Demographic impact of recent outmigration from Poland

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Abstract (short)

In May 2014 Poland will celebrate 10 years of membership in European Union. This has been a decade of intensive international outmigration of Polish nationals that contributes to depopulation and the process of ageing. In 2011 approximately 1,565 thousand persons have been abroad for at least 12 months without deregistration in the local registry office, that is 4% of 'actual residing population'. In some regions of Poland and in some demographic groups (i.e. persons aged 25-34) population loss amounts to 10%, 20% or more. The aim of this paper is twofold. First, we present demographic impact of the recent outflow on Polish population, its age structure and natality in Poland. Second, we modify official forecasts made by the Central Statistical Office of Poland and Eurostat by considering this recent outmigration. We also present three scenarios of forecasts allowing for possible returns. Preliminary findings show that due to the massive outmigration the population of Poland will be in 2035 by 5% smaller than estimated by the CSO, whereas in 2060 by 7% smaller than estimated by Eurostat. The process of ageing will be significantly more advanced.

Introduction

Population forecasts prepared for Poland show that this country will be in the future one of the most advanced European countries in terms of the process of ageing (CSO 2008, EC 2008, UN 2013). For instance, according to the Eurostat (EC 2008) the share of persons aged 65 and more will increase from 14 to 35% in the period 2010-2060 (whereas in the EU-27 – from 17 to 30%), the share of persons aged 85 and more from 1 to 6% (in EU-27 from 2 to 7%), and the old age dependency ratio[1] from 24 to 61% (in EU-27 from 27 to 50%). This is due to the fact that for the last 25 years – that is since the end of communist system – Poland has witnessed a rapid increase in life expectancy and a sharp drop in fertility which still remains below the replacement level. In particular, the decrease in fertility during the demographic transition (and the second demographic transition) was in Poland more rapid and 'condensed' in time than in other European countries. The Total Fertility Rate remains at the average level of 1.3 (2005-2012) which is one of the lowest values registered in the world (UN 2012).

However, two other factors – not considered in the population forecasts by Central Statistical Office of Poland (CSO), Eurostat and United Nations (UN) – can also contribute to the population ageing. First, the Polish membership in the European Union (2004-2014) intensified international mobility of Polish nationals (cf. Bruecker et al. 2009). Today the post-2004 outmigration into the United Kingdom, Germany, Ireland and other EU member states constitutes one of the largest flows at the European continent (cf. OECD, various years). This emigration has not been registered in the population registry of Poland for reasons that we explain in the next section. Outmigration has been selective with regard to age of migrants: the share of persons aged 20-34 was high among emigrants, relatively low among returnees and even lower among non-migrants (Anacka 2010; Anacka, Fihel 2012a, b). Previous studies showed that in some regions of Poland the loss of young persons due to emigration was estimated at 20% and more (Anacka, Okólski 2010). This also significantly affected the process of couple and family formation and contributed to further decrease in number of births.

[1] Defined as number of population aged 65 and over expressed as percent of population 15-64.

Second, due to inadequate economic and institutional premises, the level of settlement immigration in Poland remains marginal (Black et al. 2010, Okólski eds., 2012). The inflow of young persons of foreign origin could at least in first years contribute to the rejuvenation of population structure, but foreign migrants usually choose other destinations in the EU, attracted by higher wages, better work opportunities and easier legal procedures.

In this paper we want to show that international mobility of Polish nationals remains and will remain in the near future a very important factor contributing to the depopulation and population ageing. The aim of this paper is twofold. First, we want to analyze the impact of international mobility on the size of Polish population, its age composition, and the number of births taking place in Poland. Second, we want to study the impact of massive outmigration on the future population size and age structure; to achieve this, we modify two official forecasts made by the CSO and Eurostat, allowing for the recent unregistered outflow and possible returns that can take place in the near future. We intend to show that the situation of Poland is unique as its population will be subject to more advanced process of ageing than other European populations. As the population ageing will affect functioning of all social institutions, including families, labour market and political system, it is crucial to identify all determinants of process, including international mobility.

The paper is structured as follows. In the first section we present the scale of recent outmigration from Poland, its selectivity with regard to demographic features and its long-term character. The second section describes population forecast for Poland prepared by the CSO, Eurostat and UN. We want to stress that none of the above-listed institutions considers the massive unregistered emigration of Polish nationals and its persistence. The third section includes the description of data used and methods applied, whereas the fourth concerns the results: the effect of outmigration on the Polish population today and in the future.

1. International mobility of Polish nationals

The crucial issue for understanding the official definitions concerning international migration of Polish nationals is the distinction between permanent and temporary outmigration. The permanent outmigration is defined as a situation when a person living in Poland deregisters from the place of permanent residence in Poland and admits (in the local registry office) that is planning to leave abroad. Although such deregistration is compulsory, leaving Poland without it does not entail any administrative consequences. In the period 2004-2012 222 thousand persons deregistered from the population register due to departure abroad (CSO 2013) and as a consequence, these persons are not considered any more in the population register in Poland, they do not count into the category of 'actual residing population'[2] and they are not subject to the analysis presented in this paper.

The temporary outmigration is defined as a situation when a person living in Poland leaves abroad without deregistration from the place of permanent residence in Poland. This migration is not necessarily temporary; this is only an administrative name. In case of temporary outmigration, the fact of emigration is not noted in the population register and the only way to estimate the number of temporary migrants is to use a population census. A temporary migrant is still considered in the population register and counts into the category of 'actual residing population'. According to the 2011 population census, in March 2011 approximately 2,000 thousand persons have been abroad for at least 3 months, therein 1,565 thousand for at least 12 months (CSO 2012). This constituted, respectively, 5.2 and 4.1% of 'actual residing population' of Poland. In this paper we want to show what happens – in terms of demographic measures and projections – if we do not consider temporary emigrants staying abroad for 12 months and longer (further called long-term temporary migrants) as persons living in Poland.

[2] This is the translation of Polish administrative term 'ludność faktyczna'. We present this term in quotation marks to show that it does not reflect the real number of people living in Poland.

