

Joint meeting AAE  
Insurance, Pensions  
and Risk  
Management  
committees on 1st  
October 2021

# **The impact of Covid-19 on mortality rates and birth-rates in Europe**

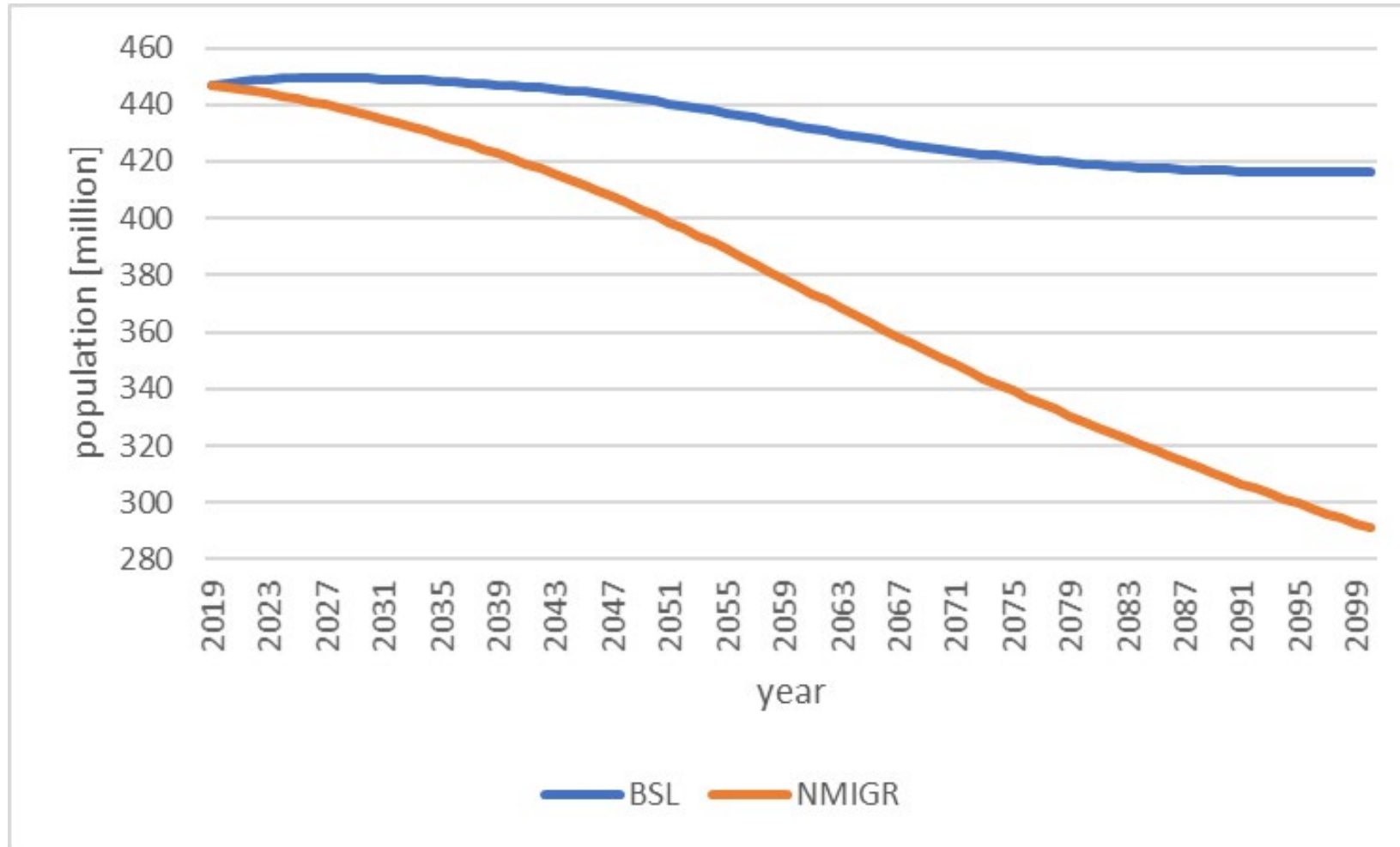


**1st of October 2021**

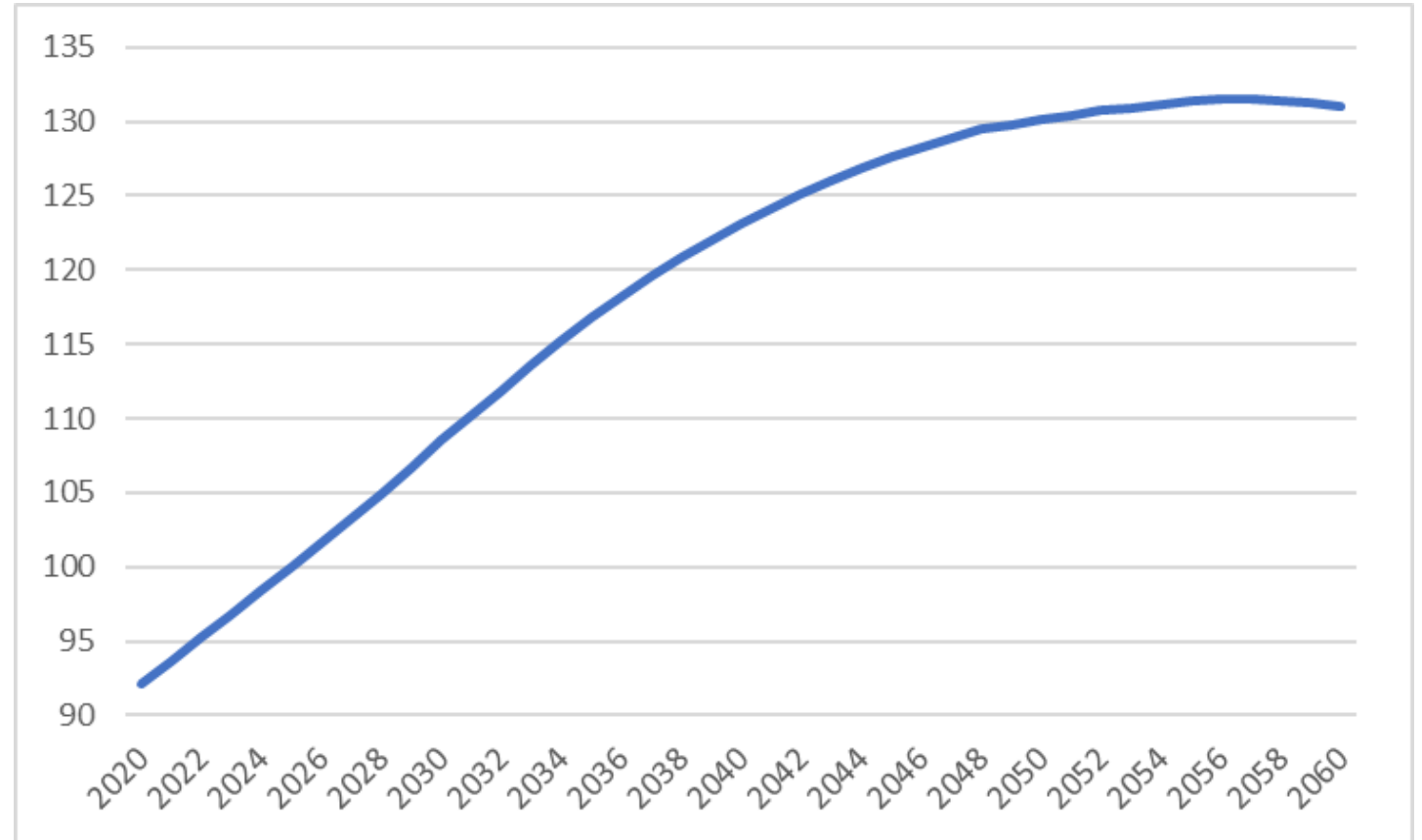
Speaker:

Assoc. prof. David Bogataj

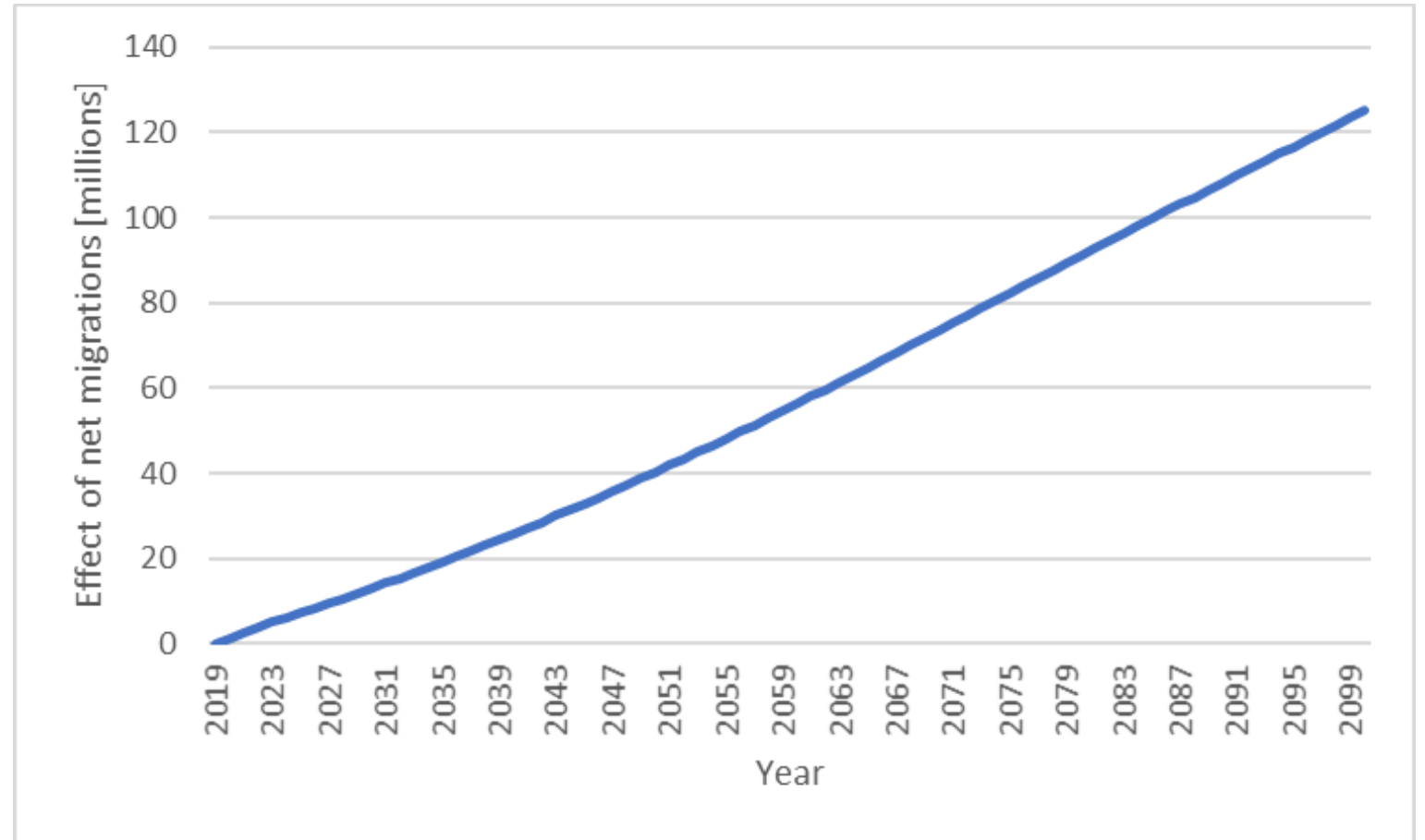
# European population projections 2019 for period 2020-2100 (source EUROSTAT)



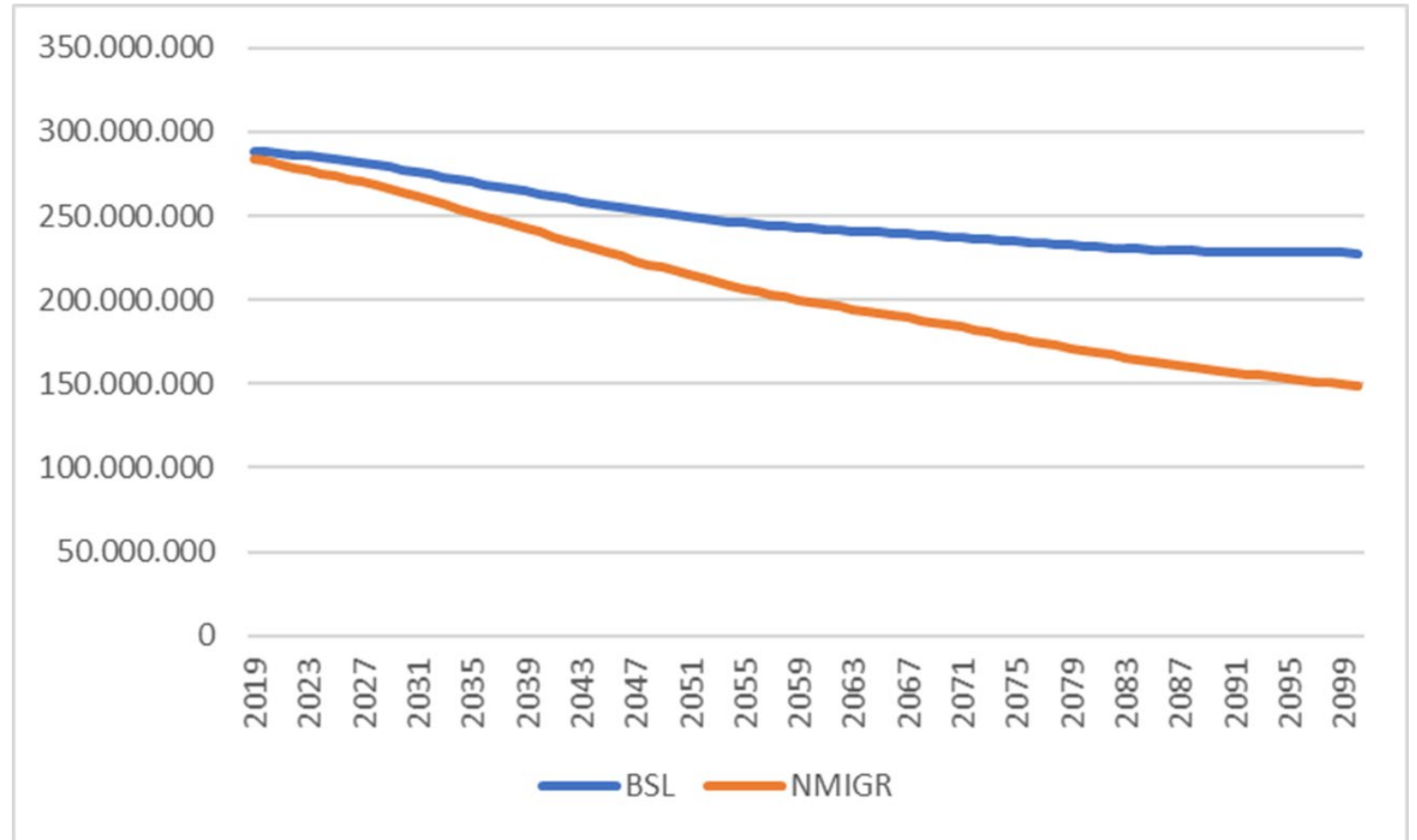
European  
population  
projections  
2019 for  
population 65+  
for period 2020-  
2100 (source  
EUROSTAT)



