ISSN: 1576-0162

Migration within the EU-15: Pull factors and choice of destination

Migración en la UE-15: Factores de atracción y elección de destino

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Recibido: octubre de 2012; aceptado: marzo de 2013

Abstract

In this paper we examine the determinants of the evolution of migrant density in the EU-15 countries during the decade 2000-2010 and its relationship with the characteristics of the destination country. Using statistics from Eurostat, a panel data model is estimated with country and year fixed effects. Like previous research, we find that per capita income and networks increase significantly immigrant inflows. As outstanding factors, we introduce the production structure and the migratory policy in our analysis. Our results show that whereas agriculture and construction sectors exert pull forces, manufacturing sector reduces considerably migrant density. Lastly, we also find that immigration policy influences significantly on the share of immigrants.

Keywords: Migration; European Union; Pull Factors.

Resumen

En este artículo se examina los determinantes de la evolución de la densidad migratoria en los países de la UE-15 durante la década 2000-2010 y su relación con las características de los países de destino. Tomando como base de datos Eurostat, se estima un modelo de datos de panel con efectos fijos a nivel de país y año. Como otros trabajos previos revelan, el nivel de renta per-cápita y las redes sociales incrementan significativamente el flujo de inmigrantes. Como factores sobresalientes, introducimos en nuestro análisis la estructura productiva y la política migratoria del país de destino. Nuestros resultados muestran que mientras el sector agrícola y la construcción actúan como factores de atracción, el sector industrial reduce considerablemente la densidad migratoria. Por último, la política migratoria también influye significativamente sobre el peso relativo de la inmigración.

Palabras clave: Migraciones; Unión Europea; Factores de atracción.

Classification JEL: C23, F22, J61, O15.

1. Introduction[1]

The World Migration Report 2010, prepared by the International Organization for Migration, acknowledges that population flows between countries are a feature of the contemporary world. The number of international migrants is greater than ever, reaching 214 million according to the Department of Economic and Social Affairs of the UN. Migratory movements are not, however, a novelty in the international economy, having always occurred. The difference in the current process is the intensity of the displacements over the last decade.

Foreign citizens residing in a host country increased from 178.5 million in 2000 to over 213 million by 2010, growing in size by a little over 19% in ten years and reaching more than 3% of the world population. In reality, however, not all regions of the world are participating in the same way and with a similar intensity. The areas made up of developed countries are taking in by far the largest foreign population. An estimated total of 59.7% is located in economies with high per capita income, political and social stability and, on the whole, better living conditions (OECD, 2010). In particular, Europe and North America, priority destinations for global migration flows, have experienced significant increases in the size of their resident foreign population over the past years. This dynamic means that the migrant density of these two zones has risen considerably. According to the UN, in 2010 immigrants accounted for more than 8.5% of the total European population and surpassed 14% of the population of North America.

In Europe, the EU-15 is the principal economic block of the continent, being made up of countries where one finds a high level of economic activity, favourable social welfare conditions and a significant percentage of the population over the age of 65. All of these factors exert a major pull and explain, in large measure, why the EU-15 has seen a considerable rise in the total number of foreigners living in the region, increasing very significantly the relative weight of the foreign population that remains there. According to data from Eurostat, in 2010 the total number of foreigners residing in the European region totalled more than 30 million people, representing 7.75% of the total.

The reality that characterises the whole of the European region does not correspond, however, with homogeneous standards in the migratory dynamics

[1] The authors acknowledge José Antonio Nieto Solís, Julio Gaspar Sequeiros Tizón and two anonymous referees for their helpful comments on earlier drafts of the manuscript.

of each one of the economies within it. Therefore, the purpose of this research is to examine the influence of some relevant variables at the national level on the divergent pattern of migration observed in the countries of the EU-15 between 2000 and 2010, trying to contribute to a better understanding of the recent migratory phenomenon in the zone. Our goal is to study how state economic and non-economic conditions affect the rate of immigrants pulled to a state; we do not consider origin country conditions that might push immigrants to move because such factors are likely to affect the number of immigrants who leave but not specific destinations within the EU-15.

In particular, we are interested in studying whether certain characteristics of EU-15 countries, such as their production structure, the income level, labour market conditions, the existence of foreign networks and migration regulations, determine the distribution of migrant density (the relative importance of immigrants in the total population of each country) across countries, rather than of the number of immigrants. Migrant density may better capture the determinants of immigrants' destination choice among the states, conditional on immigrants' decisions to come to the EU-15, because it controls for scale effect associated with the large differences in the total population across countries.

Within the EU-15, a few countries have traditionally hosted the largest numbers of foreign citizens. In 2000, Germany, France and United Kingdom were the location of more than 85% of all foreigners resident in the region. Meanwhile, countries of a similar size to the UK, as in the case of Italy, or slightly smaller, like Spain, had smaller shares of the total immigrants in the region, with 6.53% and 4.21%, respectively.

At the end of the first decade of the twenty-first century, the three major economies at the centre of Europe -Germany, France and United Kingdom- which generated over 58% of the productive activity of the whole EU-15, were absorbing somewhat less than half the immigrants in the zone, with the proportion attributable to each of these three countries having decreased significantly. Over the last years, although the number of foreigners living in Germany has remained largely the same, while increasing slightly in the case of France and the UK, the dynamics of migration towards these three countries contrasts with that of the other economies in the region.

