The Effects of Eastern-Western Mobility in EU on the Economic Development

Los efectos de la movilidad oriente-occidental en la ue sobre el desarrollo económico

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Abstract

The main objective of this research is to analyse the effects of the emigrants on the economies of the EU developed countries focusing on the effects on the economic growth, the employment rate, and the workforce but also on the productivity of the factors. The results obtained from this analysis indicate a positive and significant influence from a statistical point of view of the immigrants coming from the EU countries in 2004 on the economic growth, workforce, and productivity for the countries from EU 15. In case of the immigrants coming from Romania and Bulgaria we identified a positive and

significant impact on the economic growth of the states from EU15 while for the other variables included in the analysis, we obtained contradictory results.

Keywords: economic growth, the employment rate, factor productivity, labour force participation, immigrants.

Resumen

El principal objetivo de esta investigación es analizar los efectos de los emigrantes en las economías de los países desarrollados de la UE centrándose en los efectos sobre el crecimiento económico, la tasa de empleo y la mano de obra, pero también sobre la productividad de los factores. Los resultados obtenidos de este análisis indican una influencia positiva y significativa desde un punto de vista estadístico de los inmigrantes procedentes de los países de la UE en 2004 sobre el crecimiento económico, la mano de obra y la productividad de los países de la UE 15. En el caso de los inmigrantes procedentes de Rumania y Bulgaria identificamos un impacto positivo y significativo en el crecimiento económico de los estados de la UE15 mientras que para las otras variables incluidas en el análisis obtuvimos resultados contradictorios.

Palabras clave: crecimiento económico, tasa de empleo, productividad de los factores, participación en la fuerza laboral, inmigrantes.

1. Introduction

Migration should not be treated as a problem, it should be seen as a phenomenon that needs to be managed in order to limit its negative effects and exploit the benefits to the maximum. Migration will always represent a reality that will continue to exist as long as there are discrepancies in terms of well-being and development between different regions of the world, and political, economic or social problems, it representing a possibility to achieve aspirations. The integration of Eastern European countries into the European Union has long-term consequences, migration being one of the main social effects of this process.

Migration from Eastern Europe to Western Europe started in the early 1990s, when there were restrictions on labor mobility. According to Iranzo and Peri (2009), the emigration rate of those with higher education was three to four times higher than that of other groups in the case of emigrants from Eastern Europe in the year 2000. As barriers to labor mobility in the European Union are dismantled, with the accession to the European Union and the reduction of the legal costs of migration between East and West approximately 9% of the working-age Eastern European population would eventually move to the West.

The aging of the population in the developed economies along with the lower fertility rates raise questions regarding the sustainability of the labour markets, and the reaction was to expand the capacity of these economies to integrate a higher number of immigrants. The governments from the countries which are regarded as welcoming countries started to be more selective in their immigration policies aiming at those immigrants who can better meet the needs on the labour market and who can be easily integrated in the local communities.

Europe was always a centre of international migration. In 2020, eight out of one hundred residents in EU were born outside the EU (European Commission 2021), and 4 were born in another Member State than the current resident state. The European continent was always a space of interest for immigrants. After some states adhered in 2004 and in 2007, the migration landscape in Europe changed drastically, especially after the internal market expansion in EU and the freedom of movement of the workers in Central and Eastern Europe. The barriers stopping the East-West migration were stopped along with these expansions and created an internal market for the workforce including for the states with a different level of development, salaries, and unemployment rates.

These new migration flows were not easily accepted for a certain time, in the welcoming countries.

The full extent of these flows was remarkable, almost five million and a half of the citizens from the new Member States (the ones acceding the EU in 2004 and 2007) living in the pre-expansion Member States (EU15) in 2010, representing a three million and a half growth (Kahanec and Pytliková 2017). The high number of migration flows after an expansion in a relatively short period of time creates the proper environment for the analysis of the economic effects of migration on the destination countries. The number of moving workforce increased by 1,2% in 2019 with a slower rhythm as opposed to 3,4% in 2018, making 4,2% of the total working population in EU to live in a host Member State. Before the expansion from 2004, the mobility within EU 15 was of approximatively 1% (Gill and all, 2012).