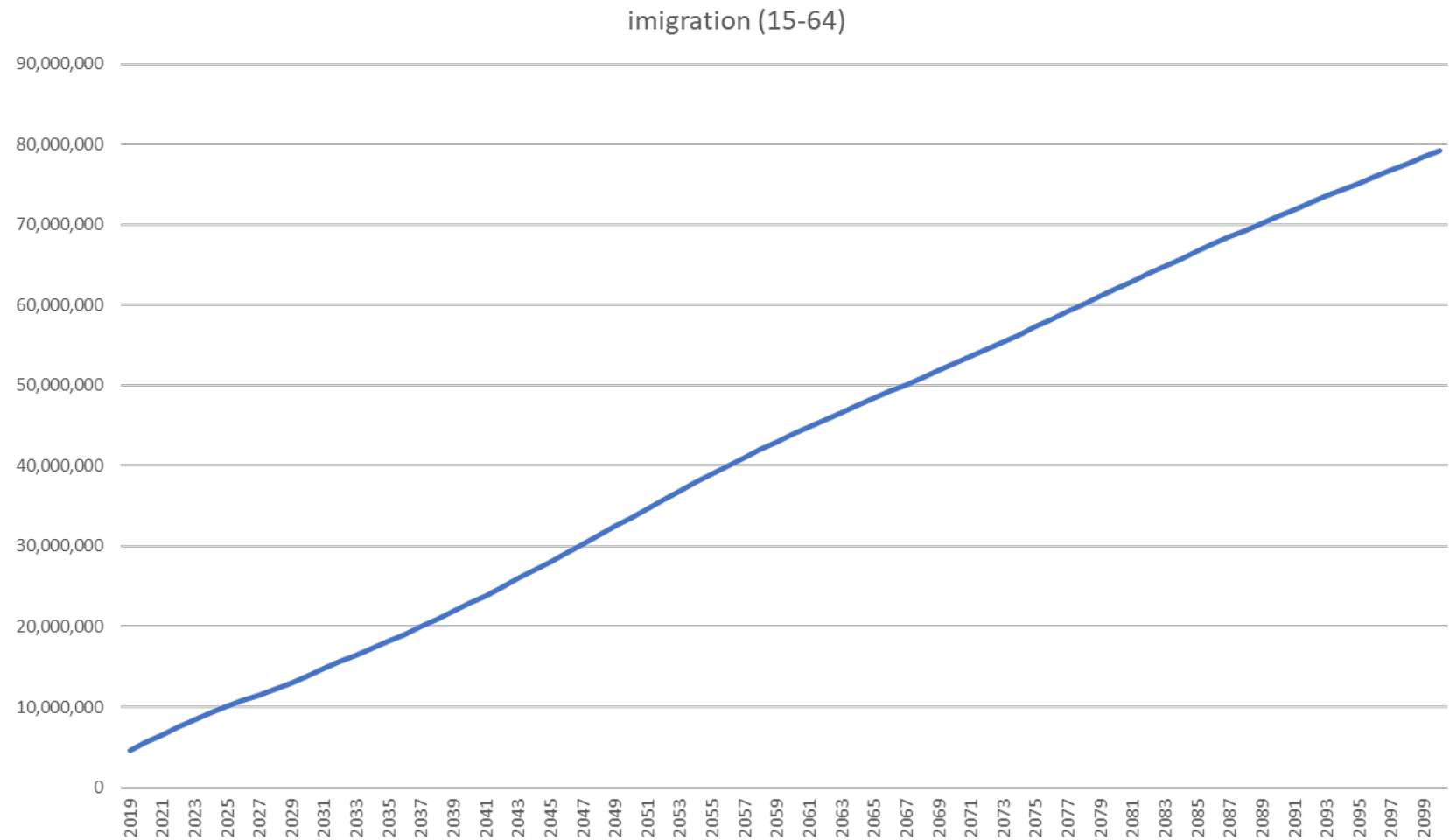
Effect of net  
migrations on  
population  
projections of  
EU Member  
States for period  
2020-2100



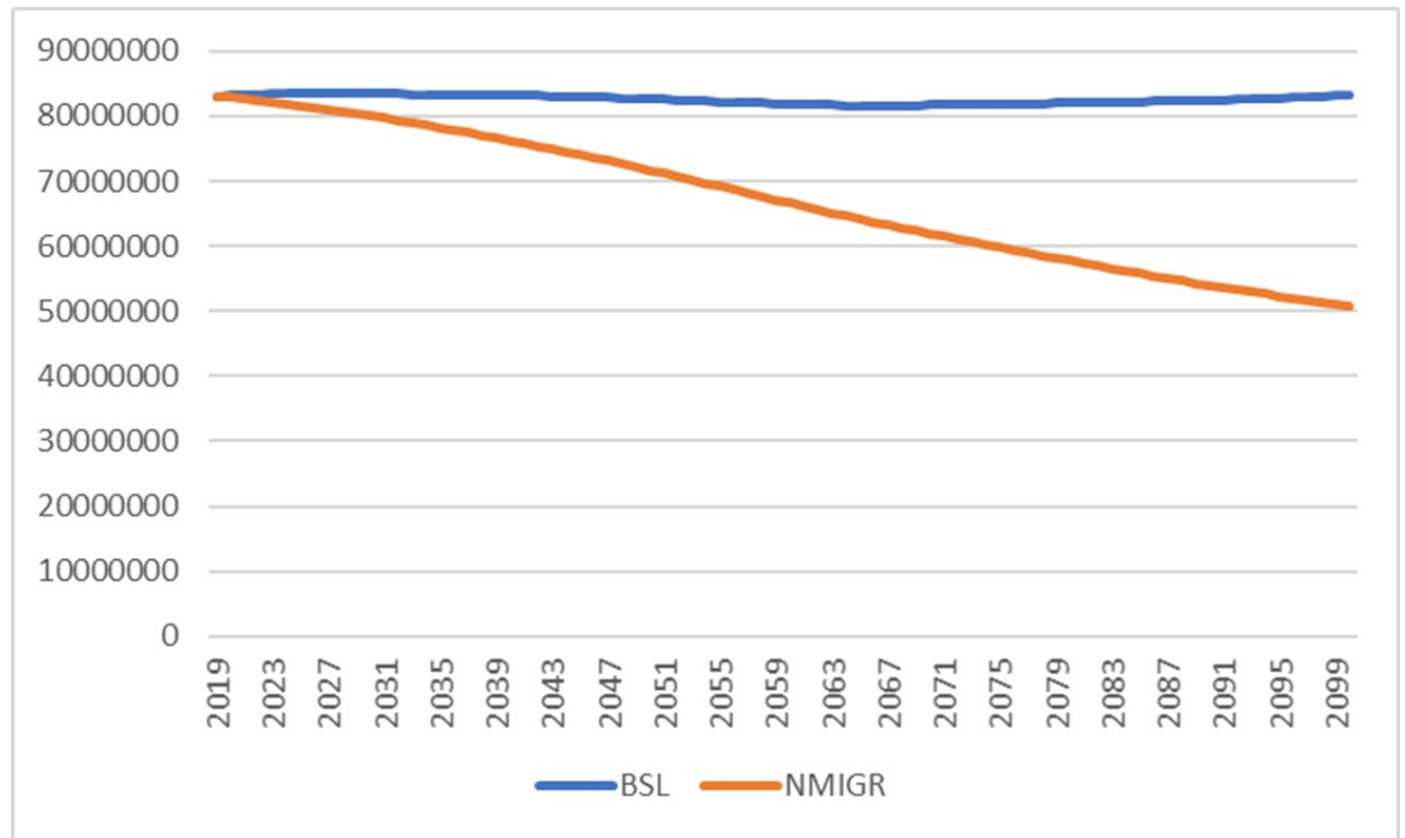
# Population projections of EU 27 working age (15-64) population projections 2019-2100



EU 27 working  
age (15-64)  
migrant  
population  
(net migration)  
EUROSTAT  
population  
projections  
2019-2100

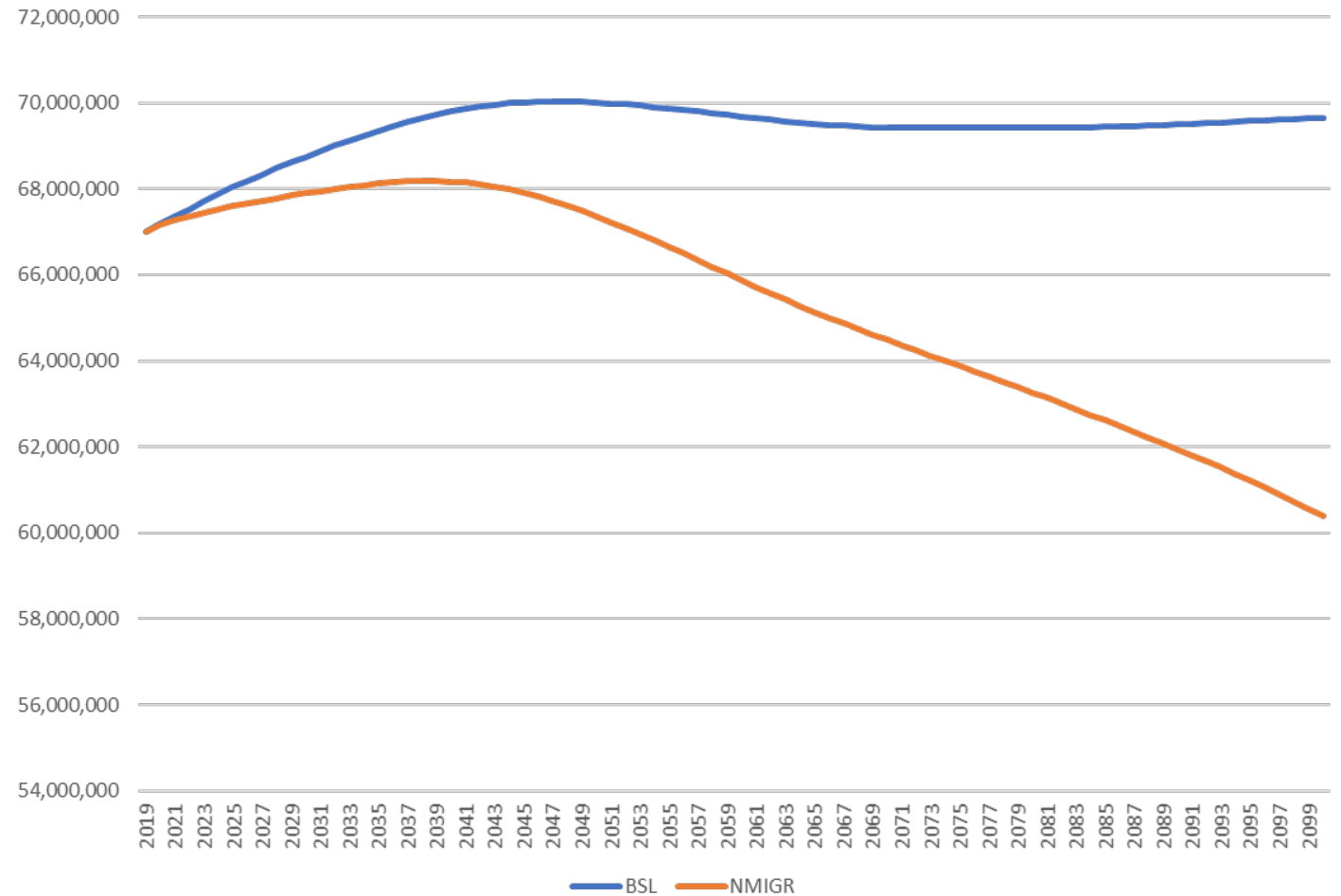


Germany  
population  
projections  
2019 for period  
2020-2100  
(source  
EUROSTAT)