Two recent population censuses – conducted in 2002 and 2011 – prove that temporary outmigration is of long-term character. According to the 2002 population census 786 thousand persons, still included into 'actual residing population', were living abroad for at least 2 months at the moment of census, therein 626 thousand for at least 1 year and 250 thousand for at least 10 (!) years. As for the 2011 population census, the information about the moment of departure was gathered only for 17% temporary migrants. In this group every fourth (23%) person left Poland at least 10 years before the census. Still, those migrants are treated as staying abroad temporarily and are included into the 'actual residing population'.

This may lead to a significant bias in the forecasted population structure, as the recent outflow appears to be highly selective with regard to socio-demographic features. Other studies show that during the first two and a half year after the EU accession the net population outflow was as high as 1,000 thousand people with almost 500 thousand people under their thirties (Grabowska-Lusińska, Okólski 2009). More detailed analysis proves also that, for instance, in years 2004-2006 men who attained tertiary education level and had been living in economically less developed regions were at most prone to leaving Poland (Mioduszewska 2008). The age structure of emigrants revealed by the 2002 and the 2011 population census differed significantly, with temporary migrants becoming much younger (Fig. 1). Also, selectivity of the return inflow was proved, though its pattern remained equivocal until the 2011 population census results were published (Anacka, Fihel 2012a, b). In general, return migrants tend to be statistically older, less educated and they originate more often in the rural areas.

2. Population forecasts for Poland – a critical assessment

The most known population forecasts for Poland were prepared by:

1) the Central Statistical Office, for years 2008-2035 (further: CSO 2008),
2) the Eurostat, for years 2013-2080 (further: Europop 2013)
3) the United Nations, for years 2010-2100 (further: UN 2012).

We present and discuss each of them, but modify only first two (for more detailed information see Table 1). Due to complex methodology applied, the forecast made by the UN was not eligible for our modifications. In this section we want to underline two assumptions made in each forecast not allowing for real international mobility of Polish nationals: an assumption concerning the initial number of population (at the beginning of each forecast) and an assumption concerning the net migration.

As for the initial number of population, each forecast applies the concept of 'actual residing population' (instead of resident population) and treats temporary migrants as persons staying in Poland. None of three institutions preparing forecasts for Poland discusses the problem of massive unregistered outmigration. In the section devoted to the international mobility of Polish nationals we argued that the temporary outmigration is in fact long term, if not – in case of some migrants – permanent. Not only in our opinion the category of 'actual residing population' does not reflect the real number of population living in Poland (see e.g. Gołata 2012, Jończy 2010, Śleszyński 2011,). Therefore, we modify official forecasts for Poland by subtracting from the initial number of population the number of temporary Polish migrants staying abroad 12 months and longer as indicated by the 2011 population census. This is not the best solution because some temporary migrants – and we do not know how many of them – can return to Poland very soon; it is the only existing solution though, as more detailed results of the Polish 2011 population census concerning other categories of population, including resident population, were not published. We present

additionally 3 scenarios accounting for different number of returnees coming back to Poland to show the sensitivity of our analysis to this particular assumption.

As for international migration, each forecast applies its own arbitrary assumptions on international mobility of Polish nationals. We are aware of the fact that international migrations constitute a very complex phenomenon and few researchers / institutions dare to speculate on possible developments in mobility trends in the long term. However, the assumptions applied in the discussed forecasts seem to us to be very, if not 'too', simple. In the CSO 2008 the most probable scenario concerning international migration assumes that in the period 2008-2019 a negative net migration balance is registered, but due to increase in immigration and decrease in emigration the net migration balance becomes positive in 2020. Since then and for the coming 15 years, both immigration and emigration remain at the same level, and consequently net migration balance remains positive and equals to 10 thousand persons each year (Fig. 2). In the Europop 2013 an extrapolation of the recent trends in mobility is projected. However, an additional assumption concerning migration says that if a loss in the number of population at working age is projected due to drop in natality (or increase in mortality), then this loss is compensated by immigration taking place the same year. Consequently, it is assumed that the demand for labour is stable and any labour shortages can be alleviated immediately by an inflow of foreigners. We find this assumption simplistic; it shows that in this forecast international migration is treated instrumentally with regard to natural movement of population. The results of Europop 2013 are surprising and can be explained not by a study of mobility determinants in Poland, but by projected (on the basis of natural movement of population) labour shortages: the net migration balance is positive in the period 2014-2022, negative in 2023-2030, and then again positive till 2080 (Fig. 2). In the UN 2012 the most probable scenario assumes that net migration remains till 2050 at the average level registered in 2005-2010, and then it declines to 0 in 2100 (Fig. 2). The authors of forecast admit that this assumption remains unrealistic but they cannot suggest any different for such a long horizon of forecast.

As assumptions for international mobility in Poland vary in each forecast, these studies give very different results (Fig. 2). In this paper we do not propose our own assumptions for expected developments in migration trends; we plan to work on this in the near future with the use of econometric techniques allowing for various determinants of international mobility, such as differences in wages, living standards, exchange rates, legal procedures, etc. Here we modify the CSO 2008 and Europop 2013 by assuming that temporary Polish migrants do not stay in Poland at the initial moment of forecast, but they possibly return in the future to Poland (see next section).

3. Data and methods

We use official data collected by the Central Statistical Office of Poland: population register and the 2011 population census. When we discuss the present population losses due to emigration at regional level in Poland (section 4.1), the population register approximates the age composition of temporary migrants registered in the census. We use the official results of population forecasts made by CSO (2008) and Eurostat (EC 2008, Eurostat 2014). As for births to Polish mothers abroad, we refer to three main destinations of Polish migrants: Germany, Ireland and the United Kingdom. We use published data for the UK (ONS 2012) and unpublished data available at the Central Statistics Office of Ireland and Statistisches Bundesamt (Germany).

The forecasts for Poland were made by the CSO (2008) and Eurostat (2014) with the use of the cohort-component technique. We made two modifications of the above-mentioned forecasts. The first modification consisted of subtracting from the initial number of population (for each demographic group defined by sex and age) in each forecast the number of temporary Polish migrants staying abroad 12 months and longer as indicated in the 2011 population census. We applied the survival rates assumed in each forecast to the group of temporary Polish migrants (and their descendants) and obtained their number for the coming years. Also, we applied fertility rates

assumed in each forecast (for persons staying in Poland) to the group of temporary Polish migrants and obtained the number of their progeny for the coming years. At the same time, the natality in Poland was obtained by application of fertility rates assumed in each forecast to the number of women really staying in Poland. We want to stress that in each modified forecast the assumptions on mortality and fertility remained unchanged; the natality in Poland dropped because we decreased the number of Polish (female) population. The original assumptions on fertility, mortality and international migration in the forecasts by CSO and Eurostat are presented in the Table 1.

