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## **NEW EU MEMBER COUNTRIES' EMIGRATION: PROJECTIONS FOR FUTURE**

### **Abstract:**

New EU member states face both migrational and natural demographic decline, while the old member states compensate the negative net birth rate with the immigration. A poor level of development of the economy as well as the accession to EU encouraged net emigration from the new member states. A panel data for the 12 new member states for the period 2007 - 2016 was used to determine how the length of membership and the GDP per capita trailing behind the EU average affect the proportion of the net emigration. It has been shown that a country has to reach at least 85% of the GDP p.c. of the EU average (measured in PPS) to prevent these tendencies, but this level increases with each year of membership by 1,37%. Croatian current GDP p.c. level at 60% of the EU average, lagging more than 30 percentage points behind the non-emigration level, is one of the reasons for the up to that moment unseen level of the net emigration (0,90% of population in 2016).

### **Keywords:**

emigration, new EU member states, old EU member states, depopulation, economic development

**JEL Classification:** J11, A10, J19

## I. Introduction

Most of the new EU member states are facing demographic catastrophe; as compared to the old member states, which mostly have population increase. While almost the entire EU faces aging population and birth rates below death rates, new member states face also strong emigration tendencies, while the old ones mostly have positive immigration balance.

In Table 1 Slovenia, Slovakia, Czech Republic and Malta had the increase in population, and the other 9 new member states had a fall. In the same time, only economically weaker old member states (GDP p.c. index below 100, which is EU average) had a population decline, like Portugal and Greece. Spain and Italy were below the EU average, but have an increase in their population, which is due to the fact that these countries are the “doors for immigration”, especially after the Arab Spring. All the other countries show important relation: negative population balance (*italic*) is related to the below average GDP per capita, while positive population balance (**bold**) is related to the above average GDP per capita. The exceptions are marked in grey.

Table 1: EU countries' population in 2003 and 2016, and GDP p.c. PPS index

Country \Year	Population in 2003	Population in 2016	Population change	GDP p.c. PPS index in 2016 (EU average = 100)
Belgium	10355844	11311117	<b>9%</b>	<b>117</b>
Bulgaria	7805506	7153784	<i>-8%</i>	<i>49</i>
Czech Republic	10192649	10553843	<i>4%</i>	<i>88</i>
Denmark	5383507	5707251	<b>6%</b>	<b>125</b>
Germany	81368051	82175684	<b>1%</b>	<b>123</b>
Estonia	1375190	1315944	<i>-4%</i>	<i>74</i>
Ireland	3964191	4724720	<b>19%</b>	<b>183</b>
Greece	10915770	10783748	<i>-1%</i>	<i>66</i>
Spain	41827838	46440099	<i>11%</i>	<i>92</i>
France	61864088	66759950	<b>8%</b>	<b>104</b>
Croatia	4305384	4190669	<i>-3%</i>	<i>60</i>
Italy	57130506	60665551	<i>6%</i>	<i>96</i>
Cyprus	713720	848319	<i>19%</i>	<i>82</i>
Latvia	2299390	1968957	<i>-14%</i>	<i>65</i>
Lithuania	3431497	2888558	<i>-16%</i>	<i>75</i>

