Macroeconomic determinants of migration from Romania to Italy

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Abstract

Taken into account various economic theories trying to explain the reasons that stay behind the decision to migrate to another country, this study uses empirical data to identify some macroeconomic motives for migrating from Romania to Italy. According to the estimations based on fast ridge regression, the stock of Romanian immigrants from Italy in the period 2002-2016 was influenced by: the real GDP per capita in Romania, real GDP per capita in Italy and life expectancy at birth in Italy. The number of Romanian migrants attracted each year in Italy in a period marked also by the global financial crisis (2007-2016) was related to factors like: real GDP per capita in Italy life expectancy at birth in Italy, unemployment rate and taxes on income, profits and capital gains in Italy. The overall results indicated that the better standard of life in Italy was a good incentive for Romanian migrants.

Keywords: ***migration, real GDP per capita, life expectancy, Bayesian ridge regression.***

JEL Classification: C40, C51, J68

1. Introduction

The determinants of migration have been the objective of a large variety of studies from economic, social, demographic, ethnic, politic or cultural perspectives. A significant attention was paid to the economic causes that stimulate emigration. Nowadays, the movement from developing countries to the more developed ones was observed. The East-West migration inside the European Union was favoured by high differences in income between old member states and new members that were integrated in 2004, 2007 and 2013. The new EU members had quite large populations and knew many transformations in society for passing to a functional market and a free society.

In this paper, the main macroeconomic factor that explain the emigration from Romania to Italy will be identified using a Bayesian approach. This approach is better than previous approaches that use survey data where a sample of migrants are taken into account that might not be representative. Moreover, a methodological novelty is brought in this research field, the Bayesian approach being used to select the migration determinants on a small set of data. The main results indicated that differences in real GDP per capita and life expectancy at birth had a significant impact on migration decision to Italy of the Romanian people after 2001.

After this introduction, the paper provides a short theoretical background for the migration determinants and the situation of Romanian migrants from Italy. In the next section, an empirical analysis is proposed by providing some Bayesian ridge regressions. The last part concludes.

2. Romanian migrants from Italy

In Italy, most of the migrants come from Romania (around 1.1 million according to the official statistics of 2016). The other countries that sent a large number of migrants in Italy are: Albania, Morocco, China, Ukraine, Philippines, India, Republic of Moldova and Bangladesh. The EU immigrants have a positive contribution on the Italian labour market. The Romanian immigrants from Italy are occupied in many sectors that suppose a significant manual labour, but with wages, working conditions or social positions that are not attractive for Italian people [1].

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There are not big language barriers for Romanian migrants that came in Italy mostly after 1999. In 2002, a large wave of Romanians chose Italy as destination country because of the legislative changes (Romanian citizens had the right to go in any Schengen Zone without any visa). On the other hand, the Italian welfare system is helped by the foreign workers in care sector. After Romanian's entrance in the EU, Italy did not require for any period of transition. In this context, the Romanian community doubled, because the Romanian's integration in the EU allow the illegal immigrants from Italy to have a legal status. The institutional framework was the one that allow the presence of non-documented immigrants in the informal economy. The recent economic crisis did not determine the migrants to be more eager to come back in the origin countries, as the data from surveys suggested [2].

The real motivation for migration of the Romanian citizens to Italy is in line with the trend for all eastern European countries. The economic transition characterized by high unemployment as well as the high level of education required for the jobs in the origin countries determined the Eastern European citizens to migration to developed countries like Italy [3]. On the other hand, the trends in the Italian labour market were factors that attracted many Romanian emigrants. Italy has an aged society and the skilled women were integrated in the national labour market. In this context, immigrants have an essential role in family sector, because they provide assistance to the elderly [4]. Given this situation in care sector, migration policies in Italy were subject to changes as to attract migrants from new EU countries.

Despite this particular context for migration, the motivations of Romanian citizens to establish in Italy might be related to the traditional reasons from economic literature corresponding to various theories.

The particular situation of Romanian migrants is closer to the theory of rejection factors that highlights the unfavourable conditions of the migrants in their origin country. Most common rejection factors that encourage the emigration are: high unemployment, low incomes, lack of political stability, ethnical and religious issues, climatic conditions [5]. The Romanian migrants also created social networks in Italy. The theory of social networks explains the functional networks that encouraged migration. These particular networks consider the interpersonal relationships between emigrants and the population in the origin country. The information about a foreign location is essential in the theory of Tiebout (1956) who considered that people follow a place where they have a maximal individual utility and best public services [6].

