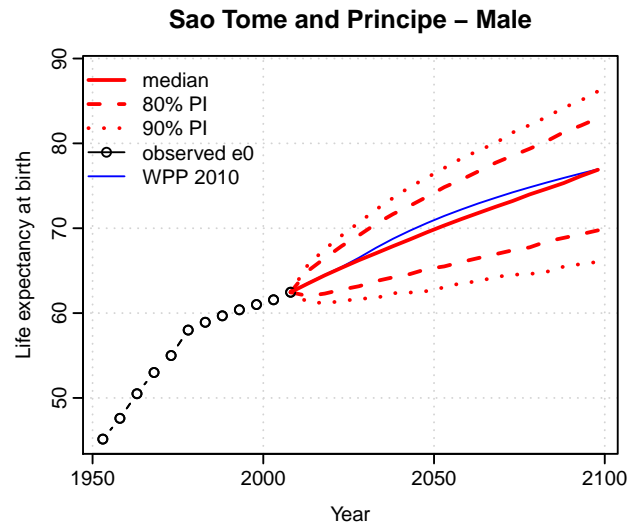
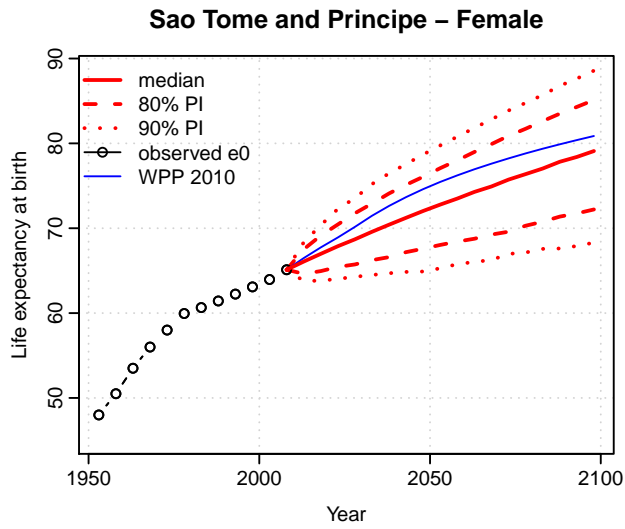


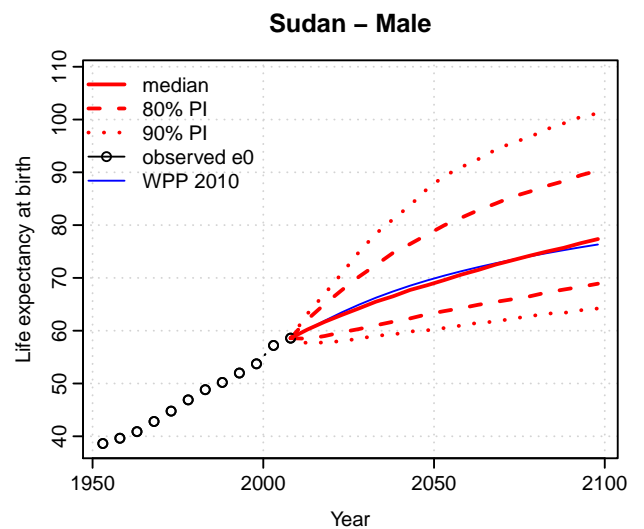
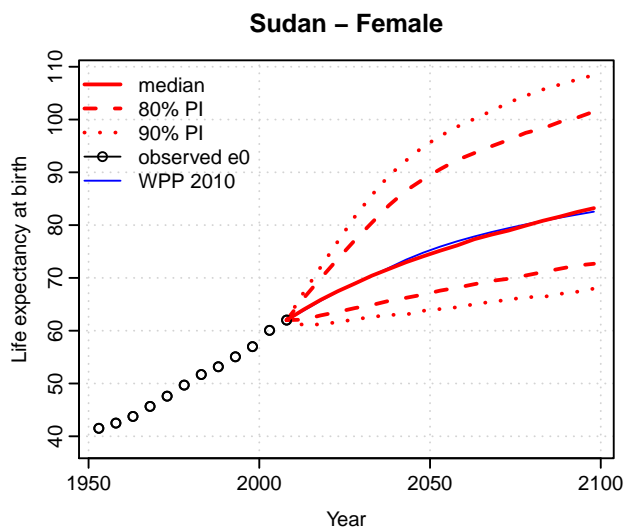
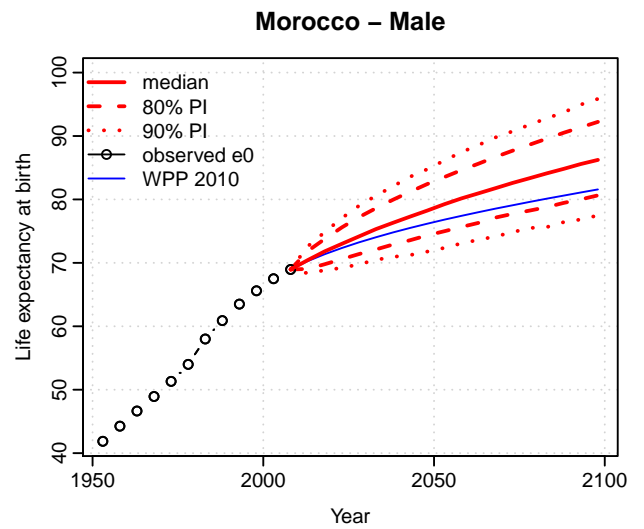
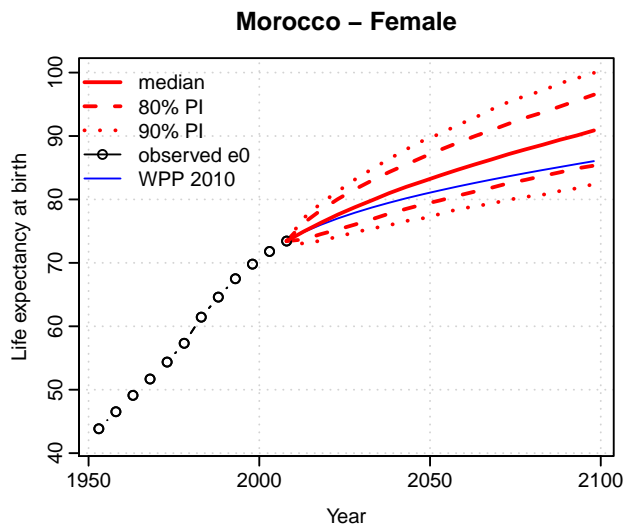
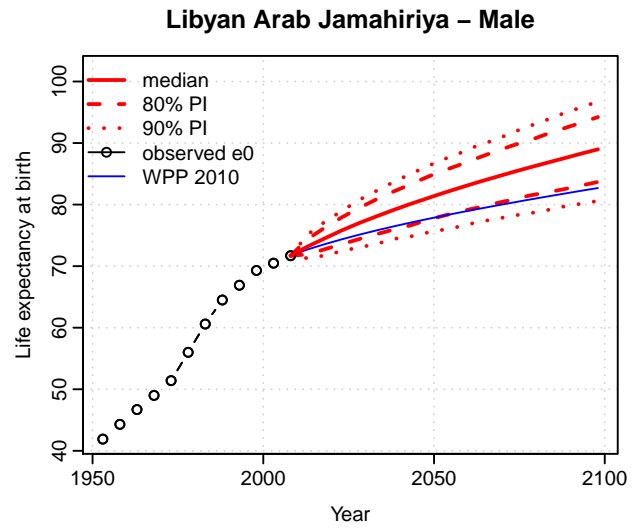
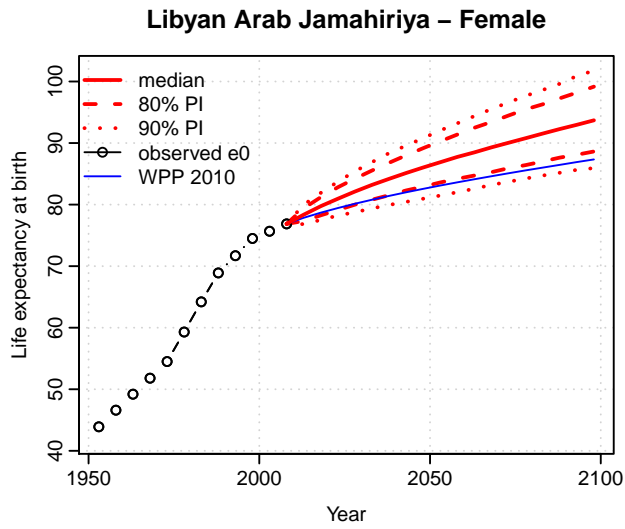
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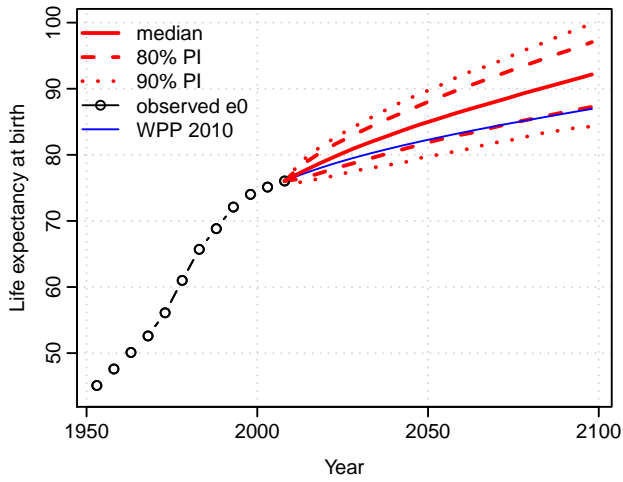
**Somalia – Male**



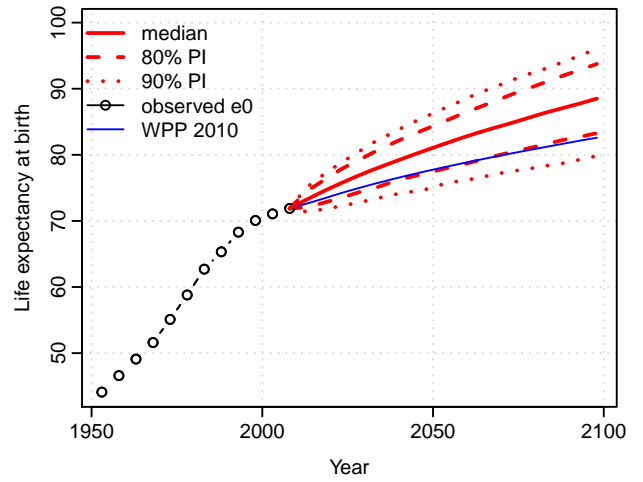




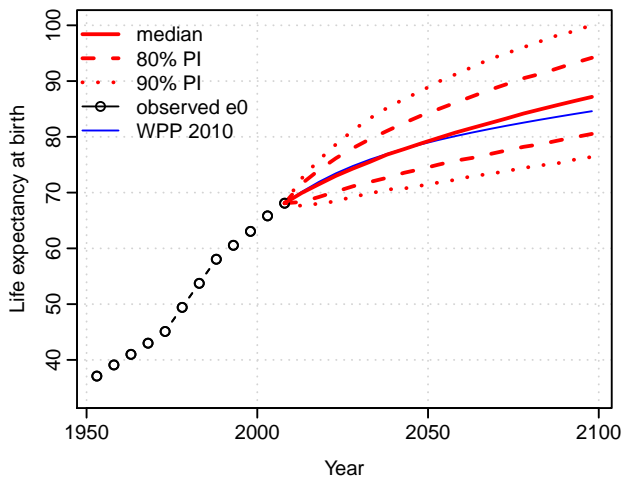
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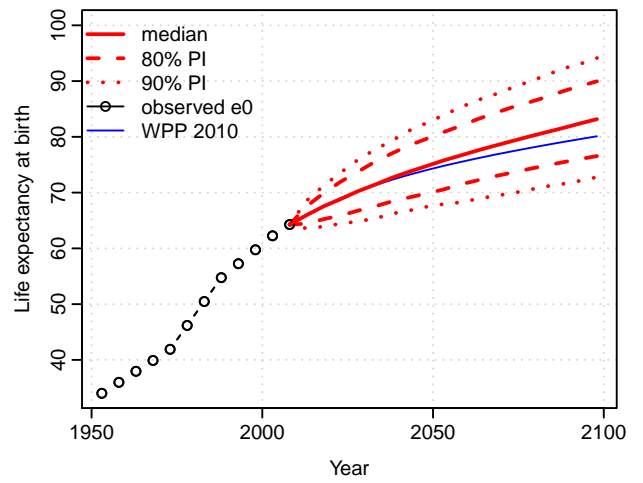
**Tunisia – Male**



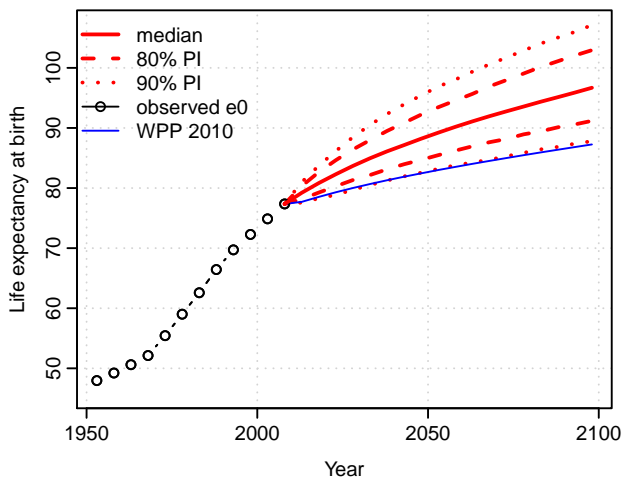
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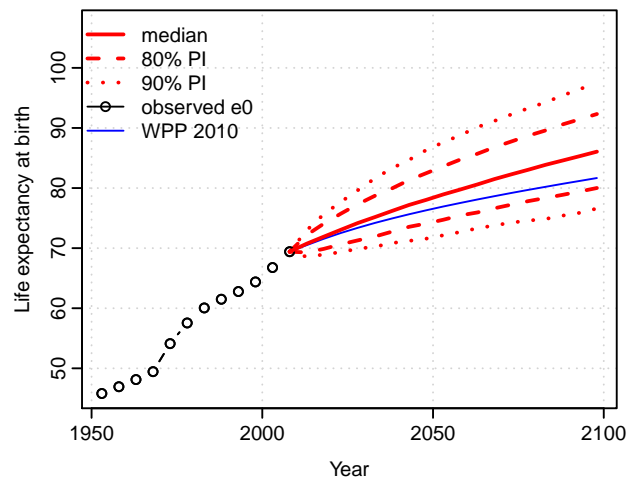
**Western Sahara – Male**



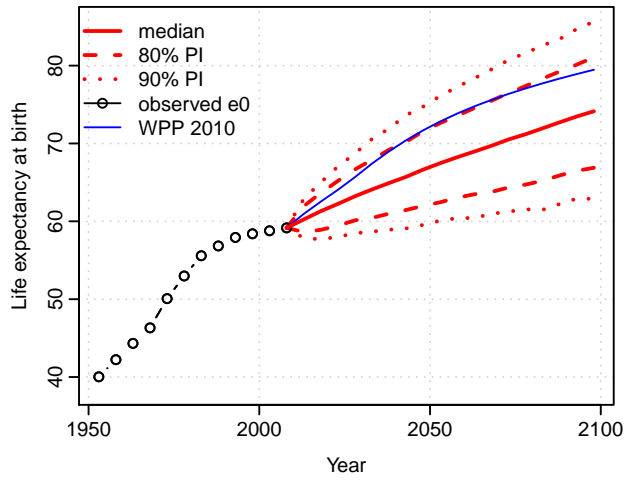
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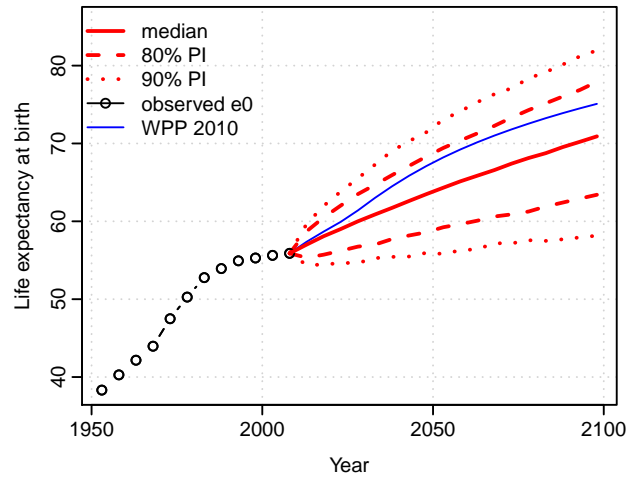
**Cape Verde – Male**



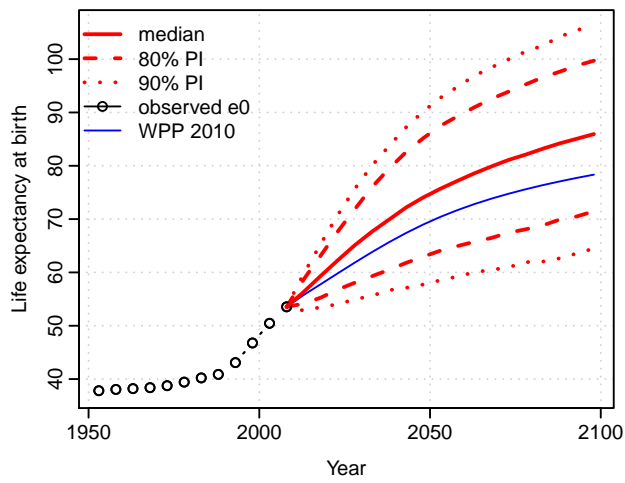
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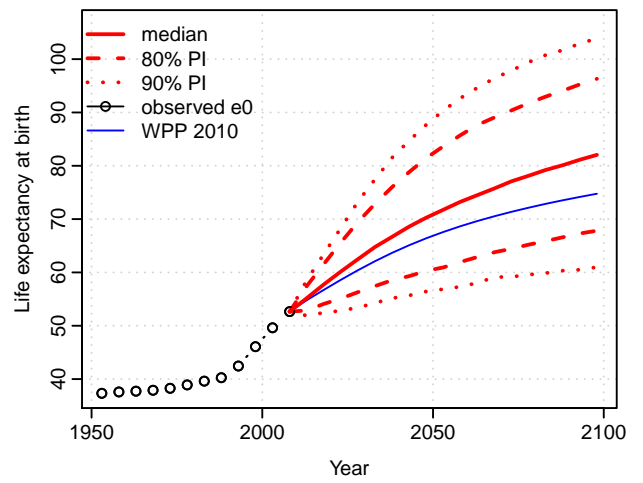
**Mauritania – Male**



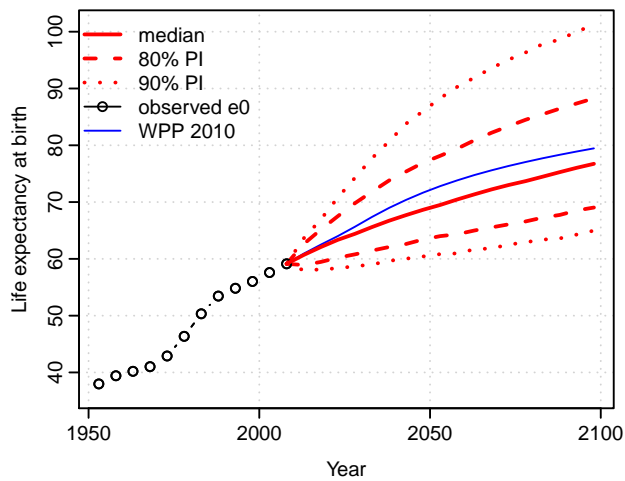
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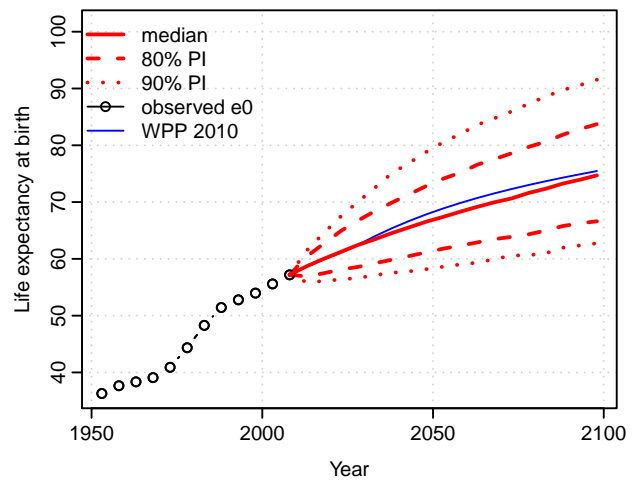
**Niger – Male**



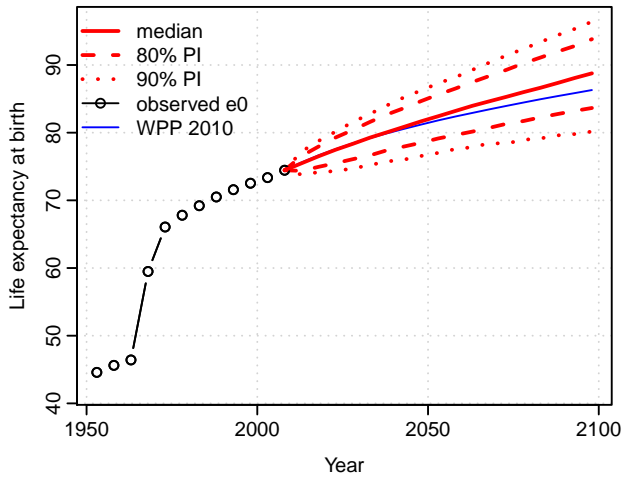
**Senegal – Female**



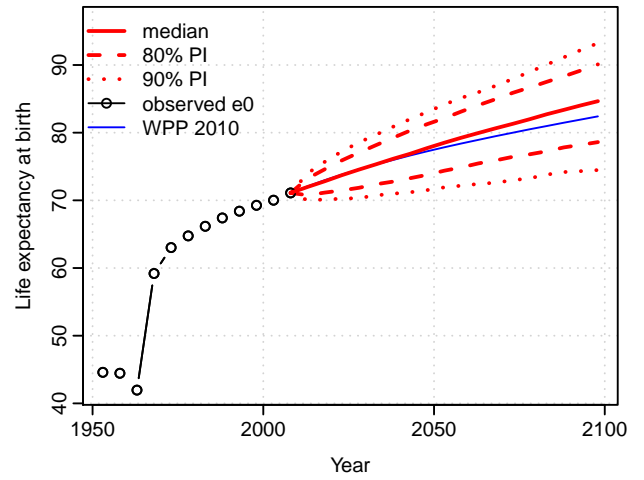
**Senegal – Male**



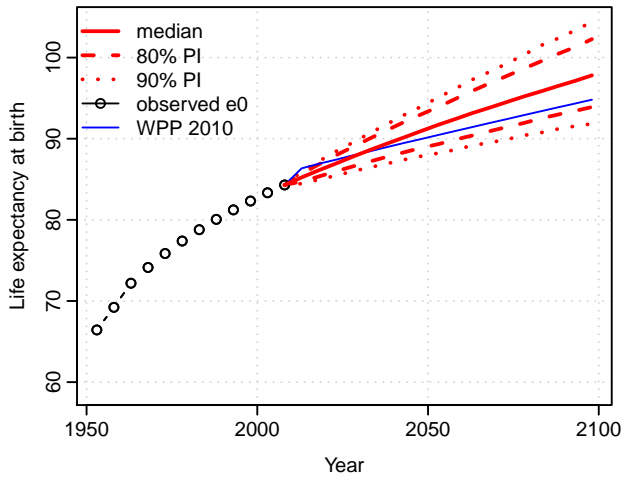
**China – Female**



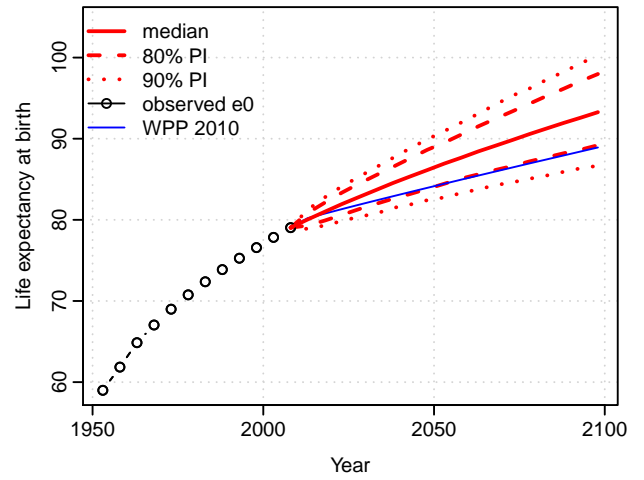
**China – Male**



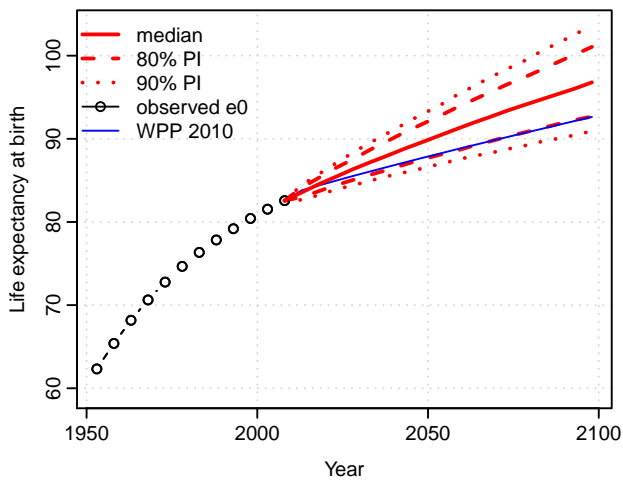
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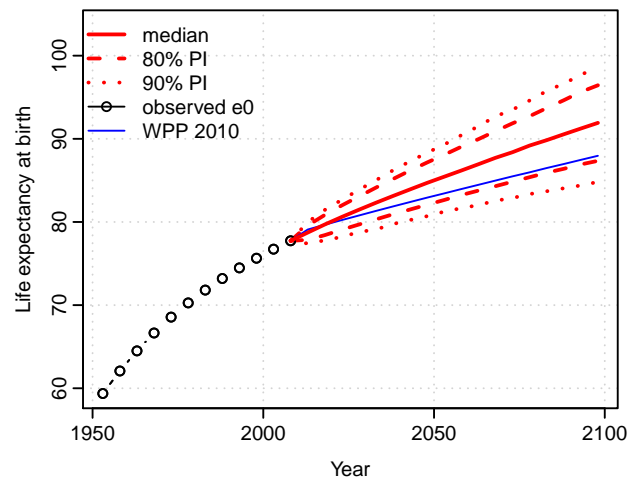
**China, Hong Kong SAR – Male**



**China, Macao SAR – Female**

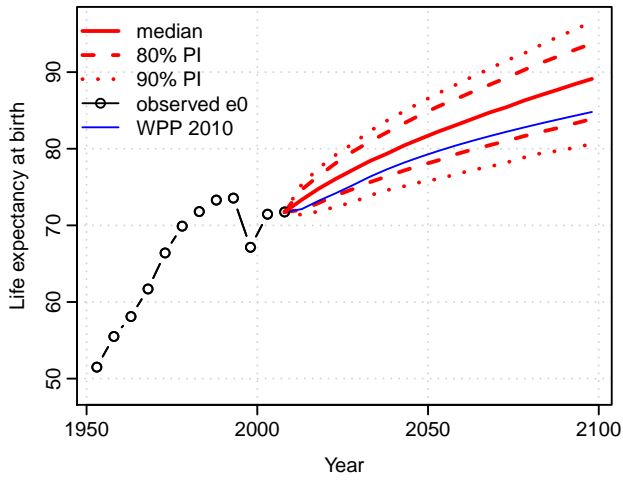


**China, Macao SAR – Male**

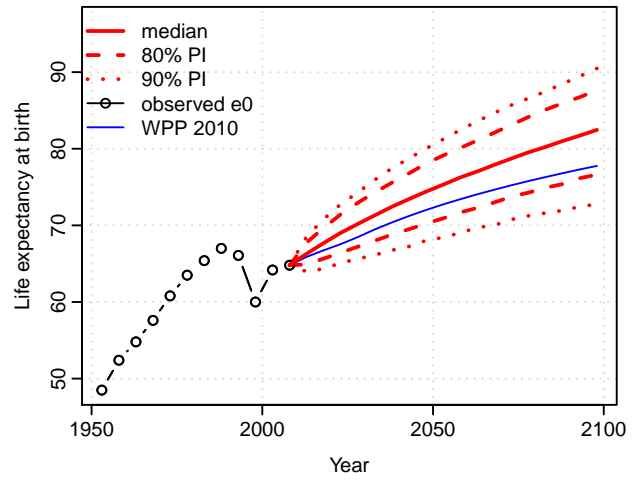




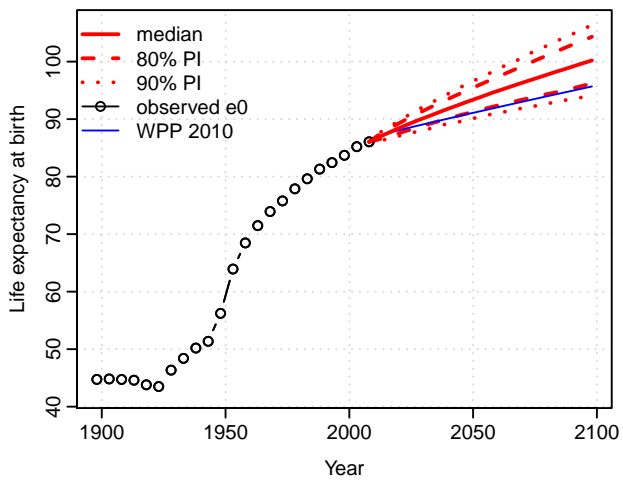
**Dem. People's Rep. of Korea – Female**



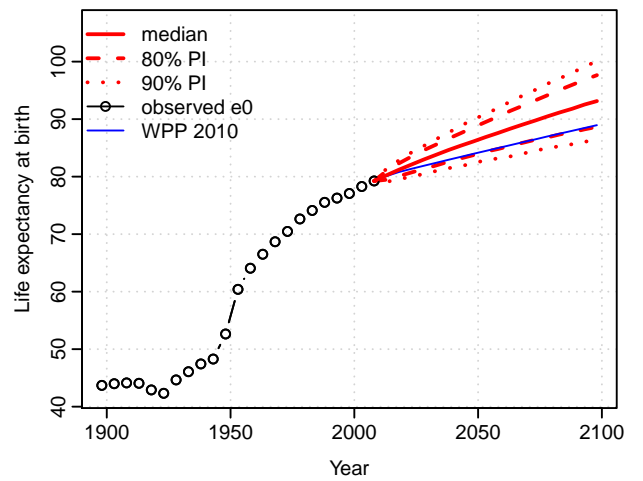
**Dem. People's Rep. of Korea – Male**



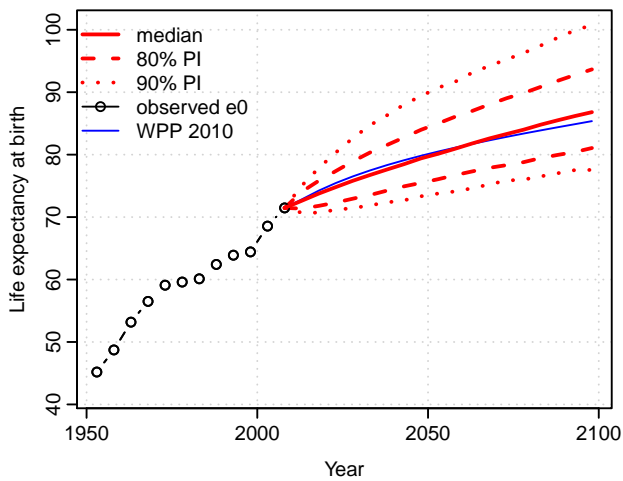
**Japan – Female**



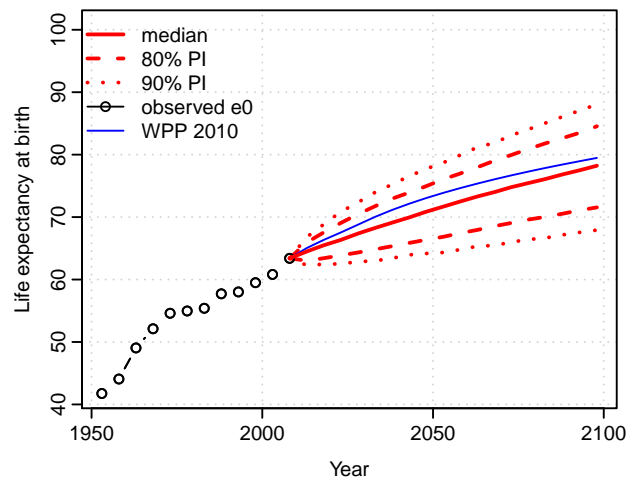
**Japan – Male**



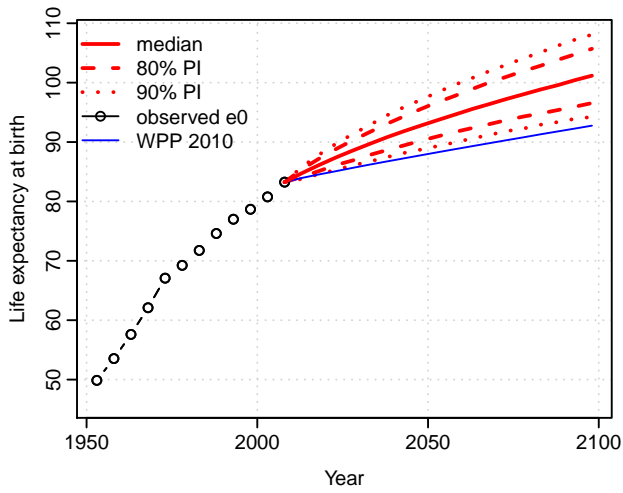
**Mongolia – Female**



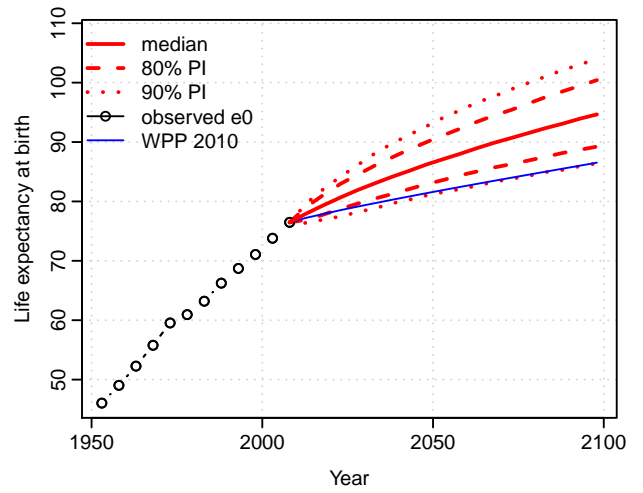
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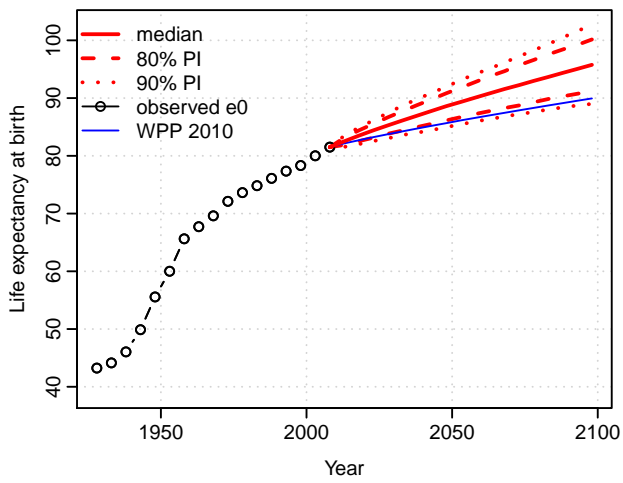
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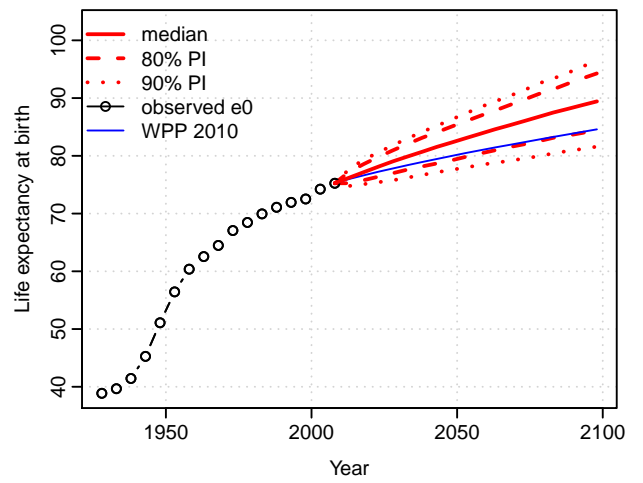
**Republic of Korea – Male**



