

Plate 1 (Figure P1): Life Expectancies at Different Ages, from Hunter-Gatherers to Modern Day Ireland¹

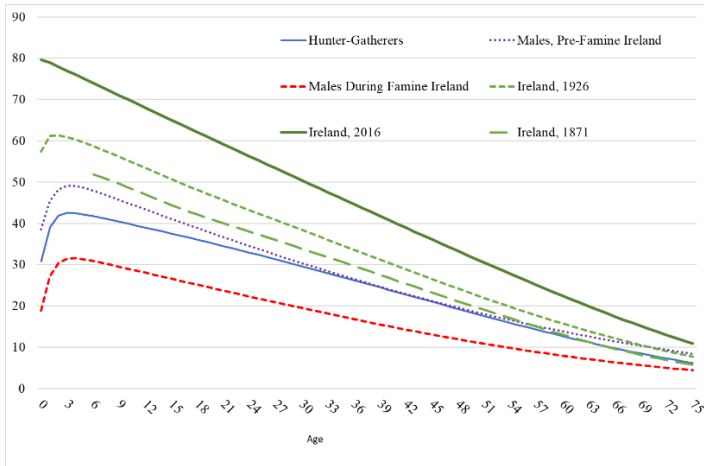
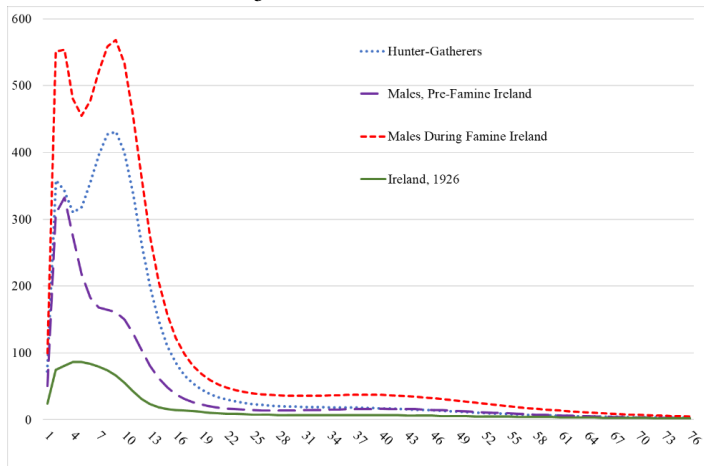


Plate 2 (Figure P2): Mortality Rate by Age as a Multiple of the Mortality Rate in Ireland in 2016²



¹ Gurven and Kaplan (2007) for hunter-gatherers. The values were calculated using average parameter values given in their Table 2 and using the formula on their p. 325. Boyle and Ó Gráda (1986) for Pre-Famine Ireland (1821-1841) and Famine Ireland (1845-49), with values in their Tables A2 and A4 fit and interpolated using the same Siler model as Gurven and Kaplan (2007). Ireland 1871 was estimated by the author based on deaths and population in the geographical region now the Republic of Ireland. Ireland 1926 and Ireland 2016 are based on official Irish Life Table 1 and 17 respectively.

² As Figure P1, but a further graduation to achieve adequate smoothness was necessary at young ages for Irish Life Table 17 (2016). The official rates were graduated using a Heligman-Pollard formula to achieve greater smoothness (see, for instance, Whelan (2006)).

Plate 3 (Figure P3): Mortality Rate by Age as a Multiple of the Mortality Rate in Ireland in 2016 [logscale]

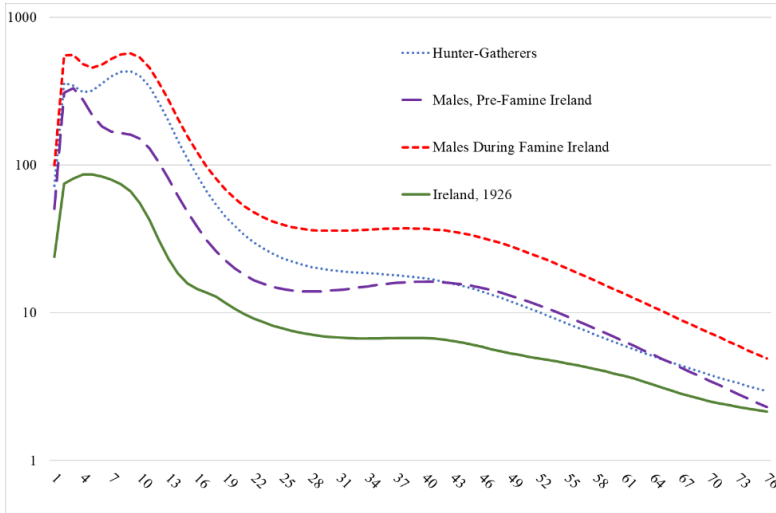
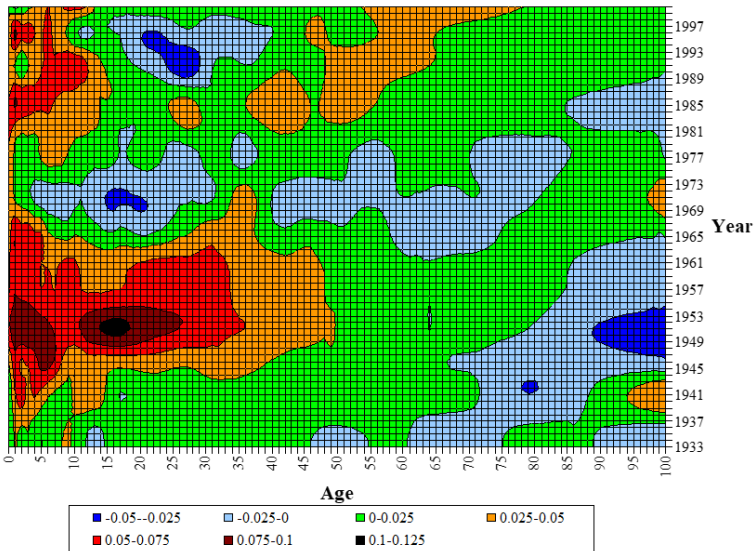


Plate 4 (Figure 1.7): Heat-Map of Annualised Average Fall in Mortality Rates over Five Calendar Years, Smoothed Over Five Calendar Years Centred in Calendar Year Shown, Irish Males



Note: Mortality rates at each age are averaged over 5 calendar years, centred in year shown, and divided by mortality rates also averaged over 5 calendar years at the same age but 5 calendar years earlier. Each calculated smoothed rate of improvement is a small square on the above grid and rates of the similar magnitude are then given the same colour.