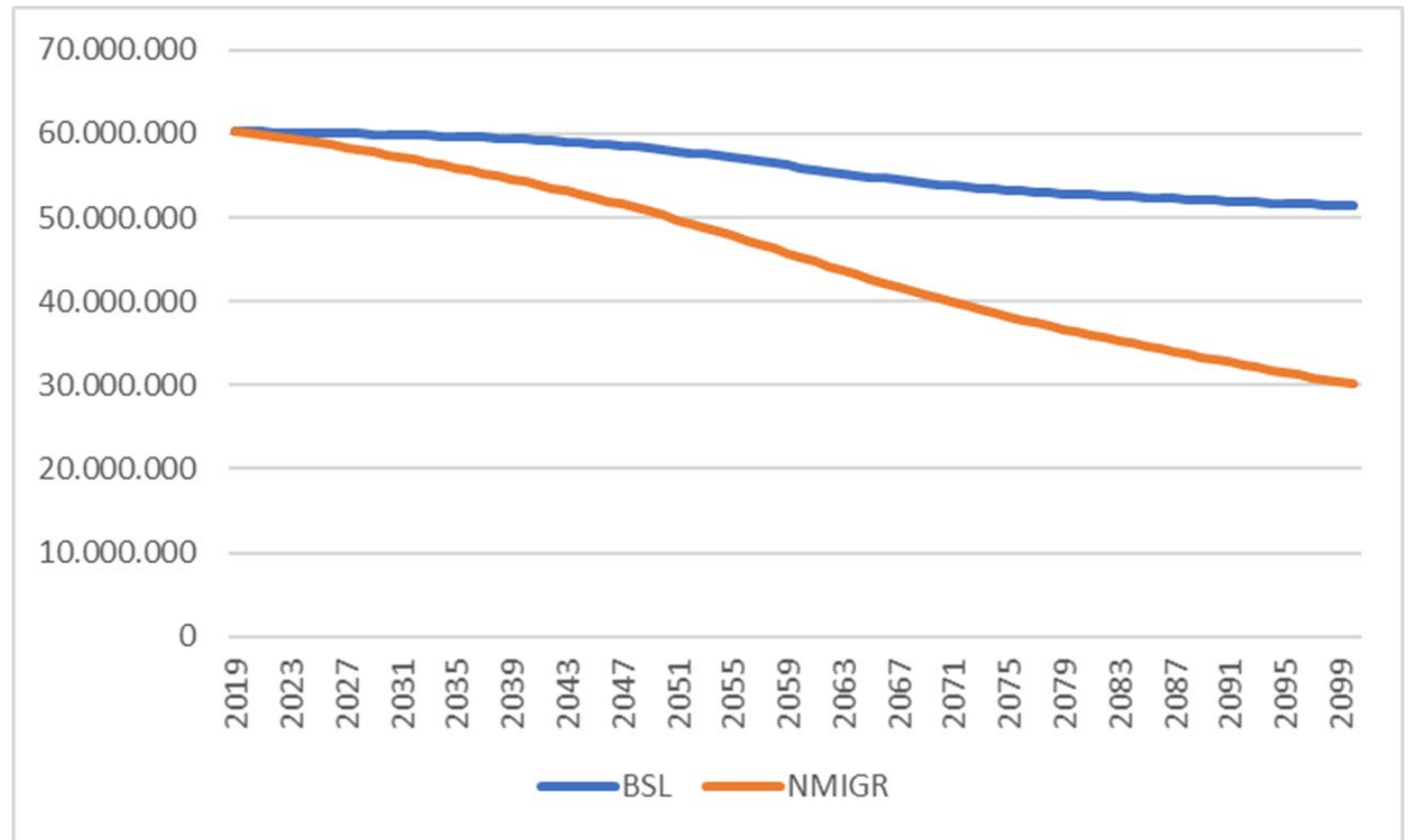


France:  
population  
projections  
2019 for period  
2020-2100  
(source  
EUROSTAT)

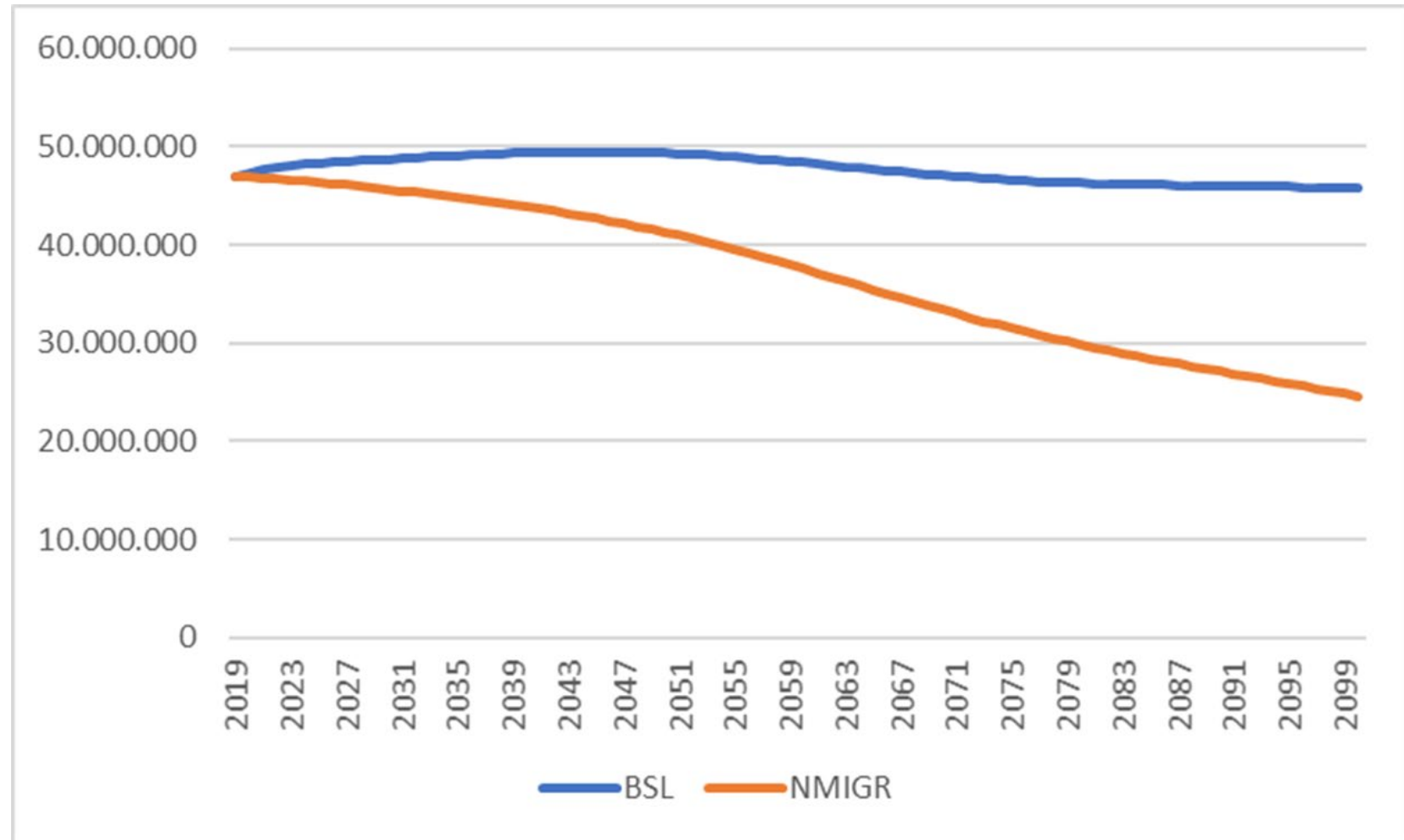




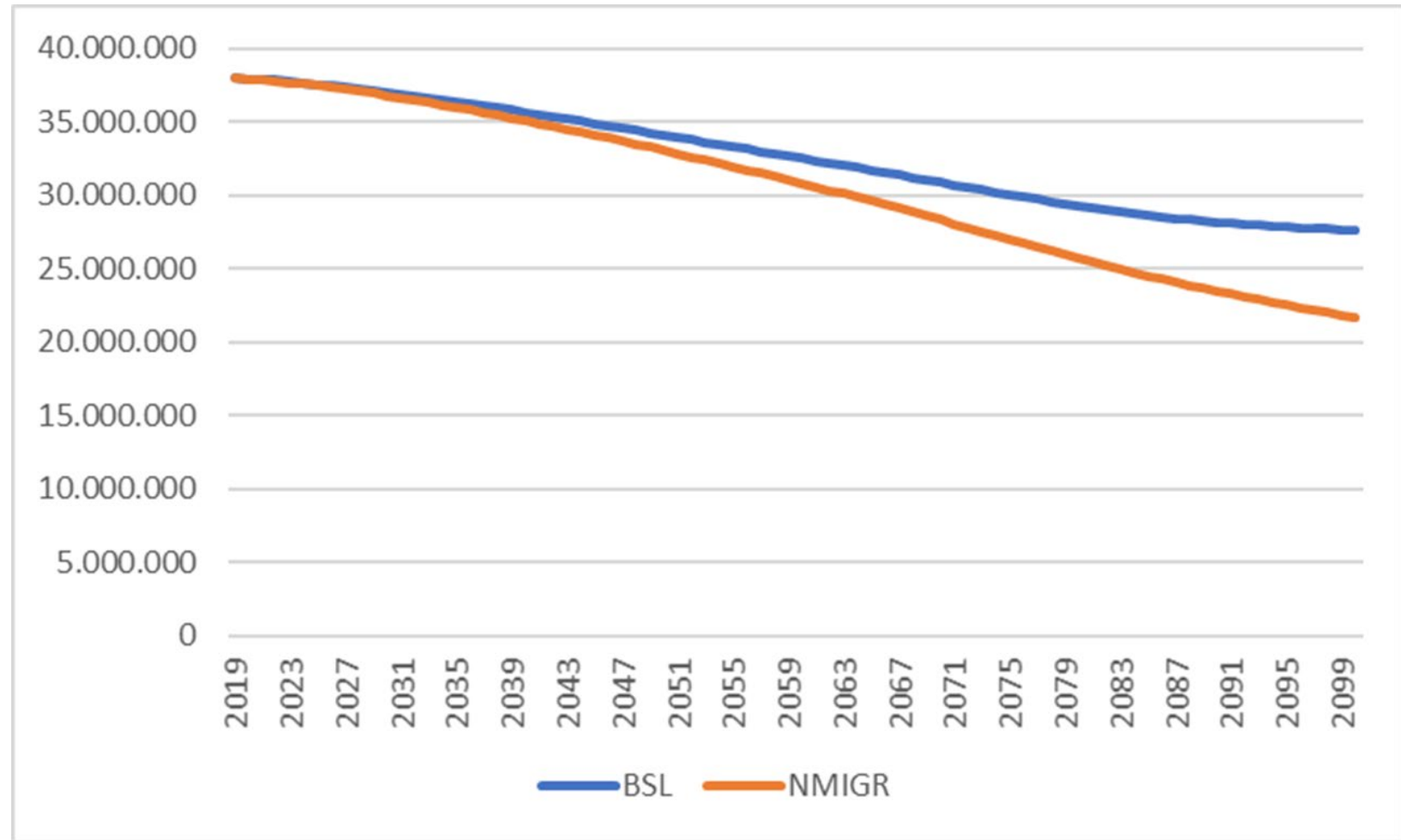
Italy: population  
projections  
2019 for period  
2020-2100  
(source  
EUROSTAT)



Spain:  
population  
projections  
2019 for period  
2020-2100  
(source  
EUROSTAT)

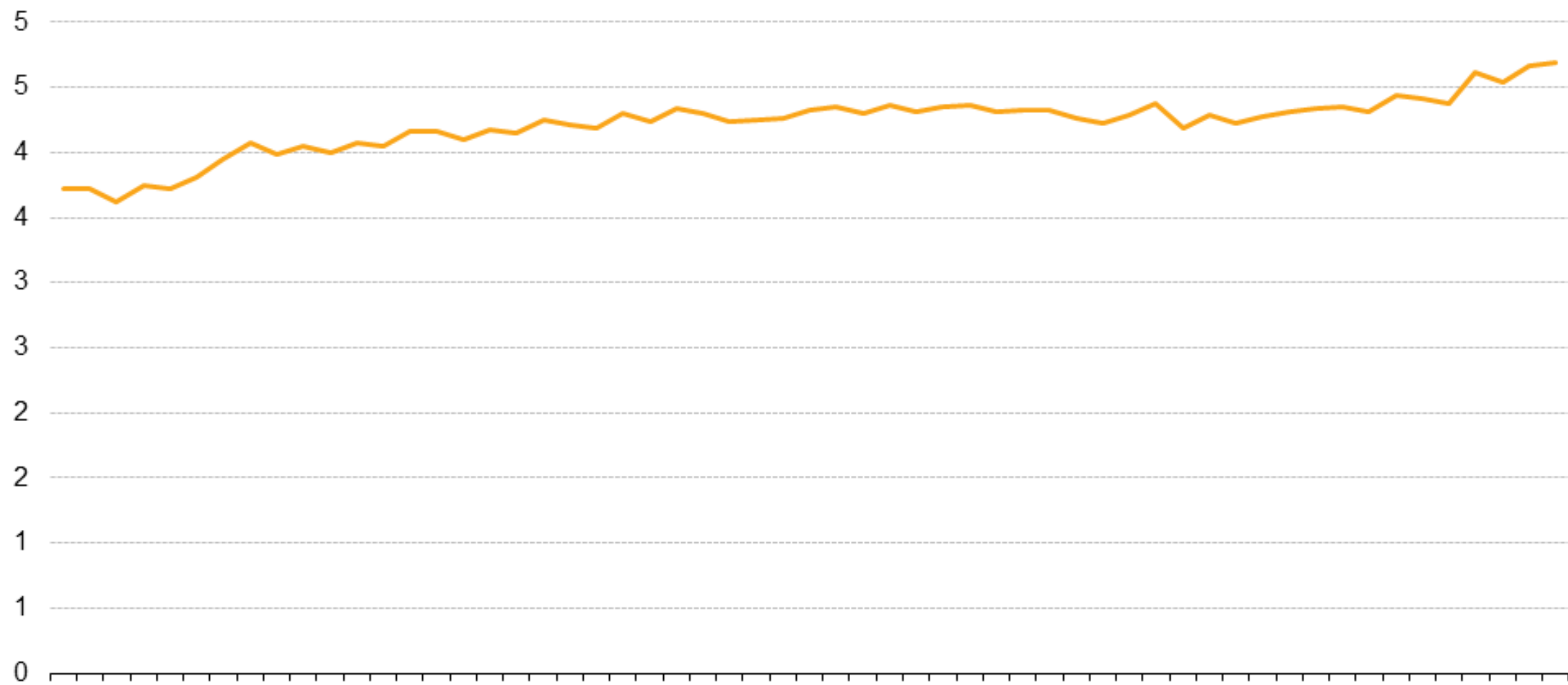


Poland:  
population  
projections  
2019 for period  
2020-2100  
(source  
EUROSTAT)