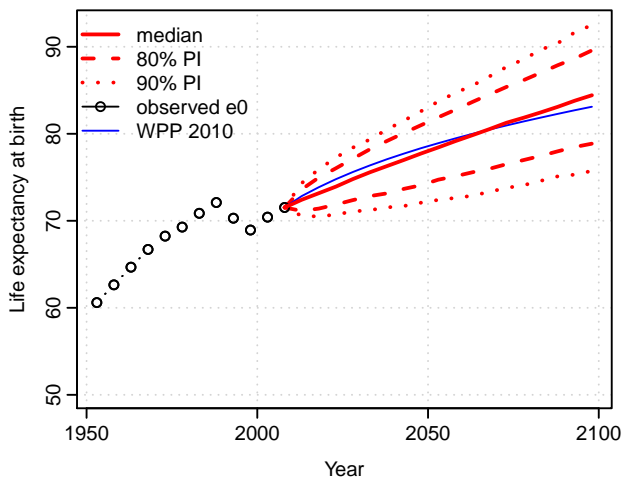
**Taiwan, Province of China – Female**



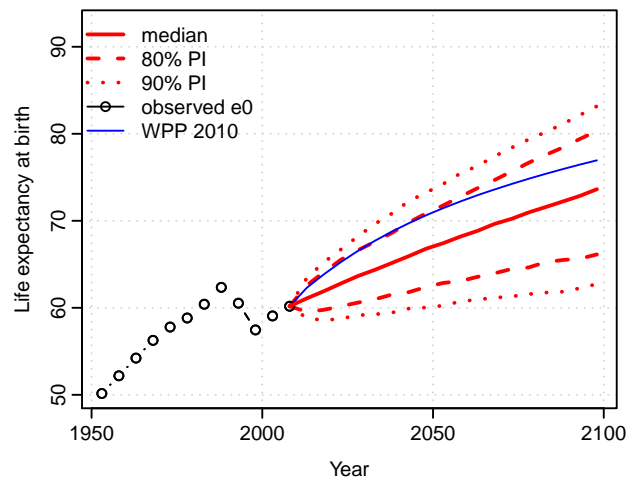
**Taiwan, Province of China – Male**



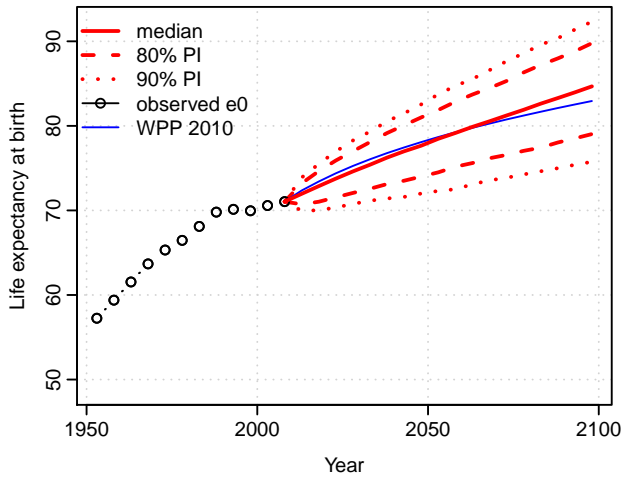
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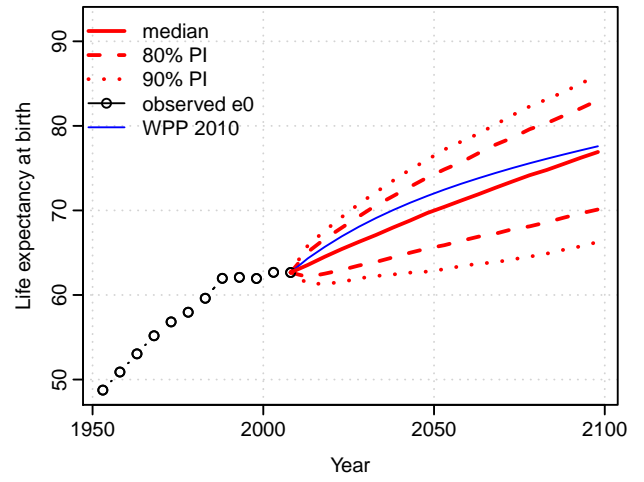
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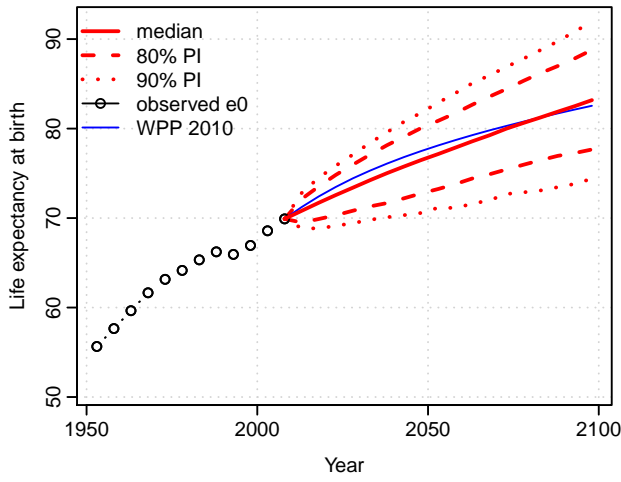
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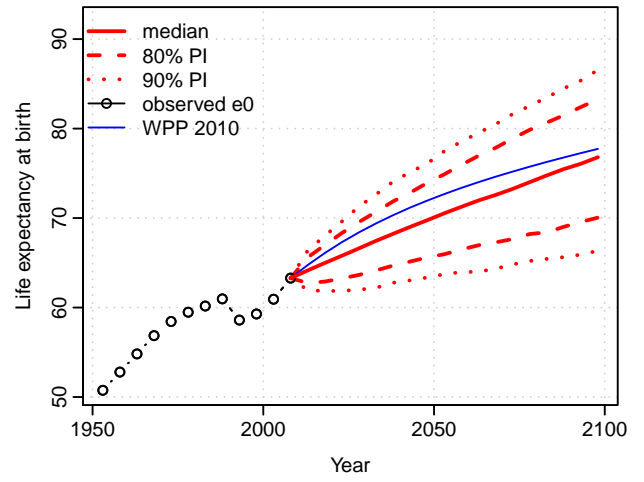
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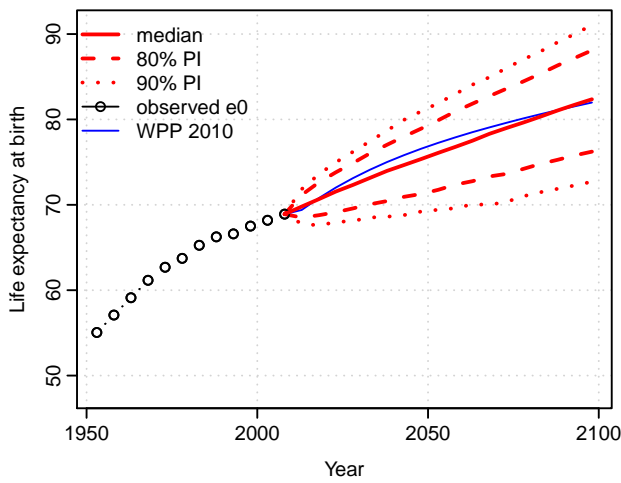
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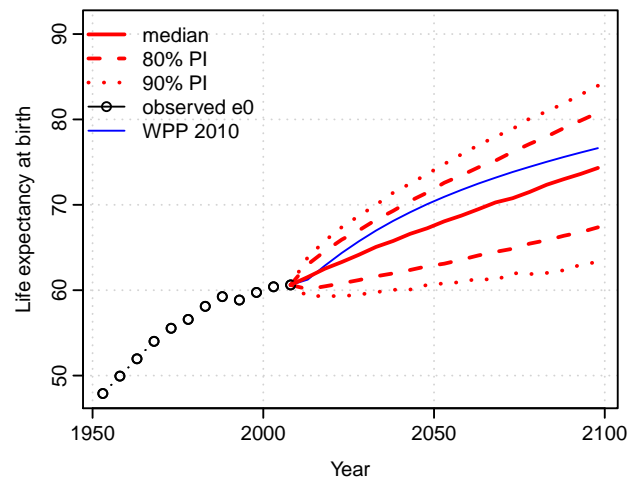
**Tajikistan – Male**



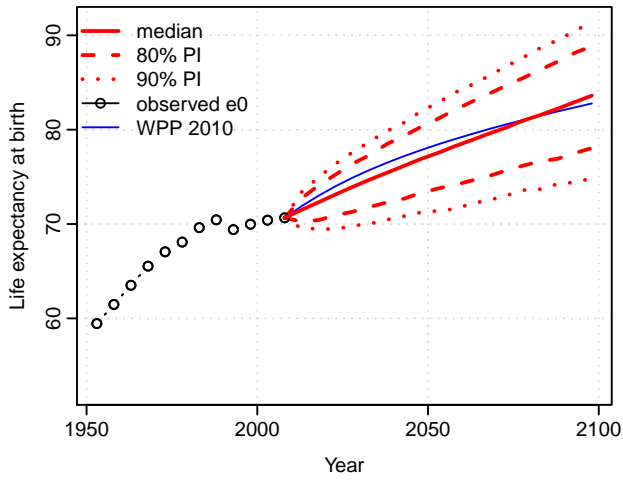
**Turkmenistan – Female**



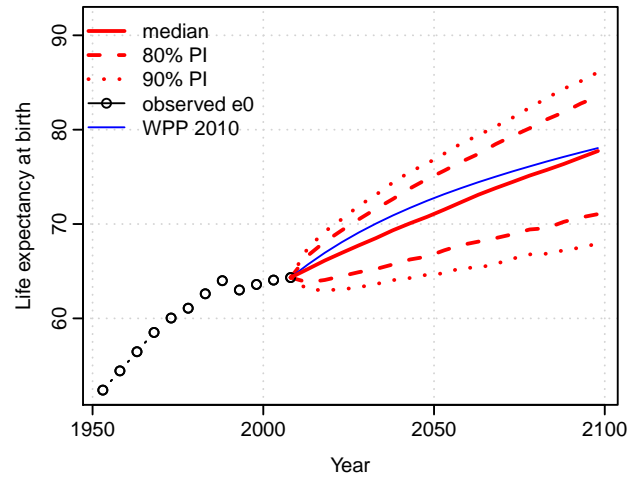
**Turkmenistan – Male**



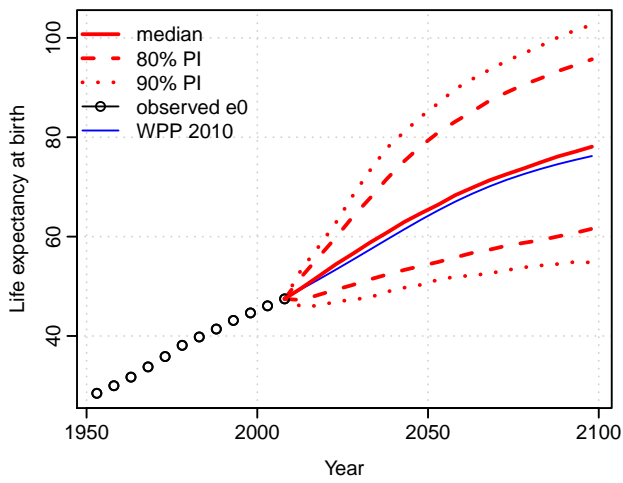
**Uzbekistan – Female**



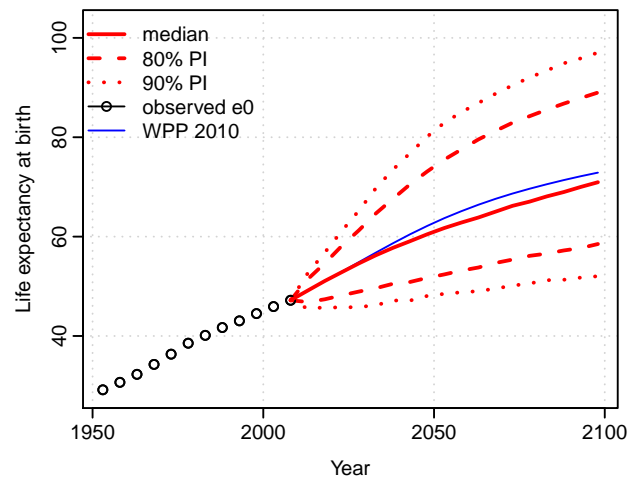
**Uzbekistan – Male**



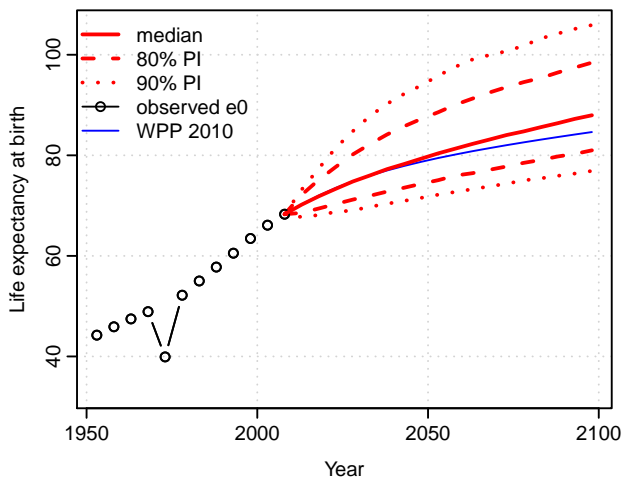
**Afghanistan – Female**



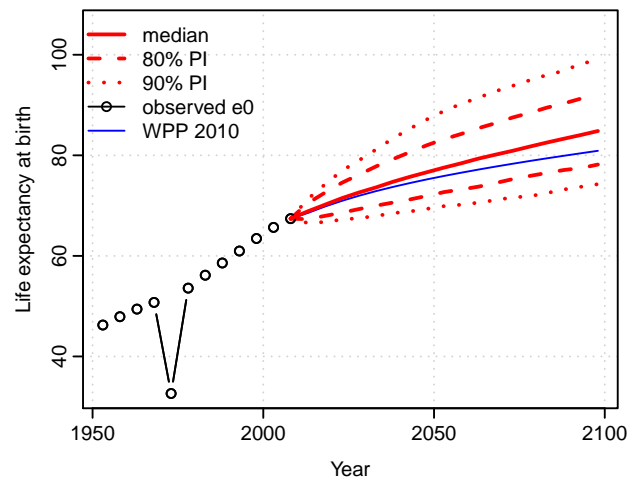
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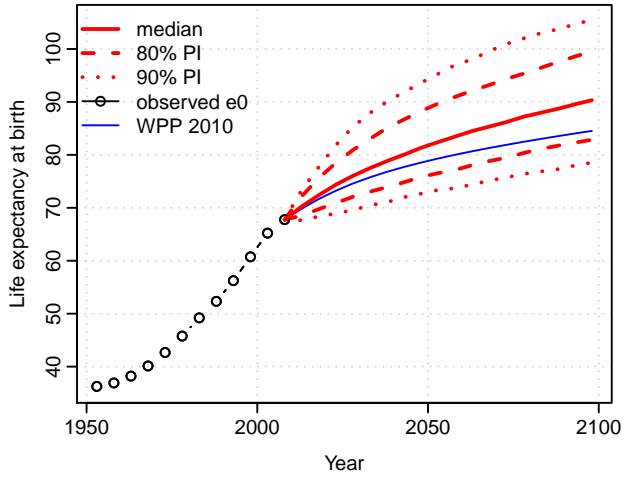
**Bangladesh – Female**



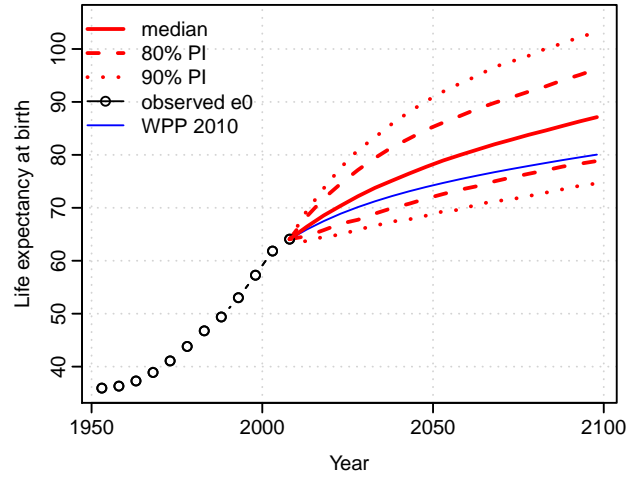
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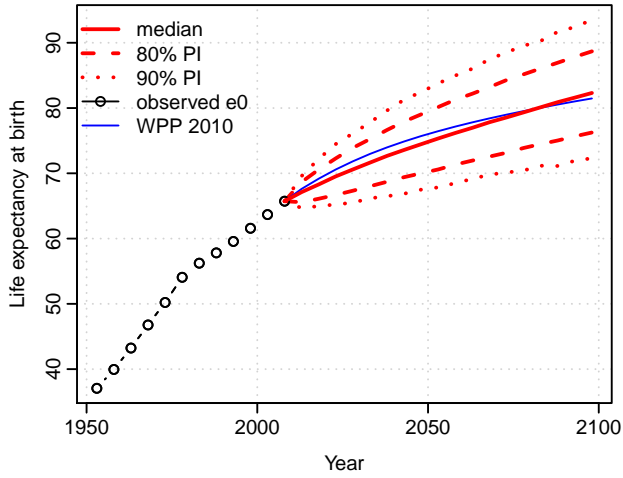
**Bhutan – Female**



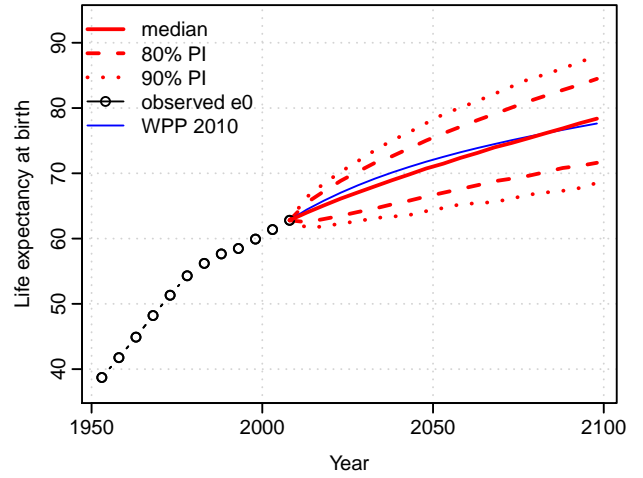
**Bhutan – Male**



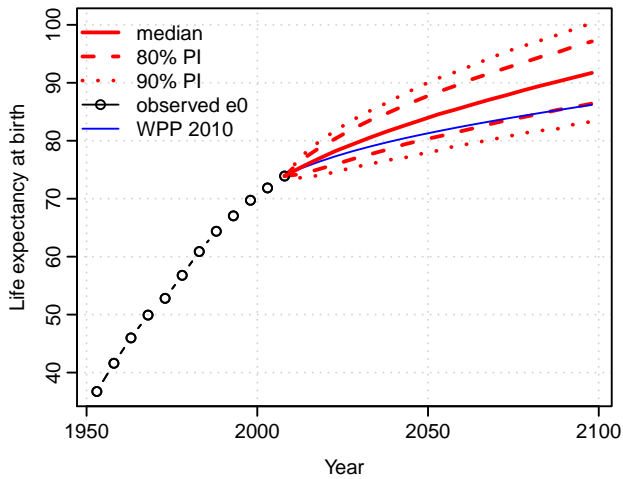
**India – Female**



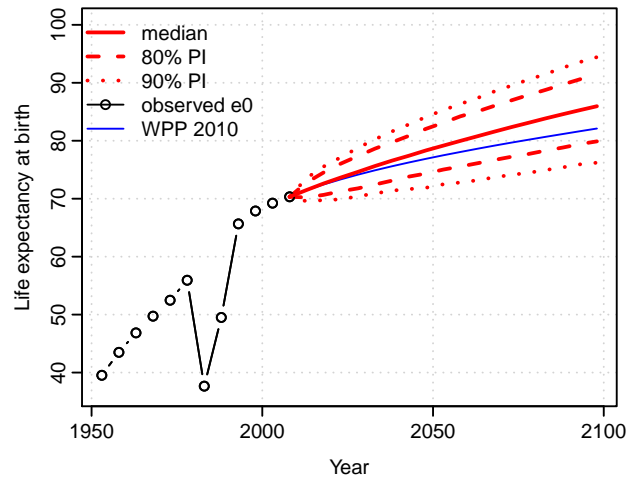
**India – Male**



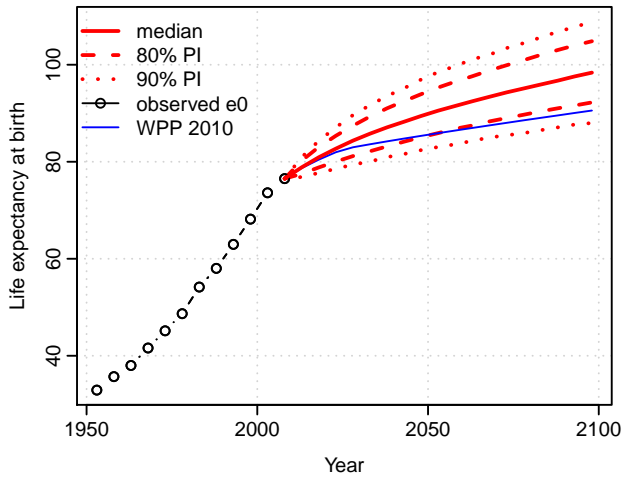
**Iran (Islamic Republic of) – Female**



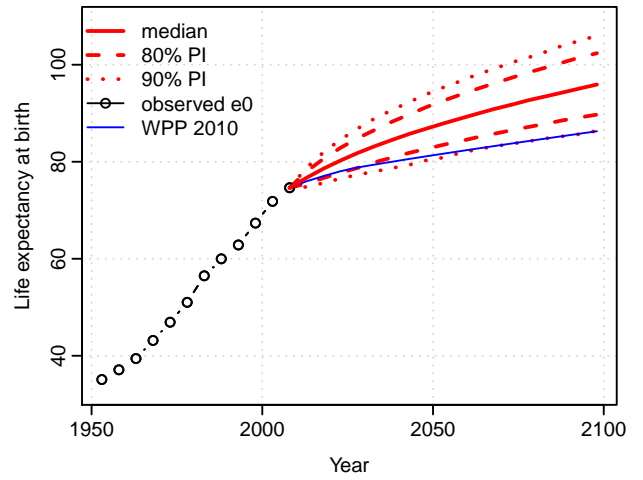
**Iran (Islamic Republic of) – Male**



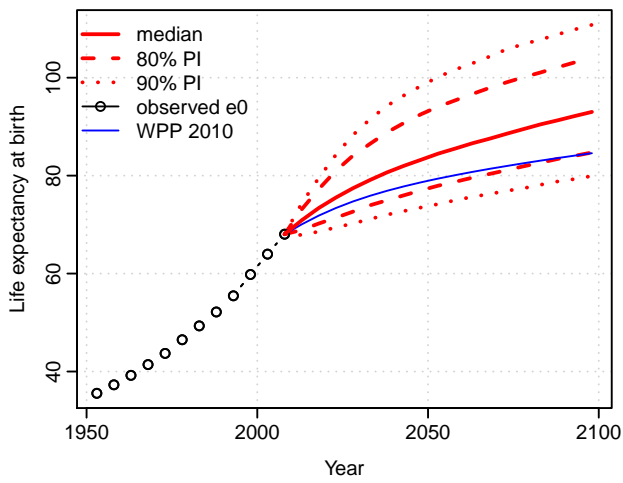
**Maldives – Female**



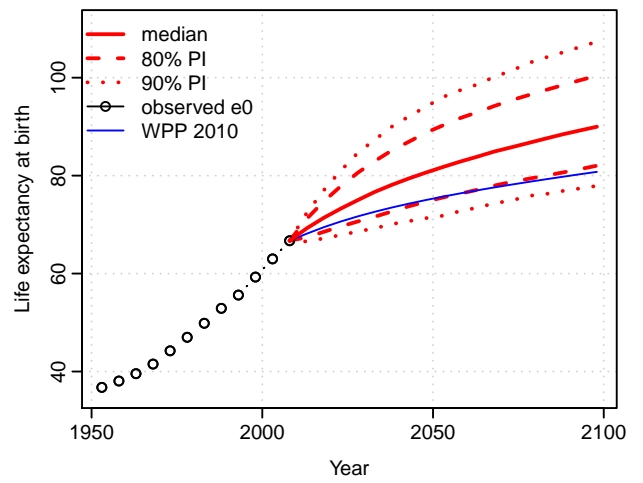
**Maldives – Male**



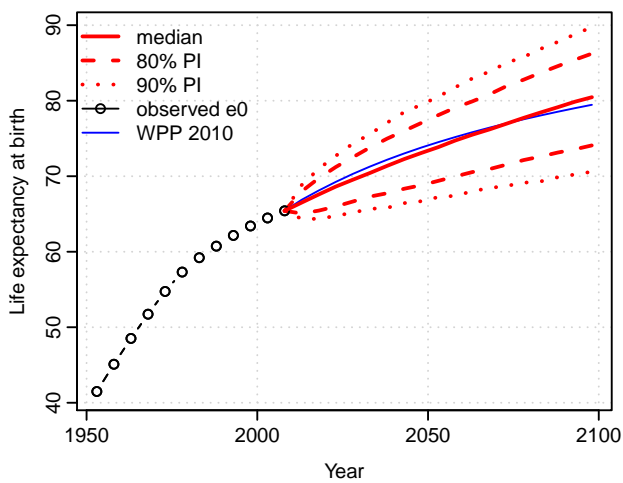
**Nepal – Female**



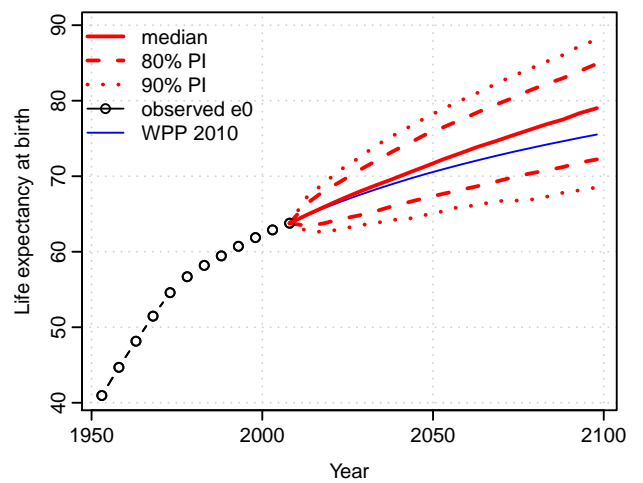
**Nepal – Male**

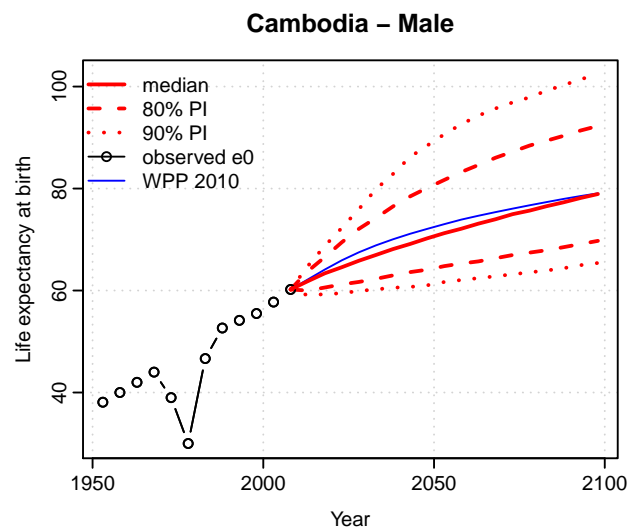
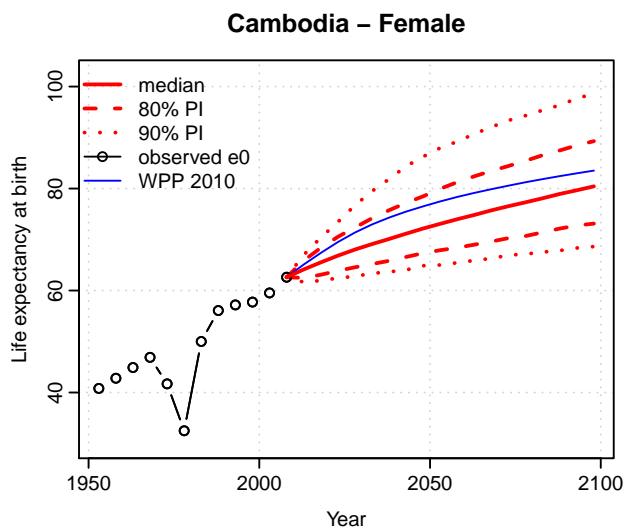
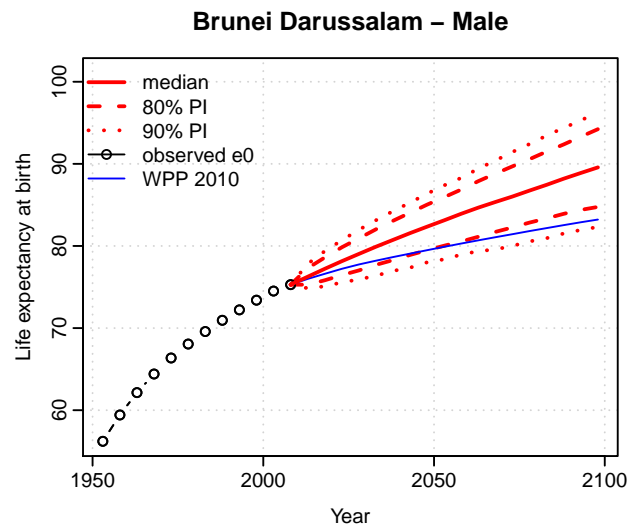
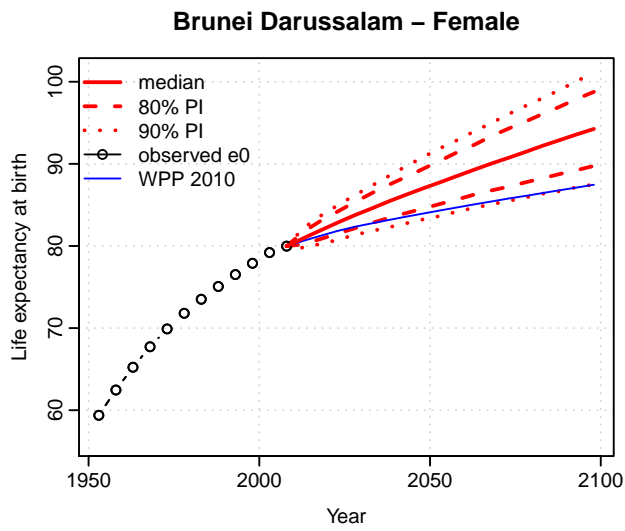
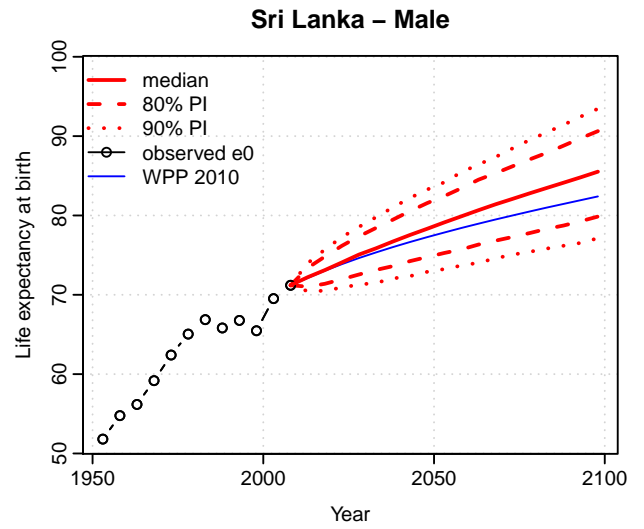
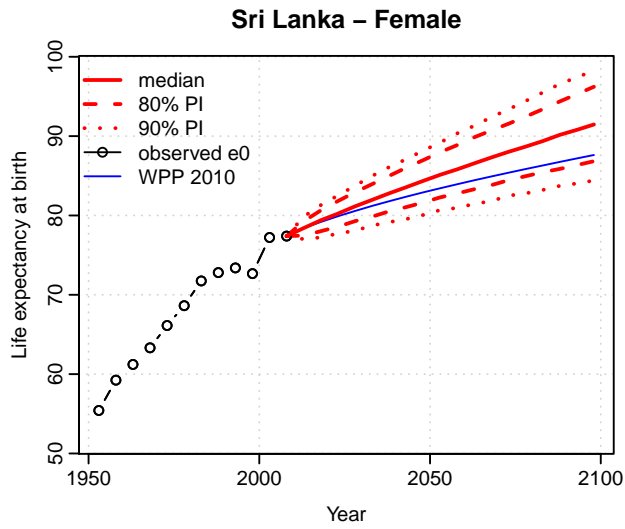


