

Demographic and labor force impacts of future immigration flows into Europe: does the region of origin matter?

Guillaume Marois^{1,2}, Michaela Potancokova¹,
Miguel Gonzalez-Leonardo¹

1. International Institute for Applied Systems Analysis, Laxenburg, Austria

2. Asian Demographic Research Institute, Shanghai University

9th World Congress of the International Microsimulation
Association

8-10 January 2024, Vienna, Austria

Objective

- Traditional population projection models usually consider immigrants as a homogenous population, irrespective of the differences they have based on their place of origin
- What would be the impact of major changes in the regions of origin of immigrants on future demographic trends and dependency ratios in EU/EFTA?
 - Multidimensional projections using microsimulation
 - Includes the interactions of the place of birth with a large set of events
 - “What if scenarios” changing regions origin of immigrants
 - Not a prediction

Need to go beyond the age dimension for a better assessment of challenges associated with population aging

- *Age dependency ratio*

$$ADR = \frac{Pop(0 - 14) + Pop(65+)}{Pop(15 - 64)}$$

- Not all people in the working age work. Not all older people are retired

Labor force dependency ratio

$$LFDR = \frac{Inactive}{Active}$$

- Not all workers are equally productive

Productivity-weighted labor force dependency ratio (Marois et al. 2020)

$$PWLFDR = \frac{Inactive}{\sum_{e=1}^k W_e * Active_e}$$

e=education levels (1=less than high school, 2=high school, 3=postsecondary)

W=Productivity factor based on salary (controlled for age, country, education, sex):

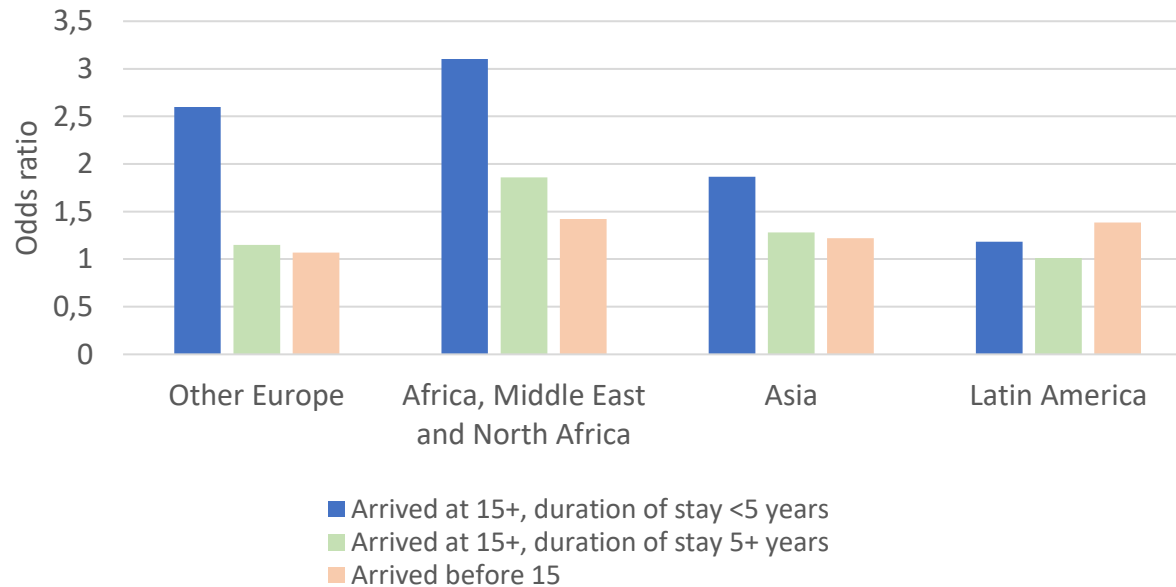
Projection model

- **QuantMig-Mic** microsimulation projection model
 - 2015-2060
 - EU/EFTA countries (31)
 - Several socioeconomic dimensions and their interaction
 - region of residence, age, sex, educational attainment, labor force participation, region of birth, duration of stay, age at arrival in host country, religion, language spoken, educational attainment of mother.
 - Includes many 'place of birth'-specific behaviors
 - Stochastic simulation of individual life courses (Monte-Carlo)
 - Continuous time / dynamic / Time-based
 - Built with Modgen

Fertility behaviors in the destination country vary with the region of origin of immigrants

- Even after controlling for education, immigrants from Africa, Middle East and North Africa have much higher fertility at their arrival, and the convergence with natives is slower

Odds ratios of giving birth by region of origin, generational status and duration of stay, native-born = reference