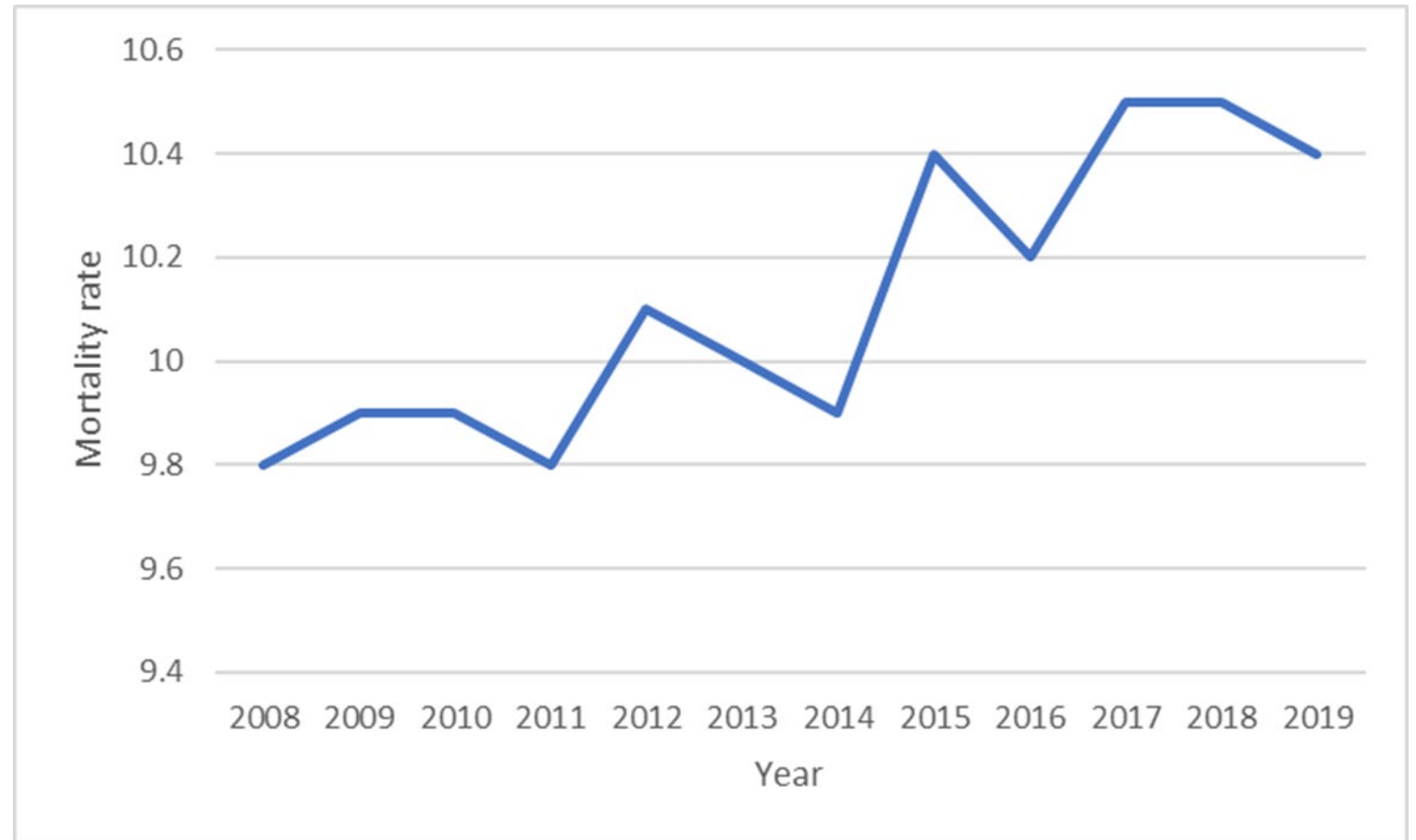


## Number of deaths, EU-27, 1962-2018

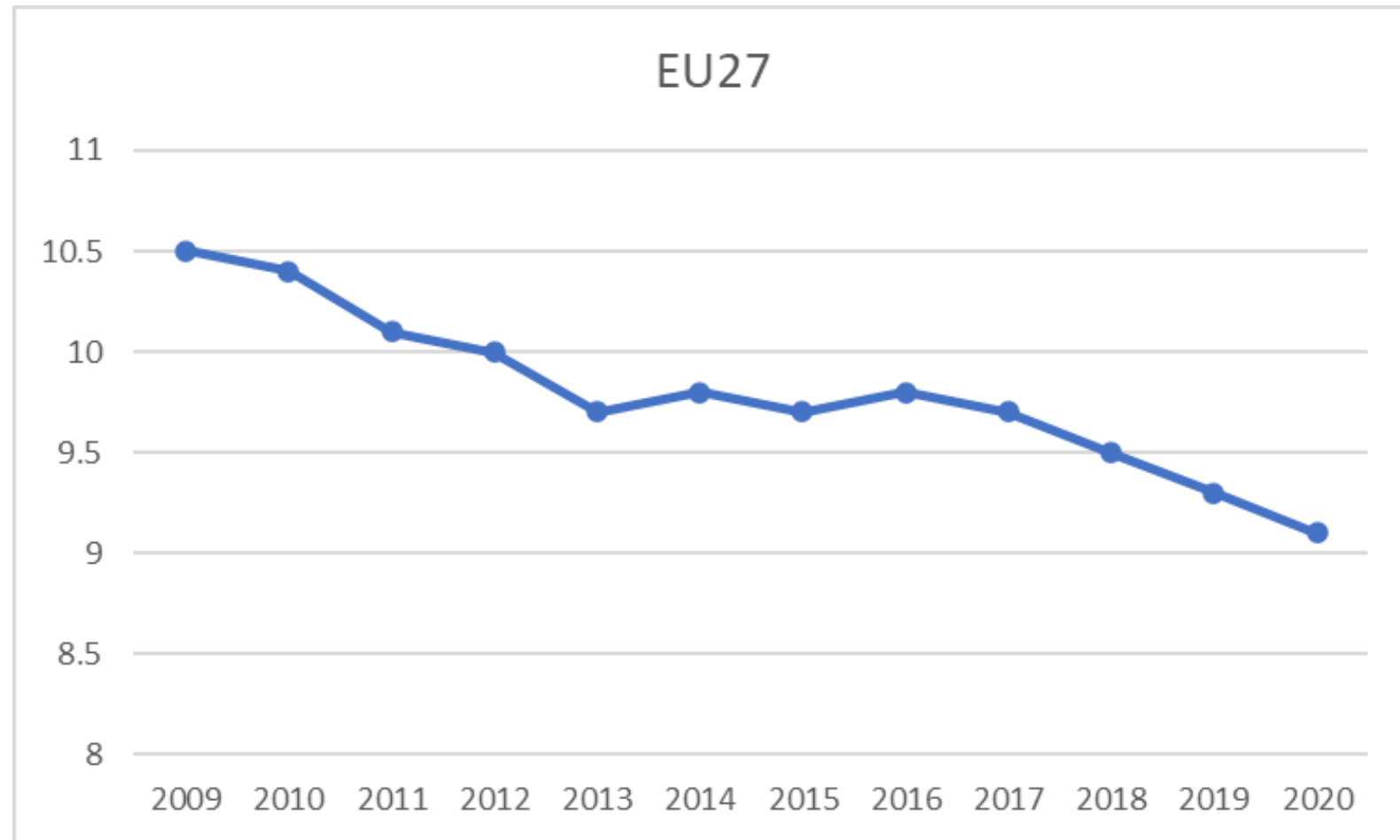
(million)



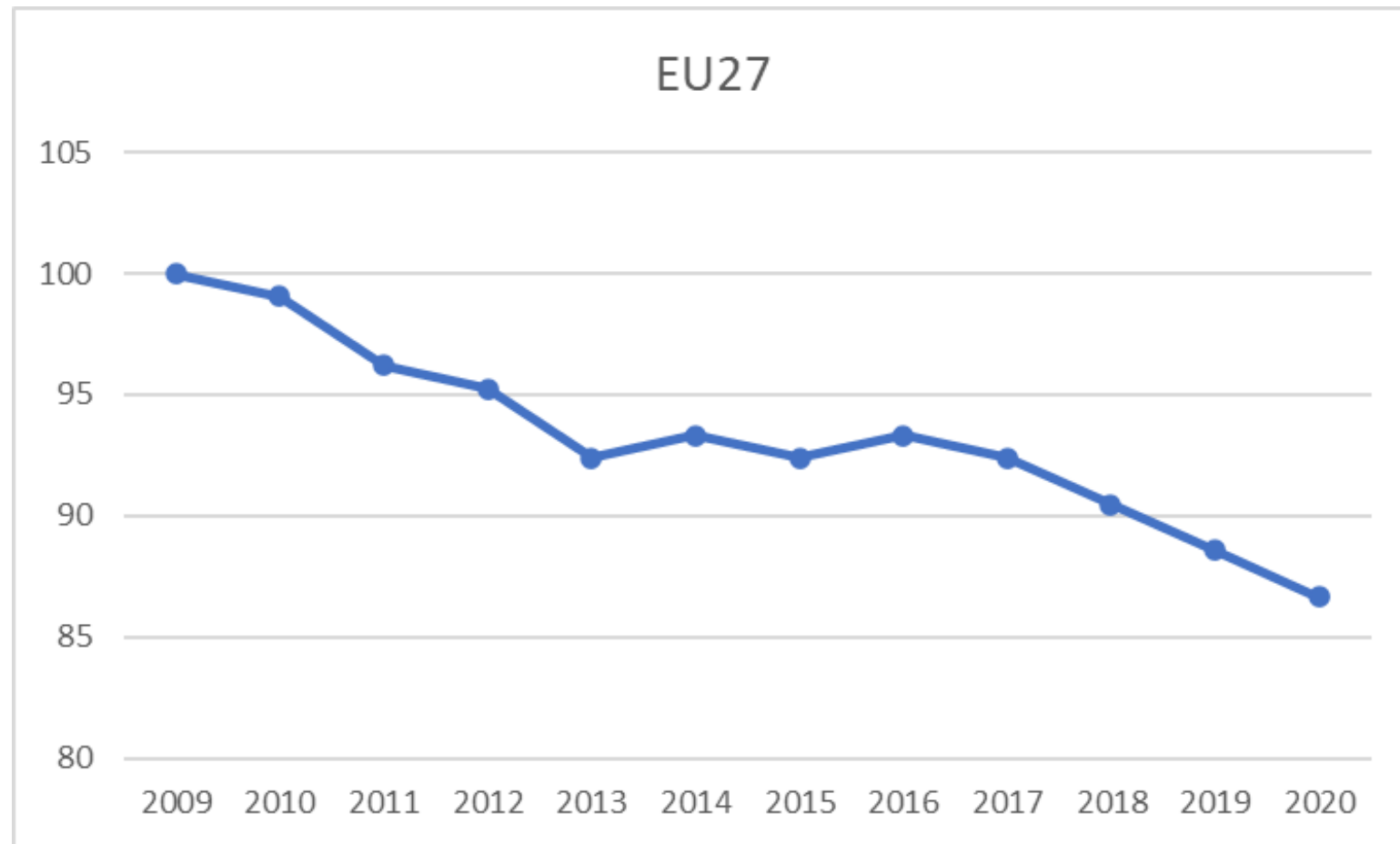
Mortality rate  
per 1000  
inhabitants for  
EU 27 for  
period  
2008-2019



