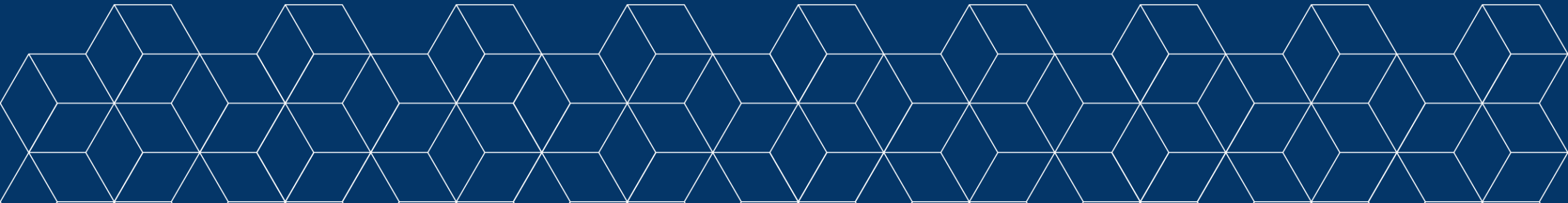CORRADO POLLI, OLIVIERO CASACCHIA, ALDO ROSANO

PROJECTING MIGRANT POPULATION IN ITALIAN POPULATION TO 2050

Giornate di Studio sulla Popolazione - Population Days 2023

Dept. of Political Sciences of Roma TRE University, 1-3 February 2023

INTRODUCTION

- Low levels of fertility and increasing survival at old age imply a pronounced ageing of population.

- This dynamic, which is taking place in all European Population, also affects the foreign component of these population.

- Available data show that the foreign component of European populations is experiencing an **ageing process** even in countries where net migration gains are substantial.

- In Italy, during the period from 2002 to 2022, the <u>number of foreigners</u> *aged 65 and older* increased from 41k (3 percent of total) to 254k (5.1 percent of total).

- The foreign resident population increased from 1.35 mln in 2002 to 5.00 mln in 2022.

BACKGROUND

- Immigration plays a role in reducing population ageing in the short run (...) The first generation of immigrants shifts progressively into old age, and if they have not returned home, they too contribute to the population ageing in the receiving country (Gesano and Strozza, 2011).

- Immigrants become older and retire; their fertility typically adapts rather quickly to the standards of the host country (De Santis, 2011).

AIM OF PAPER

- Many Research Institutions and International Organizations produce population projections (UNPD, Eurostat, ISTAT, etc.) but few of them focus on the foreign component <u>by age</u>.

- The ageing of the foreign component may have direct effects on the composition of the Labour Force and repercussions on health care and pension spending.

- The focus of the study is to forecast the resident Italian population to 2050, highlighting the foreign component by age.

METHODOLOGY

- The methodology adopted is based on the composition of multiple independent and non-homogeneous

  Poisson processes related to birth, death, immigration and emigration events.

- Events are simulated one at a time and each event is viewed as a realization of a particular Poisson process.

- In order to forecast the Italian resident population, we used Prodest Software.

- The Prodest Software adopts a stochastic approach based on the properties of point-event processes.

- The entire procedure is repeated a fixed number of times, generating for each year of study, several virtual

  populations.

METHODOLOGY

- The procedure requires a set of assumptions for future levels of fertility, mortality, emigration and immigration :

- Age structure of Population by sex at the beginning of the forecast period.

- Death rates by age and sex at the beginning and end of the forecast period.

- Fertility rates by age at the beginning and end of the forecast period.

- Emigratory rates by age and sex at the beginning and end of the forecast period.

- Average number of immigrants flow.

- Age structure of immigrants by sex at the beginning of the forecast period.

METHODOLOGY

- The forecast interval is from 2020 to 2050

- Age-specific mortality rates from 1960 to 2019 were considered to construct the future mortality scenario and **Lee-Carter's method** was used to predict the rates to 2050.

- In order to estimate the age-specific emigratory and immigratory rates, we have applied Roger-Castro method to available data.