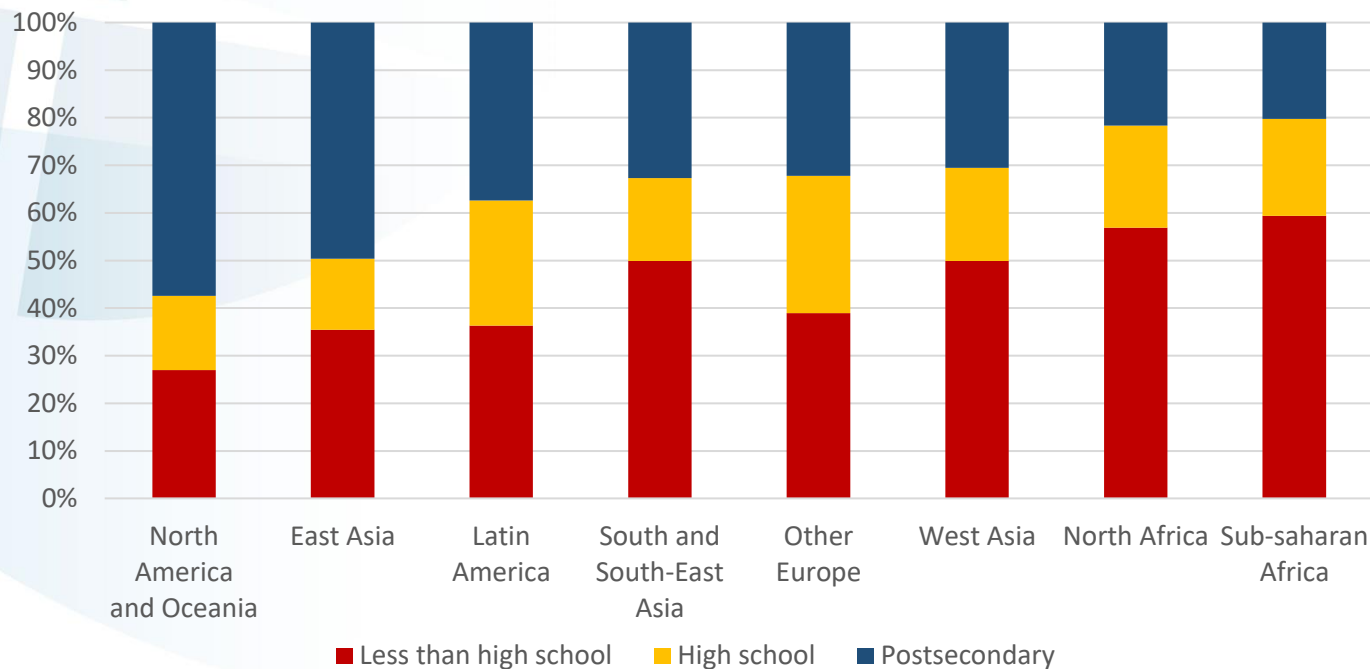
* Control for age, education and country of residence

Source: Marois et al. (2023)

There is an association between the educational attainment of immigrants and their region of origin

- Immigrants from SS Africa are less educated, those from East Asia and North America are more educated
 - Indirect impact on fertility and mortality
 - Indirect impact on the labor force participation

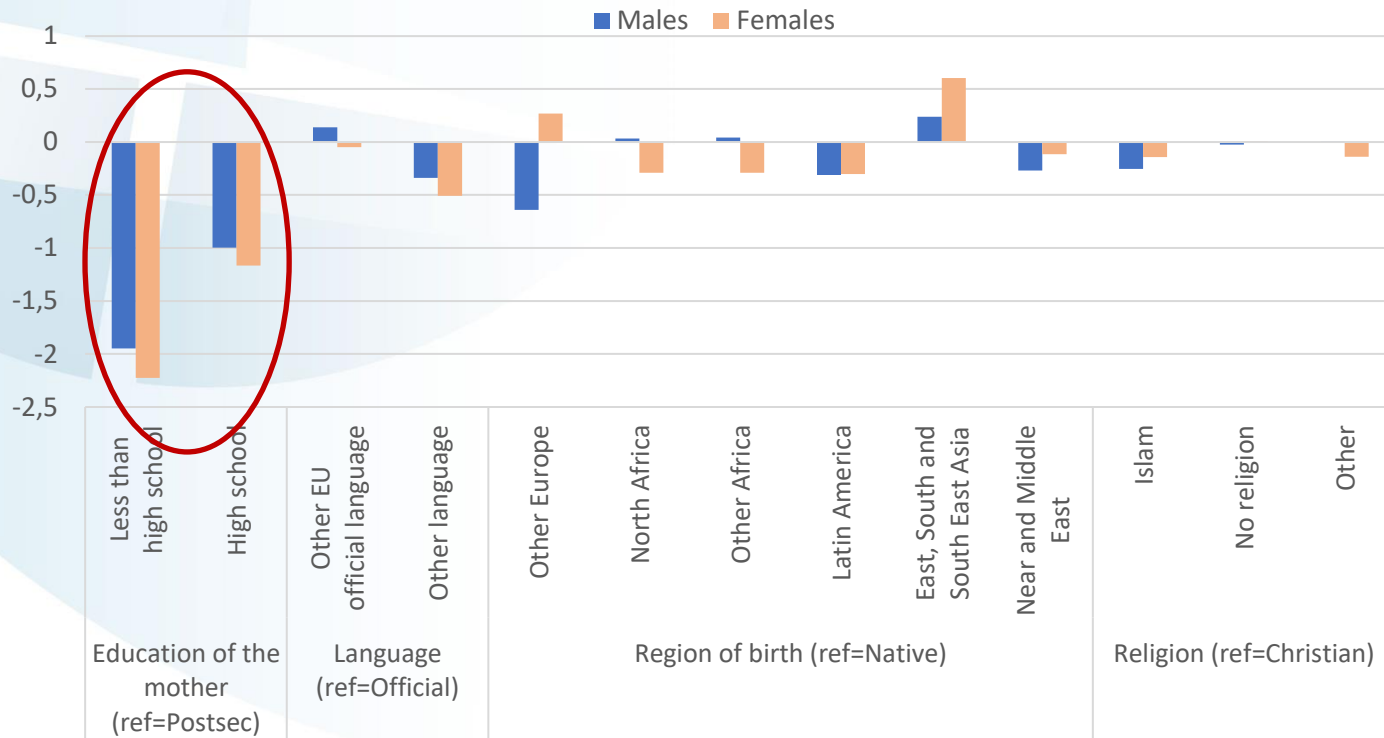
Educational attainment of immigrants arrived between 2011 and 2019 (age 15+) by region of origin



