Demographic Fairness and Migration

in the light of demographic projections for the EU28 in 2015-2060

Marcin Stonawski & Michaela Potančoková

Introduction

One of the four main freedoms guaranteed to EU citizens in the Article 2 of the Lisbon Treaty of European Union (Treaty of Lisbon, 2007), is the free movement of workers. Against the backdrop of differences in living standards, wages and services, the right to free movement greatly stimulates the mobility of EU citizens between the Member States (MS). European integration has led to an emergence of a new migration system in Europe both in terms of the direction of migration flows (south-north replaced by east-west) and nature of movements that include short-term temporary moves and cross-border work (Favell 2008). According to Eurostat, around 3% of EU citizens (19.9 million people) resided in an EU MS other than the one of which they are citizens at the end of 2017 (EUROSTAT 2018). Additionally, in that same year an estimated 1.4 million cross-border workers commuted on a regular basis for work in another MS than the one of their main residence (Fries-Tersch et al 2018). During the decade following the significant enlargement of EU with mainly eastern European countries in 2004, 2007-2008 and 2013, the migration flow between eastern and western EU Member States significantly increased. An estimated 1.8% of the population in the eastern Member States that joined the EU in 2004 moved to the EU15 between 2004 and 2009 and as much as 4.1% of population in case of Bulgaria and Romania between 2007 and 2009 (Fic et al. 2011), in spite of various transitional restrictions imposed by most MS. Populations of the EU15 grew by an estimated 0.4%, and 0.3% was due to immigration from new members during the period (ibid). The migration was triggered predominantly as an effect of large differences in material conditions on the labour market of EU countries (economic migration) (e.g. Kahanec and Zimmermann 2010). Another well-documented fact is that this led to processes of brain drain and brain waste (Brzozowski 2007 and 2008) in eastern and central European countries. In the situation of economic downturns and high unemployment in the eastern MS, during their economic transition to market economies, migration was mutually economically beneficial, but not demographically beneficial for the sending MS (Kahanec and Zimmermann 2010).

Economic benefits of increased intra-EU mobility have been well-documented (see for example D'Auria et al. 2008). But large out-migration has severe negative direct and indirect impacts on the demography of the sending Member States: acceleration of already rapid population ageing, depopulation, decrease in the size and ageing of labour force, reduction in number of births due to lower reproductive potential because emigrants tend to be young workers at both productive and reproductive age. For example, in 2016, 74% of EU28 movers were at age 20-64 (Fries-Tersch et al 2018). In contrast, young workers benefited demographically to the receiving, predominantly western countries (e.g. in England and Wales women from New EU[1] gave 354 thousand births in 2010-2017, which is 6.3% of total births in this period).

---

[1] The term 'New EU' is used by Office for National Statistics for the countries that joined the EU in 2004-2013.

The upcoming changes in the size and age structure of the sending MS will have long-term consequences for the sending countries and their economies. Moreover, the future demand for labour to fill the gaps in the workforce in the western MS would not cease, quite the contrary, due to advancing population ageing and long-term structural changes in population composition of western MS. Thus, the strong pull factor for labour migration will persist and will likely be driving EU internal mobility in the future as well.

At the same time, anti-immigration sentiments are rising across the EU with ever more MS favouring posing limits on immigration from the third countries and leaning towards policy of closed doors. Capping immigration from the third countries[2] in the context of persisting demand for labour can result in even stronger migration pressure on less economically affluent eastern and southern Member States. In spite of economic growth in the eastern countries the process of economic convergence is slow, thus we can expect that in the near future labour market conditions, including wages, will still be better in the west than in the east.

The aim of the study is to illustrate possible future demographic effects of EU mobility on eastern and western MS in the context of different strategies of dealing with international migration[3] to the European Union. To do so, we are using demographic and human capital projections and formulate several stylised what-if scenarios that illustrate a range of future intra-EU and international migration situations. We identify for which EU countries the specific migration situations articulated in narrative scenarios would be demographically beneficial and for which it would be disadvantageous. We analyse the projection results through the lens of the proposed concept of *demographic fairness*, introduced in the following section. The next sections describe projection methods and data, the process of scenario building and the underlying assumptions of these scenarios, followed by the results and conclusions.