**Pakistan – Female**

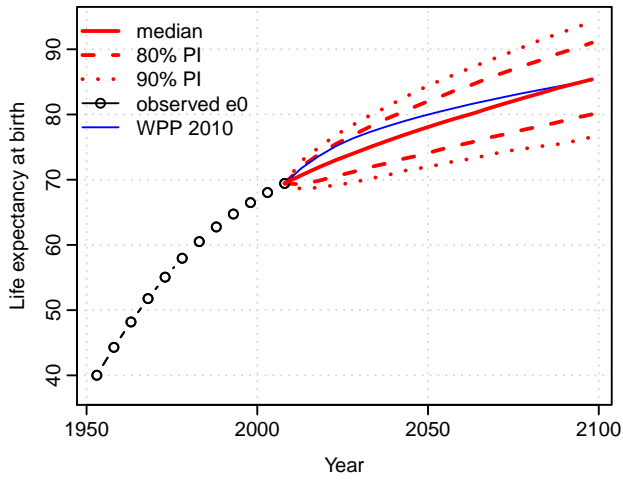


**Pakistan – Male**

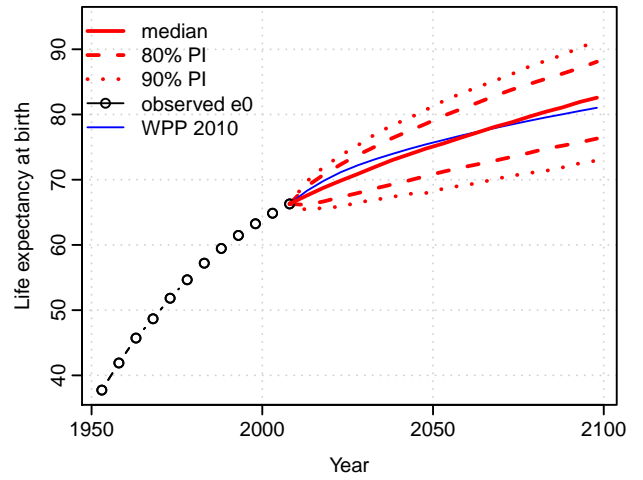




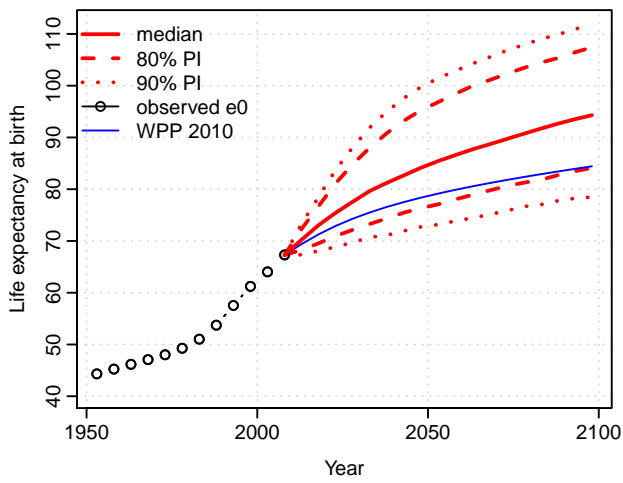
**Indonesia – Female**



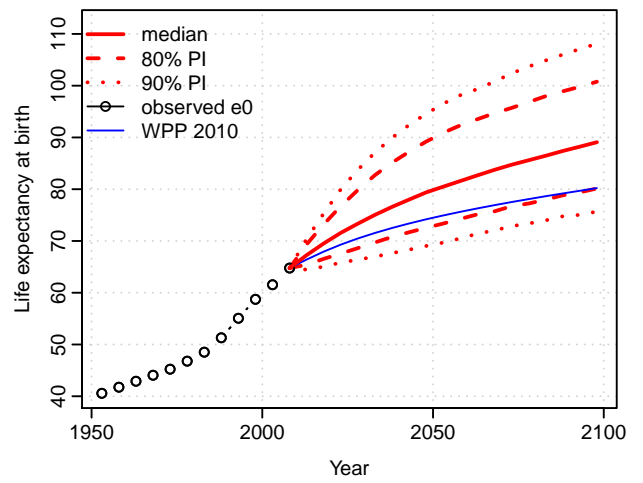
**Indonesia – Male**



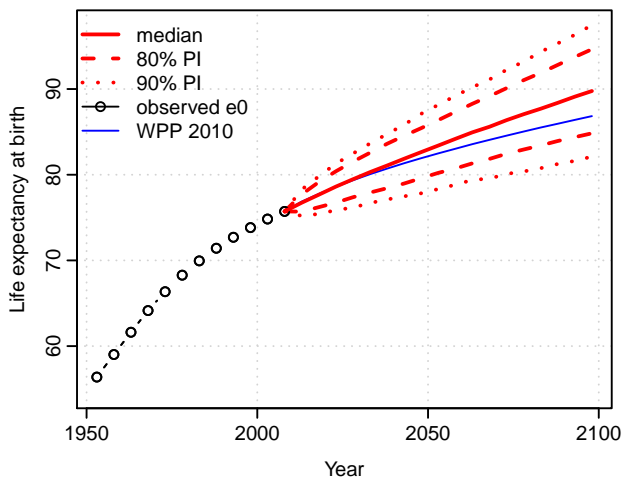
**Lao People's Dem. Republic – Female**



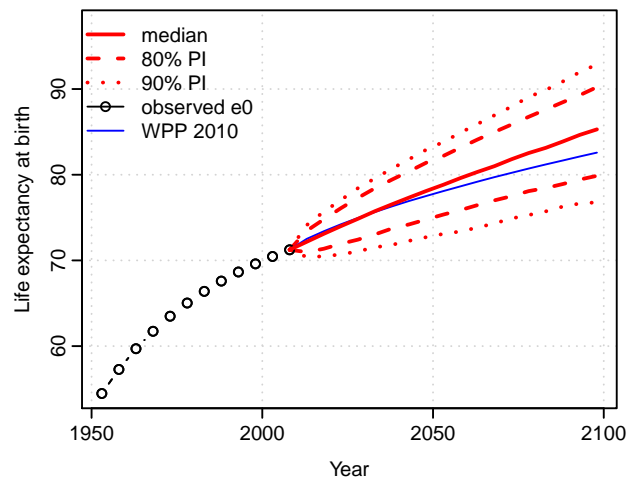
**Lao People's Dem. Republic – Male**



**Malaysia – Female**

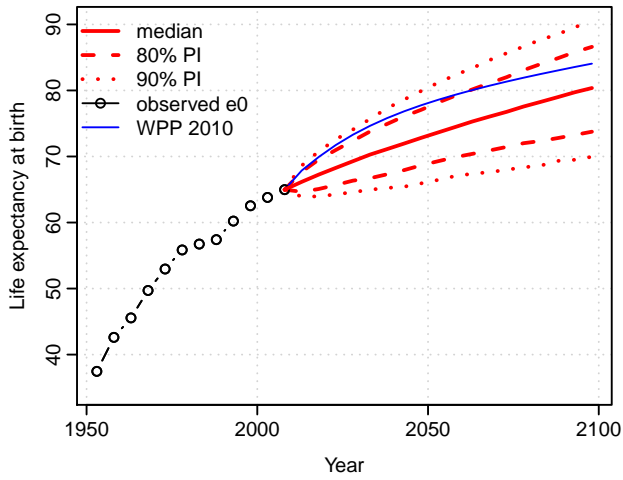


**Malaysia – Male**

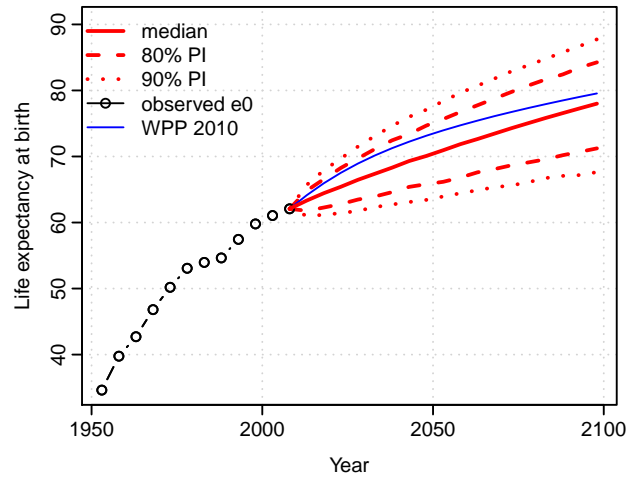




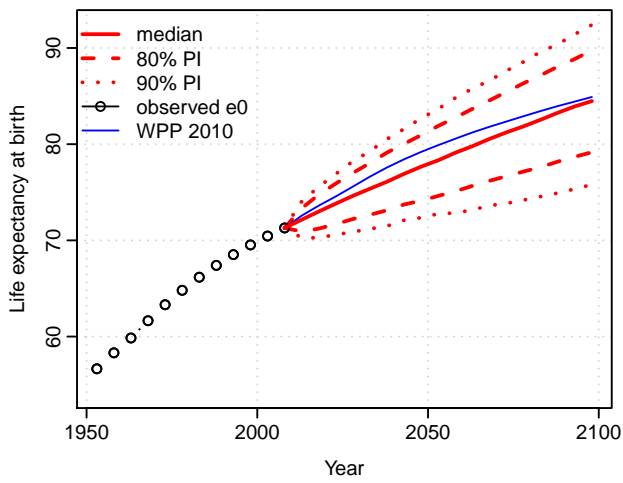
**Myanmar – Female**



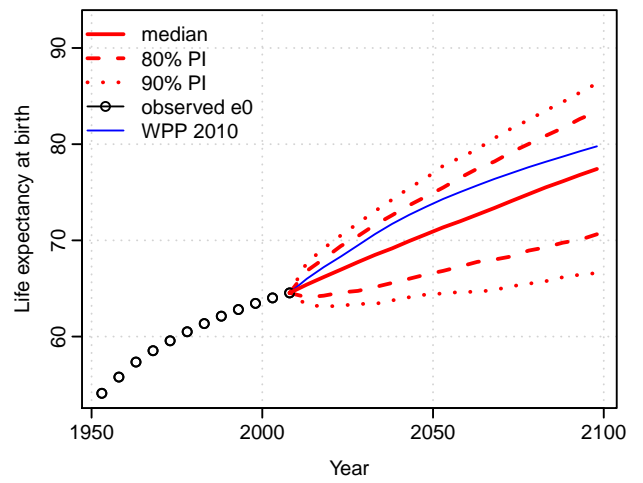
**Myanmar – Male**



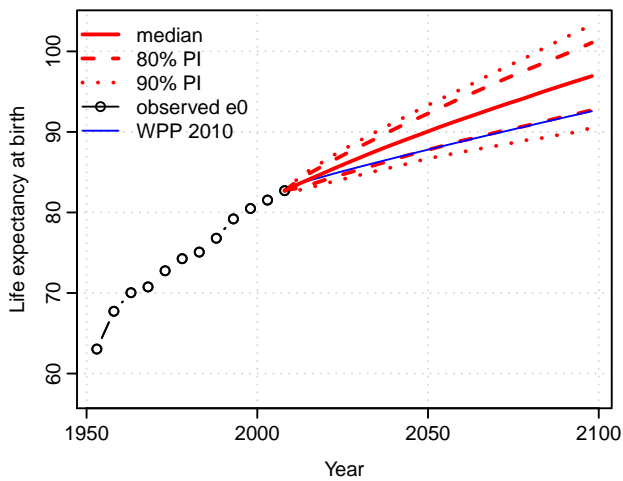
**Philippines – Female**



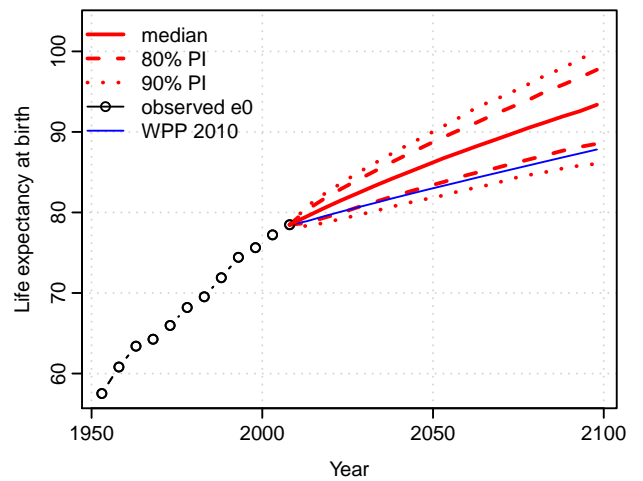
**Philippines – Male**

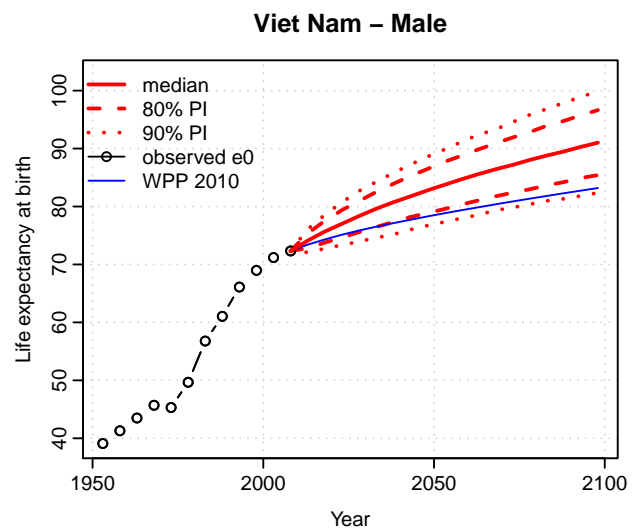
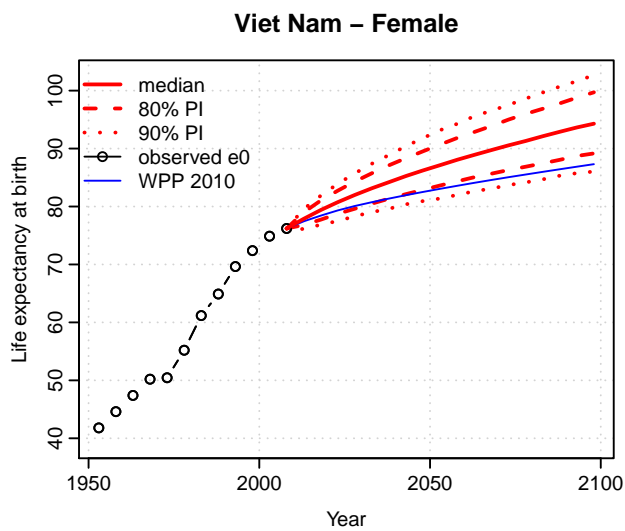
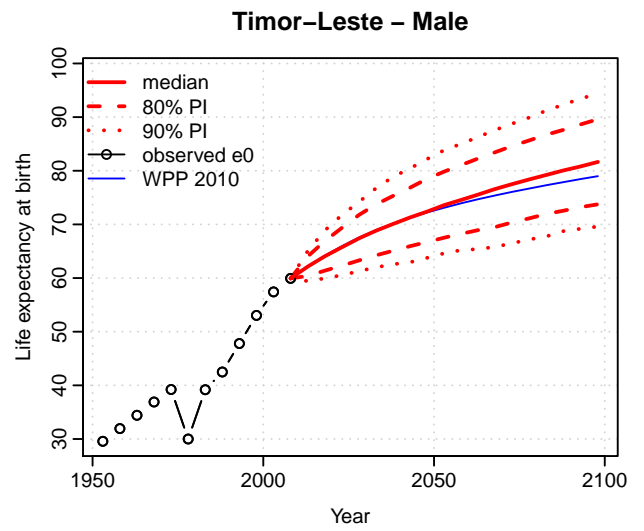
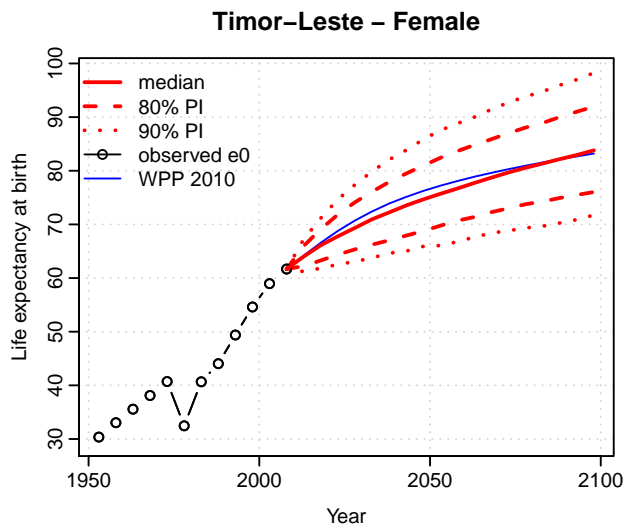
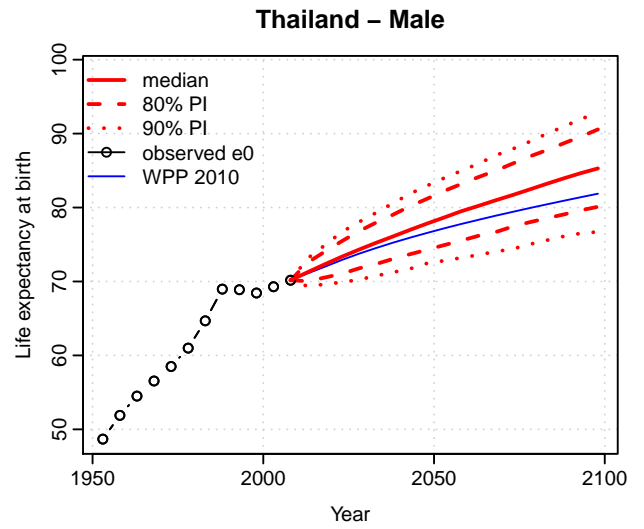
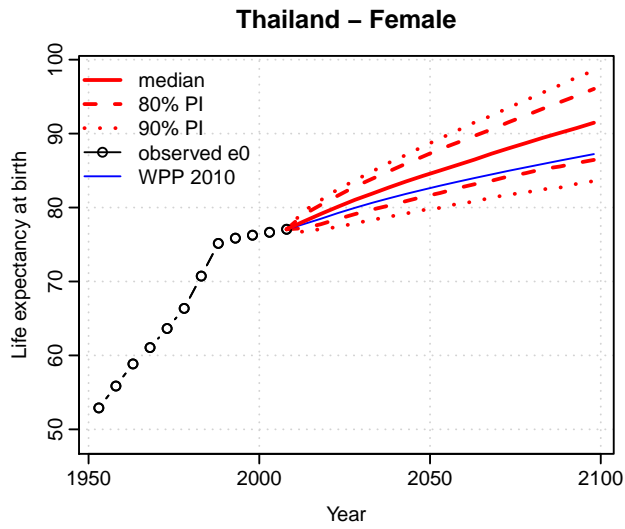


**Singapore – Female**

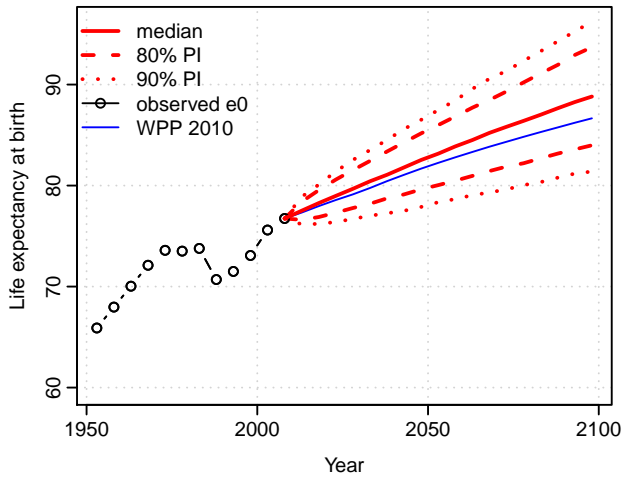


**Singapore – Male**

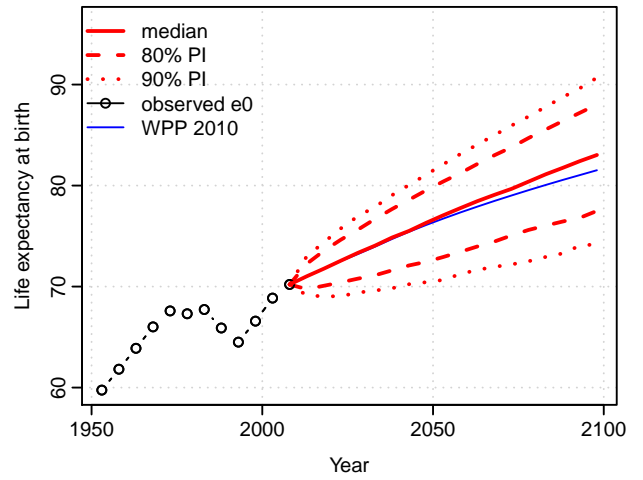




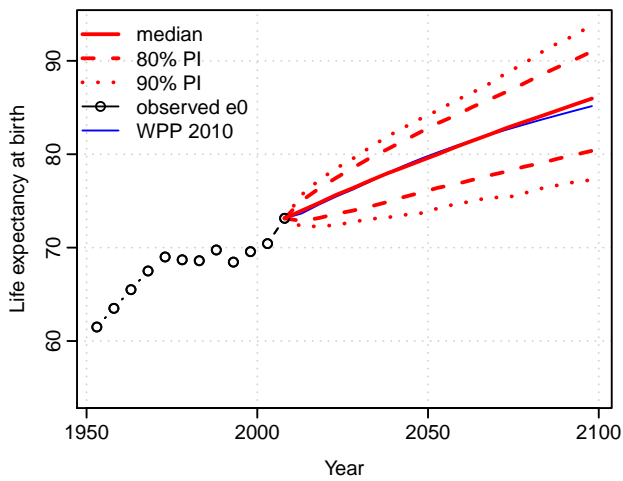
**Armenia – Female**



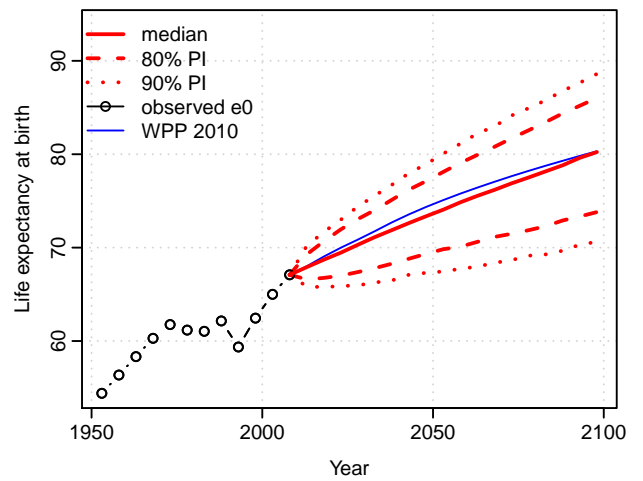
**Armenia – Male**



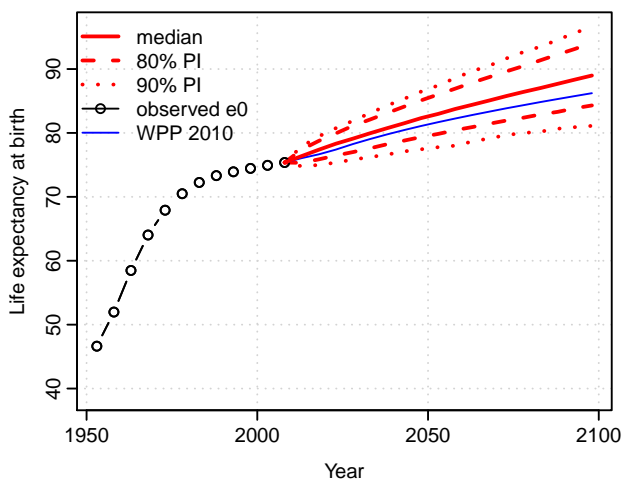
**Azerbaijan – Female**



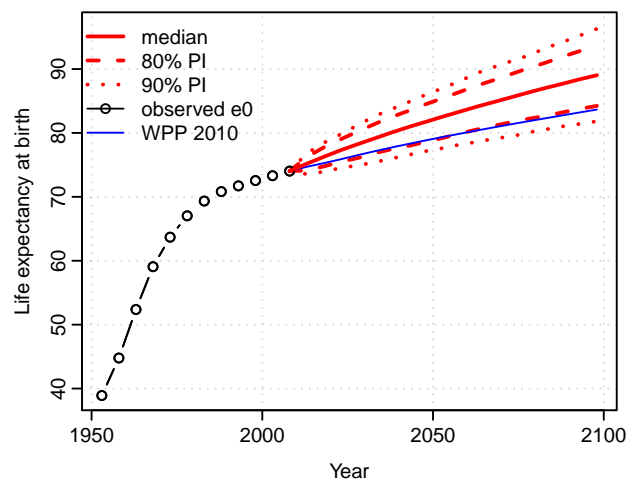
**Azerbaijan – Male**



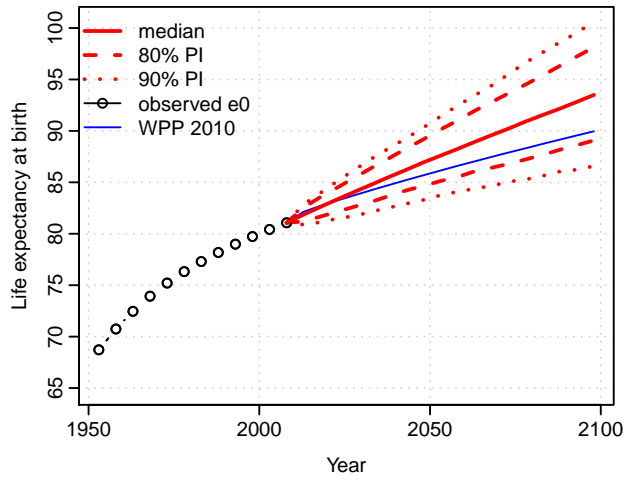
**Bahrain – Female**



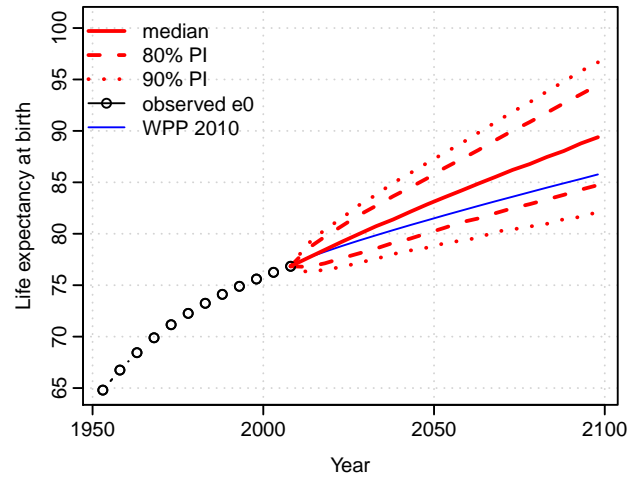
**Bahrain – Male**



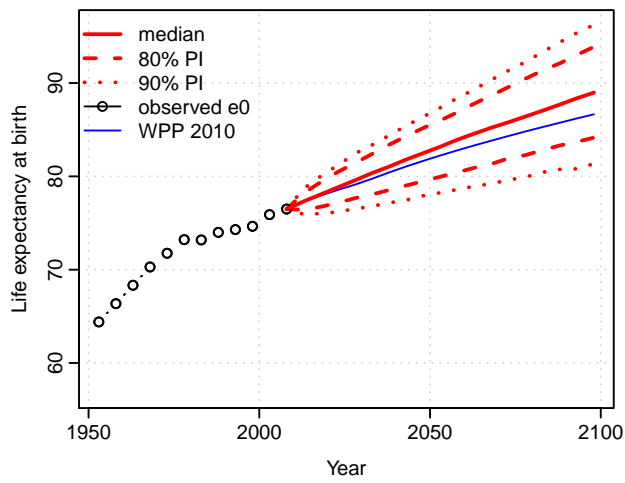
**Cyprus – Female**



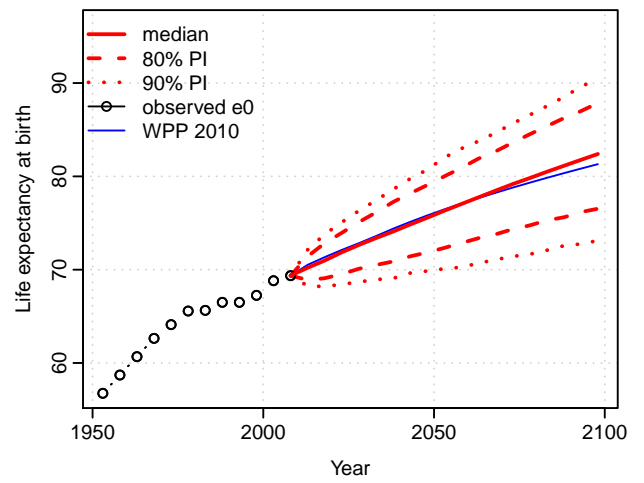
**Cyprus – Male**



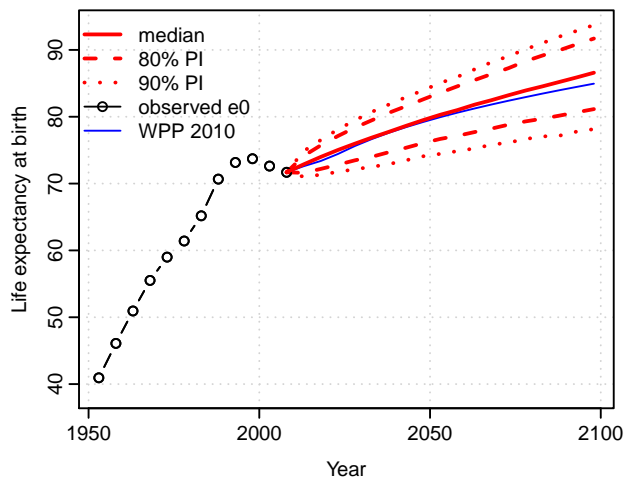
**Georgia – Female**



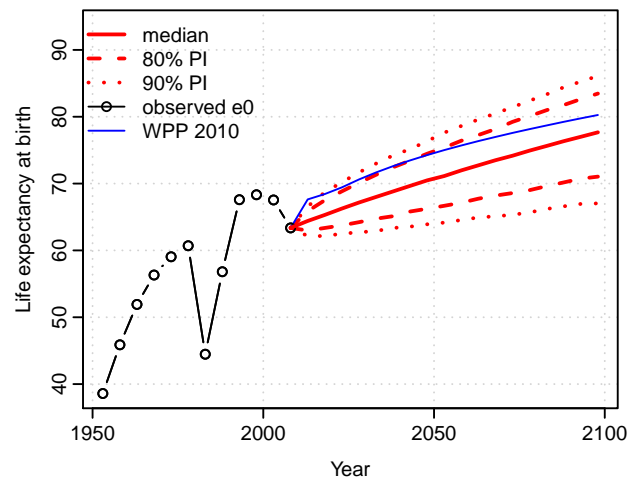
**Georgia – Male**



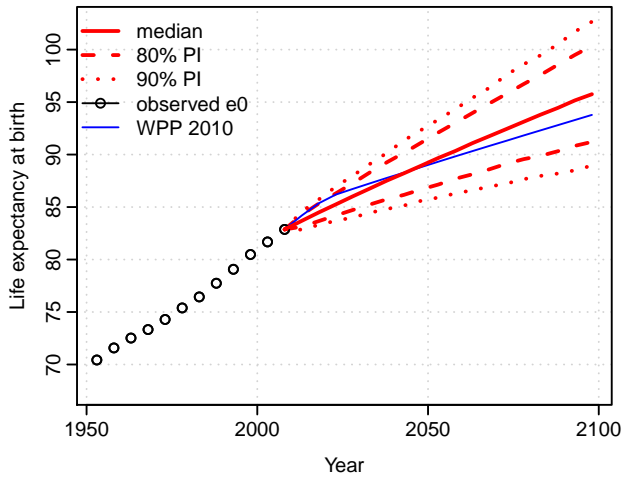
**Iraq – Female**



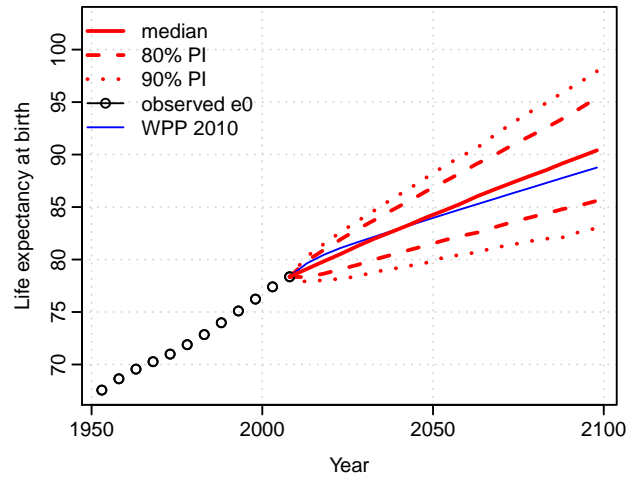
**Iraq – Male**



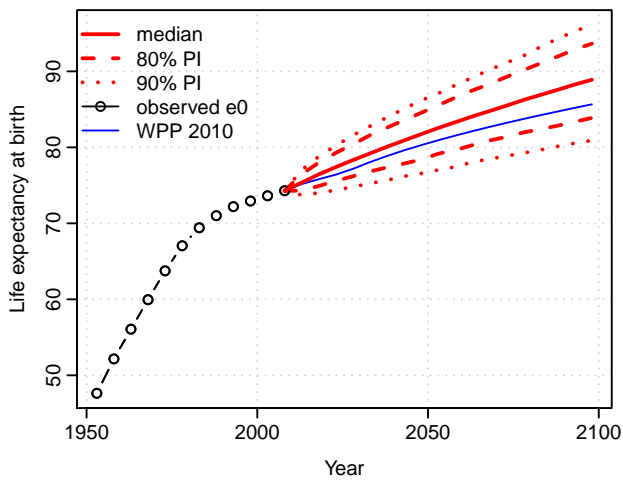
**Israel – Female**



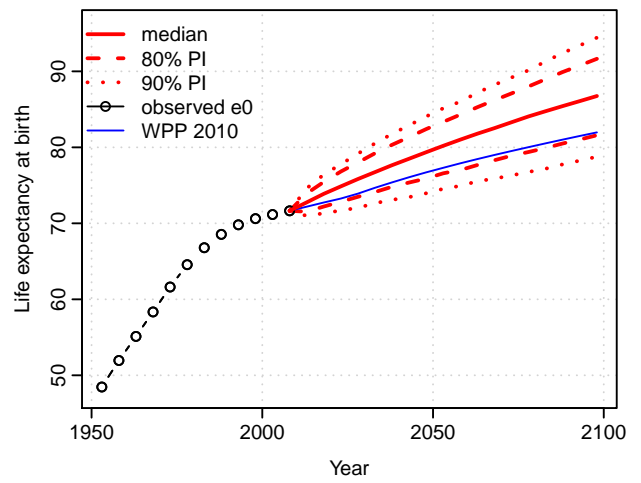
**Israel – Male**



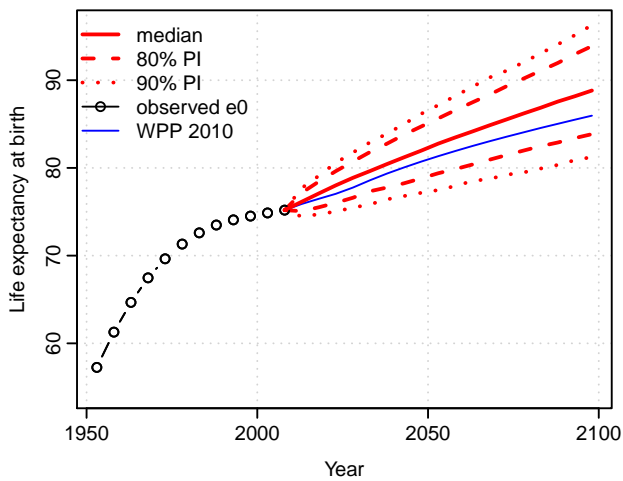
**Jordan – Female**



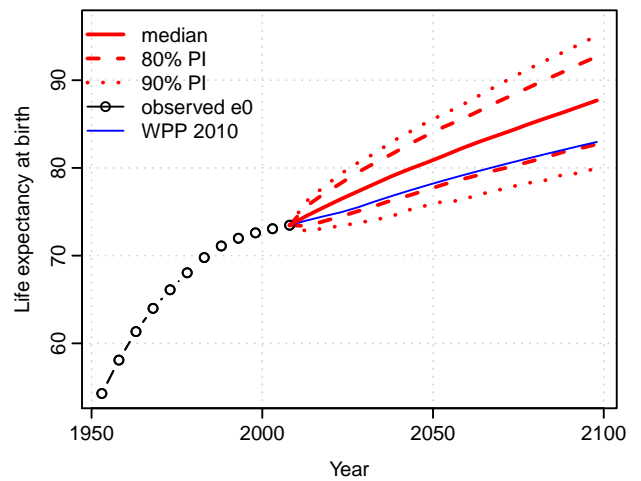
**Jordan – Male**



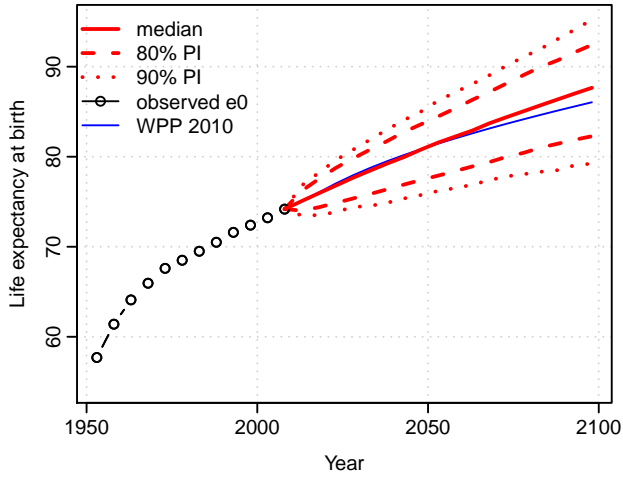
**Kuwait – Female**



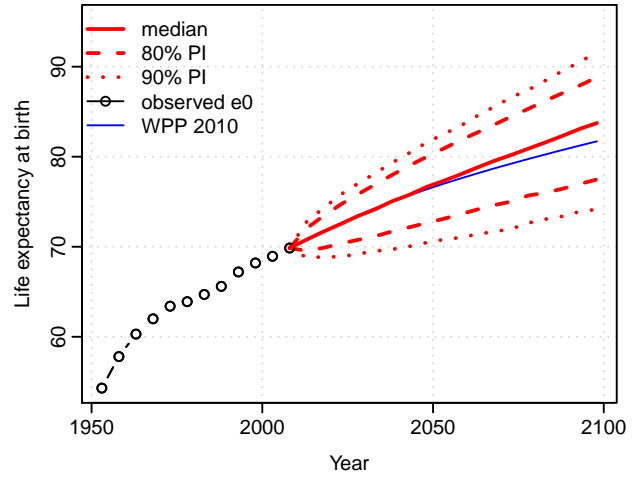
**Kuwait – Male**



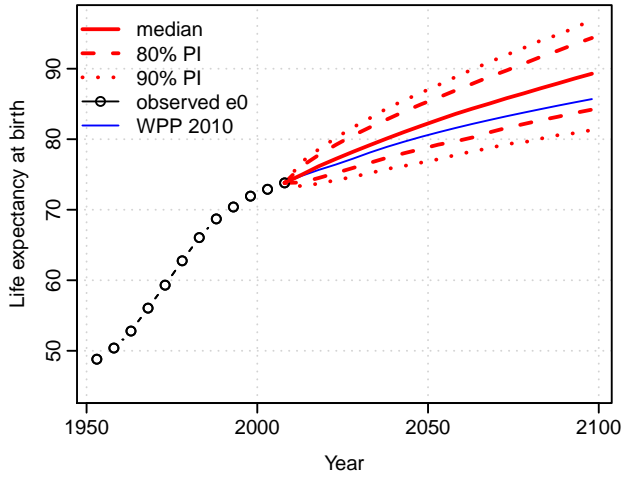
**Lebanon – Female**



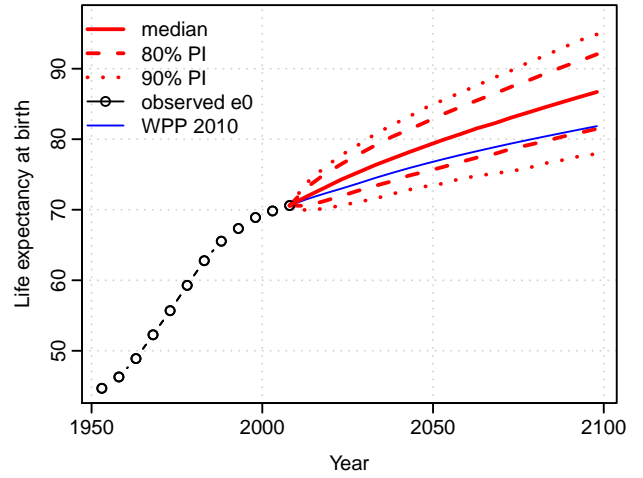
**Lebanon – Male**



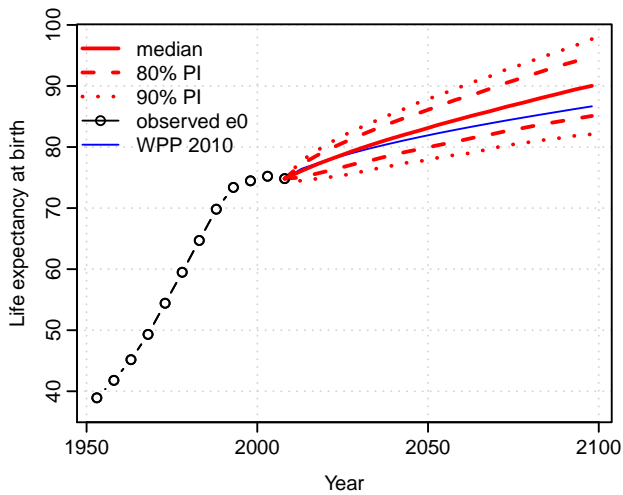
**Occupied Palestinian Territory – Female**



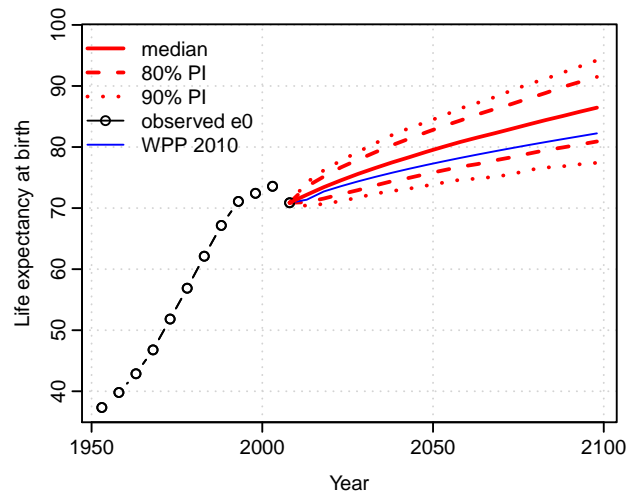
**Occupied Palestinian Territory – Male**



