Trends in Internal Migration in Romania and Spain: How Different Are They?

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Abstract: *Internal migration is important from two perspectives: first, which are its motivations and, secondly, which are its consequences on regional economic growth. Theoretically, between internal migration and economic growth there is a bidirectional relationship. The purpose of this paper is to make a comparative study Romania-Spain in order to establish the main differences between them and the reasons beyond differences. The choice for these two countries has its roots in the different timing of EU accession and in their socio-economic heterogeneity. The research method is a quantitative comparative analysis using national and county/provincial data which takes account of inter and intra-regional streams, the evolution of migration (both absolute and relative), the permanent or temporary existence of regional poles of attraction, the migration structure by sex and by age. Moreover, I will try to elucidate whether regional gaps in income and unemployment influence somewhat the decision to migrate using a dynamic econometric appraisal. The main results point out at a domination of intra-flows over inter-flows, an oscillatory evolution of migration, the existence of reduced poles of attraction and a higher willingness of younger people to migrate in both Romania and Spain. Instead, the two countries are different as regards the much higher propensity to migrate of Spanish residents. Also, women migrate more than men in Romania while the contrary happens in Spain; also, the difference between sexes is greater in Romania. The System GMM estimations reveal that in-migration rate exhibits state dependence and only GDP gaps motivate mobility in both countries.*

Keywords: *migration, comparative study, System GMM, Romania, Spain*

1. Introduction

Romania and Spain, although quite different as regards their socio-economic development, may share some similarities in domestic migration patterns. This is the main purpose of this paper.

People and labor internal migration was and continues to be one of the most debated topics in economics. The implications of this phenomenon are not limited to the boundaries of the labor market, but go beyond and are also related to local convergence which can be favored and not. As a consequence, mobility is not "a priori" good and governments do not have to make policies in order to foment migration unless this returns useful outcomes. Migration is bidirectional in the sense that it is both a cause and an effect of socio-economic conditions and not only. In this article, my objectives are to make a deep assessment of the migration flows that have occurred in Romania and Spain during the last two decades and to elucidate if county or provincial disparities are important when deciding to migrate within national borders.

Data. The variables used in this study are the gross migration rate, the per capita income and the unemployment rate. The data sources are the Romanian and Spanish national institutes of statistics INS and INE. The periods under analysis throughout section 3 are 1990(4)-2010 for Romania and 1998-2010 for Spain (including some inter-census data) whilst in section 4 I use panel data covering the periods 1995-2008 for Romania and 1998-2008 for Spain.

Paper structure. This paper is structured as follows: section 2 makes a brief review of the existing literature on approaches, determinants and models of migration, section 3 is dedicated to an extensive comparative statistical analysis of migration flows covering inter- and intra-flows, rates and numbers of migrants and their territorial distribution, migration by sex and by age groups; section 4 makes an econometric analysis in order to establish whether income or unemployment gaps among counties/provinces influence the decision to migrate; finally, section 5 gives some insights on future work.

2. Literature Review on Approaches, Determinants and Models of Migration

Approaches. Migration modeling distinguishes between micro and macro approaches. The **micro approach** refers to the individual or household decision of staying in the current location or moving into a different one. After deciding to move, the next step is to choose between alternative destinations. Both stages are based on the axiom of utility maximization. The factors that influence these decisions comprise characteristics of: individuals (sex, age, education, marital status, etc.), families (size and structure) and/or origin and destination places (wage, (un)employment, house prices, amenities, etc.). Instead, the **macro theory** relates to aggregate migration flows and the relationship between

migration and objectively macroeconomic variables such as population sizes, unemployment, economic growth and environmental conditions rather than behavioral aspects of the migration decision (Stillwell & Congdon, 1991).

Determinants. Numerous empirical studies have tried to establish why people migrate but the answers are extremely varied. The starting point is the **push-pull theory** developed by Everett Lee (1966). According to this theory, there are only two types of factors that influence the decision to migrate. Push factors are those reasons for emigrating (or leaving a place) because of some difficulties such as not enough jobs, few opportunities, precarious conditions, poor social services, etc. Instead, the pull factors are those reasons that attract people to immigrate (or move into a place) because of something desirable.