Second modification consisted of 3 scenarios allowing for possible returns. We present three arbitrary scenarios: that till 2020 25%, 50% or 75% of Polish temporary migrants return to Poland. We distributed the return migration into two waves: in 2015 half of the assumed flow takes place (respectively, 12.5%, 25% and 37.5% of temporary migrants), in 2020 the other half of flow takes place. Return migration was applied also to children, so that the returnees come back to Poland with their families. The 2020 year threshold is justified by the fact that about this time children of temporary migrants that constituted the most intensive post-accession population outflow will reach school age. Finally, for scenarios concerning return migration we assumed that starting in 2020 the natality in Poland will be proportionally higher than in the scenario excluding return migration because the number of women really living in Poland increases. We did not allow for any selectivity of returns. However, it might be the case that in the future elderly persons will be more prone to returning, whereas the generation already born and / or brought up abroad will be less keen to come to Poland.

4. Results

4.1 Impact of outmigration in the present

Number of population and its age composition

The temporary outmigration from Poland has been highly selective with regard to the place of residence in Poland: some regions noted the outflow of 4% of 'actual residing population', some of more than 10% (Fig. 3). The outflow was in particular seen in the Eastern part of Poland. Also, the outmigration attracted mostly the young, aged 25-29 (11% of men and 13% of women), 30-34 (11% of men and women) and 35-39 (8% of men and women, see Fig. 4). Studies concerning previous years, for instance till 2006 (cf. Fihel, Okólski 2009), proved that persons aged 20-24 and 25-29 were the most prone to leave Poland. By 2011 these migrants reached older age groups: 25-29 and 30-34. Also, the population census revealed that 226 thousand persons aged below 15 emigrated from Poland but more detailed information on this group were not published.

The age structure of Polish population when one excludes long term (i.e. staying abroad 12 months and more) temporary migrants changes visibly. In absolute terms the population losses are observed mostly in the age groups 25-29, 30-34 and 35-39 (Fig. 4, 5). In relative terms, in the population structure the share of children and teenagers aged under 20 and persons aged 55 and more increases (respectively, from 21.7 to 22.1% and from 26.9 to 27.9%), whereas the share of persons at age of 20-54 decreases, for instance aged 20-29 (from 15.8 to 15.2%), 30-39 (from 15.4 to 14.7%), 40-49 (from 12.6 to 12.5%). The old-age dependency ratio rises from 18.9 to 19.8%.

Population losses in the regions particularly affected by the outflow are very pronounced. Let us assume, for the purpose of this study, that in each region of Poland the age structure of temporary long term migrants is the same as the age structure of permanent emigrants in 2011. This assumption is simplistic but necessary due to the lack of more detailed information from the population census[3]. Given this, the population losses in some demographic groups and in selected

[3] No detailed information on migration from each region (NUTS-2 level) were published. In fact, 3 years after the population census many information on temporary migration from Poland is still lacking. The CSO admits

regions exceed 10 or even 20% of 'actual residing population' of Poland (Table 2). In particular, this concerns people in their 30'ies originating in less-developed regions of Poland (Opolskie, Podlaskie, Pomorskie, Podkarpackie voivodship). Selectivity of migration turned out to be the strongest in the case of women aged 30-39 (in 2011), whereas for men the propensity to leave was similar for persons aged 20-29, 30-39 and 40-49. A special case is constituted by *Opolskie* region, where temporary emigrants constituted 11% of 'actual residing population'. In this region the number of 'actual residing population' decreased between the 2002 and 2011 population census by 5%, which was the highest population loss registered in Poland at regional level. At the same time the fertility level in *Opolskie* remains extremely low (TFR = 1.1 in 2011), natural balance has been negative since 2000, and migration balance has been negative since 1976. This indicates how intensive the process of depopulation of *Opolskie* region is.

Decrease in natality

As an indirect demographic consequence of massive outmigration, especially outmigration of young persons, the natality in Poland dropped after 2004. If temporary female emigrants remained in Poland and had the same fertility rates as other Polish female residents, the number of births taking place in Poland could have been in 2011 by 32.9 thousand higher (that is by 8.5%). Assuming that the outmigration was a gradual process distributed evenly in time, our estimates for the whole period 2004-2011 reach 180 thousand births of children of Polish female nationals abroad. This result seems to be realistic given the fact that each year approximately 7 thousand births given by Polish female nationals are registered in Germany, app. 4 thousand – in Ireland, whereas in the United Kingdom – 118 thousand in the period 2005-2012 (Fig. 6). Altogether, app. 200 thousand births to Polish mothers were registered in Germany (2004-2012), Ireland (2009-2012) and the UK (2005-2012) and these are only three destinations for Polish emigrants. The UK constitutes a very interesting case because according to the British Office for National Statistics (ONS 2014), the Total Fertility Rate of Polish female emigrants living the UK is by almost 60% higher than the respective rate for women that stayed in Poland (2.13 *versus* 1.30 in 2011). This shows that a dramatically low fertility of women living in Poland might be mostly due to unfavorable socio-economic conditions, such as insecure working conditions, low wages and weak welfare protection.

4.2 Impact of outmigration in the future

Massive outmigration from Poland changes the prospects for the size of Polish population and its composition by age in the future.

As for our modification of CSO 2008 forecast, in the scenario not allowing for future returns of Polish nationals the size of Polish population decreases in 2035 by 1,851 thousand persons, that is by 5.1% of the CSO 2008 result. The group of children and teenagers (below age of 15) is by 2.4% smaller, of persons aged 15-64 by 6.3% smaller, whereas of old persons aged 60 and more by 3.4% smaller (Table 3). The old age dependency ratio increases from 36.15% to 37.29%. At first glance these changes in the age structure may not seem profound (Fig. 7); this is, however, due to the fact that the horizon of forecast (2035) is relatively short.