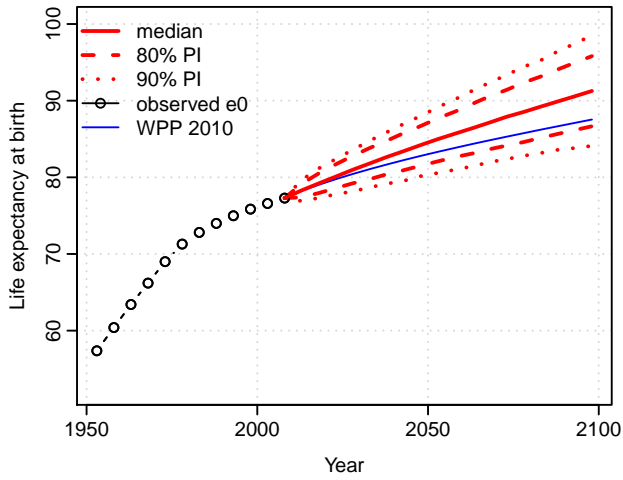
**Oman – Female**



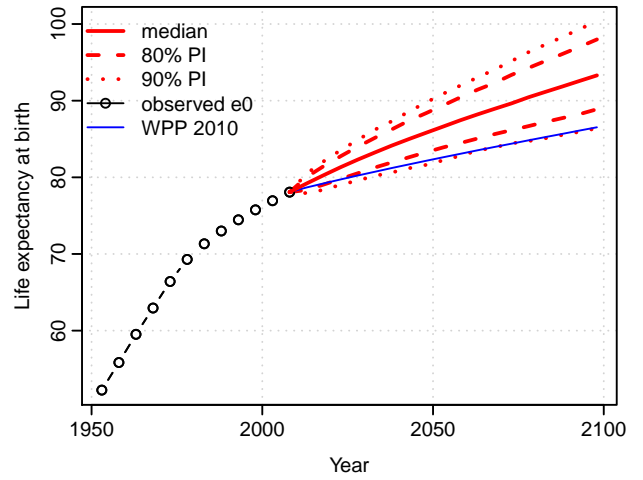
**Oman – Male**



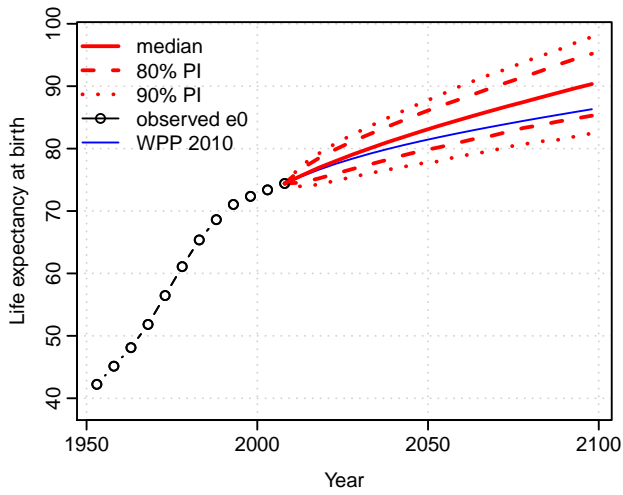
**Qatar – Female**



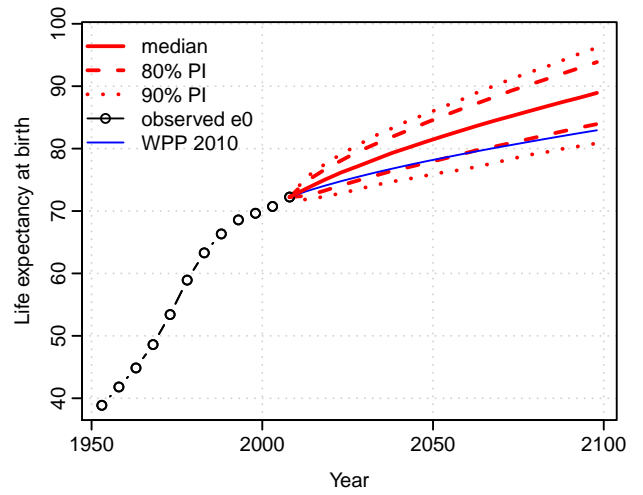
**Qatar – Male**



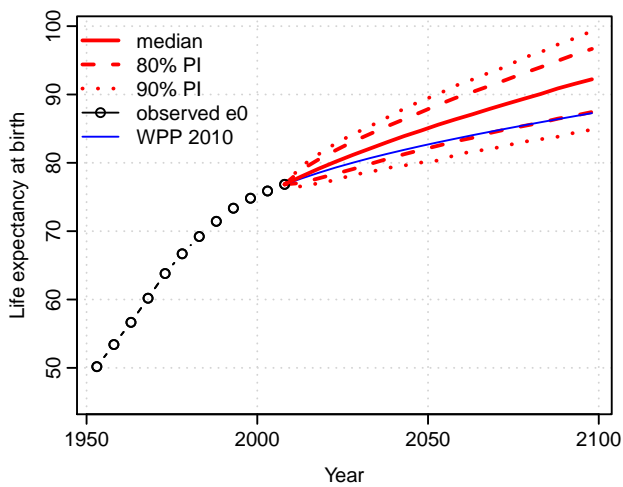
**Saudi Arabia – Female**



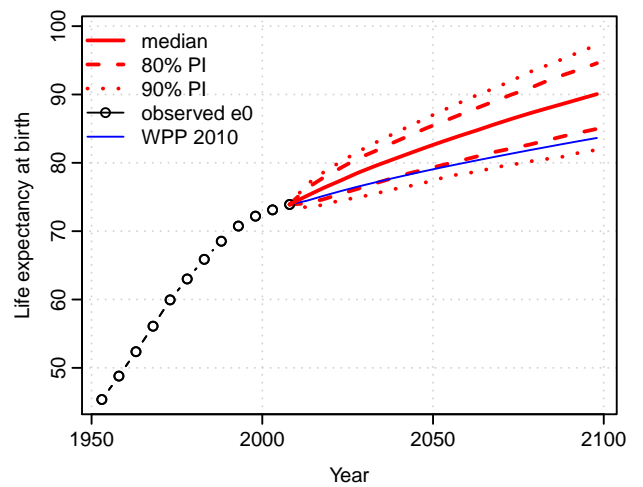
**Saudi Arabia – Male**



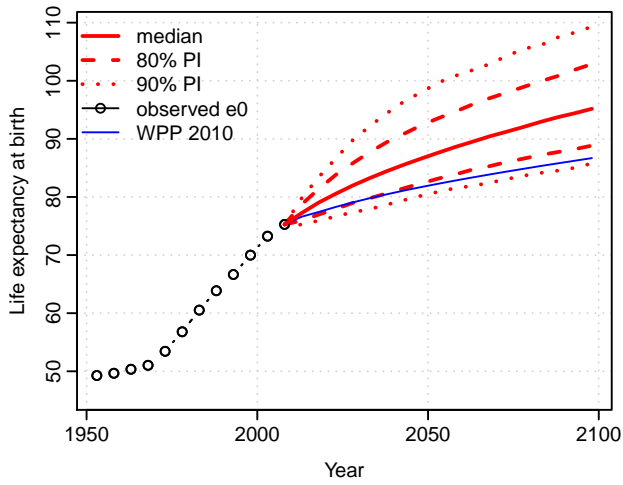
**Syrian Arab Republic – Female**



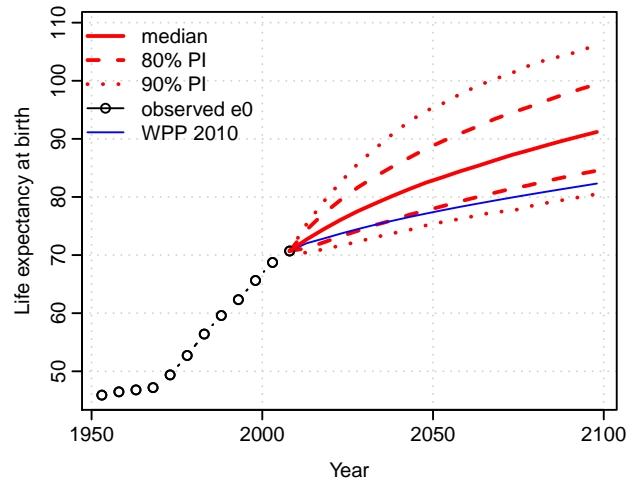
**Syrian Arab Republic – Male**



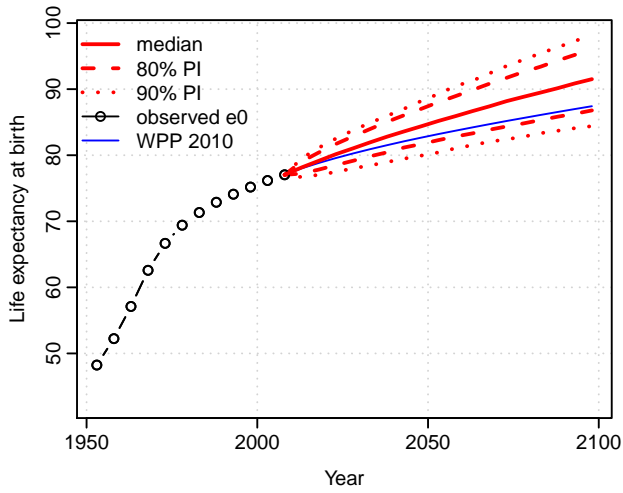
Turkey – Female



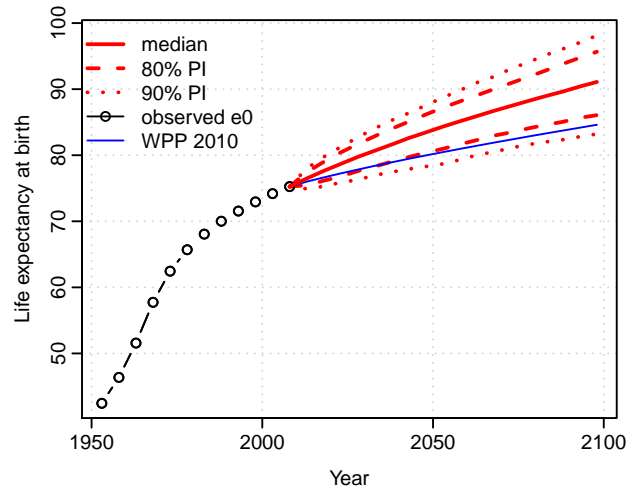
Turkey – Male



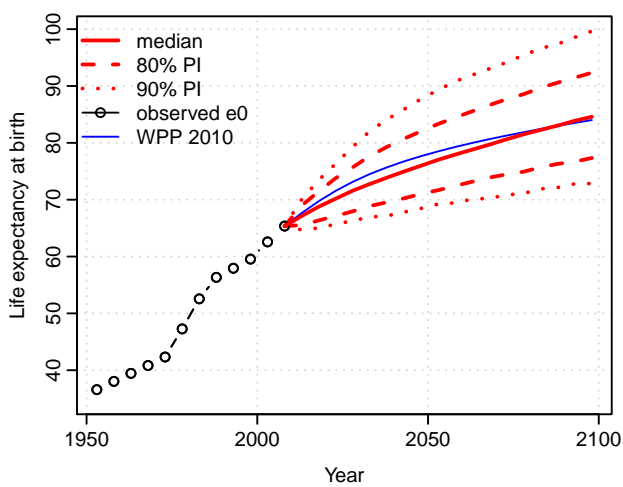
United Arab Emirates – Female



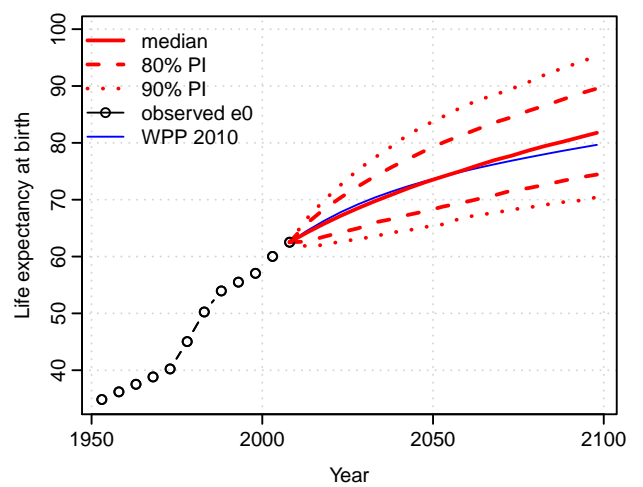
United Arab Emirates – Male



Yemen – Female

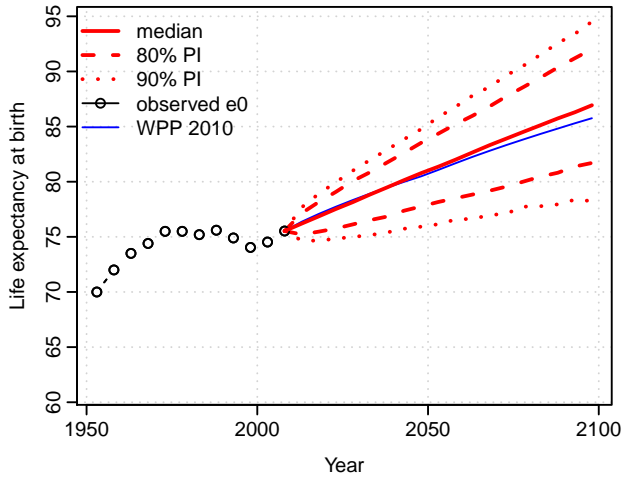


Yemen – Male

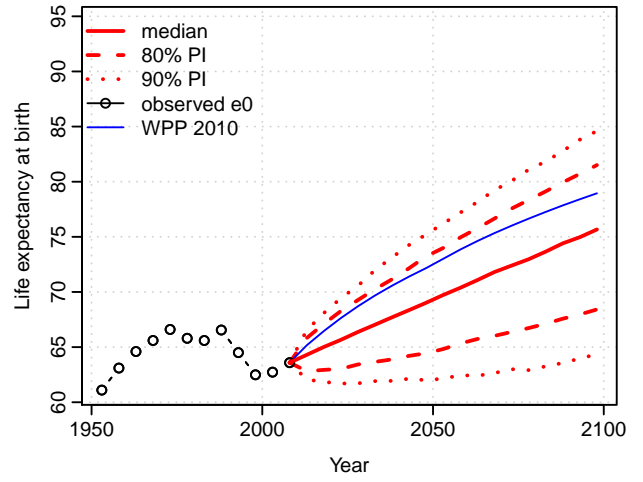




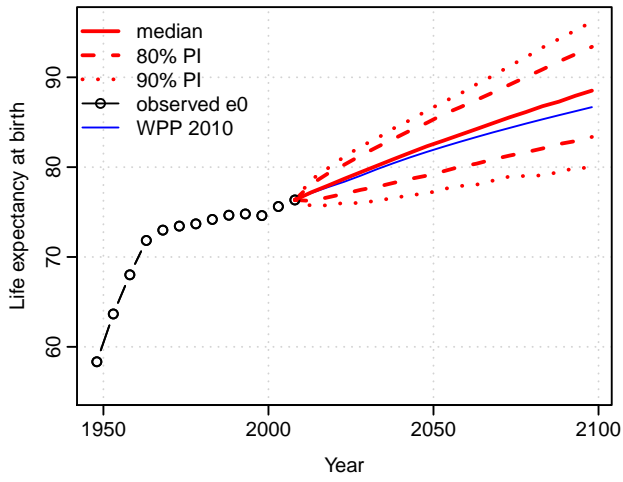
**Belarus – Female**



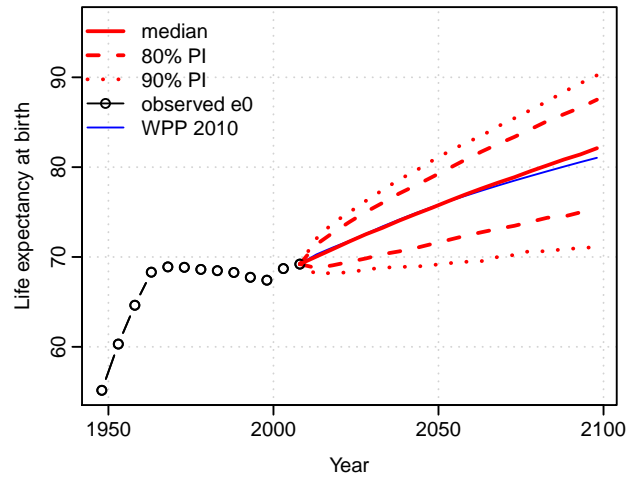
**Belarus – Male**



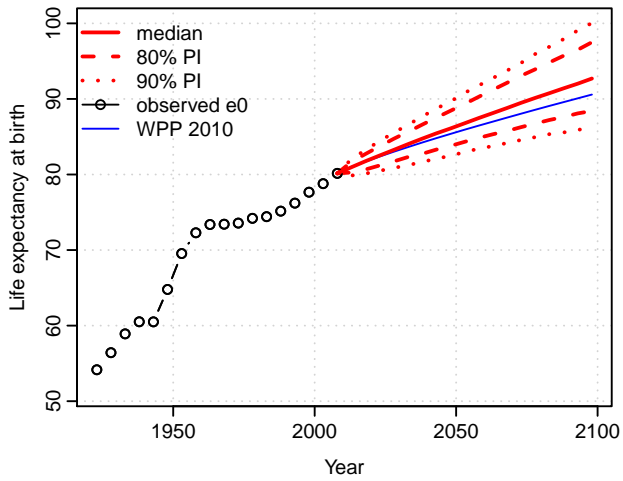
**Bulgaria – Female**



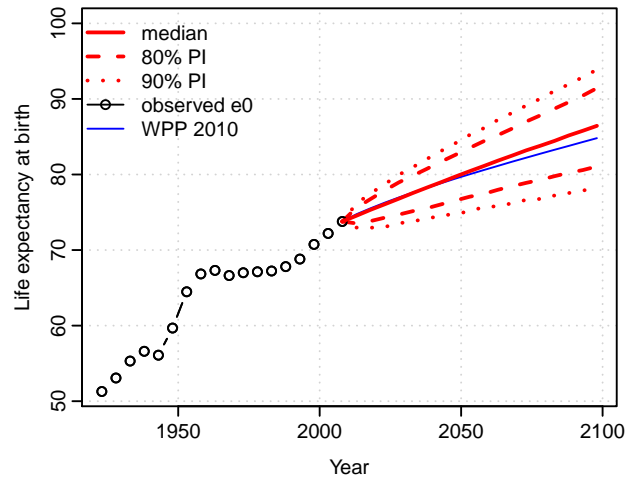
**Bulgaria – Male**



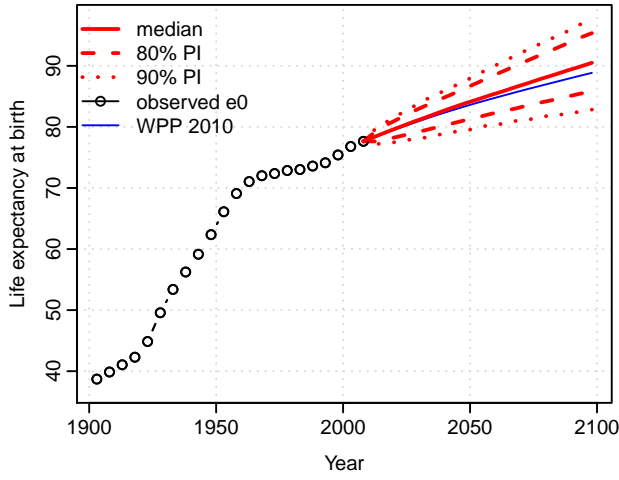
**Czech Republic – Female**



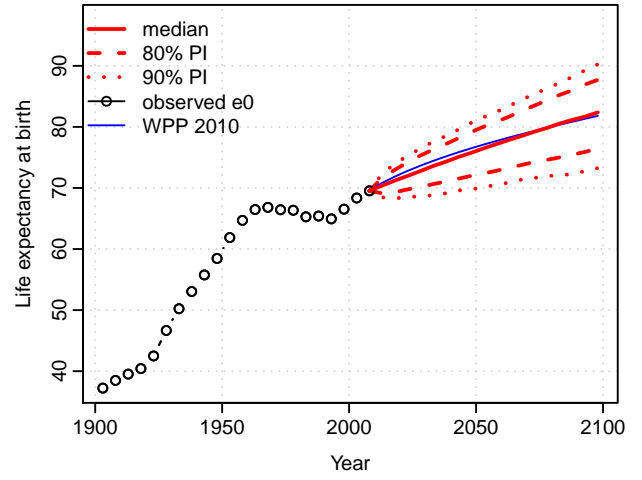
**Czech Republic – Male**



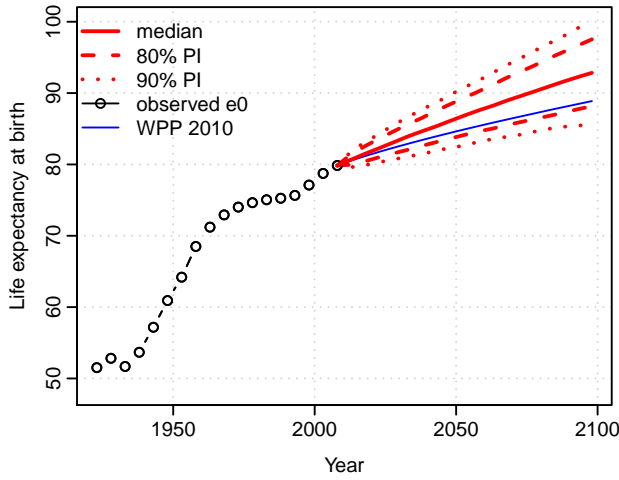
**Hungary – Female**



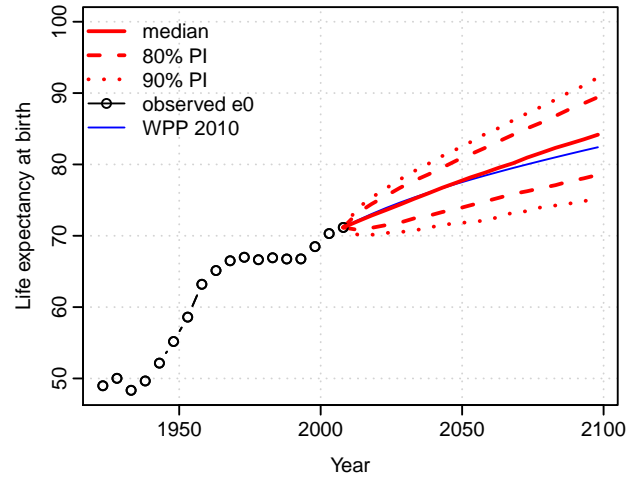
**Hungary – Male**



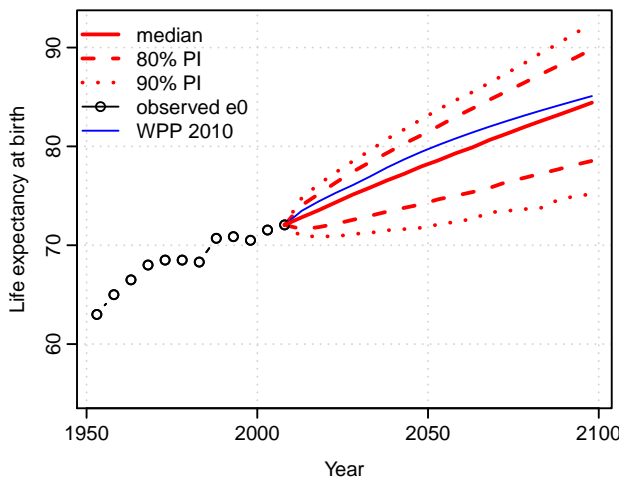
**Poland – Female**



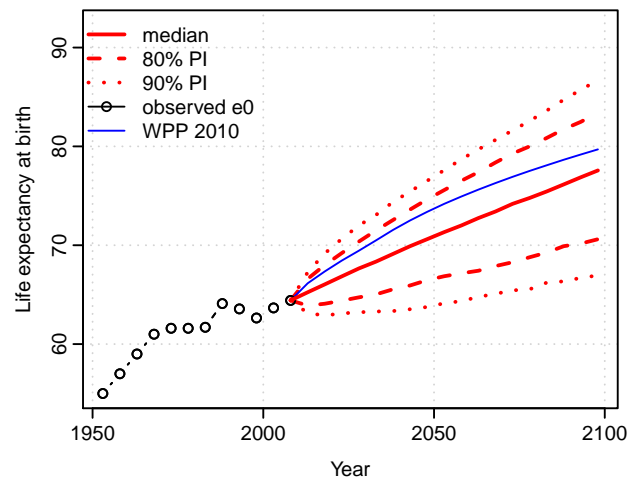
**Poland – Male**



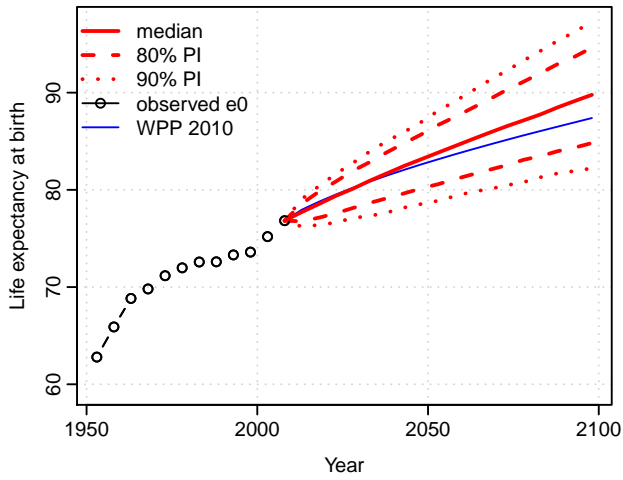
**Republic of Moldova – Female**



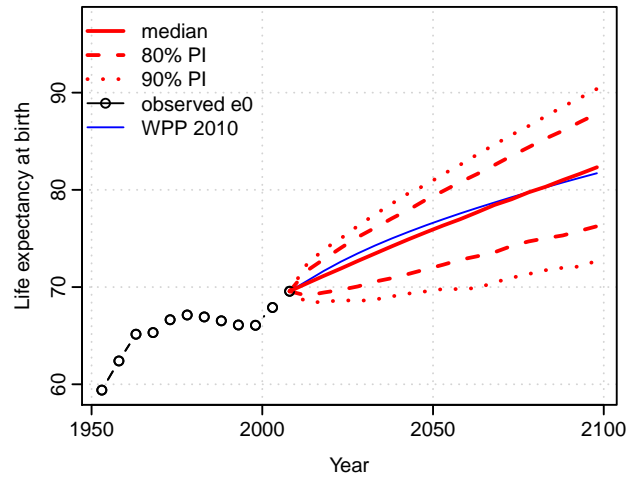
**Republic of Moldova – Male**



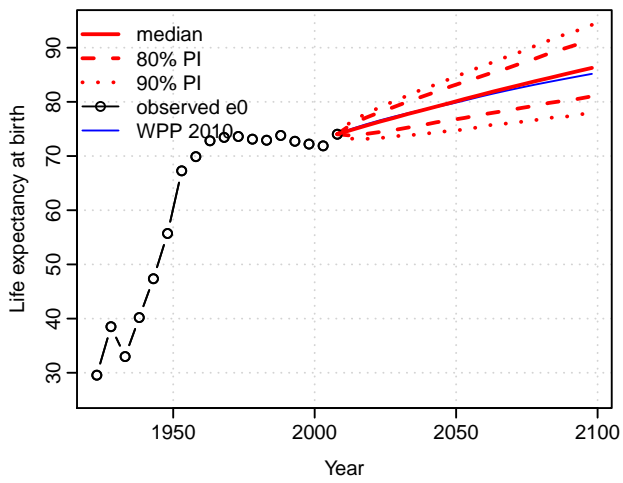
**Romania – Female**



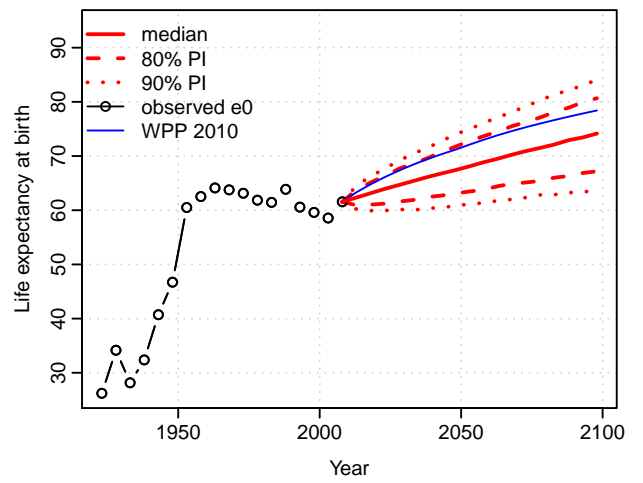
**Romania – Male**



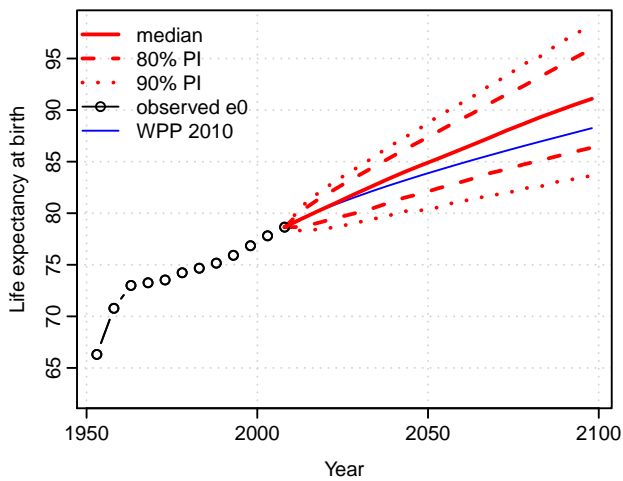
**Russian Federation – Female**



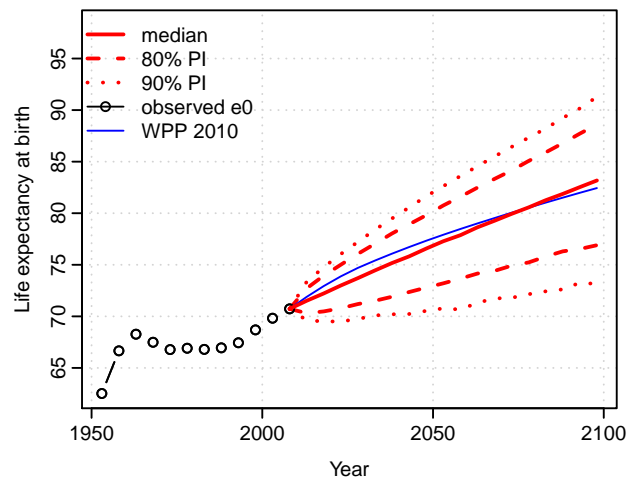
**Russian Federation – Male**



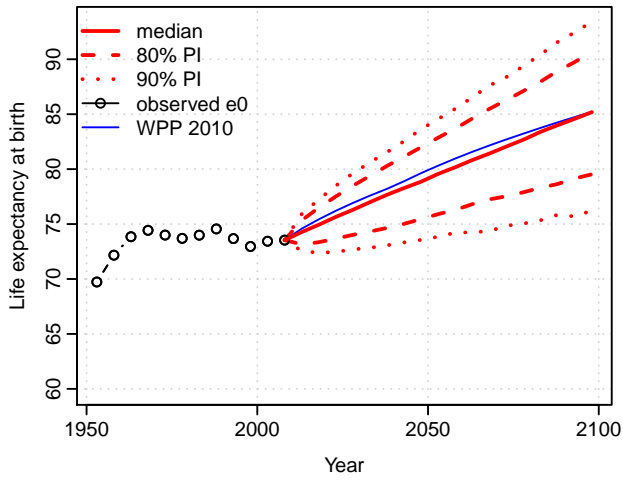
**Slovakia – Female**



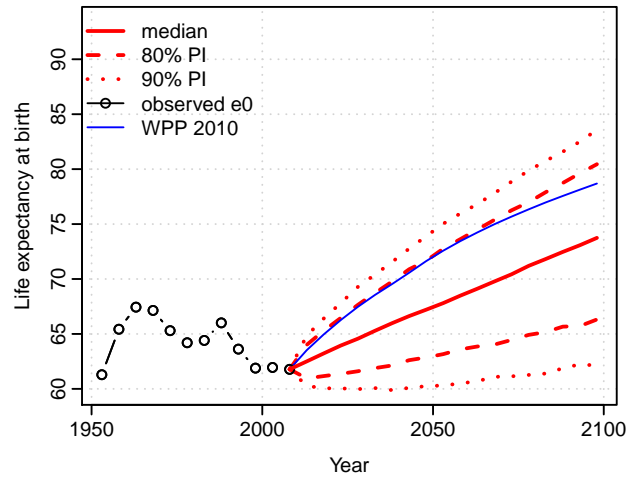
**Slovakia – Male**



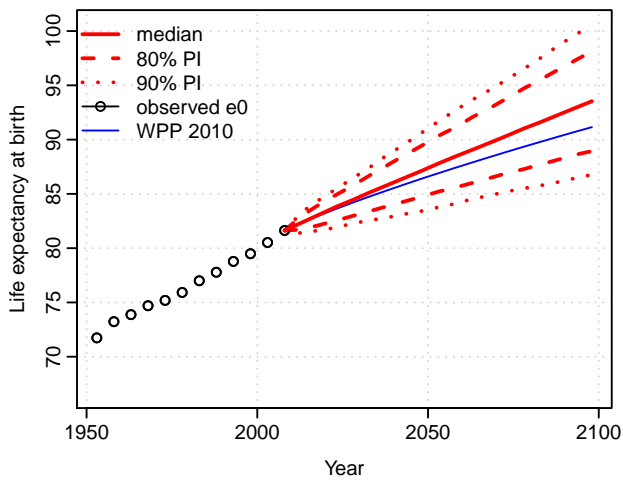
Ukraine – Female



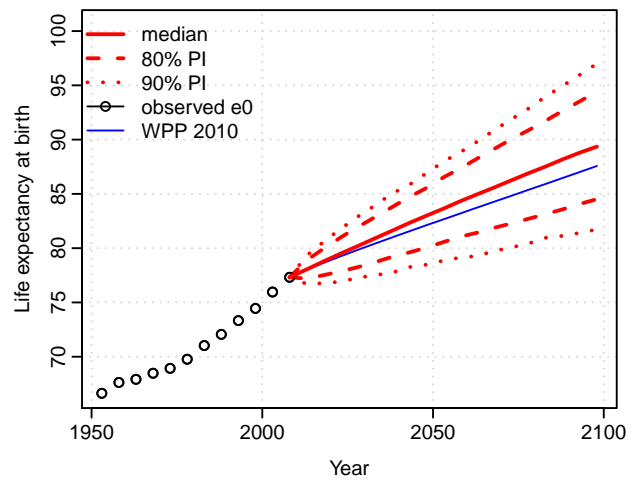
Ukraine – Male



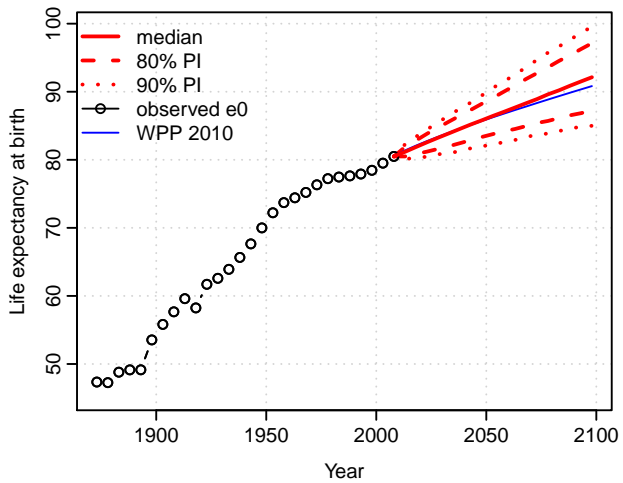
Channel Islands – Female



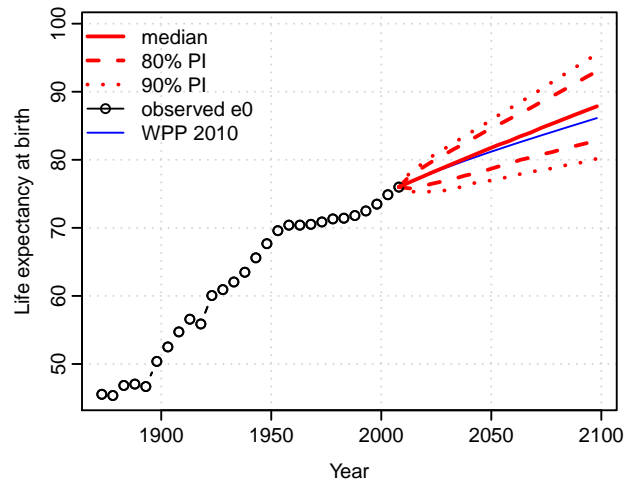
Channel Islands – Male

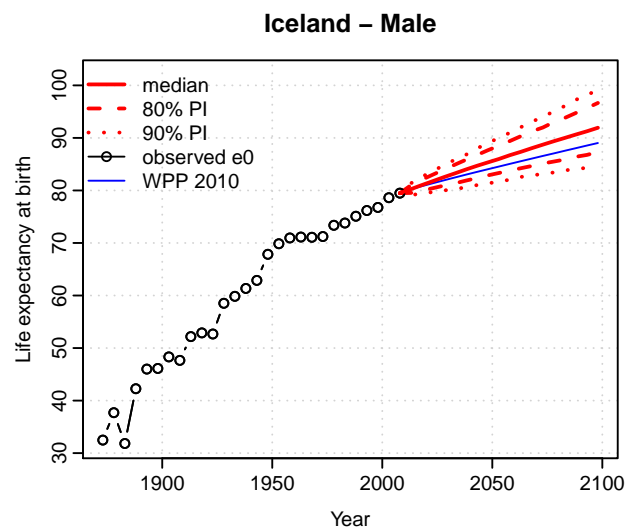
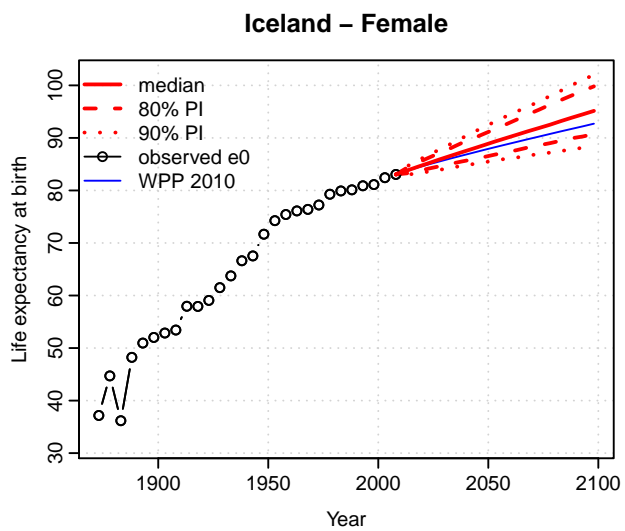
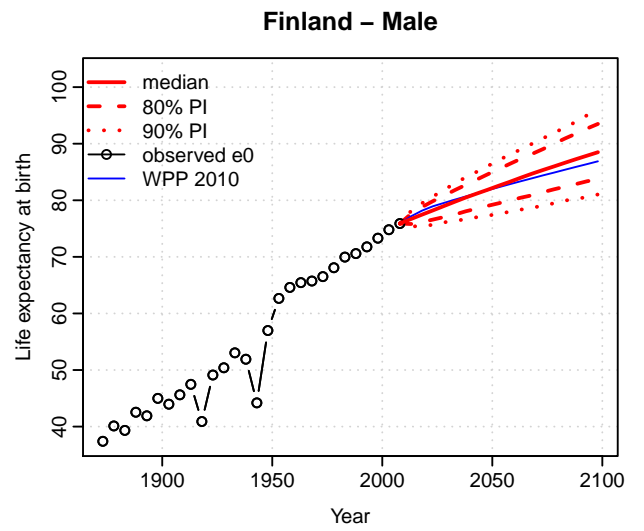
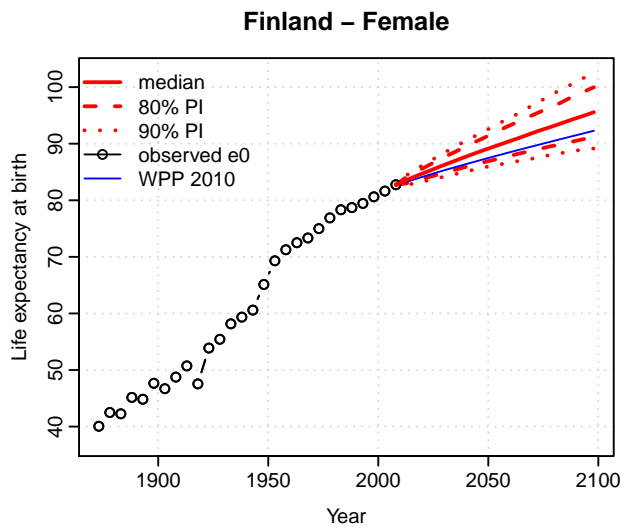
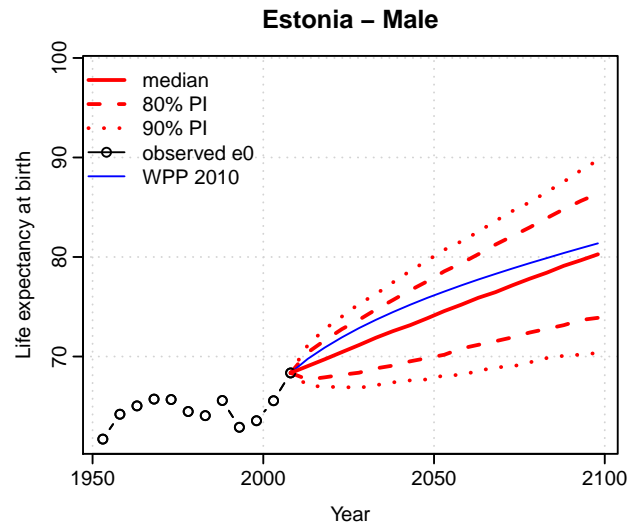
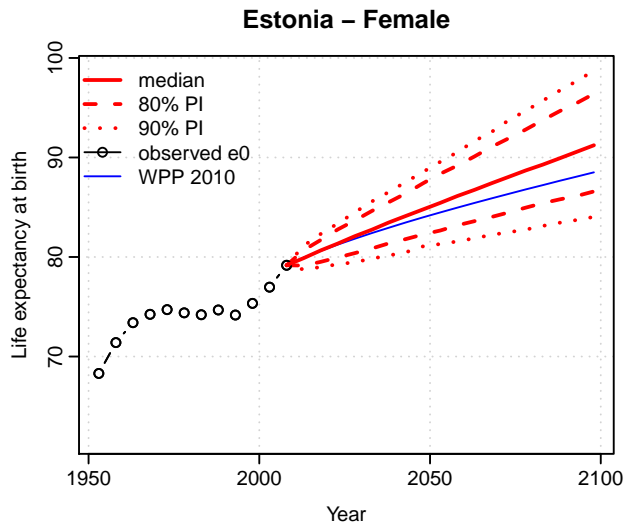