Borjas (2008) considers the following factors: age, education, distance, unemployment and wage differentials. Instead, Van Gaag et al. (2003) make a distinction between selective influences (i.e. demographic factors) and determinants of migration. The former include mainly age and sex, whereas the latter can be classified in: gravity variables, economic variables, labor market variables, housing market variables, environment variables and policy variables. Next, Anjomani (2002) finds the following determinants: previous gross migration (as proxy for social networking or availability of information), distance (as proxy for the costs of moving), economic variables (incomes at origin and destination, (un)employment rates, regional income tax, manufacturing wage at destination), amenity variables (population density at destination, mean temperatures, welfare benefits at destination, crime rates), demographic variables (population size at destination, mean educational levels, median population age at destination). The list of studies investigating the determinants of migration is very comprehensive and will be extended in a future paperwork.

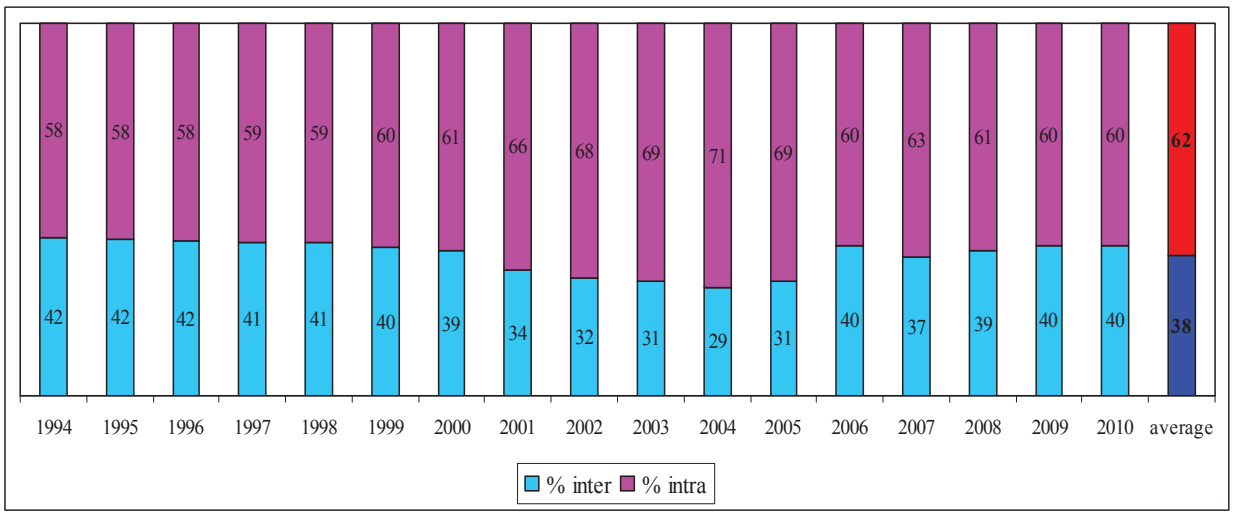
Models. The main models of migration are: the human capital or neoclassical theory model (developed by Sjaastad, 1962), the Harris-Todaro model (1970), the new economics of labor migration (Stark & Bloom, 1985), the job-matching or job-search theory (Gordon & Vickerman, 1982). The most applied in empirical studies is the gravity model of migration developed by Lowry (1966) and which belongs to the neoclassical approach.