In our modification of Europop 2013 the results are more impressive (Fig. 8). In the scenario not allowing for future returns of Polish nationals the size of Polish population decreases in 2060 by 2,322 thousand persons, that is by 7% of the Europop result. The group of children and teenagers (below age of 15) is by 7.6% smaller, of persons aged 15-64 by 8.6% smaller, whereas of old persons aged 65 and more by 'only' 4.9% smaller (Table 4). The old age dependency ratio increases from 60.89 to 62.80%. This means that the recent emigration will have long term demographic consequences consisting of: (1) drop in the size of population of Poland, (2) change in the age

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that many problems concerning matching the population register with other data sources and estimating the population at the regional level were not overcome.

structure (especially loss of cohorts born at the turn of the 1970s and the 1980s, and their descendants), (3) acceleration of the process of population ageing.

The scenarios allowing for possible returns show that return migration counteract the depopulation of Poland, but the process of population ageing can be alleviated to limited extent only. Today's temporary migrants are mostly persons born at the turn of the 1970ies and 1980ies and in 2060 they will be aged 70 and more (Fig. 9). In our modifications we assumed that temporary migrants return to Poland with their families – children and grandchildren. But still, possible returns will augment the number of old persons in the first place, whereas the number of other age groups will increase too, but to a lesser degree. This is due to the fact that in Europop 2013 the fertility levels (applied to the population of Poland as well as to emigrants) were assumed to remain below the replacement level, therefore, the generation of children and grandchildren of emigrants is smaller than the generation of migrants themselves (Fig. 9). Consequently, in our scenarios allowing for returns and not allowing for returns the old age dependency ratios do not differ significantly from each other. As outmigration of young people contributes to population ageing, future returns of the same persons may contribute to this process as well. Nevertheless, in the future the main population loss due to out-migration will concern the group of economically active people (15-64), regardless of return migration taking place or not.

Summary and discussion

This paper is devoted to the problem of defining the real population size of Poland and its consequences for the analysis of present and forecasted number of population and its structure. We showed that applying the official definition of 'actual resident population' (which is not, actually, actual at all) may be misleading when we try to assess the impact of already observed and assumed demographic processes on population ageing. The number of Polish long term temporary migrants, who according to the UN recommendations should be treated as residents of foreign countries, more than doubled between 2002 and 2011 (dates of two last population censuses) and in 2011 was as high as 1,565 thousand people. By subtracting the number of temporary migrants from 'actual residing population' and controlling for their age structure we estimated that the difference between officially recorded 'actual resident population' and the real one is 4.2%. This result, however, varies significantly between regions, areas and age categories and for particular demographic groups may even exceed 20%.

The most extensive part of the exercise presented concerned modification of two out of three most popular forecasts for population of Poland – the one prepared by the Central Statistical Office of Poland and another elaborated by Eurostat. Our amendment to these forecasts included adjusting the present (initial) population size, its age and sex structure by considering the real size of outmigration from Poland. We prove that depopulation of Poland will reach higher levels than officially predicted: the forecast for the size of the real population will be in 2035 by 5% smaller than CSO expects and by 7% smaller than reported by Eurostat for year 2060. Also, the projected population structure turned out to be more advanced in the process of ageing, with the largest population losses concerning age groups below 15 and 15-64, and the increase in the old age dependency ratio from 60.89 to 62.80%. This process of ageing could be alleviated by possible return flows that were assumed to take place before 2020, that is when children of the most numerous wave of post-accession Polish migrants would reach the school age.

As for our modifications of the CSO and Eurostat forecasts, we find at least two points that should be taken into more in-depth consideration. First, we assumed that Polish nationals staying abroad have

the same fertility levels as persons really living in Poland. Statistical data available for the UK prove that Polish women living in this country have significantly higher fertility levels than the female residents of Poland (2.1 *versus* 1.3). If one assumes that this tendency is (or would be in the near future) valid for migrant women in other destination countries, then the group of descendants of temporary migrants might be possibly larger than we projected. Second, it seems to us that descendants of temporary emigrants would not be equally prone to settling down in Poland in the future than temporary emigrants. As a rule, persons born and / or brought up abroad, including second generation of migrants, are more integrated in the economic and social sense in the receiving country than emigrants themselves. Therefore, even if temporary migrants have more (on average) children than persons who stayed in Poland, possible future return migration would not necessarily contribute to rejuvenation of population. As a matter of fact, we think that possible return migration might be very selective with regard to the age and might involve mostly retirees who prefer to live in the old age in the country of origin. Consequently, return migration may intensify the process of ageing in Poland.

Finally, we want to stress that the administrative terms 'actual residing population' and 'temporary migration' used by the Central Statistical Office of Poland do not necessarily reflect the true number of people residing in Poland and staying abroad. We know that the CSO intends to change its practice concerning defining and measuring the main population aggregates but this is rather a deliberate process. If we want to analyze and understand population phenomena taking place in Poland, the change of administrative practice is inevitable and indispensable.

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Figures

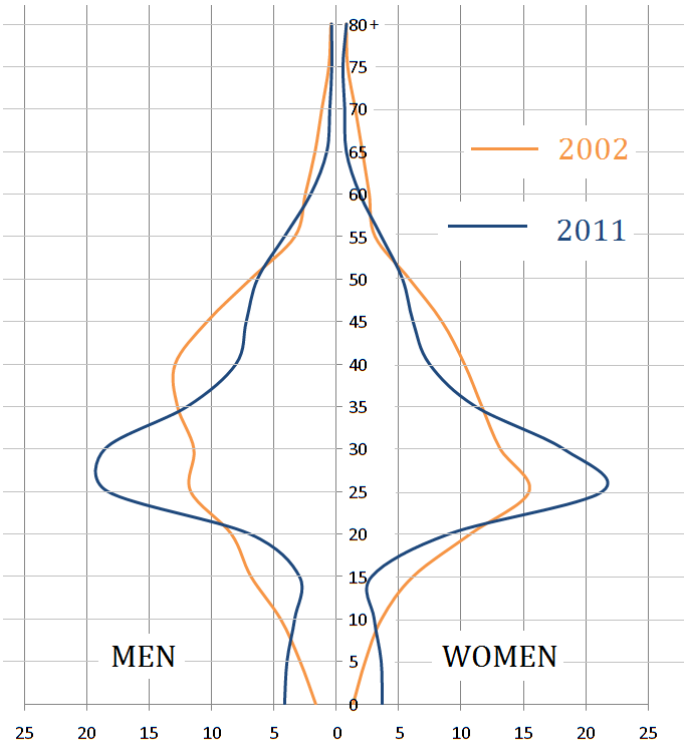

Fig. 1. The age structure of long-term temporary migrants in 2002 and 2011 based on population censuses, in percent

Source: Own elaboration based on CSO (2003, 2013).