Source: EU-LFS, authors' calculation

The region of origin as well as other socioeconomic characteristics of immigrants correlated with the region of origin also influence the educational attainment of their children raised in Europe

Odds of getting a postsecondary education (controlled for birth cohort)

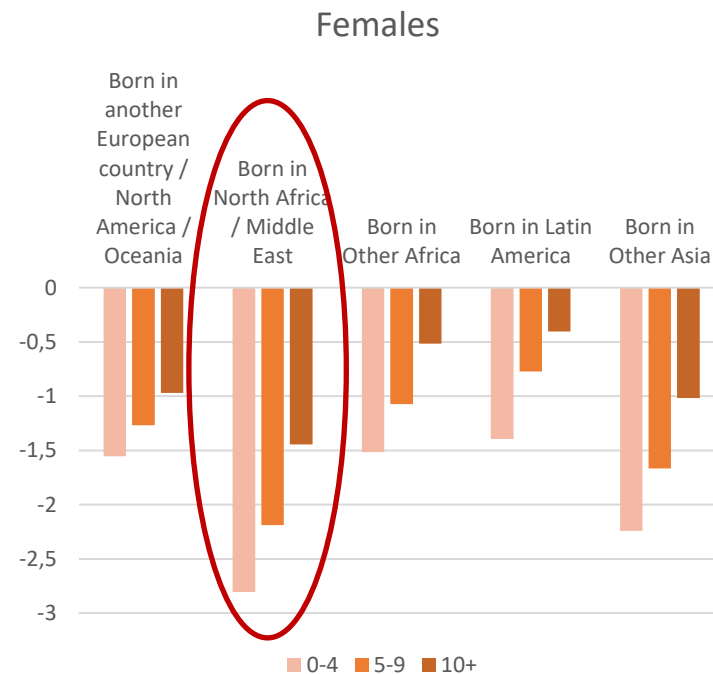
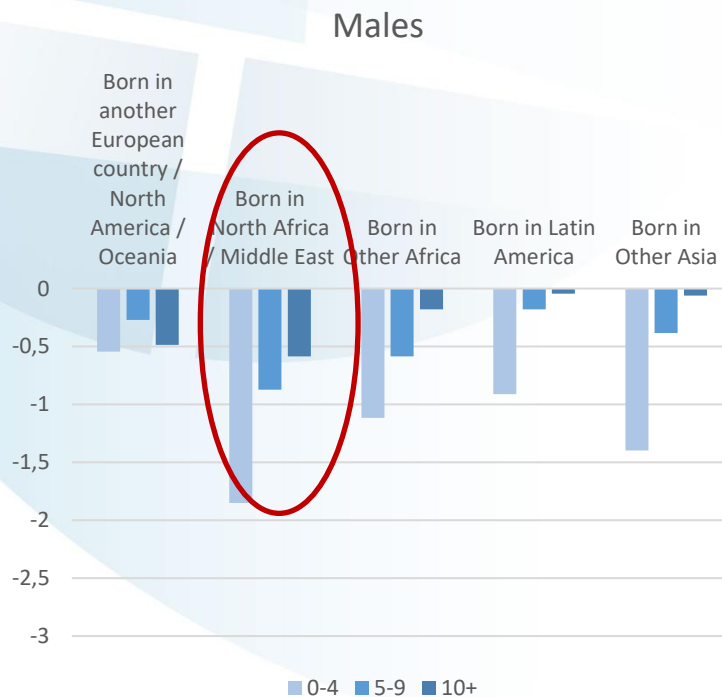