3. Statistical Analysis of Internal Migration

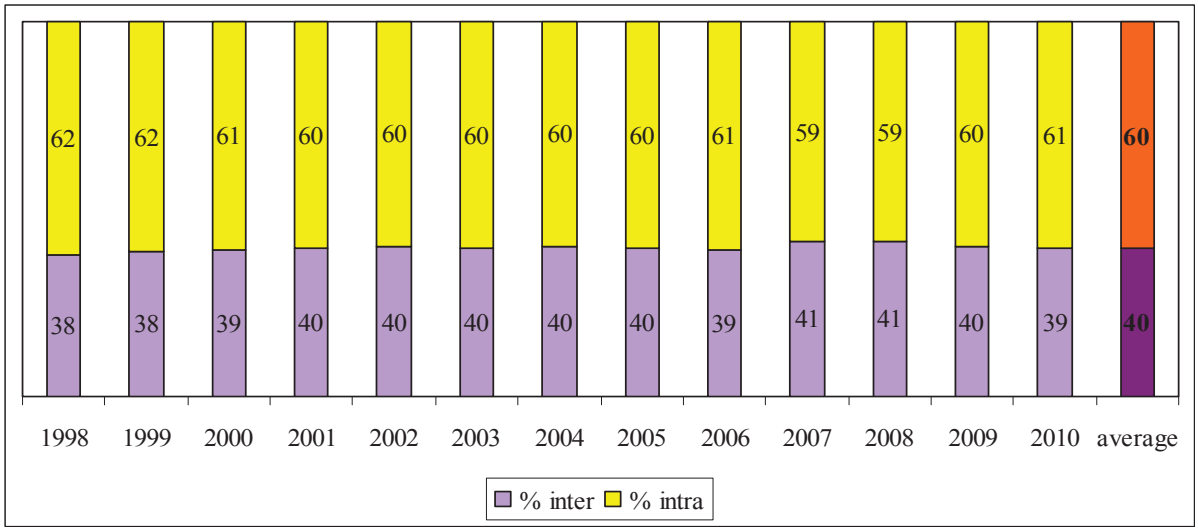
3.1. Inter-Flows versus Intra-Flows

Romania 1994-2010. During this whole period, ***intra-county migration dominated inter-county migration***, with an average difference of 24 percentage points. Notably, from 2001 to 2005, intra-county flows strongly dominated inter-county flows; otherwise, the percentage distribution of the two types was quite the same (fig. 1 (a)).

Spain 1998-2010. For this period, the percentage distribution of inter- and intra-provincial migration in Spain was very constant, with averages of 60% in favor of intra-flows and 40% for inter-flows. Similarly to Romania, ***intra-provincial migration surpassed inter-provincial migration***, with almost the same average distribution in time (fig. 1 (b)).



Source: Own elaboration based on INS data (a) Romania



Source: Own elaboration based on INE data (b) Spain

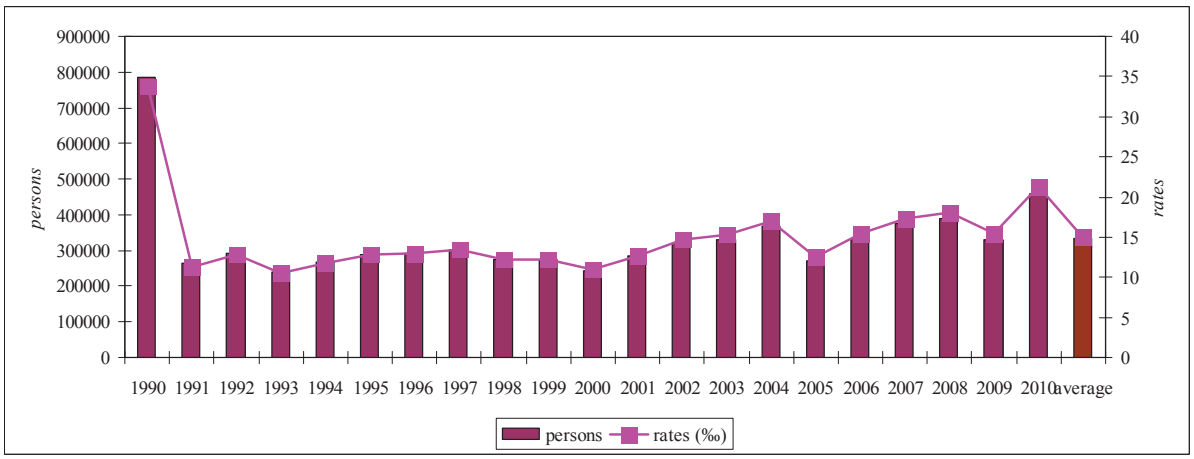
Figure 1. Distributions of inter- and intra-provincial migration in Romania and Spain