The Spanish economy has had, by far, the largest increase in the number of foreign citizens residing in the country during the decade following 2000. This has resulted in a concentration of more than 18% of the total number of foreigners living in the EU-15, with the estimated number living in Spain in 2010 at just over 5.5 million inhabitants. Similarly Italy, which earlier this decade had 1.27 million, or 8.68% of the EU-15 total, rose to more than triple the volume of foreign population in ten years, a concentration of 13.74%. Other countries that have significantly increased the volume of foreign population between 2000 and 2010 are Ireland and Portugal.

The growing relevance of the economies of southern Europe, plus Ireland, as the preferred destination for immigrants to the EU-15, has brought about, firstly, a greater spatial distribution of this population among the countries of

the area and, secondly, certain changes in the migrant density of the economies mentioned. Spain, which used to be a country of emigrants, has clearly become, in just a few years, a country of immigrants, where the percentage of foreigners compared to the total population has risen from 5.37% in 2000 to 18.37% in 2010 (Cebrián, 2009: 50). Similarly, Italy, with a migrant density of 8.32% at the beginning of this century, recorded very high values for this ratio in 2010 when more than one-tenth of its total population held foreign nationality. Much less important in relative terms are the foreign populations of Ireland and Portugal.

In recent decades, different studies have addressed the issue of migration in the EU, amongst which are those that consider the migratory effects arising from the enlargement of the EU towards eastern countries (Boeri and Brücker, 2000; Zaiceva and Zimmermann, 2008; Fõti, 2009), as well as those that have investigated the weak labour mobility in the EU context, the main determining factor in shaping a true monetary union (Eichengreen, 1994; Zimmermann, 1995; Zimmermann, 2005b). These studies do not explain, however, the unequal migratory dynamics that characterises the recent past of the countries of the EU-15, which has given rise to an approximation of the immigrant densities among countries over last decade. Therefore, our focus is on the determinants which have had a strong pull effect, attracting immigrants unevenly across each of the countries of the EU-15.

This paper is related to a vast literature on the determinants of international migration. Borjas and Bratsberg (1996), Borjas (1999), Karemera *et al.* (2000), Pedersen *et al.* (2004), Clark *et al.* (2007), among others, move the focus of attention on the causes of migration onto the economic, political and demographic characteristics of the migrants' countries of origin, arguing for the partial effect of pull factors in the host country. Following Mayda (2010), our present analysis puts greater emphasis than previous works on the demand side of migration. This change of perspective is particularly important in the EU-15 area, given the more restrictive immigration policies in the most destination countries.

In addition to the factors commonly discussed in the literature (per capita income, the unemployment rate and the stock of immigrants already living in the destination country), we also consider as a new feature the production structure of the host country. That is, we analyse the role that the most labour-intensive economic sectors, such as agriculture or construction, may have on the distribution of migrant density within the EU-15. Another novelty of this study is the inclusion of the so-called "Migrant Integration Policy Index" (MIPEX) as a proxy of the migration policy undertaken by each country (Huddleston *et al.*, 2011). This is an index published by the British Council and Migration Policy Group to measure the adaptation degree of the legislation of each country to the reality of the immigrant.

For our purpose, we use the panel data technique to estimate how country economic conditions and demographic characteristics affect the number of foreign citizens "pulled" to a particular country belonging to the EU-15. Thus, the model does not focus on source country conditions that might "push" im-

migrants to move because such factors are likely to affect the number of immigrants who leave but not the specific destinations within EU-15.

Like previous research, our results reveal that immigrants are more likely to locate in areas with high per capita income and large communities of foreign citizens already established in the host country. However, the effect of unemployment rate is positive but no significant, indicating that migrant inflows are greater in those countries with greater unemployment. When studying immigrants' response to changes in the economic structure of receiving countries, we find that the relative shares of agriculture and construction sectors exert as attraction factors, while a high share of manufacturing sector reduces significantly the migrant density. Finally, related to the influence of migratory policy approximated by MIPEX, we find a significant attraction effect on foreign population.

The rest of this paper is organised as follows. The next section presents the main theoretical arguments given by the literature to explain the effect of state-level factors on immigration patterns. The third section describes the data and shows the empirical results obtained through the panel data model. Finally, section 4 concludes.

2. PULL DETERMINANTS AND RESEARCH HYPOTHESES

Determinants affecting international migration flows are of a quite diverse nature, economic and non-economic. They can be grouped into either push factors, from the supply side of origin countries, or pull factors, from the demand side of destination countries[2]. As Berger *et al.* 1988 assess, the immigrants' destination choice is quite complex, where the influence of factors other than those exclusively economic may be relevant. Determinants as personal motivations or aspirations, social environment, the nature's characteristics, the way of life, etc. may weaken the effect of economic factors on the destination decision. However, our research puts emphasis on pull factors of destination countries within EU-15 commonly found in the economic literature (Zimmermann, 2005a). They can be divided into three categories: i) economic determinants, as the income level of the host country; ii) socio-political conditions, that may encourage or discourage the arrival of foreigners and, iii) social networks, that reduce costs and risks associated with migration and have an accumulated impact (Massey el al. 1987).