The decision to migrate in Italy might be also explained by the Keynesian economic theory that confirms the correlation between labour market supply and the real and nominal salary, respectively. According to Keynesian approach, the emigrants choose regions with higher nominal wages compared to their origin region from their country [7].

The neoclassical theory is based on differences in wages between regions/ countries that encourage the movement from regions with low wages and high unemployment rate to other regions/ countries with higher wages and lower unemployment rate. The neoclassical theory has been extended resulting "the new economics of migration". This recent perspective considers households, families and different groups of people as being the unit of analysis and not the market. The units of analysis are interested in having a minimum risk minimum and the maximum possible income. According to this theory, there are one or some members of family that emigrated to increase the family's income, but the other members of the family remained in the origin country with lower, but stable incomes. In terms of human capital investment, neoclassical theory considers that a person will emigrate if the expected income in another country will exceed the costs.

The search theory explains the decision to migrate by the need for a job in a foreign country [7]. Before migration, two types of evaluation are made: on one hand, the assessment of possible advantages and of migration costs and, on the other hand, the evaluation of that particular job.

These theoretical assumptions regarding causes of migration should be checked on empirical data. In this context, the economic literature passed from strictly theoretical reasons to those validated on empirical data. Various quantitative approaches were used to identify the determinants of migration to a certain country.

In the first econometric models, salary differentials were considered as explanatory variable staring from the heterogeneous degrees of labour market tightness. Later, the model was improved by Todaro (1969) [8] and by Harris and Todaro (1970) [9] that chose as migration cause the expected salary instead of current wage differentials. This type of econometric model is indicated for internal migration in less developed countries, but it

was improved as to explain the international migration. Even if these models were simple, they provided good forecasts. According to Bauer and Zimmermann (1999), many empirical studies identified salary differentials and employment as the most important predictors for migration [10]. However, these empirical researches have some limits that were showed by Harris-Todaro approach in the context of forecasts for migration in Spain, Greece, Portugal and A10 countries. The forecasts using this model overestimated the number of migrants from the mentioned countries. Therefore, the model should also include variables related to life quality in the origin country. The search for a better life determined people to choose a foreign country with more lucrative and productive jobs. Moreover, other types of differences between states should be introduced related to human rights, law rules or political stability.

The scientific literature provides various studies about the determinants of Romanian emigration based on data from surveys or official macroeconomic data. Based on Soros's survey made in August 2010, the probit models built by Hinks and Davies (2015) confirmed that low investment as well as low expected salaries from Romania stimulated emigration [2]. For Romanian migrants from Italy, Ailenei, Cristescu and Hrebenciuc (2015) proved, based on a survey from April-May 2011 and a logit model, that higher wages and better life and work conditions attracted Romanian citizens in Italy [11].

3. Empirical analysis

As we stated before, our aim is to identify some macroeconomic determinants of migration from Romania to Italy. Therefore, empirical data will be used to figure out some economic determinants of the Romanian people migration to Italy.

The variables used in this study refer to: stock of immigrants, number of immigrants that came each year, real GDP per capita in Euro in Italy and in Romania, life expectancy at birth in years, unemployment rate (% of total labor force) (modeled ILO estimate), taxes on income, profits and capital gains (% of revenue). For these variables, the time series refer to the period 2001-2016, excepting the immigrants for each year (period 2007-2016). The data for the number of immigrants are provided by *Bilancio demografico nazionale*. The data for the rest of the variables are provided by World Bank.

The real GDP per capita is used to compare the standard of living between countries or between different periods for the same country. It measures the economic output of a state divided by the population and adjusted for inflation.

The indicator "life expectancy at birth" expresses the average number of years that a new-born is expected to reach under the assumption that the mortality patters at the moment he/she born will remain constant in the future. An image of mortality characteristics is provided for a year, because this variable shows the number of people of different ages that will dye that particular year.

According to World Bank, taxes on income, profits, and capital gains are "levied on the actual or presumptive net income" of people, on the profits of firms and corporations, and on capital gains, even if they are not realized, on securities, land, and other assets. In this case, the intragovernmental payments are not considered in consolidation.

Unemployment rate represents the share of labour force without job, but available for work and seeking employment.

