An Aging Society: Opportunity or Challenge for European NTA Countries

Jože Sambt
University of Ljubljana, Faculty of Economics

Alexia Prskawetz
Vienna University of Technology and Vienna Institute of Demography

Janez Malačič
University of Ljubljana, Faculty of Economics

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Outline

- Basic demographic characteristics of the EuroNTA countries included into comparative analysis

- Support ratio (4 different scenarios), following the paper of: Cutler, D. M., Poterba, J. M., Sheiner, L. M., & Summers, L. H. (1990). An Aging Society: Opportunity or Challenge? Brookings Papers on Economic Activity

- The first and second demographic dividend

Assumptions

- Latest EUROPOP2008 population projections from Eurostat for the 2008-2060 period, technically extended until the year 2300 (assuming mortality, fertility and migration from 2060)

- 1-year age groups

- NTA age profiles – assuming the shapes don't change through time

- Calculation of the second demographic dividend is based on Lee & Mason NUPRI2006 paper

4 Different Scenarios of Support Ratio (following the approach of Culter et al., 1990)

Alternative 1: CON1 = $\sum_{i=1\ldots99} N_i$ (common dependency ratio)

Alternative 2: differentiate resource needs by age

   CON2 = $\sum_{i=1\ldots99} S_i N_i$ (needs weighted consumption measure, equivalence scale for three different age groups)

Alternative 1: LF1 = $\sum_{i=20\ldots64} N_i$ (common dependency ratio)

Alternative 2: LF2 = $\sum_{i=15\ldots80} w_i PR_i N_i$ (adjusted for wages and labor force participation rates by age)

4 combinations: LF1/CON1, LF2/CON1, LF1/CON2, LF2/CON2

In our analysis: alternatives under '2' are replaced by labor income (YL) and consumption (C) NTA age profiles.

# Assumptions about Fertility and Mortality in Eurostat's EUROPOP2008 Population Projections

	TFR_{2008}	TFR_{2060}	$e_{0,m,2008}$	$e_{0,m,2060}$	$e_{0,f,2008}$	$e_{0,f,2060}$
Austria	1.41	1.57	77.4	84.9	82.9	89.2
Finland	1.84	1.84	76.1	84.3	83.0	89.3
France	1.98	1.93	77.5	85.1	84.3	90.1
Germany	1.34	1.53	77.3	84.9	82.6	89.1
Hungary	1.35	1.53	69.7	81.9	78.1	87.3
Slovenia	1.32	1.52	74.7	83.7	81.9	88.8
Spain	1.39	1.56	77.4	84.9	83.9	89.6
Sweden	1.85	1.85	79.0	85.4	83.1	89.3

Population Pyramid for the **Austrian** Population in 2008 (Solid Color) and Projected Outlines of the Demographic Developments in the 2008-2060 Period (Shaded)
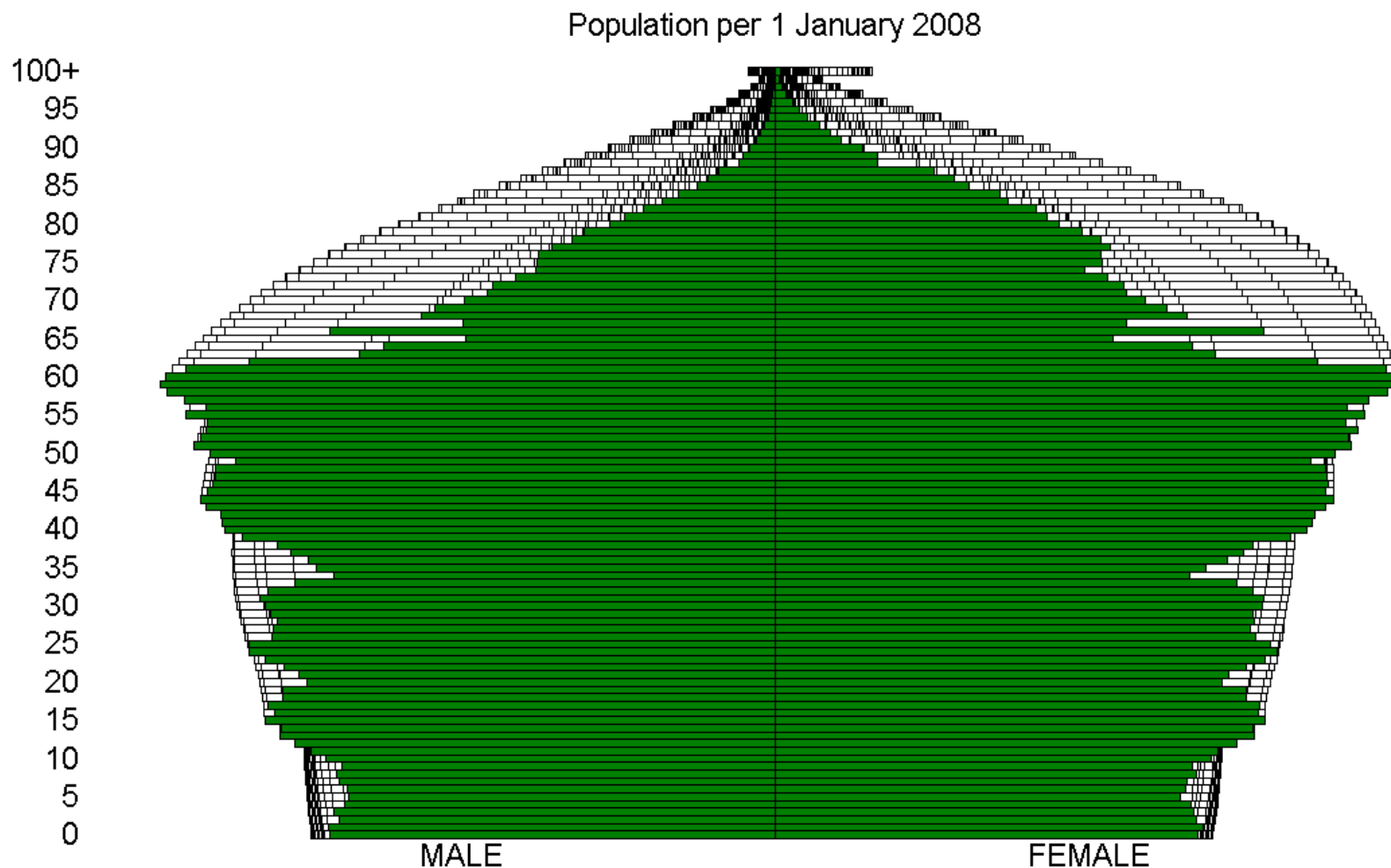

Population per 1 January 2008

MALE · FEMALE
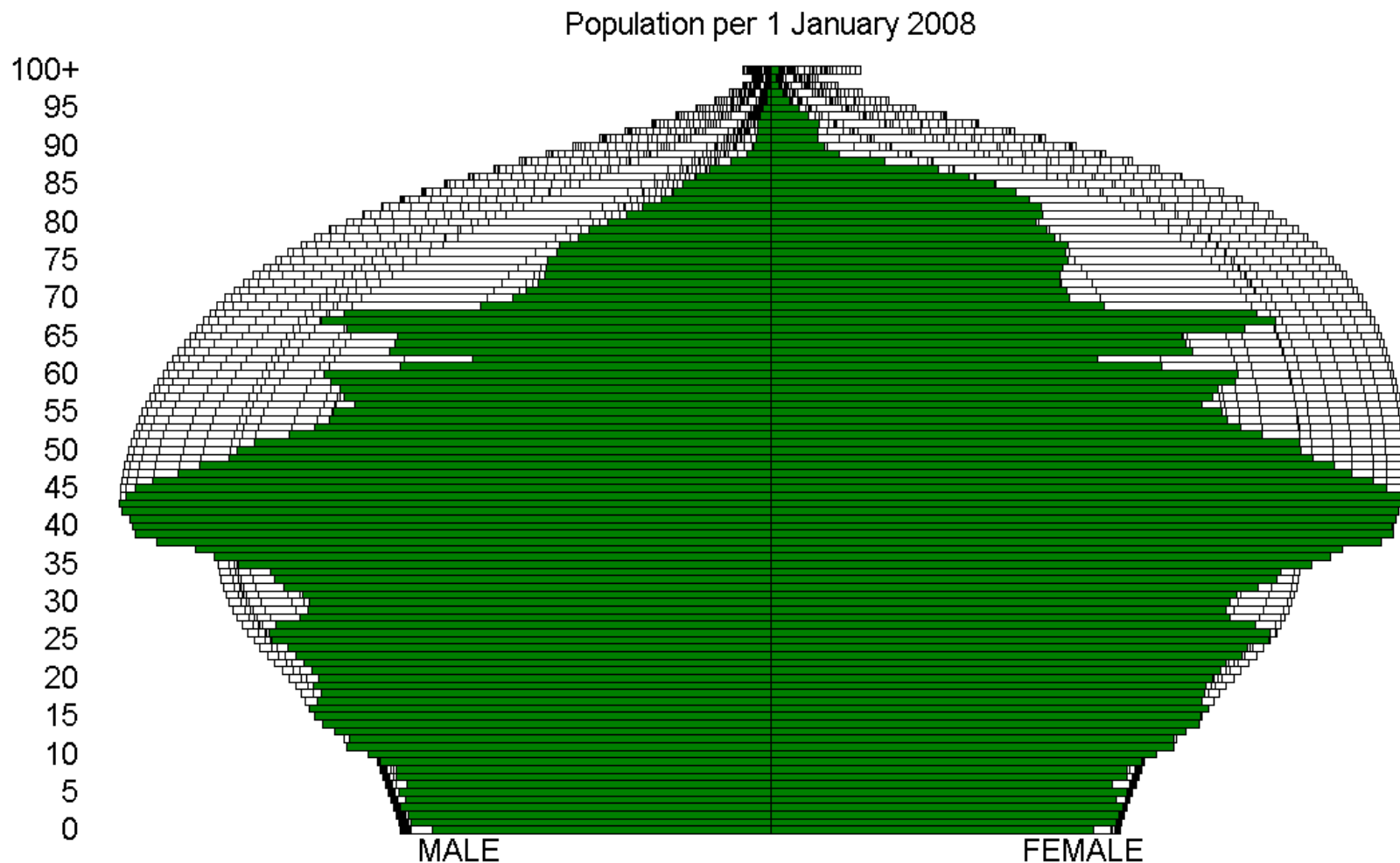
Source: Eurostat - EUROPOP2008.