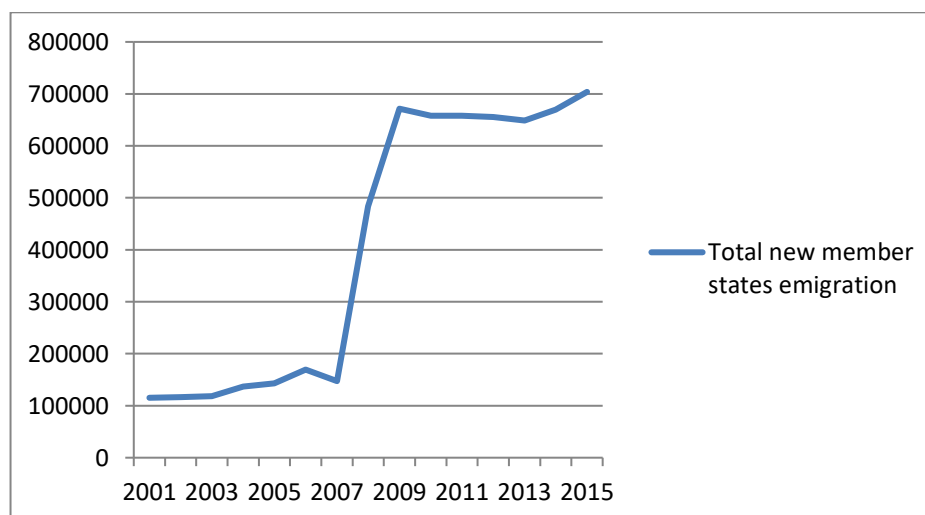
Luxembourg	448300	576249	<b>29%</b>	<b>259</b>
Hungary	10142362	9830485	-3%	68
Malta	397296	434403	9%	95
Netherlands	16192572	16979120	<b>5%</b>	<b>129</b>
Austria	8100273	8690076	<b>7%</b>	<b>127</b>
Poland	38218531	37967209	-1%	69
Portugal	10444592	10341330	-1%	77
Romania	21627509	19760314	-9%	59
Slovenia	1995033	2064188	3%	84
Slovakia	5374873	5426252	1%	77
Finland	5206295	5487308	<b>5%</b>	<b>109</b>
Sweden	8940788	9851017	<b>10%</b>	<b>124</b>
United Kingdom	59501394	65382556	<b>10%</b>	<b>108</b>

Source: own calculation based on the Eurostat data

These findings suggest a correlation between the economic performance and the population balance, which could then in turn help predict future tendencies. However, the exceptions indicate there are other factors too. Furthermore, population balance should be broken into natural and migrational segment. Hence further analysis will take into account previous analyses of the new member states migration phenomenon.

The first thing that arises seeing the migration data is that the presence in EU is a significant emigration factor for the new member states, which can be seen in the Figure 1.

Figure 1: Emigration from new member states

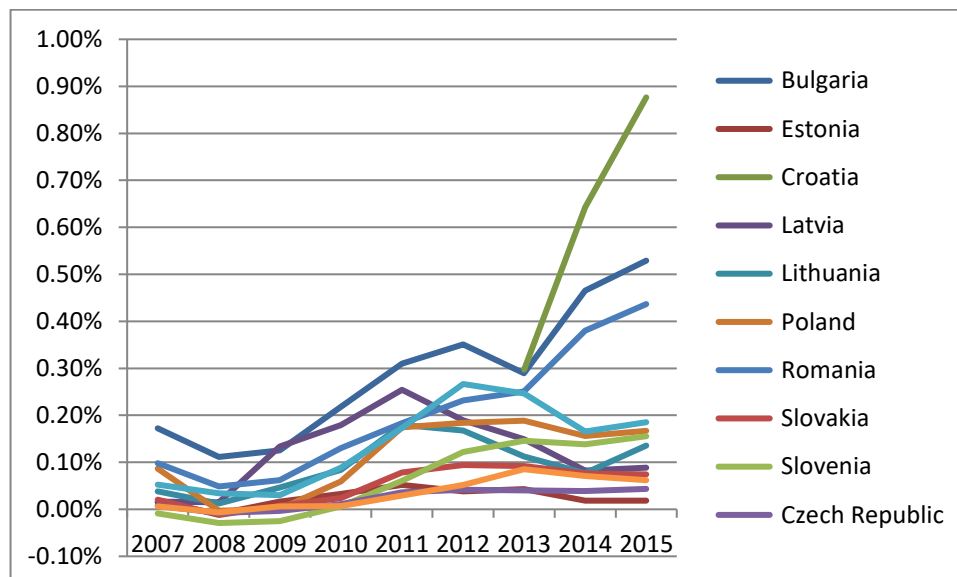


Source: Eurostat

The total new member states pre-accession emigration balance is stable around 118 000, but after the accession it goes up to 137 000, 143 000 and 169 000 in 2004, 2005 and 2006. The emigration explosion happened in 2008 during the crisis and remained high even after the crisis. It suggests that the crisis was just a trigger, and when the wave started, many other, who were also disappointed with the perspective in their homeland, decided to leave.

