

Have Migrants Bought a “Round Trip Ticket”? Determinants in Probability of Immigrants’ Return in Spain

Rafael de Arce*

Ramon Mahia[†]

*Universidad Autonoma de Madrid, rafael.dearce@uam.es

[†]Universidad Autónoma de Madrid, ramon.mahia@uam.es

DOI: 10.1515/1524-5861.1831

Have Migrants Bought a “Round Trip Ticket”? Determinants in Probability of Immigrants’ Return in Spain

Rafael de Arce and Ramon Mahia

Abstract

Understanding the extent to which immigration is a predominantly permanent or transitory phenomenon is essential for host countries insofar as it affects the strategic design of their admission, reception, and integration policies. Beyond the determination of the volume of returns, it is crucial to also determine which covariates connect better with a greater or lesser propensity of return. An adequate approach to the dynamics of the return requires considering this decision conditioned by the time elapsed since the arrival of the immigrant. From this perspective, the variable of interest would not be the intention of return, but the elapsed time between the arrival of the immigrant and the moment that return is considered as an option, as well as what are the factors affecting a greater or lesser duration of the stay. In this context, the article explores the relative importance of various personal and migration characteristics in the intention of return of immigrants conditional at the time of residence through the application of a Cox model of duration.

KEYWORDS: migrants’ return, probability of returns, life cycle in migration, migrant survival curves, cox duration model

Introduction

How can we explain the return intention of a migrant who left his origin country due to economic motivations? The academic literature contains different theories to help understand the return phenomenon. In the field of economics, historically we can find two approaches or groups of theories. On the one hand, from the Neoclassic Economy perspective, the Disappointment Theory assumes that migration is a permanent process. Such theory explains returns as a failure in the election of the host country or in the estimated costs and benefits realized by the migrant before his departure¹. On the other hand, from the New Economy of Labour Immigration perspective, the Target Income Theory postulates that migration is considered a temporal process from its very beginning. The immigrant plans his return as soon as he has obtained an increase in his yields/savings to achieve better conditions in his country of origin². In addition to these two economic theories, other explanations come from the fields of sociology and demography. Massey et al. (1993), Reyes (2001), and Casarino (2004) organize these theories into three groups: (i) structural approaches (a migrant is constantly checking the advantages and disadvantages of his location compared with the changing circumstances of his original country), (ii) transnationalism (the migrant maintains frequent contact with his country of origin in order to return when he has achieved some objectives), and (iii) social network theories (the social networks at origin as well as at destination reinforce bidirectional movement between the two countries)³.

Having a good understanding of the essence, permanent or transitory, of the migration process is a key issue for the policy design of host countries. From an economic point of view, a good definition of this characteristic is crucial in order to define an optimum distribution of resources in welfare states (education, employment subsidies, retirement expenses...). In the short and medium term, these implications have been widely analysed (see Arce and Mahia, 2009, 2010 for a survey). However, the effects of potential returns, normally focused in the long-term, have received less attention.

Taking into account several national surveys⁴, there is clear evidence of return intention in an important share of immigrants. Dustman et al. (2007) estimate return at around one-third of immigrants arriving in a country. However, although return of immigrants clearly occurs, its investigation is difficult once the

¹ See Herzog and Schottman (1982).

² See Borjas (1994), Hill (1987), Lindstrom (1996).

³ Some authors such as Reyes (2001) include a sixth group of theories referred to as *circular migration* but these involve a different kind of motivation, beyond the scope of this paper.

⁴ Spanish Immigration Survey INE (2007), quinquenal German Socio-economic Panel (GSOEP), National Longitudinal Survey of Youth, USA or LFS, UK.

event has occurred, as after the return, these persons have left the statistical control of the host country.

In the analysis of the factors producing these returns, there is statistical evidence of different patterns based on the host country characteristics, area of origin, personal economic situation, family ties, etc. This set of variables influencing the return intention can be modelled through a specific probability function capturing the essentials of each individual decision, conditioned by the host country, the personal circumstances, and the host/origin countries parallel evolution.

The main aim of this paper is the definition of the individual variables conditioning the intention of immigrants in Spain to return within less than five years. Using a duration curve and Cox regression, the relative weight and significance of a set of variables is estimated.

As it is well known, Cox regression is used as a tool in duration models where the influence of different variables is to be tested, treating the time to an expected event like an endogenous variable. This technical approach, usually employed in modelling a hazard, is a good mechanism to estimate the intention to return of immigrants. The survival curve illustrates the *hazard of return* for each point of time of residence controlled by several covariates influencing it. Although this technical approach is a useful way to model the returns, it has not been used frequently (Reyes, 2001; Bijwaard, 2007).

The analysis in this paper is conducted through the Encuesta sobre Inmigración INE 2007, with a sample of 15,465 immigrants arriving in Spain. The information of this survey has been completed with an estimation of the individual increase of parity purchasing power (PPP) conditioned for the time of residence of each immigrant in Spain. To calculate the PPP, data of the World Economic Outlook of the IMF were used.

Only immigrants driven by economic reasons have been captured from the survey in this research. Taking into account the country of origin, we have conserved only the migrants who arrived to increase their quality of life, discarding immigrants who could have had similar opportunities in their countries of origin.

The paper is organized as follows: first, we revisit the *state of the art* about theories of migrants' returns in the academic literature. Then, we propose a specific model for the Spanish case and it is estimated. Finally, (some) conclusions are drawn.

Determinants of Immigrants' Returns⁵

As shown in Constant and Massey (2002), there are two main approaches in the literature on immigrants' returns: that of the neoclassical economy (NE) theory and that of the new economy of labour immigrants (NELI) theory.