Actual and Projected Changes in Support Ratio (Relative to 2000), Four Alternative Measures, **Austria**, 1950-2060, Eurostat EUROPOP2008 Population Projections
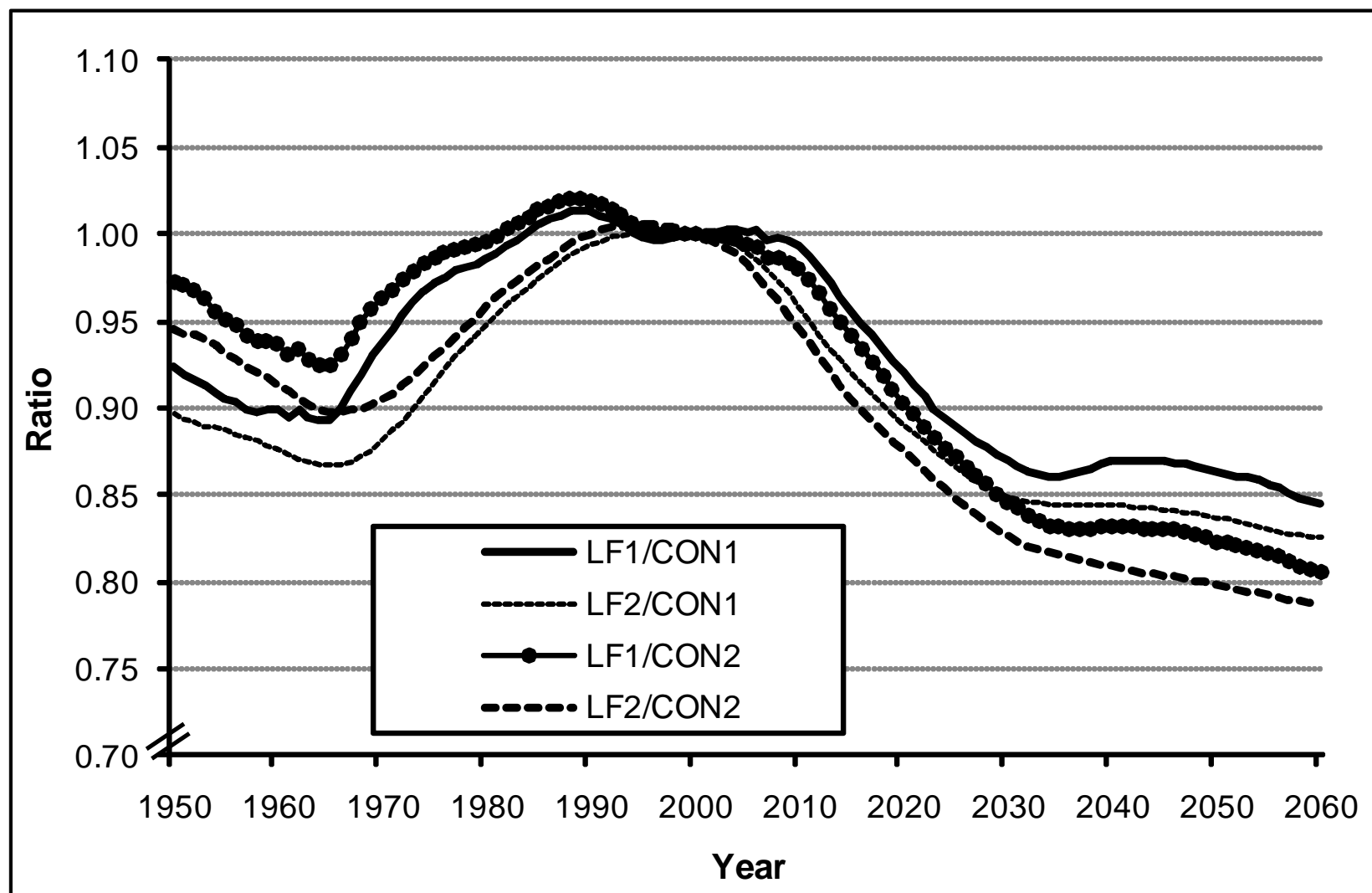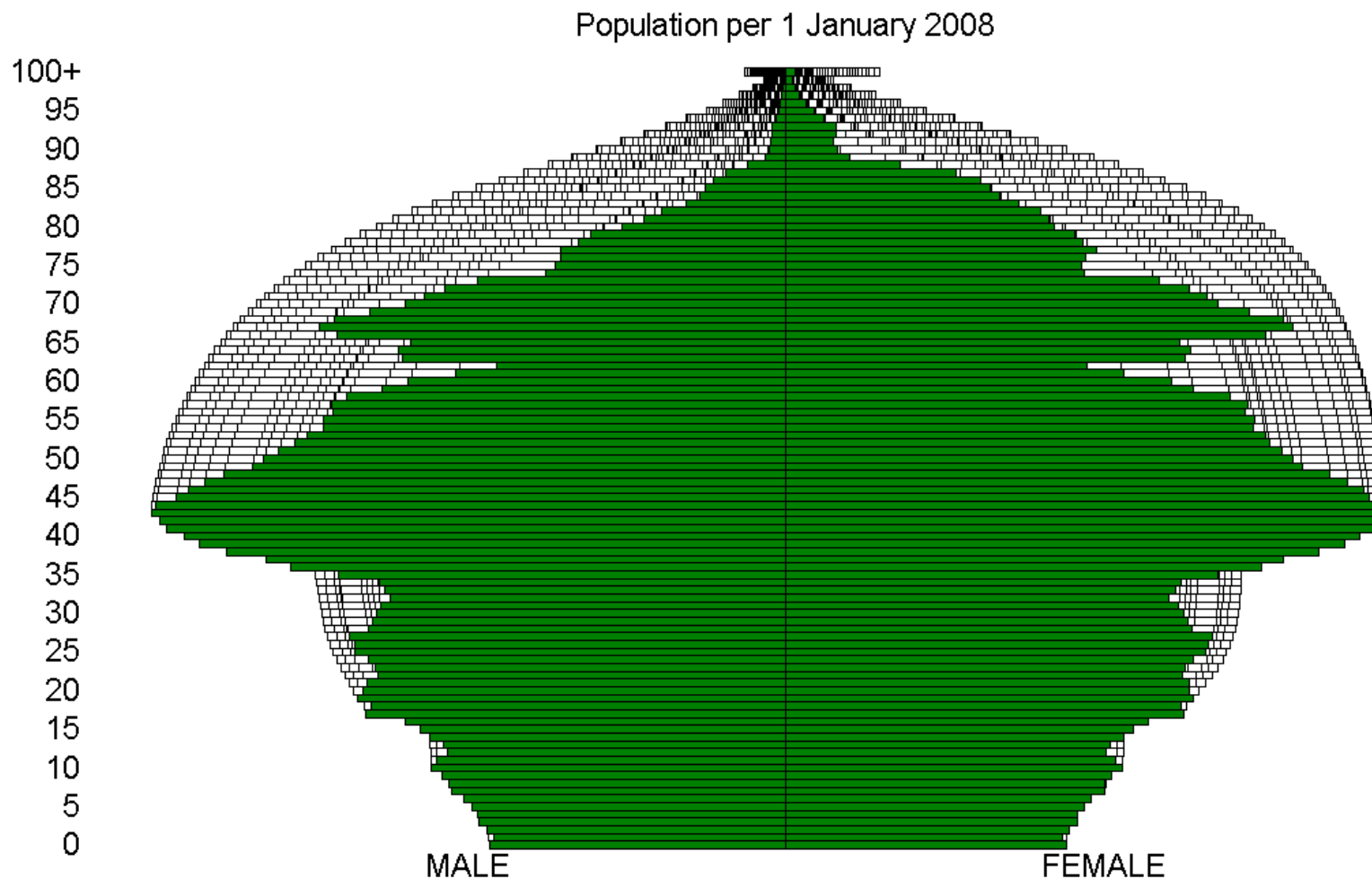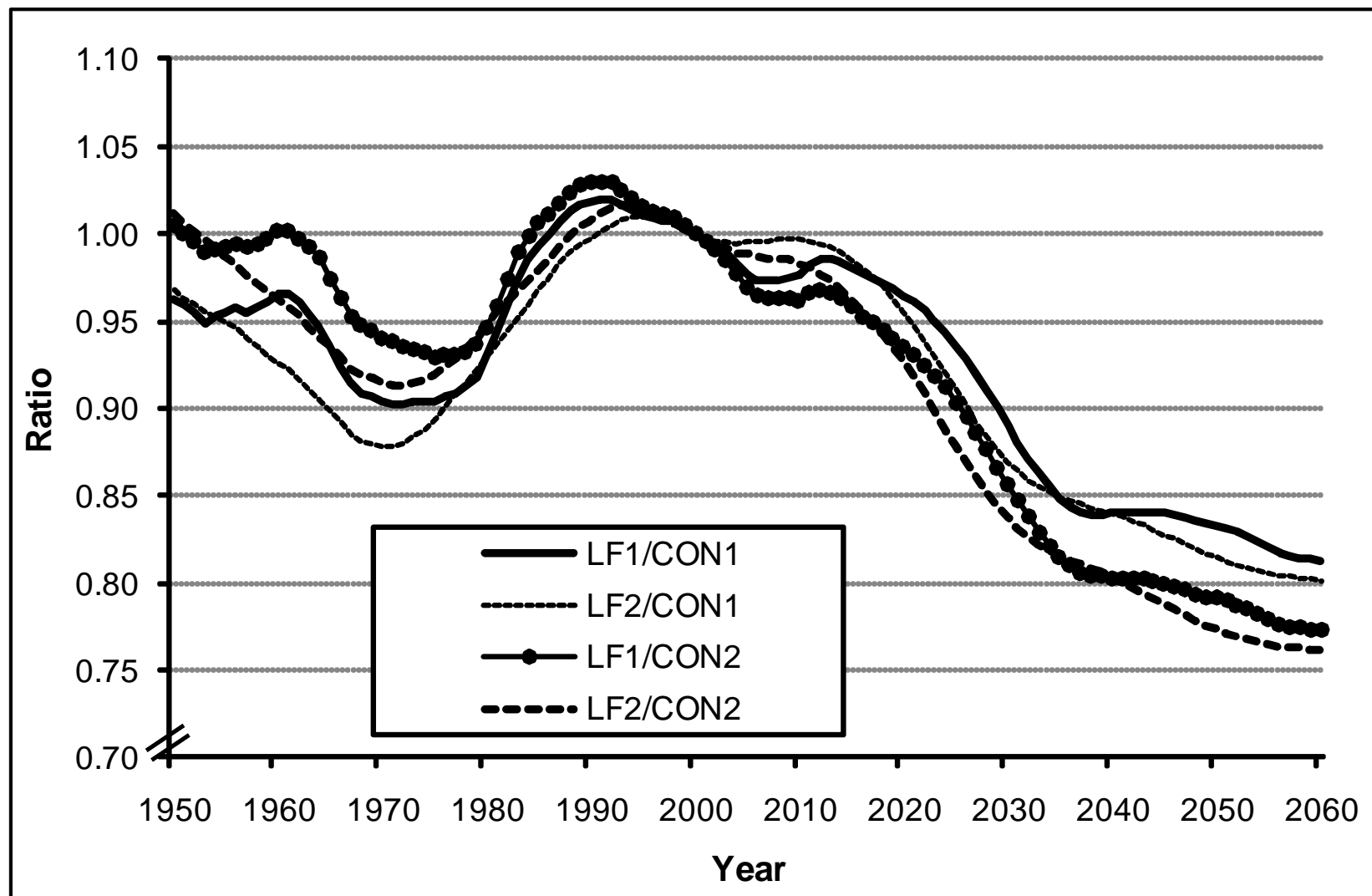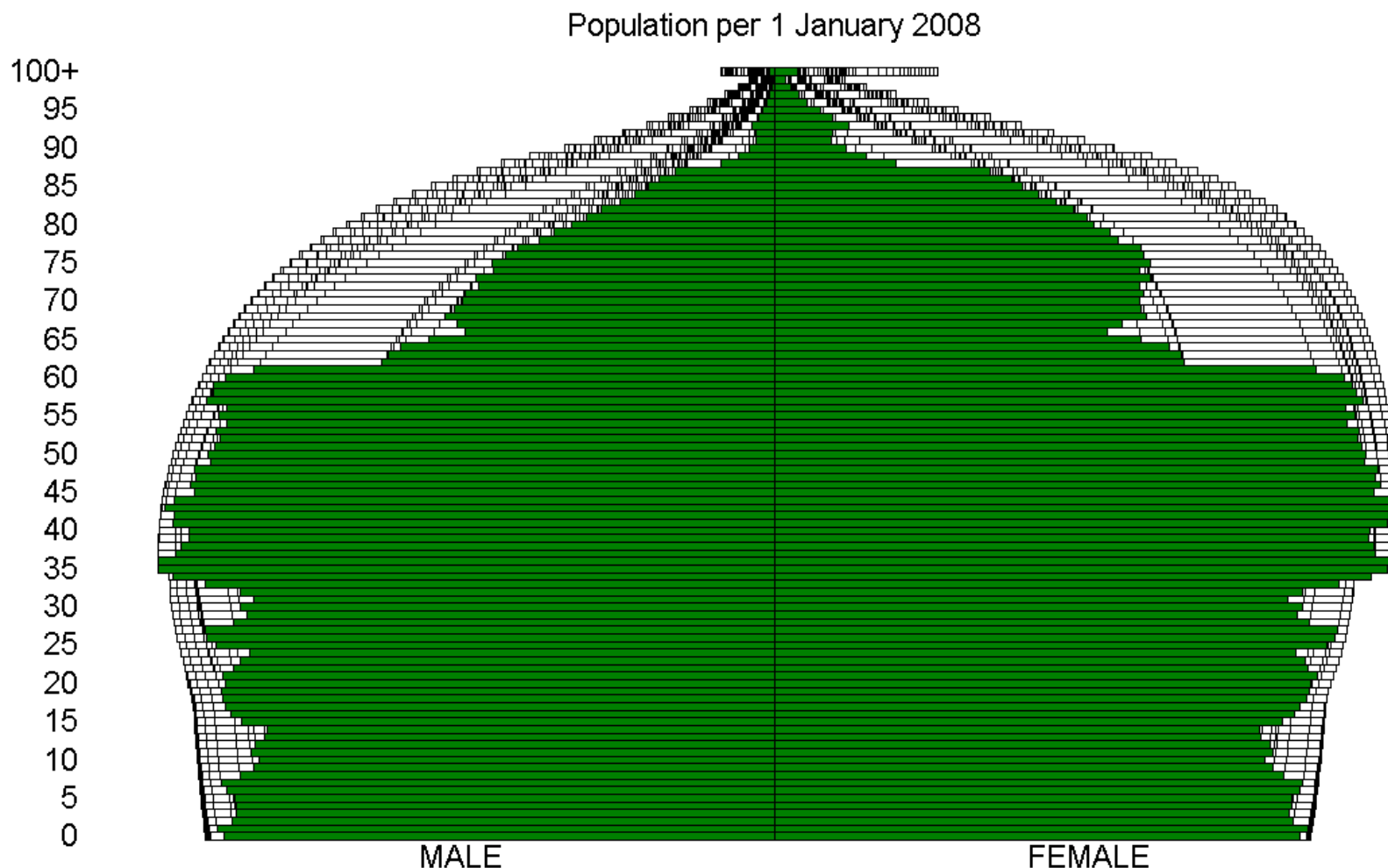

Legend:
- LF1/CON1
- LF2/CON1
- LF1/CON2
- LF2/CON2
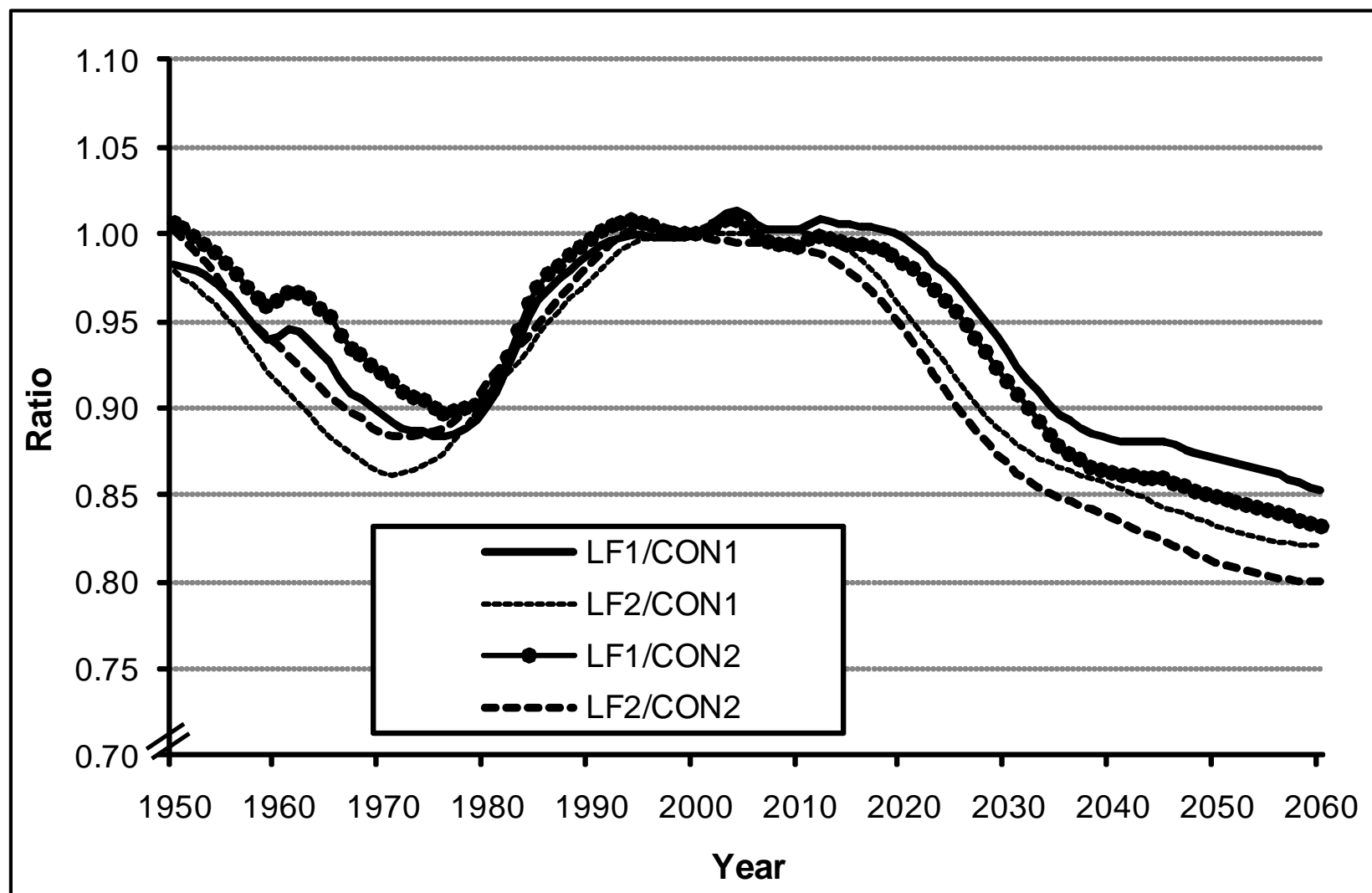
Source: Eurostat, NTA age profiles, own calculations.