The largest part of the migration in Europe takes place between the EU Member States. The first countries with immigrant workers as compared to the population of the country were Romania, Poland, Italy, Portugal, and Bulgaria. The mobility periods are shorter, 50% of the people moving out, stay in the host country for one up to four years. The comeback mobility also increased: for every four people leaving a Member State, three come back. (European Commission 2020). An expansion of immigration as a result of the European common labour market might have varied, positive and negative effects. The size of these effects relies on the size of the migration growth – a small growth of immigration represents small effects. The effects also depend on the nature of the new immigrants and on the functioning of the economy they resort to.

An enormous influx of immigrants from Central European countries, especially after the economic recession of 2008, stimulated in-depth research on the effect of migration to Central Europe within the European Union. Thus, the objective of this article is to analyze the effects of migration from Central and Eastern European countries that joined the EU in 2004 and 2007 in the EU15 countries for the period 2000-2020, thus taking into account both the pre-accession period when migration already existed, especially in the case of those with higher education (Iranzo and Peri 2009), but also the period after accession and liberalization. The effects are looked at in terms of economic growth, employment and productivity in the EU15 countries.

The document is structured as follows: the next section outlines a brief literature overview of the approaches conducted on the topic, then Section 3 emphasizes the theoretical framework of the econometric approach, Section 4 summarizes the applied data and sources, Section 5 discusses the results of our analysis and Section 6 presents the conclusion of this paper.

2. A BRIEF LITERATURE OVERVIEW

This article analyses a highly debated aspect in the reference literature, that is the effects of immigration on the economies of the welcoming countries, focusing on the EU developed countries. There are contradictory opinions

regarding the impact of immigration on the economies of the welcoming countries.

The opponents of immigration think that immigrants are stealing the working places and are lowering the salaries. Another argument of the critics of immigration is that immigration can trigger conflicts between the ethnic groups. The reasoning behind this hypothesis is that such an environment might appear where the native groups with low incomes consider immigrants as competition for working places and resources. Eventually, the opponents of immigration sustain that the higher number of immigrants might ruin the identity of the local community and of its institutions.

The supporters of immigration, on the other hand mention that immigrants are not the reason why they lose the working place, because most of the time they do not engage in those tasks considered to be too easy, or uninteresting by the host society. The supporters also add that the immigrants create added value for the economy, because they are consumers and they stimulate the economy, which in its turn creates new working places. The international migration has the potential to facilitate the transfer through competences and to contribute to the cultural enrichment.

The early research regarding the mobility of the workforce analysed immigration in an extended version of the traditional model Solow-Swan, according to which we assume that immigrants increase the unqualified population of a country, leading to a lower income per capita because of a capital reduction. Later, Benhabib (1996) overcoming the hypothesis of the Solow-Swan model according to which the immigrants do not offer any capital and brings the idea of a certain economic income from immigration in terms of GDP per capita.

In its paper Borjas (1995) proved that immigrants increase the workforce offer in the welcoming country determining a new internal balance characterised by a national lower average income, an increasing employment rate and a higher national income. These growth as opposed to the initial situation is called „surplus generated by immigrants".

As for the effects of the immigrants on the salaries of the workers from the destination country, there were a series of studies conducted having as a destination country Canada or Australia (Addison and Worswick 2002; Pope and Withers 1993; Akbari and DeVoretz 1992) they did not identify the negative effects of immigration on the labour market. In Asian countries, a study conducted analyses the female population immigrating to urban areas due to the increasing demand for labor mobility, in the connection with economic development (Su et all., 2019). In a study conducted by Zorlu and Hartog (2005) we identified the low effects on the salaries of the native workers from Great Britain, the Netherlands and Norway. And in the USA Freidberg and Hunt (1995) noticed a small effect on the salaries determined by immigrants.

The low effects of migration on the salaries and on unemployment in the destination countries were identified in a series of studies performed on the labour market from UK (Blanchflower et al, 2007; Gilpin et al., 2006; Lemos

and Portes, 2008). Similarly, the studies conducted in Ireland (Doyle et al., 2006; Hughes, 2007) identified the fact that after the EU expansion there was an effect of substituting and reducing the growth for a category of salaries, but only in certain sectors, which did not have an impact on unemployment and on the growth of the salaries on a macroeconomic level. In Ireland, Barrett (2010) also noticed a positive effect of migration because it reduced the growth of the salaries in the period of economic boom, leading to the growth of the international domestic product.

In a study carried out on eight EU Member States, Brenke et al. (2010) concluded that the EU immigrants are competing with the non-EU ones, rather than with the workers from the welcoming countries, especially in the low-qualified field.