Plate 5 (Figure 1.8): Heat-map of Annualised Average Fall in Mortality Rates Over Five Calendar Years, Smoothed Over Five Calendar Years Centred in Calendar Year Shown, Irish Females

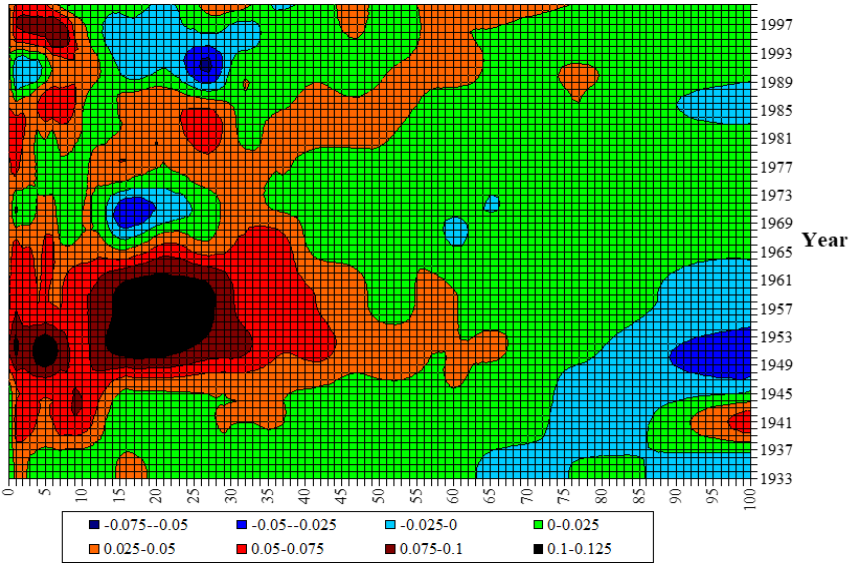
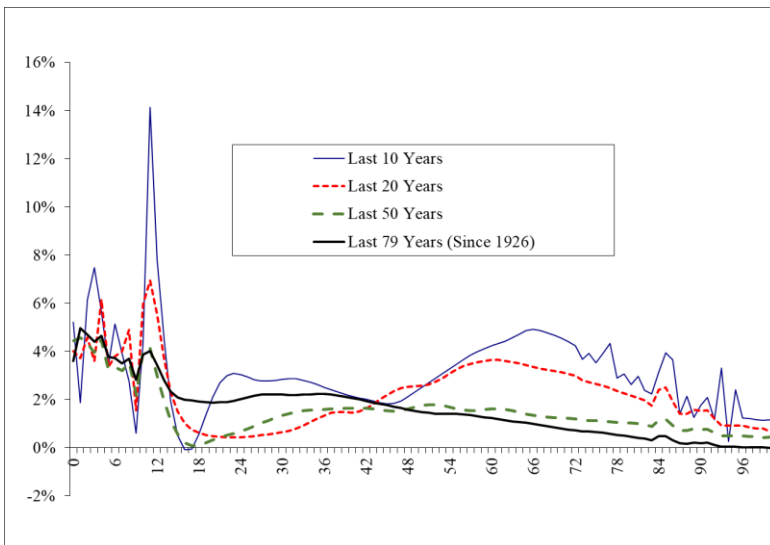
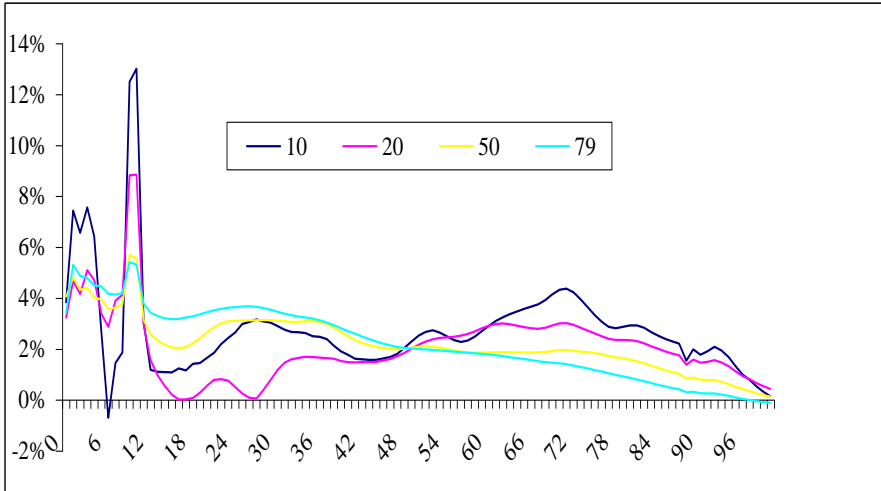


Plate 6 (Figure 1.11a and b): Annualised Average Rate of Decline with Age Over 10 Years, 20 Years, 50 Years and 79 Years Ending 2005
a. Irish Males

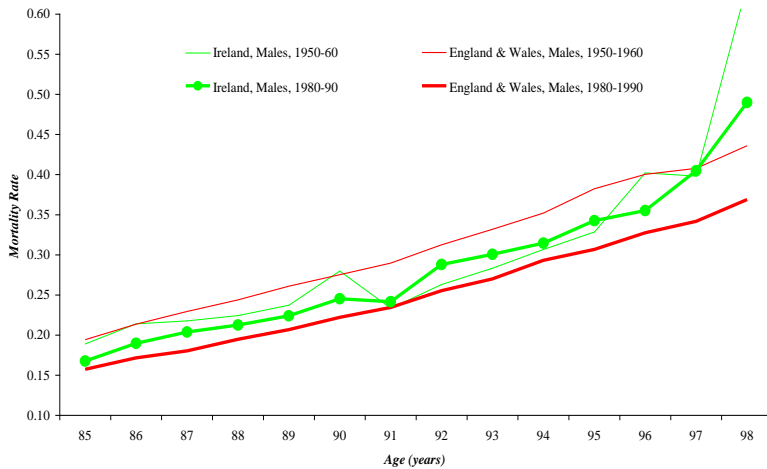


b. Irish Females



Note: Author used King's Method to graduate the crude mortality rates estimated by census method with deaths over period 2004–2006. Mortality rates in previous years from Irish Life Tables or interpolated if between Irish Life Tables.

