Poland's Turn from a Sending to a Receiving Migration Regime: The Impact on Population Ageing

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Extended abstract

Conceptual background and objectives

In his seminal study on demographic transition, Jean-Claude Chesnais (1992, 1986) proposed a theoretical concept of Migration Transition (MT) to describe how the European countries switched from registering negative to positive international migration balance: at the turn of the 20th century mass emigration overseas relieved the population pressure arisen due to high natural increase (Hatton and Williamson, 1998), but after the WW2, the coincidence of low demographic dynamics and intensive economic growth restrained emigration and incited the inflow of foreign labour (Fassmann and Reeger, 2012). This turn from a 'net sending' to a 'net receiving' status took place first in the West of Europe (in the 1950s and 1960s), later in the North (in the 1960s and 1970s, with the exception of the UK) and most recently, in the South (in the 1980s) (Okólski, 2012).

Post-communist countries of Central Europe, in turn, experienced substantial population outflows in the last two decades. These were related to the freedom of population movements ensuing the accession of those countries to the EU and the abolishment of labour market restrictions in the 'western' EU member states (Bruecker et al., 2009). This situation changes rapidly, though, and the most recent Eurostat statistics[2] support the view that the turn in international migration regime (from a net sending to a net receiving) will apply to Central Europe as well. However, international migration projections, usually based on net migration rates, fail to predict radical turns in migration trends, such as a reversal from a net sending to a net receiving regime. This study concentrates on Poland, demographically the largest post-communist country of Central Europe, and its objective is twofold; first, we establish a population projection including an expanded international migration component consisting of four flows: immigration and emigration, each applying separately to Polish and foreign citizens. On the basis of the experience of other European countries that are at more advanced stages of the MT, we aim to investigate how, in the Polish case, these four types of international migration flows will respond

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[1] The contribution of Marta Anacka to the empirical part of this study (the population forecast) is highly acknowledged.
[2] The Czech Republic and Hungary started to register positive, albeit negligible net migration balance in the 2000s, whereas Slovakia and Slovenia did the same in the 2010s. According to Eurostat, in 2017 Poland became the EU member state that issued the highest number of first residence permits to third-country nationals.

to low (or negative) natural increase, shrinking numbers of new entrants to the labour market, dynamic economic growth and low unemployment rates (among other factors).

<u>The other objective</u> of the study concerns the impact that international migration exerts on population ageing throughout the migration transition. In the course of the demographic transition, the process of ageing is driven mostly by the decline in fertility and in mortality (Bengtsson and Scott, 2010; Horiuchi, 1991; Preston and Stokes, 2012), whereas the role of international migration remains marginal (Fihel et al., 2018). However, as long as international migration is highly selective with regard to age, it does affect the age composition of a sending and a receiving population. Several studies for European countries and the US investigated how net migration contributed to population rejuvenation or ageing, but the results appear, at first glance, ambiguous or even inconsistent[3]. This is mostly due to the use of the "artificial" notion of net migration, differences in defining migrants (whether first generation only or subsequent generations are included as well) and the time lag between the investigated migration and its effect on the population's ageing or rejuvenation. In this study, we intend to exhibit the different impacts that the four types of international migration flows mentioned above will most probably exert on the age structure of the population of Poland until 2060 and we interpret our results in the context of the migration transition concept.

Methodology

The population forecast for the period 2015–2060 is based on the Bayesian framework established by the United Nations (UN) Department of Economic and Social Affairs. We use the World Population Prospects (WPP) models for fertility and mortality (Alkema et al., 2015), along with the provided estimation tools (Sevcikova et al., 2013). The international migration forecast, established deterministically, concerns international inflows and movements for periods of at least 12 months. First, we design panel models for a set of European countries as the most suitable tool to identify a common migration pattern for Europe. In the second step, we extrapolate the estimation results into a forecast for Poland. Our choice of explanatory variables for the panel models is constrained by theoretical considerations and limited data availability[4]: GDP variables with a forecast by the OECD (2014), unemployment with a forecast by the European Commission (2015), and several demographic variables computed recurrently from our population forecast (the percentage of the population in the mobile age of 20-39 years, the natural increase rate, birth rate, the old age dependency ratio (OADR) and the percentage of people in post-productive age).