The Great crisis in 2008 has caused intense migration wave (Figure 2), which calmed down after the end of the crisis. Unfortunately, Croatia's long lasting crisis and the late entrance to EU has caused the share of emigrants in the overall population to boom to almost 0,85% of the overall population in 2015. The alarming data will put a strong focus of this paper on the Croatian case.

Figure 2: Share of emigrants in the overall population from the new member states from 2007 - 2015



Source: Own analysis based on the data of the national bureaus of statistics in UK, Ireland, France, Germany, Austria and Sweden

## II. Literature Overview

Traditionally, it is believed that the migration is influenced by differences in opportunities (i.e. income, employment, quality of life). This is logical but rather limited view on migration. Evidence indicates that the migration does not occur exclusively from the poorest towards the wealthiest countries. Moreover, the volume of migration increases with the development of the country. Castles et al. (2013, p. 25) explain this phenomenon with improved access to information and education, better social capital and financial

resources that impact people's aspirations and capabilities to migrate. Generally, the theoretical approach to migration as well as empirical studies evolved along with general socio-economic context in the past century.

The earliest work of Ravenstein (1885) and Hicks (1932) analyse migration as a process whose causes are predominantly economic (i.e. maximizing the utility of individuals subject to budget constraint). Previous models set ground for neoclassical migration theory which sees migration as a function of geographical differences between supply and demand for labour, thus optimizing the allocation of the production factors (Rostow 1960; Harris & Todaro, 1970; Todaro, 1980; Williamson 1988, Borjas, 1989). The neoclassical models are criticized to see migration as a decision of the perfectly rational individuals based on the rational cost-benefit analyses.

As a modification of the neoclassical approach to migration, Sjaastad (1962) introduced human capital model for migration treating migration as an investment decision. According to this model, migration occurs when expected present value of migration returns exceed costs of migration, including psychological costs (e.g. separation from friends and family). The model also introduces variables influencing the decision based on personal characteristics (age, gender, education, etc.). Stark & Bloom (1985) argue that migration behavior of individuals can be expected to differ in accordance with their perceived relative deprivation and their skill levels.

Mincer (1978) added a new perspective to migration arguing that it is more family than individual decision and that migration occurs only when expected returns of a family member internalize expected losses of other family members. This theory became more influential with the rise of female workforce, indicating that migration decision depends on partner's migration decision and thus explains rising marital instability. Contrary to that, alternative assumption that led to a different class of migration models (see Stark, 1991) is that families show risk sharing behaviour which means that they use their ability to diversify resources (i.e. labor) in order to minimize the risk to family income (e.g. one member of the family working abroad). Further expanding of the model included consideration of social and informational networks, as well as social capital, suggesting that after initial migrants facing the highest costs, migration gradually can become a self-perpetuating process (Massey, 1990; Boyd, 1989).

A useful perspective of labour migration integrating all previous models can be given in the so-called "push and pull" framework. Lee (1966) saw migration decision as a result of "plus" and "minus" factors divided into three areas: origin and destination, obstacles to migration and personal factors. Based on previous theoretical framework, various "push-pull" models arose (Dorigo & Tobler, 1983; Portes & Böröcz, 1989). According to these models, a number of demographic, political and economic factor influence population to

be “pushed” out of their countries (e.g. population increase, lack of working opportunities, political repression etc.), while other factor “pull” them toward new destinations (e.g. unsatisfied demand for labour, political freedoms etc.). The “push-pull” models are criticized to be purely descriptive and arbitrary (Castles et al. 2013) unable to take into account relative importance of different factors, as well as unable to explain simultaneous migratory movements in and out of a country, high level migration in case of low fertility rate countries, etc.