The neoclassical theory of international migration theory developed by Lewis (1954) and other researchers such as Fei and Ranis (1964), considers that international migration is due to geographical differences in the supply and demand for labour. In countries where the number of workers is high relative to the amount of capital, average wage is low. The opposite will happen in countries where the labour endowment is low relative to capital. The re-

[2] See, for example, Alonso (2011) and Massey and Espinosa (1997) for reviews of the determinants of international migration.

sulting wage differential causes the displacement of workers from low wage countries to those of higher wages. The volume of international migration is thus significantly and directly related, over time and across different countries, to the wage differential. Jennissen (2003) assumes that per capita GDP is directly correlated with international wage differences and, in this way, a higher per capita income for developed countries exerts an attraction for immigrants. Thus, we postulate the impact of per capita GDP as follows:

Hypothesis 1: The migrant density is higher in those countries with a higher per capita GDP.

Further refinements of the neoclassical theory (Sjaastad, 1962; Todaro, 1969; Harris and Todaro, 1970) argue, however, that the determining factor in the decision process of migration is the difference in expected earnings, and not the absolute wage difference. When migrants decide to move, they do not only have in mind the magnitude of the difference between the wages prevailing in their countries of origin and the destination country at the time of the decision, but also the possibility of progress throughout their life cycle provided by one country or another. At all times the expectations of earnings are defined as actual earnings in the country multiplied by the probability of finding employment in that country. Under these conditions, the possibility of high unemployment in the destination country weighs heavily on the expectations of hoped-for income, discouraging the arrival of immigrants.

Hypothesis 2: The migrant density is higher in those countries with a lower unemployment rate.

The theory of labour market dualism defended by Piore (1979) argues that international migration is determined by the intrinsic labour demand of modern industrialised societies. The negative characteristics that the inhabitants of industrialised countries attribute to the work of certain labour-intensive sectors such as agriculture, construction, food service or personal assistance, provide employment opportunities for foreign workers, such that they increase their earnings expectations and their ability to overcome risk and credit constraints.

Most immigrants occupy different market niches to those of natives, engaging in activities that local people are unwilling to perform (Alvarez-Plata *et al.*, 2003) and only in some sectors does potential competition exist between natives and immigrants (Coppel *et al.*, 2001). For Piore, the leading exponent of this theory, international migration is caused by a permanent demand for foreign workers inherent in the economic structure of the destination country. According to these arguments, immigration is not caused by stimulus factors in the countries of origin, but rather by pull factors found in destination countries, among which are included the structure and trend of economic growth in the host economy (Biffl 1996). Thus, the differences in the production systems of the EU-15 countries and, in particular, their specialisation in physical labour-intensive sectors have been affecting the arrival of immigrants into the different economies of the area.

Hypothesis 3: The production structure of host countries influence their migrant density.

Migration involves costs associated with transportation to and installation in the receiving country. These costs can be significantly attenuated by the presence of immigrant networks and institutions that help immigrants by facilitating an employment contract, procuring illegal transport, and providing them with information about the host country, etc. (Massey *et al.*, 1993). For the first members of a community, emigration is very expensive as they have to make their way in unfamiliar surroundings with limited social support. However, as the diaspora expands, it becomes easier for new migrants to undertake the migration experience. Migrant networks are composed of interpersonal ties that connect migrants, former migrants and non-migrants in areas of origin and destination through ties of kinship, friendship or belonging to the same community of origin. The existence of these networks is a kind of externality that reduces the levels of costs and risks for the settlement of immigrants in their new home (Bartel, 1989; Jaeger, 2000). Therefore, it is expected that a large number of foreigners residing in a country acts as a pull factor for new immigrants.

Hypothesis 4: The migrant density is higher in those countries with greater migrant networks.

Finally, it should be noted that, as put forward by Solé (2003), migration flows are influenced by the entry rules in each country. The development of specific restrictive legal regulations, for instance, the requirement for the immigrant to pass a basic test of social integration in the Netherlands since 2006, the UK since 2005, and France since 2003, increases the costs and risks of movement and reduces the desire to migrate, accounting for the brake on additional movements that encourage the process of causal accumulation.

Hypothesis 5: The migrant density is positively affected by flexible migratory policies.

3. Empirical analysis

As noted above, this study analyses the influence of certain factors of attraction of the destination countries forming the EU-15 that have influenced on the evolution of migrant density during the decade 2000-2010. First, we will provide a description of the data and statistical sources used and afterwards, we will present the main results of our econometric analysis.[3].

[3] It should be noted that the figures on which our analysis is based are approximate because illegal immigration is not recorded and must be estimated indirectly. We must assume, therefore, that the actual data far outweigh those provided by countries and international organisations like the UN, OECD and Eurostat. On the other hand, one of the main difficulties in measuring international migration is its very definition. The lack of coherence and consistency is one of the major obstacles to make accurate measurements that allow for comparisons.

3.1. Descriptive analysis

For greater comparability of data, the main source used was Eurostat, which collects statistical information on all socio-economic variables considered in our study for the EU-15 countries for reference in the period 2000-2010. In particular, Eurostat provides for each country annual data for the total population as at January 1 and the distinction between native and foreign inhabitants[4]. The data quality is high, even though the coverage is not complete. There are countries, such as Greece, France, Italy and Portugal, for which no information is available about the foreign population for the entire period. In the empirical analysis, we have linearly extrapolated the data for the missing years based on the average annual rate of change calculated for the entire period.