To investigate the impact of international migration on population ageing, we apply the model of age-specific growth rates (Horiuchi and Preston, 1988) based on the earlier work by Samuel Preston and Ansley Coale (1982). In the version of the

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[3] For instance, in a comparative study for France and Italy both positive net migration (to the former) and negative net migration (from the latter) appeared to contribute to demographic ageing (Caselli and Vallin, 1990). In another study, positive net migration in France and negative net migration in Sweden were found to have a similar rejuvenating effect (Murphy, 2017).

[4] It is possible to use only those variables for which forecasted values of explanatory variables exist or can be estimated for Poland in the time horizon of the forecast.

framework developed by Preston et al. (1989), changes in the mean population age, A_p (captured by the derivative with respect to time), can be decomposed as follows:

$$\frac{dA_p}{dt} = \sum\nolimits_{x=0}^{\omega} r(x,t)c(x,t)\left(x - A_p(t)\right),$$

where $r(x, t)$ denotes the rate of growth of the population aged x at time t, and $c(x, t)$ denotes the proportion of the population that is aged x at time t. The rate of growth of the population aged x at time t, $r(x, t)$, depends on the following components of population change: – the number of births during the year ending at time $t-x$, – the survivorship of cohort born at time $t–x$ till time t, – a factor by which the cohorts of nationals and foreign citizens born during the year ending at time $t–x$ changed in size till time t due to, separately, outflow and inflow. As the decomposition analysis starts in 2010 and demographic data is missing for the period before 1920, the population's mean age is limited to the population under 90. This is an important limitation of this study.

Preliminary results

According to our forecast, in the 2010s and the 2020s the international migration in Poland will be dominated by the outflow of Polish citizens (Fig. 1). Over the following decades, however, two different tendencies will occur, namely growing inflow of foreign citizens and decreasing outflow of Polish citizens, whereas the inflow of Polish return migrants and the outflow of foreigners will remain stable. As a consequence, around 2025–2029 Poland will switch from the regime of negative into the regime of positive net migration. The proportion of foreign-born persons[5] in the Polish population will increase steadily, with the shares rising from less than 1% in 2010 and reaching approximately one seventh overall and one sixth of the working age population by 2060.

Between 2010 and 2060, the mean age of the Polish population under 90 will increase from 39.6 to 46.4 years, that is by 6.8 years. The population ageing will be particularly intense at the beginning of the forecast period, that is, until 2030, when cohorts of post-WW2 baby boomers will reach the old age (the effect of high fertility after WW2 and improved survivorship of these cohorts). Mortality decline will affect the population ageing most significantly, contributing to the increase in the population's mean age throughout this period by 4.29 years (Fig. 2). Fertility decline will constitute another important factor, contributing to the increase in the population's mean age by 3.08 years, but its impact will decline substantially till 2060. Thus, as in other ageing populations, the process of ageing in Poland will be driven more and more by mortality decline, whereas the role of fertility will become less and less important[6].

The impact of international migration will, in the long run, be twofold: while outflow will contribute to the rejuvenation of the population, the inflow will accelerate the process of ageing (Fig. 3). As for the outflow, we expect that its joint contribution

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[5] Foreign citizens in the moment of arrival, but as some of them will naturalise in Poland by 2060 we use the term foreign-born.
[6] This is also due to the fact that the WPP forecast imposes stabilization of fertility in the long run.

into the mean age growth will be -3,60 years, that is -2.54 years due to the outflow of Polish citizens and -1.06 years due to the outflow of foreign citizens. The effect observed for Polish citizens concerns mostly baby boom cohorts born at the turn of the 1980s who largely emigrated after the EU enlargement in 2004 and who, by 2040, would reach an old age. The effect observed for foreign citizens concerns middle-aged and old-aged persons whose outflow will intensify proportionally to the foreign inflow throughout the forecast period.

As for the inflow, its joint contribution into the mean age growth is expected to be 2.64 years, that is 1.10 years due to the inflow of Polish citizens and 1.54 years due to the inflow of foreign citizens. The effect observed for Polish citizens will concern, again, baby boom cohorts born at the turn of the 1980s and returning between 2040 and 2050 for retirement to Poland, as well as middle-aged persons born around 2010–2020. The effect observed for foreign citizens concerns mostly cohorts born between 1995 and 2010, expected to migrate to Poland in the first decades of the forecast period.