Denmark – Female

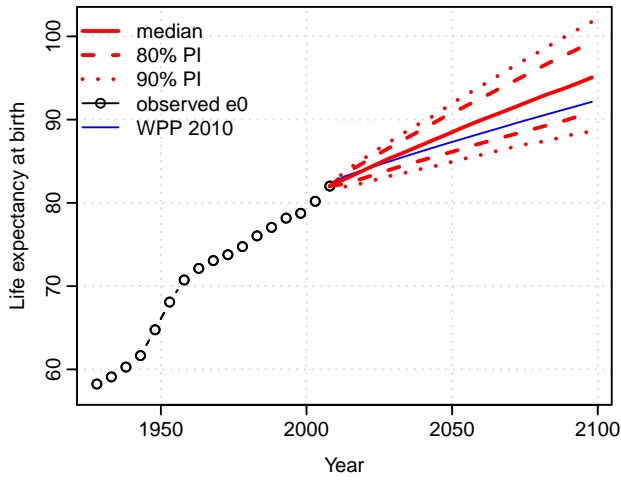


Denmark – Male

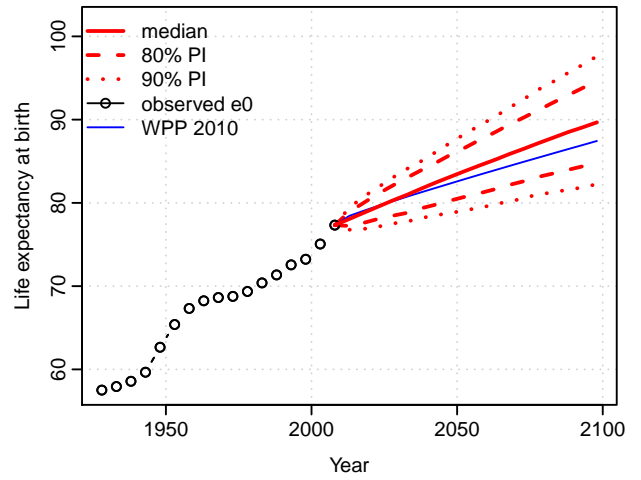




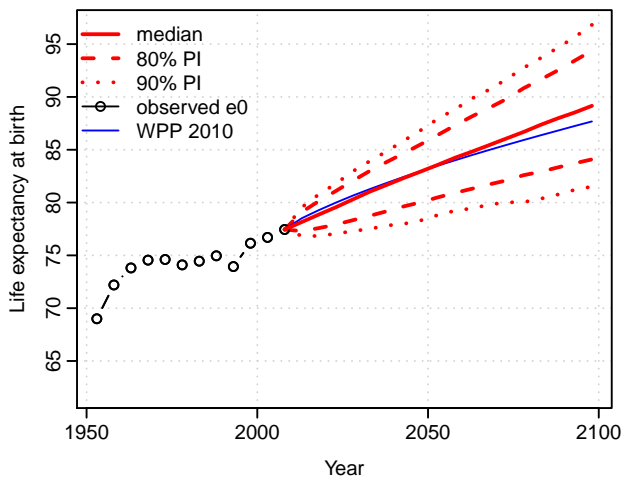
Ireland – Female



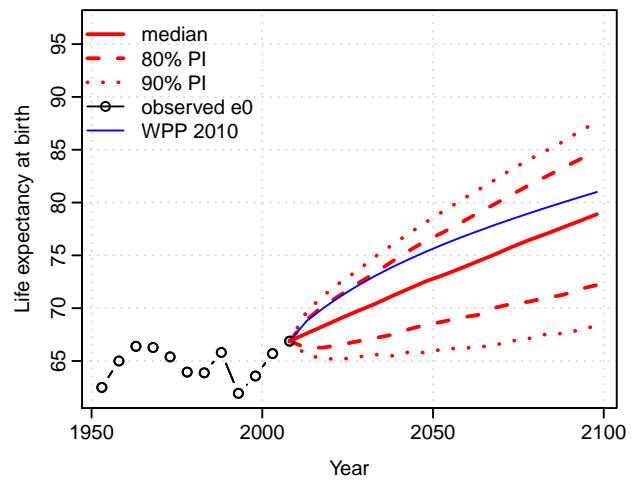
Ireland – Male



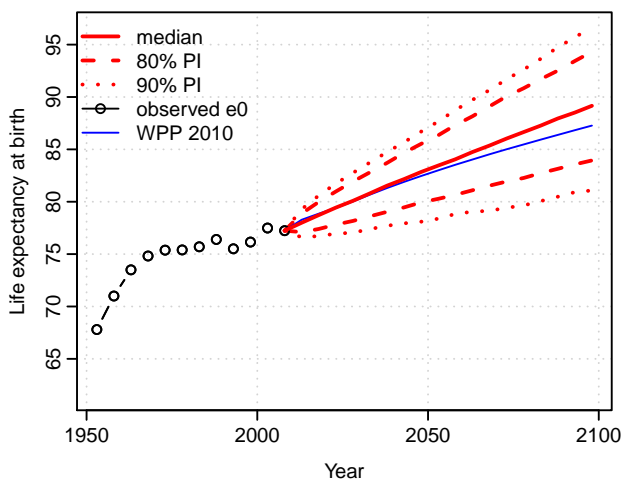
Latvia – Female



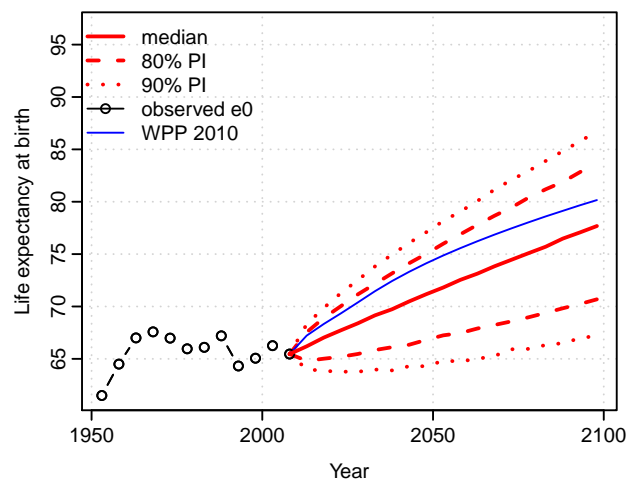
Latvia – Male



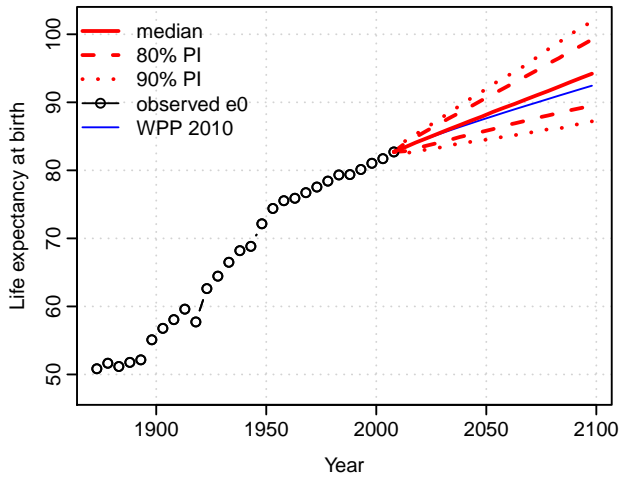
Lithuania – Female



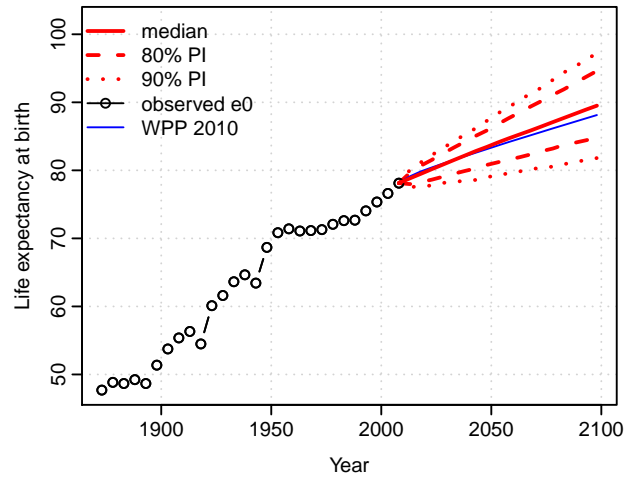
Lithuania – Male



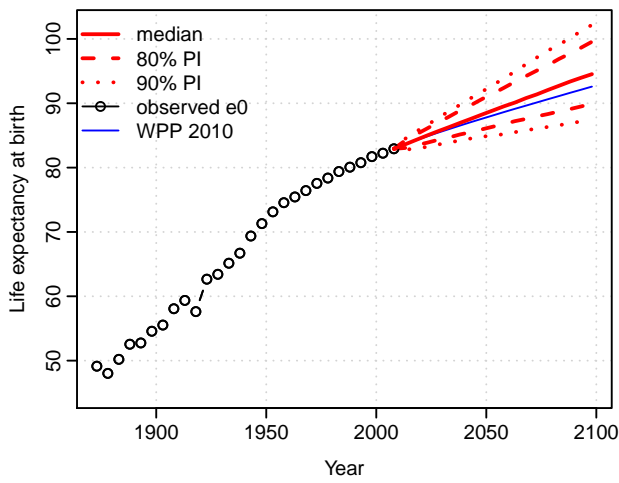
Norway – Female



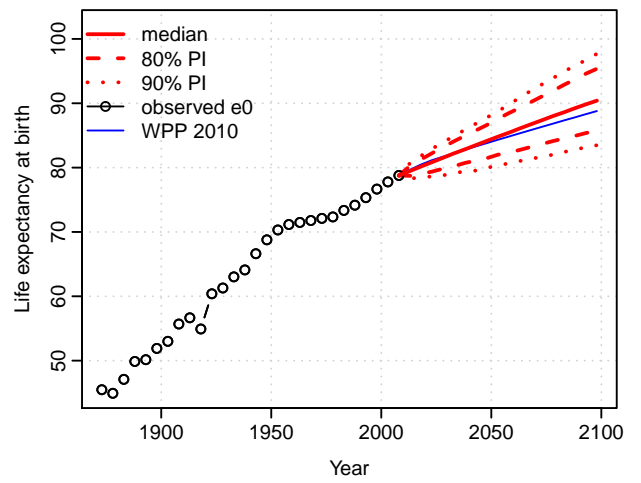
Norway – Male



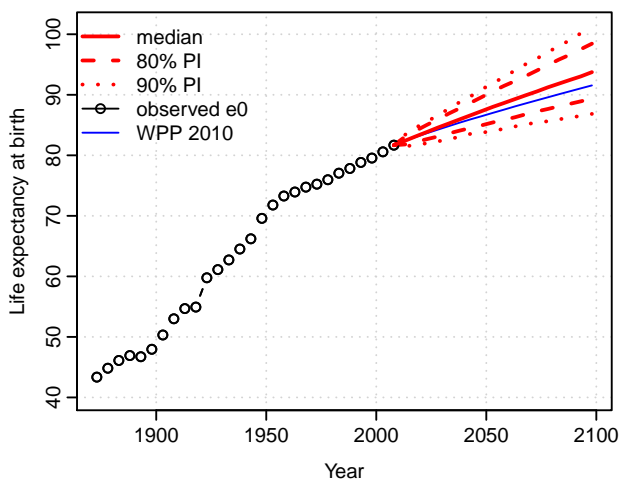
Sweden – Female



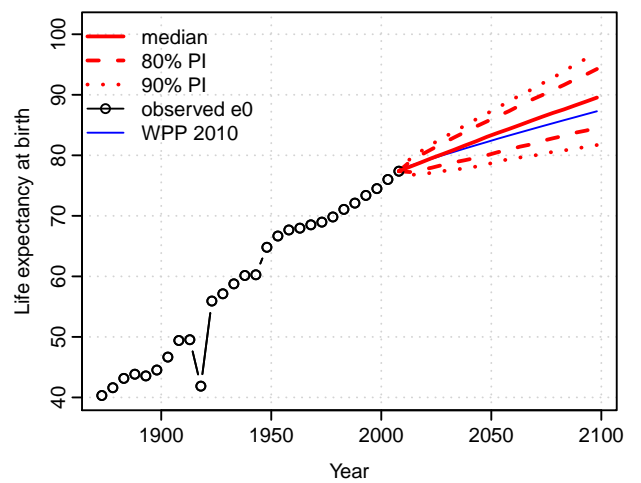
Sweden – Male



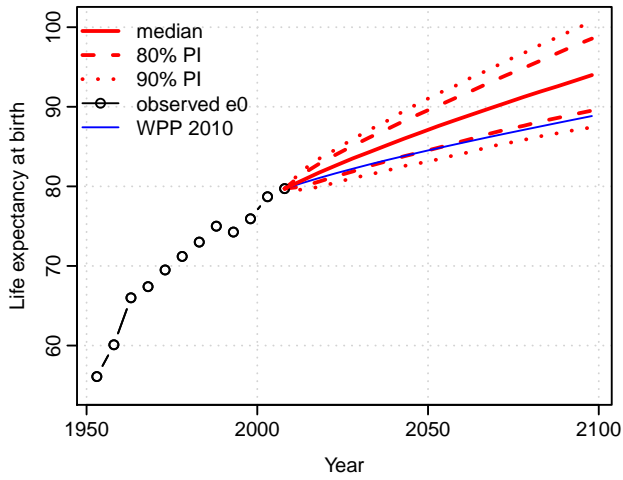
United Kingdom – Female



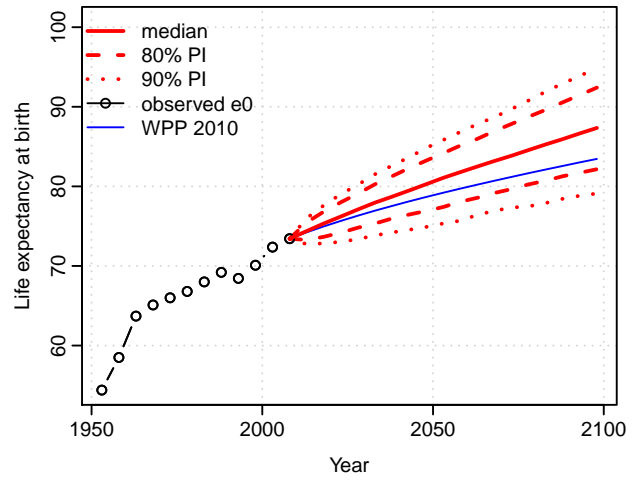
United Kingdom – Male



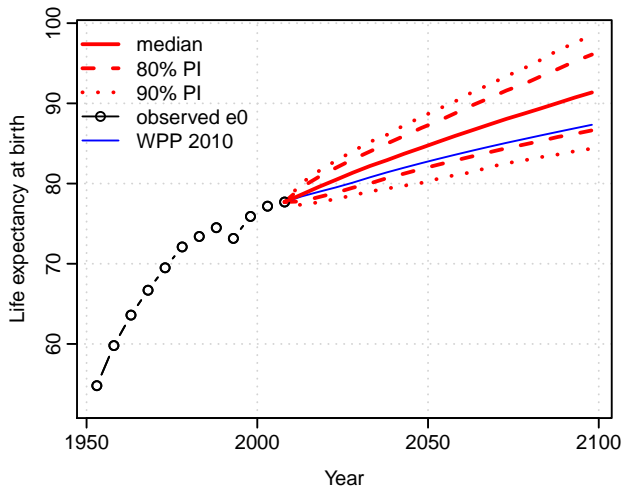
**Albania – Female**



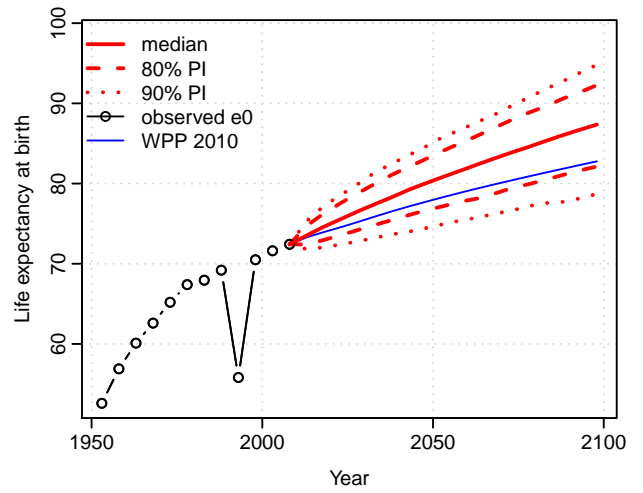
**Albania – Male**



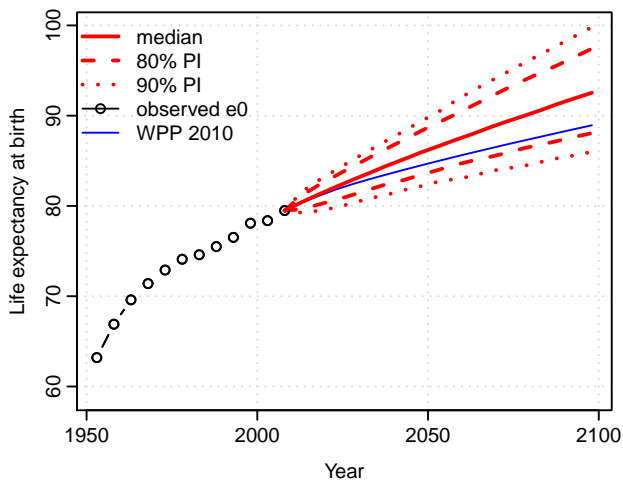
**Bosnia and Herzegovina – Female**



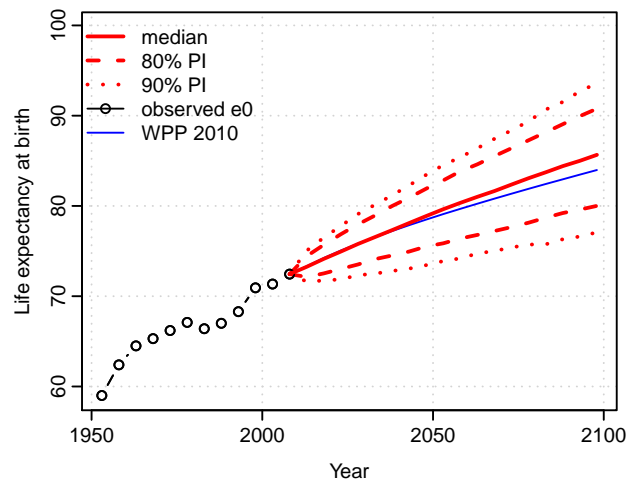
**Bosnia and Herzegovina – Male**



**Croatia – Female**

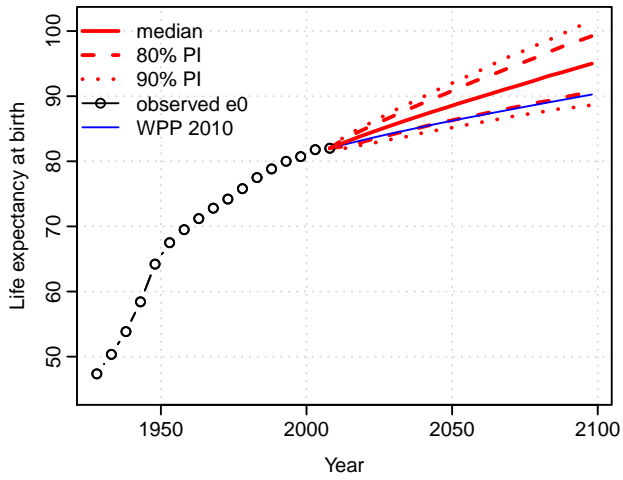


**Croatia – Male**

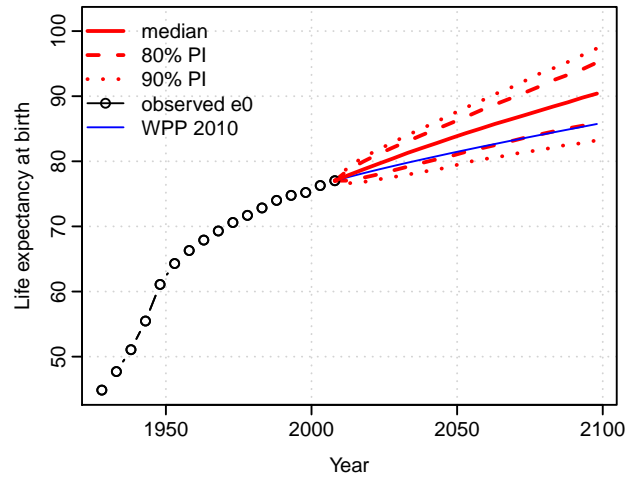




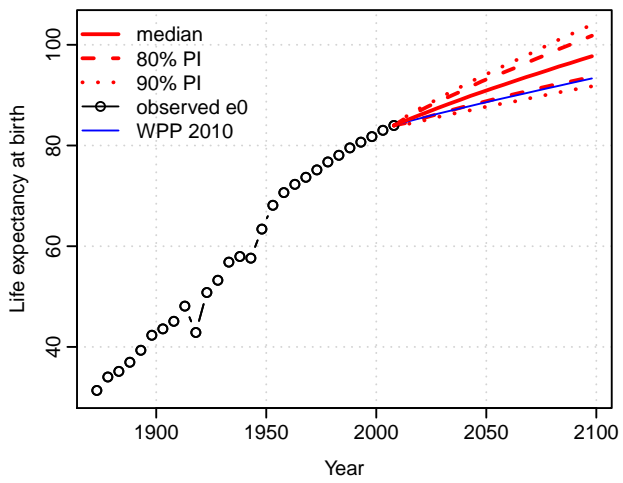
**Greece – Female**



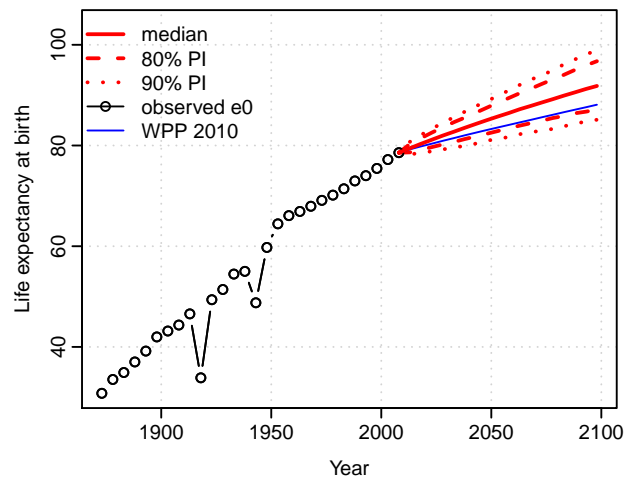
**Greece – Male**



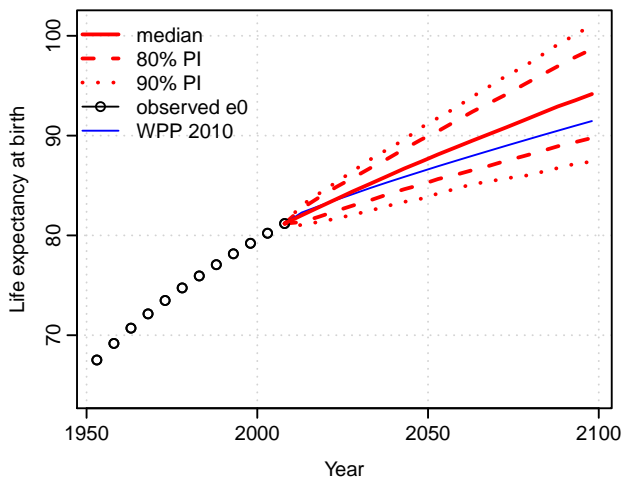
**Italy – Female**



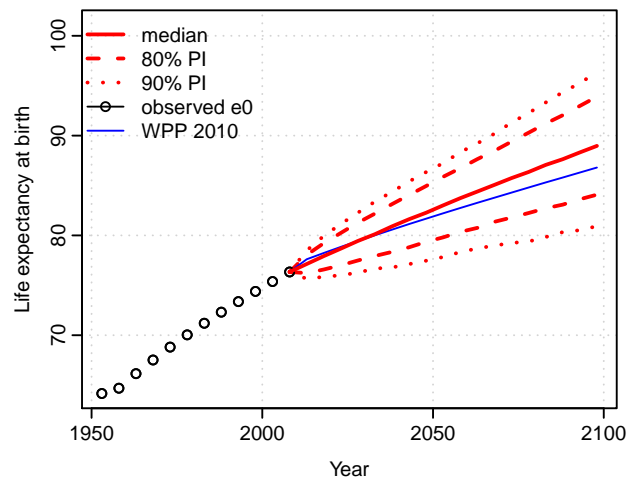
**Italy – Male**



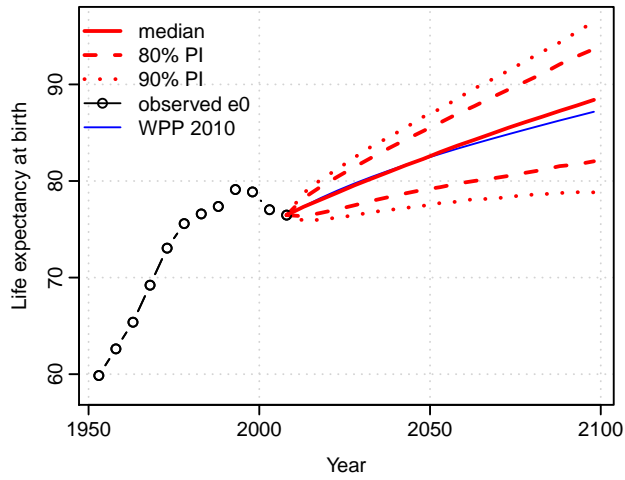
**Malta – Female**



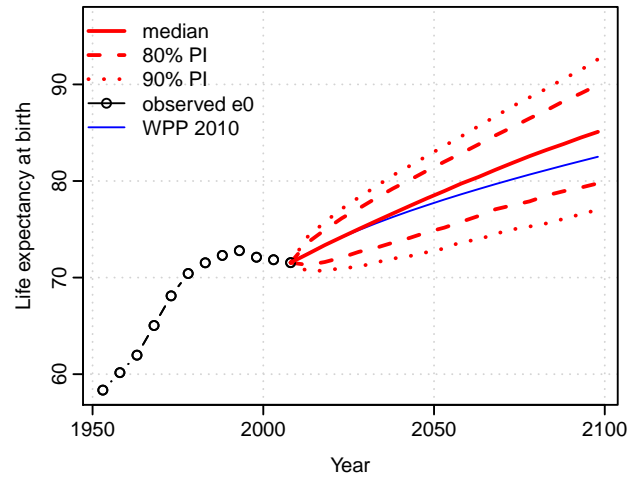
**Malta – Male**



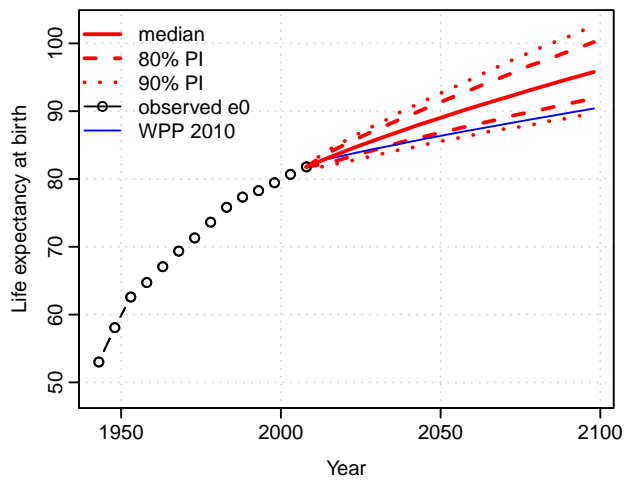
Montenegro – Female



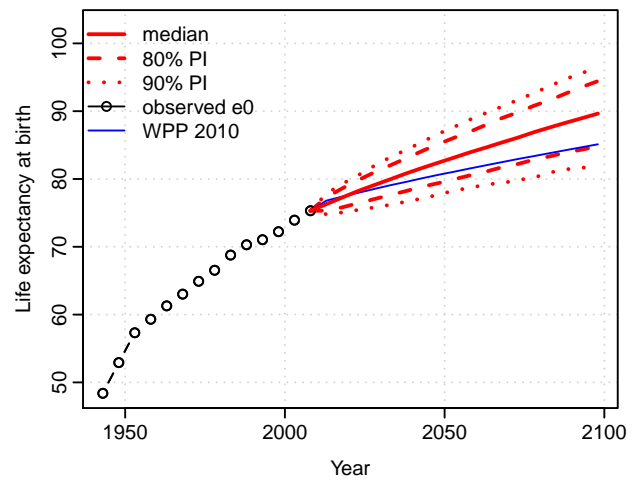
Montenegro – Male



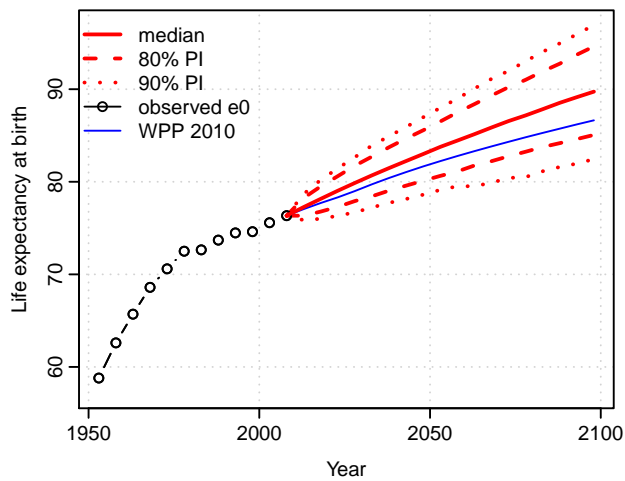
Portugal – Female



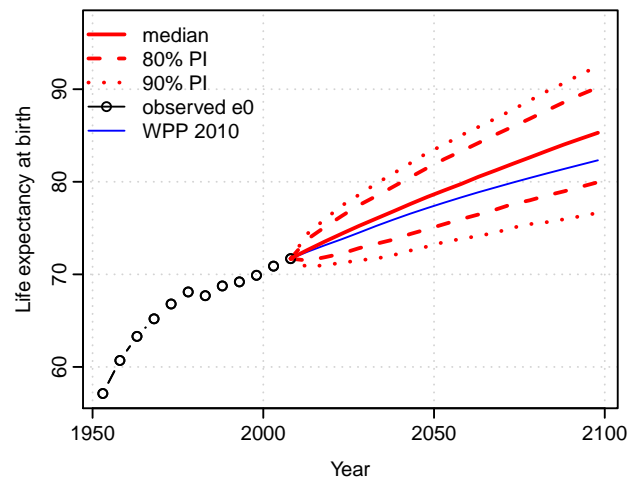
Portugal – Male



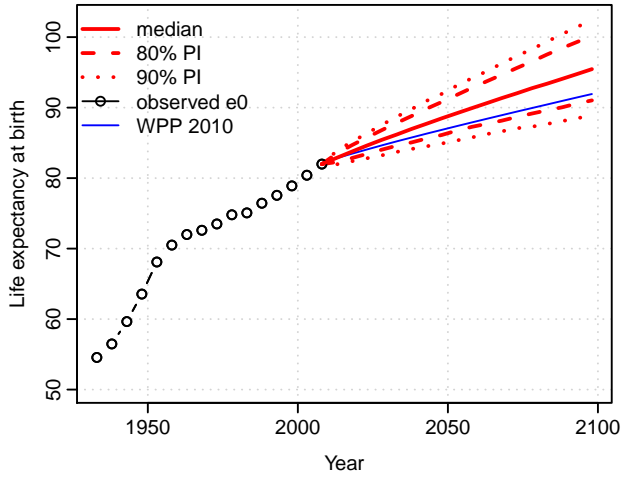
Serbia – Female



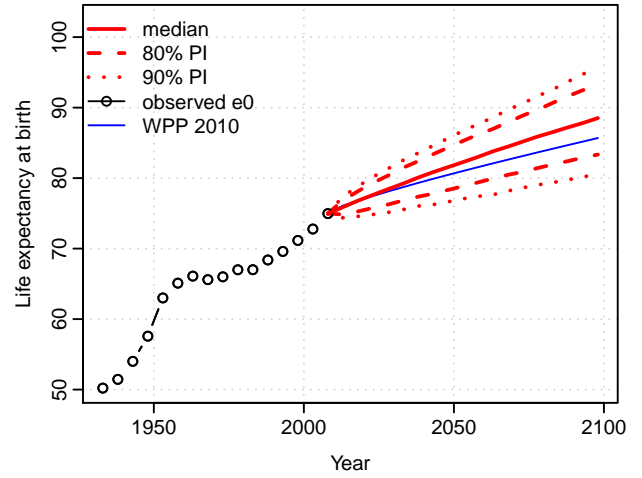
Serbia – Male



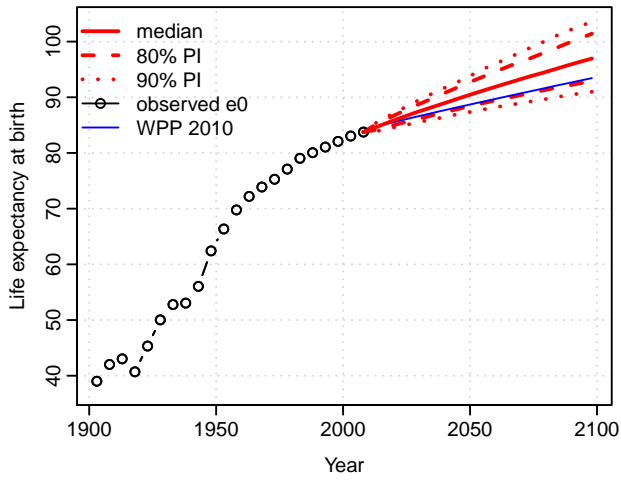
**Slovenia – Female**



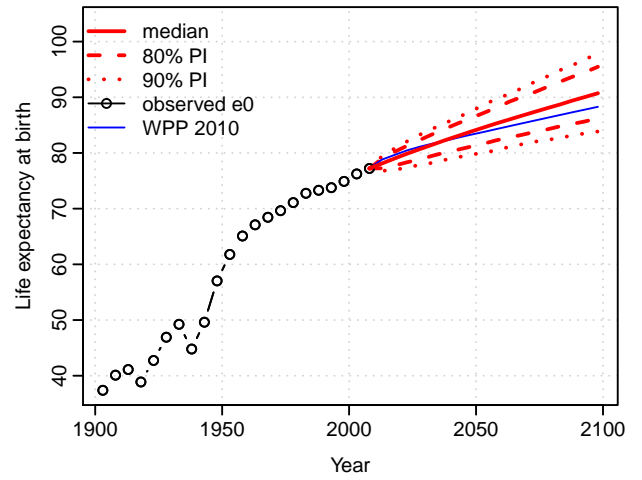
**Slovenia – Male**



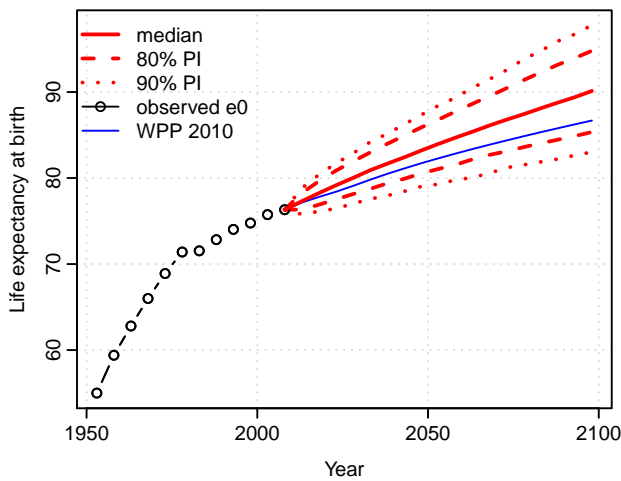
**Spain – Female**



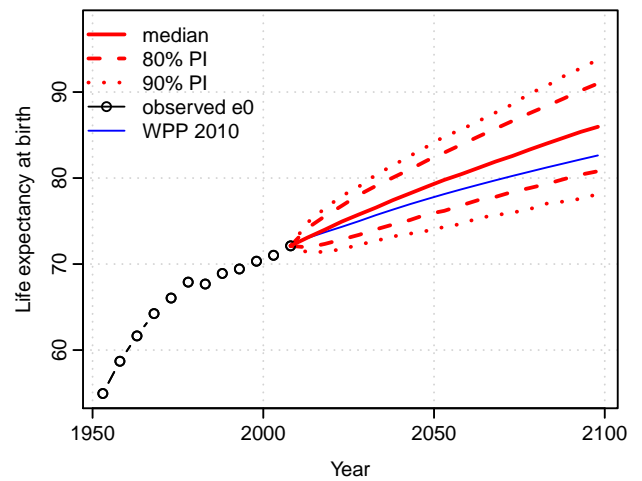
**Spain – Male**



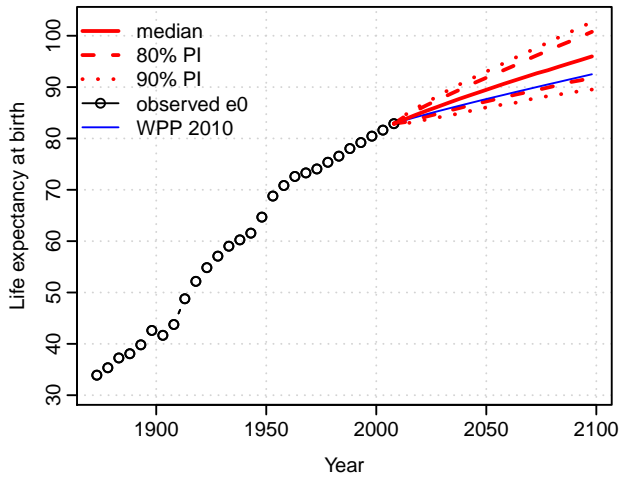
**TFYR Macedonia – Female**



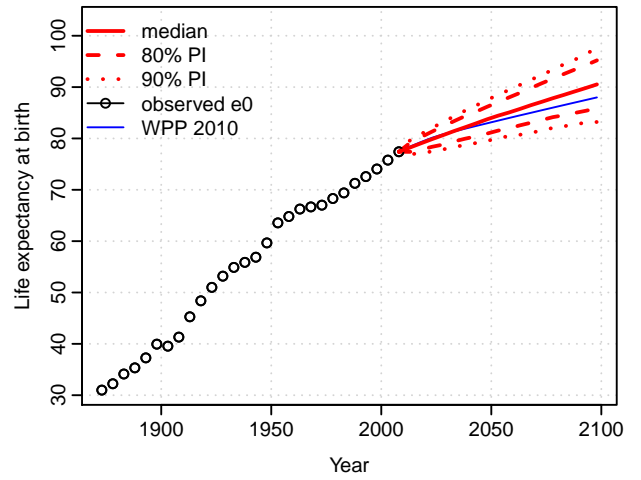
**TFYR Macedonia – Male**



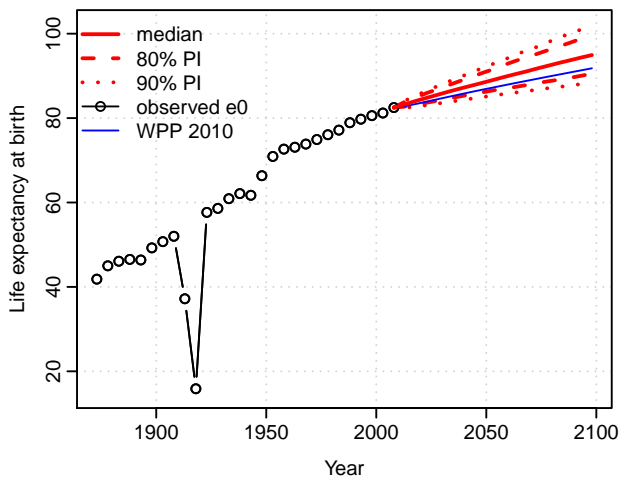
**Austria – Female**



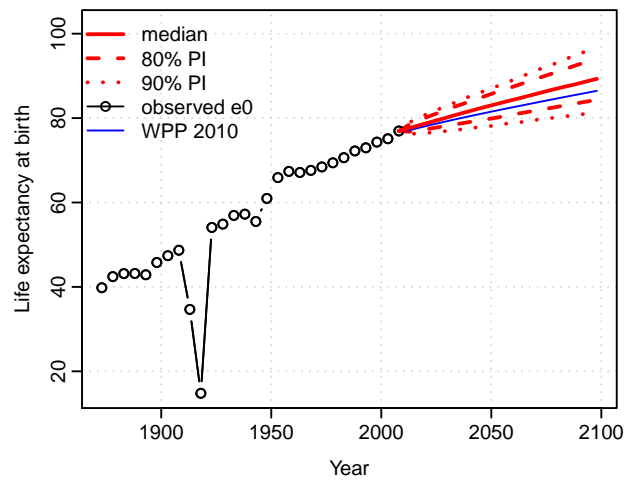