Plate 7 (Figure 3.17): Comparison of Mortality Rates for Males Ages 85 to 98 Years, Ireland and England and Wales Over Decades 1950-60 and 1980-90³



³ Mortality Rates for Males in England & Wales, Table 6 in Thatcher (1992). For Ireland as calculated by author using the method of extinct generations.

Plate 8 (Figure 4.1): Comparison of Mortality Rates for Males Ages 85 to 98 Years, Ireland and England and Wales Over Decades 1950-60 and 1980-90⁴

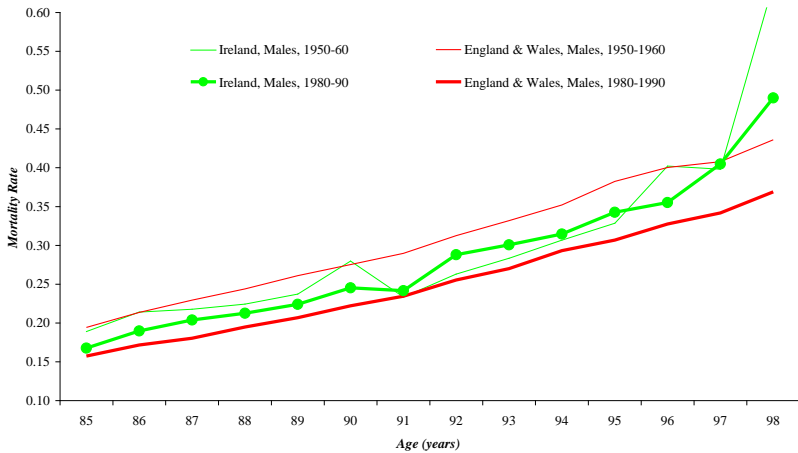
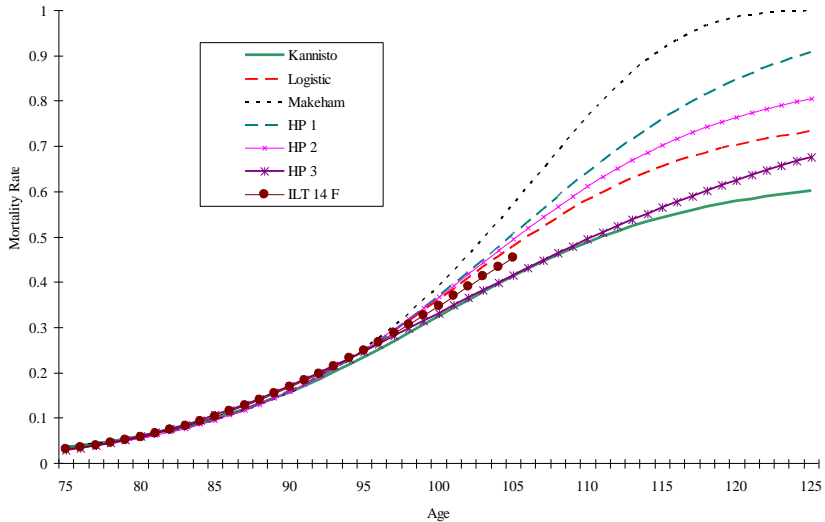


Plate 9 (Figure 4.2): Several Models Fitted to ILT 14 F, by Minimising Squares of Relative Errors in Age Range 75 to 100 Years



⁴ Figure 13 from Mortality in Ireland at Advanced Ages, 1950-2006: Part 1: Crude Rates. The crude mortality rates for Ireland were calculated using the method of extinct generations and the mortality rates for males in England & Wales, are from Table 6 in Thatcher (1992).

Plate 10 (Figure 4.4): Mortality Laws Fit to Crude Mortality Rates (by Method of Extinct Generations), Irish Male Cohorts Born, 1885-1995

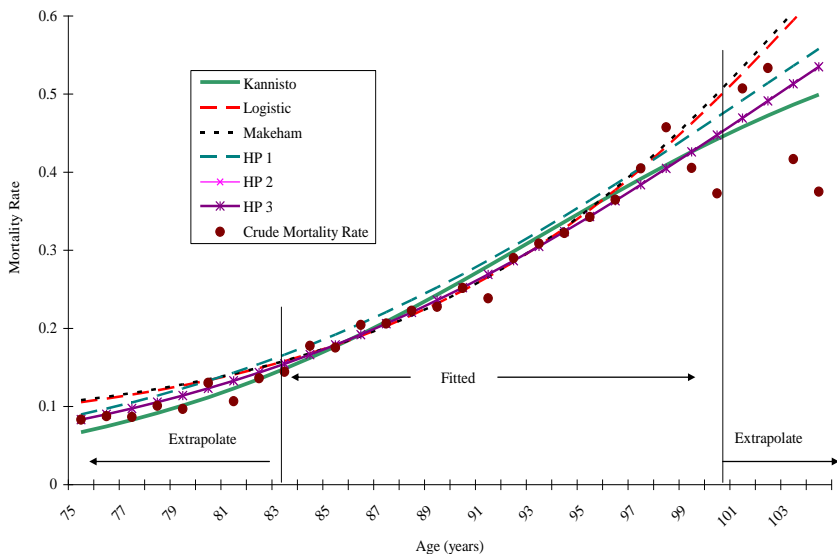


Plate 11 (Figure 4.5): Mortality Laws fit to Crude Mortality Rates, Irish Males, 1970-1980 and Compared with Crude Rates (by Method of Extinct Generations), by Minimised Weighted Relative Error in Age Range 83-100 Years and Extrapolated