This study shows that during the MT, international migration exerts an ambiguous impact on the population age structure. First, when the sending population is still relatively young, emigration contributes to rejuvenation, but later, when low fertility and declining mortality entail population ageing, immigration accelerates this process. Therefore, while it is true that in the long run, throughout the MT, the net effect of international migration on population ageing is much smaller than the effects of mortality and fertility, the particular migration components do have a substantial (and variable) impact on the age structure throughout the different phases of the MT.
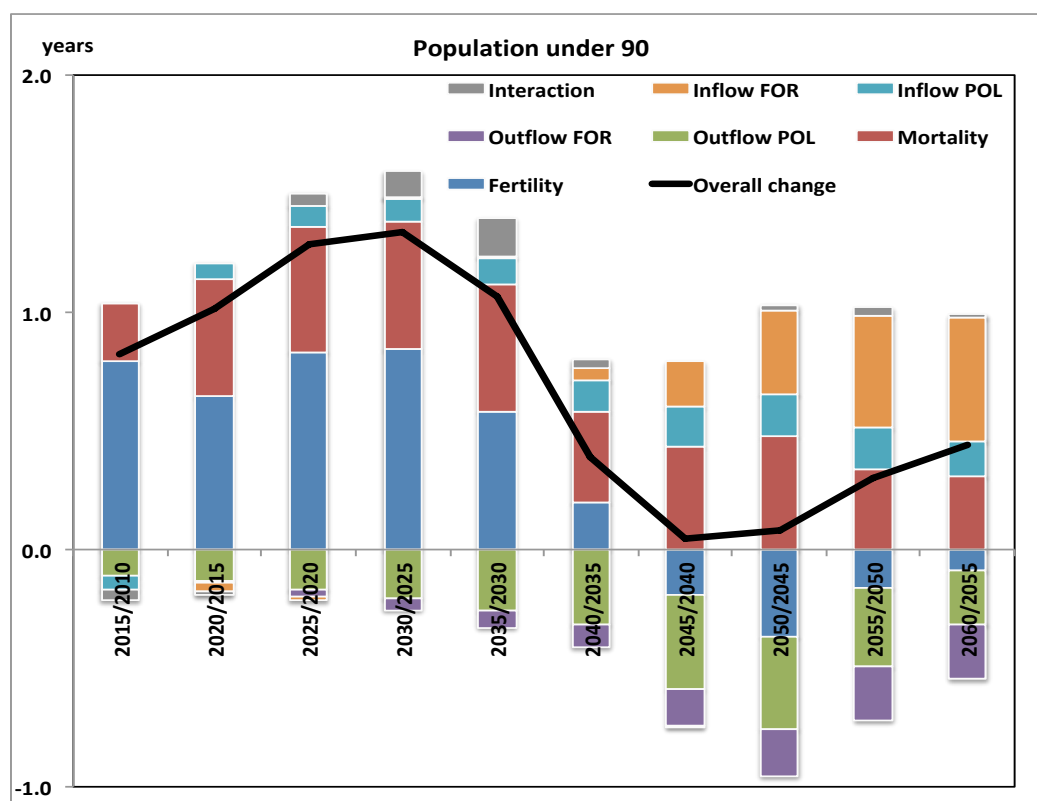
Figures
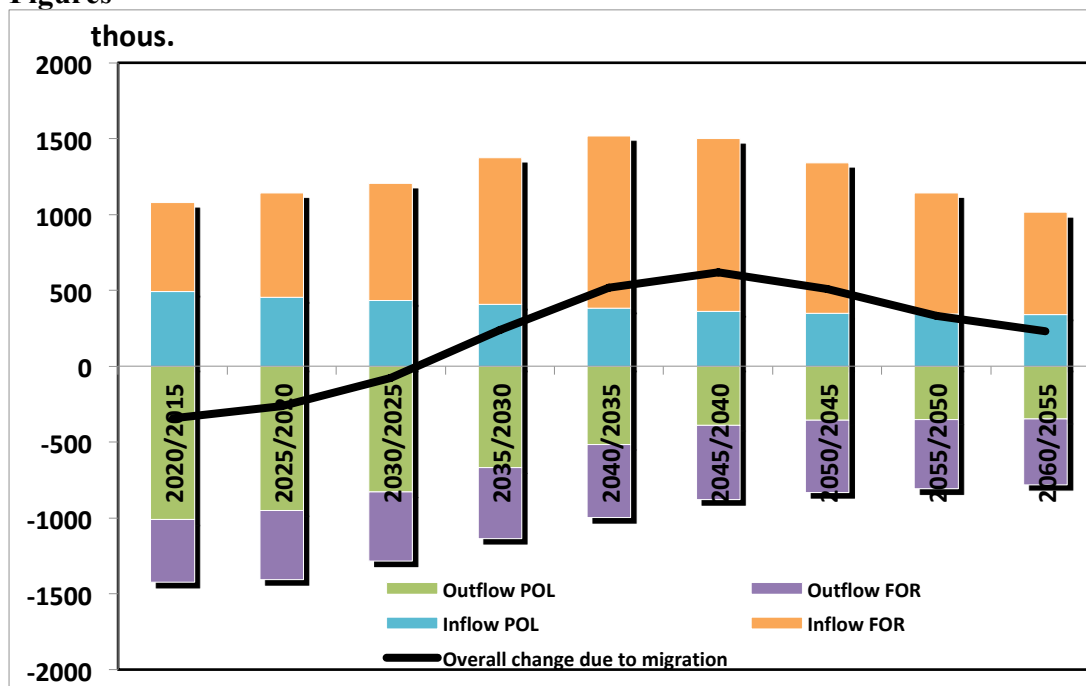
Figure 1. Forecasted migration flows[1] for Poland, 2015–2060 (in thous.)