- We have assumed the same hypothesis of ISTAT for their population projections for immigrant flows and fecundity (TFR from 1.2 to 1.5).
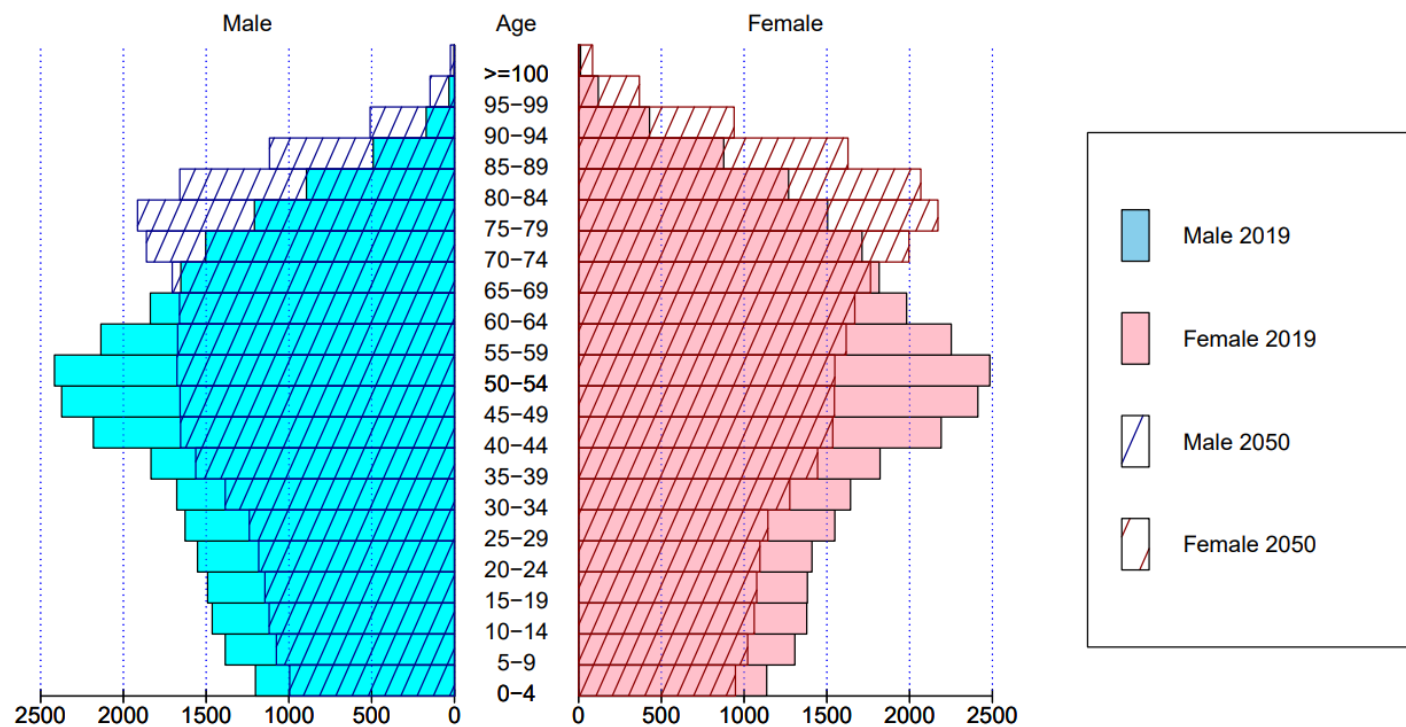
RESULTS