Population Pyramid for the Population of **Finland** in 2008 (Solid Color) and Projected Outlines of the Demographic Developments in the 2008-2060 Period (Shaded)

Population per 1 January 2008

MALE | FEMALE

Source: Eurostat - EUROPOP2008.

Actual and Projected Changes in Support Ratio (relative to 2000), Four Alternative Measures, **Finland**, 1950-2060, Eurostat EUROPOP2008 Population Projections
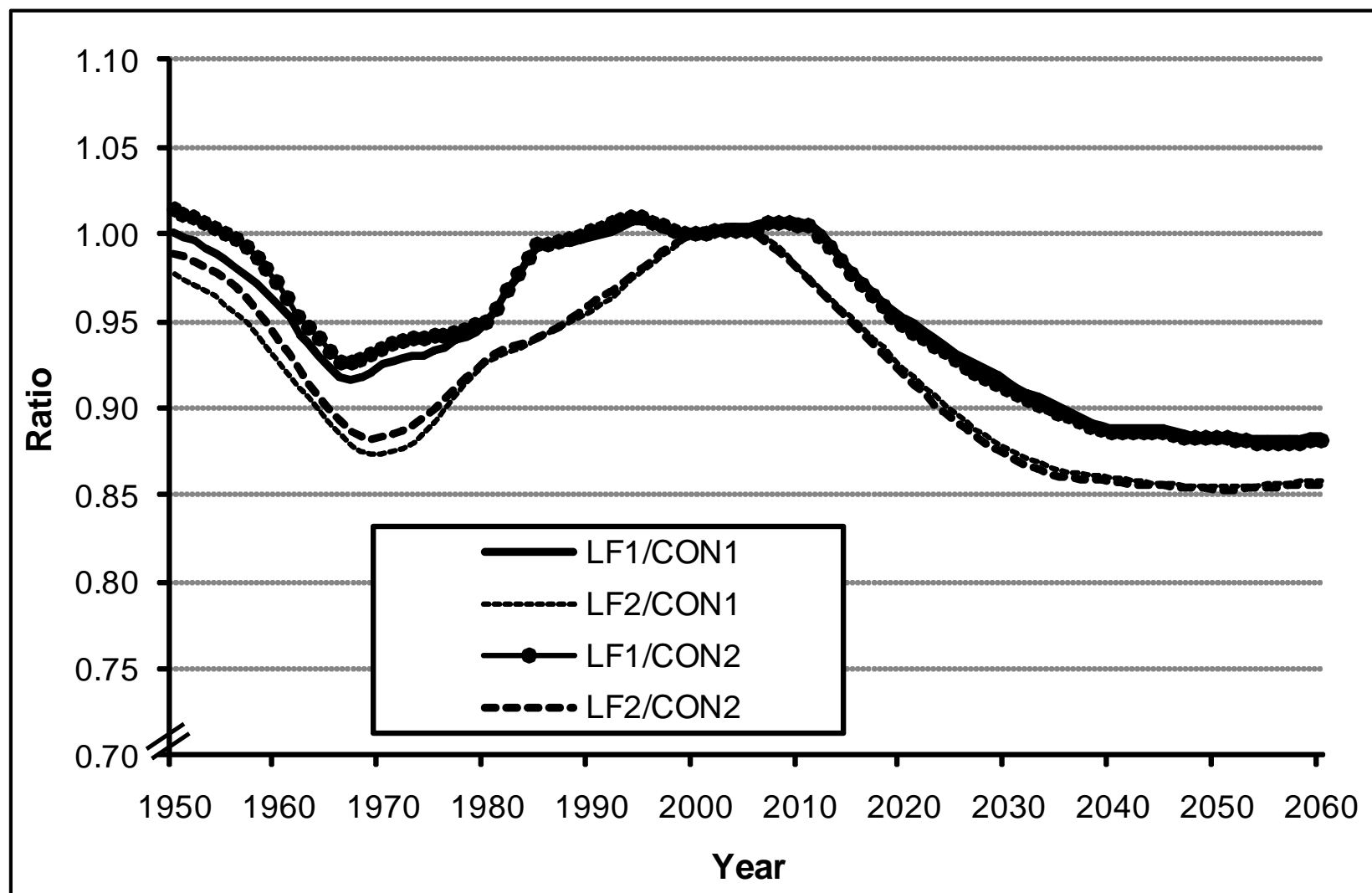

Source: Eurostat, NTA age profiles, own calculations.

Population Pyramid for the **German** Population in 2008 (Solid Color) and Projected Outlines of the Demographic Developments in the 2008-2060 Period (Shaded)
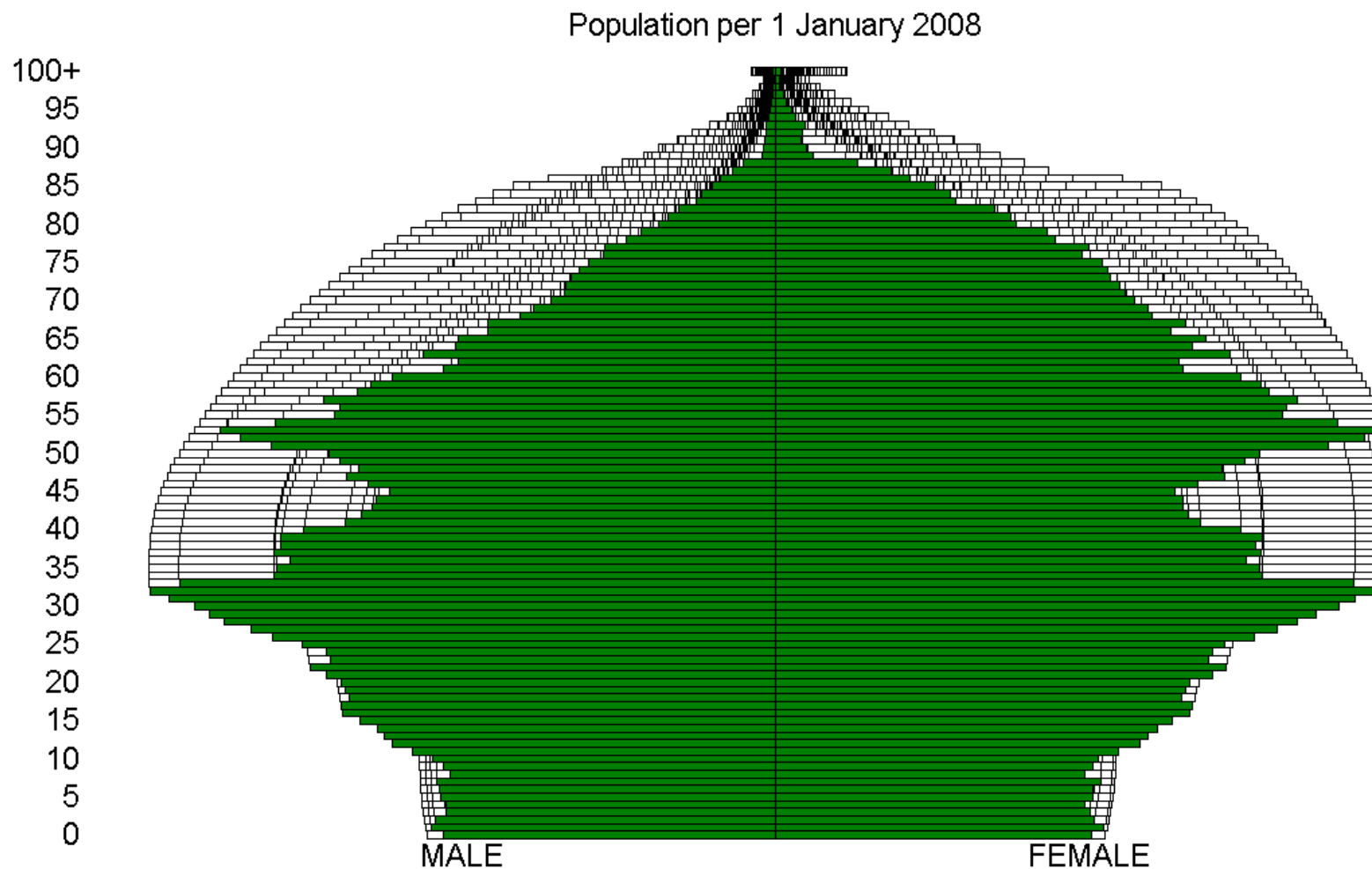

Population per 1 January 2008

Source: Eurostat - EUROPOP2008.

Actual and Projected Changes in Support Ratio (relative to 2000), Four Alternative Measures, **Germany**, 1950-2060, Eurostat EUROPOP2008 Population Projections
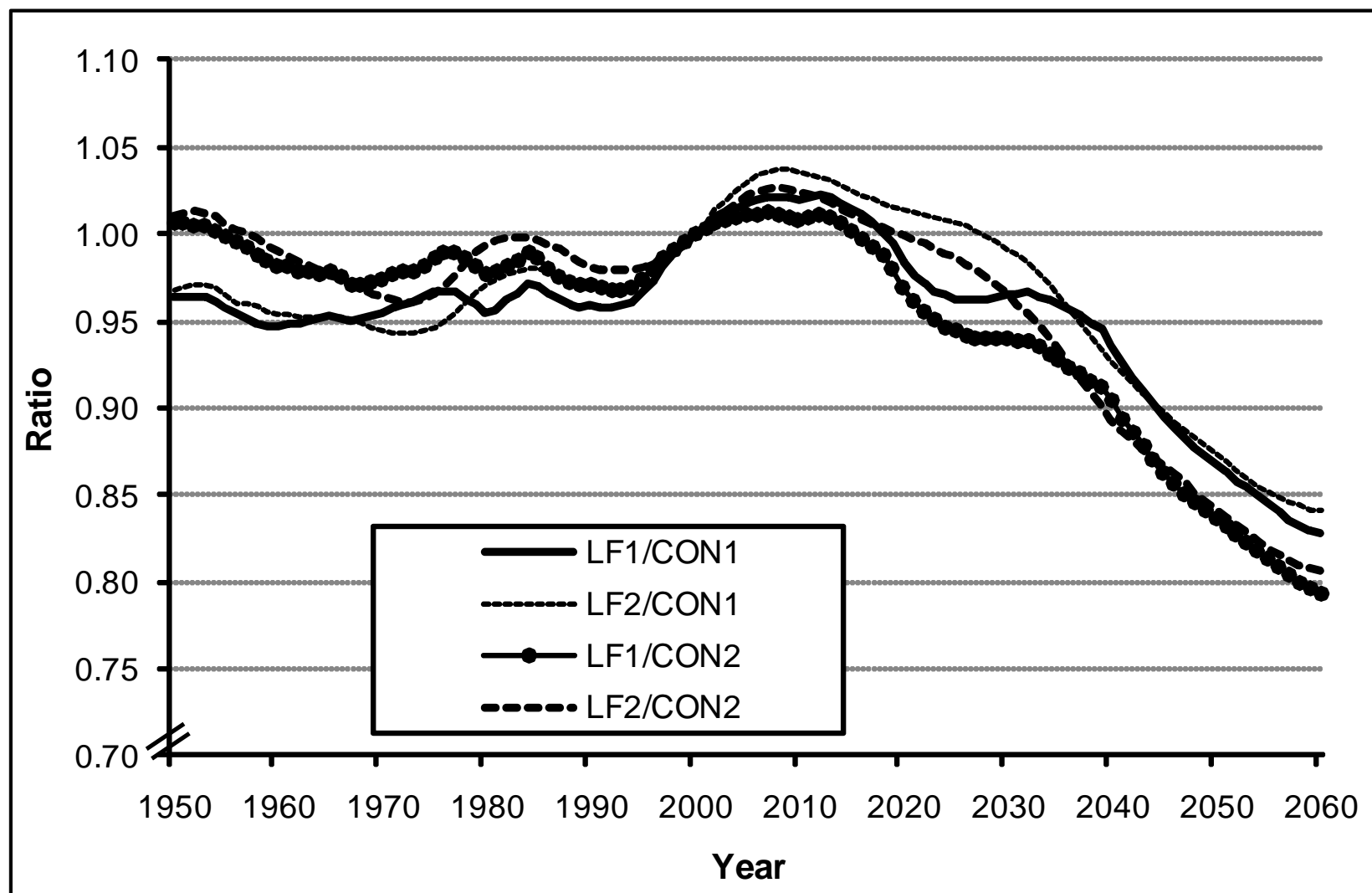

Source: Eurostat, NTA age profiles, own calculations.

Population Pyramid for the **French** Population in 2008 (Solid Color) and Projected Outlines of the Demographic Developments in the 2008-2060 Period (Shaded)

Population per 1 January 2008

MALE   FEMALE

Source: Eurostat - EUROPOP2008.

Actual and Projected Changes in Support Ratio (relative to 2000), Four Alternative Measures, **France**, 1950-2060, Eurostat EUROPOP2008 Population Projections

Source: Eurostat, NTA age profiles, own calculations.