Source: ESS, authors' calculation

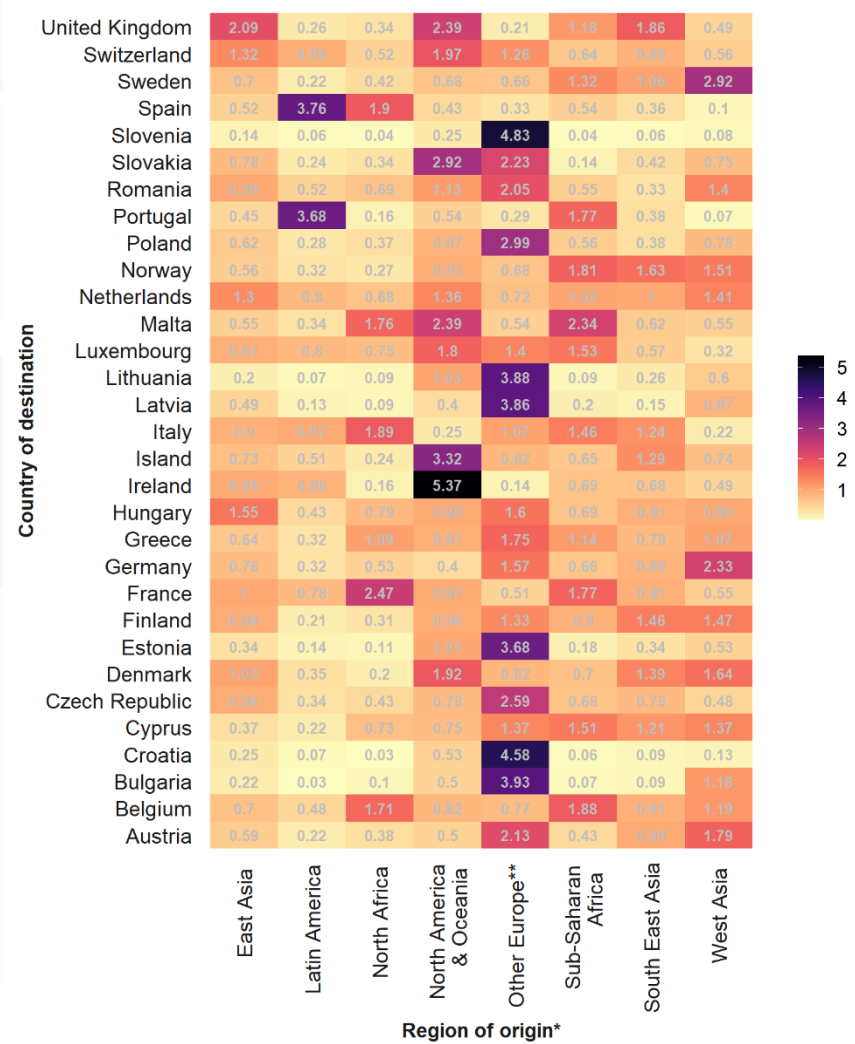
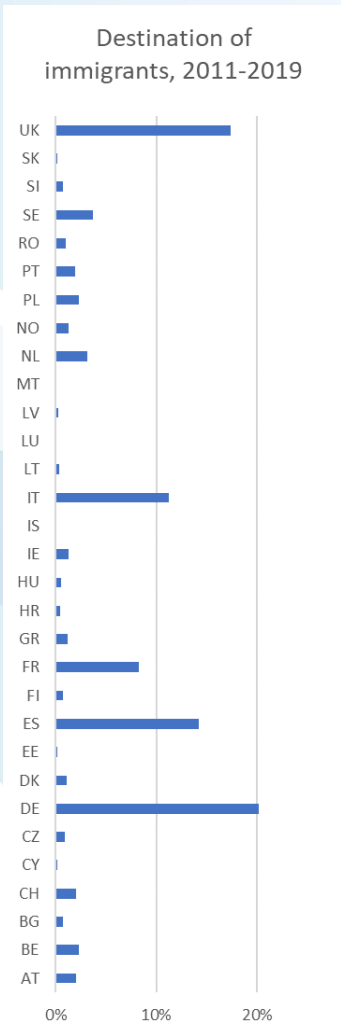
The integration in the labor force varies with the region of origin of immigrants

- The integration in the labor force is slower for immigrants born in North Africa and Middle East
- Varying double disadvantage for women immigrants

Parameters for the region of birth and duration of stay from logit regression on the labor force participation (ref=native)