Birth rate per  
1000  
inhabitants for  
EU 27 for  
period  
2009-2020

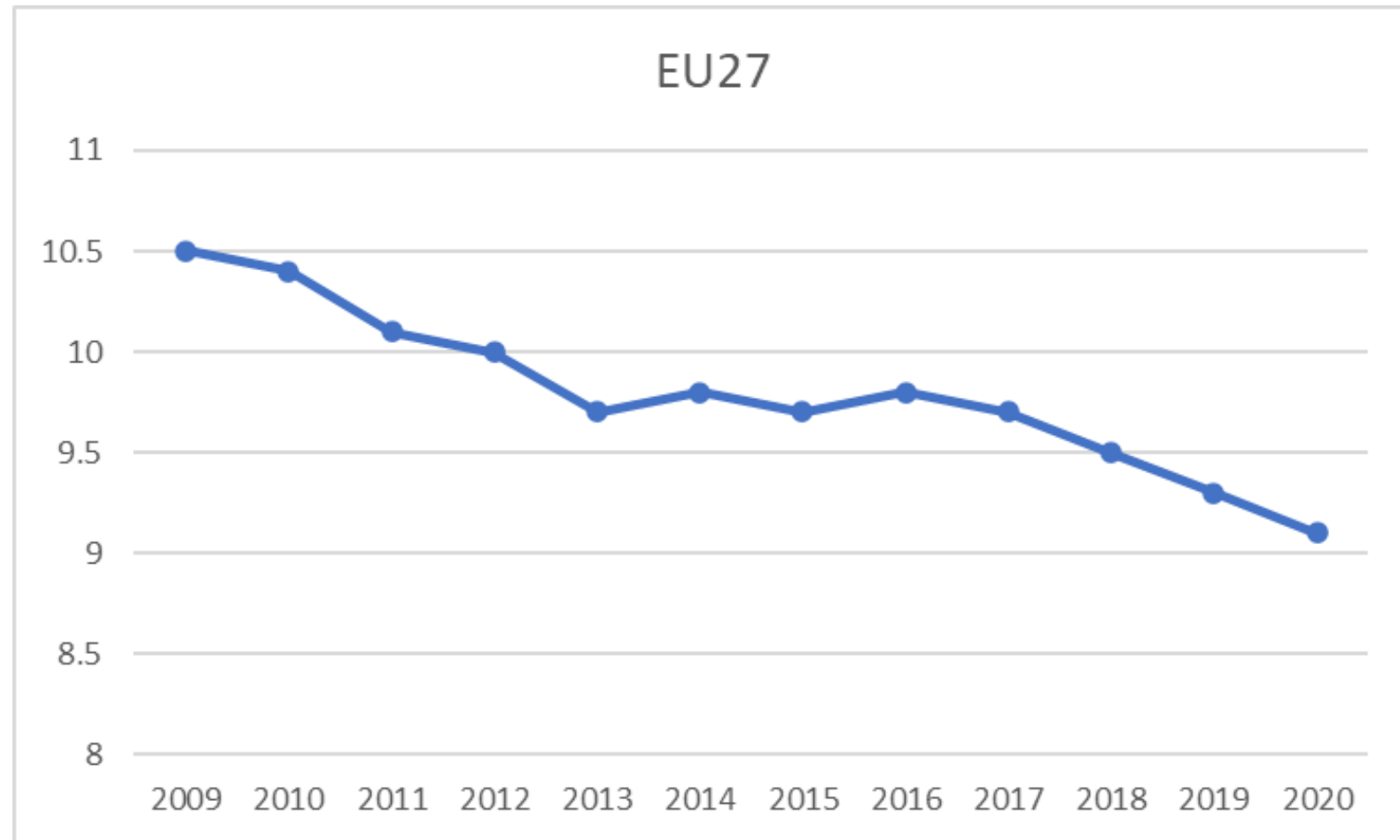


Index of  
fertility rate  
per 1000  
inhabitants for  
EU 27 for  
period  
2009-2020

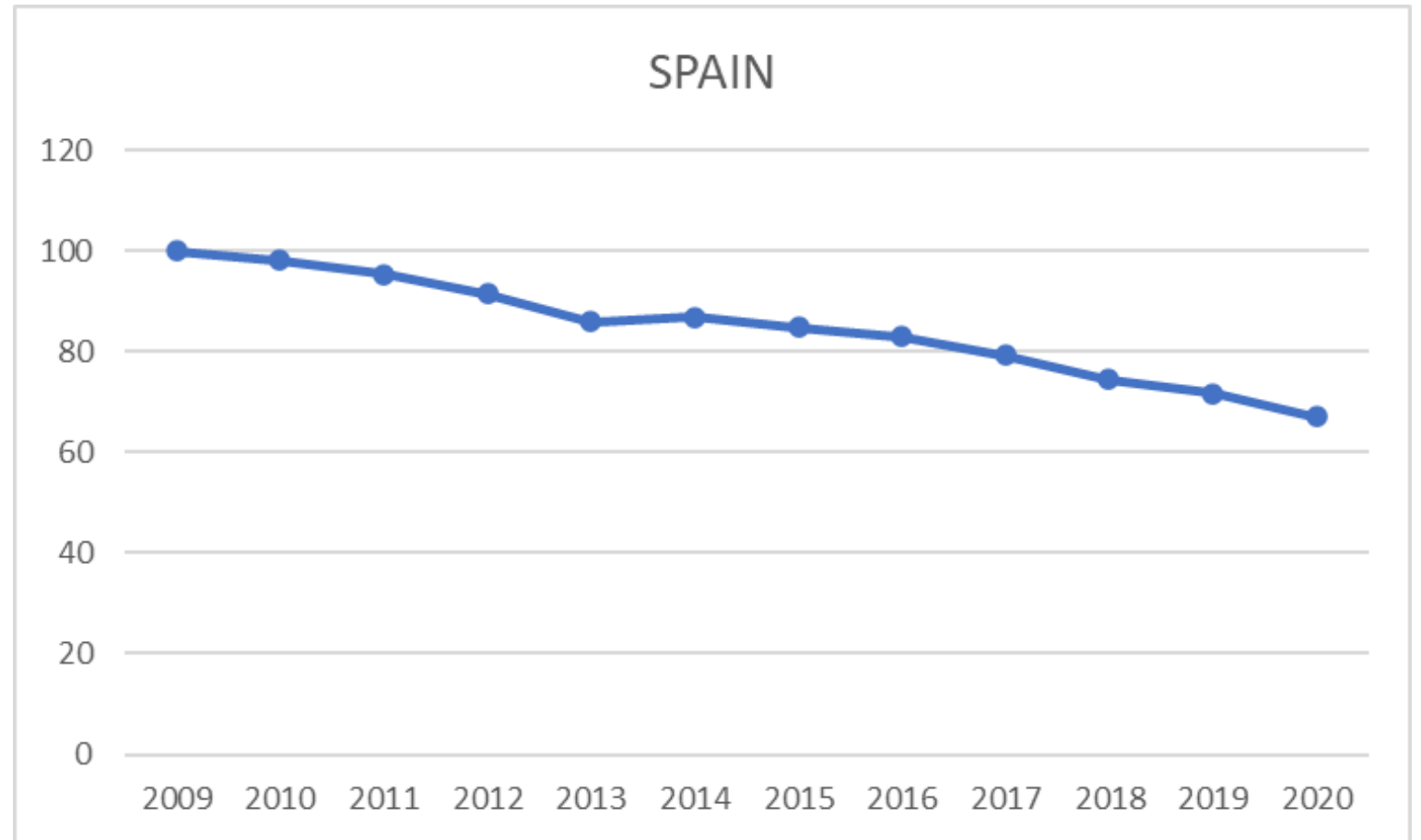




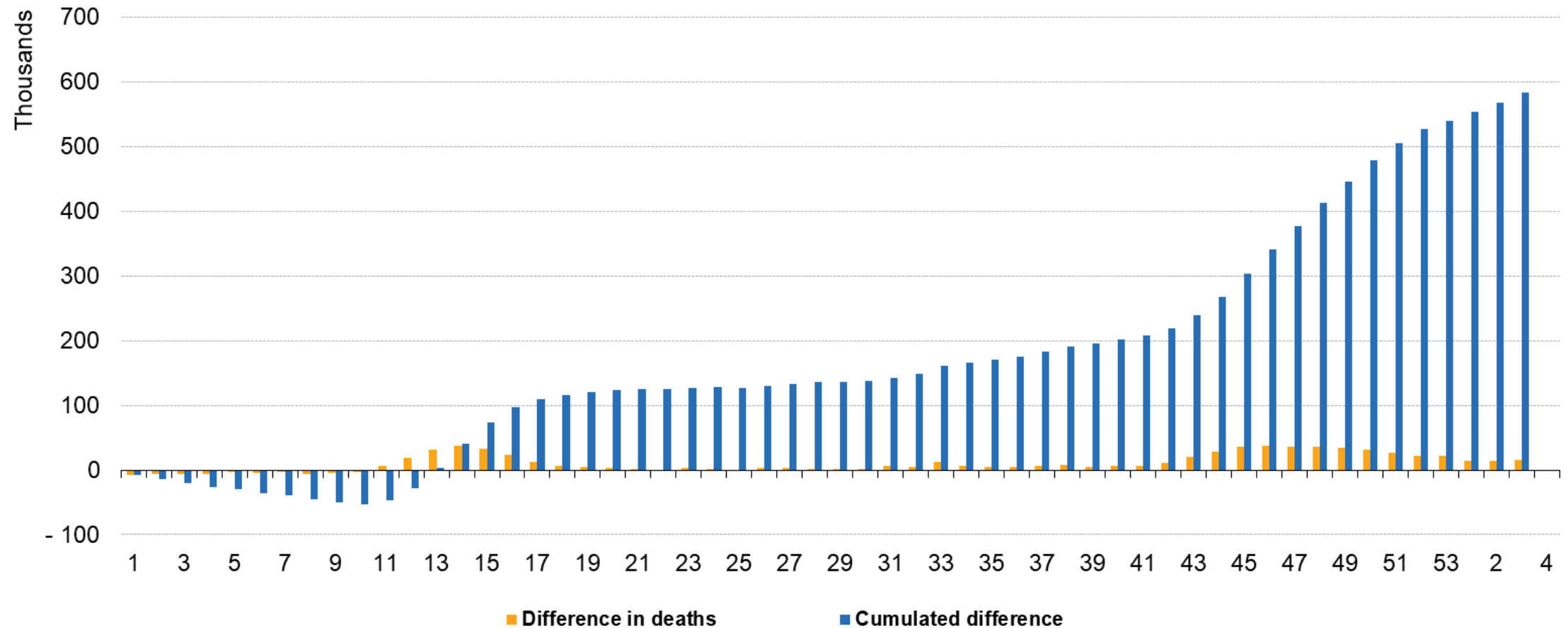
Birth rate per  
1000  
inhabitants for  
Spain for  
period  
2009-2020



Index of birth  
rate per 1000  
inhabitants for  
SPAIN for  
period  
2009-2020



## Weekly deaths in EU and EFTA countries, 2020-2021 (differences with 2016-19 average)



Country coverage: 26 EU Member States (Ireland missing), and EFTA countries.

Source: Eurostat (online data code: *demo\_r\_mwk\_ts*)

# ADDITIONAL DEATHS IN THE EU AND EFTA COUNTRIES

- There were **600 000 additional deaths in the EU and EFTA countries from January 2020 to end of January 2021**, against the average number of deaths in the period 2016-2019.

# NUMBER OF DEATHS

- **At the beginning of March 2020, the number of deaths rose rapidly in some Member States.**
- **In some parts of the European Union, the difference compared with previous years was exceptionally high, while some other areas were less severely affected.**
- **In total, among the European Union and EFTA countries for which data are available, in 2020 there were around 540 000 more deaths than the average during the same period from 2016 to 2019**
- **In the most exposed period of the first wave, from mid-March to mid-May 2020, i.e. weeks 11 to 21, there were more than 175 000 additional deaths,**
- **while during the second bigger increase between October and December (weeks 41 to the end of 2020) more than 340 000 additional deaths were registered.**
- **While in the first wave some countries and regions were severely hit and others were less affected, the second wave (still active in January 2021) affected a larger territory overall.**

# Two spikes in additional deaths

During the first critical period, mid-March to end of May 2020, there were more than 175 000 additional deaths;

Mar.–May 2020

Oct.–Jan. 2021

data from October to the end of January 2021 highlight a second larger spike of almost 400 000 additional deaths.

# Two peaks in mortality in April and November 2020

- In 2020, excess mortality was high above the average in the European Union, **especially in spring and autumn, reaching two peaks in April (+25.1% ) and November (+40.7%).**



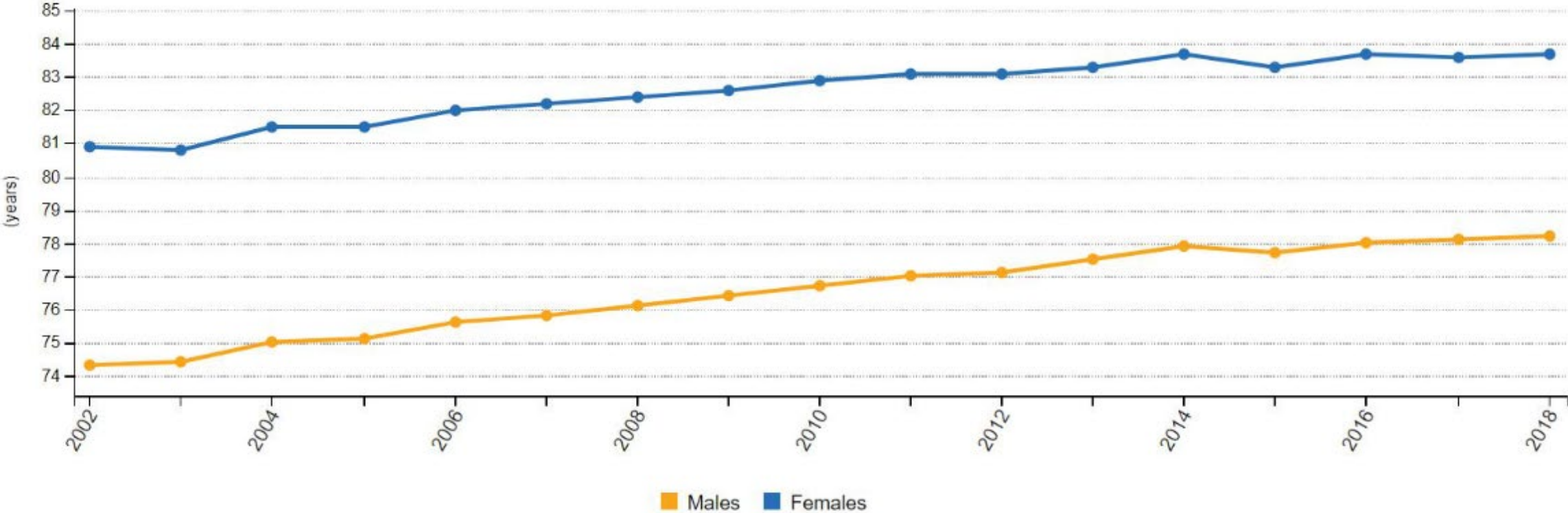
# Mortality in UK in 2020

- By **26 June 2020, the UK had the highest cumulative excess mortality rate in Europe;**
- **the cumulative excess mortality rate for the UK was 7.2% above the five-year average by 18 December 2020.**

## AUTUMN AND EARLY WINTER MONTHS (SECOND SPIKE)

- During the autumn and early winter months **central and eastern European countries had the highest levels of excess mortality** in Europe; western European countries still experienced some excess mortality but at lower levels than those experienced in the spring.