Population Pyramid for the **Hungarian** Population in 2008 (Solid Color) and Projected Outlines of the Demographic Developments in the 2008-2060 Period (Shaded)
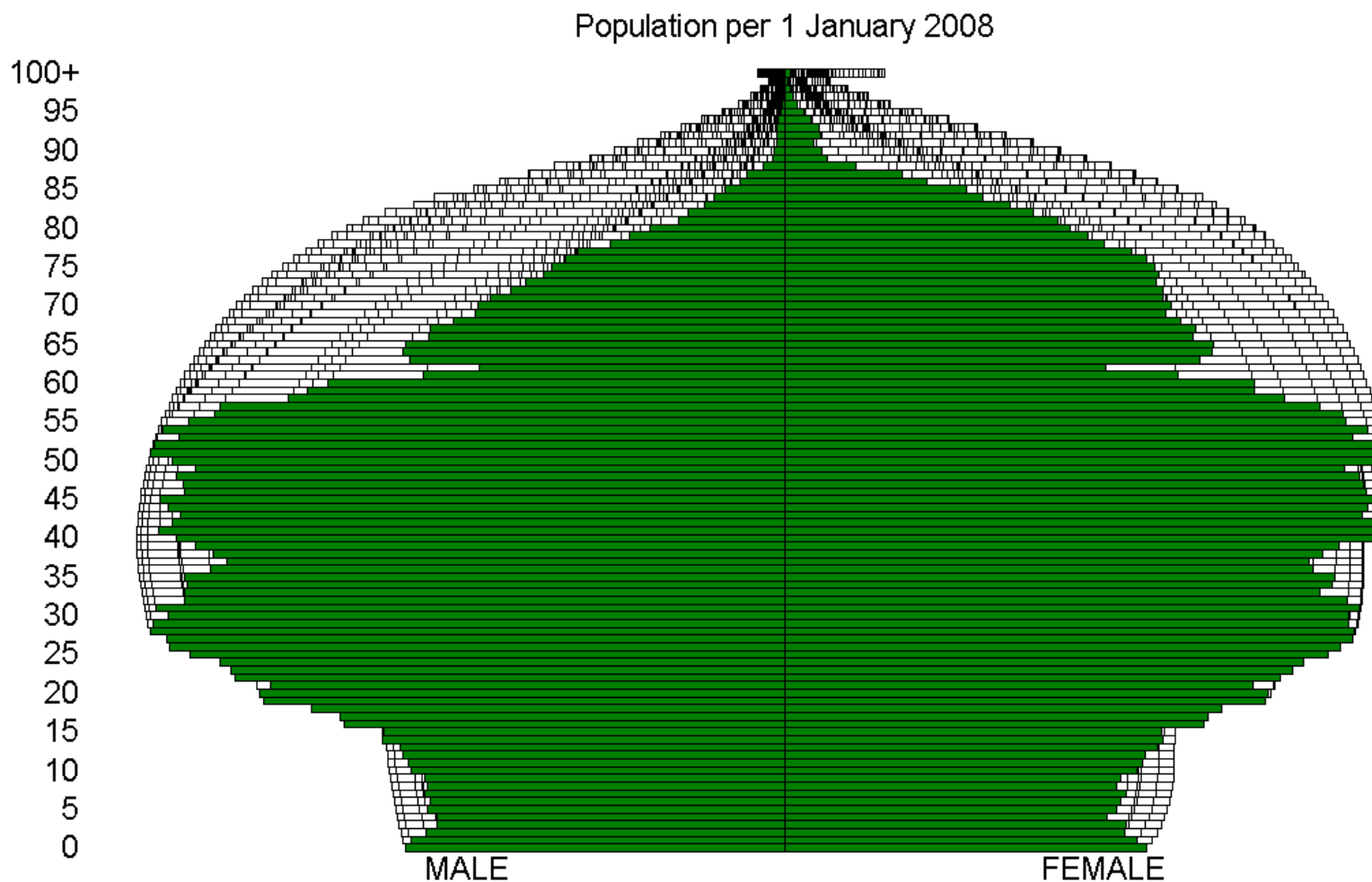
Population per 1 January 2008

MALE   FEMALE

Source: Eurostat - EUROPOP2008.

Actual and Projected Changes in Support Ratio (relative to 2000), Four Alternative Measures, **Hungary**, 1950-2060, Eurostat EUROPOP2008 Population Projections
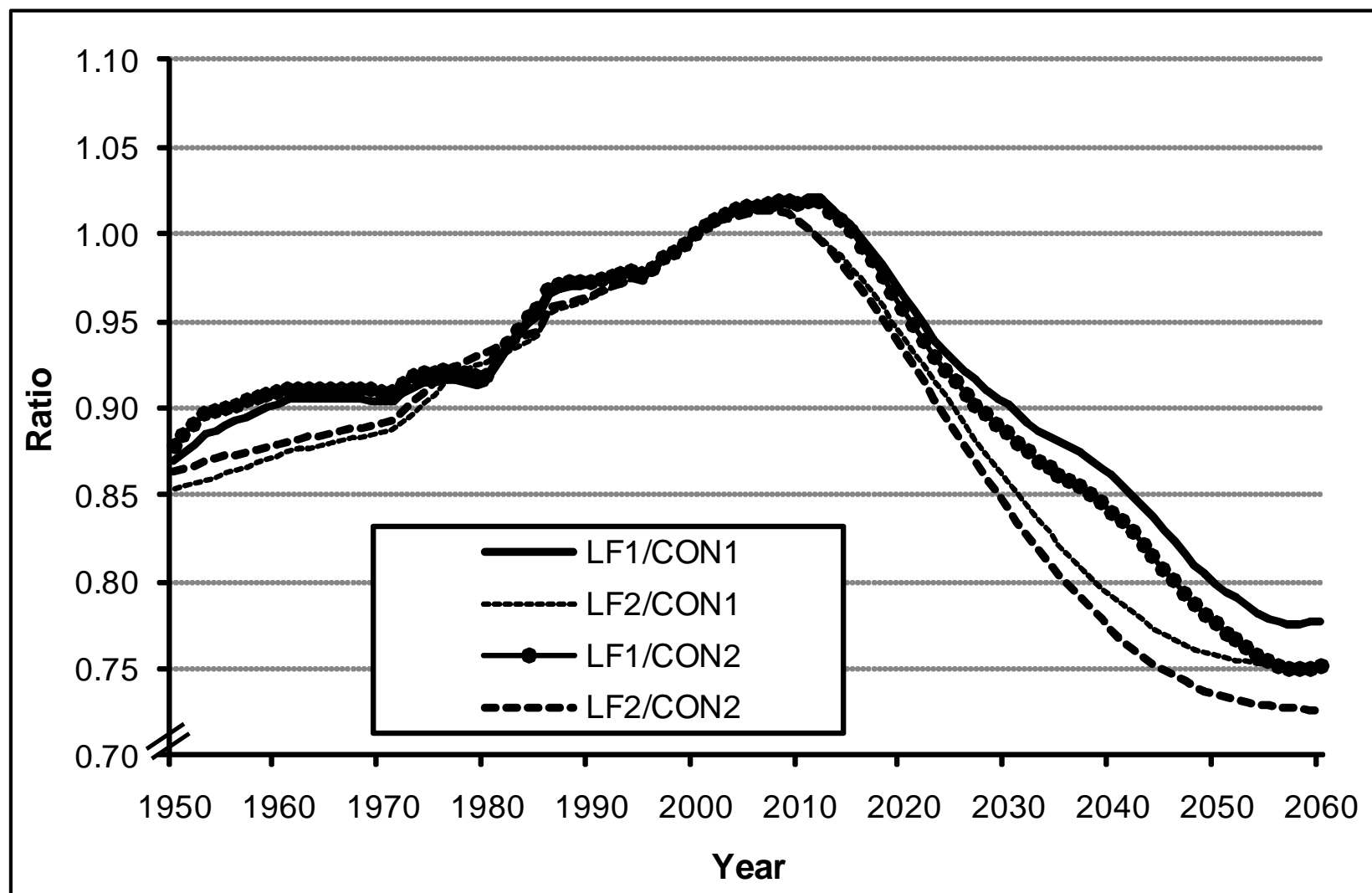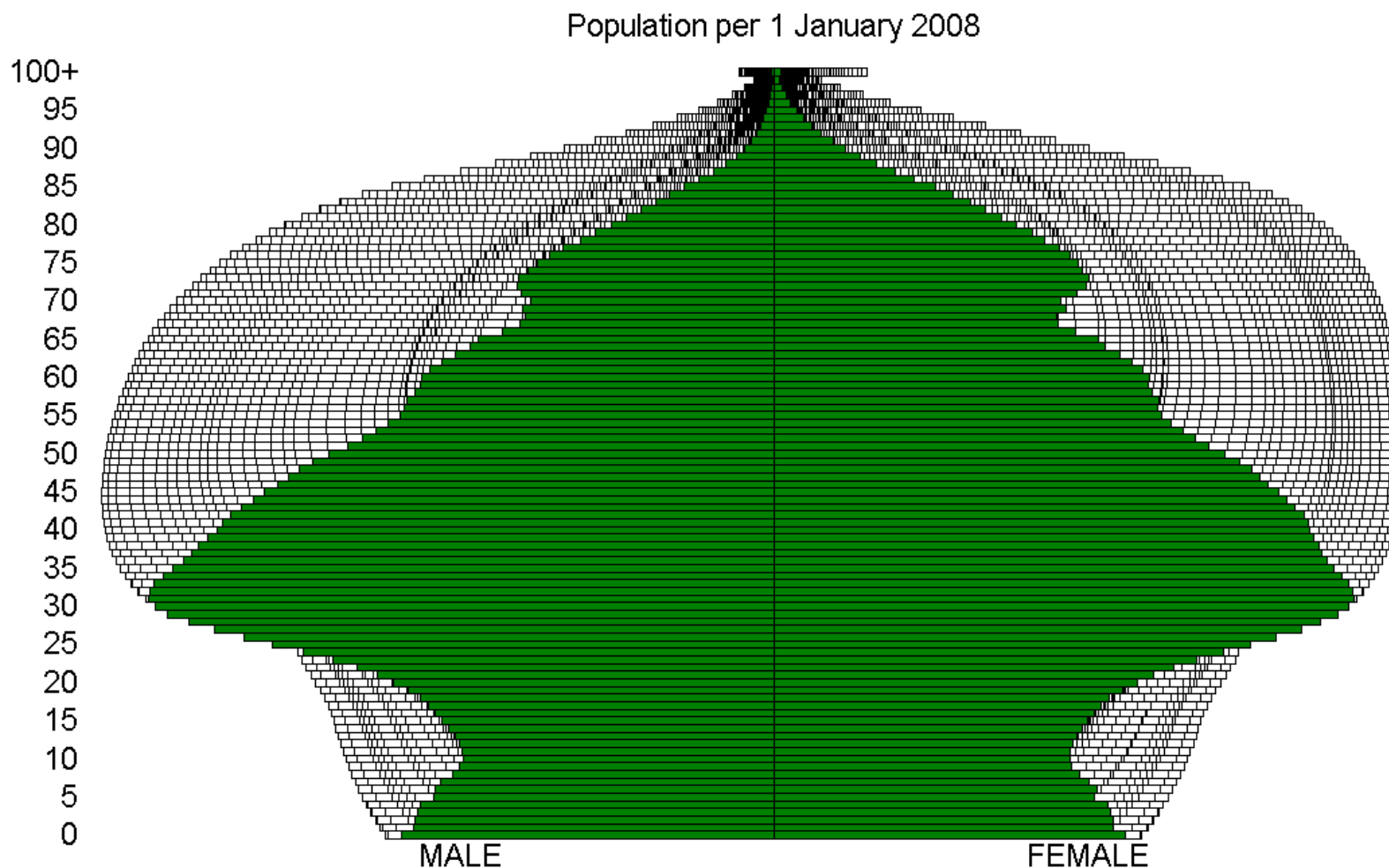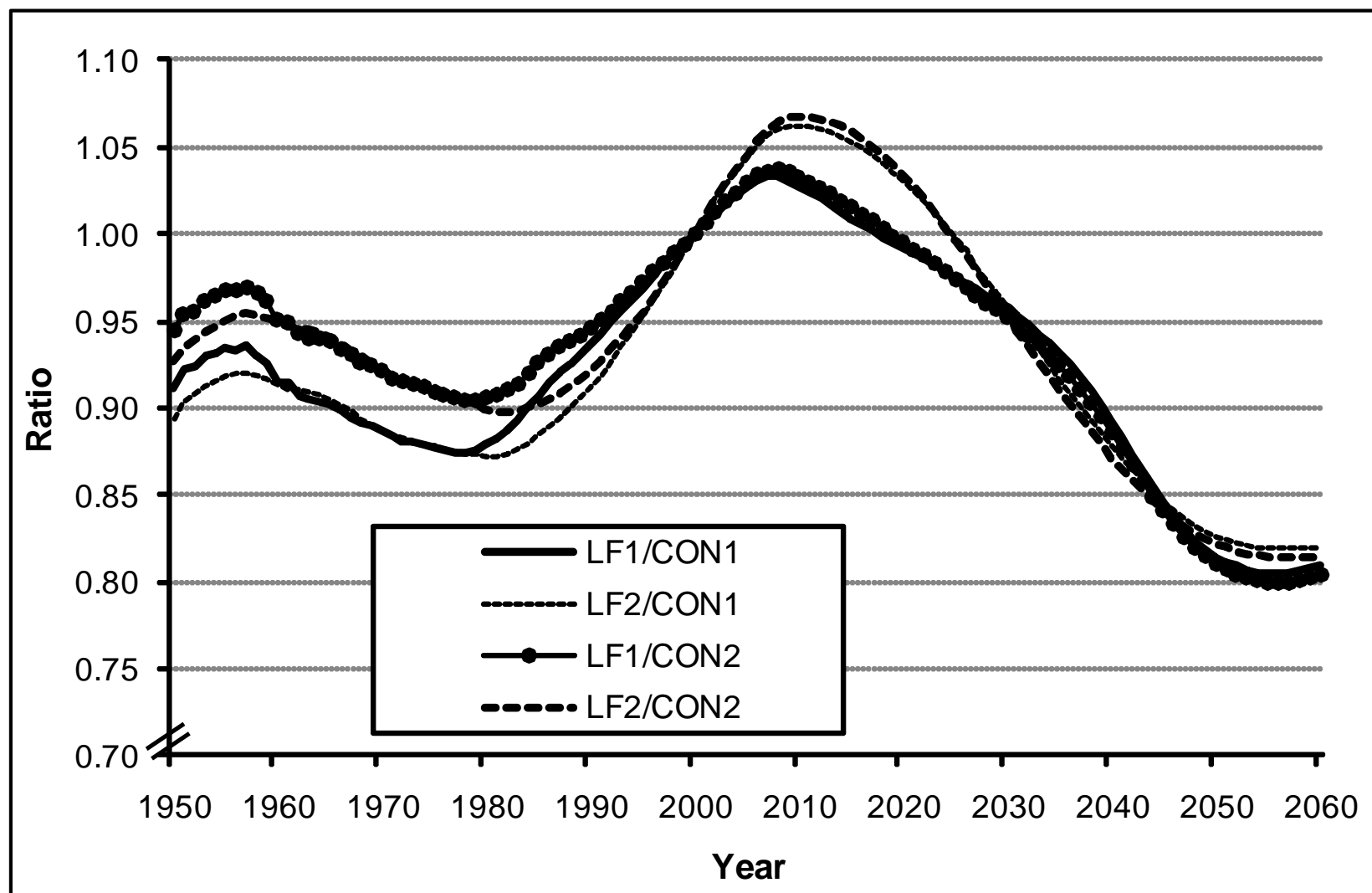

Source: Eurostat, NTA age profiles, own calculations.