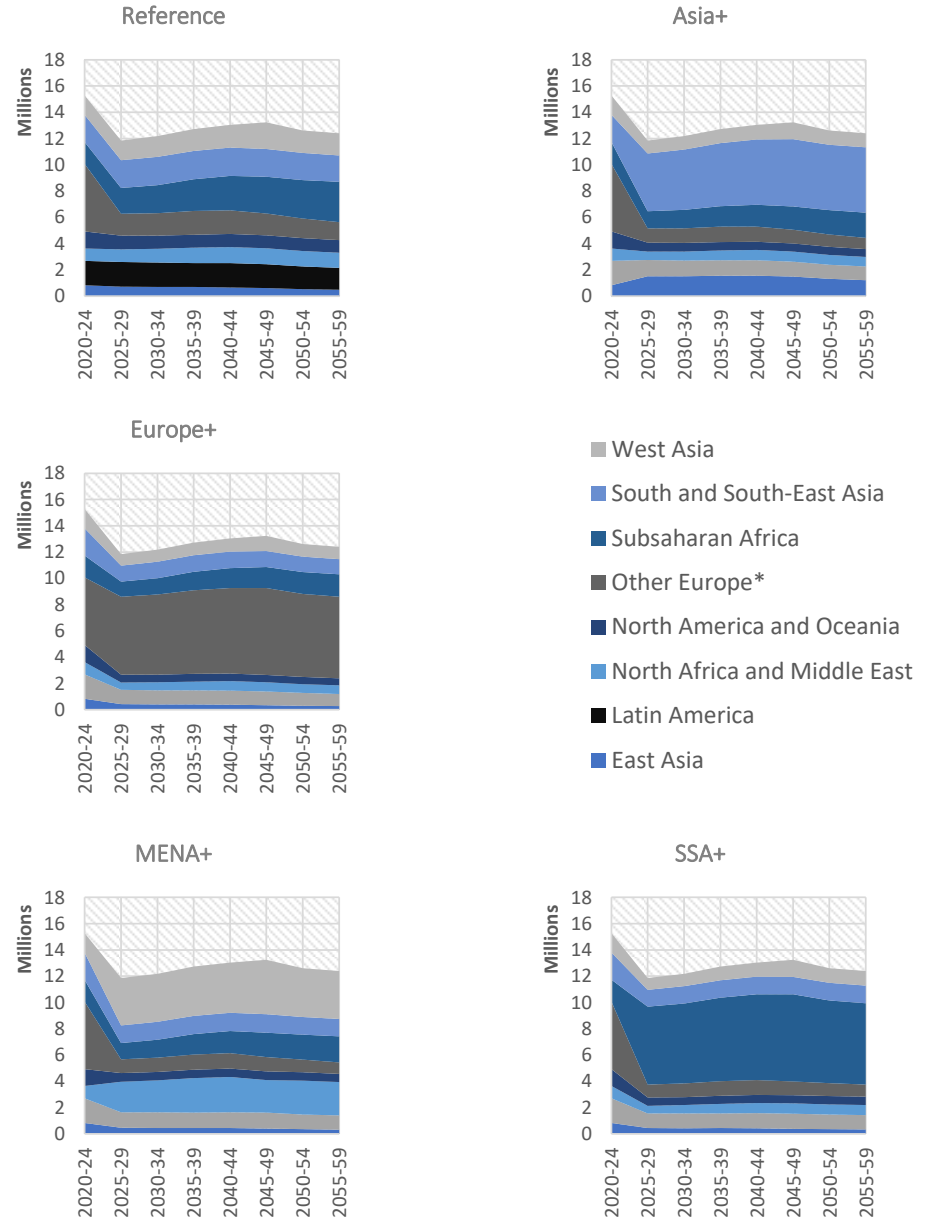
The region of origin is also associated with the destination



Assumptions on the distribution of the region of origin of immigrants by scenario

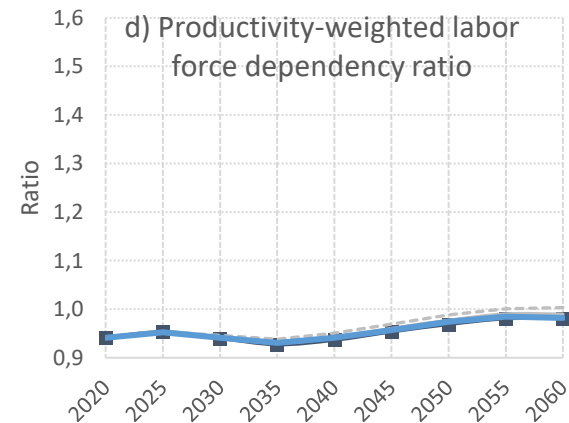
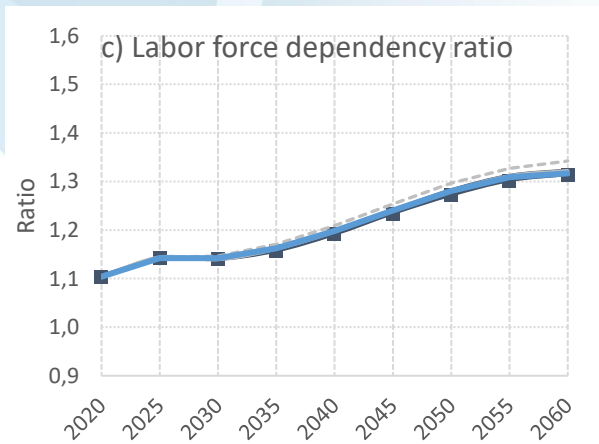
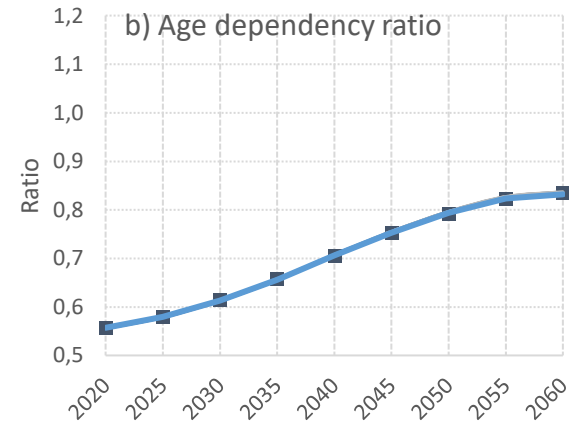
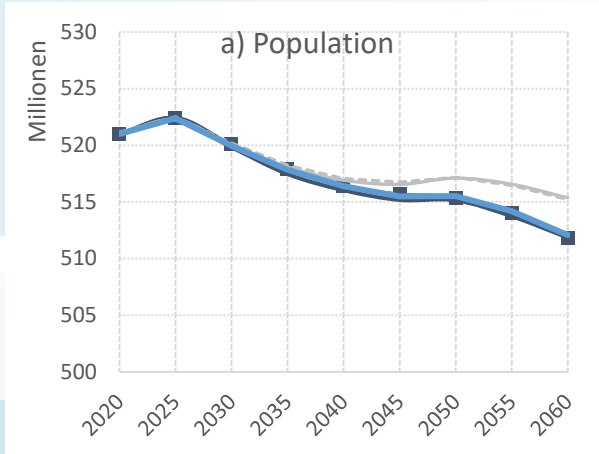
Scenarios

