# Migration and its Determinants: an Europe 2020 Perspective

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## Abstract

The main theories of migration argue that migration is caused by the level of development of the host countries. This fact is also confirmed by the empirical analyses from the scientific literature.

Due to the changes occurred after the economic crisis the main concern of European Union is focused on Europe 2020 perspectives. This analyse merge migration with four of five major domains regarding Europe 2020: employment, research adn development, education, poverty and social exclusion. The data set used comes from Eurostat and includes a time span of 10 years starting with 2004, for all 28 countries of the European Union.

**Key words:** migration, panel data, regression model, Europe 2020
**J.E.L. Classification:** C33, F22, O10, O15

## 1. Introduction

Since prehistoric times migration was a normal activity for people to gain their existence as humans were rather nomadic, nowadays migration is rather an exception. Migration is defined as a movement of a person or a group of persons abroad, representing the international migration, or within the borders of a state, representing internal migration.

The main interest when studying migration is related with the determinants of it and what drivens this social phenomenon. Literature regarding migration is abundant in studies that explain a plurarity of triggers and many studies are focused on economical determinants of migration.

Acording to the main theories of migration there are a series of push and pull factors that influences the decision to go abroad or to return back home. In terms of international migration push factors can occur at the home country (e.g. unemployment) and pull factors can occur at the destonation country (e.g. higher wages). Neo-clasical Theories and New Economics of Labour Migration consider that migration is a consequences of cost-benefit ratio that individuals take into consideration when they decide to migrate, thus the main reason of migration is to improve income which denotes that migration is especially related with labour market (Massey et al., 1993). Dual Labour Market Theory also explains migration in terms of labour market by emphasizing the disparities in employment rates and conditions (Massey et al., 1993). World System Theory considers that migration is a consequence of the differences between countries (Massey et al., 1993).

Therefore the main theories of migration mainly argue that migration is caused by the level of development of the host countries including labour market and economical development. This fact is also confirmed by the empirical analyses from the scientific literature. Zimmernann and Zaiceva (2008) showed that a higher GDP per capita increase the propensity to migrate for EU 15 countries. Mayda (2005) showed that an increase of GDP per worker in the host country increase the emigration rate in the home country. Also, Sprenger (2013), besides the obvious influence of the increase of GDP per capita of the host country increases the inflows of migrants, showed that higher unemployment rate in the home country increase the emigration rates.

Due to the changes occurred after the economic crisis the main concern of European Union is focused on Europe 2020 perspectives, and focuses on the economic and social development of European Union Countries. This paper merge migration with four of five major domains regarding Europe 2020 perspective.

The most recent trend of the European Union concernings are regarding the Europe 2020 perspectives that establish the main goals for the EU future and socio-economic development. In this context there are five major targets acccording the EU, and as detailed in Table 1., regarding five major domains: Employment, Research and Development, Climate change and energy sustainability, Education, Fighting poverty and social exclusion.

*Table no. 1. Main targets of Europe 2020*

| Europe 2020 | |
|---|---|
| **Domain** | **Targets** |
| Employment | • 75% of the 20-64 year-olds to be employed |
| Research and Development | • 3% of the EU's GDP to be invested in R&D |
| Climate change and energy sustainability | • greenhouse gas emissions 20% (or even 30%, if the conditions are right) lower than 1990<br>• 20% of energy from renewables<br>• 20% increase in energy efficiency |
| Education | • reducing the rates of early school leaving below 10%<br>• at least 40% of 30-34–year-olds completing third level education |
| Fighting poverty and social exclusion | • at least 20 million fewer people in or at risk of poverty and social exclusion |

*Source:* European Comission

Though migration is usualy strongly related with the degree of development of a country (Zimmernann and Zaiceva, 2008; Mayda, 2005; Sprenger, 2013) education also plays an important role. A comprehensive study regarding migration and education was conducted by Dutmann and Glitz (2011). They start from the premise that migration is an investment for the future and education and skill acquisition are the main dimension of future investment in human capital.

## 2. Data and Method

The method employed in this analysis is the linear regression model applied on panel data. Panel data are that type of data which include two components: both time and cross-sectional components.