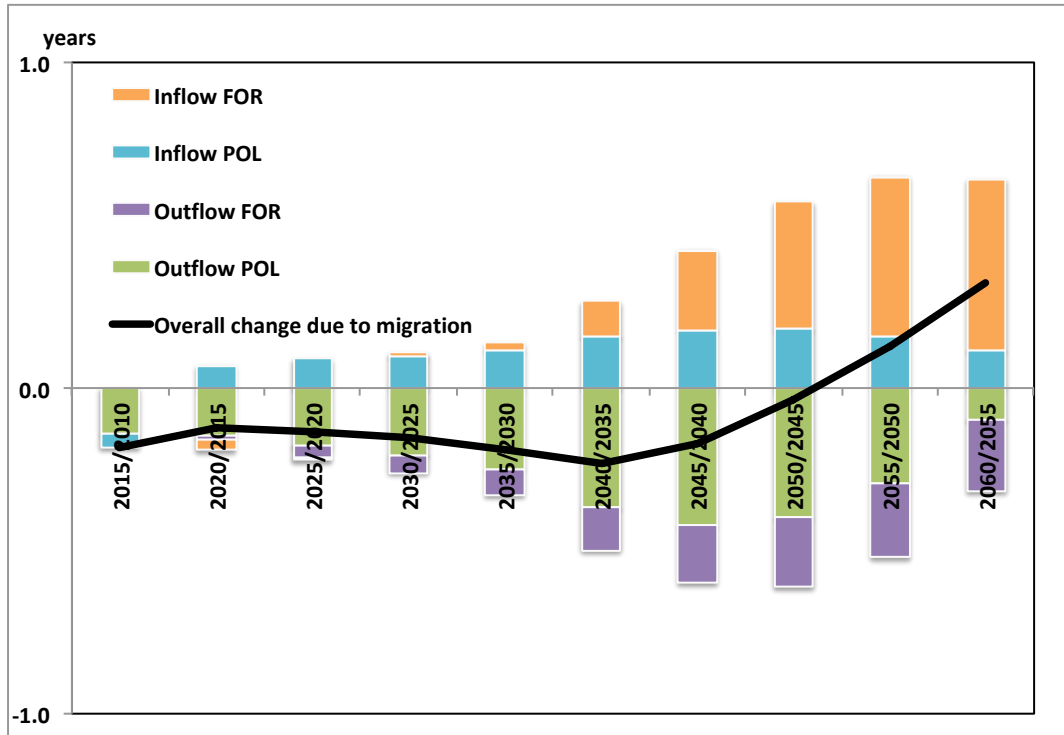[1]FOR and POL denotes, respectively, flows of foreign and Polish citizens.
Source: own estimates

Figure 2. Change in the mean population age[1] between period *t+1* and *t* and its components[2], population forecast for Poland 2015–2060
[1]For population aged under 90 only; [2]FOR and POL denotes, respectively, flows of foreign and Polish citizens.
Source: own estimates.

Figure 3. Change in the mean population age[1] between period *t+1* and *t* due to international migration and its components[2] (four types of migration flows), population forecast for Poland 2015–2060

[1]For population aged under 90 only;
FOR and POL denotes, respectively, flows of foreign and Polish citizens.
Source: own estimates.

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