Population size, 2002-2019, and population forecasts with prediction intervals,2020-2050
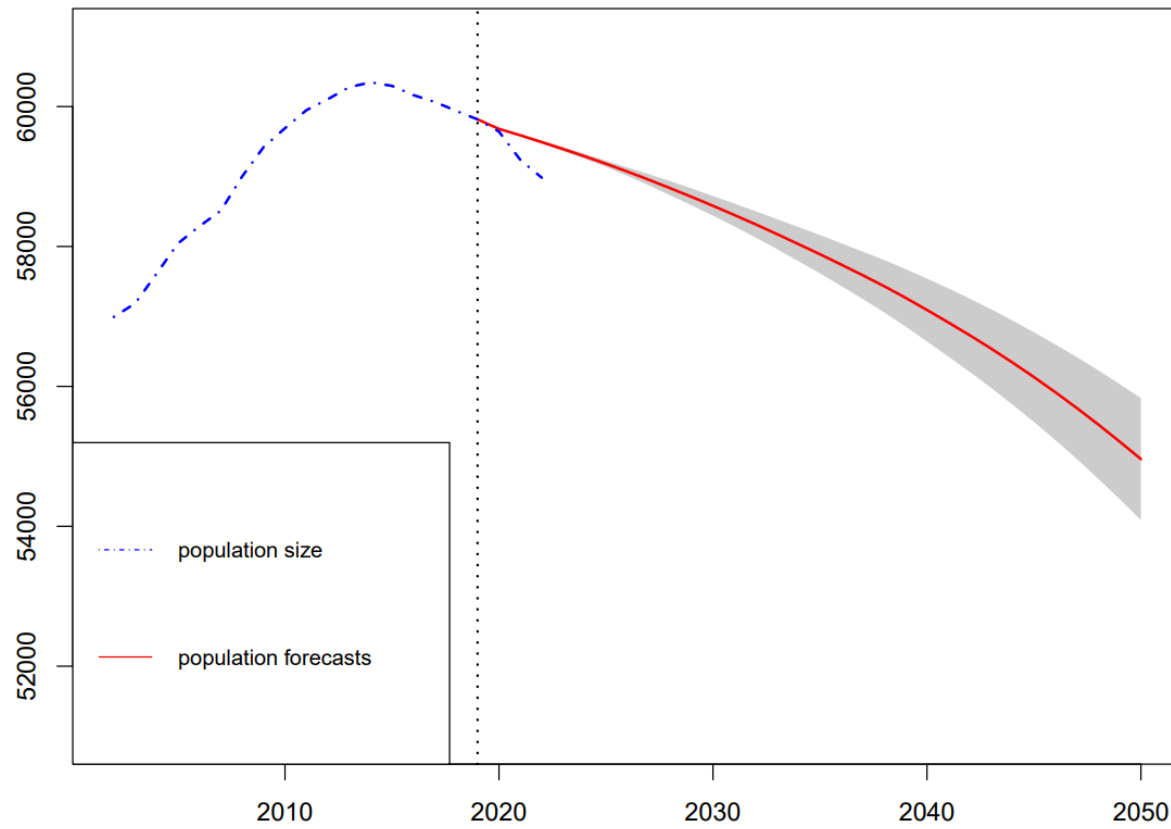
RESULTS

Age pyramids of Italian Population from 2019 to 2050

RESULTS

Projected demographic indicators to 2050 - Italy

	2019	2035		2050	
	Indicator value	Mean value	Standard Error	Mean value	Standard Error
Average age of population	45.5	49.3	0.2	51.5	0.7
Child dependency ratio	20.6	18.9	0.3	21.6	0.8
Old age dependency ratio	35.8	53.8	0.2	69.3	1.1
Age dependency ratio	56.4	72.7	0.3	90.2	1.0
Average age at death	80.7	84.2	0.1	86.8	0.1
Number of children	401444	408637	16600	377074	22738