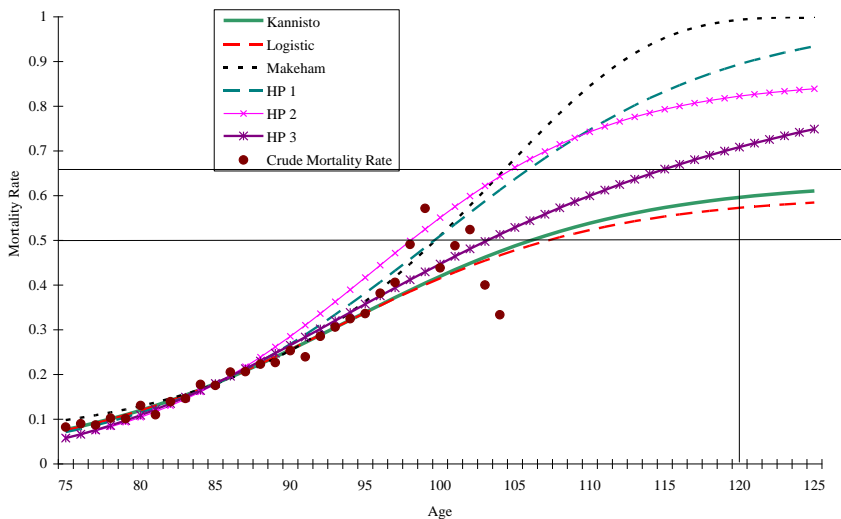
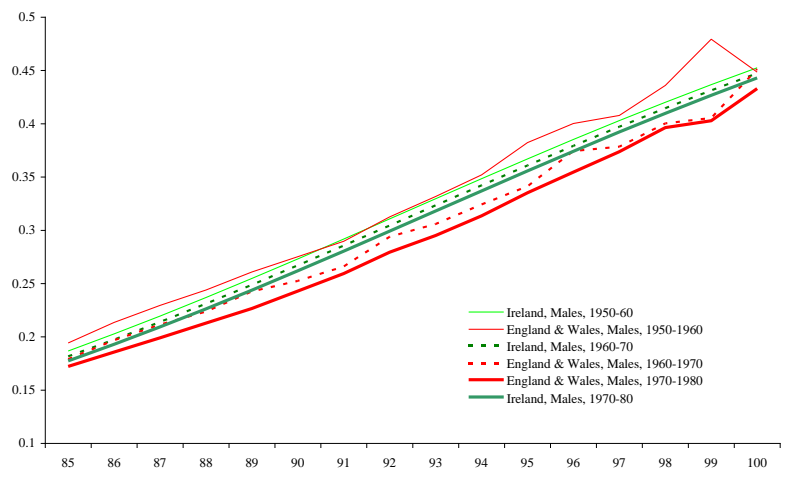
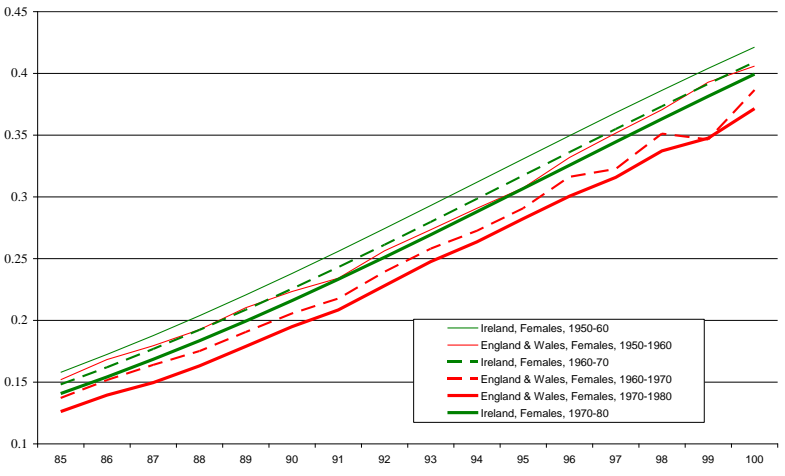


Plate 12 (Figure 4.6): Mortality Rates for Males Ages 85 to 100 Years, Irish Experience Graduated, Compared with Crude Rates in England and Wales, Over Decades 1950-60, 1960-70, and 1970-80



Note: Above can be compared with Figure 4.1, which graphs the crude Irish rates and comparison those of England and Wales. Mortality Rates for Males in England & Wales from Thatcher (1992).

Plate 13 (Figure 4.7): Mortality Rates for Females Ages 85 to 100 Years, Irish Experience Graduated, Compared with Crude Rates in England and Wales, Over Decades 1950-60, 1960-70, and 1970-80



Note: Mortality Rates for Females in England and Wales from Thatcher (1992).

Plate 14 (Figure 4.8): Comparison of Mortality Rates for Males Ages 85 to 100 Years, Ireland and 13 Developed Country Average Over Decades 1950-1960, 1960-70 and 1970-80⁵

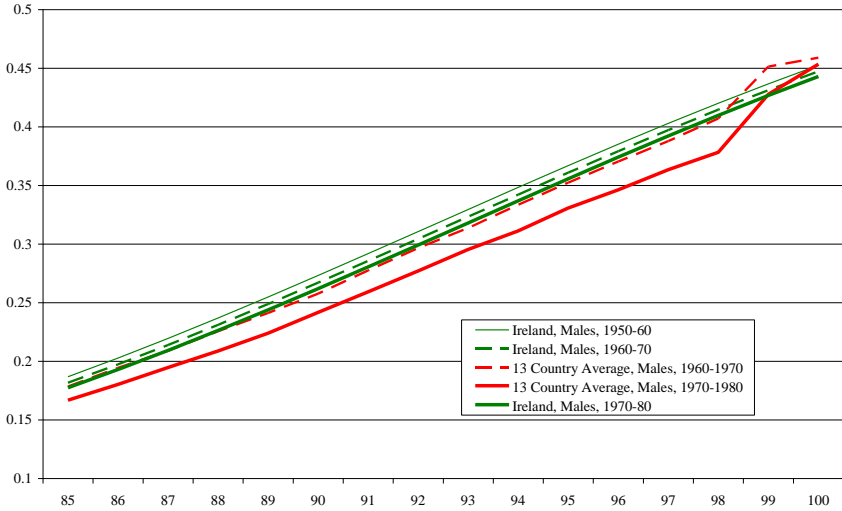
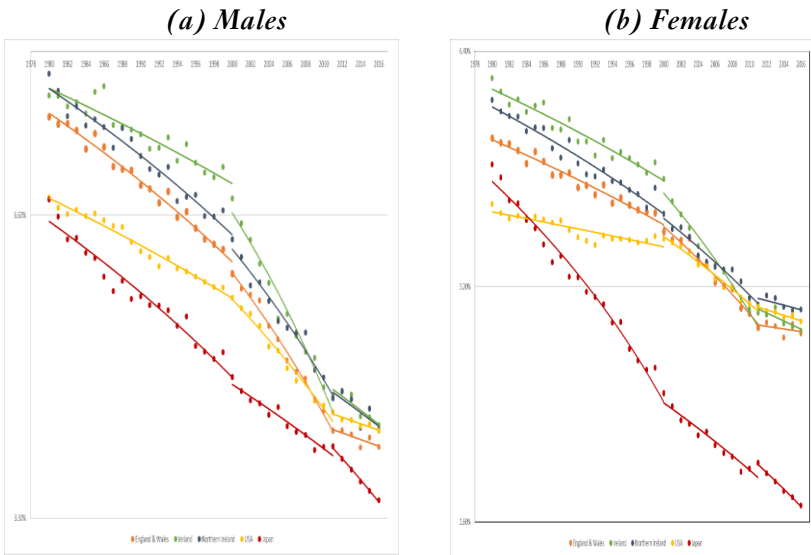