Since 2001, the stock of Romanian migrants knew an increase from a year to another till 2011, when the number of migrants decreased with around 15% compared to 2010. Since then, the number of migrants continued to increase, but in 2012 a lower level than that from 2010 was reached. The negative consequences of the financial crisis at the economic level (lower salaries, unemployment, fiscal chaos) might explained the withdrawal of a part of Romanian migrants.

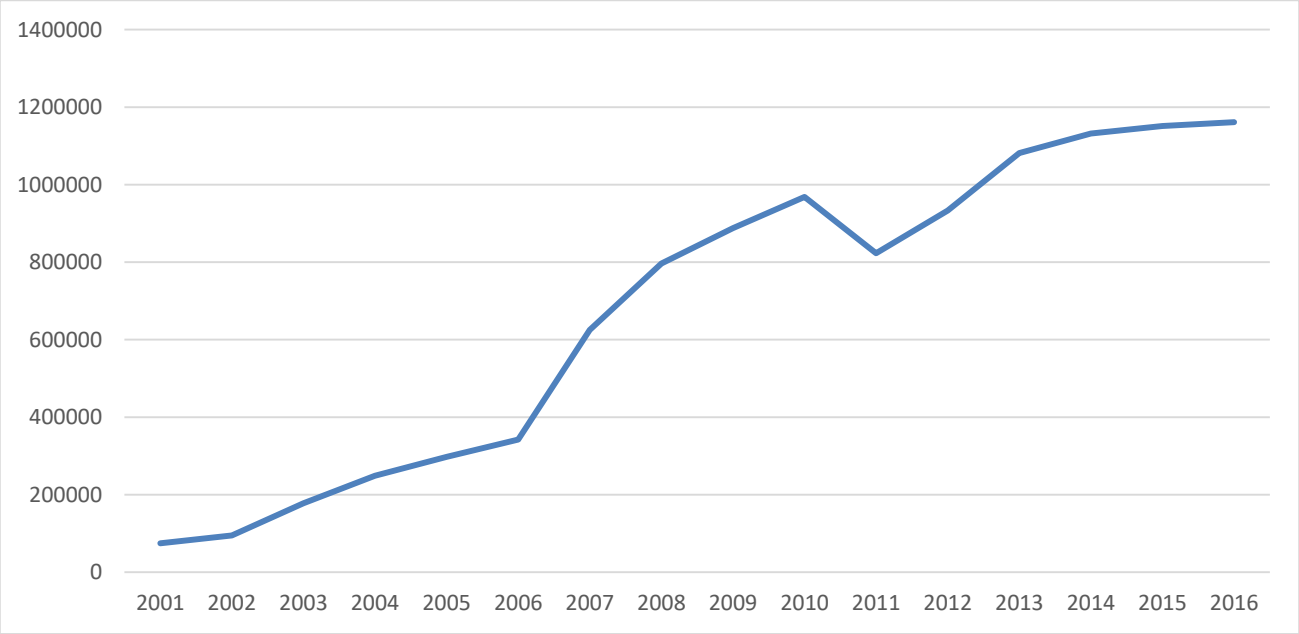

Fig. 1. The stock of Romanian migrants from Italy (2001-2016)

For identifying the determinants of migration, several types of Bayesian regressions are used:

- Fast ridge regression;
- Fast power ridge regression;
- Fast generalized ridge regression.

The dependent variable is stock of immigrants and then number of immigrants that came in a certain year. The posterior probability that the standardized coefficient is within 1 standard deviation of 0 (PP1SD) is computed. For a value of PP1SD lower than 0.5, the corresponding explanatory variable represents a significant predictor in that ridge regression.

The explanatory variables are: real GDP per capita in Euro in Italy and in Romania, life expectancy at birth in years, unemployment rate, taxes on income, profits and capital gains. According to the values of Akaike information criterion (AIC), the best model is the fast ridge regression. As this model showed, the main determinants of immigration stock are: real GDP per capita in Romania, real GDP per capita in Italy, life expectancy at birth in Italy.

More types of Bayesian ridge regressions were built, but the best one is that with the lowest value for Akaike informational criterion (AIC). The common fast ridge regression provided the best results for the period 2002-2016. We selected only the explanatory variables for which PP1SD is less than 0.5. According to the estimations based on fast ridge regression, the stock of Romanian immigrants from Italy was influenced by: the real GDP per capita in Romania, real GDP per capita in Italy and life expectancy at birth in Italy. The results are confirmed by expectations. Indeed, the high differences between real GDP per capita between Italy and Romania was a strong motive for migration as other studies highlighted [12]. On the other hand, the life expectancy at birth is closely related to the issue of aging in Italy. The Italian welfare system needs immigrants as caregivers. The foreign people that make elderly assistance are called *badanti* and migration policies have a particular legalization for them [4].