Empirical studies provide evidence supporting previous models in different ways. Haug (2008) demonstrates the strong relation between social capital at the place of destination and decision to migrate (or return to the place of residence) based on data for Bulgarian and Italian migrants in Germany. Jennisen (2002) confirms the impact of GDP pc and unemployment on a country’s net international migration based on 1960-1998 period data in Western Europe. Gallardo-Sejas et al. (2006) demonstrate that the most important explanatory factors for international immigration in 13 European destination countries are population and distance factors, the macroeconomic conditions, cultural proximity, and the existence of narrow trade relationships. Mayda (2005) confirms that immigration in 14 OECD countries was predominantly driven by the difference in salary levels. Cultural, population and distance factors have their expected impact on the size of migration in accordance with the theoretical models.

Sandu & De Jong (1996) explored the migration intentions of Romanians during the 1990s and demonstrated that labor market demand in foreign countries, as well as democratic values strongly influence decision to migrate. On a district level, migration also depends on the local political profile. Other studies (Boncea, 2009) indicate that among higher educated groups (such as physicians) decision to migrate is primarily influenced by the difference in salary in Romania and other countries. Other determinants with significant importance are career opportunities and availability of facilities. Political stability and personal factors are of lesser importance.

Kaczmarczyk & Okólski (2005) argue that CEE represent a separate migration entity sharing common characteristic regarding migration factors. As authors show, the CEE countries are characterized by relatively very high overall mobility but there are also countries with moderate (Estonia and Latvia) or even very weak migration intensity (the Czech Republic and Hungary). With respect to (long-term) migration balance with the West, probably in only one country (the Czech Republic) it is significantly positive, whereas in two or three other (Hungary, the Slovak Republic and maybe Lithuania) its value seems negligible. The rest of CEE has a considerable negative balance. Favelli (2008) argues that the East - West Europe migration story is also one of high-skilled migration. The author reveals the strong impact of human and social capital on migration towards Western Europe in the post enlargement period.

### III. Data and Methods

Based on the introductory analysis in this paper of this paper, and the similar surveys analysed above, a number of variables for emigration, overall economy performance and the presence in EU were chosen. The following model was created:

$$NEM = \beta_0 + \beta_1GY + \beta_2IND + \beta_3EUY \quad (1)$$

where NEM stands for net emigration in population ratio, from the new member states to the other EU states, IND is the index of GDP per capita in PPS where 100 is EU average, GY is its annual percentage change and EUY is the number of years of a country in EU.

The regressor, NEM, is a normalized net emigration variable (net emigration is shown as an index to the total population, which is denoted as 100) since it is completely different if e.g. Croatia, having around 4.2 Mill inhabitants, and Poland, having 38 Mill inhabitants, loose the same number of people. The data are collected from the national bureaus of statistic in Germany, Austria, Sweden, Ireland, France and United Kingdom, which are the main destinations for the new member states' emigrants.

EUY regressor measures the time since the country acceded EU. In the introductory analysis, it was shown the length of stay is related to the emigration tendencies. It could be explained as follows: it takes time for the emigrants to see how the things are over the fence, and after a while, when they prepare and introduce themselves to the new culture, they take the plunge and set off. Encouraged by the other emigrants, those less eager to leave decide to leave afterwards, since they already have a welcoming community in the recipient country.

Performance of the entire economy is measured in GDP per capita measured in purchasing power standard by Eurostat. Two variables are based on this value: IND, which is an index of the mentioned data, where the EU average is set to 100, thus adjusting the absolute average, which floats, to a fixed reference value. The other variable, GY, shows the rate of change of the GDP per capita (PPS). While the former shows how far from the average the country currently is, the latter shows dynamics. The reason for introduction of both variables is that sometimes people, although their economy is still weak (shown by IND), have a boost of optimism seeing good progress (shown by GY). The estimate of the model will show if some of these variables are obsolete. Since variables IND and GY are deducted from the same data set, there is a significance multicollinearity present. Hence it is very probable that one of these variables would be omitted from the model.

The dataset encompasses all new member states except Malta, which is an outlier due to the size and the economic activity, which leaves 12 cross section categories. The data are observed in the period from 2007 – 2016 (10 years). The panel data was used to estimate the model. The panel has 120 pieces of data, fully balanced. The model (1) will be estimated and possibly adjusted and restructured.