Population Pyramid for the **Slovenian** Population in 2008 (solid color) and Projected Outlines of the Demographic Developments in the 2008-2060 Period (shaded)
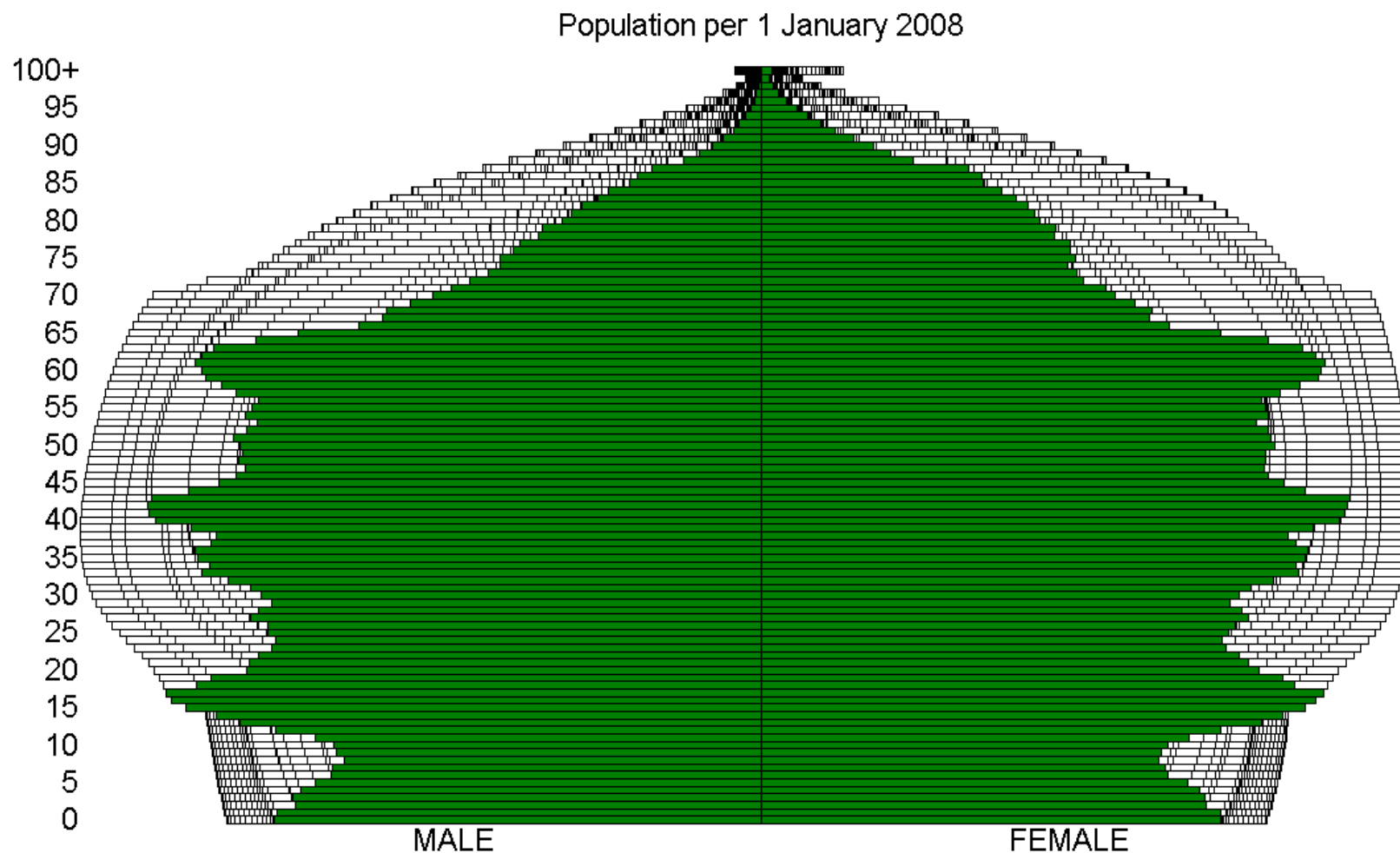
Population per 1 January 2008

Source: Eurostat - EUROPOP2008.

Actual and Projected Changes in Support Ratio (relative to 2000), Four Alternative Measures, **Slovenia**, 1950-2060, Eurostat EUROPOP2008 Population Projections
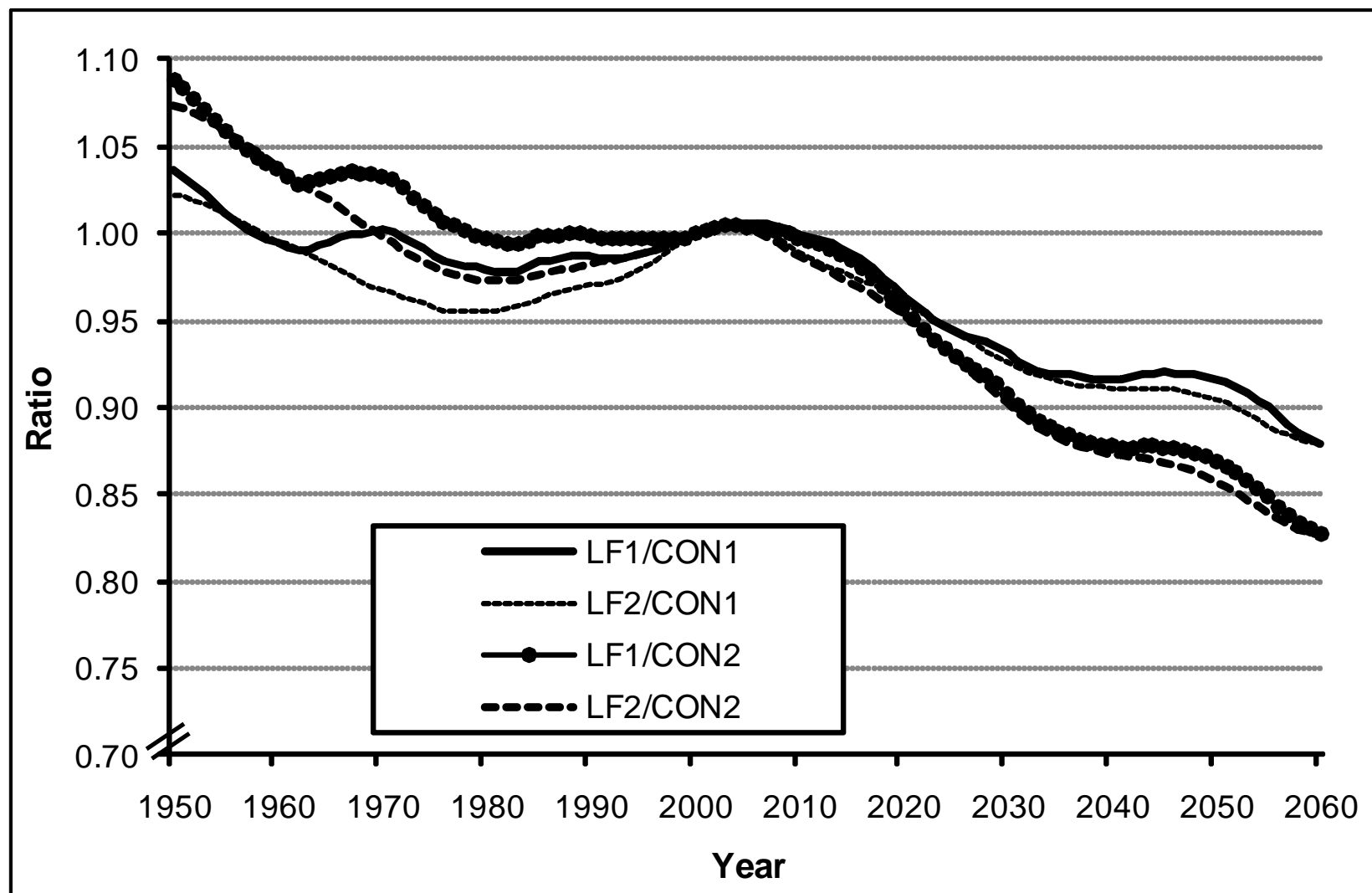

Source: Eurostat, NTA age profiles, own calculations.

Population Pyramid for the **Spanish** Population in 2008 (solid color) and Projected Outlines of the Demographic Developments in the 2008-2060 Period (shaded)

Population per 1 January 2008

MALE   FEMALE

Source: Eurostat - EUROPOP2008.

Actual and Projected Changes in Support Ratio (relative to 2000), Four Alternative Measures, **Spain**, 1950-2060, Eurostat EUROPOP2008 Population Projections

Source: Eurostat, NTA age profiles, own calculations.

Population Pyramid for the **Swedish** Population in 2008 (Solid Color) and Projected Outlines of the Demographic Developments in the 2008-2060 Period (Shaded)


Population per 1 January 2008

MALE   FEMALE

Source: Eurostat - EUROPOP2008.

Actual and Projected Changes in Support Ratio (relative to 2000), Four Alternative Measures, **Sweden**, 1950-2060, Eurostat EUROPOP2008 Population Projections
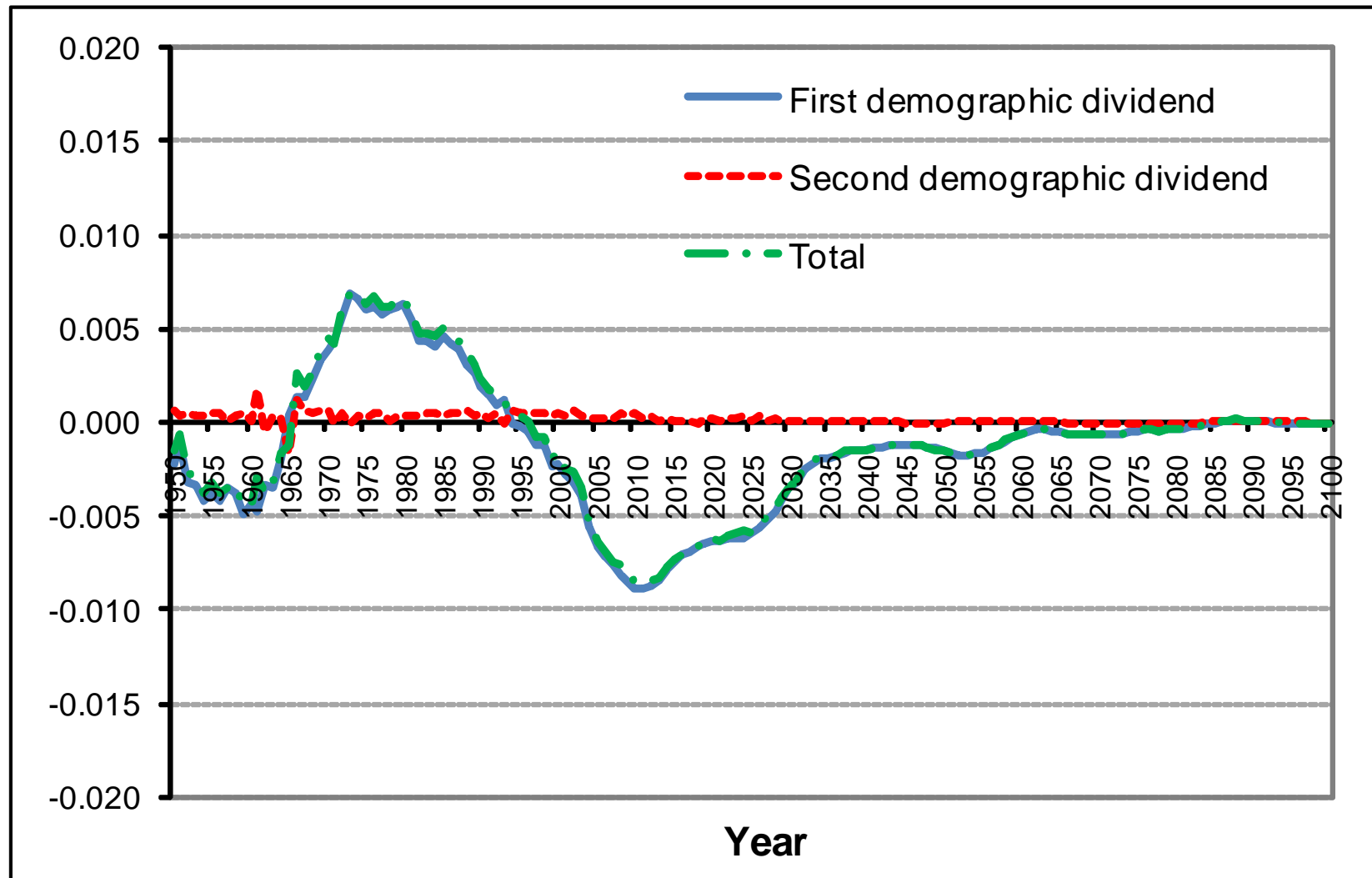

Source: Eurostat, NTA age profiles, own calculations.