The linear regression equation for panel data as Wooldrige (2002) describes has the following form:

$$y_{it} = \beta_0 + \sum_{k=1}^{k} x_{kit} \cdot \beta_k + \varepsilon_{it} \text{ (equation 1.)}$$

Where: i = 1,…,N, N represents the crossectional in this case country;

t = 1,…,T, T represents the time observations in this case year;

k represents the index of independent variabiles;

$y_{it}$ represents the depentent variable for country i and year t;

$x_{kit}$ represents the independent variables for country i and year t;

$\beta_0$ represents the constant term common for all crossectional entities;

$\varepsilon_i$ represents the error term independently and identical distributed with mean zero and continuous variation.

There are three types of linear regression models to estimate when referring of panel data: pooled regression, which in fact is the clasical linear regression model not taking into account the variation between or within its components, and fixed effects model and random effects model.

The fixed effects regression model is defined as:

$$y_{it} = \beta_{0i} + \sum_{k=1}^{k} x_{it} \cdot \beta_{kit} + \varepsilon_{it} \text{ (equation 2.)}$$

The random effects regression model is defined as:

$$y_{it} = \beta_{0i} + \sum_{k=1}^{k} x_{it} \cdot \beta_{kit} + u_{it} \text{ (equation 3.)}$$

Where: $u_{it} = (\alpha_i + \varepsilon_{it})$.

The data set consists of all 28 European Union countries and a time span of 10 years starting with year 2004, since the data for the variabile of interest NEET (not in employment, education or training) has been colected starting with the year previously meantioned.

*Table no. 2. Description of the variables employed in the analysis*

| Variable | Description |
|---|---|
| *NEET (not in employment, education or training) age 18 to 24 years* | the indicator includes unemployed and inactive persons not in education or training, and covers different age groups (starting with age of 15 and up to 34 years: 15-17; 15-19; 15-24; 15-34; 18-24; 20-24; 20-34; 25-29). |
| *In-work at risk of poverty rate 18 to 24 years* ( denoted as In-work poverty) | measures the rate of poverty for employed persons aged 18 to 24 years. |
| *Expenditures for Research and Development* | as percentage of GDP |
| *Education early leavers at age 18 to 24 years old* | as percentage of total population |
| *Wages and Salaries* | as percent of GDP |
| *Population with tertiary educational attainment level 25-64 years* | as percentage of total population |
| *Long Life Learning* | persons aged 25 to 64 who declared that they received a form of education in the last four weeks during the survey. |
| *Employment rate for age 15 to 24 years* | as percentage of total population |
| *Household consumption* | Expendires with household consuption as percent of GDP |
| *Old Dependency Ratio* | refers of the ratio between the persons over the age of 65 and the the economically active persons (aged 15 to 64). |
| *People living in households with very low work intensity* (denoted as LowWork Cap) | are those aged 0 to 59 living in households where the adults (aged 18-59) work less than 20% of their total work potential during the past year. |
| *Crude rate of net migration plus adjustment* | expressed per 1000 inhabitants, a negative value shows that the overall phenomenon is towards emigration. The indicator is obtained by dividing the difference between immigrants and emigrants with 1000 inhabitants. |

*Source:* Eurostat Metadata

Most of the chosen variables are considered part of the main indicators that are taken into consideration for achieve the target of the Europe 2020 perspective. In the analysis was also considered the following variables: expenditures with household consumption mainly because remittances (that are a main characteristic of migration) consist an important part of them (OECD, 2006).

## 3. Results

As was mentioned before the data set involves a time span of 10 year, to emphasize the effects of financial crisis in the model was also introduced a dummy variable. Most authors placed the debute of the financial crisis in 2007 (Papademetriou and Terrazas, 2009; Stiglitz, 2010) and the first signs of recovery in European Union where noticed in 2010 (Eubanks, 2010).