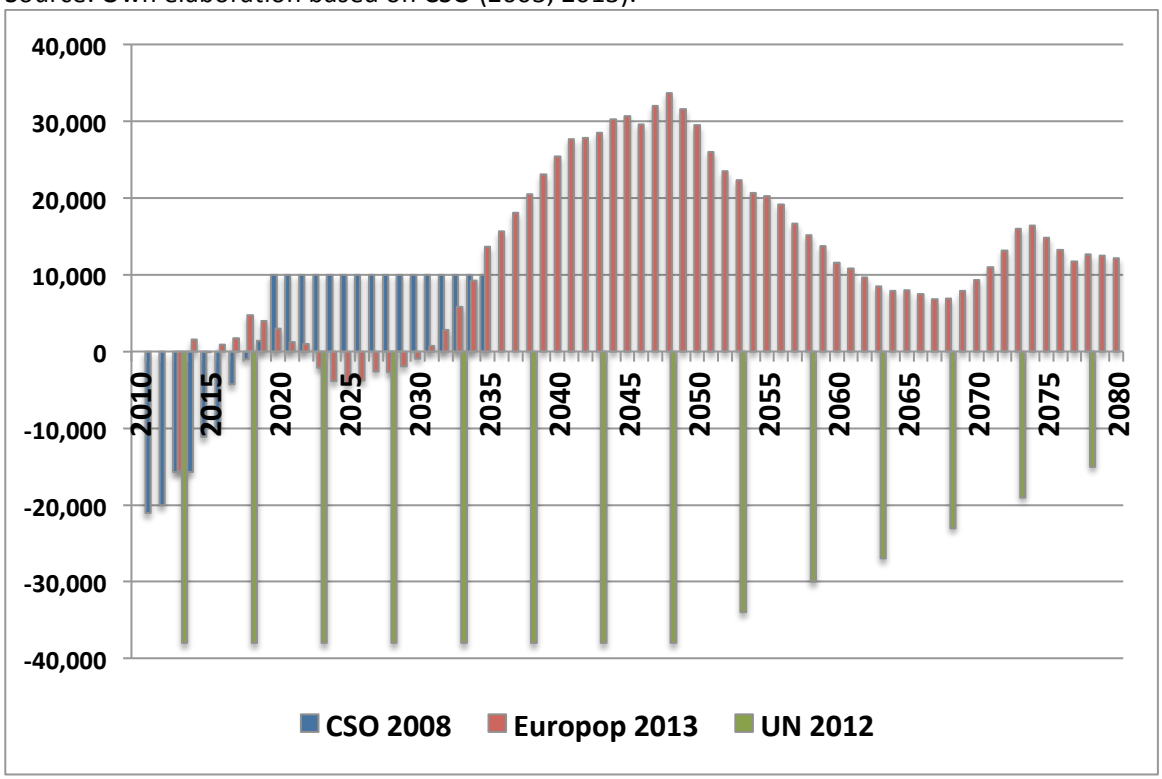

Fig. 2. Net migration in Poland as forecasted in CSO 2008, Europop 2013 and UN 2012[(1)], 2011-2080

[(1)] The results of UN forecast are for 5-year periods.

Source: own elaboration based on CSO (2009), Eurostat (2014), UN (2014).

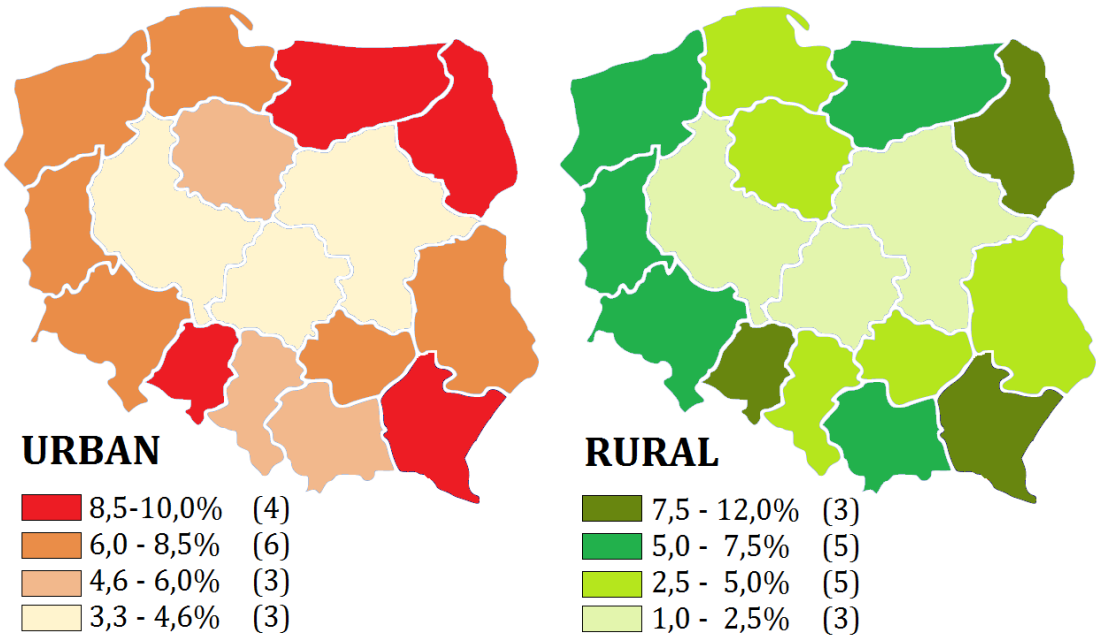

Fig. 3. Temporary emigrants as % of 'actual residing population', by place of residence indicated in the population register

Source: own elaboration on the basis of 2011 population census (CSO 2012).