The First and Second Demographic Dividend, EUROPOP2008; **Austria**, Using the NTA Age Profiles
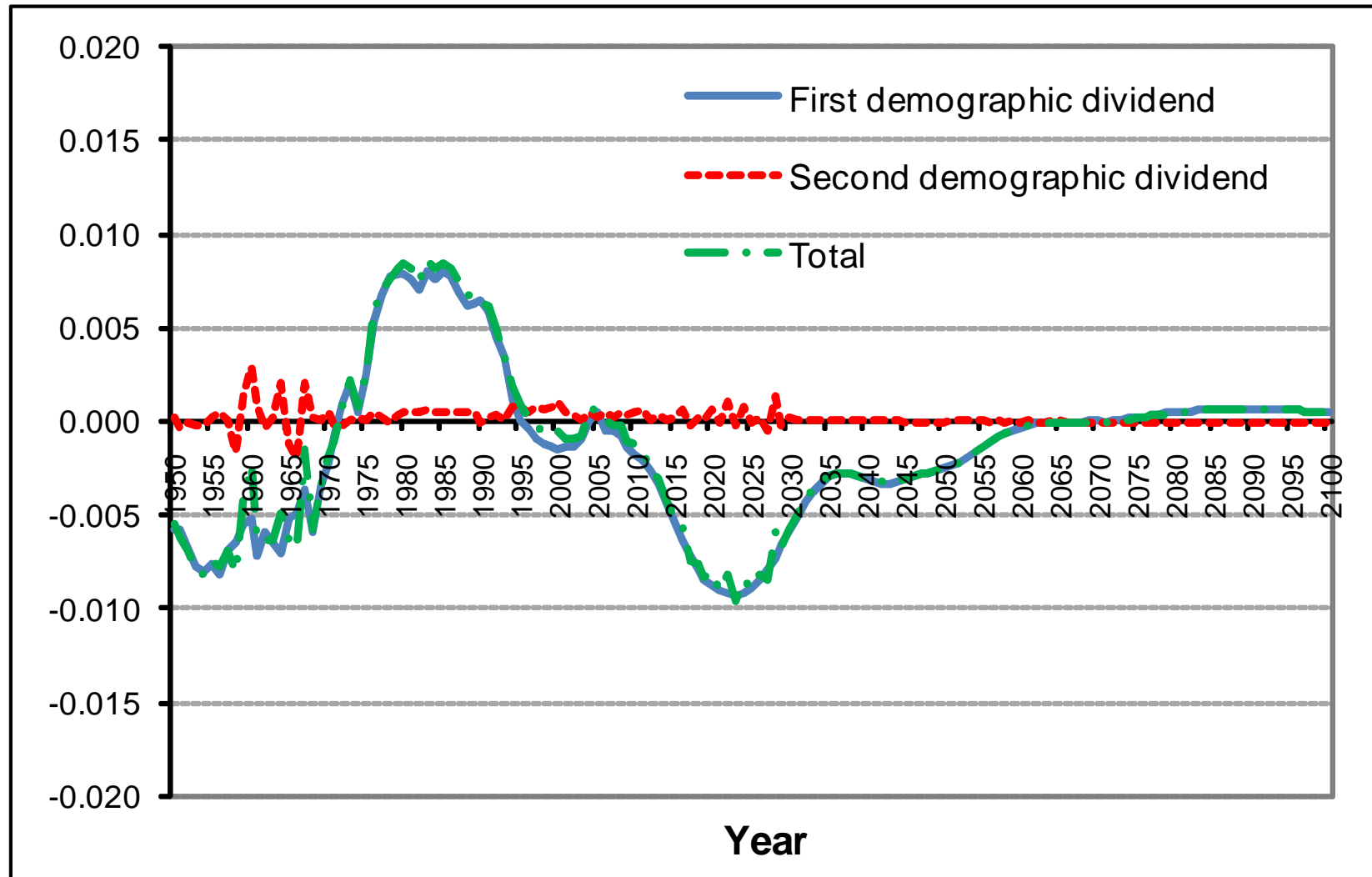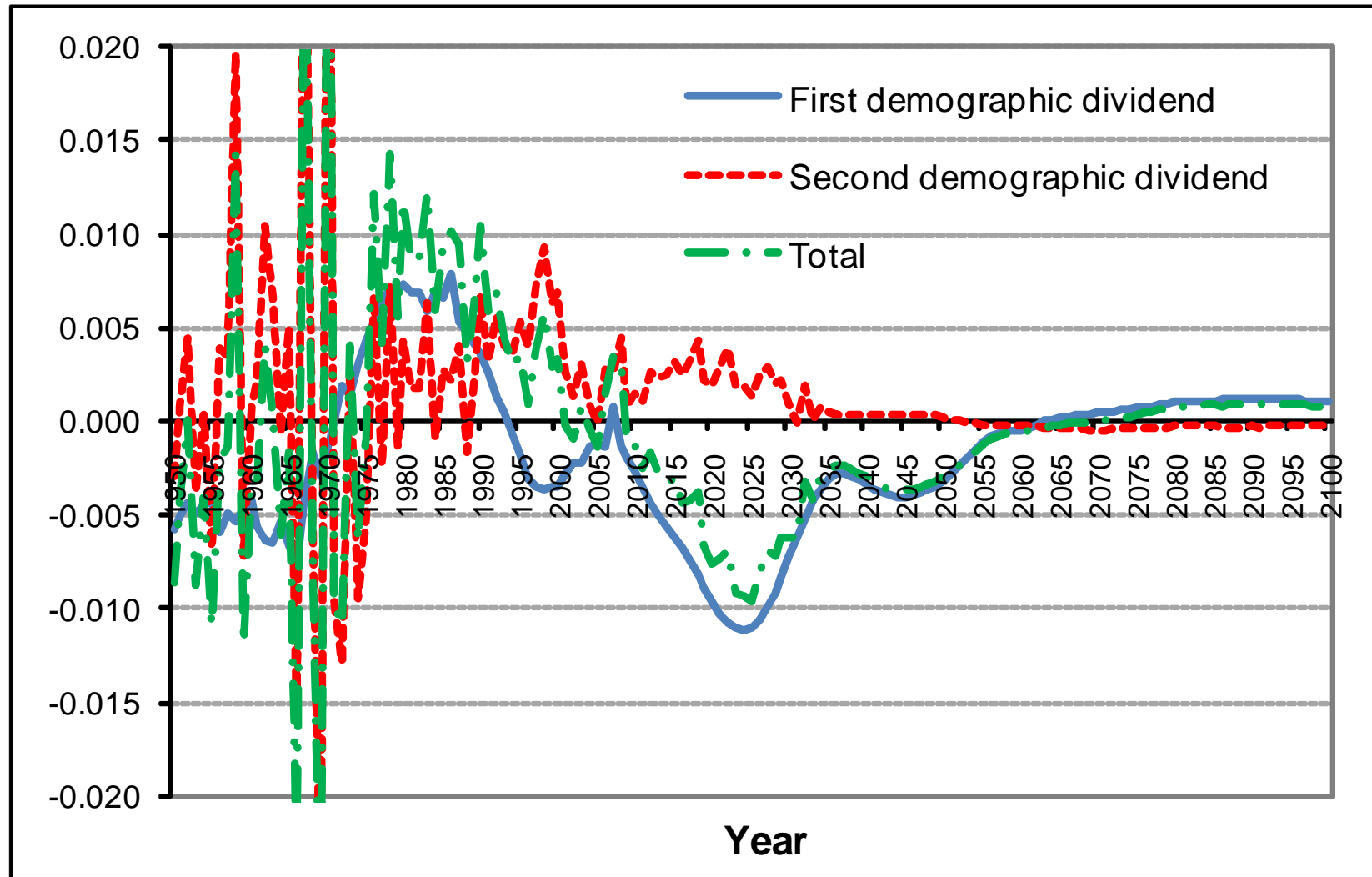

Source: Eurostat, NTA age profiles, own calculations.

The First and Second Demographic Dividend, EUROPOP2008; **Finland**, Using the NTA Age Profiles
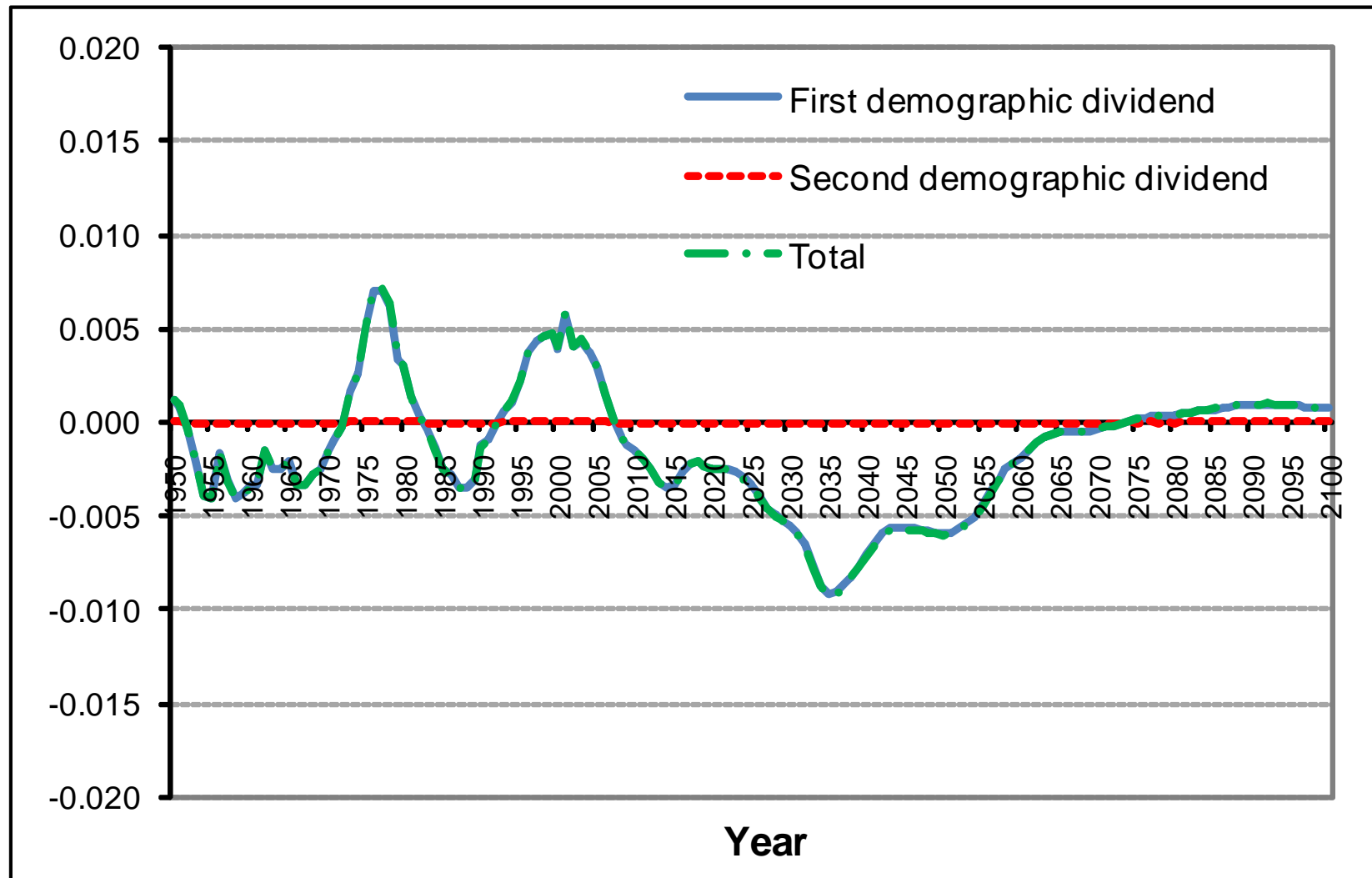

Source: Eurostat, NTA age profiles, own calculations.

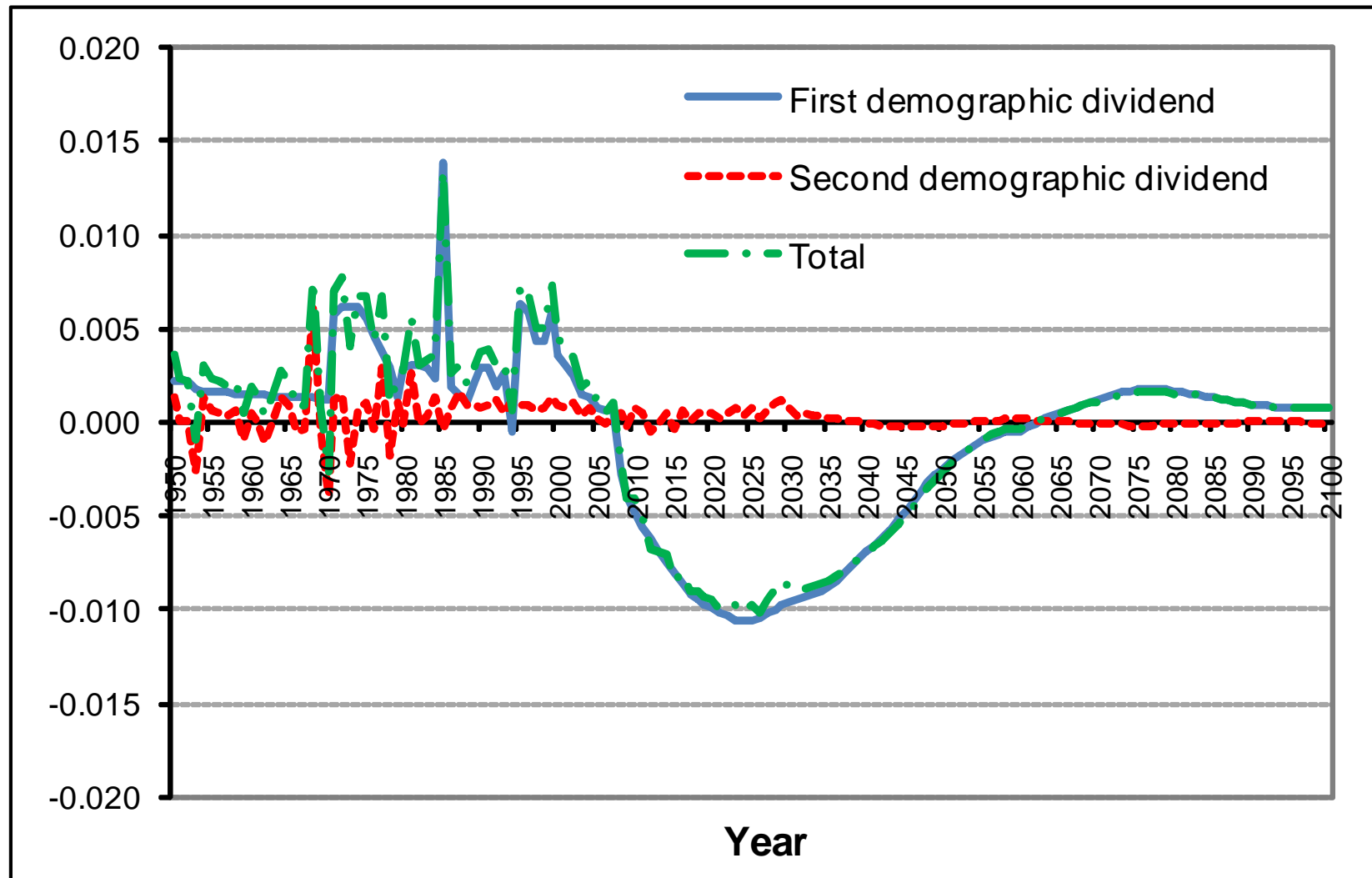# The First and Second Demographic Dividend, EUROPOP2008; **Germany**, Using the NTA Age Profiles

Source: Eurostat, NTA age profiles, own calculations.