The results are presented in Table 2. And also Hausmann test was applied to choose which type of model is more appropriate for the analysis, a statistically insignificant result of the test shows that random effects model is prefered to fixed effect model (Baltagi and Liu, 2014). The model

*Table no. 3. The regression model for the panel data set*

| Dependent variable: *Crude rate of net migration plus adjustment*<br><br>Independent variables | Fixed effects | | Random effects | |
|---|---|---|---|---|
| | Coefficients | P-value | Coefficients | P-value |
| **R&D expenditures (as % of GDP)** | -1.4291 | 0.317 | **1.1246***** | **0.006** |
| Early leavers education 18 - 24 years | -0.1269 | 0.400 | -0.0205 | 0.854 |
| **NEET 18 - 24 years** | **-0.3265**** | **0.032** | **-0.3567**** | **0.012** |
| Wages and salaries (as % of GDP) | **-0.3961**** | **0.045** | -0.1785 | 0.214 |
| Population with tertiary educational attainment (% of population aged 15 - 64 years) | 0.0508 | 0.694 | 0.0399 | 0.681 |
| Long life learning | 0.0109 | 0.928 | -0.0411 | 0.700 |
| In-work poverty | -0.1383 | 0.250 | -0.1065 | 0.311 |
| **Low work Cap** | **-0.3640**** | **0.037** | **-0.5259***** | **0.001** |
| **Employment rate for 15-24 years** | **0.4761***** | **0.000** | **0.2299***** | **0.008** |
| **Household consumption (as % of GDP)** | **-0.4235**** | **0.016** | **-0.4233***** | **0.001** |
| **Old Dependency Ratio** | **0.7154**** | **0.025** | **0.5734**** | **0.012** |
| *Economic Crisis* | *-0.8356* | *0.131* | *-0.8552* | *0.126* |
| Constant | 18.1361 | 0.254 | **25.8560**** | **0.012** |
| R Squared within | 0.4747 | | 0.4527 | |
| R Squared between | 0.0549 | | 0.0797 | |
| R Squared overall | 0.0924 | | 0.1542 | |
| F | 15.51 | | - | |
| Wald chi2 | - | | 151.70 | |
| rho | 0.86922 | | 0.6724 | |
| Number of observations | 245 | | | |
| Number of groups | 27 | | | |
| Breusch and Pagan Lagrangian multiplier test | 208.61*** (p-value = 0.0000) | | | |
| Hausmann test | 13.89 (p-value = 0.3078) | | | |

*(\*\*\*) significant at 1%, (\*\*) significant at 5%, (\*) significant at 10%*

*Source:* Author's computation

Between R&D expenditures and Employment rate for 15-24 years there is an indirect relationship, this result shows that for an unit increase of R&D expenditures and of Employment rate the crude rate migration will be negative, so the phenomenon is towards immigration. People being atracted if the countries offer employment or have investments in research and development. If the Old Dependency Ratio will increase with one unit reveals that will lead an increase of immigration. This also can be seen from the demographic perspective as European Union face demographic aging, mainly with this demographic process is faced by the developed countries. This fact it is not a signal of pull factor for migration but rather a signal that countries that are attractive for migration are dealling with low birth rates are a large population of elders.

The variables people living in households with very low work intensity and NEET 18 - 24 years increase the phenomenon of emigration. So if the countries are experiencing these negative effects people are influenced to emigrate. Household consumption (as % of GDP) confirms that an increase with one unit lead to emigration, which it means that remittances are part of expenditures with household consumption.

## 4. Conclusions and remarks

Financial crisis has a low significant effect only if it will be taken into consideration a significance threshold of 15% mainly because though at the European Union level an economic recovery has been felt starting with 2009 not all the European Union countries exit the economical and financial crisis at the same time. This variable should be intrepreted in terms of financial crisis individually for the each European Countries.

Regarding the migration aspect the Emigration and Immigration are a consequence of social and economic conditions of a country, the results show that employment rate and people living in households with very low work intensity increase the migration propensity, and expenditures with research and development will increase the propensity of immigration rates being a pull factor for migrants.

Migration as a phenomenon of human progress will increase in countries that will have low rate of unemployment, financial security for both employees and unemployed, so from the Europe 2020 perspective will be expected that countries that will rich the most of the main targets will be attractive for immigrants.

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