As for the effects of immigrants on the employment rate and unemployment rate in Ireland (Doyle et al., 2006; Hughes, 2007; Barrett 2010) we did not notice significant changes. Similarly and on the level of UK (Blanchflower et al, 2007; Gilpin et al., 2006; Lemos and Portes, 2008) the authors consider that the fear for unemployment growth was the triggering factor determining the reduction of the salaries before 2004.

A study analysing the impact of immigration on the European Economic Space (Angrist and Kugler, 2003) in the period 1983-1999 noticed that a 10% growth of the number of immigrants would determine a reduction of the employment rate of the natives with 0,2-0,7 percent.

On the level of EU, there is a unanimous point of view in the studies carried out, that is, that migration in the EU countries was determined by the EU expansion, because it generated substantial migration flows from the new Member States to the old Member States (Kahanec, 2015; Kahanec & Zimmermann, 2009, 2016; Light & Young, 2009). These papers identified a positive aggregate effect on the host workforce, although on a micro level it might generate positive or negative effects, on the whole the free movement in an expanded EU led to the development of the efficiency of its labour markets.

More recent studies (Manole et al, 2017; Noja et al., 2018; Jaumotte et al. 2016) carried out on the EU level pointed out the positive effects of the immigrants on the labour market and the economic growth from the destination countries. Manole et al. (2017) noticed that for the destination countries migration leads to a growth of productivity due to the innovation and the complementarity and determines the economic growth. Noja et al. (2018) analyses in a study the effects generated by refugees and immigrants and concluded that these are positive on the level of the labour market regarding the employment and the labour productivity. Jaumotte et al (2016) estimated that the immigrants generate a long term effect for the GDP growth per capita in the destination countries irrespective of the degree of qualification, A 1% of the share of the immigrants in the workforce determines a growth of the GDP per capita with 2% on a long term.

Ortega and Peri (2014), noticed in a study carried out on the level of the OECD countries that the immigrants flow lead to a growth of the total GDP

in the destination countries without affecting the level of the salaries or the income of the people.

As compared to these studies, our research brings two elements of novelty. The first novel element is represented by the fact that the analysis of the effects generated by immigration is only on the advanced economies from the European Union and not on a mix of countries with higher or lower incomes. This analysis allows us to formulate relevant results which are specific for the development countries which are confronting with a higher number of immigrants. A second novelty element is given by using a data panel in the analysis, consisting of several developed states from EU offering results which can be used in the debates regarding the EU policies related to migration, unlike the previous papers analysing the effects of the immigrants on the economic growth, on the employment rate and unemployment on the level of the Member States (using data series).

In order to achieve the proposed goal to identify the effects of the migration from the Easter-European countries on the West-European countries from the point of view of their involvement on the economic growth, the workforce and the productivity of the factor, we formulated several hypotheses:

H1. *Immigrants might affect the employment rate and the participation of the workforce from the destination countries.* This hypothesis is based on the idea that immigrants lead to the growth of the labour offer, and can generate either the elimination of the workers in the destination country from the labour market, or to create new complementary working place, stimulating their productivity and specialisation. In consequence, we assess the total effect of immigration on the employment rate combining their direct contribution and the effect on the native employment.

H2. *Immigration has a positive impact on the economic growth from the destination countries.* This hypothesis relies on the idea according to which immigration might influence the volume and the nature of investments. Moreover, according to the structure of the competences of the immigrants, the effects on the capital accumulation and on the intensity of the capital can be positive, because the immigrants with higher studies can work in more intensive sectors in capital or can use complementary capital techniques.

H3. *There is a significant influence of the immigrants on the total productivity of the factors.* This hypothesis starts from the fact that immigrants might cause either exclusion effects, when they replace the local workers or completion effects when we add the variety of ideas and products from the destination economy.