Table 1 shows some summary statistics for the immigrant inflows at the beginning and the end of the period 2000-2010. As we can see, while the three major economies at the centre of Europe -Germany, France and United Kingdom- absorb most immigrants in the zone, the data also show a growing relevance of the economies of southern Europe, plus Ireland, as the preferred destination for immigrants to the EU-15. This is consistent with Biswas and McHardy (2005). These authors find that the migration process within EU-15 area has been highly balanced and improved significantly over time, showing the southern countries a higher improvement in such migration balance than the northern ones.

The Spanish economy has had, by far, the largest increase in the number of foreign citizens residing in the country during the decade. Spain, which used to be a source country of emigrants, has clearly become, in just a few years, a main destination country of immigrants. The number of foreign citizens living in Spain has risen from 0.8 to just over 5.5 million inhabitants (see the first two columns of Table 1). As a consequence, the concentration of foreigners residing in this country compared to the total immigrant population in EU-15 has risen from 4.21% in 2000 to 18.37% in 2010 (third and fourth columns). Similarly, in Italy, the volume of foreign population has increased to more than triple in ten years (from 1.27 to 4.24 million). Moreover, while only 6.53% of the total EU-15 immigrants were residing in this country at the beginning of the century, such ratio has recorded a considerable increase in 2010, up to 13.74%. Other countries that have significantly increased the volume of foreign population between 2000 and 2010 are Ireland (from 0.12 to 0.38 million) and Portugal (from 0.19 to 4.60 million).

[4] Here we follow the approach of Eurostat which considers as an immigrant any person who does not have citizenship in their country of residence. However, according to UN criteria, an immigrant is anyone who is born in a country other than the country in which they reside.

TABLE 1. GEOGRAPHICAL DISTRIBUTION OF FOREIGN POPULATION WITHIN THE UE-15 OVER THE PERIOD 2000-2010

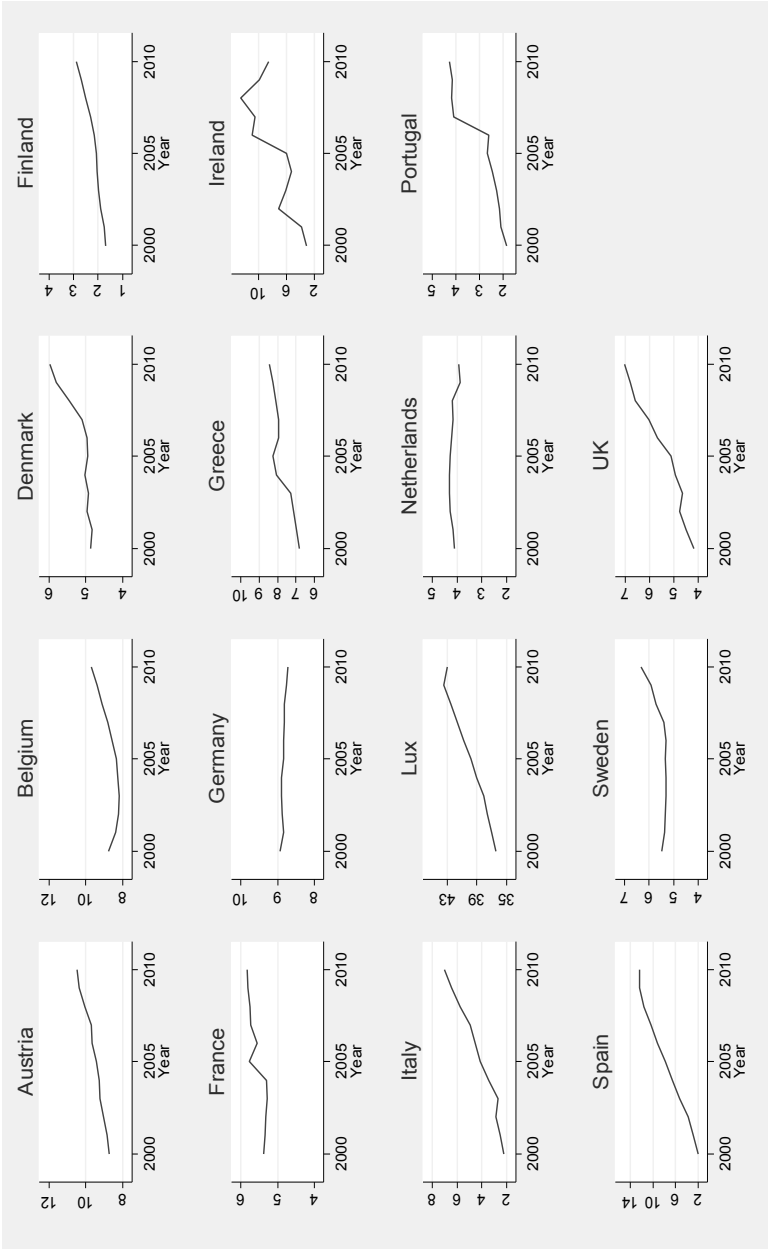
	Million immigrants		Distribution by country (%)		Migrant Density (%)		Average accumulated variation rate (%)
	2000	2010	2000	2010	2000	2010	2000-2010
Austria	0.70	0.88	3.59	2.84	8.73	10.46	2.29
Belgium	0.90	1.05	4.61	3.42	8.76	9.71	1.61
Denmark	0.26	0.33	1.33	1.07	4.87	5.96	2.43
Finland	0.09	0.15	0.45	0.50	1.70	2.89	5.84
France	3.26	3.77	16.78	12.23	5.39	5.82	1.45
Germany	7.34	7.13	37.73	23.13	8.93	8.72	-0.28
Greece	0.74	0.95	3.82	3.10	6.82	8.45	2.53
Ireland	0.12	0.38	0.62	1.25	3.18	8.60	12.32
Italy	1.27	4.24	6.53	13.74	2.23	7.02	12.79
Luxembourg	0.16	0.22	0.81	0.70	36.38	42.96	3.18
Netherlands	0.65	0.65	3.35	2.12	4.11	3.93	0.01
Portugal	0.19	0.46	0.98	1.48	1.87	4.30	9.13
Spain	0.82	5.66	4.22	18.37	2.05	12.31	21.32
Sweden	0.49	0.59	2.51	1.92	5.50	6.32	1.94
UK	2.46	4.36	12.65	14.15	4.18	7.03	5.90
UE-15	15.28	30.83	100.00	100.00	4.05	7.75	7.27