- 5 scenarios in which only the region of origin of immigrants changes from 2025.
- All other parameters are the same for group-specific behaviors, but can differ at the aggregated level by composition effect



At the European level, major changes in the origin of immigrants would not have big impact

Projected population, labor force dependency ratio and productivity-weighted labor force dependency ratio according to 5 scenarios, EU/EFTA, 2015-2060



— Reference

■ Europe+

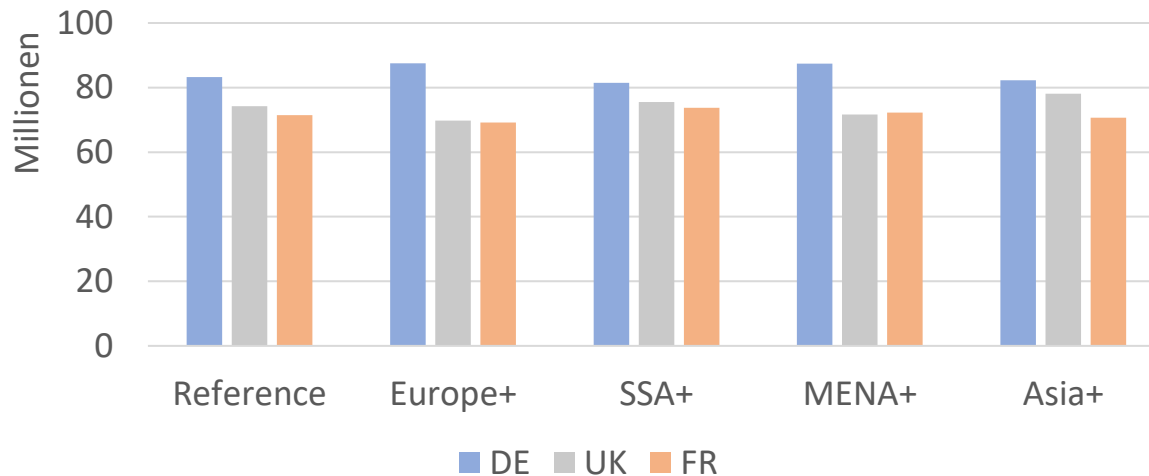
— SSA+

--- MENA+

— Asia+

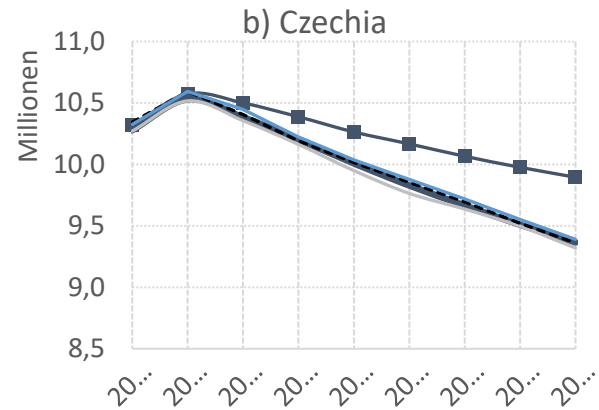
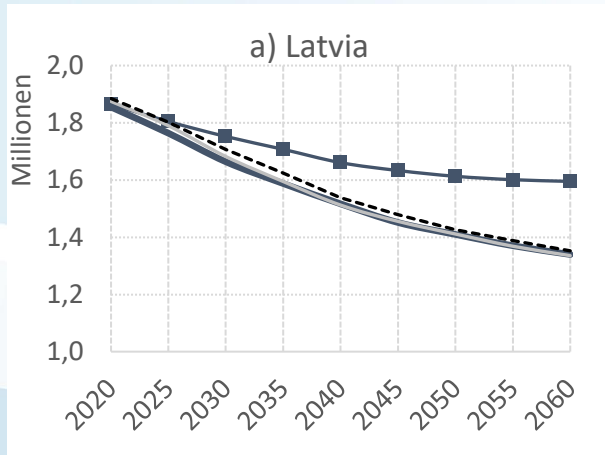
- Changes in the origin of immigrants might however alter the regional distribution of the population in EU/EFTA
 - Larger immigration flows from Sub-Saharan Africa might reduce the gap between the three countries
 - Larger flows from the Middle East or from the rest of Europe (Ukraine, Russia, etc.) might consolidate the leading position of Germany in terms of population size