Contrasting demographic regimes and demographic fairness

Migration is increasingly the focus of policy actions and concerns in both the European Union bodies and individual Member States. The decisions and practices of one country or a group of countries regarding to migration can have a significant impact on other MS and the whole EU. Thus, migration policies and practices should be based on principles of fairness and equity. In this paper we focus on demographic consequences of different solutions and situations regarding to international migration using population and human capital projections. We define the concept of **demographic fairness** of a solution understood as its quality that treats all countries equally in terms of demographic outcomes, in our case particularly population size and structure. According to Folger and Cropanzano (2001) unfair treatment is considered as done by someone accountable for an action (or inaction) that threatens another's material or psychological well-being. The action that violates some ethical principle of conduct (a normative standard of justice) leads to unfavourable condition (a negative state of events, relative to a given frame of reference). In case of migration, national and international policy makers and politicians in the EU are accountable for their actions or inaction and should apply a principle of equality in EU in their decision-making, and the consequences of their actions can be harmful, according to us, for populations.

---

[2] Refers to non-EU foreign nationals.
[3] International migration in this paper refers to migration flows between the EU and third countries.

The question arises if, in fact, migration decisions and actions affecting demographic change in size and composition can result in vulnerable populations. *Vulnerability* is defined here as the susceptibility to harm and results from an interaction between the resources available to individuals and communities and the life challenges they face (Mechanic & Tanner 2007). In our case there are two important issues to explore:

(1) Can the whole populations be described as potentially vulnerable given their age composition imbalances, pace of change, etc.?

(2) Can populations of certain structures be considered vulnerable in a sense of the challenges linked to population ageing, shrinking and ageing workforce, in terms of their ability to adapt and react to the rapidly changing globalised contexts and other so-called mega-trends?

Strongly imbalanced population age structures and depopulation pose challenges to a society. For example, it leads to increased burden of maintaining infrastructure and public services in places with strong depopulation or very unbalanced population composition, especially in a welfare state regime. Some investments made previously have to be abandoned, e.g. in material infrastructure (kindergartens, schools, public offices) and human capital (teachers) resulting in sunk costs. Population composition skewed towards older ages causes severe challenges for economy and public spending – rise of spending on health, retirement, withdrawal of savings, increase of the burden on working age population – just to name some issues. Migration can moderate or emphasise such patterns, and thus exacerbate or moderate the consequences and challenges related to such rapid changes.

Thus, decisions related to migration can be *demographically unfair* leading to increase of vulnerability of entire populations. In case of EU, for example introduction of policies of "closed doors" in western MS or entire EU could lead to ever more pronounced demographic imbalances between more and less economically advanced countries of the union, as the first could be benefiting at the expense of the latter. In this case, gaps in wages and living standards will keep on driving migration flows deteriorating demographic situation in the East, and additionally stimulates "demographic sponsoring" as young and well-educated people were raised at the expense of origin (East) countries would contribute demographically and economically to a destination country (West). We argue that this could be *demographically unfair*. In the next sections, we numerically describe possible consequences of different migration decisions and actions for the EU and evaluate their fairness in terms of demographic outcomes.

Data and method

Population and human capital projections presented in this paper use a widely accepted model of multi-dimensional population dynamics that takes several dimensions of population into account (e.g. Keyfitz and Rodgers 1982, KC et al 2010, KC and Lutz 2014, Stonawski et al 2015). The Centre for Expertise on Population and Migration (CEPAM) cohort-component multistate model uses three dimensions of population heterogeneity (Lutz et al. 2018, Lutz et al. 2019). It stratifies population of each European Union country by age (5-year age groups), sex and educational attainment[4]. The importance of including education as a dimension in population projections arises from its influence

---

[4] The model uses the following categories based on ISCED 2011 classification: lower secondary and below (no education, ISCED 1-2), upper secondary (ISCED 3), post-secondary (ISCED 4-8).

on all components of population dynamics (Lutz et al. 2014). It is crucial to capture all three dimensions of population heterogeneity in projections when focusing on migration and its consequences. The composition of migration flows varies greatly in terms of age, sex and education, depending on country-origin dyads. Some flows are dominated by women, other ones by low educated persons or elderly. There is also a phenomenon of brain drain, brain waste, etc. (e.g. Brzozowski 2008, Brzozowski 2007). Migration can play a major role in change of size and composition of populations. Thus, all of these dimensions have to be included into population and migration projections of modern societies in which human capital is a major asset and source of competitive advantage in the global economy.

CEPAM model was developed in *Centre for Expertise on Population and Migration* (CEPAM) which is a joint research project between IIASA and the Joint Research Centre of the European Commission, established to study future changes in EU's population with respect to various alternative migration scenarios. In modelling future changes in population and human capital, we formulate assumptions on fertility, mortality and migration by education, and on trajectories of change in educational attainment. In order to study the demographic effects of diverging migration situations, we develop multiple migration scenarios using narrative scenario building approach.