3.2. Absolute and Relative Flows of Gross Migration

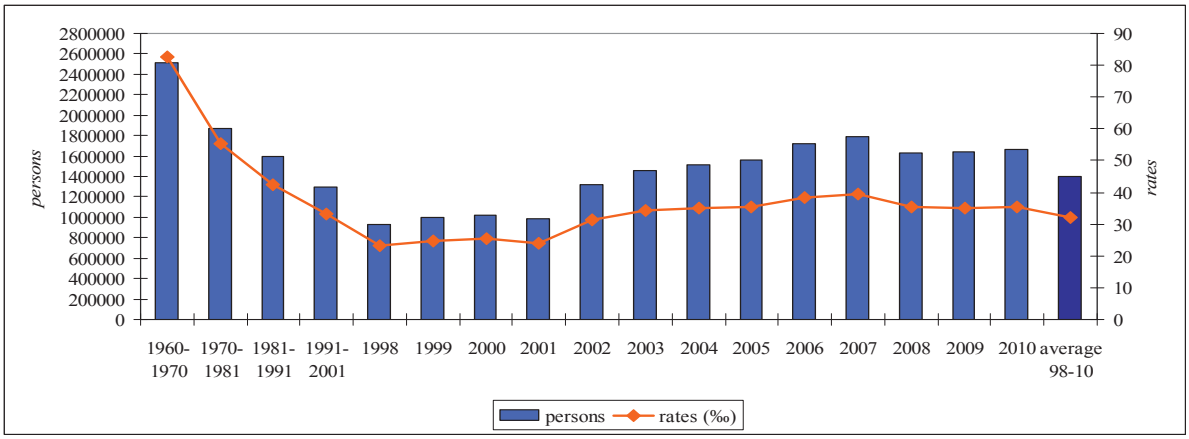
Romania 1990-2010. Internal migration (both numbers and rates) registered an oscillatory evolution with minimums of 240,231 migrants and 10.55‰ both in 1993 and maximums of 786,471 migrants and 33.88‰ both in 1990. As the chart below shows there were two sub-periods, 2001-2004 and 2006-2008, of constant increases. Overall, ***Romania recorded an annual average number of 333,207 migrants and a rate of 15‰*** (fig. 2 (a)).

Spain 1960-2001 and 1998-2010. According to census data (1960-1970, 1971-1981, 1981-1991, 1991-2001), Spain witnessed constant falls in internal migration from one decade to another; if in 1960-1970 the migration rate had reached 82.5‰ in 1991-2001 fell at 33.02‰. Instead, according to the year-by-year data, one can observe that after a four-year period with relatively low levels, Spain was subject to a constant upward trend from 2002 to 2007, after which migratory flows decrease slightly and remained steady. On average for the interval 1998-2010, ***Spain registered an annual average number of migrants of 1,402,888 persons, i.e. an annual average rate of 32.11‰***, with peaks in 1998 and bottoms in 2007 (fig. 2 (b)).

Therefore, ***internal migration in Spain more than doubled internal migration in Romania***, i.e. Spanish people were much more mobile than Romanian people. If, for the period 1998-2010, in Spain migration rates were within the range [23.21-39.5‰], in Romania, for the same period, migration rates were within [10.89-21.39‰].



Source: Own elaboration based on INS data (a) Romania



Source: Own elaboration based on INE data (b) Spain

Figure 2. Numbers and rates of internal migrants in Romania and Spain

3.3. Territorial Distribution of Migration Rates

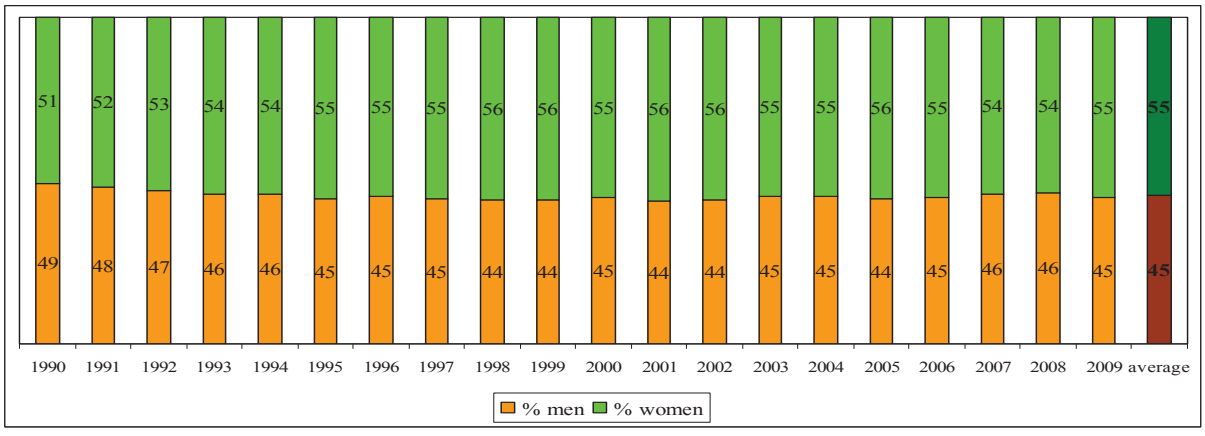
Romania 1990-2010. Dividing the whole period in four five-year sub-periods, I obtained an uneven distribution of positive and negative flows across the 42 Romanian counties. Thus, for 1990-1994, 30 counties turned negative and 11 positive; for 1995-1999, 23 turned negative and 18 positive; for 2000-2004, 25 turned negative while 17 positive; for 2005-2009, 28 turned negative whereas 14 positive; and, for the whole period 1990-2010, 31 negative and 11 positive.