Projected population size in 2060 of Germany (DE), the United Kingdom (UK) and France (FR) according to 5 scenarios

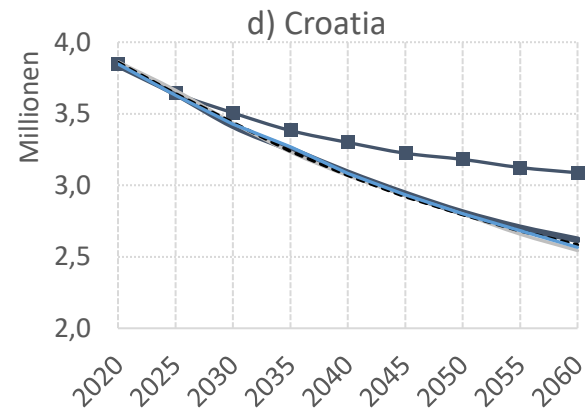
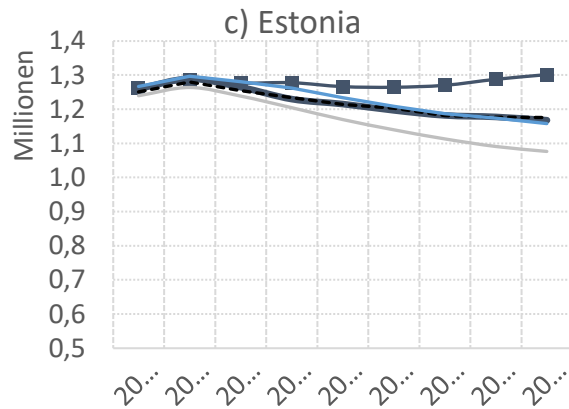


Changes in immigration origins could also impact the population size of smaller countries that do not traditionally receive high migration flows

Projected population size according to 5 scenarios, 2015-2060

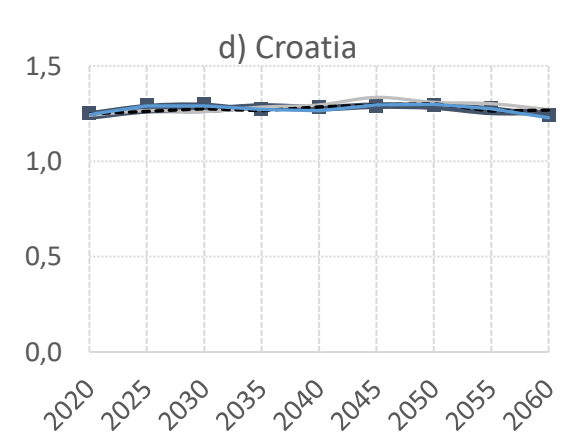
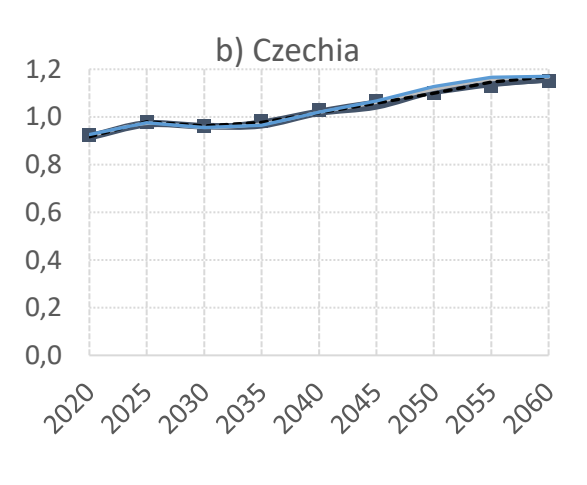
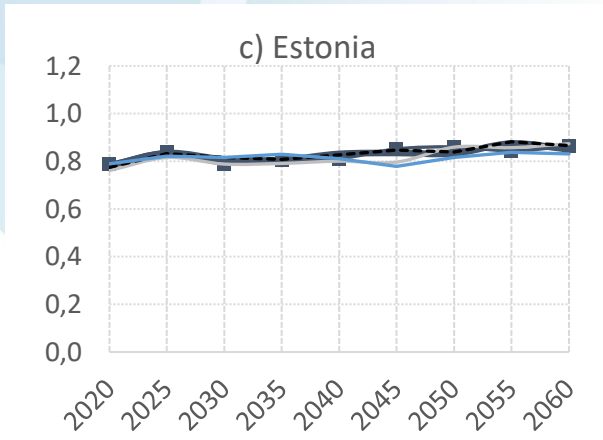
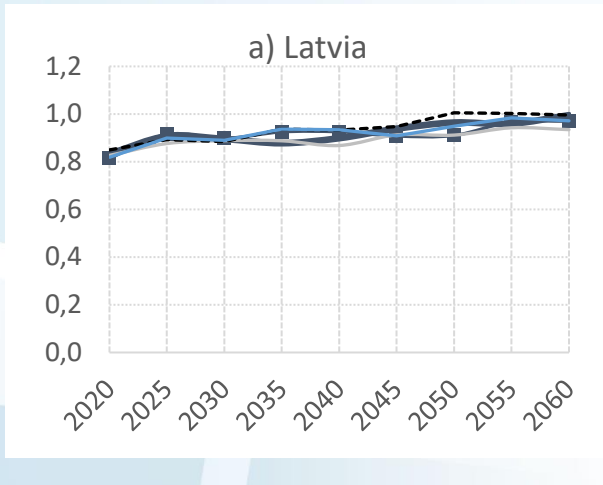