Plate 15 (Figure 5.1): International Age-Standardised Mortality Rates (Ages 65-89 Years Inclusive), 1980-2016, by Gender, including Trendlines⁶



⁵ Source: Mortality Rates for 13 Developed Countries from Thatcher et al. (1998).

⁶ Data sourced from the Human Mortality Database (HMD (2018), Pace et al. (2013), Ahmad et al. (2001)).

Plate 16 (Figure 5.4): Period Life Expectation at Birth by CSO-2018 and CSO-2013 Projection Basis, by Gender
(a) Males **(b) Females**

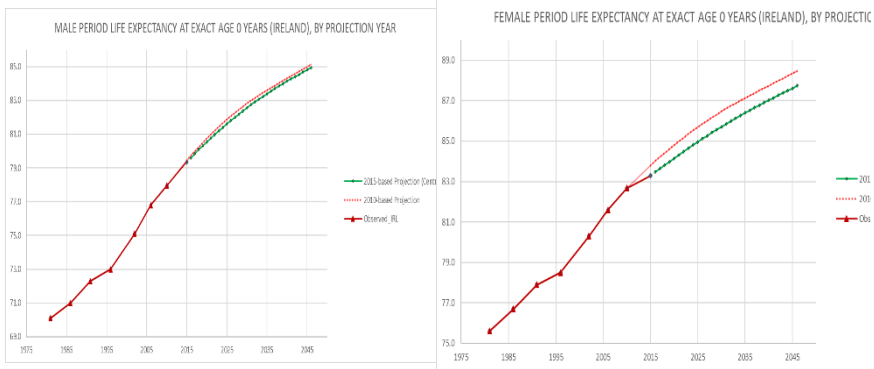


Plate 17 (Figure 5.5): Period Life Expectation at Age 65 years by CSO-2018 and CSO-2013 Projection Basis
(a) Males **(b) Females**

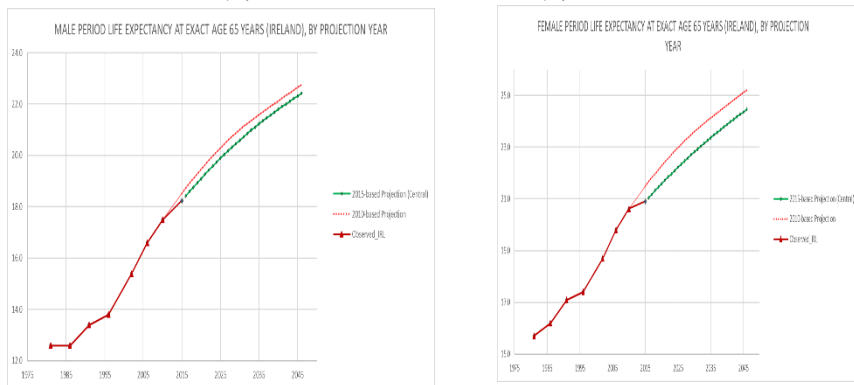


Plate 18 (Figure 5.7): Period Life Expectation at Age 65 years by Gender and Country

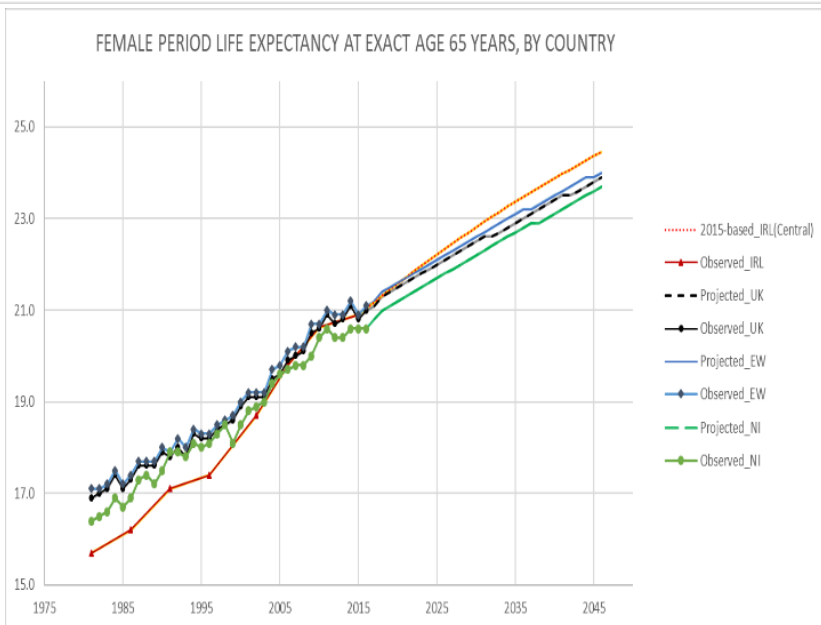
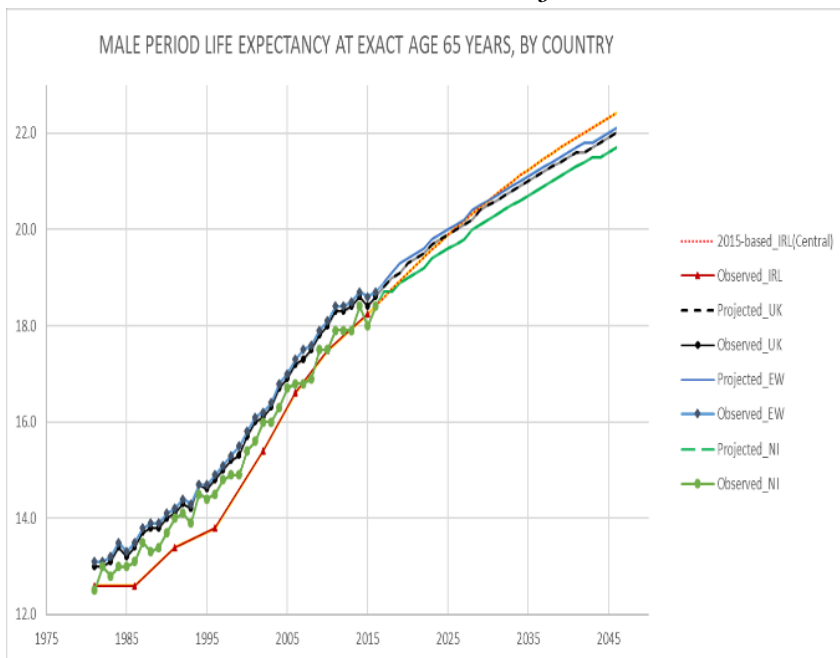