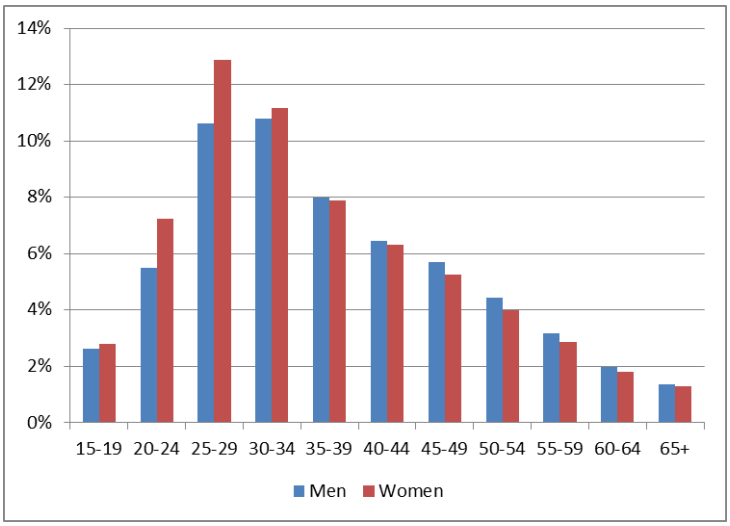

Fig. 4. Temporary emigrants as % of 'actual residing population', by age

Source: own elaboration on the basis of 2011 population census (CSO 2012).

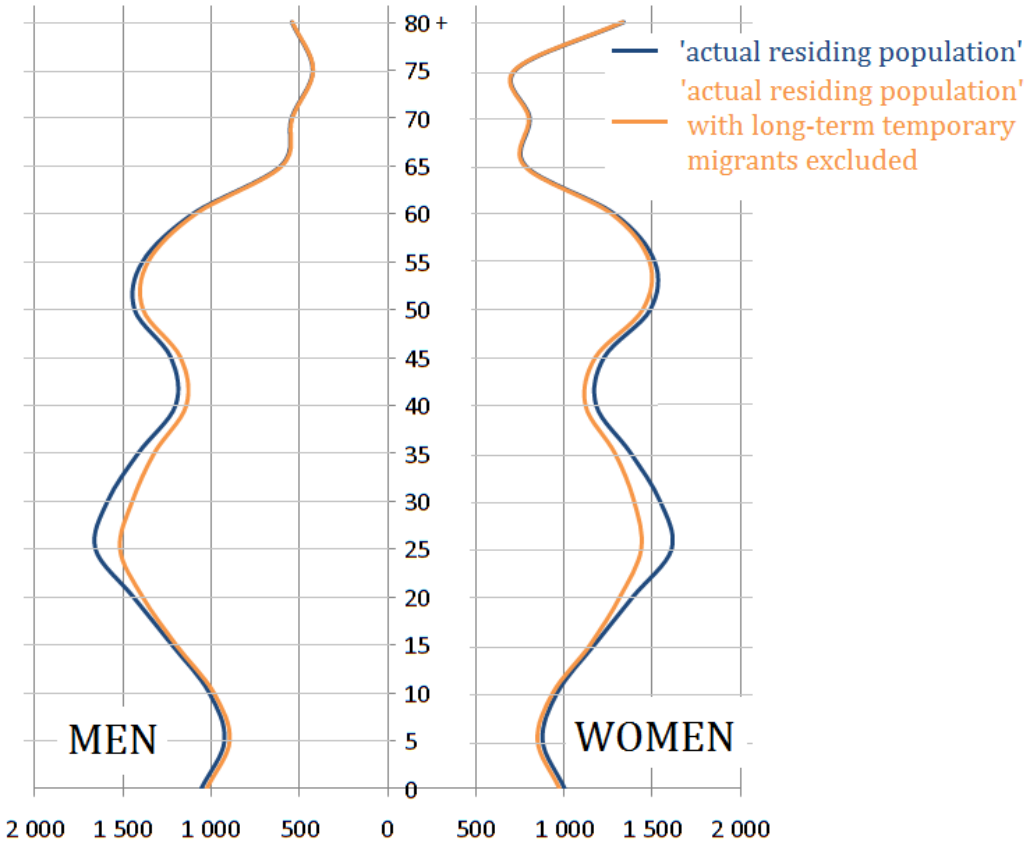

Fig. 5. The age structure of the 'actual residing population', and of 'actual residing population' without temporary long-term migrants, in thousand, 2011

Source: own elaboration on the basis of the 2011 population census (CSO 2012).

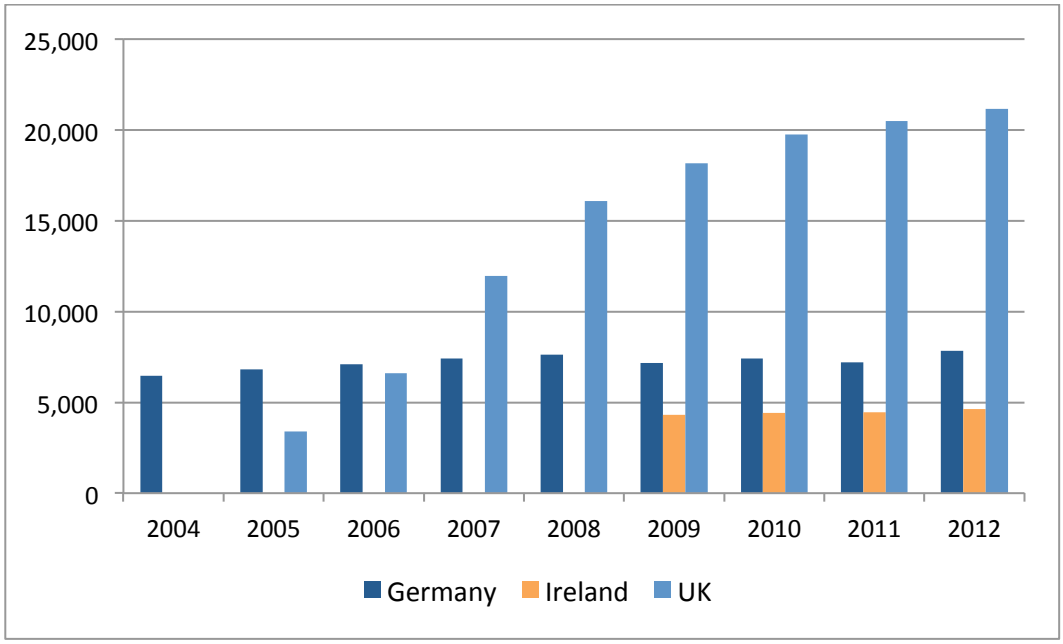

Fig. 6. Births to Polish mothers in three main destination countries, 2004-2012
Source: own elaboration on the basis of ONS (2014), Central Statistics Office of Ireland and Statistisches Bundesamt (unpublished data).