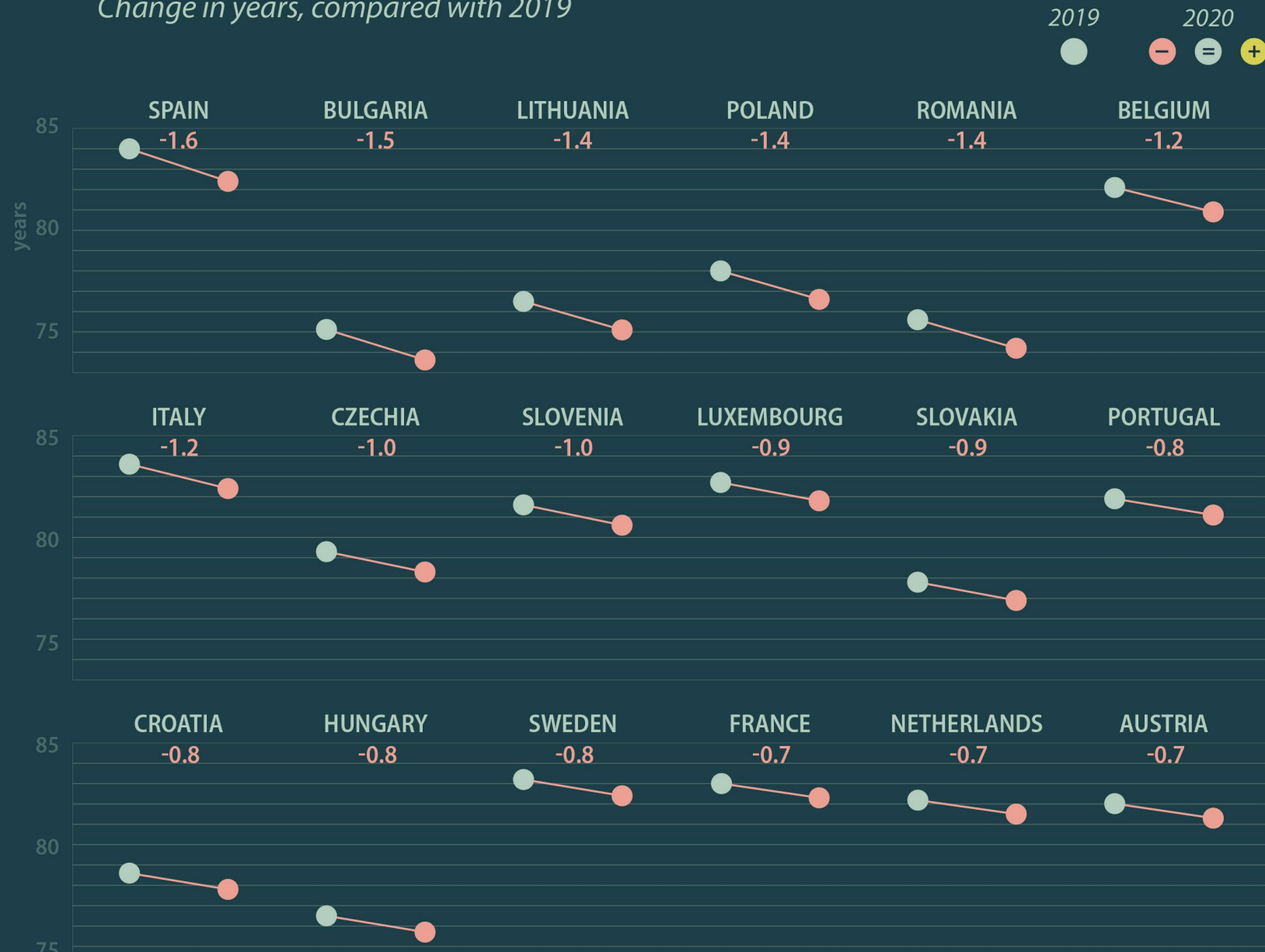
# Life expectancy at birth, EU-27, 2002-2018



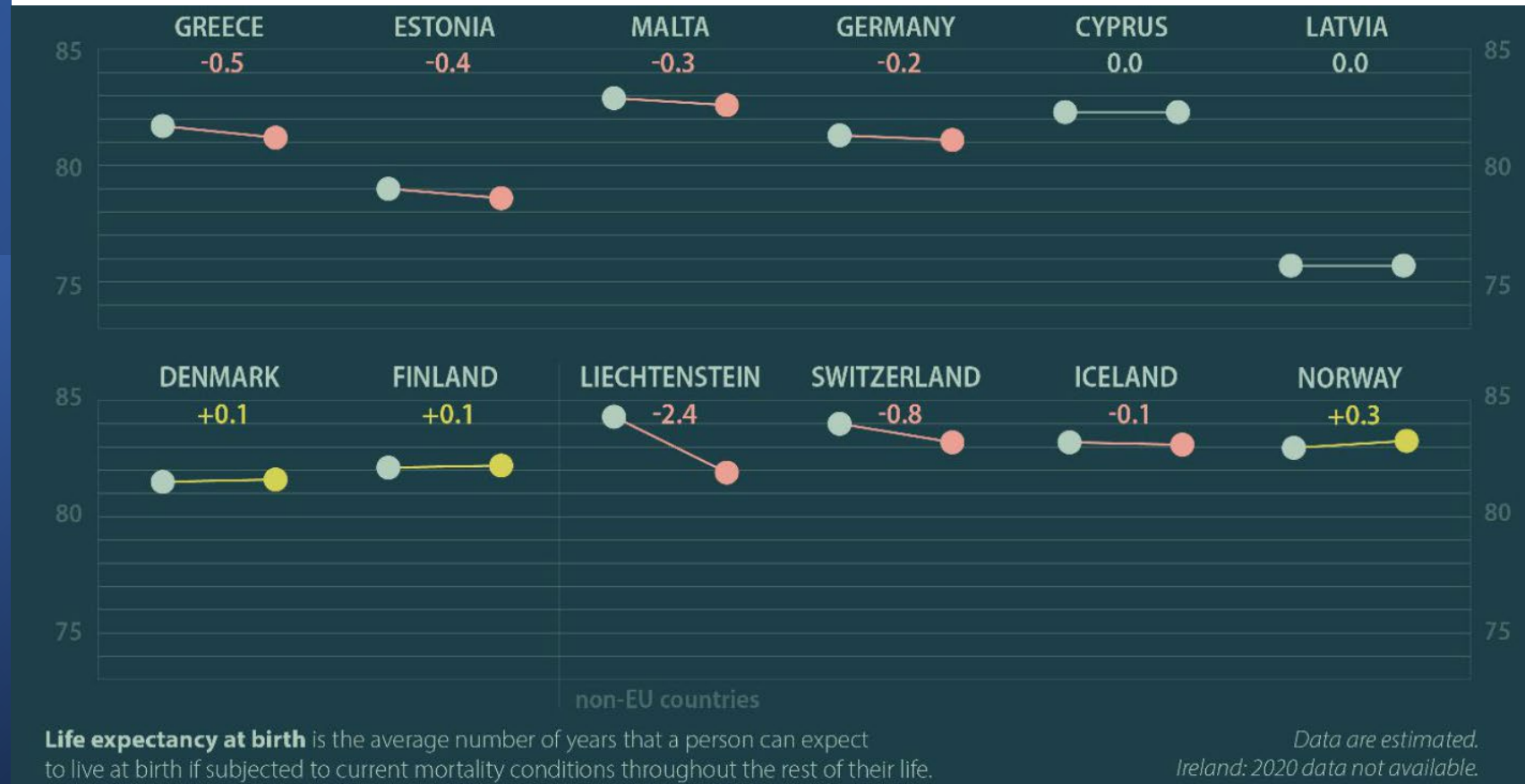
# How did life expectancy change in 2020

## How did life expectancy change in 2020?

Change in years, compared with 2019



# Decrease in life expectancy in selected EU member states

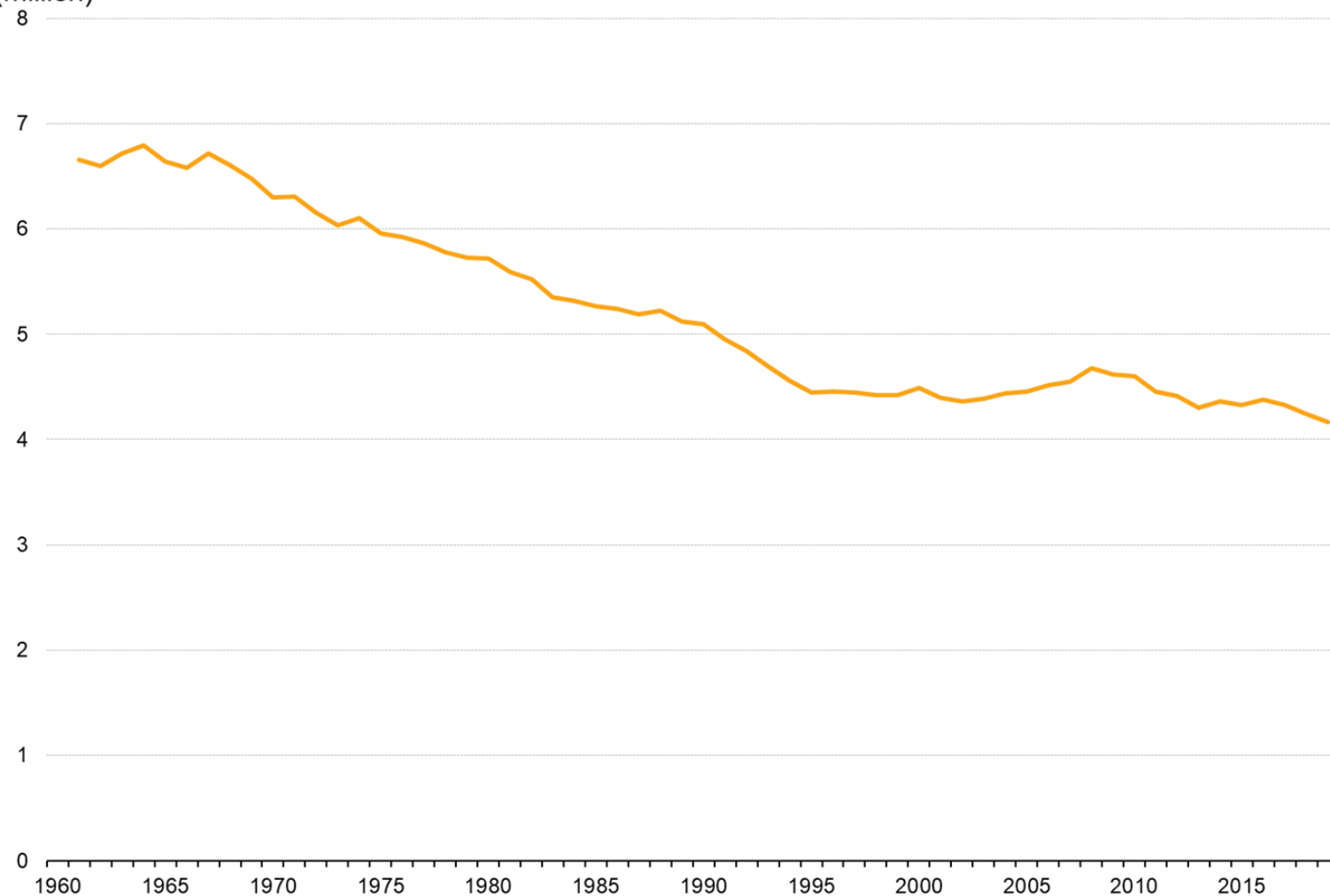


# Long-term consequences on mortality

- **No long-term consequences on mortality rate are expected from COVID 19 epidemics.**

## Number of live births, EU, 1961–2019

(million)



Note: Excluding French overseas departments before 1998. Including Mayotte from 2014.

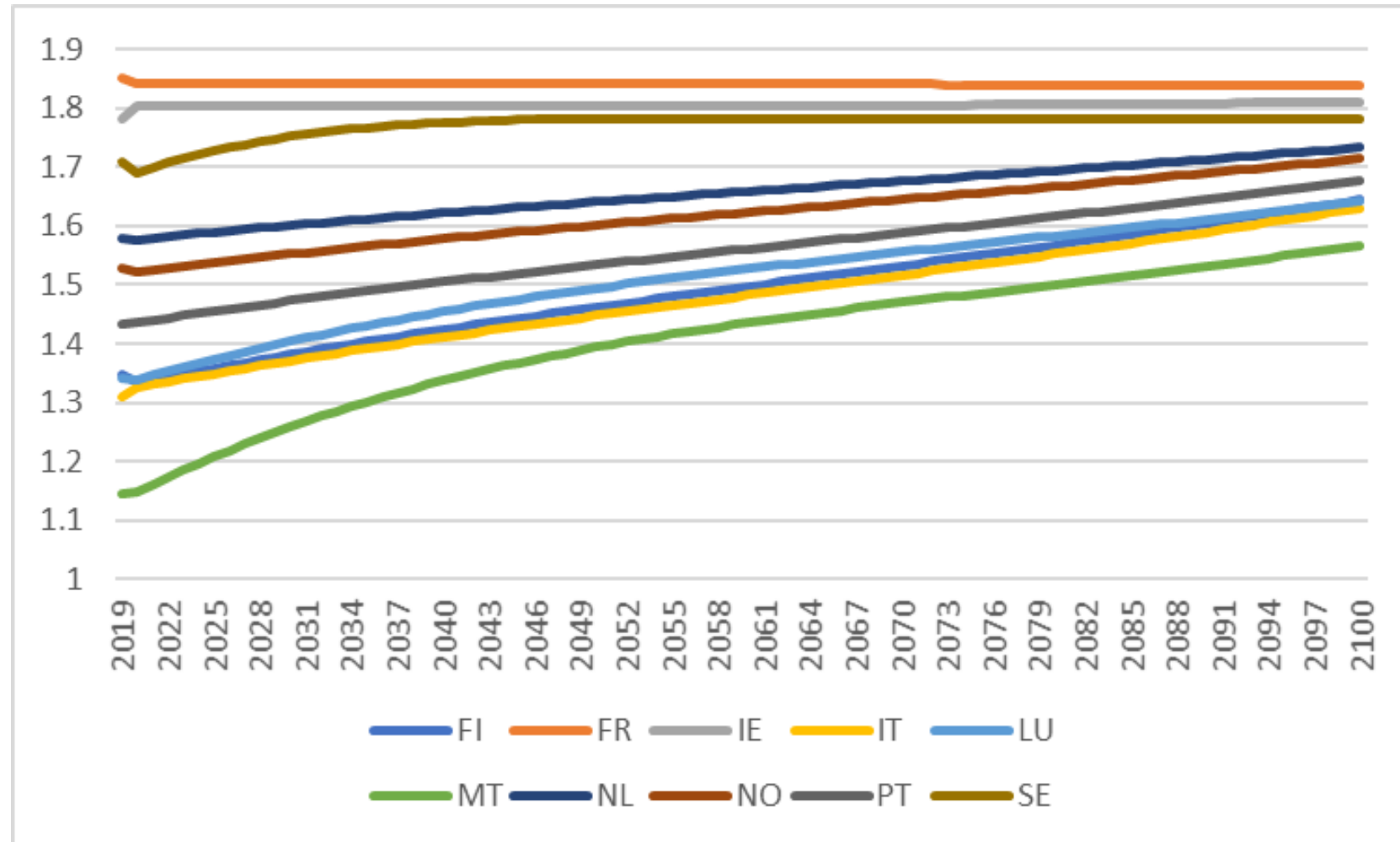
Source: Eurostat (online data code: demo\_gind)