Plate 19 (Figure 5.9): Lee-Carter Projections, with 95% Confidence Interval, versus CSO Projections of Period Life Expectation for Females: (a) from Birth (b) from Age 65 Years⁷
(a) from Birth **(b) from Age 65 Years**

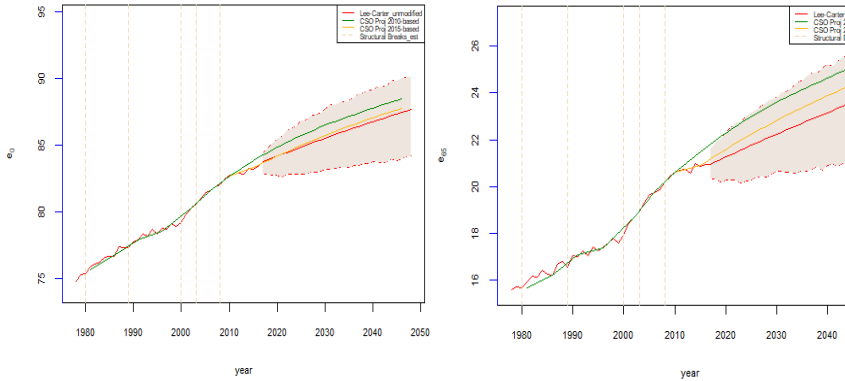
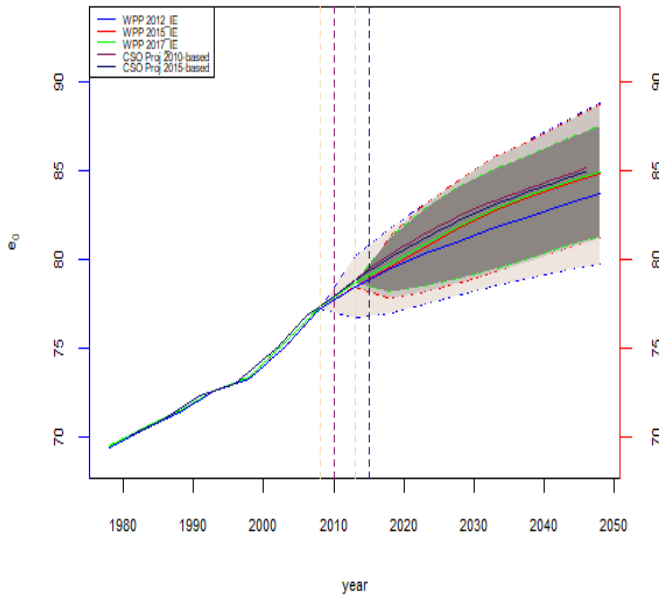


Plate 20 (Figure 5.10): UN Projections versus CSO Projections of Period Life Expectation at Birth by Gender and Projection Year
(a) Males



⁷ Authors' own calculations, based on Irish mortality data, 1980–2016.

(b) Females

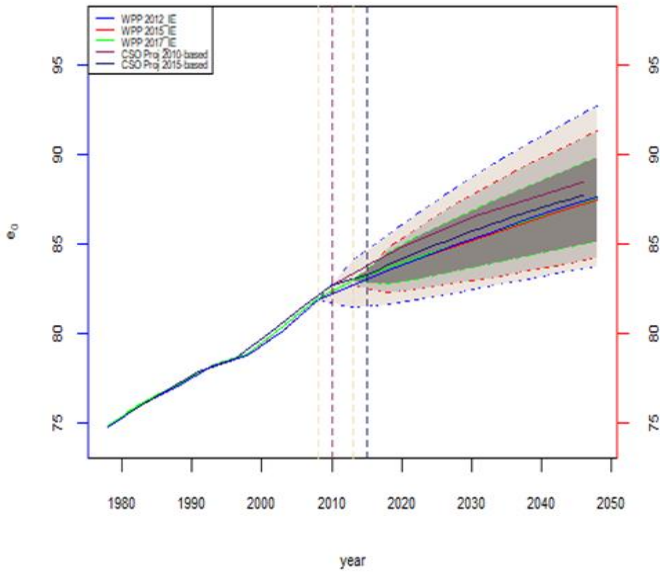
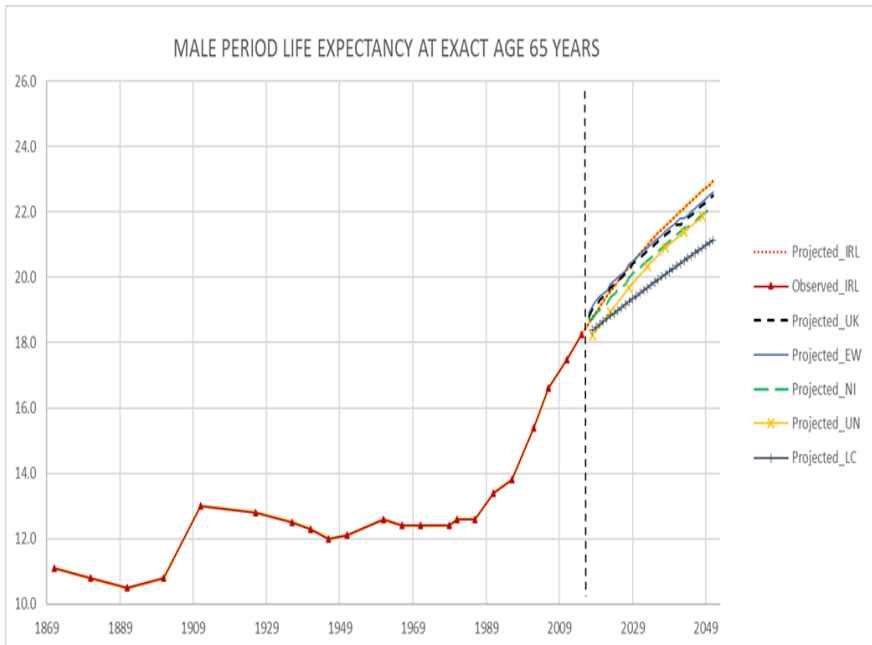