#### IV. Findings

An econometric estimate of the model (1) based on the previously introduced panel data is conducted. In this estimate it was shown that GY is to be omitted from the model. An improved model (2) is estimated:

$$NEM = \beta_0 + \beta_1 IND + \beta_2 EUY \quad (2)$$

and its results are as follows:

$$NEM = 0.5723 - 0.0067IND + 0.0092EUY \quad (3)$$

(0.000)    (0.000)    (0.031)

The model has shown that each additional year in EU leads to the increase in the net emigration of the new member states to the old member states by 0.0092 percentage points, while the rise in GDP per capita in PPS index (EU average = 100) by 1 point decreases net emigration in population ratio by 0.0067 percentage points. There is also a systemic tendency for the new member states to leave their countries for the western Europe and it accounts for almost 0.6 percentage points of the net emigration in population ratio.

The explanation for it could be found in a thorough analysis of the factor that affect this constant to be that high; the most probable, which is to be a part of the further analysis of this far-reaching and detrimental phenomenon, is the difference between the development of the society in the new and the old member states. The measure for that could be the Worldwide Governance Index (WGI, published by World Bank) and the Economic Freedom Index (EFI, published by The Heritage Foundation).

The estimated model could be used to predict the emigrational tendencies in Croatia. If Croatia is to stop the emigration wave by then NEM should be equal to 0:

$$0 = 0.5723 - 0.0067IND + 0.0092EUY \quad (4a)$$

$$0.0067IND = 0.5723 + 0.0092EUY \mid \div 0.0067 \quad (4b)$$

$$IND = 85.42 + 1.37EUY \quad (4)$$



This result shows that a country requires at least 85.42 of the GDP p.c. (PPS) where 100 is the EU average to stop emigration, but this value increases for each year of the membership by 1.37. This factor might be called the “integration factor” of the EU, showing that population, as the time goes by, will face the increasing mobility which is crucial for the solution of the eurosclerosis problem. Specifically, Croatia would require a  $IND = 85.42 + 1.37 \times 7 = 95,03\%$  of the GDP p.c. EU average (PPS) in the 2017 to stop emigration, while in the 2018 it would grow up to 96,4%. Croatia, having only 60% of the GDP p.c. EU average in 2016, is very far from the emigration limit, which could be easily seen in the Figure 1 where Croatia has the most intense emigration process, being significantly above the runner up, Bulgaria.

## V. Conclusion

Major part of the new member states in the European Union have shown the increase in the emigration since their accession. Although some countries, like Czech Republic, Slovakia and Slovenia, have stopped these tendencies, due to their own good economic performance, even they have experienced the increase in the net emigration during the big crisis duration. Since this emigration is extremely far reaching, due to the inadequate birth rate in the observed countries, these countries slowly, but certainly go towards the collapse of the public health and pension system, which is mostly based on a solidarity principle in the entire post transitional block.

In order to predict and prevent the undesired effects, this paper first analysed the literature to determine factors crucial for the emigration in the similar studies. Afterwards, a panel data econometric analysis was made, based on the emigration data for the 12 new member states (all except Malta) from 2007 – 2016. It was determined that a country, having at least 85% of the GDP per capita of the EU average, measured in PPS, is required to prevent the emigration, but this level increases by 1,37% for each year of membership.

These findings suggest that the demographic decline in Western Europe is patched up by “demographic cannibalism” from Eastern Europe, thus aggravating their situation even further. The reach of the emigration in the new member states is in the major part explained by this model, showing why it is so intense in the poorest countries, like Croatia, Romania and Bulgaria, and giving the forecast for the future, which is, in the current level of economic development, extremely detrimental for these countries which are far from the non-emigration level of development.

This model has taken into account only the net-immigration old EU member states, excluding the net emigrational countries like Italy and Spain, but which welcomed many Romanians. To get a wider picture, and not only the EU inter-migration, a broader set of

countries, including the overseas countries too, should be taken into account. Furthermore, an immigration policy as well as the quality of institutions and the level of economic freedom should be included, since Spain, which has net emigration, has buffed these tendencies with the non-EU immigration welcoming policies, while Hungary does just the opposite and has almost no immigration from non-EU countries.

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