Selected preliminary results: Demographic effects of alternative migration scenarios

Population age composition: potential workforce and population ageing

We observe diverging past and projected trends in the size of the potential labour force. In the western MS we can see a rather stable projected working age population peaking around 2020-2025 at 164 million and oscillation around 160 million till the projection horizon in the *Medium* scenario. Policies of closed borders to international migration (ZIM) would result in rapidly shrinking working age population[5] in the west to 130 million in 2060. This means that the western EU MS would have 30 million potential workers less in 2060 than if EU mobility and international migration continued as in recent past (*Medium* scenario). Such gaps would need to be potentially compensated by increased mobility from other parts of the EU and/or increased fertility. The 25% rise in fertility from 2020 inwards would result in lesser decline than in the *ZIM* scenario but the benefits of increased fertility would be visible only in the long run. By 2060 the working age population would reach 152 million, same as in the scenario with balanced net EU mobility (no EU mobility). As expected, doubled EU mobility would benefit western MS but would add only fewer than 5 million potential workers in 2060 compared to the number projected in Medium scenario.

Figure 1: Relative change in population size 2060/2015 by scenario
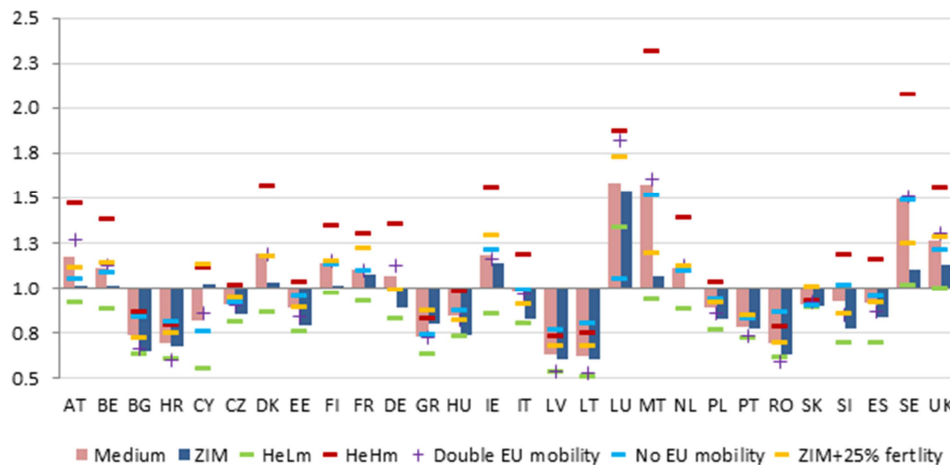
Note: 1 indicates population in 2015 = population in 2060