Plate 21 (Figure 5.11): Past and Expected Evolution of Period Life Expectancies at Age 65 Years in Ireland under Various Models
(a) Irish Males



(b) Irish Females

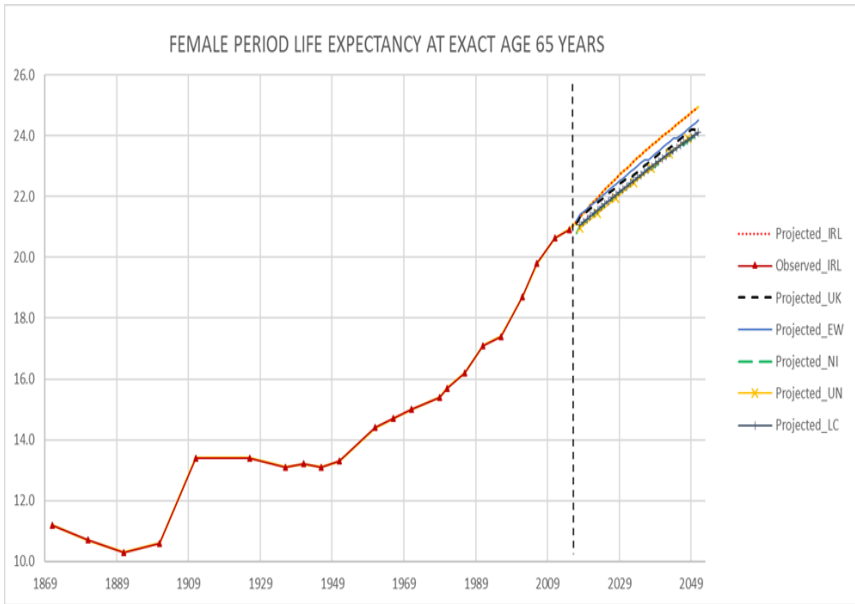


Plate 22 (Figure A5.1): Estimates of Irish Male Mortality Rates for Ages 80-98 Years in Year 2015

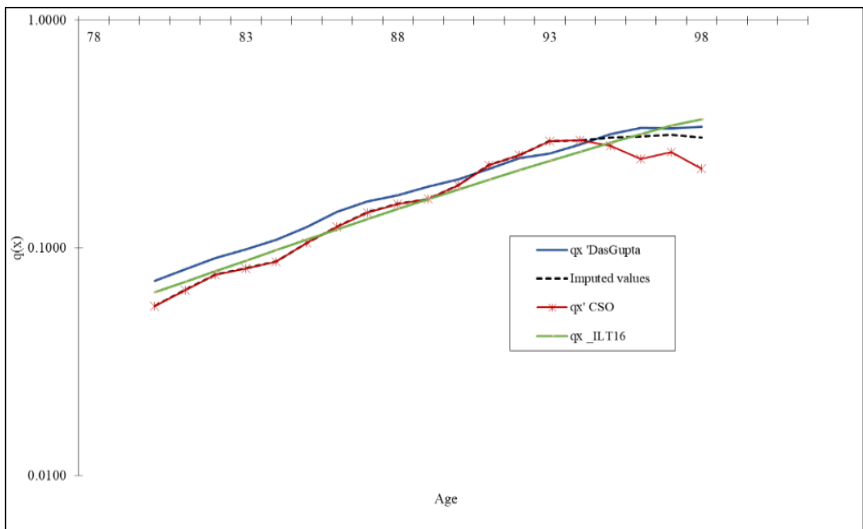


Plate 23 (Figure A5.2): Irish Male Crude Rates with Fitted Mortality Curves, Ages 75-125 Years Inclusive

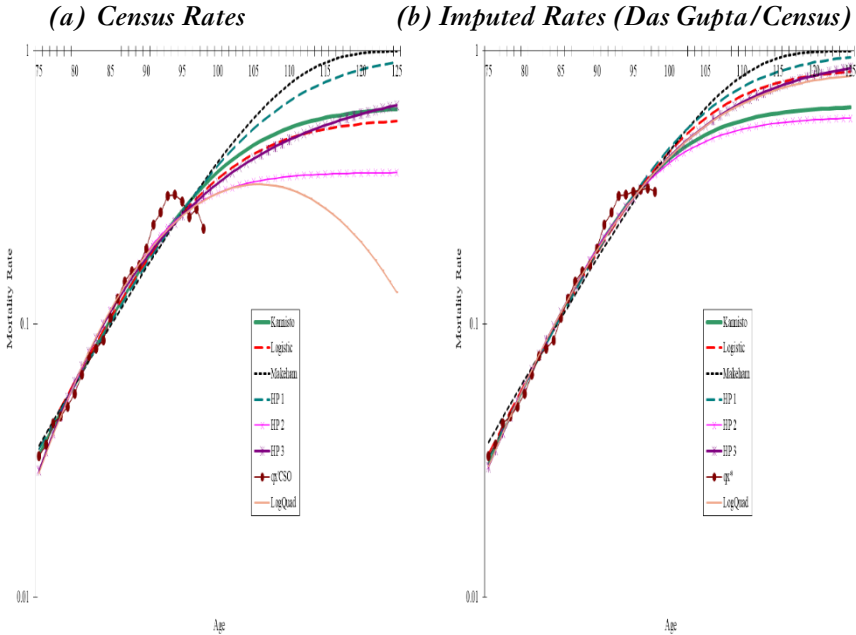


Plate 24 (Figure A5.3): Best Fitting Kannisto Model Fitted to (a) the Census Rates Non-Adjusted (Kannisto 1 Curve) and (b) the Imputed Rates (Kannisto 2 Curve) for the Three Calendar Years Centred 2015. Also, Base Rates of the CSO 2013 Projection, Relating to Calendar Year 2010