**Austria – Male**



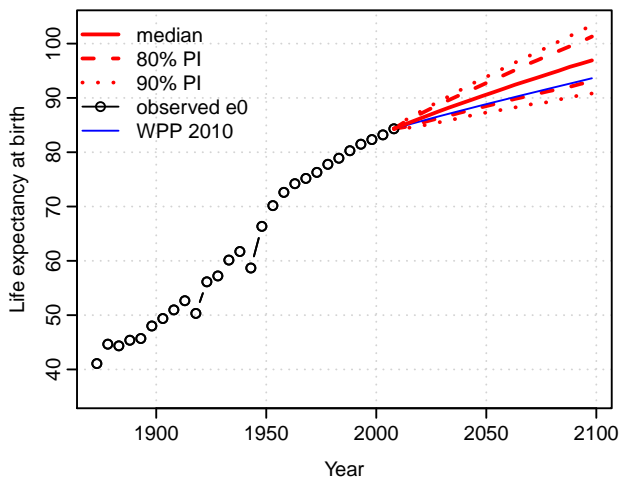
**Belgium – Female**



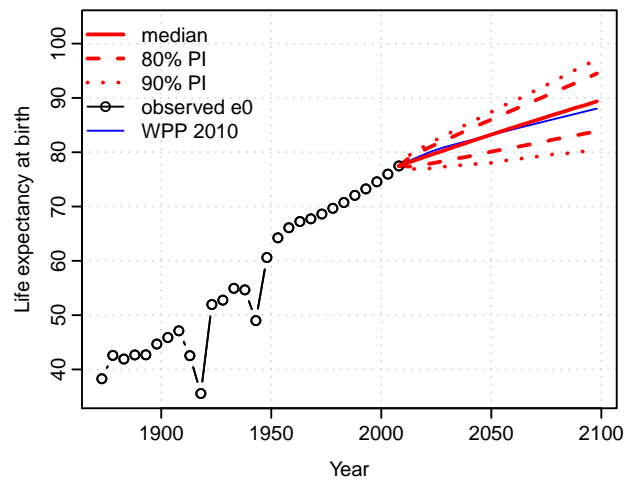
**Belgium – Male**



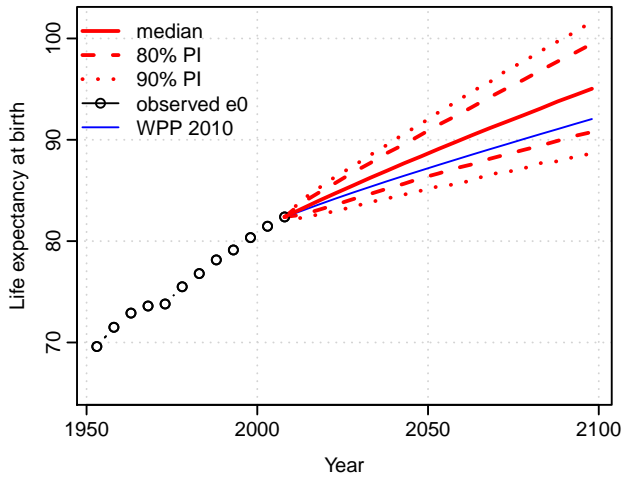
**France – Female**



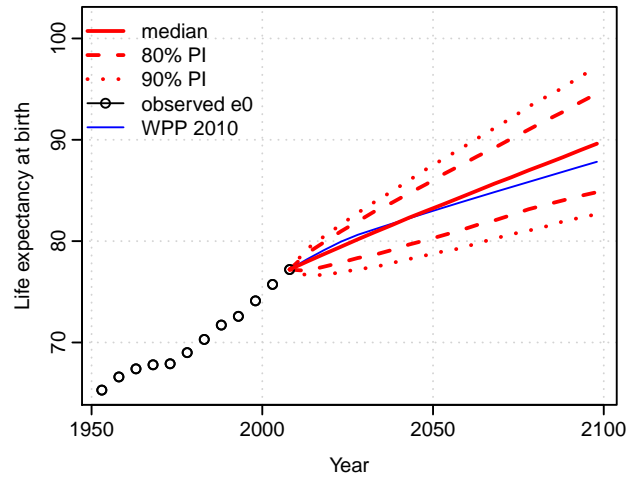
**France – Male**



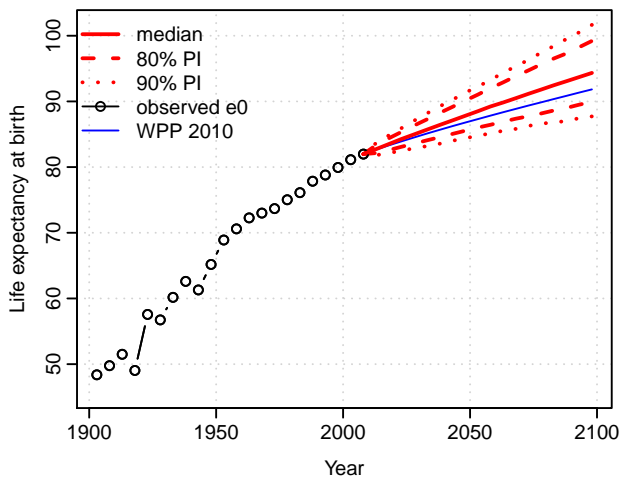
**Germany – Female**



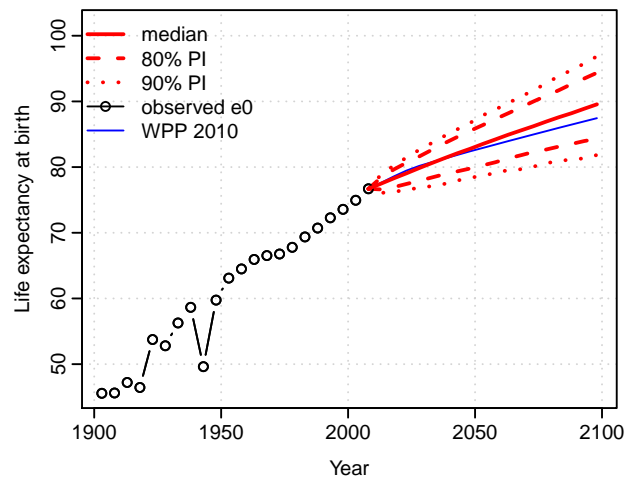
**Germany – Male**



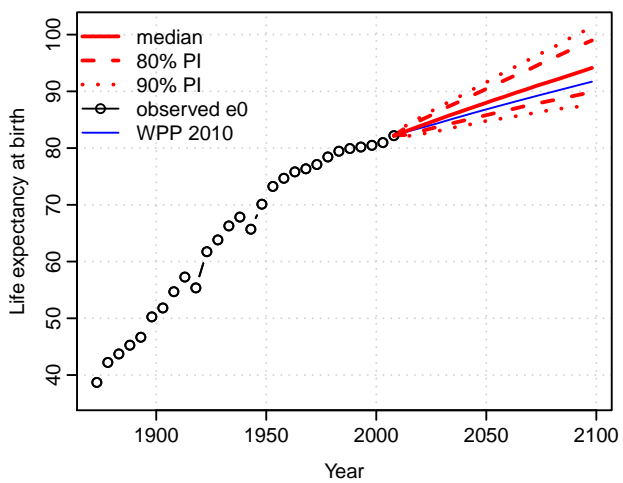
**Luxembourg – Female**



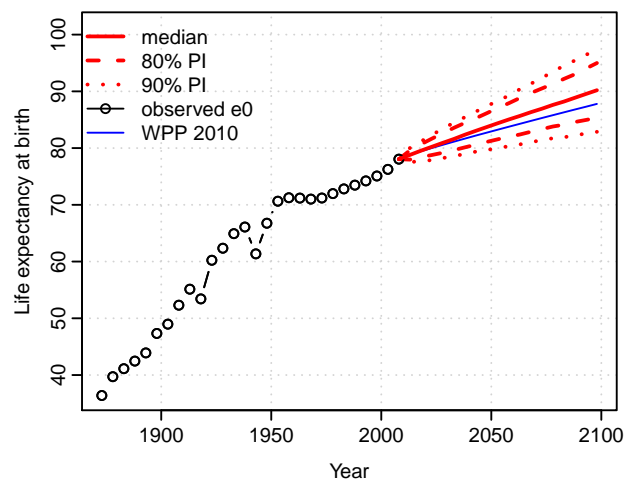
**Luxembourg – Male**



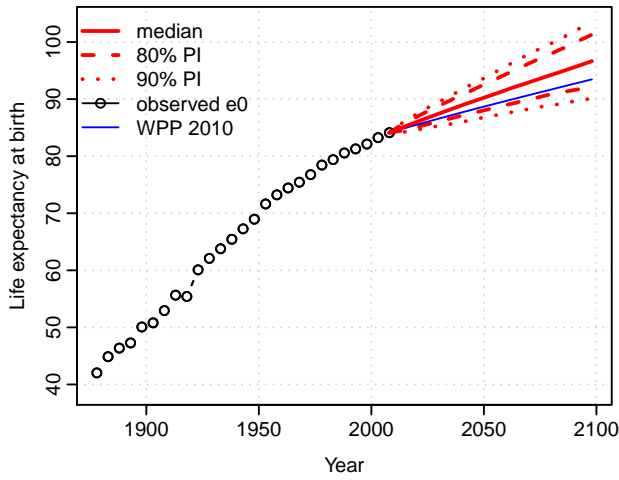
**Netherlands – Female**



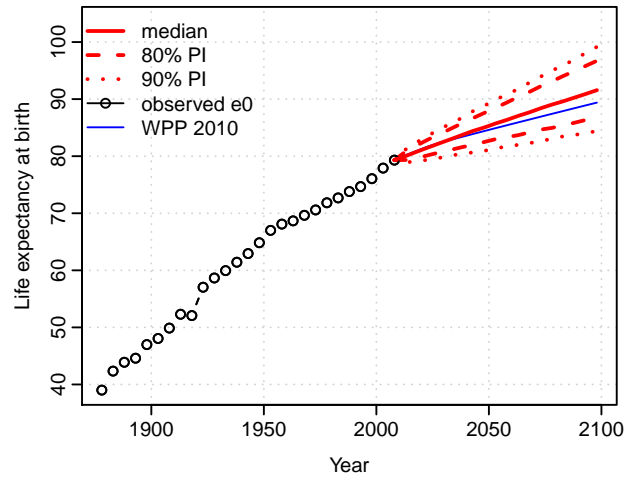
**Netherlands – Male**



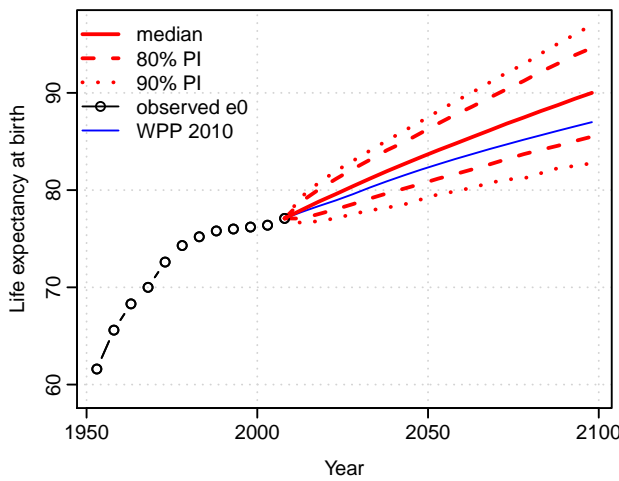
Switzerland – Female



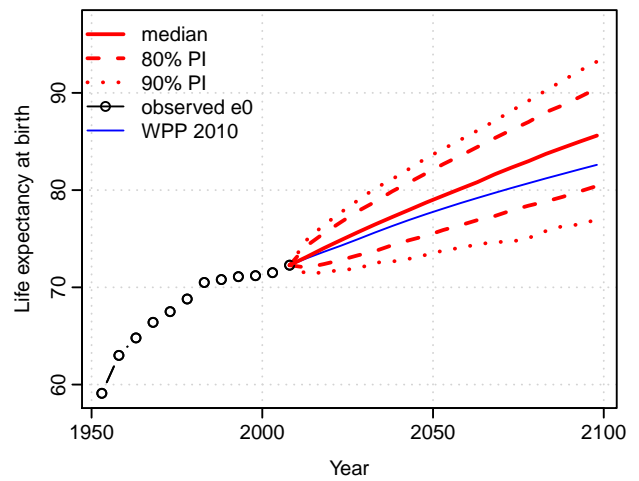
Switzerland – Male



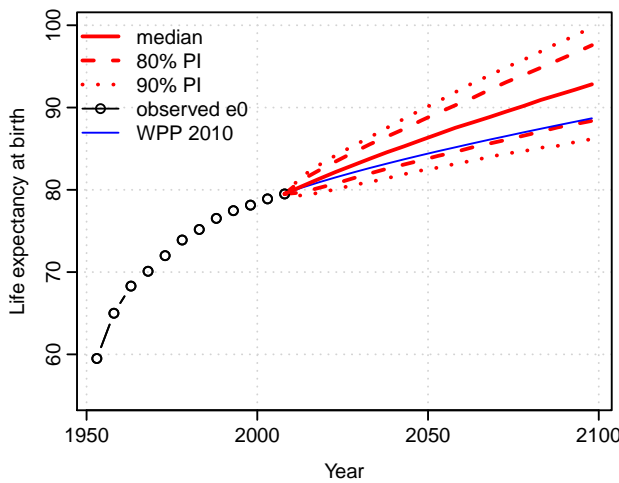
Aruba – Female



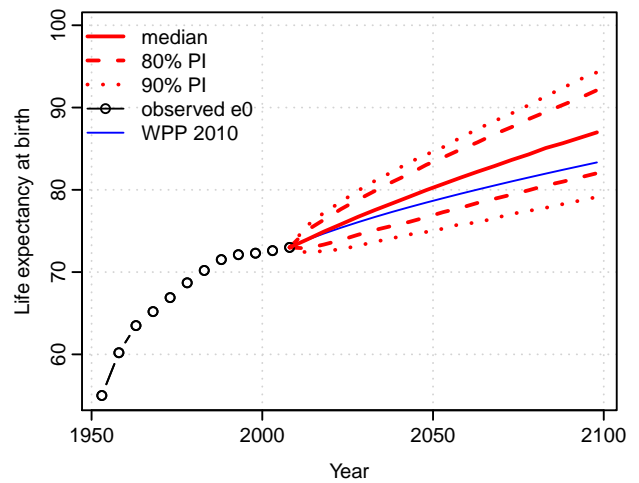
Aruba – Male



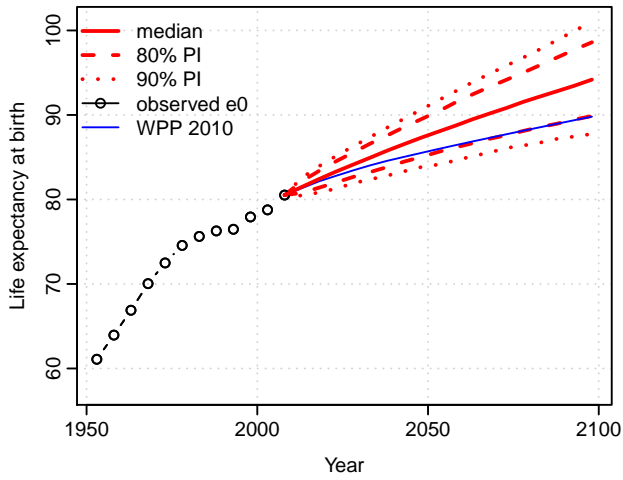
Barbados – Female



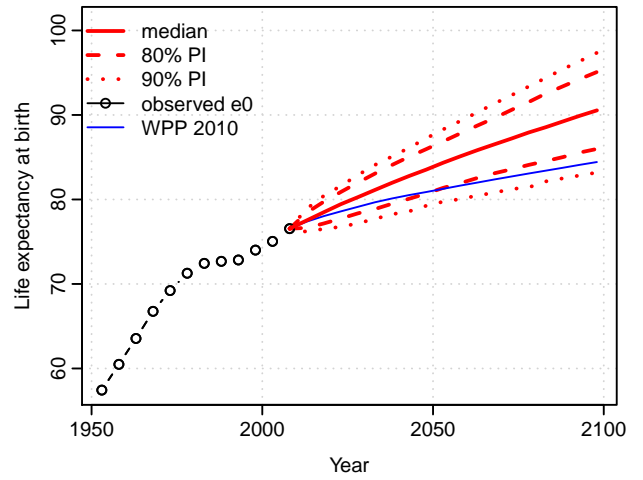
Barbados – Male



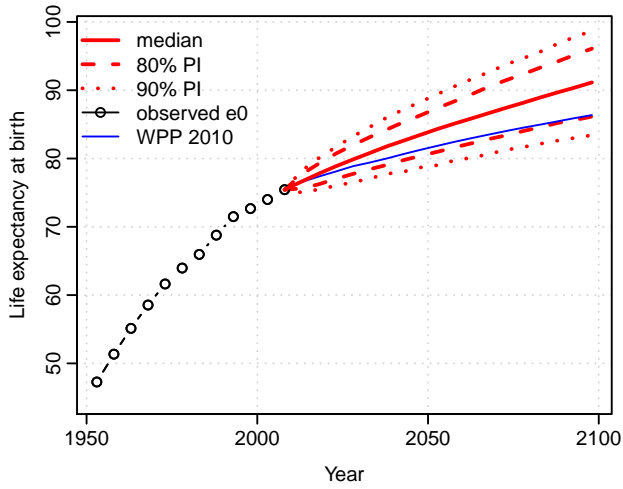
**Cuba – Female**



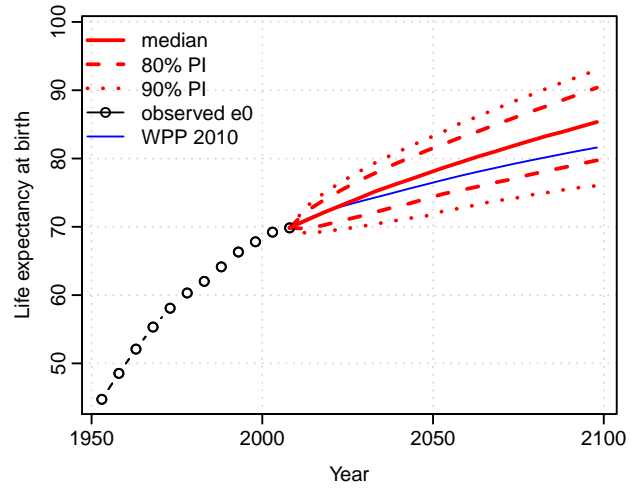
**Cuba – Male**



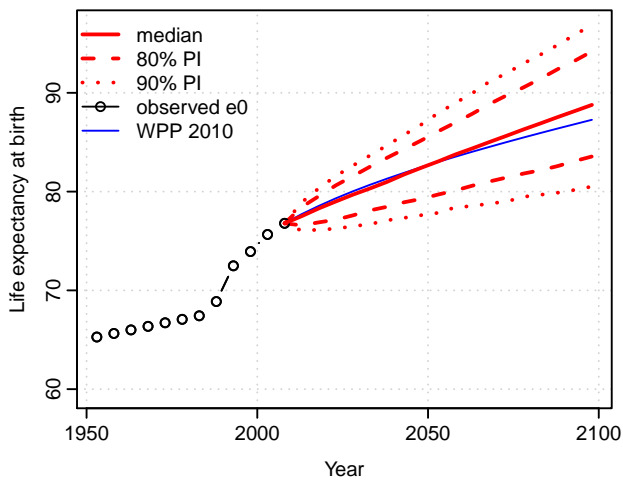
**Dominican Republic – Female**



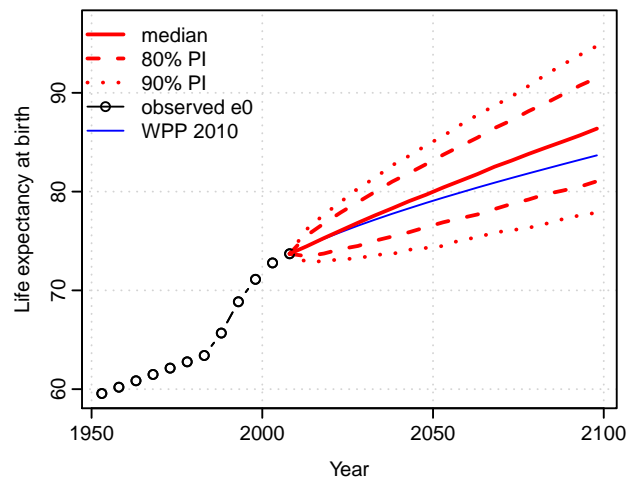
**Dominican Republic – Male**



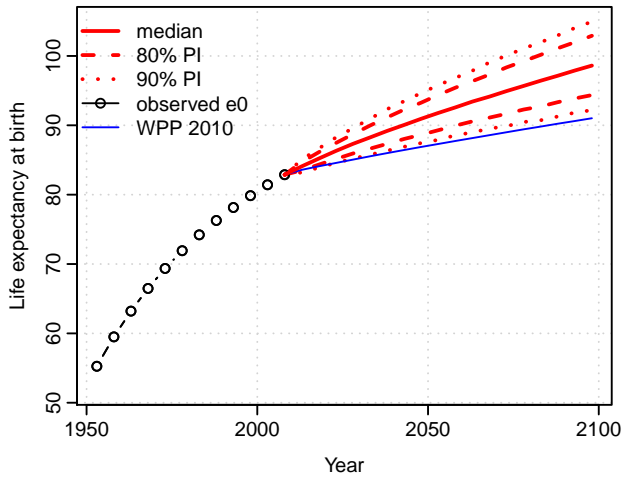
**Grenada – Female**



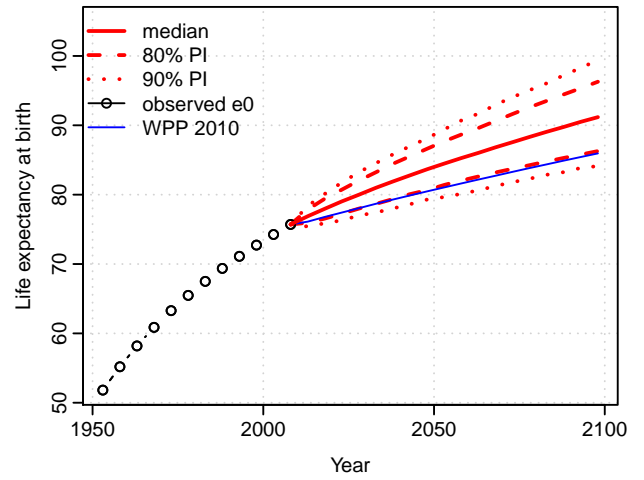
**Grenada – Male**



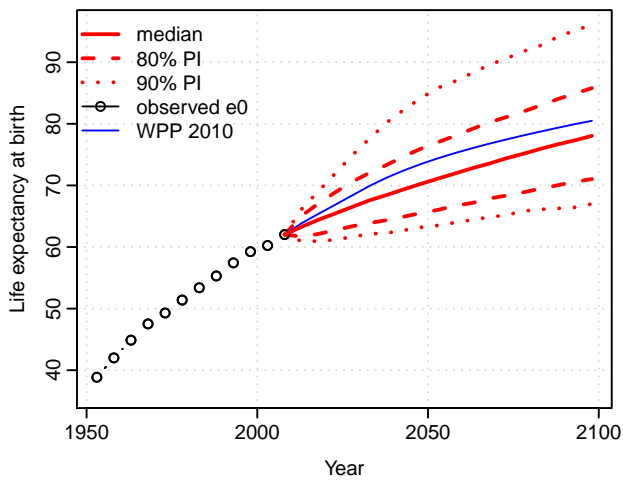
**Guadeloupe – Female**



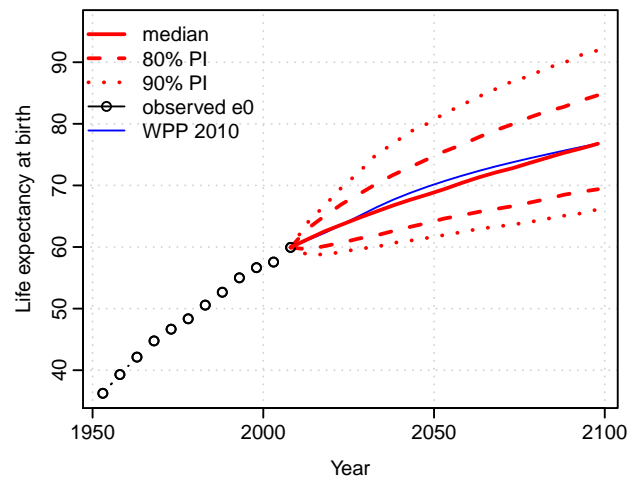
**Guadeloupe – Male**



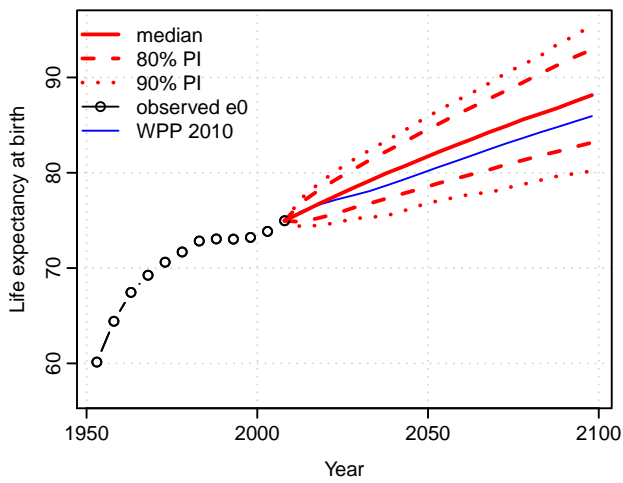
**Haiti – Female**



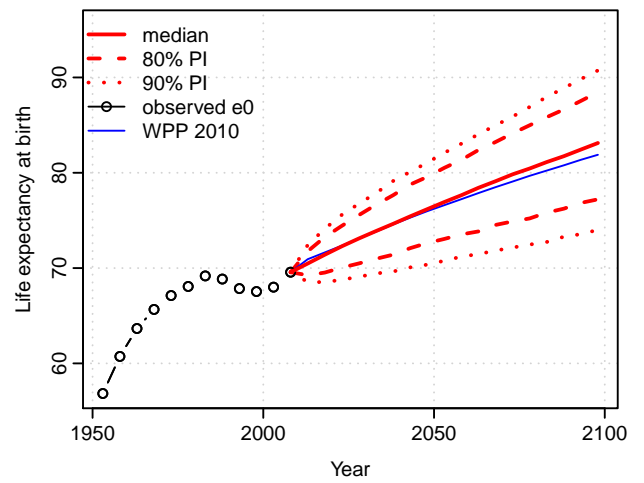
**Haiti – Male**



**Jamaica – Female**

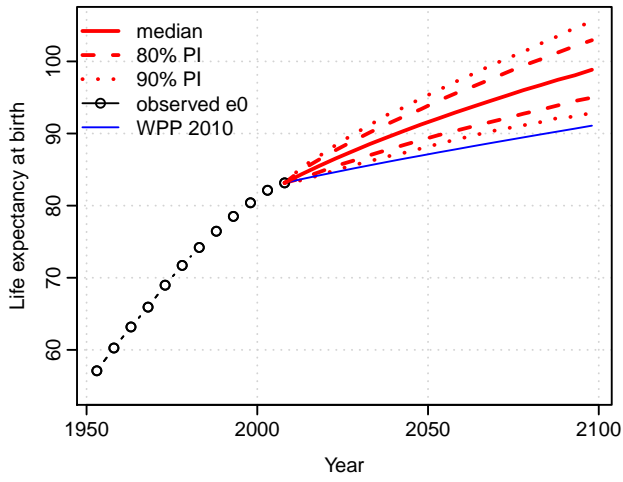


**Jamaica – Male**

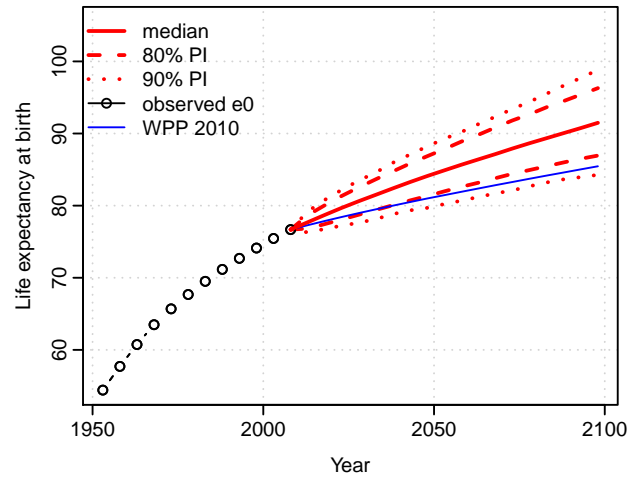




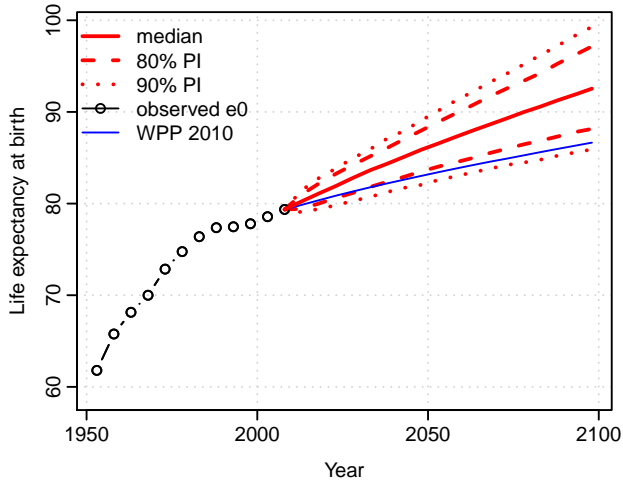
**Martinique – Female**



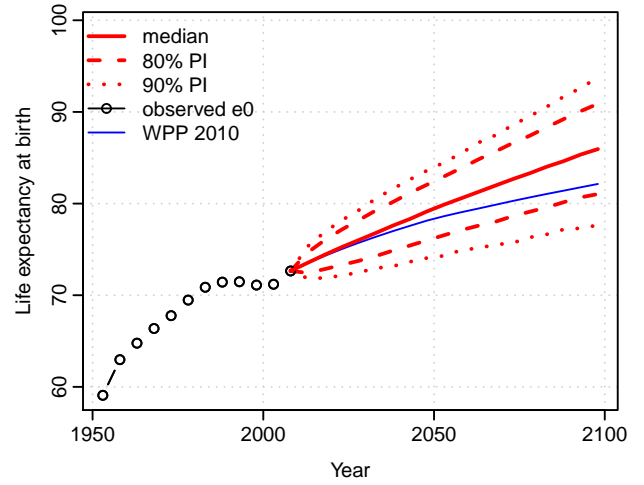
**Martinique – Male**



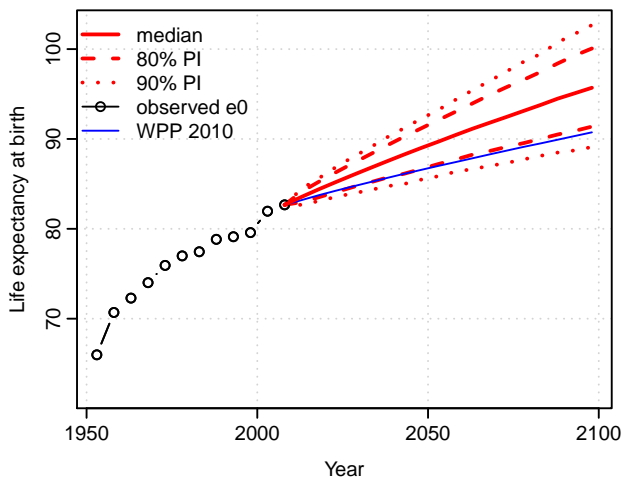
**Netherlands Antilles – Female**



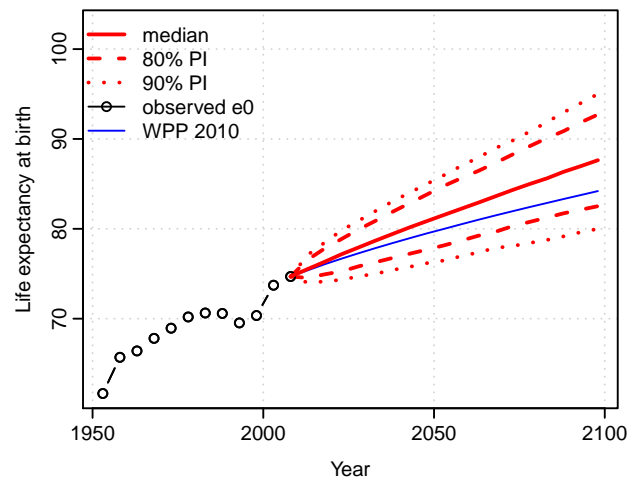
**Netherlands Antilles – Male**



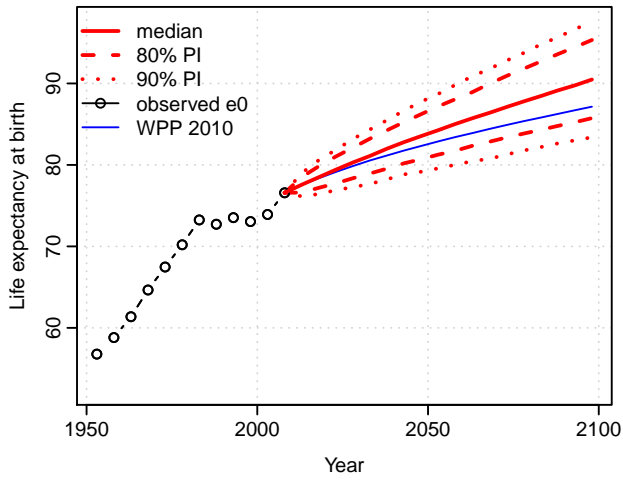
**Puerto Rico – Female**



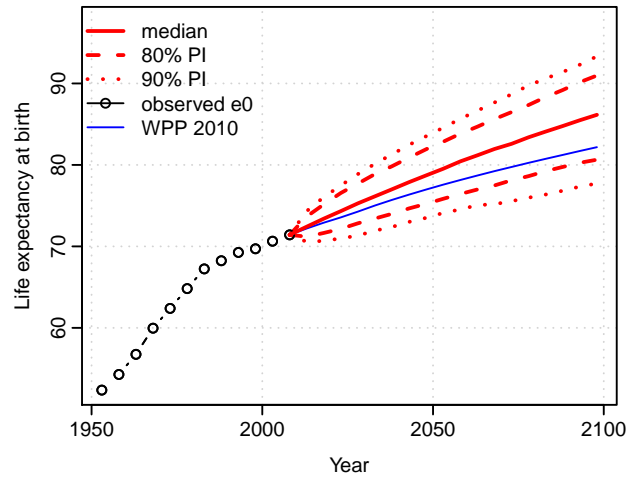
**Puerto Rico – Male**



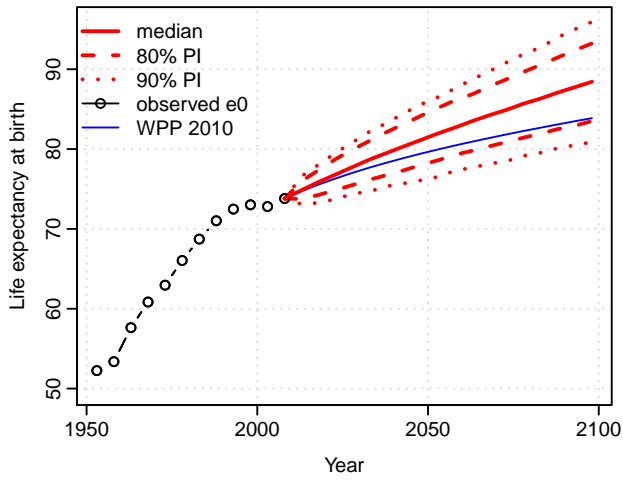
**Saint Lucia – Female**



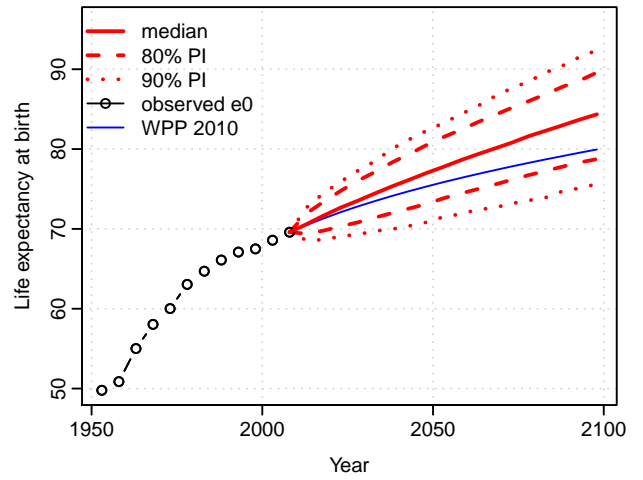
**Saint Lucia – Male**



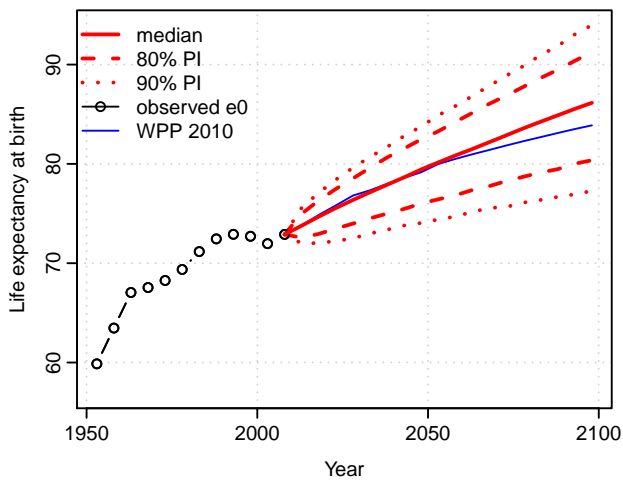
**St. Vincent and the Grenadines – Female**