In the southern and eastern EU MS, the working-age population has already peaked around year 2010 and is projected to decline in all scenarios. Zero international migration (*ZIM*) has a less significant impact for this region than for the west – only 5% smaller working age population in 2060 compared to *Medium* scenario, while western MS would see 18% reduction. Country-specific results show that the impact of *ZIM* is smaller in eastern member states that do not attract as many international immigrants as southern ones (Figure 1). In countries with net migration losses to outside the EU (such as Greece), *ZIM* scenario results in smaller decline and larger working age population compared to *Medium* scenario.
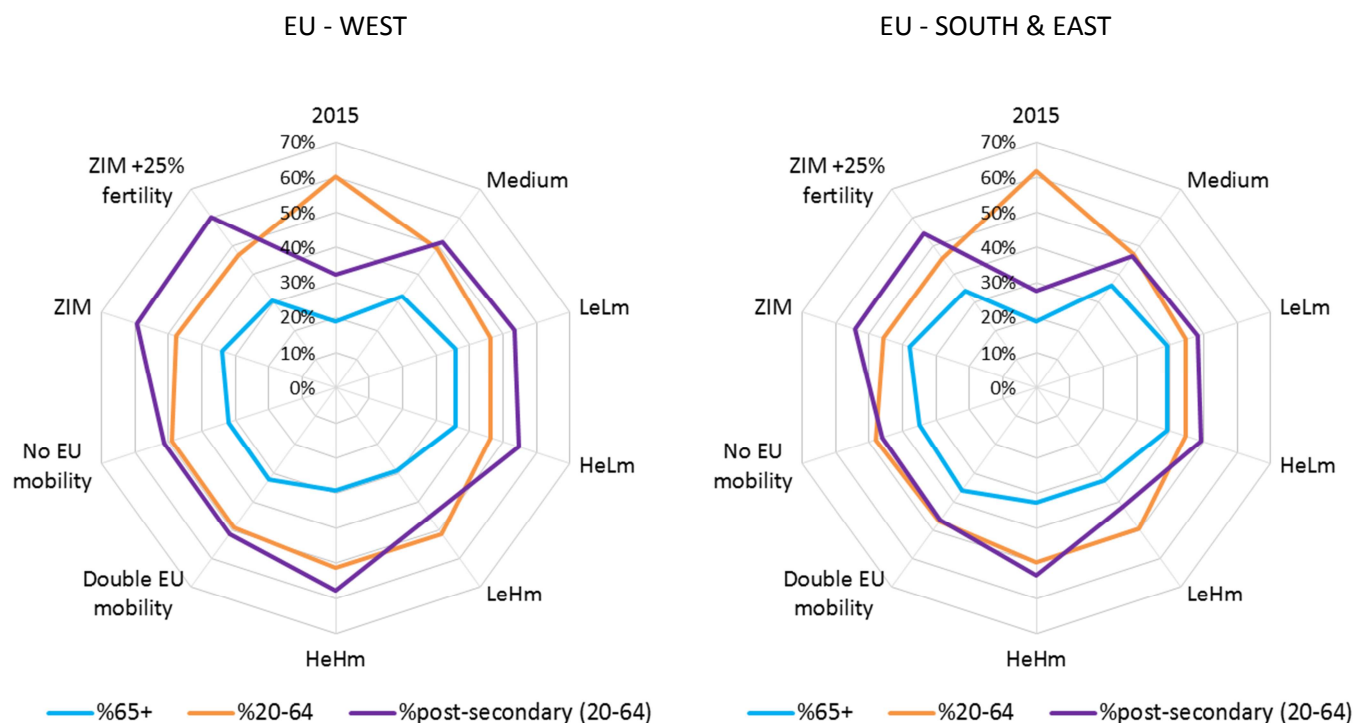
Lack of labour force in the west can result in greater pressure for increasing EU mobility. That would severely hurt economies of southern and eastern MS. The scenarios of *no EU mobility* or *doubled international migration* at the backdrop of continuing mobility would result in a less significant decline on the potential labour force compared to *Medium* scenario. No intra-EU mobility scenario returns nearly 7% larger working age population in 2060 compared to the projected value in *Medium* scenario. Both high migration variants show about 24% larger the 20-64 population in 2060 than in *Medium* scenario.

Currently, southern and eastern EU has younger population composition than the west but population projections indicate faster population ageing the east and south. In relative terms, in 2015 the share of working age population was higher in the southern and eastern MS (62%) than in the western MS (60%). The tables will turn due to the lasting effect on the past and project demographic trends. In 2060 the eastern and southern countries will have 47% of their populations 20-64 under the *Medium* scenario, compared to 49% in the western MS (Figure 2).

Continued educational expansion will result in better educated working age population with a higher share of highly educated population with a university or non-university diploma beyond the completion of upper secondary education, termed post-secondary education in this analysis. Figure 3 shows that in 2015 32% of working age population was better educated in the west (32% post-secondary educated) compared to south and east (27%). This disadvantage is projected to continue. As a result, eastern and southern Europe will have in 2060 smaller and better educated working age

population compared to 2015 (-3.5 million but +46% with post-secondary education), but less educated than in the west where 51% of working age population is projected to have post-secondary education in *Medium* scenario. Western MS will, under *Medium* scenario and in fact in most other scenarios, find themselves in possibly more advantageous situation when the stable labour force size goes in hand with better educated composition. What education composition would be more advantageous is difficult to foresee as future labour demands depend on large number of factors and often contradicting tendencies. One can hypothesise that highly educated workforce is potentially more adaptable to the upcoming changes in nature of work due to upcoming technological progress related to robotisation and artificial intelligence (e.g. Craglia et al. 2018).

Figure 2: Share of population 65+, working and population (20-64) and share of highly educated within the working population, 2015 and projected 2060 by scenarios

Conclusions

Policies of closed borders to international migration would result in rapidly shrinking, although better educated, working age population. Lack of labour force in the west can result in greater pressure for an increased EU mobility. This would have a significant negative impact on population size and structure of eastern EU Member States.

We argue that policies of "closed doors" (EU as a closed fortress) are *demographically unfair* for the EU Member States because these could lead to ever more pronounced demographic imbalances between more and less economically advanced MS. Due to population ageing and the past demographic trends, working-age population in the EU would decline in absence of international immigration. At the same time, the pull factors in the ageing advanced economies would not cease and a pressure for workers from within the EU would drive EU mobility.