- Reference
- Europe+
- SSA+
- MENA+
- Asia+



Even in countries where some scenarios result in very different population sizes, the trends in dependency ratios remain unimpacted

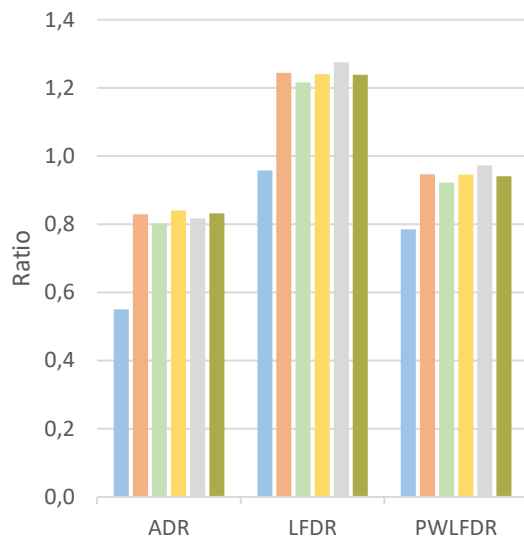
Projected productivity-weighted labor force dependency ratios according to 5 scenarios, 2015-2060



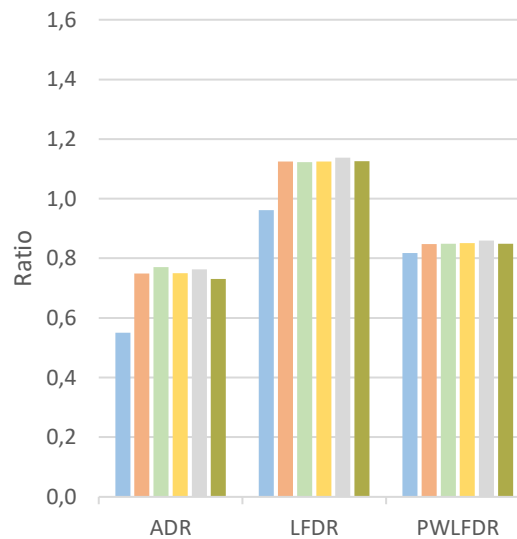
No significant impact on any dependency ratios of high immigration countries neither

Projected dependency ratio of (a) Germany, (b) United Kingdom and (c) France according to 5 scenarios, 2020-2060

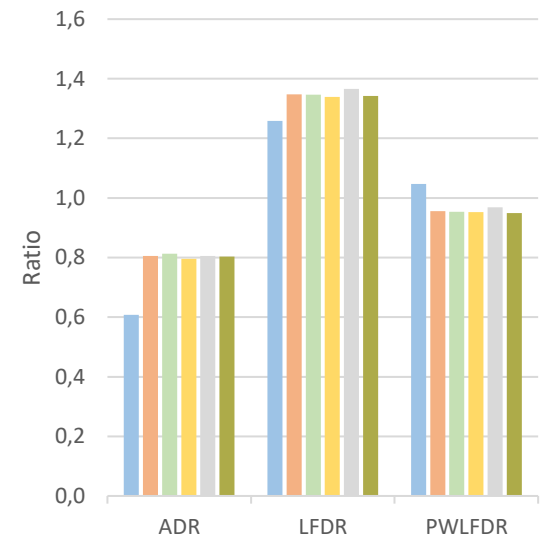
a) Germany



b) United Kingdom



c) France



■ 2020

■ 2060 - Reference

■ 2060 - Europe+

■ 2060 - SSA+

■ 2060 - MENA+

■ 2060 - Asia+

Why such a small impact on the productivity-weighted labor force dependency ratio?

Changes in the origin of immigrants would increase the number of immigrants in some places

1. Marginal but positive impact on the age structure

- Fertility behaviors of immigrants are not different enough from native's one
- Convergence toward the behaviors of the native-born over time
- The younger age structure of immigrants is not a permanent characteristic
 - Immigrants also age, and with converged fertility rates, the impact on the population age structure is not sustainable

2. Marginal impact on the labor force participation/productivity

- Positive with higher education/labor force participation than native, negative otherwise
- Differences according to the place of births are not very important in any case
- Convergence of labor force participation rates with the duration of stay

Positive factors (younger age structure) are partly offset by negative ones (usually lower labor force participation rates and lower education)

Concluding remarks

- Major changes in the origin of immigrants...
...might reshape the spatial distribution of the population in EU/EFTA
 - With large immigration flows from the rest of Europe, population decline in Eastern Europe countries could be much less daunting
- ...would not change trends in dependency ratios in any countries
 - Demographic impacts other than on the age/education/labor force dimensions have not been investigated

Thank you

marois@iiasa.ac.at