Spain 1960-2001 and 1998-2010. In Spain, during the inter-census period 1960-1970, 33 provinces had negative balances and 17 positive balances; over 1970-1981, 31 provinces turned negative while 19 positive; over 1981-1991, 23 balances were negative and 27 positive; while over 1991-2001, 29 provinces turned negative and 21 positive. Instead, for the year-by-year period 1998-2010, Spain had 29 provinces with net outflows and 21 with net inflows. Dividing the last period in three four-year sub-periods, the results display the following distribution: 32 provinces negative and 18 positive for 1998-2001, 27 negative and 23 positive for 2002-2005, half (25) negative and half positive for 2006-2009.

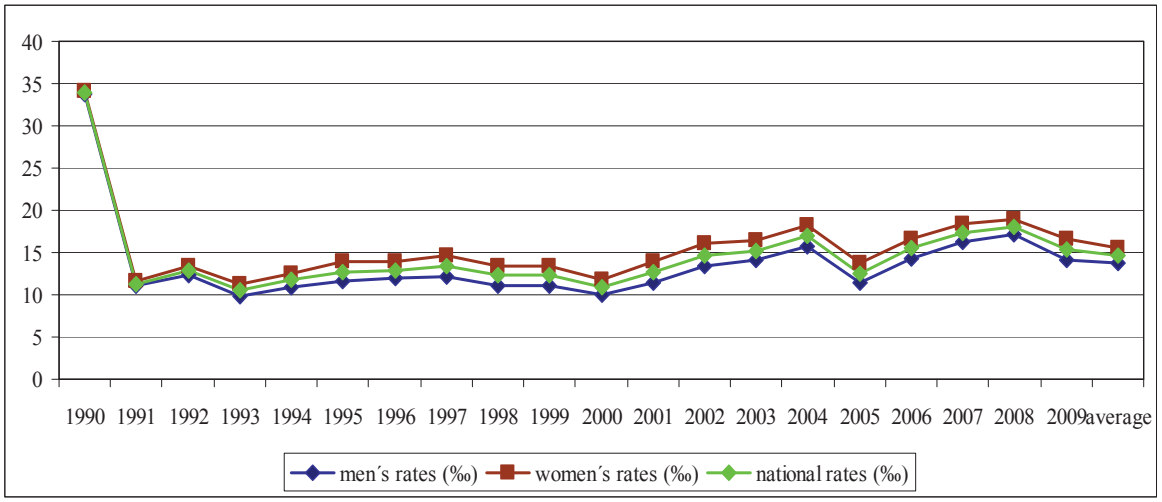
Comparing the two countries, I can conclude that ***both Romania and Spain had different degrees of attractiveness/development within their own territory, with a relatively higher inequality in Romania.***

3.4. Internal Migration by Sex

Romania 1990-2009. In the case of Romania, ***women migrated more than men***, with a difference of 10 percentage points (55% women, 45% men) (fig. 3 (a)). Migration rates (national, men's, and women's) followed an oscillatory evolution with ups and downs. Moreover, in 1991, there was a sharp fall in migration rates from values higher than 33‰ to values around 11‰. According to figure 3 (b), on average, women's rates (15.6‰) exceeded national rates (14.7‰) which, in turn, exceeded men's rates (13.7‰).