Table 1. Bayesian fast ridge regressions for stock of Romanian immigrants in Italy (2001-2016)

Explanatory variable	Fast ridge regression		Fast power ridge regression		Fast generalized ridge regression	
	Slope estimate	PP1SD	Slope estimate	PP1SD	Slope estimate	PP1SD
Real GDP per capita in Romania	75617.017	0.137	88670.064	0.424	56087.703	0.078

Real GDP per capita in Italy	-54254.539	0.157	-49743.961	0.588	-59866.092	0.062
Life expectancy at birth in Italy	73157.516	0.073	81016.772	0.475	61243.287	0.061
Unemployment rate in Italy	31101.151	0.535	-790.258	0.668	48322.304	0.078
Taxes on income, profits and capital gains in Italy	-13970.380	0.648	-5546.652	0.666	-27995.863	0.372
Intercept						
AIC	452.006		452.645		452.057	

Source: own calculations

The factors that attract Romanian migrants to come each year in Italy are also important for having a better picture of migration. According to AIC values, the fast power ridge regression performed better than the other two types of regressions. Excepting real GDP per capita in Romania, all the other variables explain the decision of Romanian people to come in Italy: real GDP per capita in Italy life expectancy at birth in Italy, unemployment rate and taxes on income, profits and capital gains in Italy. The real GDP per capita associated to a higher economic development is an important motive for migrating to Italy. Life expectancy at birth in Italy which is associated to elderly assistance explain the decision to establish in Italy to work in welfare system. The increases in the unemployment rate in Italy associated with the financial crisis were a factor that braked the migration. On the other hand, even if the taxes on income, profits and capital gains in Italy grew, the Romanians continue to choose Italy as destination country, because the salaries are higher than in Romania [13].

Table 2. Bayesian ridge regressions for Romanian immigrants in Italy (2007-2016)

Explanatory variable	Fast ridge regression		Fast power ridge regression		Fast generalized ridge regression	
	Slope estimate	PP1SD	Slope estimate	PP1SD	Slope estimate	PP1SD
Real GDP per capita in Romania	-9252.651	0.534	-3983.815	0.579	-11810.144	0
Real GDP per capita in Italy	21910.431	0.327	18155.138	0.008	14020.061	0
Life expectancy at birth in Italy	1930.43	0.656	10355.657	0.1	14153.659	0
Unemployment rate in Italy	-14071.597	0.478	-12518.168	0.116	-13923.339	0
Taxes on income, profits and capital gains in Italy	23796.799	0.127	21527.903	0.028	10593.031	0
AIC	232.143		231.135		234.127	

Source: own calculations

All in all, our empirical study confirmed that differences in life quality attracted many Romanian citizens to Italy. This result is also obtained by other studies [11]. The life quality is well related to real GDP per capita, an indicator of economic development with direction consequences on standard of living and life expectancy at birth. Particularly for Italy, the issue of demographic ageing related to life expectancy favour the attraction of Romanians for care sector.

4. Conclusions

The economic literature provided many theories to explain the decision to migrate in another country. Romanian trends in migration are placed in the framework of less developed Eastern European countries that faced problems related to economic transition. On the other hand, developed countries chosen as destination regions faces specific problems that justify the need of foreign people on labour market. Italy is known as a country that requires migrants for unqualified jobs. In the case of Romanian people, the theoretical arguments for migration to Italy are related to wage and unemployment differentials, life and work conditions, the existence of social networks among migrants.

The novelty of this research is given by the consideration of empirical data to identify the determinants of migration to Italy for the Romanian citizens. The stock of migrants as well as the number of migrants received each year in Italy were considered in this analysis. Contrary to previous studies, we do not use data based on survey. Official data were used to estimate some Bayesian ridge models. The empirical results confirmed that the gap between real GDP per capita in Romania and Italy and the high life expectancy at birth in Italy are among the reasons to leave Romania for Italy. The research is limited by the use of a small number of economic variables. In a future study, other variables might be introduced in the models as to catch social and political factors.

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