References

Brzozowski, J. (2008), *Brain Drain or Brain Gain? The New Economics of Brain Drain Reconsidered*, SSRN Electronic Journal, DOI: 10.2139/ssrn.1288043

Brzozowski, J. (2008), Brain Waste, Educational Investments and Growth in Transitional Countries [in] J. Novosak, *On some migration and development issues*, University of Ostrava. Available at SSRN: [https://ssrn.com/abstract=991785 or http://dx.doi.org/10.2139 /ssrn.991785]

Craglia M. (Ed.), Annoni A., Benczur P., Bertoldi P., Delipetrev P., De Prato G., Feijoo C., Fernandez Macias E., Gomez E., Iglesias M., Junklewitz H, López Cobo M., Martens B., Nascimento S., Nativi S., Polvora A., Sanchez I., Tolan S., Tuomi I., Vesnic Alujevic L., (2018), *Artificial Intelligence - A European Perspective*, EUR 29425 EN, Publications Office, Luxembourg, 2018, ISBN 978-92-79-97217-1, doi:10.2760/11251, JRC113826.

D'Auria, F., McMorrow, K., Pichelmann, K. 2008. Economic impact of migration flows following the 2004 EU enlargement process: A model based analysis. Economic Papers 349. European Commission

Eurostat. (2018). *Migration and migrant population statistics. Statistics explained*. [https://ec.europa.eu/eurostat/statistics-explained/pdfscache/1275.pdf]

Favell, A. 2008. The New Face of East–West Migration in Europe. J*ournal of Ethnic and Migration Studies* 34:5, 701-716, DOI: 10.1080/13691830802105947

Fic, T., Holland, D., Paluchowski, P., Rincon-Aznar, A., Stokes, L. (2011). *Labour mobility within the EU – the impact of enlargement and transitional arrangements*, NIESR Discussion Paper No. 379 [http://www.niesr.ac.uk/sites/default/files/publications/050811_152043.pdf]

Folger, R., Cropanzano, R. (2001). Fairness Theory: Justice as Accountability. [in] J. Greenberg, & R. Cropanzano (Eds.), *Advances in Organizational Justice* (pp. 1-55). Stanford, CA: Stanford University Press.

Fries-Tersch, E., Tugran, T., Ludovica Rossi, L. and H. Bradley. (2018). *2018 Annual Report on intra-EU Labour Mobility* [https://ec.europa.eu/social/BlobServlet?docId=20685&langId=hu]

International Monetary Fund (IMF). (2019). *Demographic headwinds in Central and Eastern Europe*, Departmental paper No. 12/19 [https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2019/07/11/Demographic-Headwinds-in-Central-and-Eastern-Europe-46992]

Kahanec, M., Zimmermann, K. (2010). *EU Labor Market after Post-Enlargement Migration*, Springer.

Lutz, W., Butz, B., KC, S. (2014). *World Population & Human Capital in the Twenty-First Century*. Oxford University Press, ISBN 9780198703167.

Lutz, W., Goujon, A., KC, S., Stonawski, M. and N. Stilianakis (eds). (2018). "Demographic and Human Capital Scenarios for the 21st Century: 2018 assessment for 201 countries". Publications Office of the European Union: Luxembourg, ISBN 978-92-79-78023-3.

Lutz, W., Amran, G., Bélanger, A., Conte, A., Gailey, N., Ghio, D., Grapsa, E., Jensen, K., Loichinger, E., Marois, G., Muttarak, R., Potančoková, M., Sabourin, P. and M. Stonawski. (2019). "Demographic Scenarios for the EU - Migration, Population and Education", ISBN 978-92-76-03216-8. Publications Office of the European Union: Luxembourg.

Organisation for Economic Co-operation and Development (OECD). (2019)*. A global profile of emigrants to OECD countries: Younger and more skilled migrants from diverse countries*. DELSA/ELASA WP2(2019)3.

Raymer, J., Wiśniowski, A., Forster, J.J., Smith, P.W.F., and J. Bijak. (2013). Integrated Modelling of European Migration. *Journal of the American Statistical Association*, 108 (503), 801-819. [http://dx.doi.org/10.1080/01621459.2013.789435]

Treaty of Lisbon. (2007). Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community, signed at Lisbon, 13 December 2007, *Official Journal of the European Union*, vol. 50, ISSN 1725-2423 [access: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2007:306:FULL&from=EN]