Source: Own elaboration based on INS data (a) Distribution of migration by sex

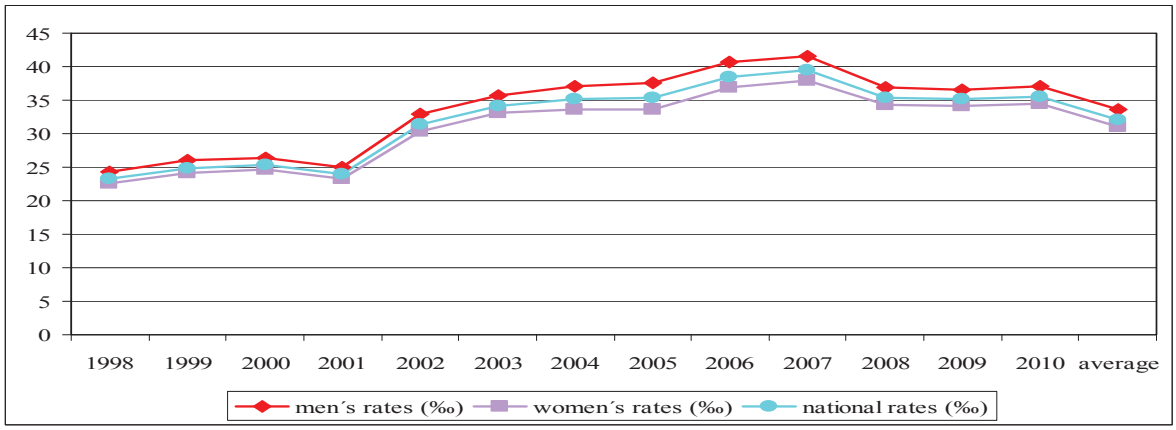


Source: Own elaboration based on INS data (b) Migration rates by sex

Figure 3. Classification of migration by sex in Romania (distribution and rates)

Spain 1998-2010. Contrary to Romania, in Spain, ***men were constantly more mobile than women*** (51% - 49%) (fig. 4 (a)). As for the rates, one can observe a steady increase from 2002 to 2007. Men's rates (total average of 33.7‰) were higher than national rates (total average of 32.1‰) and women's rates (total average of 31‰) (fig. 4 (b)).

Source: Own elaboration based on INE data (a) Distribution of migration by sex

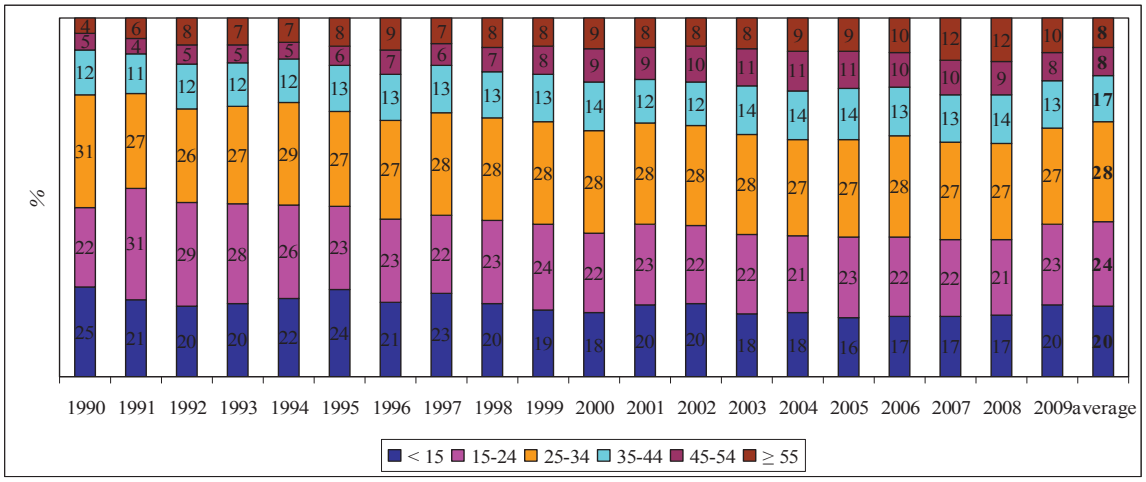


Source: Own elaboration based on INS data (b) Migration rates by sex

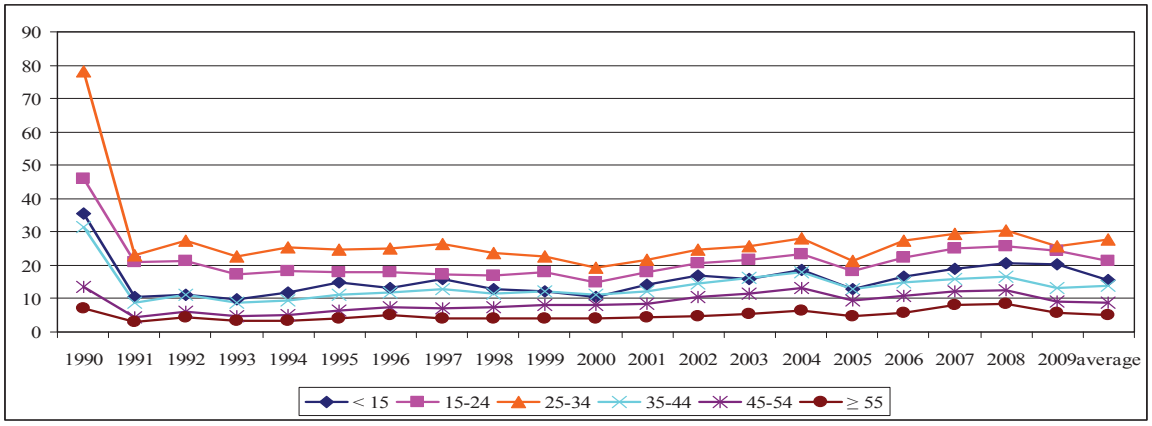
Figure 4. Classification of migration by sex in Spain (distribution and rates)