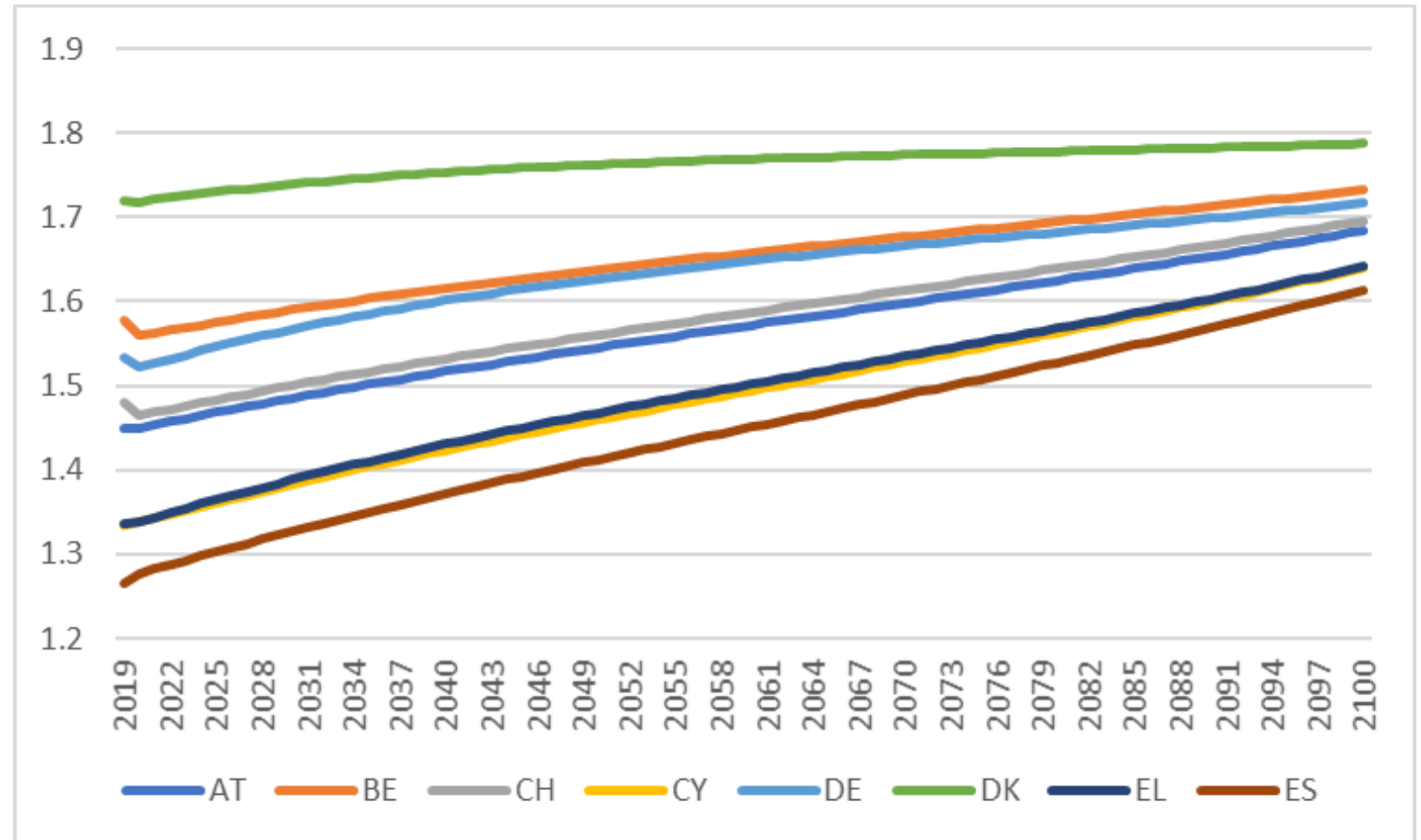
# Development of a range of indicators concerning the number of births and fertility across the European Union (EU)

Fertility rates steadily declined from the mid-1960s through to the turn of the century in the EU Member States. However, at the beginning of the 2000s, the total fertility rate in the EU displayed signs of rising again. This development stopped in 2010 and a subsequent decline was observed through to a relative low in 2013, followed by a slight increase up to 2016 and another decrease since. In 2019, the total fertility rate in the EU was 1.53 live births per woman (as compared to 1.54 in 2018).

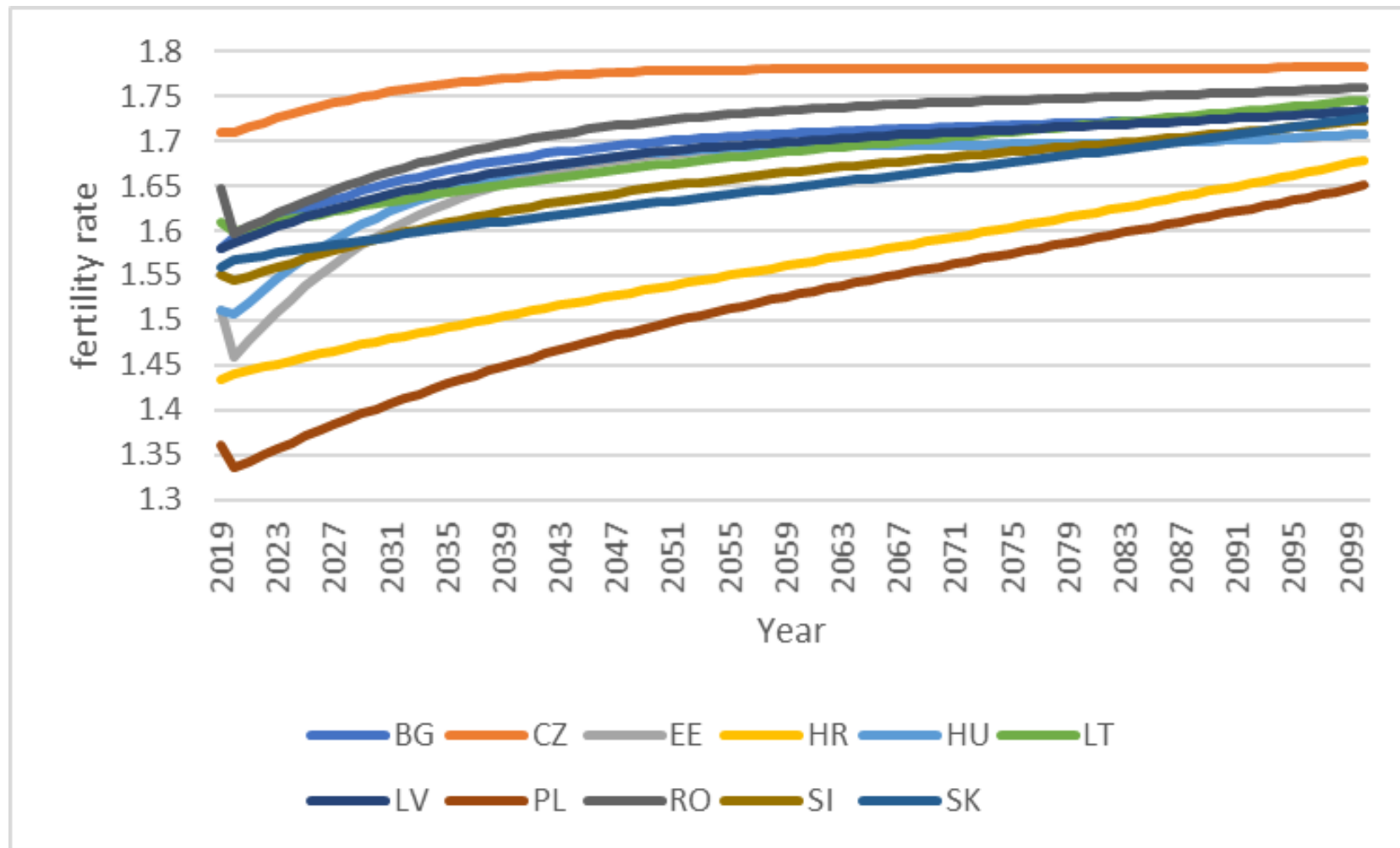
Baseline fertility  
rate  
assumptions for  
selected EU and  
EFTA Member  
States for  
period 2020-  
2100



Baseline  
fertility rate  
assumptions  
for selected  
EU and EFTA  
Member  
states for  
period 2019-  
2100



# Baseline fertility rate assumptions for selected new EU Member States



# Research findings regarding fertility

Francesca Luppi, Bruno Arpino, Alessandro Rosina (2020)

**The impact of COVID-19 on fertility plans in Italy, Germany,  
France, Spain, and the United Kingdom**

Descriptive Finding

DEMOGRAPHIC RESEARCH, VOLUME 43, ARTICLE 47, PAGES  
1399–1412

PUBLISHED 1 DECEMBER 2020

<https://www.demographic-research.org/Volumes/Vol43/47/>

DOI: 10.4054/DemRes.2020.43.47

**Table 1: Sample distribution of fertility plans and some country- and regional-level indicators of COVID-19, young people and female employment conditions, and fertility**

	Italy	Germany	France	Spain	UK
<b>Data from <i>Rapporto giovani</i>:</b>					
<b>Original sample size</b>	2,000	1,000	1,000	1,000	1,000
% not planning to have a child (January 2020)	73.4	78.6	72.5	78.4	76.4
<b>Sample size of those planning to have a child (January 2020)</b>	532	214	275	216	236
% Still planning <sup>1</sup>	25.6	30.7	32.0	21.2	23.0
% Postponers <sup>1</sup>	37.9	55.1	50.7	49.6	57.8
% Abandoners <sup>1</sup>	36.5	14.2	17.3	29.2	19.2

Francesca Luppi, Bruno Arpino, Alessandro Rosina  
(2020)



**Contextual data:****Number of COVID-19 cases in mid-April 2020 (1,000 inhabitants)**

in the country	2.7	1.6	2.0	3.9	1.5
in the regions with the highest number of cases <sup>2</sup>	4.6	2.2	3.2	7.3	1.9

**% of NEET<sup>3</sup> (15–24) in 2019<sup>4</sup>**

in the country	18.0	5.7	10.6	12.1	11.5
in the regions with a higher number of cases	11.8	5.2	11.1	8.6	13.1

**Female employment rate (25–34) 2019<sup>5</sup>**

in the country	50.2	73.0	62.9	58.4	71.5
in the regions with a higher number of cases	68.4	78.2	74.2	76.7	76.4

**Mean age at birth 2018<sup>5</sup>**

in the country	32.0	31.1	30.6	32.2	30.6
in the regions with a higher number of cases	32.0	31.2	30.5	32.8	30.4

<b>Mean age at first birth 2018<sup>5</sup> (in the country)</b>	31.2	29.7	28.7	31.0	29.0
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**Total Fertility Rate 2018<sup>5</sup>**

in the country	1.29	1.57	1.88	1.26	1.68
in the regions with a higher number of cases	1.40	1.55	1.74	1.29	1.64



Francesca Luppi, Bruno Arpino, Alessandro Rosina (2020)  
The impact of COVID-19 on fertility plans in Italy, Germany,  
France, Spain, and the United Kingdom

- Fertility plans have not changed in the same way across age groups.
- A common trend across the countries is the increasing proportion with age of those 'still planning';
- i.e., the proportion is higher among individuals aged 25–29 and 30–34 than among their younger counterparts (18–24).

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and the United  
Kingdom

## RESEARCH RESULTS

- Research show that fertility plans have been negatively revised in all countries, but not in the same way. In Germany and France fertility plans changed moderately, with many people still planning or postponing their decision to have a child.
- In Italy, however, the proportion of abandoners is much higher than in the other countries, and the proportion of those deciding to postpone their plans is lower.

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- Moreover, across countries the demographic characteristics of individuals appear to be associated with fertility plans in different ways. In Italy, abandoners are common among individuals younger than 30 and those without a tertiary education. In Germany, abandoners are slightly more prevalent in the regions most affected by COVID-19.
- In the United Kingdom, the individuals that most frequently abandoned their fertility plans are those who expect the crisis to have a dramatic negative effect on their future income. Finally, in France and Spain we do not observe a clear pattern of revision of fertility plans.