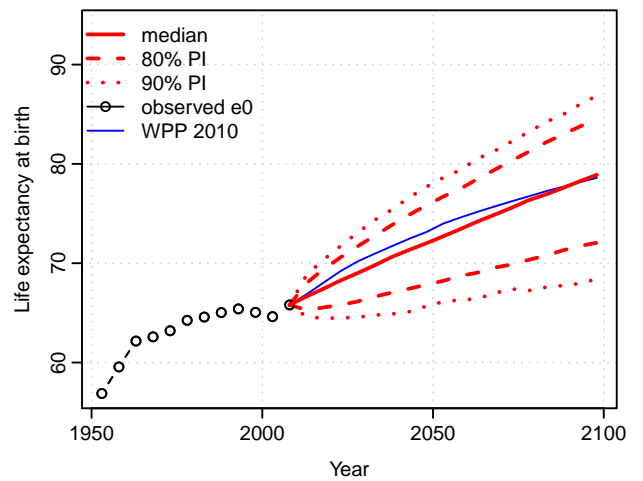
**St. Vincent and the Grenadines – Male**



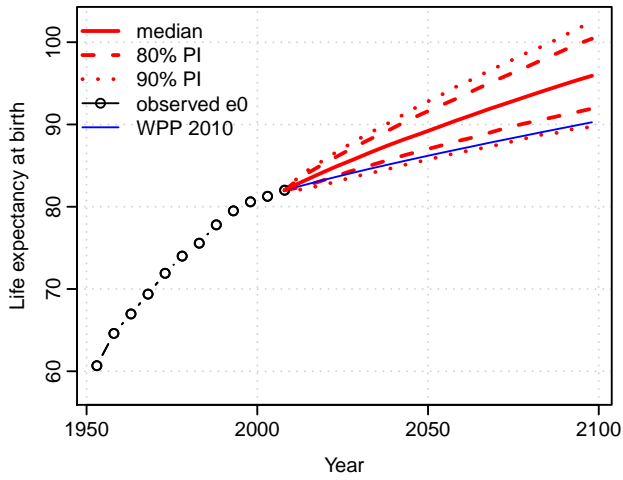
**Trinidad and Tobago – Female**



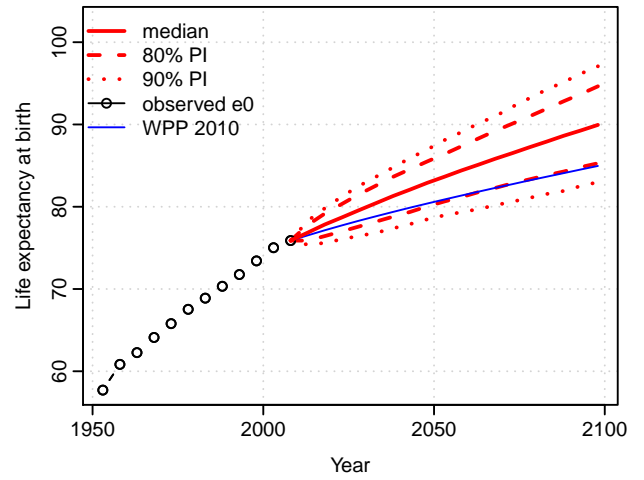
**Trinidad and Tobago – Male**



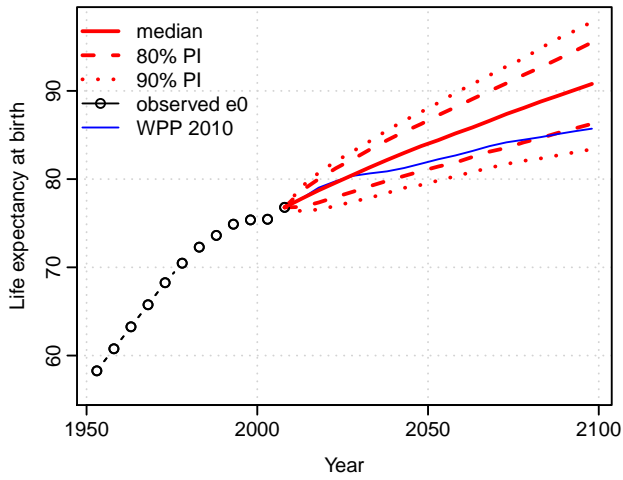
**United States Virgin Islands – Female**



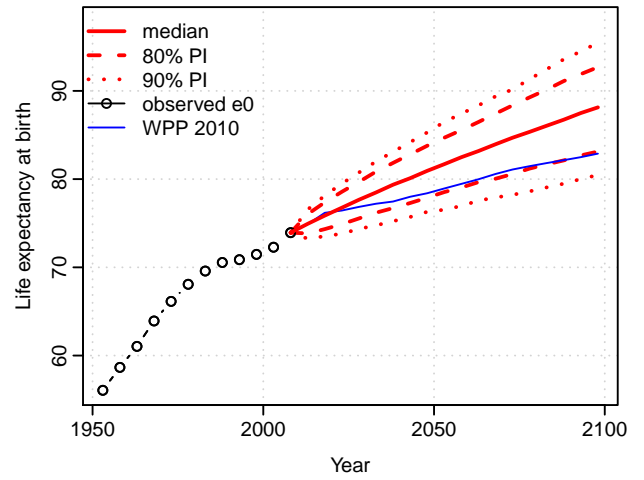
**United States Virgin Islands – Male**



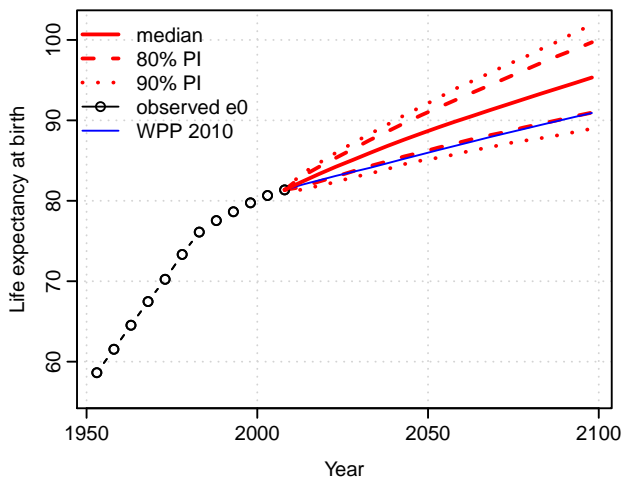
**Belize – Female**



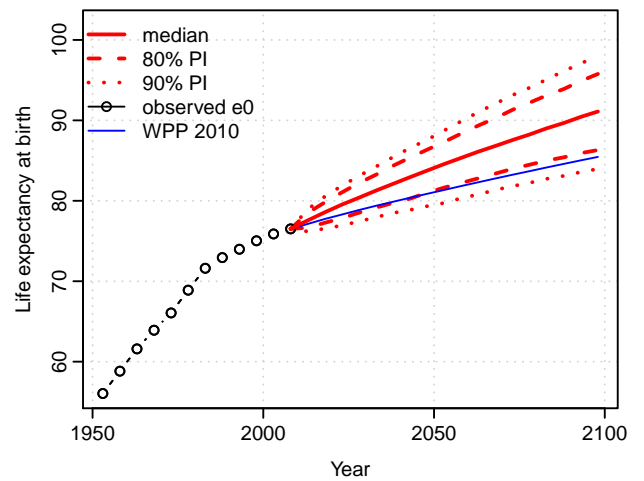
**Belize – Male**



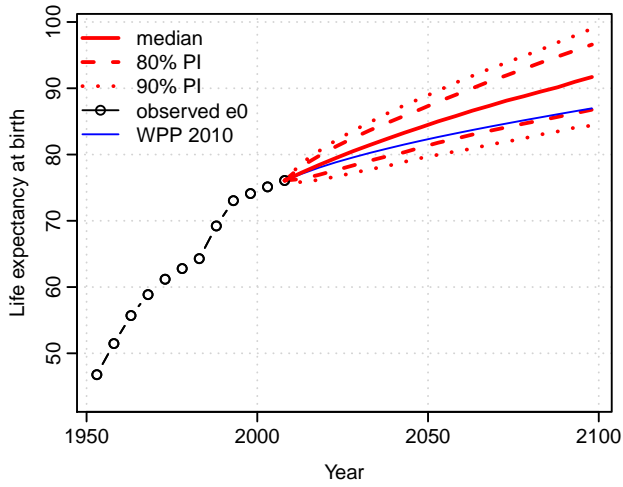
**Costa Rica – Female**



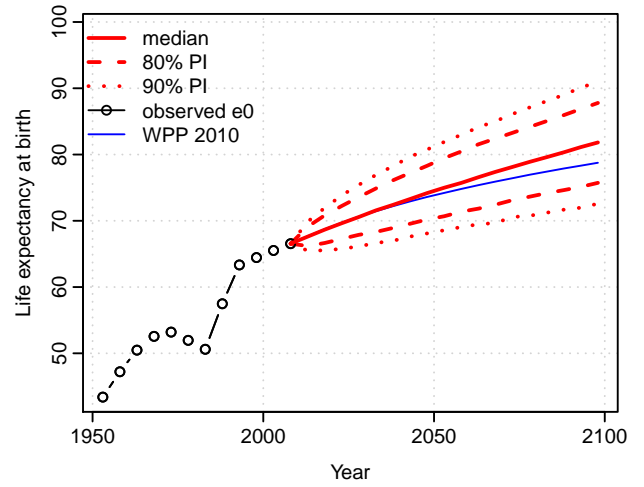
**Costa Rica – Male**



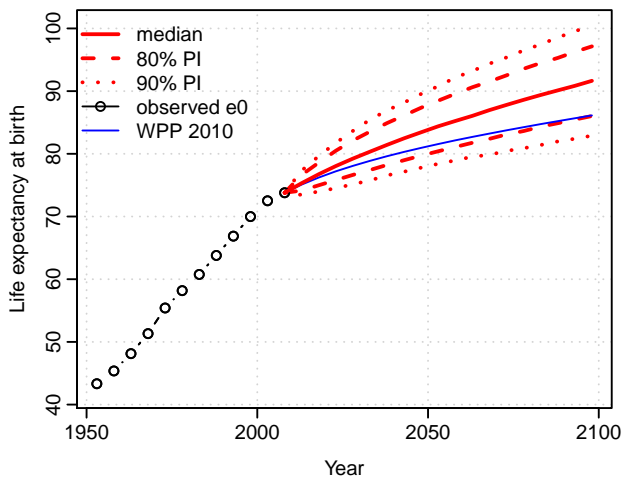
**El Salvador – Female**



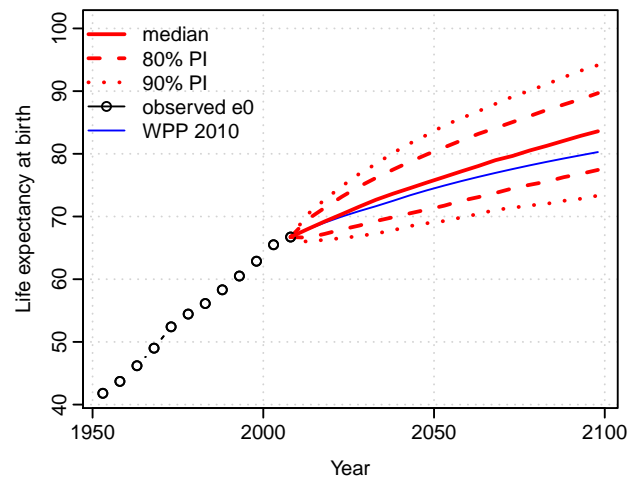
**El Salvador – Male**



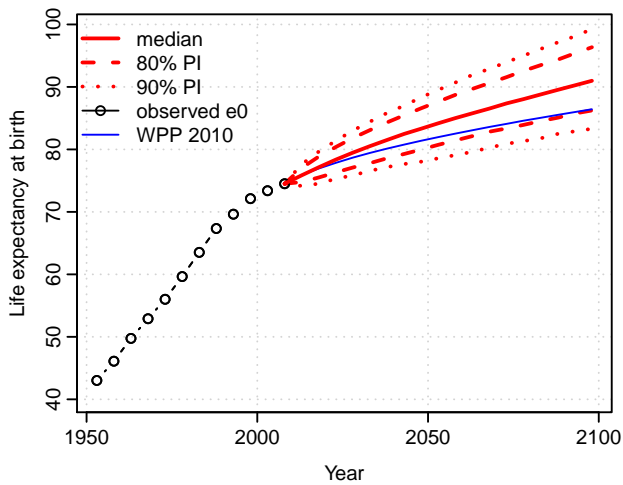
**Guatemala – Female**



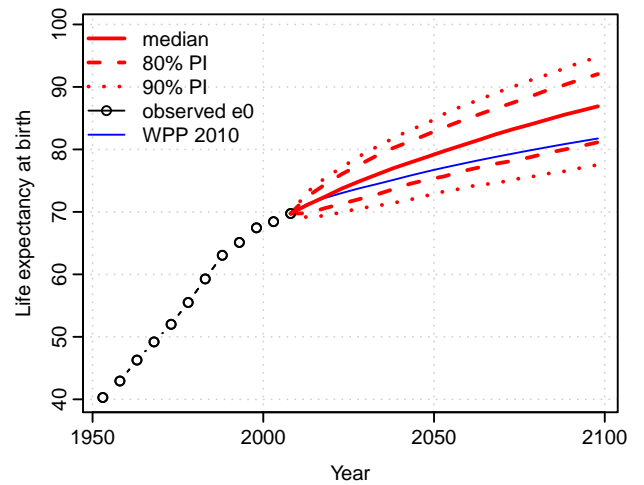
**Guatemala – Male**

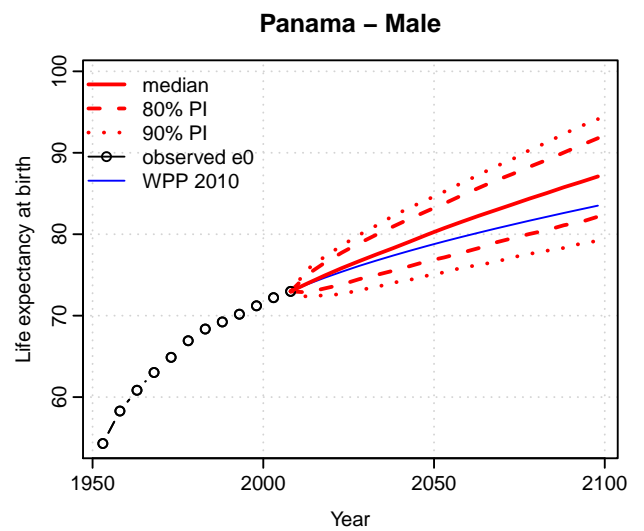
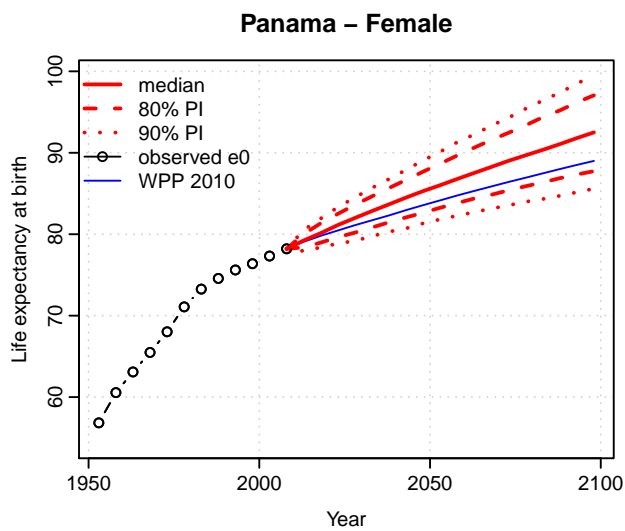
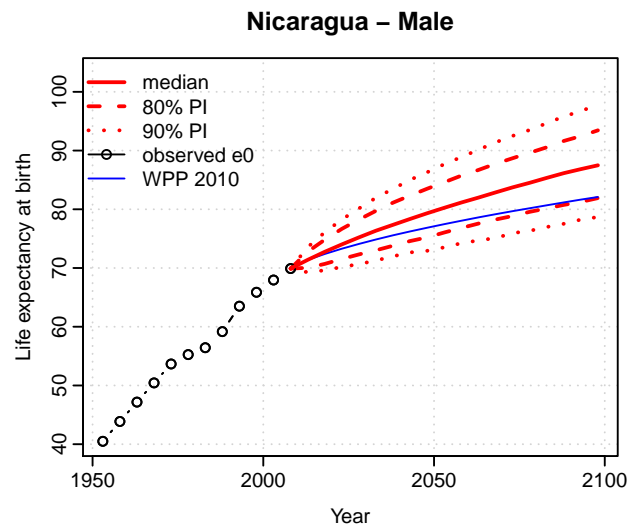
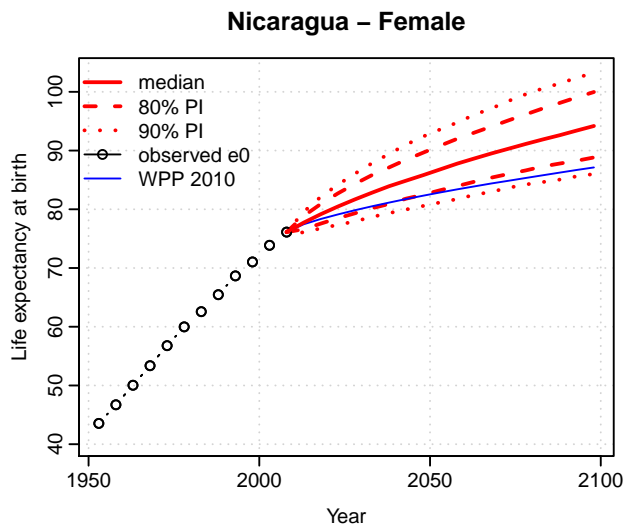
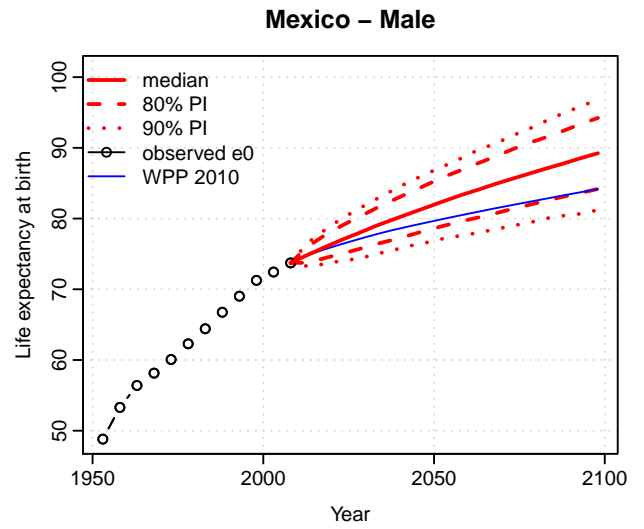
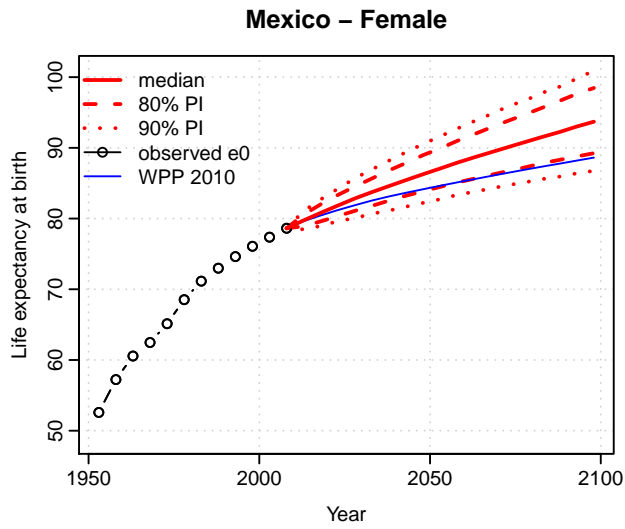


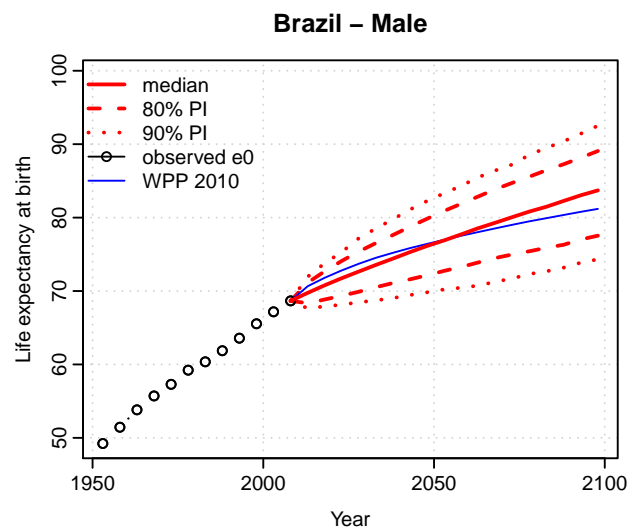
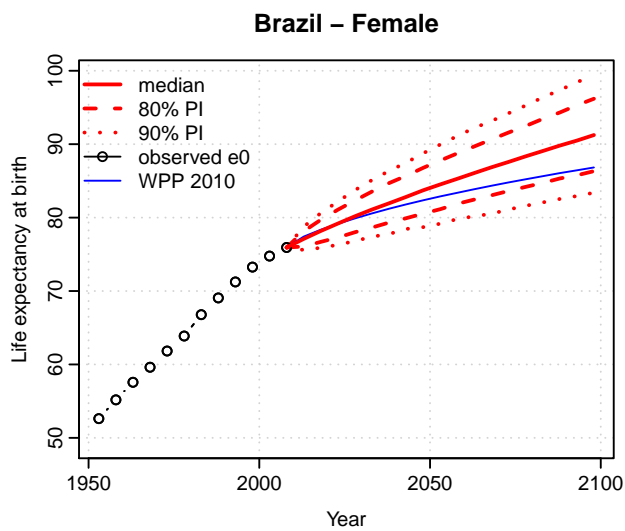
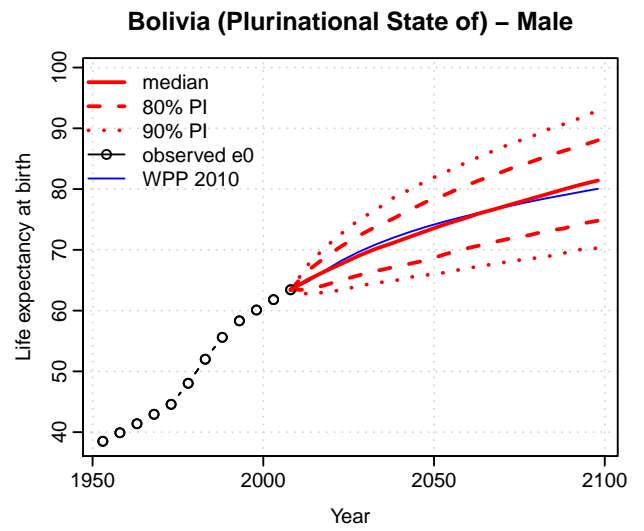
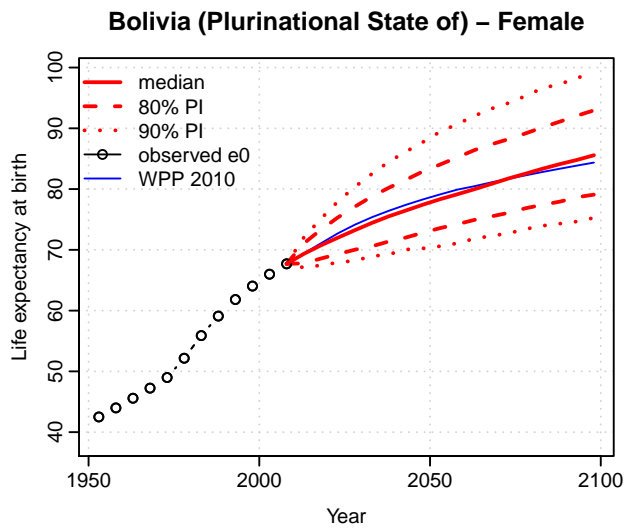
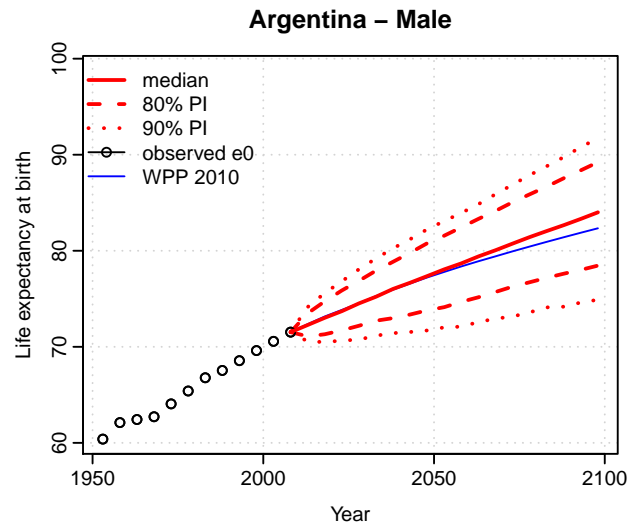
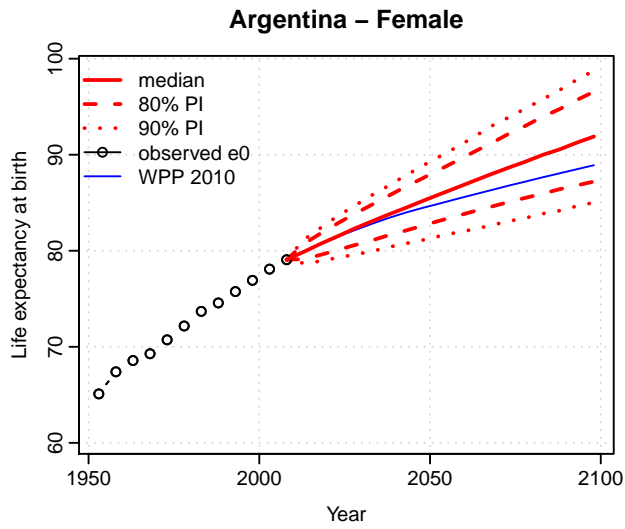
**Honduras – Female**