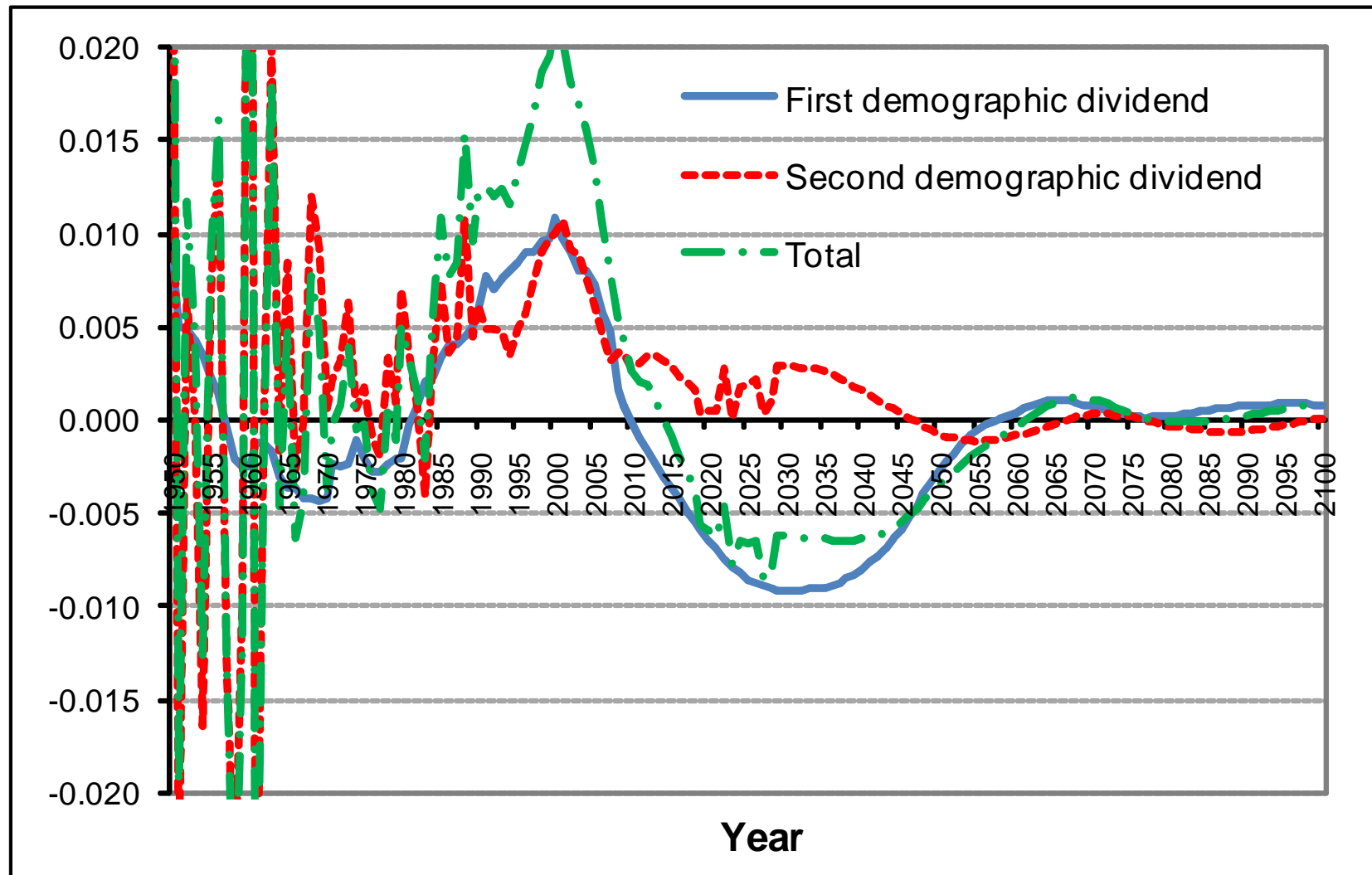# The First and Second Demographic Dividend, EUROPOP2008; Hungary, Using the NTA Age Profiles

Source: Eurostat, NTA age profiles, own calculations.

The First and Second Demographic Dividend, EUROPOP2008; Slovenia, Using the NTA Age Profiles
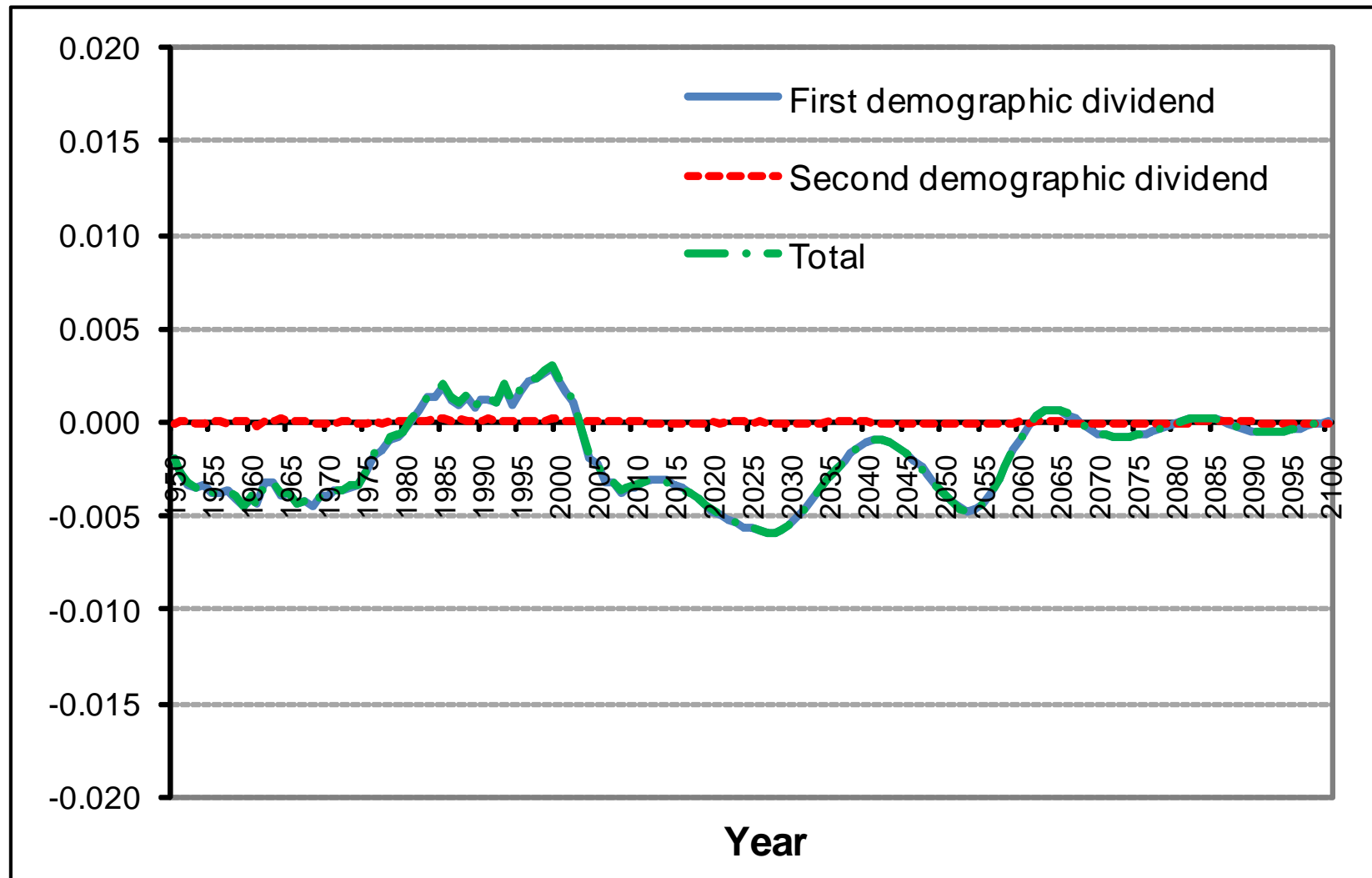

Source: Eurostat, NTA age profiles, own calculations.

The First and Second Demographic Dividend, EUROPOP2008; **Spain**, Using the NTA Age Profiles
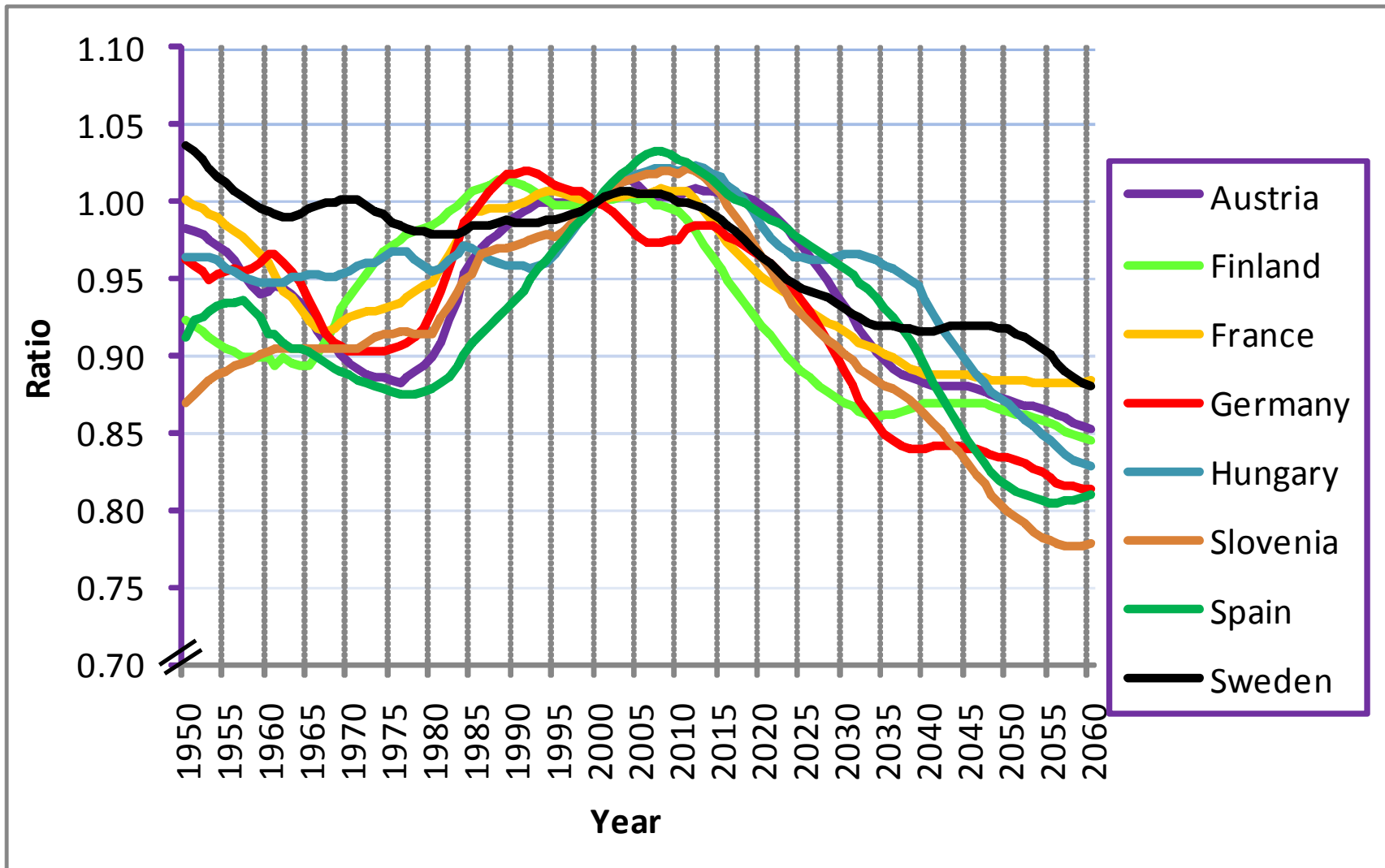
Source: Eurostat, NTA age profiles, own calculations.

The First and Second Demographic Dividend, EUROPOP2008; Sweden, Using the NTA Age Profiles
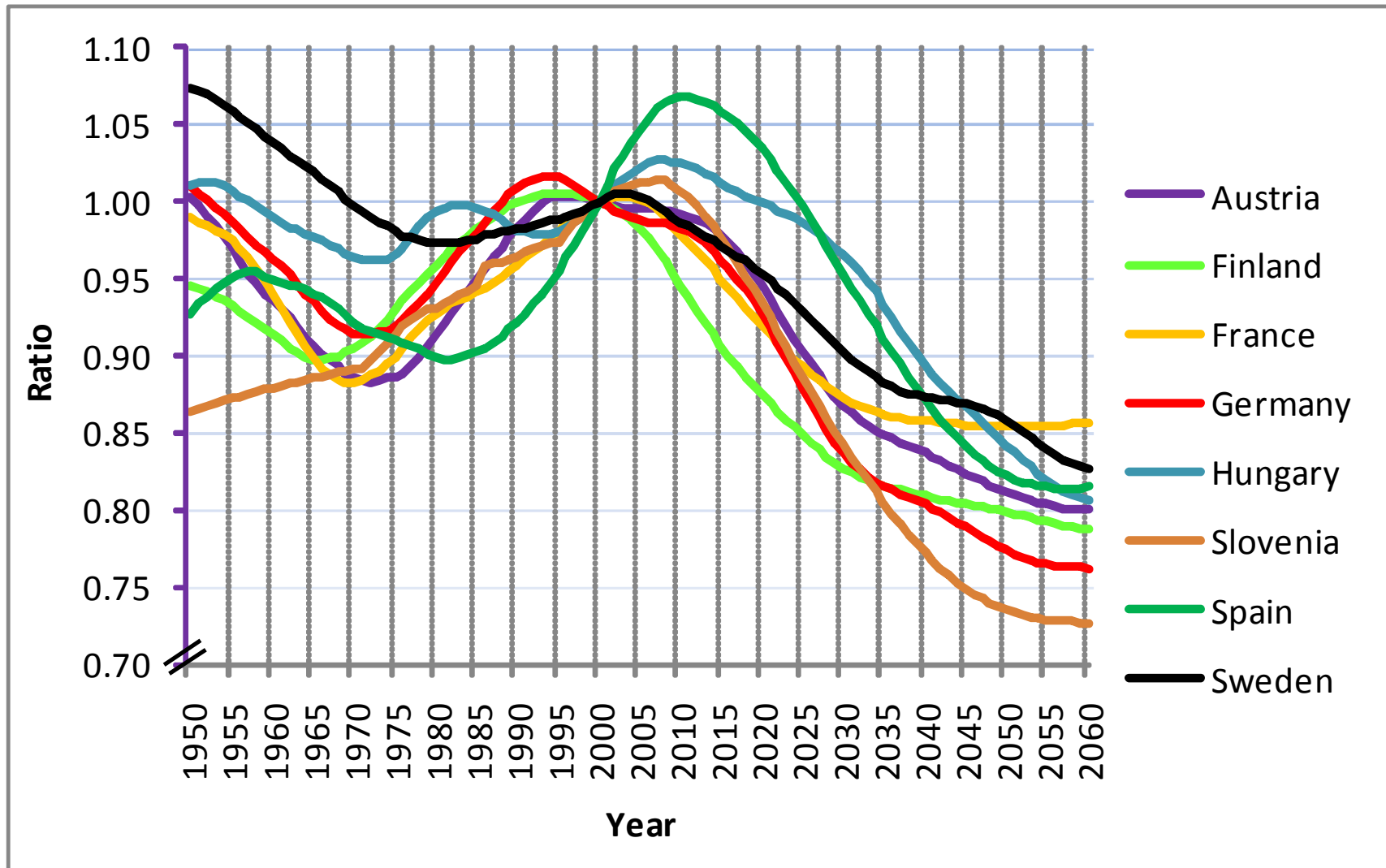

Source: Eurostat, NTA age profiles, own calculations.