3.5. Internal Migration by Age Group

Romania 1990-2009. Analyzing internal migration by age, it turned out that migration is directly related to age, i.e. younger people migrate more than older people. Fig. 5, describing weights (a) and rates of each age bracket (b), shows that ***people aged 25-34 were the most eager to move, followed by those aged 15-24***.



Source: Own elaboration based on INS data (a) Distribution of migration by age group

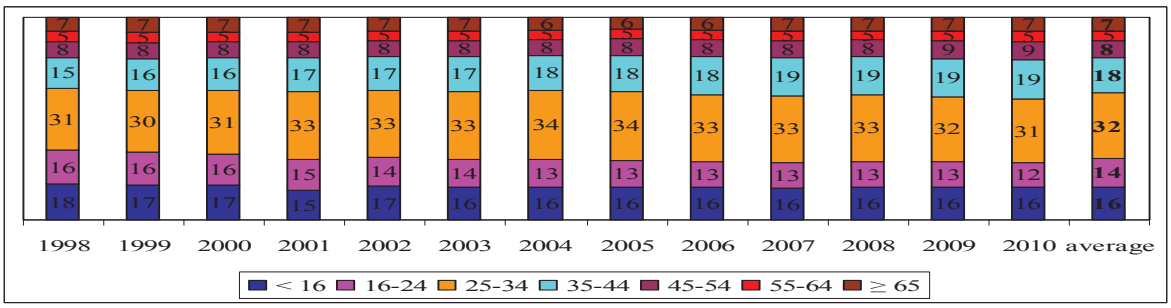


Source: Own elaboration based on INS data (b) Migration rates by age group

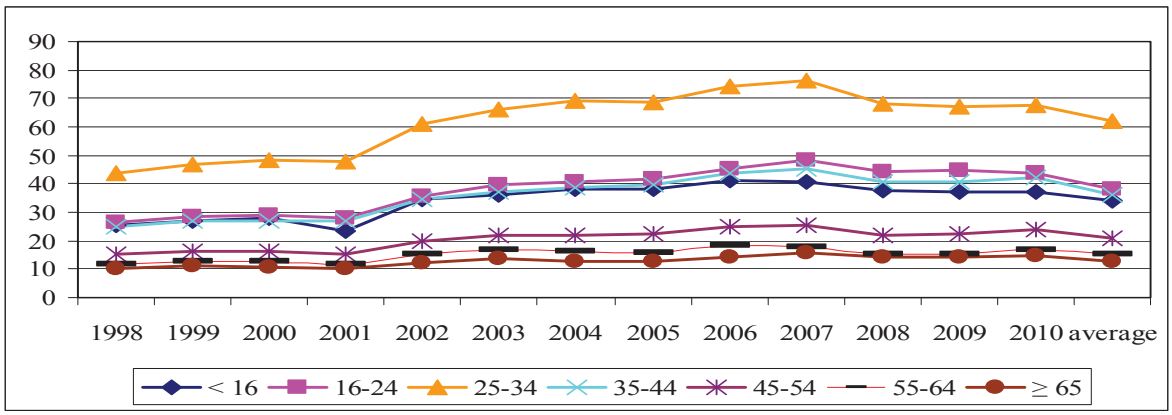
Figure 5. Classification of migration by age group in Romania (distribution and rates)

Spain 1998-2010. The same affirmations hold for Spain, with some mentions: the difference between the age group 25-34 (32%) is now much higher compared to the following one (here 35-44 if we account for weights and 16-24 if we accounts for rates). See fig. 6.

In conclusion, ***the cases of Romania and Spain confirm the neoclassical theory of migration that the willingness to move decreases with age***. Moreover, the distribution of migration by age takes an ∩-shaped form.