3. Theoretical framework

In order to quantify the effects of the population immigration in the new Member States of EU on the EU economies, we started from the model proposed Kahanec and Pytlikova, (2017), Peri (2012), Ottaviano and Peri (2012) and Docquier et al. (2013) which were based on the production function. In our

research we seek to investigate the effects of the migration on the salaries (being assessed as GDP per capita) and the economic growth, as well as on the employment and the total productivity of the factors. Therefore, we will assess a set of five models expressed with the following linear regression equation:

$$lnY_{jt}=c_t+\gamma lnX_{jt}+\vartheta_j+\theta_t+\delta_r\theta_t+\varepsilon_{jt}$$ (1)

where *Y* is successively represented by the following dependent variables: GDP total (GDP_T), GDP per capita (GDP_C), employment rate (ER), labour force participation (LFP) and total factor productivity (TFP). Because the values of the Y term cannot be determined only by the evolution of the number of immigrants, we also must include a series of other factors which should consider the specific time characteristics for each country, represented by the term ϑ_{tj} the fix time effects θ_t, as well as the fix time effects, which interacted with regional qualitative variables in our main specifications $\delta_r\theta_t$. The term ε_{jt} represents the standard error associated with every state included in the analysis. The variable used to explain the changes in the term Y is represented by X_{jt} that is the number of immigrants from certain origin countries in the destination country. X will be successively represented by the independent variables *EU2004* (number of immigrants coming from the 10 countries acceding the EU in 2004) and EU2007 (number of immigrants from Romania and Bulgaria, countries which acceded in EU in 2007). The effects of immigration on the economies of the destination countries are quantified with the help of the coefficient associated with the term X_{jt}.

The implications of the foreign population migration in the destination countries can be noticed both on the workforce offer, but also on the native workers, by excluding them or by orienting them towards other working places. This situation generates the growth of the labour productivity and of the specialisation of the workers in the destination country. Changing the total productivity of the factors appears because of the exclusion of the native workers due to the immigrants on the labour market.

In order to test the hypothesis formulated we used the simple linear regression equation which we tested using the - Ordinary Least Squares Fixed Effects (LS-FE), the method of the Stepwise Least Squares (STEPLS) and the method of the Robust least squares (ROBUSTLS).

The method of the Ordinary Least Squares Fixed Effects (LS-FE) involves that the differences between the individuals can be adapted by different interceptions. This assessment model is often called the technique of the simulated variable (LSDV). The fixed effects differ from the classic model but still uses the ordinary principle of the least squares. The modelling hypothesis producing a constant interception for each transversal and time section is considered less realistic, so more models are used in order to attract the energy.

The assessors of the ordinary pattern of the least squares are sensitive to the presence of the observations being outside the normal interval for the interest

regression model. The sensibility of the conventional regression methods to the abnormal observations might lead to the assessment of coefficients which do not reflect accurately a subjacent statistic.

The robust least squares (ROBUSTLS) method refers to a variety of regression methods created in order to be robust or less sensitive to normal values. We used the assessment method M proposed by Huber (1973) approaching the abnormal variable where the value of the depending variable is significantly different from the norm of the regression (large waste).

The step-by-step regression (STEPLS) allows that variables in a linear regression are either chosen automatically from a set of variables, using various statistical criteria. The advantages and the limits of this method were presented in papers as: Derksen and Keselman (1992), Roecker (1991), Hurvich and Tsai (1990). This method eliminates from the variable set those which are linear combinations of other regression variables. If two or more search variables are co-linear, STEPLS will select the variable listed first in the search variable list. After the Stepwise selection process, the used software reports the results of the final regression, that is the regression of the included variables and of the selected variables on the dependent variable. In certain cases, the sample used in this equation might not coincide with the regression used during the selection process. This will happen if some of the searched variables have missing values for some observations which do not have missing values in the final regression.

4. The data used in this study

The dependent variable used within our study are represented by the gross domestic product (GDP_T), the gross domestic product per capita (GDP_C), the employment rate (ER), the labour force participation (LFP) and the total factor productivity (TFP), and the independent variables are represented by the number of immigrants from the 10 countries acceding the EU in 2004 and the number of immigrants from the 2 countries acceding EU in 2007.

The set of data regarding international migration used withing this analysis was collected from the database of the Population Service of the United Nations Department of Economic and Social Affairs and includes information about the immigrant flows from EU15 in the period 2000 - 2020. The data regarding the total GDP (GDP_T), GDP per capita (GDP_C) and the employment rate (ER) were officially collected from the European Commission website and the total factor productivity (TFP) were selected from the World Bank database. EU15 includes the following 15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Portugal, Spain, Sweden, United Kingdom. This represents the Member Countries of the European Union before the accession of the ten candidate countries on 1 May 2004.