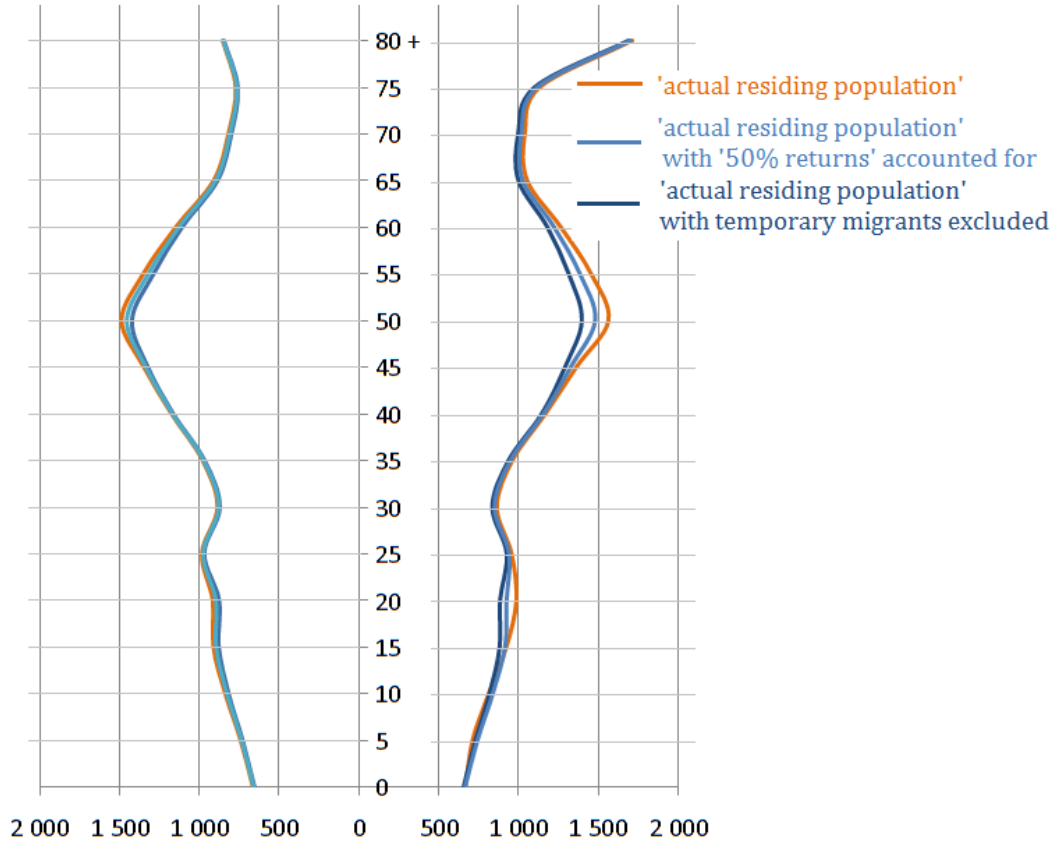

Fig. 7. The age structure of 'actual residing population' as forecasted by CSO, 'actual residing population' with 50% returns scenario, and 'actual residing population' without long-term temporary migrants (i.e. 'no returns' scenario) as of 2035, in thousand
Source: own elaboration on the basis of CSO (2008).

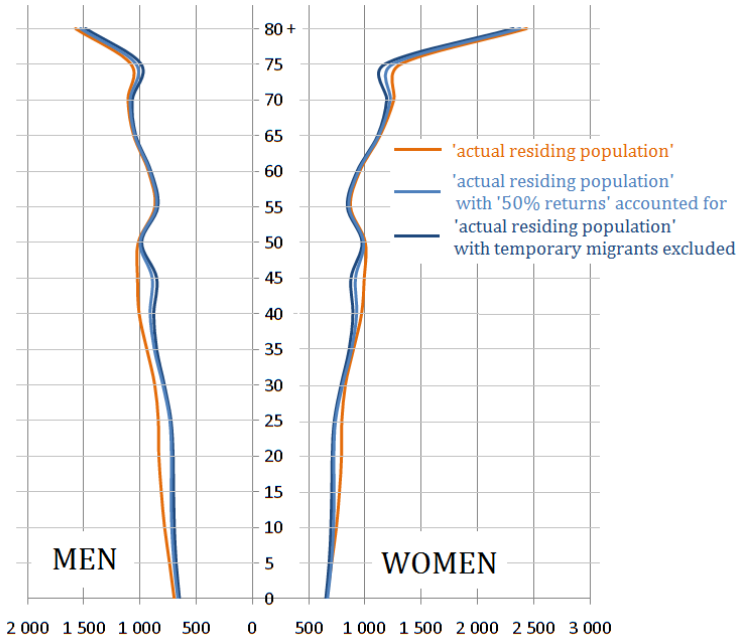

Fig. 8. The age structure of 'actual residing population' as forecasted in Europop, 'actual residing population' with 50% returns scenario, and 'actual residing population' without long-term temporary migrants (i.e. 'no returns' scenario) as of 2060, in thousand
Source: own elaboration on the basis of Europop 2013 (Eurostat 2014).