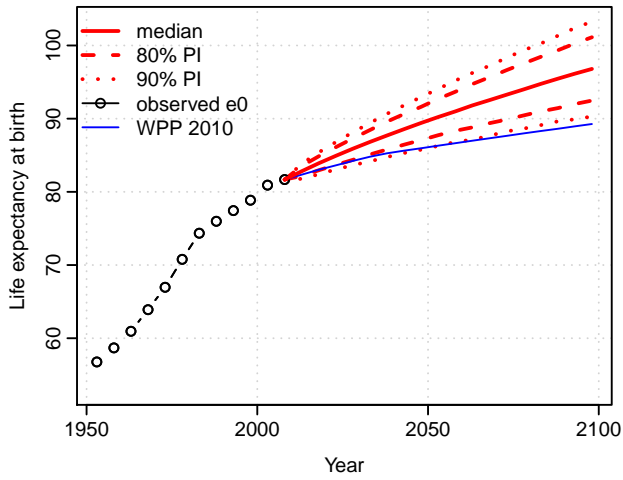
**Honduras – Male**



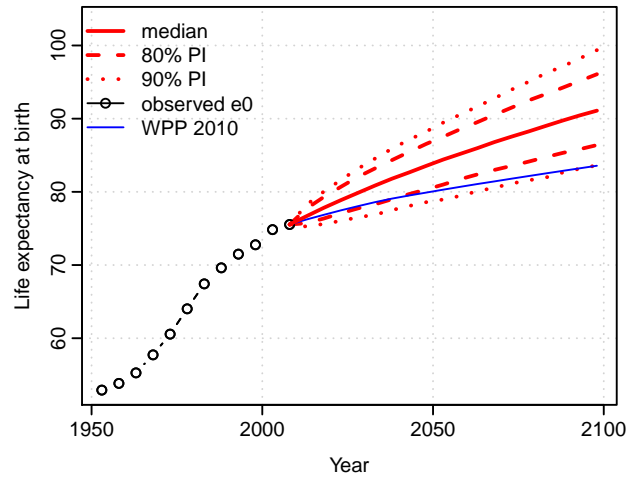




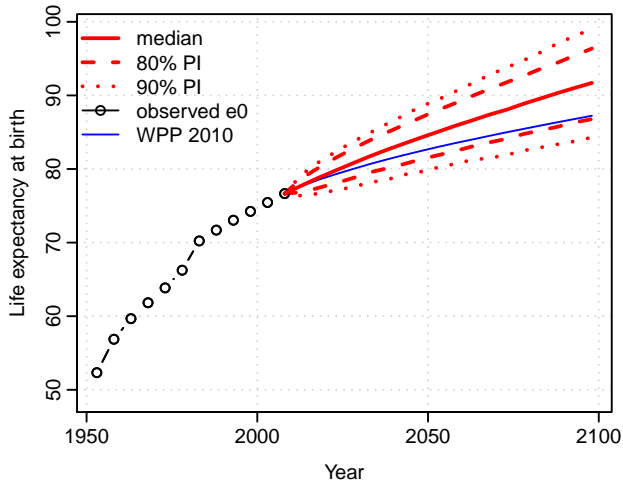
**Chile – Female**



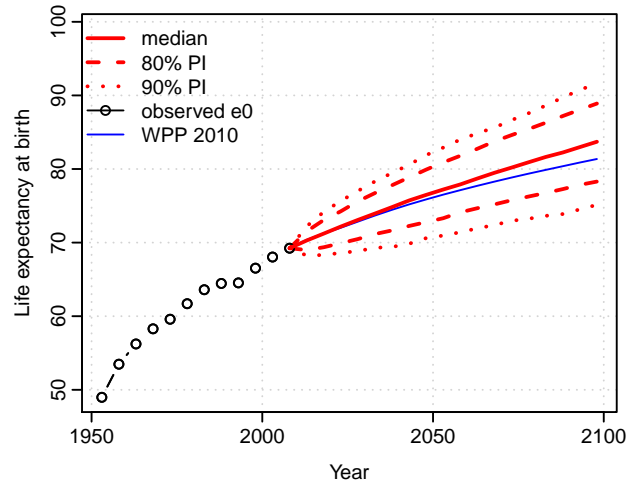
**Chile – Male**



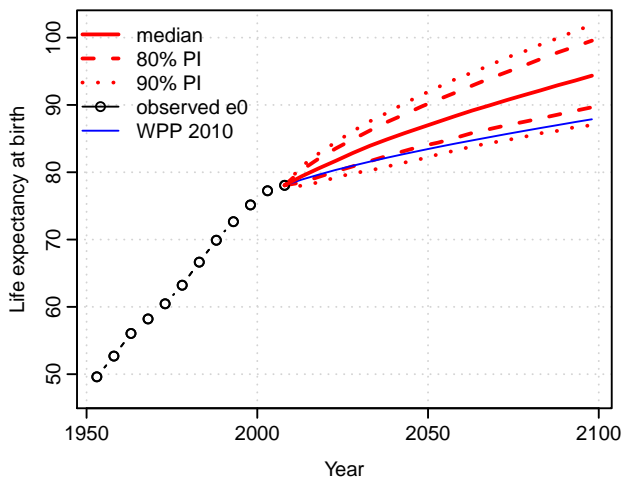
**Colombia – Female**



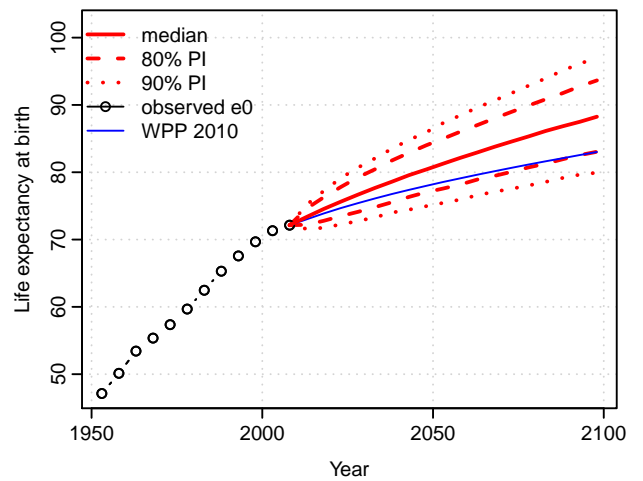
**Colombia – Male**



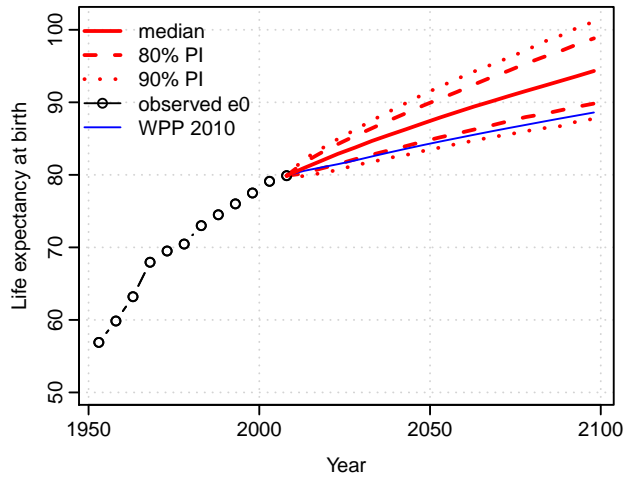
**Ecuador – Female**



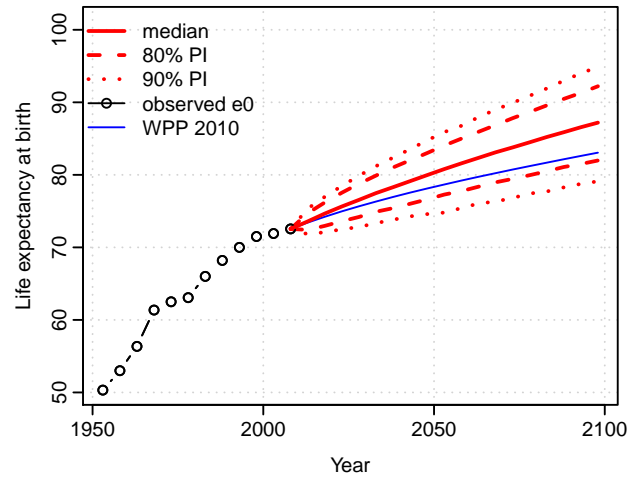
**Ecuador – Male**



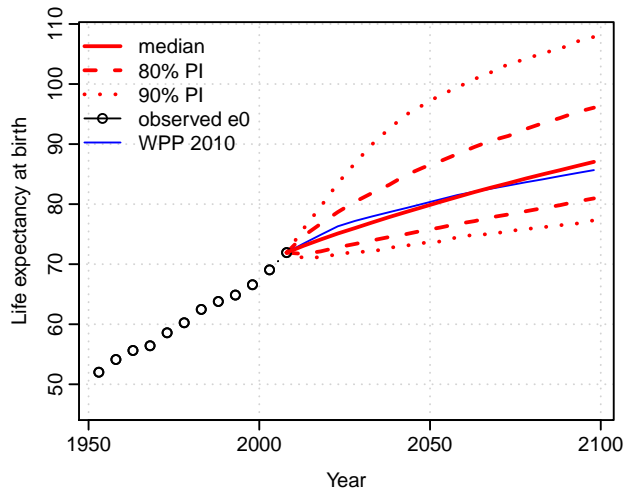
**French Guiana – Female**



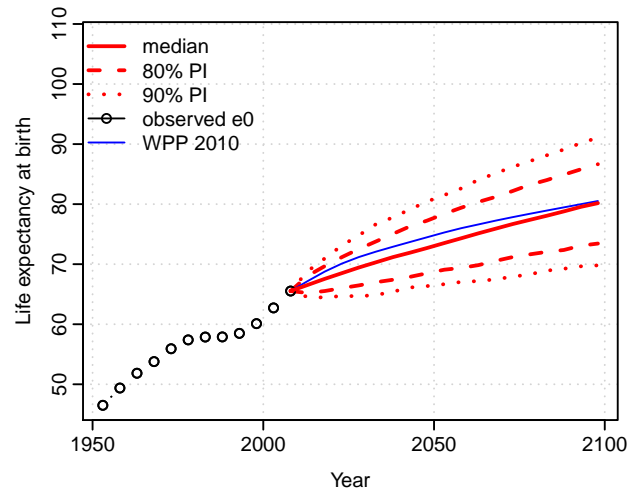
**French Guiana – Male**



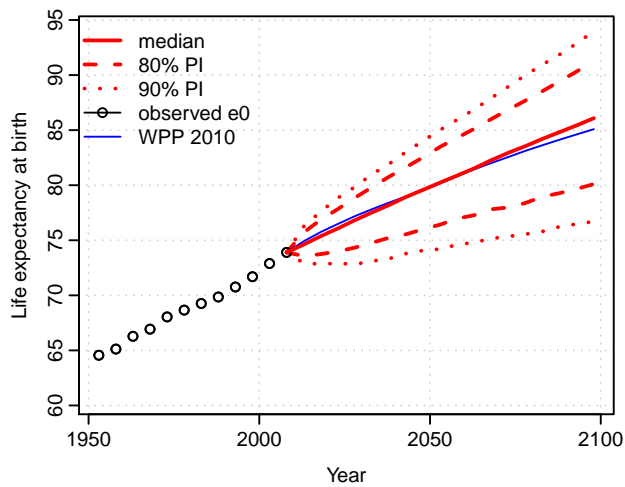
**Guyana – Female**



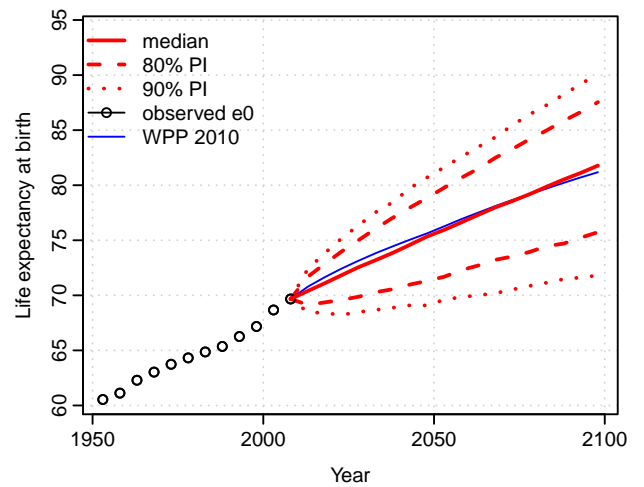
**Guyana – Male**



**Paraguay – Female**

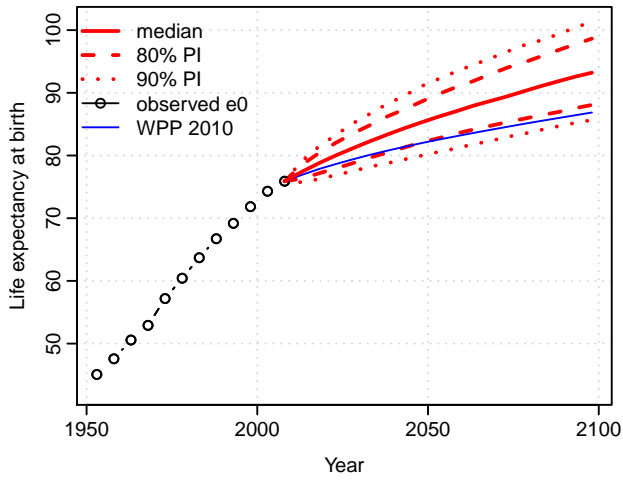


**Paraguay – Male**

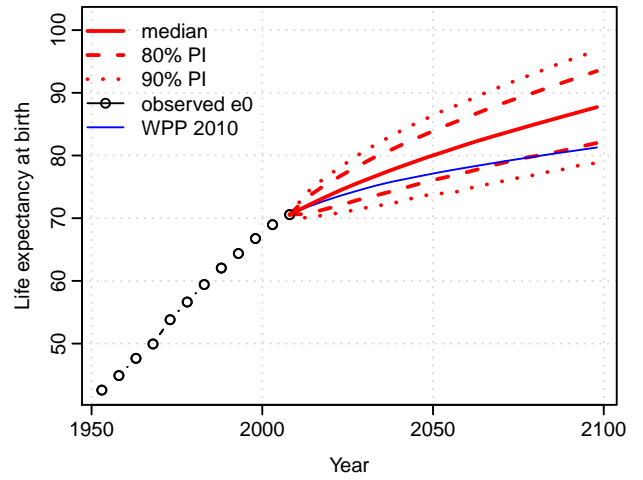




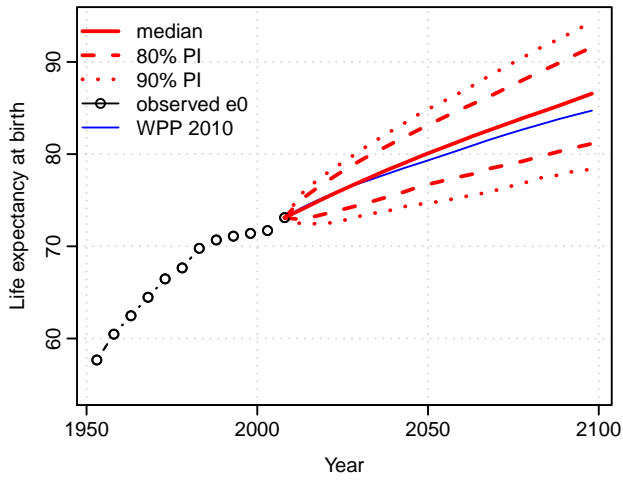
**Peru – Female**



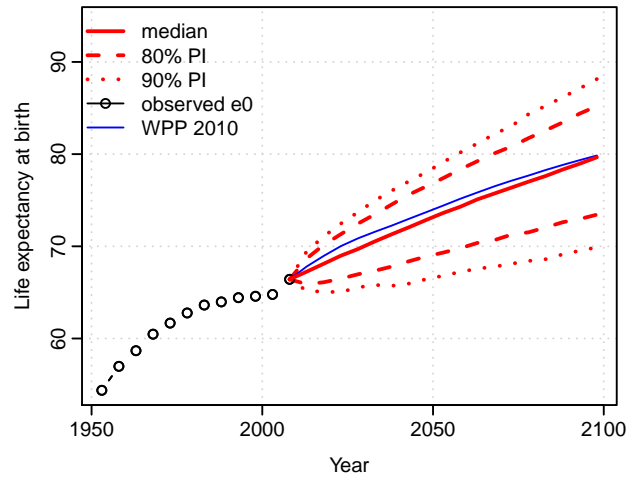
**Peru – Male**



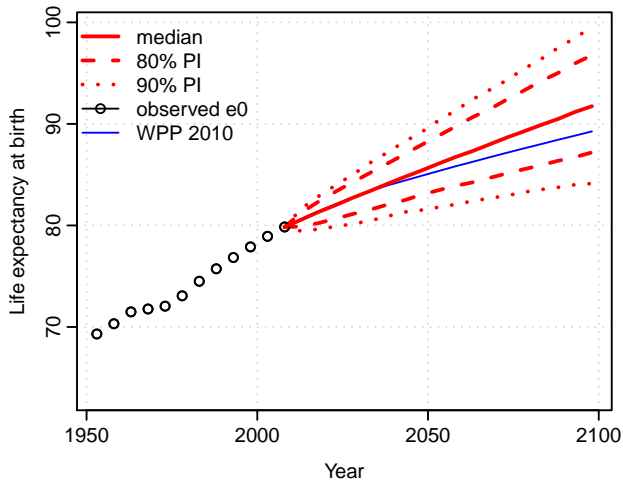
**Suriname – Female**



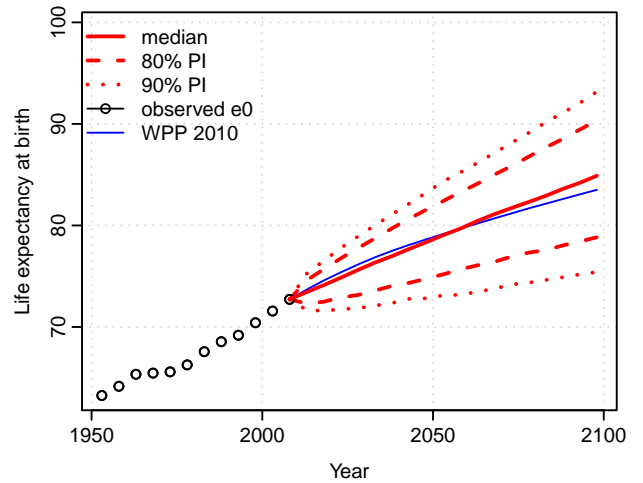
**Suriname – Male**



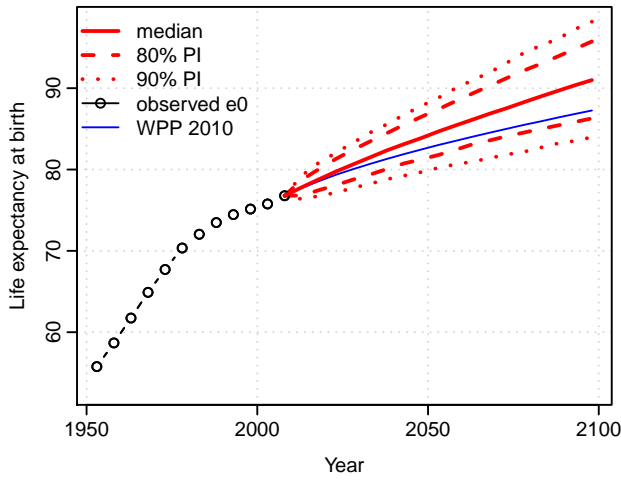
**Uruguay – Female**



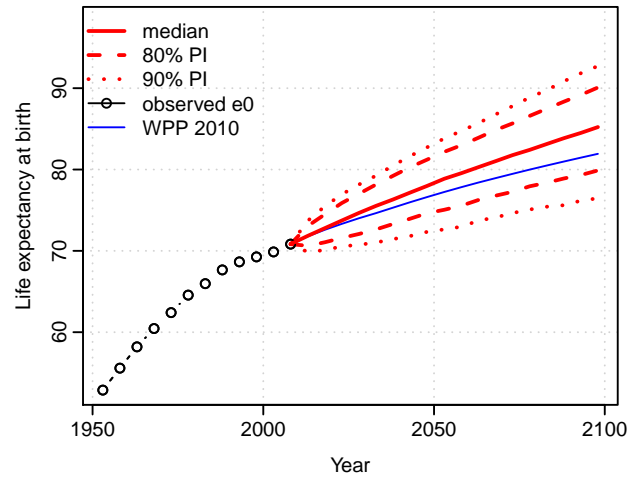
**Uruguay – Male**



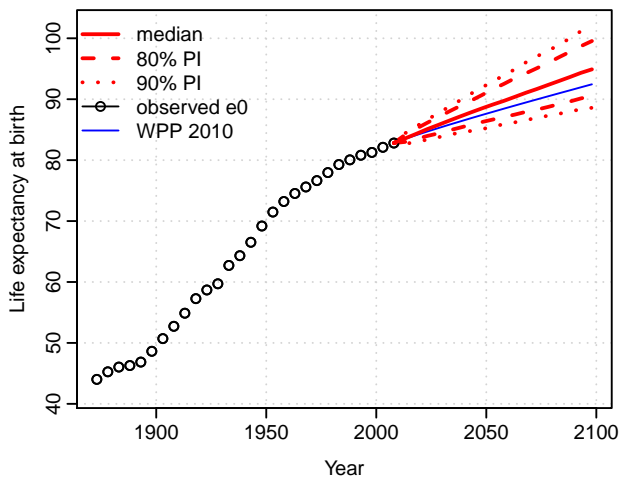
Venezuela (Bolivarian Republic of) – Female



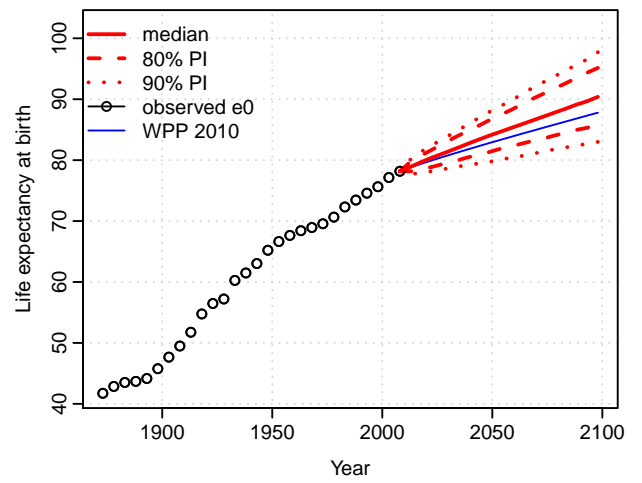
Venezuela (Bolivarian Republic of) – Male



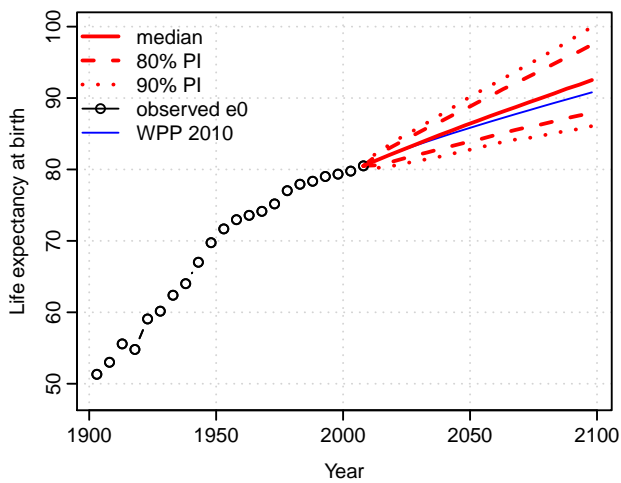
Canada – Female



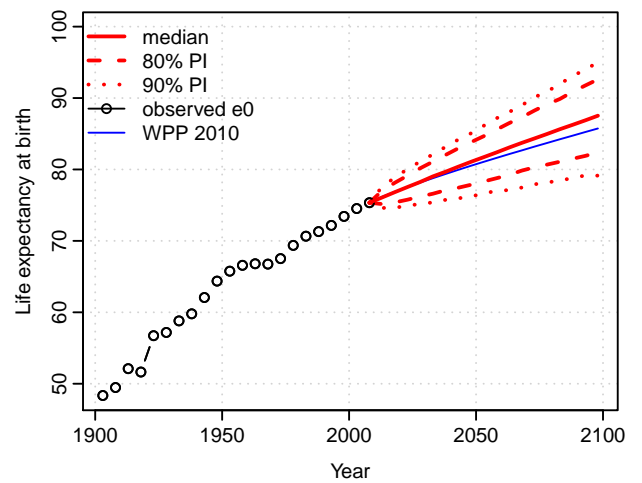
Canada – Male



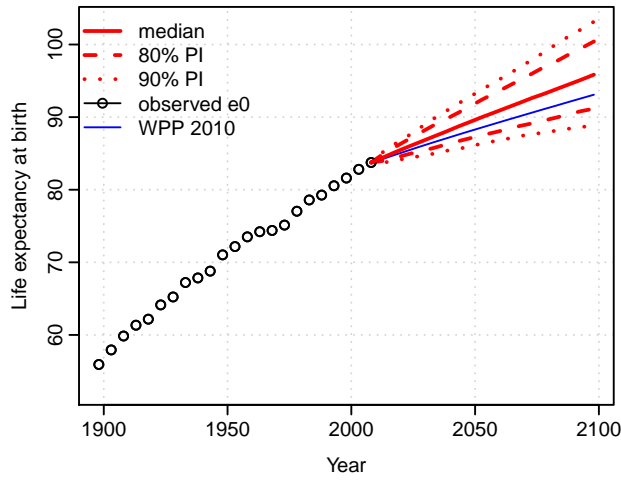
United States of America – Female



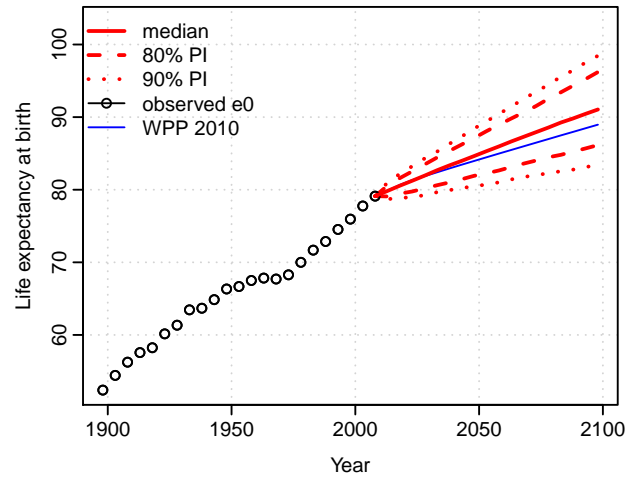
United States of America – Male



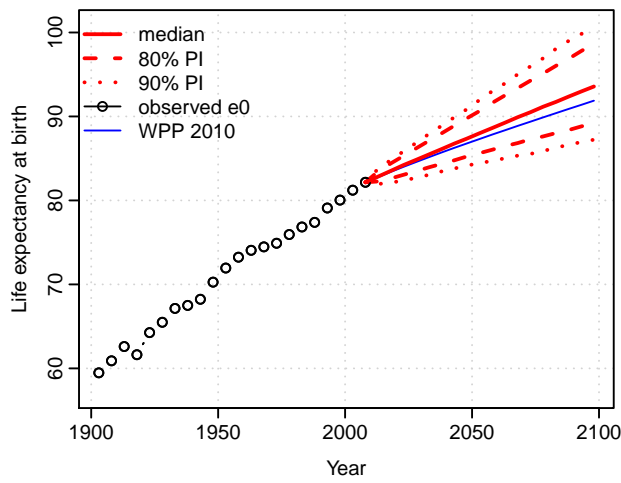
**Australia – Female**



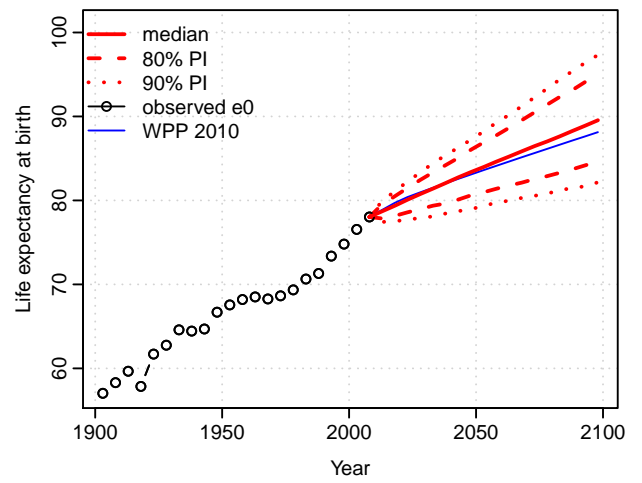
**Australia – Male**



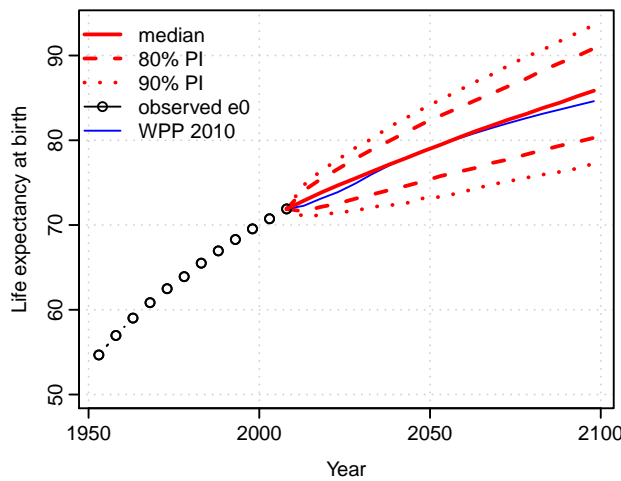
**New Zealand – Female**



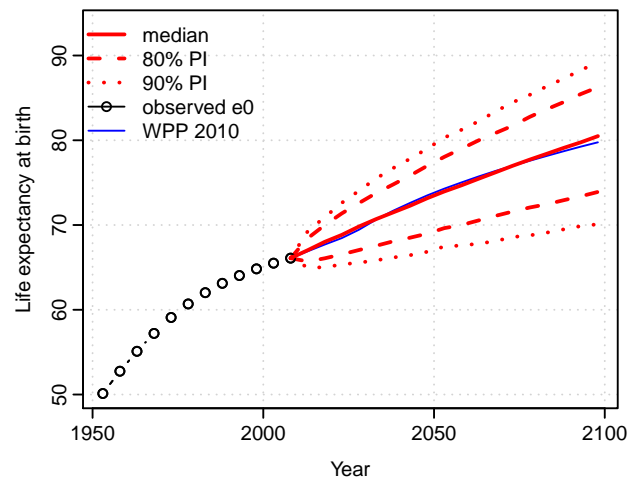
**New Zealand – Male**



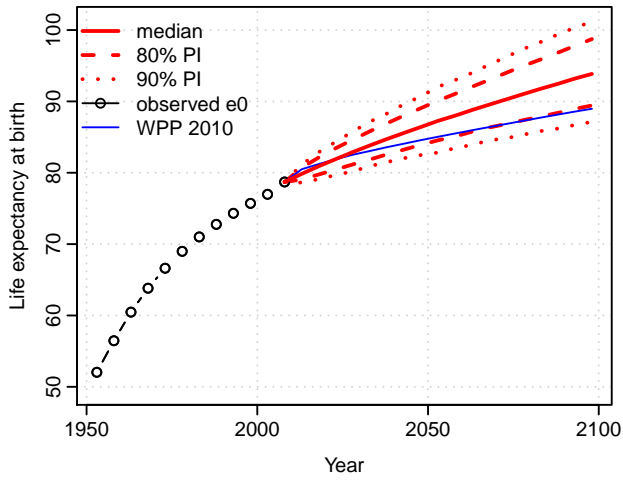
**Fiji – Female**



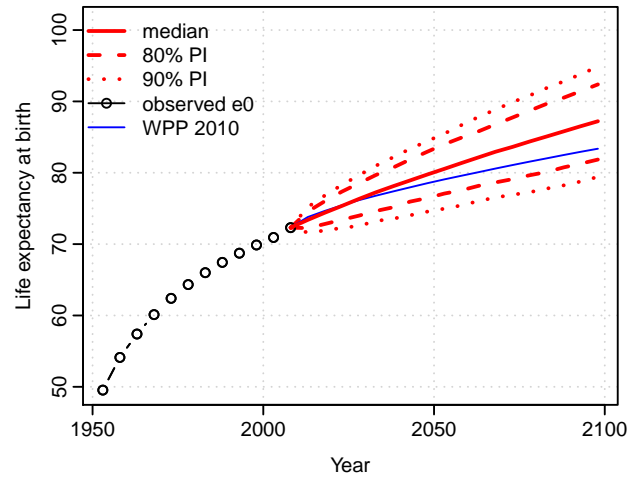
**Fiji – Male**



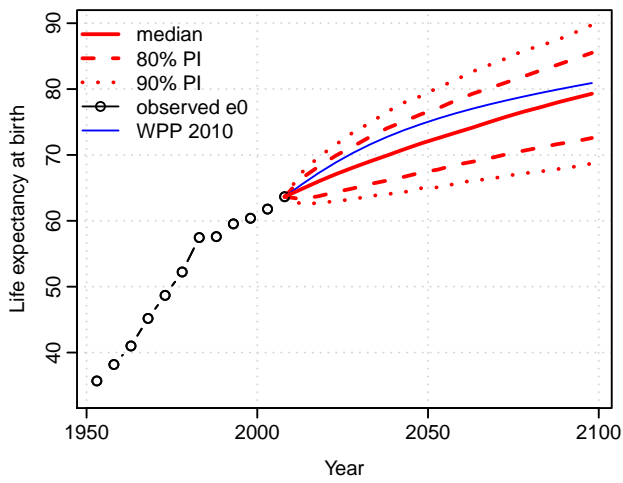
**New Caledonia – Female**



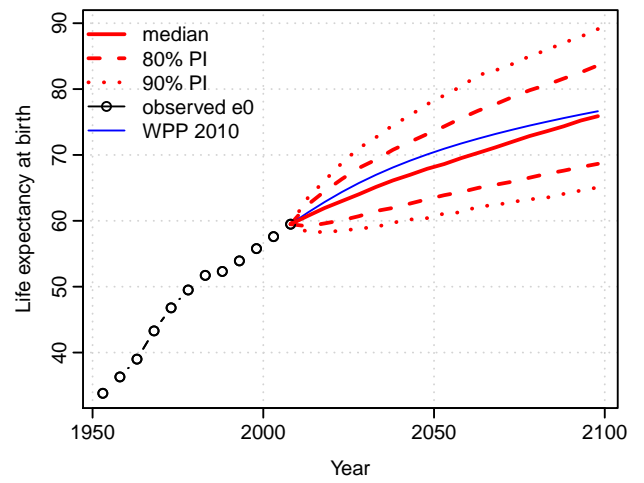
**New Caledonia – Male**



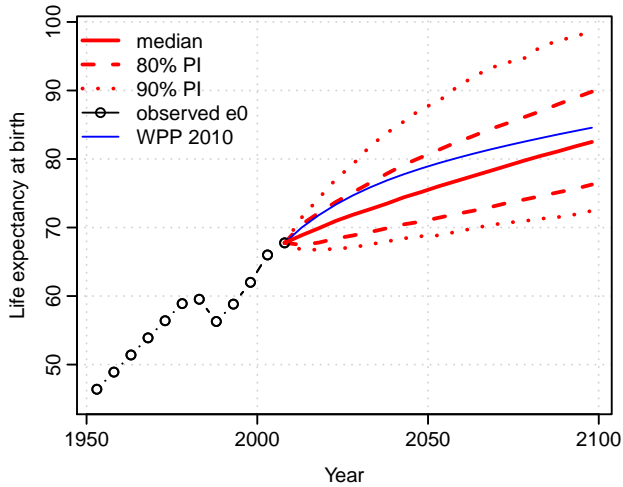
**Papua New Guinea – Female**



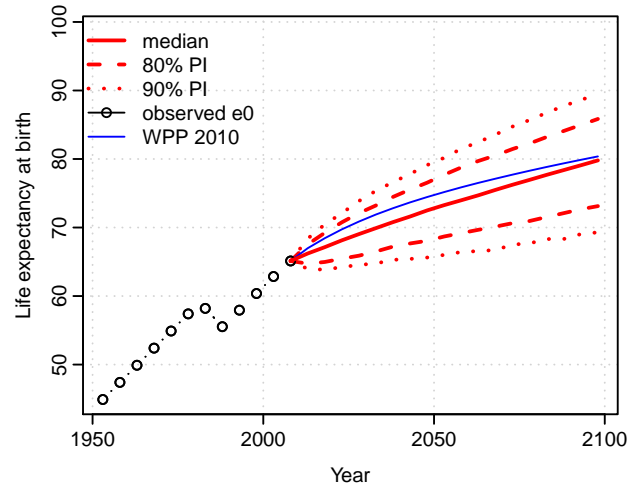
**Papua New Guinea – Male**

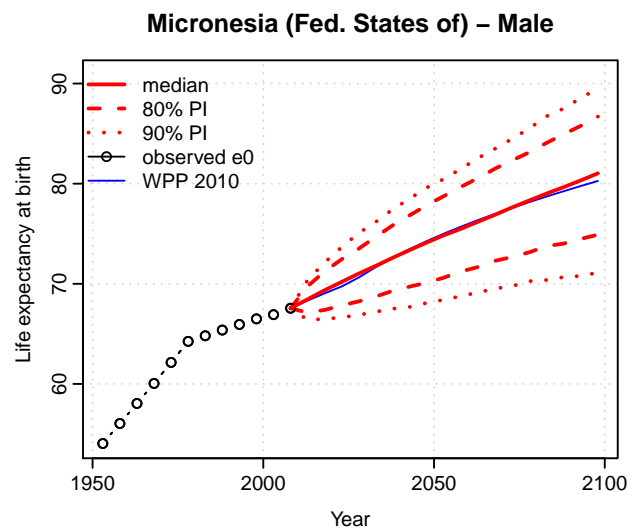
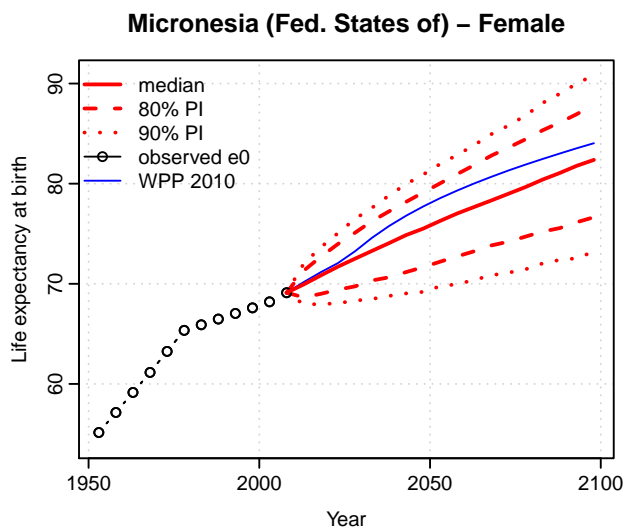
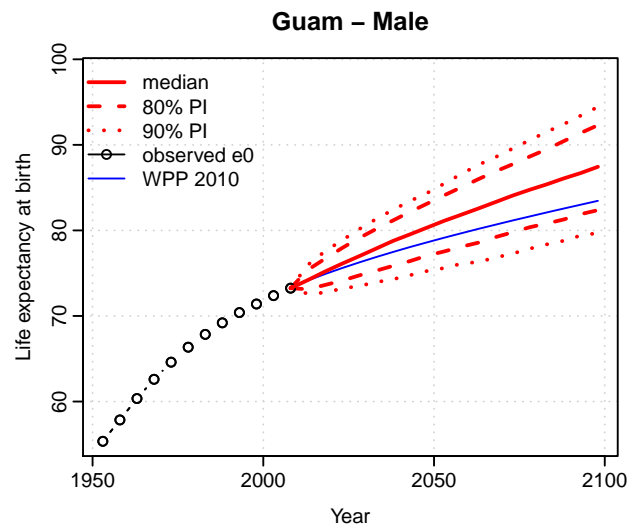
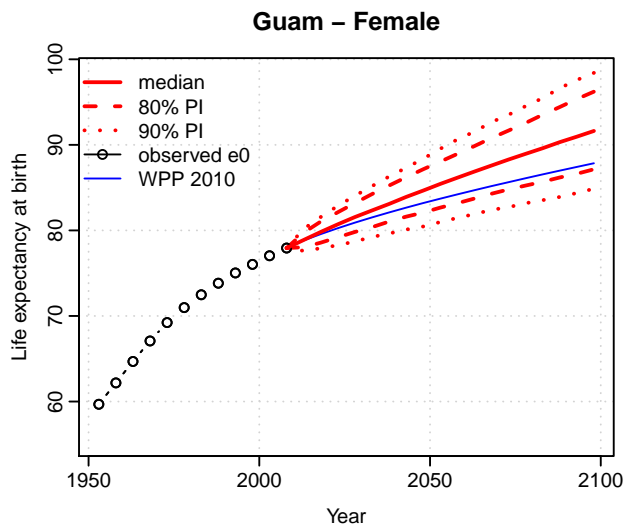
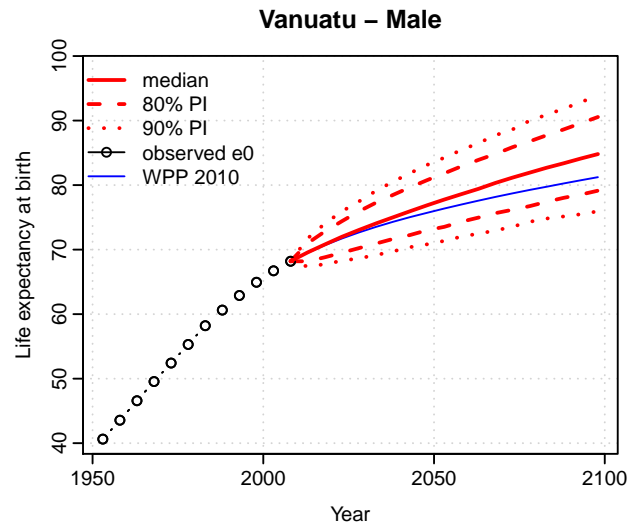
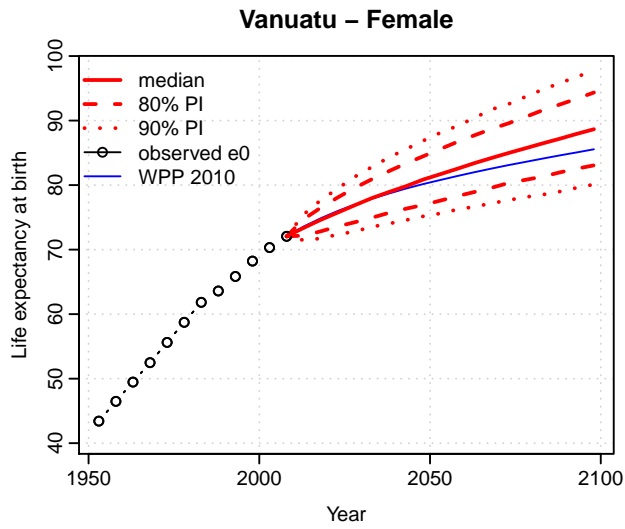


**Solomon Islands – Female**

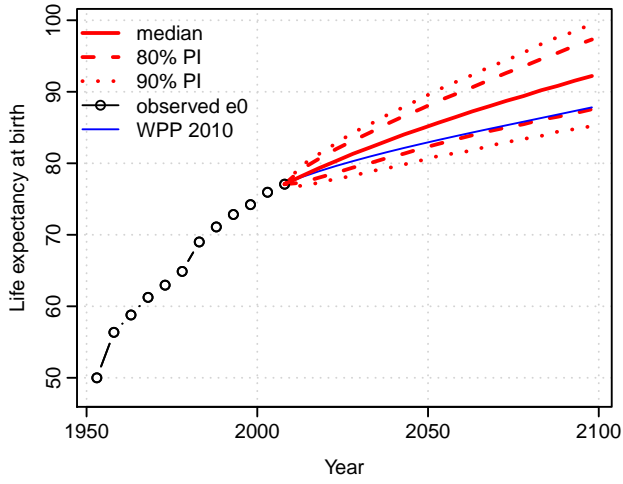


**Solomon Islands – Male**

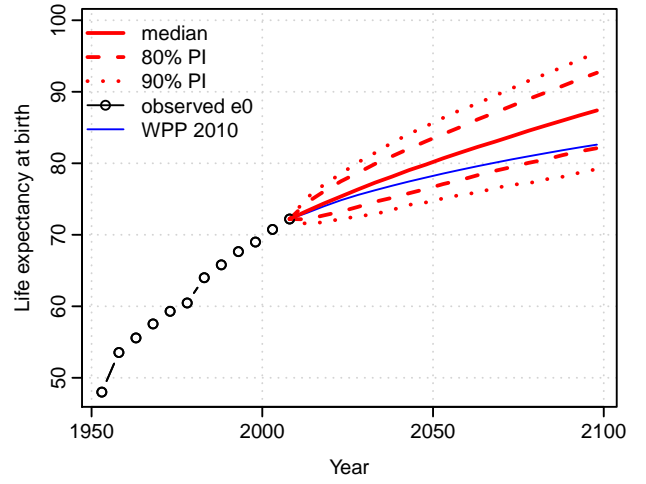




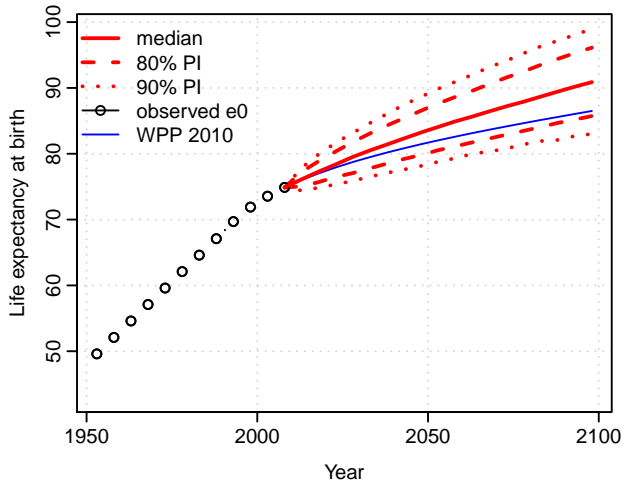
**French Polynesia – Female**



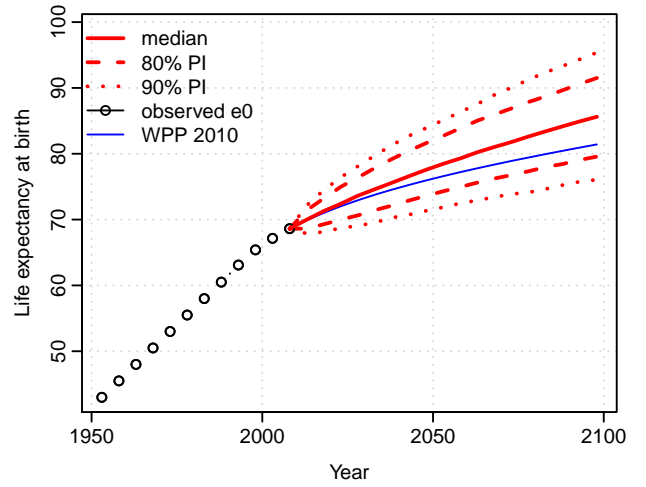
**French Polynesia – Male**



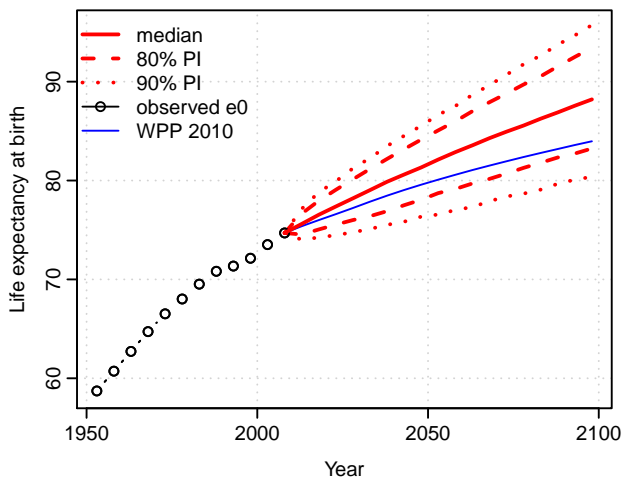
**Samoa – Female**



**Samoa – Male**



**Tonga – Female**



**Tonga – Male**