In our analysis we used data regarding the immigrant flow from the 12 countries acceding EU in 2004 and 2007. The largest expansion of the

European Union as a territory, number of states and population took place on the 1st May 2004. The simultaneous accessions included the following countries (noted by us EU2004): Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia. Seven from these were part of the former Eastern block. A new expansion took place in 2007 with the accession of Romania and Bulgaria to the EU (written by us EU2007).

In our set of data, as in the other existing set of data, the institutions from the countries included in the analysis used different definitions for an „immigrant" and take their statistics regarding the foreign population from various sources. While some countries report the definition according to the country they were born in, which is preferred in our data, other countries use the definition according to the citizenship or the country of origin, which includes a second or a third generation of immigrants, excluding those naturalised.

For a complete and overall image on the series of data used in our analyses, we considered it was necessary to present the descriptive statistics for the variables used within the proposed models.

TABLE 1. DESCRIPTIVE STATISTICS

	GDP_T	GDP_C	LFP	TFP	ER	EU2004	EU2007
Mean	776853.7	35017.30	58.85297	6430371.	66.39865	264291.0	169439.3
Median	353704.7	33300.00	59.49000	2792017.	67.25000	83210.00	40355.50
Maximum	3367560.	83550.00	73.29000	20957202	77.80000	3181086.	1110667.
Minimum	22986.00	16170.00	48.15000	179535.1	50.80000	936.0000	399.0000
Std. Dev.	836775.0	15069.25	5.226893	6588582.	6.231702	575342.0	288515.3
Skewness	1.293577	1.737142	0.057714	0.950518	-0.284143	3.406075	2.100674
Kurtosis	3.579754	6.318156	3.283950	2.271032	2.331131	14.42657	6.260421
Jarque-Bera	21.67422	71.16582	0.289684	12.78144	2.375199	545.6630	87.20183
Probability	0.000020	0.000000	0.865159	0.001677	0.304952	0.000000	0.000000

Source: Own construction.

As it can be noticed from table 1, we identified for each variable the following descriptive elements:
- in average we have 264291 people emigrating from the EU 2004 states in EU15 and 169439 people emigrating from EU 2007 in EU15.
- Unlike the average of the immigrants in EU15 which has high values, the middle line of the immigrants in EU15 has some high values, the middle lines indicate 83240 immigrants in EU 2004 and 40355 in Romania and Bulgaria by the Member States EU15.
- The maximum value of the immigrants coming from EU 2004 is 3181086, while the minimum value of this indicator is 936 immigrants. As for the states acceding EU in 2007, they registered a maximum number of 1110667 emigrants to EU15 and a minimum of 399 emigrants to EU15.

- We notice in this table that the single variable with negative asymmetry is the employment rate (ER), whereas the rest of the variables present a right distribution.
- We can notice that for the two variables (TFP and ER) the distribution is leptokurtik (with a peak), and for the other five variable the distribution is platokurtik.
- For the five of the variables shown above, we reject the hypothesis of the normal distribution on the level of 5%, but not for the variable LFP and ER presenting a normal distribution as it results from the p values.

5. Results and debates

To summarize data, as an input into a more advanced analysis, and as a diagnostic for advanced analyses we use a correlation matrix. A correlation matrix is a table showing correlation coefficients between variables (Table no. 2). In our case, correlations will be computed for each pair of analysis variables, controlling for all of the variables in the conditioning set. We consider the Pearson correlation between each pair of variables.

Table 2. The correlation matrix of the variables in the models

| Correlation							
Probability	lnGDP_T	lnGDP_C	lnER	lnLFP	lnTFP	lnEU2004	lnEU2007
lnGDP_T	1.000000						
	-----						
lnGDP_C	-0.245565	1.000000					
	0.0350	-----					
lnER	0.032001	0.300934	1.000000				
	0.7866	0.0092	-----				
lnLFP	-0.136796	0.258736	0.836559	1.000000			
	0.2452	0.0260	0.0000	-----			
lnTFP	0.947387	-0.342611	-0.198434	-0.337532	1.000000		
	0.0000	0.0028	0.0901	0.0033	-----		
lnEU2004	0.747074	-0.066594	0.267337	0.098314	0.595572	1.000000	
	0.0000	0.5729	0.0213	0.4046	0.0000	-----	
lnEU2007	0.606993	-0.275826	-0.306999	-0.370380	0.727488	0.447531	1.000000
	0.0000	0.0174	0.0078	0.0012	0.0000	0.0001	-----

Source: Own construction.