-Own elaborations on Istat, Eurostat data

RESULTS

Age structure of the foreign population in 2019 and 2050
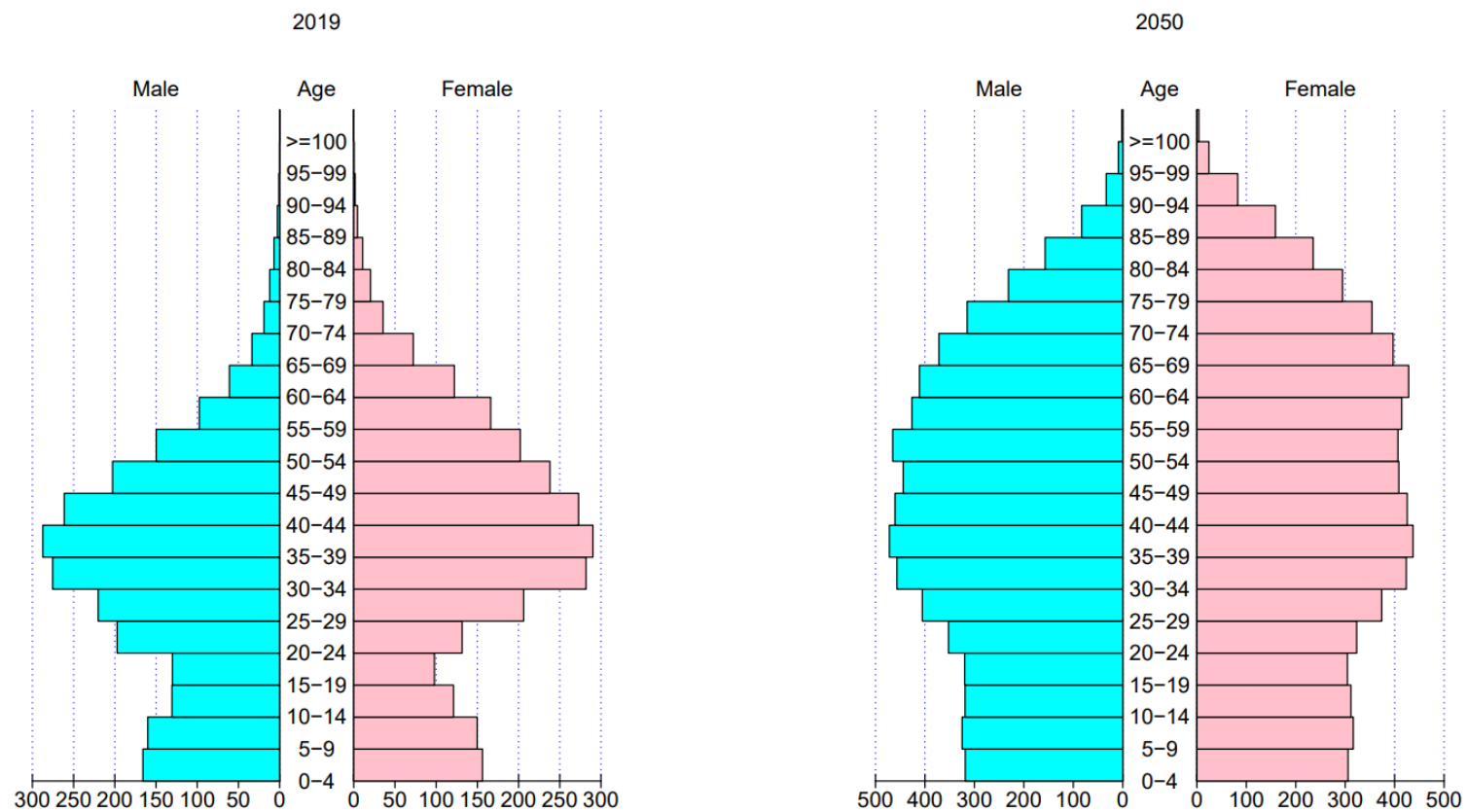
CONCLUSIONS

- The simulation showed that the age structure of foreigners seems to converge with that of Natives.

- In the next years, the migratory balance will be always positive and growing, but not sufficient to compensate for the decrease in population resulting from progressive ageing and the reduction in births.

- The results are similar in absolute terms to those available in scientific literature and official statistical report. In addition, we provide details about the forecast of the age structure.

- Next steps we will implement R packages to allow wider application of the method.

THANKS FOR YOUR ATTENTION!

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