Source: EUROSTAT

The following Figure 1 illustrates the evolution of percentage of foreign citizens over total residing population (migrant density) in the countries of the EU-15.[5] As can be seen, over the decade most countries show a growing trend in the relative importance of immigrants compared to the total population. As we mentioned before, the most striking cases are Spain, Ireland, Italy and Portugal. In the Spanish case, the rate of migrant density has increased by over 10 percentage points between 2000 and 2010 (from 2.05 to 12.31). Ireland is the country that experienced the greatest fluctuations over these ten years, from a value of less than 4 percent to a level slightly above 8 percent in 2010. Italy, which began the decade with values close to Spain, reaches a rate of migrant density slightly below the average for all countries in the EU-15 by the end (from 2.23 to 7.02). Finally, the immigrant inflow rises from 1.87 to 4.30 in Portugal.

[5] Figure 1 complements the information available in the fifth and sixth columns of Table 1.

Figure 1. Evolution of migrant density (%) by destination country (2000-2010)



3.2. VARIABLES, METHODOLOGY AND ECONOMETRIC RESULTS

In order to test the research hypotheses formulated in Section 2, the econometric analysis includes the migrant density as the dependent variable and, as explanatory variables, a set of variables used as approximations for the destination countries' factors that attract the foreign population.

The explanatory variables related to economic and demographic conditions are the following: i) a first group of economic variables traditionally studied in the literature: GDP per capita and the unemployment rate, as proxies for the level of wages and the difficulty of finding employment in the country of destination, respectively, ii) a second group of variables related to the production structure of the host country: the relative importance of agriculture, industry, construction and services in the destination country's employment and iii) thirdly, the stock of foreign population in the host country as a proxy for the effect of migration networks.

To test hypothesis 5, some measure on destination countries' migratory policies is needed. In our analysis, we use the index of immigrant integration policy (MIPEX). The information on the MIPEX comes from http://www.mipex.eu/. This is an index published in Brussels by the British Council and the Migration Policy Group. Importantly, this indicator does not measure the success or failure of the integration of immigrants in EU countries, but rather to what extent the law of the country treats immigrants with the same rights as native citizens. To date there have been three editions relating to the years 2004, 2006 and 2010. As the MIPEX contains the results obtained in different policy areas, in our study we consider the overall score achieved by each country in each one of these editions.[6] For comparability reasons, individual scores have been calculated with respect to the average of the EU-15, taking this average a value of 100. The higher MIPEX score, the better adaptation of country legislation to integrate immigrants in the national environment.

Table 2 shows information about the variables used in the statistical study: their definition and expected effect on migrant density. In Appendix A.1, we provide some descriptive statistics of the variables considered for the 15 countries.

[6] The 2004 pilot study covers the following areas: labour market mobility, long-term residence, family reunification, access to citizenship and anti-discrimination. The MIPEX 2006 edition includes political participation and the MIPEX 2010 includes education.

Table 2. Explanatory variables and their expected effect on migrant density

Variable	Definition	Expected Effect
GDP pc	Gross Domestic Product per head	+
Unem	Unemployment rate (%)	-
AGRI	% of employment in the agricultural sector	+
IND	% of employment in the industrial sector	-
CONSTR	% of employment in the construction sector	+
STOCK	Number of foreigners residing in the host country (EU-members and non EU-members)	+
MIPEX	Index of migratory integration policy	+

The availability of time series data by country (15 countries) along the period 1999-2010 (11 years) for all variables, except for MIPEX (with just three observations by country) enables to estimate a panel data model.

Moreover, given the observed heterogeneity among EU-15 countries due to geography, history, language, culture, etc, it seems reasonable to think that there must be country-specific factors influencing on the migration decision which are difficult to measure. Hence, panel data methodology allows to capture the effect of unobservable determinants which may explain differences among countries (Cebrián, 2009; Mayda, 2010).

The basic specification of the estimating equation is as follows [7]:

$$\frac{Foreing_{it}}{Popul_{it}} = \beta_0 + \beta_1 GDP_{it-1} + \beta_2 UNEM_{it-1} + \beta_3 STOCK_{it-1} + \beta_4 AGRI_{it-1} + \beta_5 IND_{it-1} + \beta_6 CONSTR_{it-1} + \delta_i I_i + \delta_t I_t + \varepsilon_{it}$$

where *i* is the destination country (i = 1,...15) and t the year (t = 1999,...2010).