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and the United Kingdom

- Historically, **economic and health crises have never been preferred periods for a couple to decide to have a baby** (e.g., Marteleto et al. 2020; Trinitapoli and Yeatman 2011; Sobotka, Skirbekk, and Philipov 2011; Vrachnis et al. 2014).

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on fertility plans in Italy,  
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and the United Kingdom**

➤ **Regarding health crises, the evidence shows that during and after major epidemics fertility declines strongly** (Stone 2020; see e.g., Chandra and Yu 2015a, 2015b; Chandra et al. 2018 for the Spanish flu, and Marteleto et al. 2020 for the Zika epidemic).

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Kingdom

- As for **economic crises**, an **overall economic downturn** and **the loss of jobs** create a **climate of great uncertainty**, which **depresses family projects** (Adsera 2011; Goldstein et al. 2013; Matysiak, Vignoli, and Sobotka 2018; Vignoli et al. 2020).

Francesca Luppi, Bruno Arpino, Alessandro Rosina (2020)  
The impact of COVID-19 on fertility plans in Italy, Germany, France, Spain, and the United Kingdom

- Therefore, although **the COVID-19 crisis has very special features compared with previous crises, we may expect similar demographic outcomes** (see Aassve et al. 2020 for a recent discussion of possible post-pandemic fertility trajectories according to countries' income level).



These results suggest that **different mechanisms are at work**, possibly due to the different:

➤ **economic,**

➤ **demographic, and**

➤ **policy**

**pre-crisis background and post-crisis prospects.**

➤ Low-fertility contexts in particular appear to be more at risk of a fertility loss due to the crisis

# Poland

Poland's population has slowly decreased in the past 20 years mostly due to the emigration of young people seeking better opportunities.

# Poland: impact of COVID-19 on population dynamics

According state agency Statistics Poland data in December 2020 for 11 months of 2020,

- number of deaths was the **highest since World War II** and the **number of births the lowest in 15 years**.

# Poland: impact of COVID-19 on population dynamics

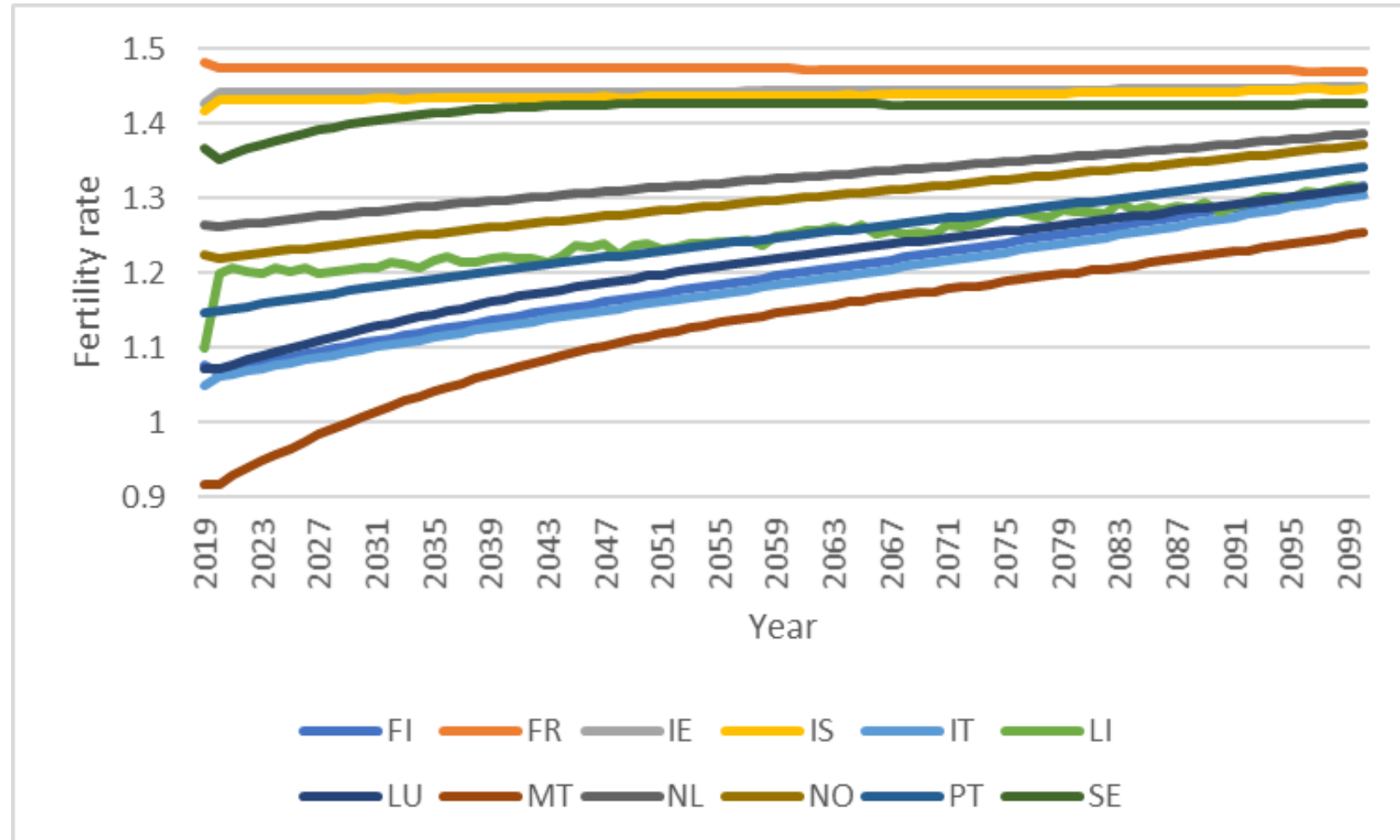
Poland, a nation with a **population of more than 38 million**,

- registered **357,400 births in 2020**, the lowest number since 2005,
- and some **486,200 deaths from various causes**, the highest number registered since the war.
- The overall **data in 2020** showed **a population loss of some 129,000 people**, compared **with a decline** of some **36,400 the 2019**.

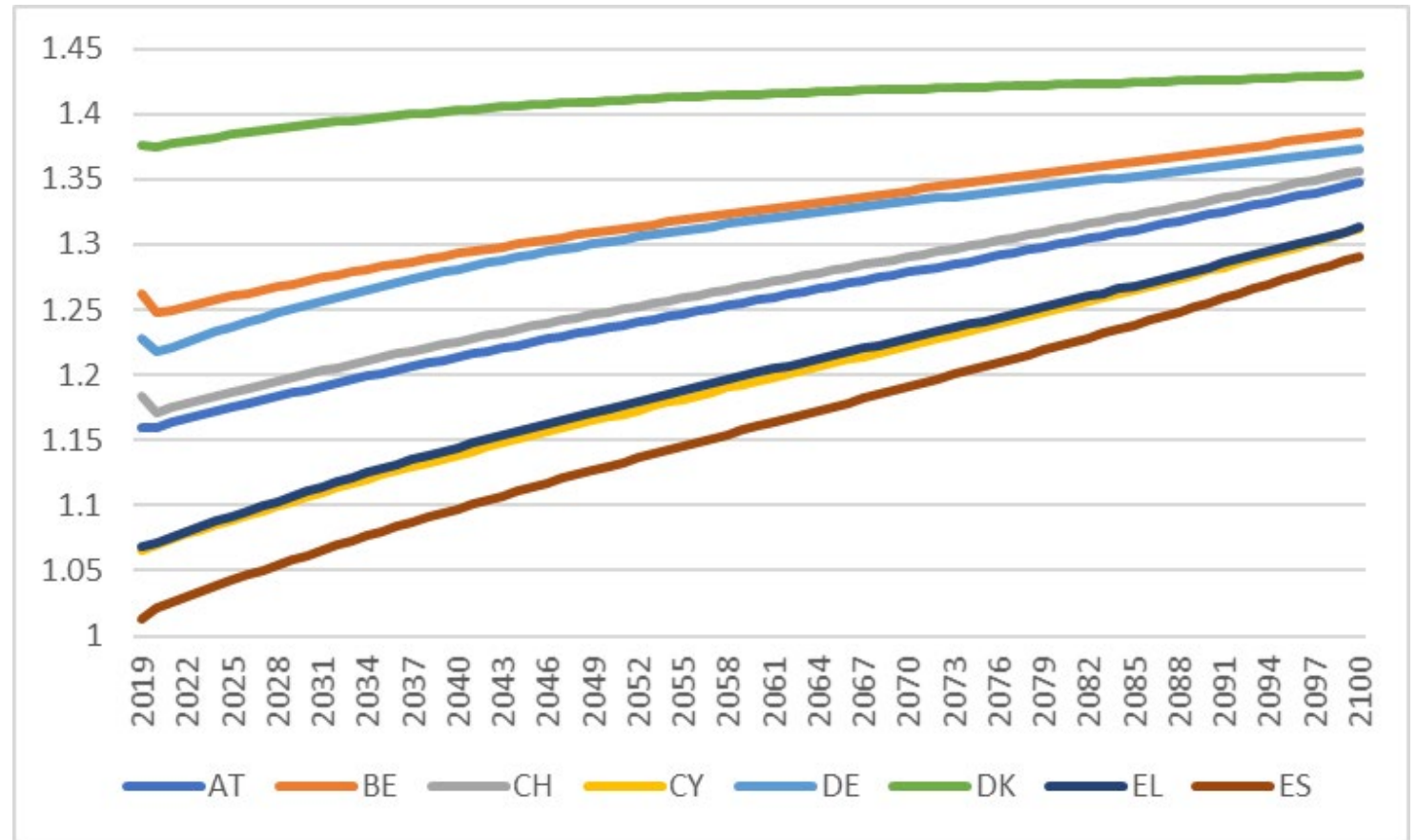
# Poland: impact of COVID-19 on population dynamics

- Minister of Family and Social Policy Marlena Malag ascribed the high death rate to the pandemic and said it would take a long time for the current government programme of family benefits intended to boost the birthrate to reverse the negative trend.

Low fertility rate  
assumptions for  
selected EU and  
EFTA Member  
states for  
period 2019-  
2100

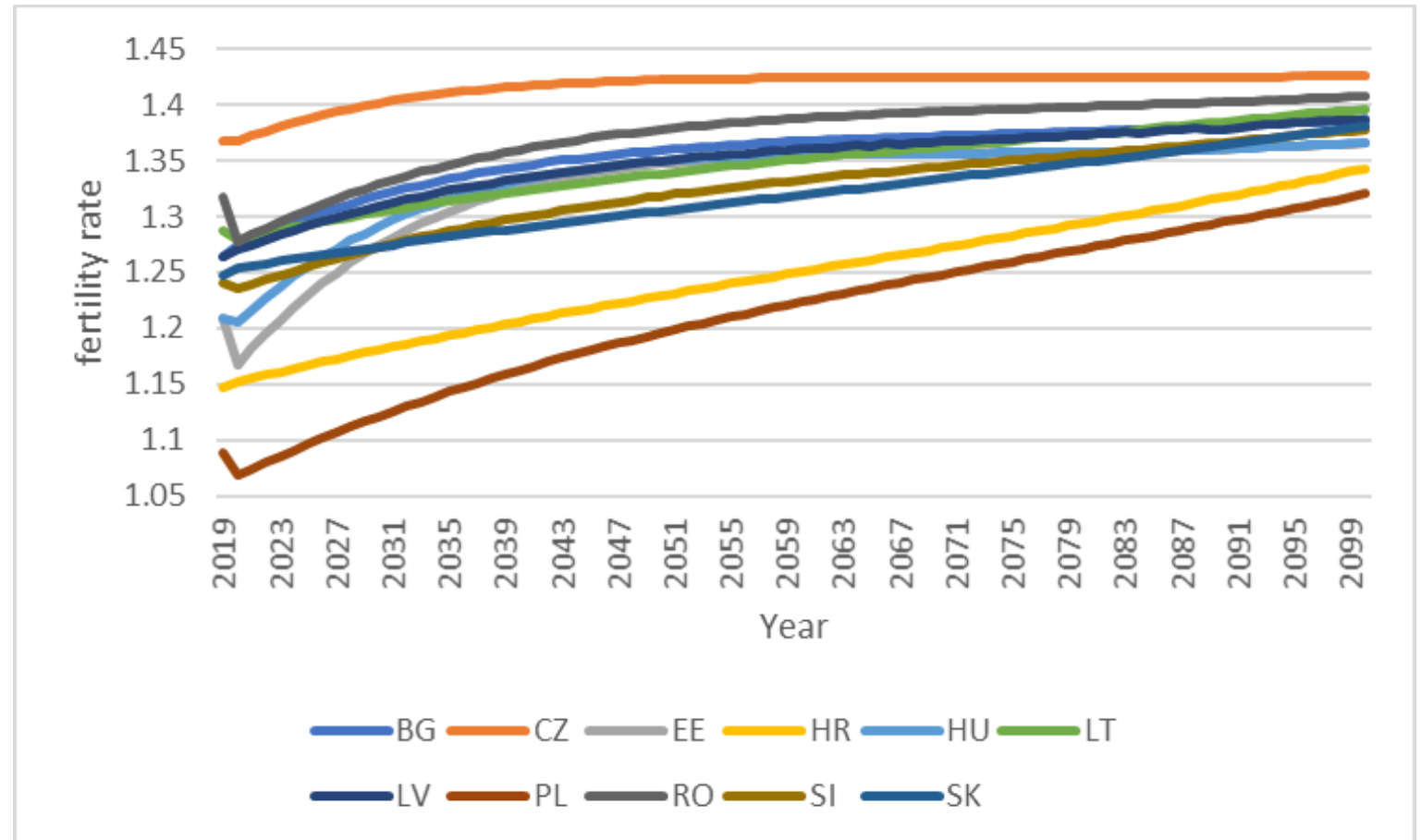


Low fertility rate  
assumptions for  
selected EU and  
EFTA Member  
states for  
period 2019-  
2100





# Low fertility rate assumptions for selected new EU Member States



# Thank you for attention!

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