Source: Own elaboration based on INE data (a) Distribution of migration by age group



Source: Own elaboration based on INS data (b) Migration rates by age group

Figure 6. Classification of migration by age group in Spain (distribution and rates)

4. What Motivate People to Migrate: Income or Unemployment Gaps?

In this section, I will study whether income gaps or unemployment rate gaps are important when making the decision to migrate. I will use a provincial (NUTS 3) framework and a dynamic panel data model. As one should know, Romania is divided into 42 counties including the capital Bucharest while Spain is split into 50 provinces. Both counties and provinces belong to the Eurostat NUTS 3 level of classification. I opt for this level as being the most disaggregated one for which data are available. The periods covered in the analysis are 1995-2008 for Romania and 1998-2008 for Spain.

My purpose is to find out whether the disparities across these territorial units have any influence on migrants. The variables employed are the in-migration rate, the GDP per capita and the unemployment rate, each by NUTS 3 unit and in logarithms. I prefer to use System GMM estimation because is more appropriate with models asymptotic in N (N/T ratio is large) and can overcome the problem of weak instruments (Blundell & Bond, 1998). BB estimator estimates a system of two simultaneous equations, one in levels (with lagged first differences as instruments) and the other in first differences (with lagged levels as instruments). Therefore, the technique of estimation applied is **Two-step System GMM** with Windmeijer-corrected standard errors, small-sample adjustments, orthogonal deviations and collapsed instruments (Roodman, 2006).

This dynamic GMM technique distinguishes between endogenous, predetermined and strictly exogenous variables. The endogenous variable is correlated with past and present residuals, the predetermined variable is correlated only with past residuals while the strictly exogenous one is uncorrelated with both past or present errors. In the table below, in-migration rate is endogenous while lagged GDP and unemployment are predetermined. The model specification is correct since the AR terms confirm the existence is first-order correlation AR(1) but not of second-order serial correlation AR(2), whereas the Hansen test (with Difference-in-Hansen tests) returns p-values higher than 0.05. The (robust) Hansen test is based on the assumption that the residuals should be uncorrelated with the covariates if the instruments are truly exogenous (H0). Hence, I can trust that the models and overidentifying conditions are correctly specified, i.e. all instruments are exogenous.

I ought to mention that GDP and unemployment are not included in the same model because as Furceri (2006) and Etzo (2008) argue, when the two covariates (regressors) are included in the same model, both the signs and significance of coefficients are not robust to the inclusion of other variables. Additionally, I include time dummies to control for common shocks to all counties/provinces.

In consequence, the results showed that ***both Romania and Spain react to income gaps*** within national borders ***but neither reacts to unemployment gaps***. Concretely, a 1% increase in previous GDP/capita level boosts current in-migration rate by 0.20% in Romania and by 0.39% in Spain. Thus, ***Spaniards reacted more to income gaps than Romanians***. Moreover, ***both countries exhibited state dependence***, i.e. the estimate of lagged dependent variable turns positive and significant, with a higher level for Spain. Following the inertia of the dependent variable, ***GDP/capita*** (and all other possible regressors) ***has also long-run effects on in-migration rate*** (Bastida et al., 2009). These can be obtained by dividing the short-run coefficient by (1-0.48) in the case of Romania and by (1-0.89) for Spain. Thus, I obtain long-run income coefficients of 0.38% (Romania) and 3.54% (Spain).

Table 1. System GMM estimations (two-step)

Regressant: **in-migration rate**	*Romania*		*Spain*	
	GDP	**Unemployment**	**GDP**	**Unemployment**
Lagged in-migration rate	0.48***	0.57***	0.89***	0.80***
Lagged GDP/capita	0.20***	-	0.39**	-
Lagged unemployment rare	-	0.042	-	-0.005
No. instruments	39	39	30	30
Observations	544	542	500	500
F-statistic (14,41)	115.78***	349.33***	785.87***	713.54***
AR(1)	0.00	0.00	0.00	0.00
AR(2)	0.81	0.85	0.28	0.35
Hansen test (p-value)	0.79	0.86	0.20	0.07

NB: All regressions were carried out in STATA (9.2/SE version), *** Significant at 1% level, ** Significant at 5%

5. Future Research

Next, I intend to investigate more on the determinants of migration and, in this sense, to apply a suitable and comprehensive gravity model of migration. Moreover, I will perform a convergence analysis in order to see if migration is also a causal factor in the real economy, i.e. impacts on local convergence.

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