$\frac{Foreing_{it}}{Popul_{it}}$ the dependent variable, is the percentage of foreign citizens over total population (migrant density) of country i in year t, GDP is the (log) per capita GDP; UNEM is the unemployment rate; STOCK is the (log) total immigrant population already established in the destination country; AGRI, IND and CONSTR are the percentages of employment in the agricultural, manufacturing and construction sectors, respectively. Finally, the specification also includes destination counties' fixed effects (I_i), and year effects (It). To avoid endogeneity problems, all explanatory variables are lagged one period.

[7] To avoid multicollinearity problems, services sector has not been included in the econometric specifications.

After checking the suitability of estimating a fixed effects model with the Hausman test ($p < 0.001$), the modified Wald test confirmed the existence of heteroscedasticity in the residuals ($p < 0.001$) and the Wooldridge test confirmed the first-order autocorrelation problem ($p = 0.0469$). Therefore, we do the Prais-Winsten estimation to get more efficient results.

Table 3 shows the estimates obtained from the Prais-Winsten regression, corrected both for heteroscedasticity as well as a first-order serial correlation of errors.

TABLE 3. DETERMINANTS OF THE MIGRANT DENSITY WITHIN EU-15 OVER 2000-2010

	MODEL I		MODEL II	
Migrant Density	Coeff.	St. Dev.	Coeff.	St. Dev.
GDPpct-1	9.267***	3.407	6.989***	2.425
UNEMT-1	-0.036	0.067	0.054	0.061
STOCKt-1	3.758***	0.509	3.383***	0.470
AGRIt-1			0.145	0.097
INDt-1			-0. 208***	0.075
CONSTRt-1			0. 327**	0.154
Constant	-136.561***	39.474	-107.024***	28.462
N° observ.	165		165	
Wald chi2	188778.12		108732.81	
R2	0.9598		0.9744	

Notes: *** p = 0.01, ** p = 0.05 and * p = 0.1

For clarity, the coefficients of the fixed effects for each destination country and year have not been included.

The results of the estimates of model I confirm the effects found in the previous literature regarding the positive and significant effect of both per capita income and the stock of immigrants. Immigrants are likely to choose as destination countries those with high per capita income and large immigrant networks. Therefore, both factors act as important characteristics of European host countries that attract foreign population, which lead to accept our hypotheses 1 and 4.

Regarding hypothesis 2, the coefficient of the unemployment rate is negative, indicating that the higher the unemployment rate of a particular destination, the lower its share of immigrants. However, such an effect is not significant in our data. Indeed, some studies do not find clear evidence supporting a strong correlation between unemployment and immigration (Stalker, 2002). Moreover, by adding variables representing the receiving country's production structure (see model II in Table 3), the influence of the unemployment rate changes the sign. Therefore, we do not find a clear deterrent effect for this

variable and we thus can not accept the existence of a negative relationship between migrant density and unemployment rate given by hypothesis 2.[8]

Estimates of model II, which improve the goodness of fit from 95.98% to 97.44% from model I, also show significant effects both for per capita income and the stock of immigrants. With respect to the production structure of the destination country, we find the expected findings. Our estimates show that both agriculture and construction sectors attract foreigners, although the impact of the agricultural sector is not significant. Also, a greater intensification of the host country towards the industrial sector reduces significantly migrant density. Then, we can assert that production structure of the destination country determines significantly migrant density, as suggested by hypothesis 3.[9]

Related to our variable of immigration policy, MIPEX, as we have only three observations by country all along the period, it is not practicable the usage of panel data analysis. Instead, we compare migrant share among EU-15 members according to their MIPEX rankings in every year for which information is available. In particular, we analyse whether there exist significant differences in the immigration density between countries with a MIPEX above the EU-15 average and those with an index value below. Mann-Whitney non-parametric tests are the following: $p = 0.0826$, for 2004; $p = 0.0372$, for 2006 and $p = 0.6015$, for 2010. These findings support that those countries with an index value above the EU-15 average concentrate more foreign population than those that are below, being such differences significant in 2004 and 2006 but not in 2010 (see Appendix A.2 data). Effectively, the northern and southern countries reach the highest MIPEX scores with the latter receiving a significant share of immigrants during the decade. This result confirms our hypothesis 5.

With all, we have obtained quite strong support in favour of the significant role that key variables determine the destination choice of foreigners within EU-15 area. That is, European migration is likely to be linked to the attraction of higher income, larger foreign communities, greater share of agricultural and construction sectors and lower share of manufacturing. Likewise, a higher MIPEX value is associated with a greater immigrant density, though such relationship seems to vanish at the end of period.

4. Conclusions

Year after year thousands of immigrants come to the countries of the EU-15 mainly looking for better living conditions. Although this zone can be identified as a homogeneous aggregate sharing similar macroeconomic conditions, between 2000 and 2010 major differences have become apparent in the migration to the various countries of this region, which have led to significant

[8] In line with Basu (1997), this result could be explained by the fact that potential immigrants would move to a high unemployment area if they can plan in advance and make an effort to search for a job.
[9] Inclusion or not of both year and country effects never changes the signs of the explanatory variables considered in models I and II, except for unemployment rate.

increases in the relative weight of the immigrant population in countries such as Spain, Ireland, Italy and Portugal. However, Germany continues to be the country in the zone to welcome most immigrants.