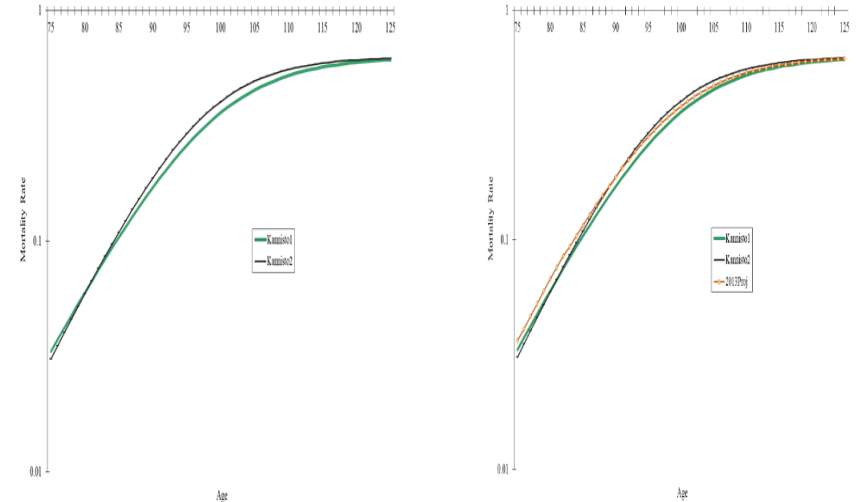


Plate 25 (Figure A5.5): Estimates of Irish Female Mortality Rates, in Period 2014-2016, for Ages 80-98 Years

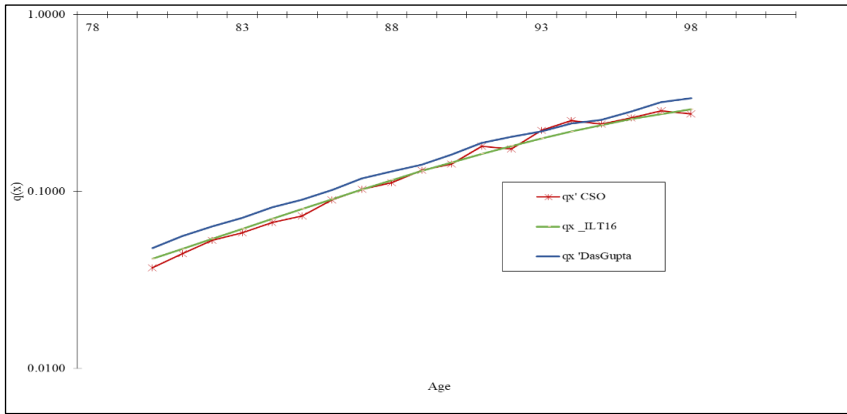


Plate 26 (Figure A5.6): Irish Female Graduated Mortality Rates in 2014-2015, Ages 75-125 years, and Fitted Kannisto Curve 2015 Compared with Kannisto Curve for 2010

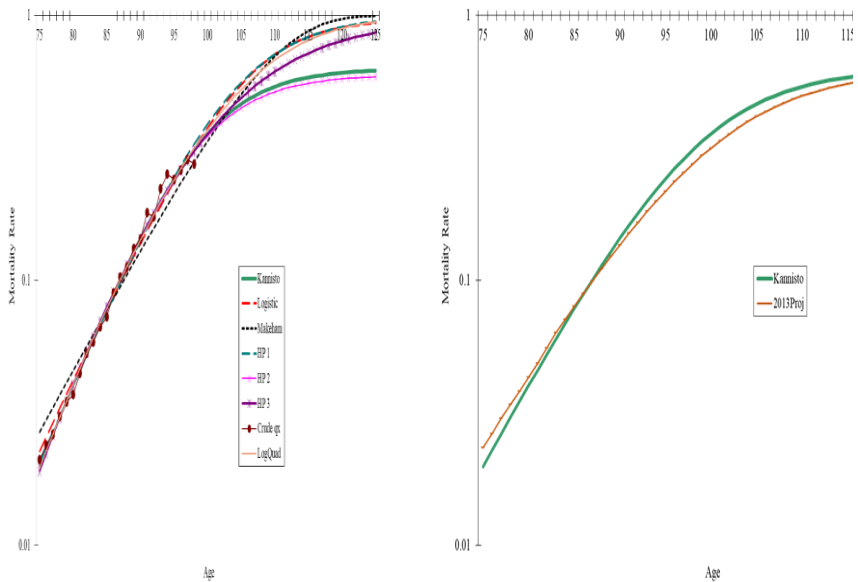
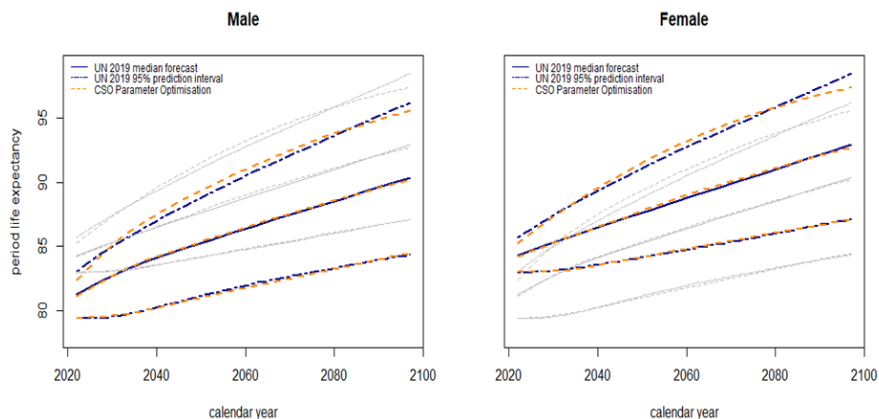


Plate 27 (Figure 6.1): UN 2019 Forecasts of Period Life Expectancy at Birth for Irish Males and Females (with 95% Prediction Intervals), Each Calendar Year 2020-2100, and the Corresponding CSO Model after Parameters Optimised for Goodness-of-Fit



Note: Faded grey lines in either graph is the median and 95% prediction intervals of the opposite sex for comparison.

Plate 28 (Figure 6.2): Male and Female Cohort Life Expectancy at Birth for Each Calendar Year, 2020-2100, with 80% and 95% Prediction Bounds Derived for UN 2019 Forecasts