Each cell in the table contains on the first position the correlation coefficient and under this the value of probability. From this table we can notice a strong positive correlation between the total productivity of the factors and GDP total indicated by the 0.94 coefficient (very close to 1) and the p-value of 0.0000. At the same time, we identified the positive and the significant correlations from a statistical point of view between the labour participation and the employment rate, between the immigrants from the countries acceded to EU

in 2004 and GDP total and the total productivity of the factors. There were identified negative correlations reduced as intensity, but significant from a statistical point of view between lnGDP_C and lnGDP_T, between lnTFP and lnGDP_C, between lnTFP si lnLFP, as well as between lnEU2007 and lnGDP_C, lnEU2007 si lnER, lnEU2007 and lnLFP.

The results of our analysis regarding the effect of immigration on the EU15 economies are presented in table no.3. In order to take into account, the possible differences between the categories of immigrants, as they are defined by their origins, we point out separately the results for immigrants coming from the states which acceded to EU in 2004 and those which acceded in 2007.

The results correspond to the five models where the GDP per (for the assessment of the value of the average income) and the total GDP (both adjusted in PPA), the employment rate and the labour participation (in order to take into account the labour input), and the total factor productivity (in order to consider productivity) are used as depending variables.

Fig. 1. The consequences of the immigrants on the economic growth, the workforce and the productivity in EU15
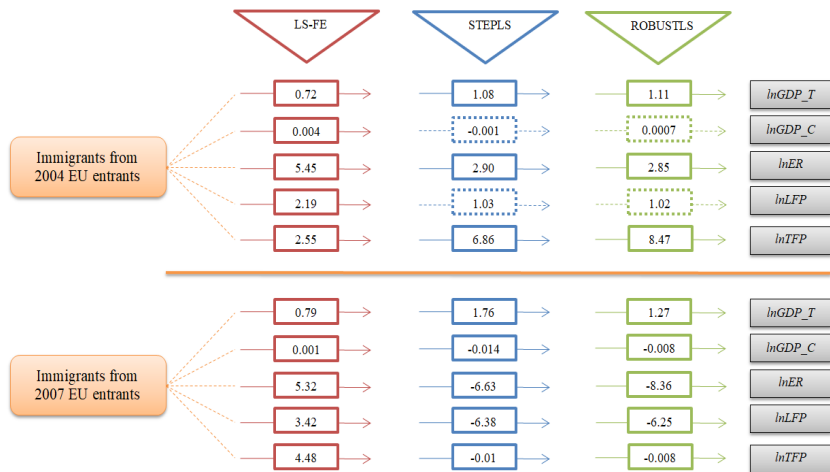
Source: Own construction.

Figure 1 shows a series of significant results. As for the assessments obtained from using the least square method with fixed effects, we can notice positive and significant influences from a statistical point of view triggered both by the immigrants from the countries acceding EU in 2004, but also by the immigrants coming from the countries acceding EU in 2007, for all the dependent variables which were analysed. The influence of the economic growth of EU15 is almost the same in the case of both categories of immigrants, so that a growth with

1% of the immigrants in EU 2004 and EU 2007 determines a growth of GDP with 0,72%, respectively 0,79%.

The significant and positive differences in both cases are met in the analysis of the influence of immigrants on the labour force participation where we notice that the immigrants in Romania and Bulgaria determine a higher labour participation (3.42) as compared to the influence of the foreign population coming from the states which acceded to the European Union in 2004 (2,19). Continuing the analysis in the area of the workforce, we notice that the impact of the immigrants on the employment rate is almost the same, so that a 1% growth of the immigrants in EU2004 and EU 2007 will determine a growth of the employment rate with 5,45%, that is 5,32 also positive in the case of both categories of immigrants.

Analysing the impact generated by the foreign population on productivity, we can also notice a positive and significant influence from a statistical point of view of the immigrants in Romania and Bulgaria on the total factor productivity (4.48) higher than the influence of the immigrants coming from EU 2007 (2.55). If we report to the assessments resulted from the STEPLS method, we can notice that in the case of the immigrants coming from EU 2004 we identified positive and significant influences from a statistical point of view for three variables (*lnGDP_T*, *lnER* si *lnTFP*), whereas the results for the other two variables (*lnGDP_C* și *lnLFP*) are not significant from a statistical point of view (because the value of p is higher than 0.10).