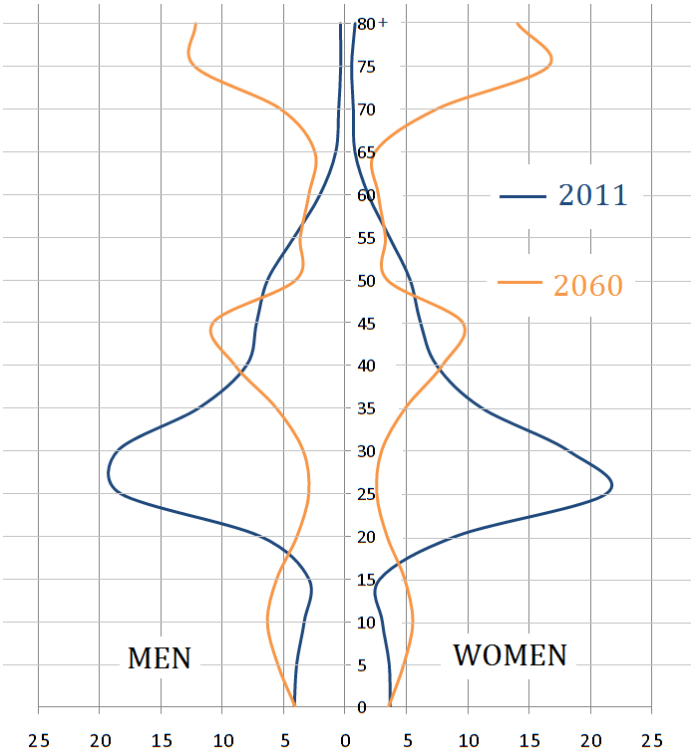

Fig. 9. The age structure of the Polish long term temporary migrants in 2011 and 2060, in percent

Source: own elaboration based on CSO (2013) and EUROSTAT (2014).

Tables

Table 1. Original assumptions for Poland in the CSO 2008 and Europop 2013 forecasts

	TFR		Female life expectancy at birth		Male life expectancy at birth		Net migration	
Year	CSO	Europop	CSO	Europop	CSO	Europop	CSO	Europop
2015	1.35	1.39	80.2	81.3	72.3	73.3	-11,009	-42
2020	1.37	1.43	80.8	82.2	73.4	74.5	10,002	2,947
2025	1.38	1.47	81.5	83.0	74.6	75.6	10,002	-4,266
2030	1.39	1.50	82.2	83.8	75.8	76.7	10,002	-903
2035	1.40	1.53	82.9	84.6	77.1	77.8	10,002	13,664
2040		1.55		85.3		78.8		25,433
2045		1.58		86.1		79.8		30,692
2050		1.60		86.8		80.8		29,474
2055		1.62		87.4		81.7		20,250
2060		1.32		88.1		82.6		11,566

Source: own elaboration based on CSO (2008) and Eurostat (2014).

Table 2. Highest[(1)] population losses due to temporary emigration in groups defined by sex, age and place of residence in Poland, as percent of 'actual residing population' [(2)], 2011

MEN	%	WOMEN	%
age 30-39, rural, pomorskie[b]	22.0	30-39, rural, pomorskie	27.5
30-39, urban, pomorskie	18.7	30-39, urban, pomorskie	24.1
40-49, rural, opolskie	18.2	30-39, urban, podlaskie	22.8
30-39, urban, podlaskie	18.0	40-49, rural, pomorskie	21.6
20-29, rural, pomorskie	17.2	30-39, urban, podkarpackie	19.8
40-49, urban, pomorskie	16.9	30-39, rural, opolskie	18.1
40-49, rural, pomorskie	15.8	40-49, rural, opolskie	17.7
30-39, urban, podkarpackie	15.1	20-29, rural, podlaskie	16.9
		20-29, urban, pomorskie	16.6
		20-29, rural, opolskie	16.0
		30-39, urban, warmińsko-maz.	15.9
		30-39, urban, opolskie	15.1

[(1)] categories with at least 15% population loss, [(2)] the name of voivodship (NUTS-2 region).

Source: own elaboration on the basis of the 2011 population census (CSO 2012) and population register (CSO 2013).

Table 3. Demographic indicators for Poland in 2035, according to the CSO 2008 and our modifications

Demographic indicator	CSO 2008	Modification: no returns	1st scenario: 25% returns	2nd scenario: 50% returns	3rd: 75% returns
	in thousand				
Population number	35,993	34,142	34,594	35,046	35,499
Persons aged 0-14	4,515	4,407	4,449	4,492	4,534
Persons aged 15-64	23,120	21,659	21,998	22,338	22,677
Persons aged 65+	8,357	8,077	8,147	8,217	8,287
Persons aged 80+	2,574	2,534	2,544	2,554	2,564
	as % of the CSO 2008 result				
Population number	100.0	94.9	96.1	97.4	98.6
Persons aged 0-14	100.0	97.6	98.6	99.5	100.0
Persons aged 15-64	100.0	93.7	95.1	96.6	98.1
Persons aged 65+	100.0	96.6	97.5	98.3	99.2
Persons aged 80+	100.0	98.5	98.8	99.2	99.6
	in %				
Old age dependency ratio	36.15	37.29	37.04	36.79	36.54

Source: own elaboration on the basis of CSO (2008).

Table 4. Demographic indicators for Poland in 2060, according to the Europop 2013 and our modifications

Demographic indicator	Europop 2013	Modification: no returns	1st scenario: 25% returns	2nd scenario: 50% returns	3rd: 75% returns
	in thousand				
Population number	33,294	30,972	31,367	31,763	32,158
Persons aged 0-14	4,326	4,054	4,113	4,171	4,230
Persons aged 15-64	18,004	16,534	16,726	16,918	17,109
Persons aged 65+	10,964	10,383	10,528	10,673	10,819
Persons aged 80+	4,011	3,803	3,855	3,907	3,959
	as % of the Europop 2013 result				
Population number	100.0	93.0	94.2	95.4	96.6
Persons aged 0-14	100.0	92.4	93.7	95.1	96.4
Persons aged 15-64	100.0	91.4	92.5	93.6	94.7
Persons aged 65+	100.0	95.1	96.3	97.6	98.8
Persons aged 80+	100.0	94.8	96.1	97.4	98.7
	in %				
Old age dependency ratio	60.89	62.80	62.95	63.09	63.23

Source: own elaboration on the basis of Europop 2013 (Eurostat 2014).