Our empirical analysis shows that the migrant process within the EU-15 between 2000 and 2010 has been conditioned mainly by factors of attraction of an economic and socio-political nature. The influence of these factors has resulted in a lower concentration of immigrants in the whole region and greater uniformity in the migrant density of these European economies.

In this way, among economic issues, the difference in per capita income across recipient countries is a very important factor in explaining the distribution of migration across economies of the EU-15. In search of higher incomes, migrants move to where labour receives higher wages and better living conditions. On the other hand, the characteristics of the production structure of the host country and, specifically, the relative weight of activities intensively requiring untrained manual labour, as in the case of agriculture and construction, exerts a pulling force on migrants. These immigrants arrive to fill vacancies in activities that the national population is either unwilling to perform or unable to attend the excess labour demand, as it has happened in Spain. Typically, immigrants are found to experience lower employment and wages than natives. However, the process of adjustment and restructuring that these sectors have been experiencing in recent decades, and the negative impact of the financial crisis on construction sector in the future might lead to a crowding-out effect from labour-intensive activities towards other sectors of higher activity and dynamism.

From a socio-political point of view, immigrants are often viewed as a group with a high welfare dependency and other forms of social assistance compared to natives. But this assumption is not uniformly confirmed by the literature, as countries differ substantially on levels of use due to policy and institutional rules (Kerr and Kerr, 2011). Immigration is favoured by the existence of institutions and immigrant communities that foster the development of networks of trust and acceptance in the recipient country. In the case of the EU-15, the results of our analysis indicate that the immigration network exerts a significant role as determinant of the recent evolution of migrant density. Moreover, the fact that the countries with high quality of immigration policies, assessed by MIPEX, are those which have received more significant immigrant inflows during the decade, support the attraction effect of such policy measures.

Therefore, it could be expected that the uneven impact of current crisis on the economies of the EU-15 countries and its effects on certain production activities, especially those activities that receive migrant unskilled labour related to the construction sector, bring about changes in the distribution of migrant density within the zone. Immigrants are likely to go from countries as Spain, Ireland or Italy, where the impact of crisis is being particularly negative, to other countries as Germany and Northern states where its effects are not so intense. However, there exist factors which simultaneously act in an opposite direction. Those countries where the reduction in GDP has been lower due to

the crisis are usually those whose production structure is more intensive in manufacturing, which is not a pull factor for immigrants. Moreover, migratory policies implemented in these countries are normally more restrictive. On the other hand, the existence of important migrant networks already established in most countries of the EU-15 may act as a protection mechanism against adverse conditions of the crisis, which could reduce the departure of immigrants. Lastly, as another consequence of the economic crisis, the distinct pattern of the unemployment rates across EU-15 countries is not likely to influence significantly on migrant density as our results suggest. With all, we could expect that the current crisis will not impact noticeably on the distribution of migrant density across EU-15 countries.

References

Alonso, J. A. (2011): "International migration and development: A review in light of the crisis", *CDP Background Paper,* 11 (E), December.

Alvarez-Plata, P. Brücker, H. y Siliverstovs, B. (2003): "Potential migration from Central and Eastern Europe into the EU-15. An update", DIW, Berlín.

Basu, B. (1997): "Advanced consideration of migration and the choice of destination: A joint decision", *Applied Economics,* 29, 259-268.

Bartel, A. P. (1989): "Where do the new U.S. immigrants live", *Journal of Labor Economics*, 7, 371-391.

Biffl, G. (1996): "Immigrant labour integration", in Schmid, G. O¨Reilly, J. y Schömann, K. (comps.): *International Handbook of Labour Policy and Evaluation*, Edward Elgar, Cheltenham.

Biswas, T. y McHardy, J. (2005): "Measuring the balance of intra-regional migration", *Applied Economics*, 37, 2221-2230.

Berger, A., Fornairon, J.D. and Rouzier, J. (1988): "El avance del Sur de Francia. Una novación económica y social", Revista de Estudios Regionales, 20, 33-46.

Boeri, T. y Brücker, H. (2000): "The impact of eastern enlargement on employment and labour markets in the EU member states", *Final Report, Commissioned by the employment and social affairs, DG of the European Commission*, European Integration Consortium, Berlín and Milán.

Borjas, G. J. (1999): "The economic analysis of immigration"; in Ashenfelter O, Card D. (eds.): *Handbook of Labor Economics*, chapter 2. North-Holland Elsevier Science, The Netherlands, 1697-1760.

Borjas, G. J. y Bratsberg, B. (1996): "Who leaves? The outmigration of the foreign-born", *The Review of Economics and Statistics,* 78, 165-176.

Cebrián, M. (2009): "Los determinantes de los flujos migratorios internacionales, el caso español 1995-2007", *Principios*, 14, 49-70.

Clark, X. Hatton, T. H. y Williamson, J. G. (2007): "Explaining U.S. immigration, 1971-1998", *The Review of Economics and Statistics*, 89, 359-373.

Coppel, J., Dumont, J. CH. y Visco, I. (2001): "Trends in immigration and economic consequences", *Working Paper*, 284, Economic Department OCDE.

Eichengreen, B. (1994): "Thinking about migration: Notes on European migration pressures at the dawn of the next millennium", *Center for International and Development Economics Research (CIDER) Working Paper,* C93-019, University of California.