The models analysing the impact of the immigrants from the states acceding EU in 2007 show us that all the variables are significant from a statistical point of view, but, unlike the results obtained from the LS-FE method, there is a positive impact only on lnGDP_T variable, while for the others the influence is negative. We notice the fact that the influence on GDP is higher in the case of the immigrants from EU2007 when we used the STEPLS method, as compared to the results obtained with the help of LS-FE. Similar results to those obtained through the STEPLS method were also found in the case of the ROBUSTLS method. Therefore, the immigrants coming from the countries acceding the EU in 2004 influenced in a positive way the variables *lnGDP_T*, *lnER* and *lnTFP*, while the influence on the other two variables, although it is positive, it is not significant from a statistical point of view. At the same time, in the case of the immigrants coming from Romania and Bulgaria, there is a positive and statistical impact on the lnGDP_T variable, whereas on the other variable we identified significant statistical influences, but negative.

6. Conclusions

The purpose of this research was represented by the analysis of the influences exerted by the migration of the population from the less developed EU states (acceding EU in 2004 and 2007) on the economic growth, workforce, and productivity in the EU founding countries, as destination countries for immigrants. Therefore, we separated the foreign population in these states

in two categories: immigrants from EU 2004 (the 10 acceded EU in 2004) and the immigrants from Romania and Bulgaria (the two states acceding EU in 2007). The dependent variables used to assess the economic growth were represented by GDP total and GDP per capita (lnGDP_T and lnGDP_C), and the ones to quantify the workforce were the employment rate and the labour force participation (lnER and lnLFP), and to assess the productivity we used the total factor productivity (lnTFP).

The assessments of the models proposed were obtained by using the three econometric analysis method that are: the method of the Ordinary Least Squares Fixed Effects (LS-FE0 the method of - Stepwise Least Squares (STEPLS) and the method of the Robust least squares (ROBUSTLS).

The results obtained from this analysis point out a positive and significant influence from a statistical point of view of the immigrants coming from EU 2004 on the economic growth, workforce and productivity from EU15, according to the values obtained from the application of the three methods of analysis, for the three dependent variables analysed (*lnGDP_T*, *lnER* and *lnTFP*), whereas for the other two (*lnGDP_C* și *lnLFP*) the influences are significant from a statistical point of view only if the LS-FE method is used. These results are on the same line with the results obtained in other studies, using similar or different methods (Barrell et al. 2007; Muysken and Ziesemer, 2014; Mazuy et al. 2013; Kahanec, Pytlikova, 2017; Jaumotte et al, 2016; Manole et al., 2017)

The effects triggered by the foreign population coming from Romania and Bulgaria on the economic growth in EU15 are positive, significant from a statistical point of view and confirmed through all the three methods applied, in exchange there is an uncertainty of the influence of this category of immigrants on the workforce and of the labour productivity in EU15, because the results obtained with the help of the LS-FE are positive and significant from a statistical point of view, while the results obtained with the help of the other two methods (STEPLS and ROBUSTLS) point out a significant impact from a statistical point of view, but negative, which does not allow us to conclude on the effect on the workforce and labour productivity.

The results from this paper correspond to those presented in other papers drafted on the same subject (Kahanec, 2015; Kahanec & Zimmermann, 2009, 2016; Light & Young, 2009) that is that the free movement of workforce in EU contributes to the positive effects of migration within EU on the destination countries, allowing the immigrants to integrate more efficiently and representing a significant element on the single EU market.

The results obtained outline the importance the countries need to show for the integration of the immigrants on the labour market so that they can benefit from the GDP growth per capita and from the GDP general and to reduce the pressure on the public finances. Therefore, we consider that the developed states should follow the adoption of policies which should be guided to solving the problems of the immigrants related to language, recognition of

the competences, their certification, facilitating in this way the employment of the immigrants according to their specialisation and qualification.

We identified the limits of this research referring to the low availability for a longer period, which would allow for more precise results in the evaluation of the effects of the migration phenomenon on the economic growth.

In the future, we aim to expand our analysis considering the higher level of education of the immigrants (considering the need to attract the highly educated people on a EU level) and the occupational structures and carrying out analysis on different periods of time, before and after the COVID19 period in order to distinguish if the pandemic crisis generated changes in the influence exerted by immigrants.

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