LF1/CON1 (Relative to 2000), Comparison of the Results for European NTA Countries
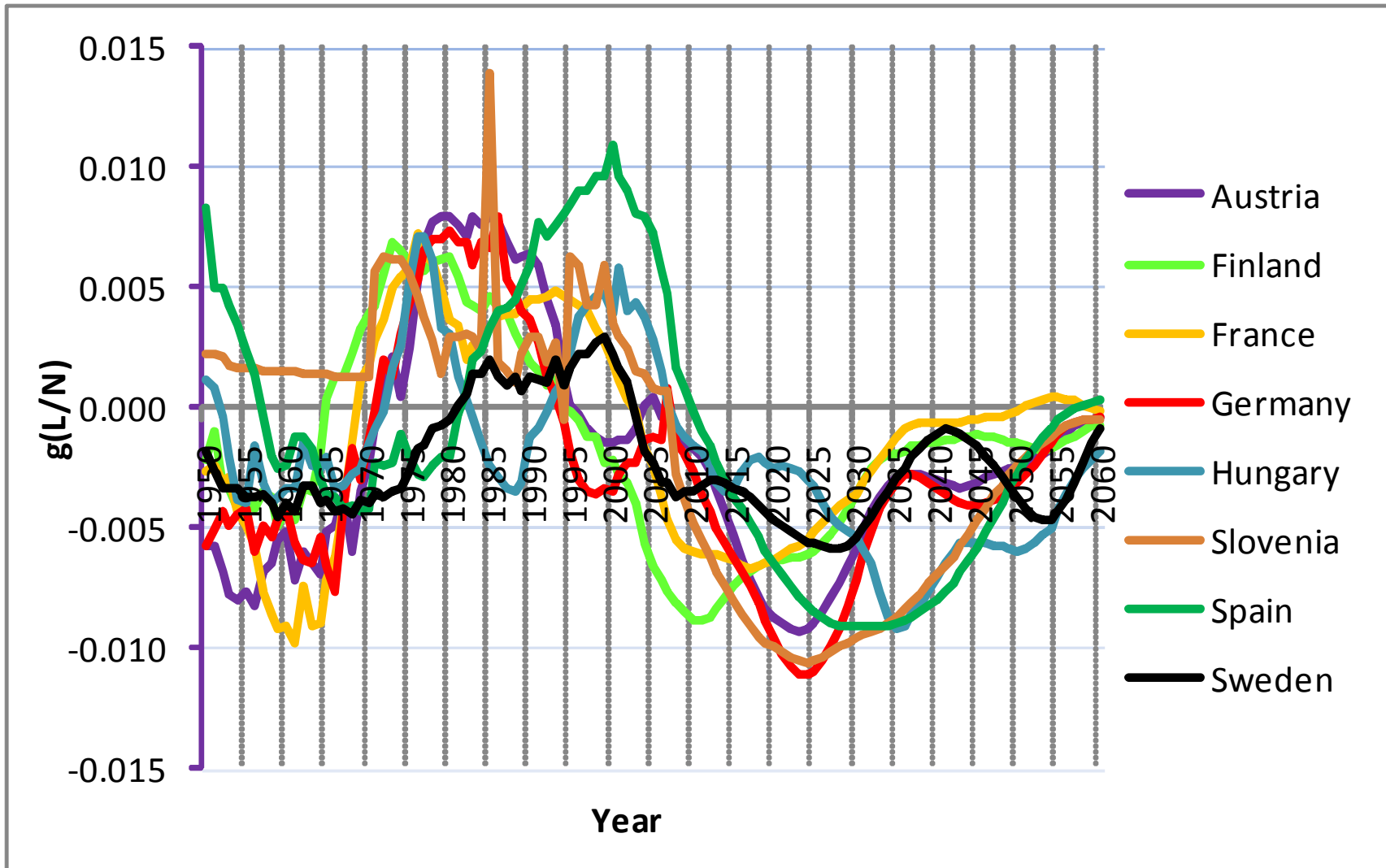
Source: Eurostat, NTA age profiles, own calculations.

LF2/CON2 (Relative to 2000) , Comparison of the Results for European NTA Countries – support ratio decreases to lower levels
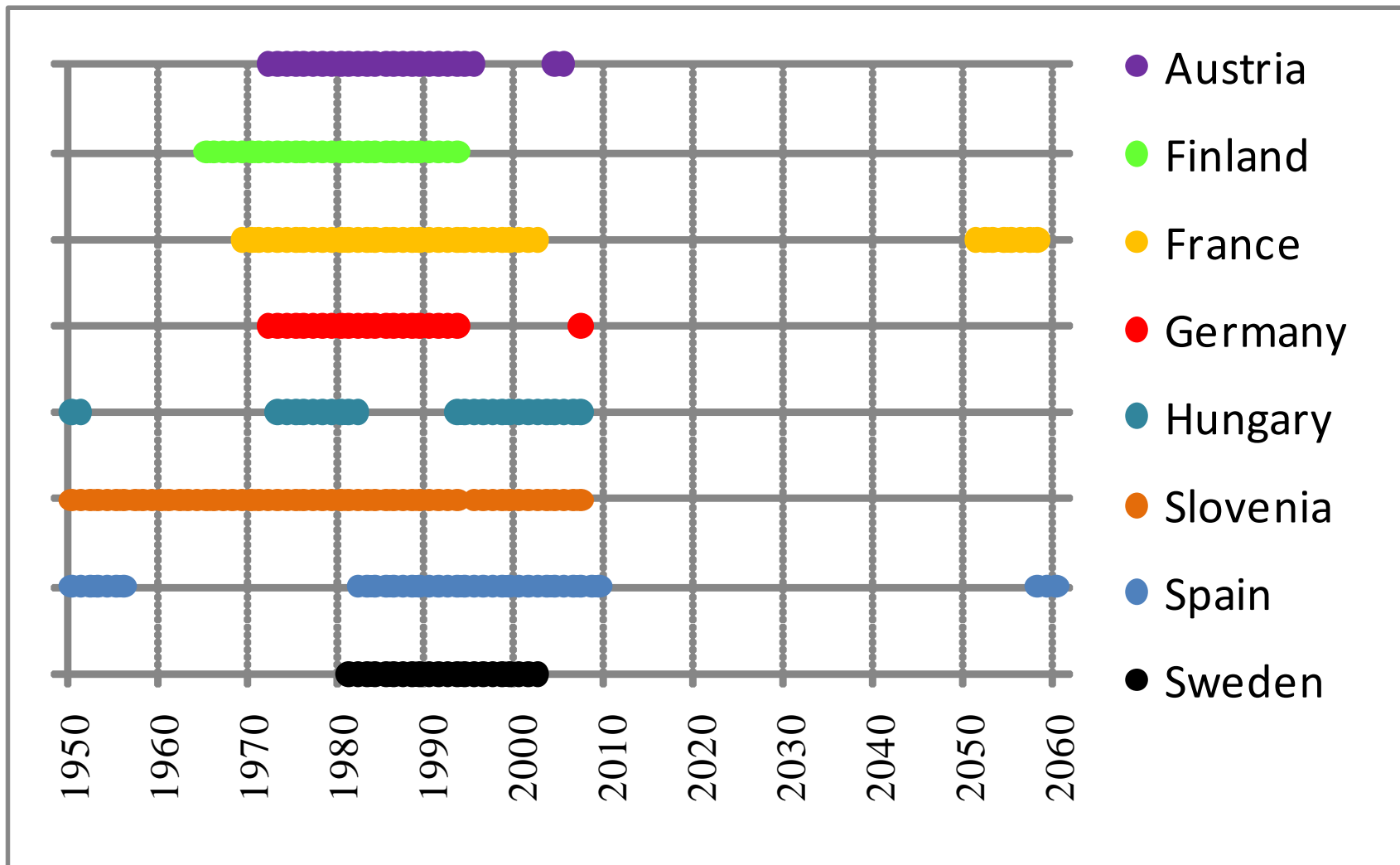
Source: Eurostat, NTA age profiles, own calculations.

# First Demographic Dividend – Comparison of the Results for European NTA Countries

Source: Eurostat, NTA age profiles, own calculations.

First Demographic Dividend – Years in which the First Demographic Dividend was / is Expected to be **Positive**

Legend:
- Austria
- Finland
- France
- Germany
- Hungary
- Slovenia
- Spain
- Sweden

Source: Eurostat, NTA age profiles, own calculations.

Second Demographic Dividend – Comparison of the Results for European Countries
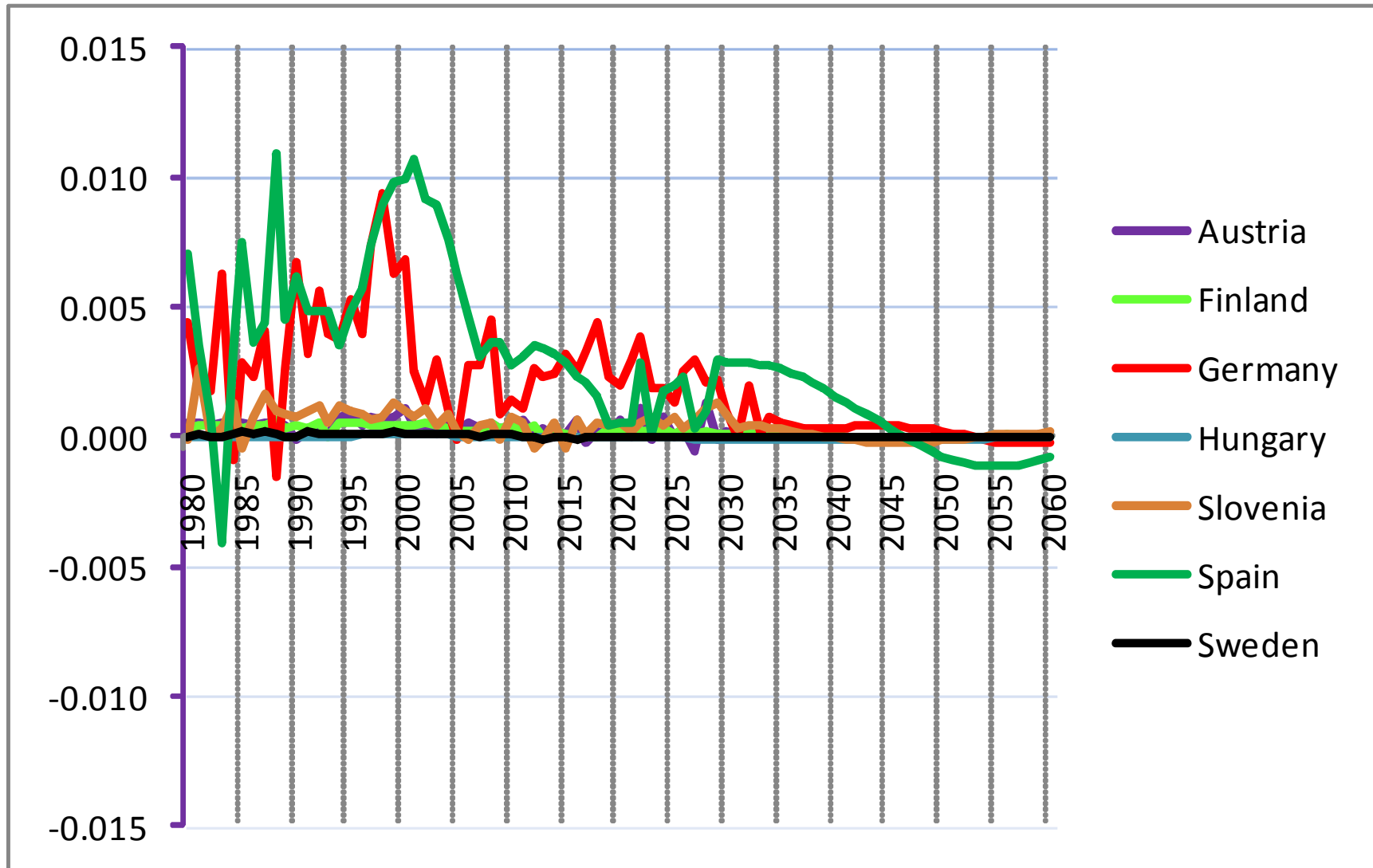
Source: Eurostat, NTA age profiles, own calculations.

Conclusions and Discussion

- There are considerable differences in the level and shape of the support ratios among European NTA countries for 1950-2060 period.

- In the future all European NTA countries are expected to face strong decline in support ratios. In some countries the support ratios are already substantially declining and in others they are just about to start to decline.

- In all European NTA countries except Spain and Germany the second demographic dividend is expected to be small, assuming fixed age profiles through time. The **opportunity** of aging societies in form of positive second demographic dividend is expected to be heavily dominated by the **challenge** of a negative first demographic dividend.