Eurostat (2010): *Population Statistics*, European Communities, Luxembourg.

Fei, John C. H. y Ranis, G. (1964): "*Development of the labor surplus economy: Theory and policy",* Homewood, Illinois: Richard A. Irwin, for the Economic Growth Center, Yale University.

Fōti, K. (2009): "Trends and reasons for East-European labor migration to Ireland and the UK in the first years of enlargement", *Revista de Economía Mundial*, 22, 27-50.

Harris, J. R. y Todaro, M. P. (1970): "Migration, unemployment and development: A two-sector analysis", *The American Economic Review*, 60, 126-142.

Huddleston *et al.* (2011): *Migrant Integration Policy Index*, Bruselas.

Jaeger, D. A. (2000): "Local labour markets admission categories and immigrant location choice", *Institute for the Study of Labor (IZA), Working Paper*, June.

Jennissen, R. (2003): "Economic determinants of net international migration in Western Europe", *European Journal of Population*, 19, 171-198.

Karemera, D., Oguledo, V. I. y Davis, B. (2000): "A gravity model analysis of international migration to North America", *Applied Economics,* 32, 1745-1755.

Kerr, S. P. and Kerr, W. R. (2011): Economic impact on immigration: A survey, NBER *Working Paper*, 16736.

Lewis, W. A. (1954): "Economic development with unlimited supplies of labour", *Manchester School of Economic and Social Studies*, 22, 139-191.

Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A. Y. y Taylor. J. E. (1993): "Theories of international migration: A review and appraisal", *Population and Development Review,* 19, 431-466.

Massey, D. and Espinosa, K. (1997): "What's driving Mexico-U.S. migration? A theoretical, empirical, and policy analysis", The American Journal of Sociology, 102, 4, 939-999.

Mayda, A. M. (2010): "International migration: A panel data analysis of economic and non-economic determinants of bilateral flows", *Journal of Population Economics*, 23, 1249-1274.

Pedersen, P. J., Pytlikova, M. y Smith, N. (2004): "Selection or network effects? Migration flows into 27 OECD countries, 1990-2000", *IZA Discussion Paper, 1104*.

Piore, M. J. (1979): "*Birds of passage: Migrant labor in industrial societies"*, Cambridge University Press, Cambridge.

Sjaastad, L. A. (1962): "The costs and returns of human migration", *The Journal of Political Economy*, 70, 80-93.

Solé, C. (2003): "European policy on immigration", *Transfer: European Review of Labour and Research Autumn***,** 9, 401-415.

Stalker, P. (2000): "Migration trends and migration policy in Europe", *International Migration*, 40, 5, 151-179.
Todaro, M. (1969): "A model of labour emigration and urban unemployment in less developed countries", *The American Economic Review*, 58, 138-148.
Zaiceva, A. y Zimmermann, K. F. (2008): "Scale, Diversity and determinants of labour migration in Europe", Oxford Review of Economic Policy, 24., 3,427-451.
Zimmermann, K. F. (1995): "Tackling the European migration problem", *Journal of Economic Perspectives*, 9, 45-62.
Zimmermann, K. F. (2005a): *European migration. What do we know?* Oxford University Press, USA.
Zimmermann, K. F. (2005b): European Labour Mobility: Challenges and Potentials, *De Economist* 153, 4, 425-450.

A.1. Summary statistics (average by country over the period 2000-2010)

País	Migratory Density (%)	GDPpc	UNEM Rate (%)	AGRI (%)	IND (%)	CONSTR (%)	Foreigners Stock	MIPEX 2004	MIPEX 2006	MIPEX 2010
AT	9.52	29,750	4.32	5.15	19.65	8.26	773,487	88.76	64.04	80.77
BE	8.71	28,550	7.80	1.76	18.22	6.70	912,060	117.25	116.41	128.85
DK	5.17	37,558	4.89	2.94	16.76	6.75	278,472	82.09	73.96	101.92
FI	2.18	29,375	8.50	4.89	19.44	6.63	112,219	105.05	111.91	132.69
FR	5.56	26,983	9.05	3.62	17.51	6.79	3,465,500	105.80	92.49	98.08
DE	8.84	27,375	8.62	2.22	23.85	7.24	7,277,125	93.38	88.89	109.62
GR	7.74	17,016	10.10	13.03	14.46	7.99	848,387	82.73	65.01	94.23
IE	7.64	37,100	6.06	5.56	16.06	10.73	303,848	95.75	90.36	94.23
IT	4.24	24,116	8.22	4.25	22.72	8.21	2,379,204	98.77	106.92	115.38
LU	39.93	63,650	3.82	1.81	9.66	8.07	183,132	87.34	92.06	113.46
NL	4.17	31,625	3.84	2.78	13.16	5.87	677,048	110.67	113.31	130.77
PT	3.00	14,608	7.63	8.12	21.53	11.52	304,194	110.18	133.34	151.92
ES	7.65	20,433	11.84	5.33	17.57	11.67	3,142,592	110.08	101.96	121.15
SW	5.53	32,058	6.80	2.11	16.40	5.97	500,520	110.56	147.02	159.62
UK	5.47	29,216	5.63	1.25	15.00	7.70	3,221,000	101.55	105.92	109.62
UE-15	8.35	29,961	7.14	4.32	17.46	8.01	1,625,253	100.000	100.000	100.000

Source: EUROSTAT and MIPEX.