According to the more traditional approach encompassed in the theoretical group of Neoclassical Economics (quoted in Borjas, 1985; Borjas and Bratsberg, 1996; Kings, 2001), immigration is a long-term vocation and returns are the result of "errors in the selection of the country of origin". Immigration is the result of a cost-benefit analysis, based on *permanent* wage differences between the country of origin and destination (influenced by the level of education, e), as a benefit; and transport, culture, social integration, etc. as costs (C).

Wages in the country of destination (d) and origin (o) are determined from the following functions:

$$\begin{aligned} W_{di} &= \alpha_d + \beta_d e_i \\ W_{oi} &= \alpha_o + \beta_o e_i \end{aligned} \quad \text{Eq. 1}$$

Following the usual formulation of Borjas (1987) on the role of the migration utility we can write

$$U_i = \alpha_d - \alpha_o + (\beta_d - \beta_o)e_i - C \quad \text{Eq. 2}$$

where the probability of emigration for each subject follows a normal distribution which can be expressed as

$$U_i = 1 - \Phi \left[\frac{\mu_{wo} - \mu_{wd} + C}{\sigma_U} \right] \quad \text{Eq. 3}$$

where, in addition to the difference between the salary average between the origin and destination country (μ), and the costs of immigration, Borjas introduces the standard deviation (σ) in the normal accumulated function (Φ).

Some authors (for example Todaro, 1969) added to the utility function maximized by immigrants the necessary time for reunification and the permanent settlement in the host country, thereby reinforcing the idea that the motivation for immigration has permanence. The theory fits in a static context: the time when the decision to emigrate or not to do so is taken just once.

⁵ Budnik (2011, pp. 20–24) contains a good survey of these theories.

A review of this theory (Borjas and Bratsberg, 1996; Rooth and Saarela, 2007) proposes that the return of migrants could be considered as a new theory of selection in contrast to the “positive selection argument” proposed by Roy (1951). This serves as the basis for the NE. For these authors,

“the theory of selection in return migration additionally incorporates reversible migration decisions. Return migration may occur for two distinct reasons. It may be the optimal residential location plan over the life cycle, which allows some workers to attain higher utility than if the migration decision was permanent, or it may result from mistakes in the initial migration decision” (see more in Rooth and Saarela, 2007).

Turning to the second theoretical approach (NELI), immigration occurs due to a “failure of the labour market in the country of origin”. Relocation abroad is a temporary solution until the market conditions in the origin country are conducive for return. Some authors, such as Djajic and Milbourne (1988) and Raffelhüschen (1992), explain returned migration on the basis of preference for a specific location. From this perspective, immigration is seen as a temporary situation whereby the workers seek to increase their savings, their training, and/or work experience sufficiently in order to be able to relocate to their home country with greater guarantee of professional and social success.

Quoting Dustmann (2003), empirical evidence shows that there is temporary immigration, without the vocation of permanent residence that lies behind the NE approach. The neoclassic model is valid in a static context, but not in a dynamic context, where relative wage differences would be subject to changes and, therefore, also the decision to stay in the country of migratory destination might be changed. As Péridy (2006) shows, this new focus does not change dramatically the traditional drivers of migration, but it allows to take into account the return migration in a human capital model.

Following Dustmann (2003), the utility function of the immigrant, including the duration of their stay in the country of reception (t), can be written as

$$U_i = tv(\rho_o, C_o) + (1-t)v(\rho_d, C_d) \quad \text{Eq.4}$$

with the following constraints:

$$tw_d + (1-t)w_o - tC_o - (1-t)pC_d = 0 \quad \text{Eq.5}$$

where p represents the relative price of consumption in the country of origin compared with the price of consumption in the country of destination (which is the ratio between the PPP of a common set of goods consumed in both origin and destination country).

In this context, the accumulation of wealth (or savings) seems a logical factor in determining the optimal duration of immigration. On the equations of budgetary restraint and utility, regrouping conveniently, we can write the following expression to maximize:

$$\pi[(w_o - w_d) + (pC_d - C_o)] - [v(\rho_o, C_o) - v(\rho_d, C_d)] = 0 \quad \text{Eq.6}$$

The relative wage difference between the countries of destination and origin now has a different sense in the context of the likelihood of return of an immigrant. Observed in a dynamic context, increasing this differential would produce an incentive to return, to the extent that the immigrant wage/savings would increase their ability to purchase/invest in their country of origin. In the same context, Dustmann (1993) and Kirdar (2009) found evidence of the significance of the changes in the PPP, as a proxy variable of relative prices, in determining the likelihood of return of an immigrant.

Dustmann (1993) focused on Turkish migration in Germany and found that rising years since migration, speaking German, being married to a German, and having young children increased (the) intended duration of stay. Steiner and Velling (1994) found that intended duration increased with years of residence in the host country, education skill, German language knowledge, property ownership, having young children, and "feeling good" about Germany, but decreased with remitting, unemployment, and having children in the country of origin.

For the case of Ireland, Barrett and Trace (1998) found evidence that returning emigrants had higher education than those who remained abroad. In contrast, Bauer and Gang (1998) found that Egyptian returning migrants were negatively selected with respect to skill, and having prior migrant experience and access to social networks abroad shortened that length of stay. For the US case, Lindstrom (1996) demonstrated that sending remittances home also lengthened trips, a finding also found among unskilled Mexican immigrants to the United States.

Reagan and Olsen (2000) found lower probabilities of return migration among those who have arrived at younger ages, those with higher potential wages, those with more years in the United States, and those participating in welfare programmes. They did not find evidence of gender differentials.

Reyes (2001) found three sets of independent variables of special interest in the case of United States migrants: opportunities available in the country,

household resources, and economic opportunities at the home community. In addition to these variables, her model takes into account personal characteristics (age, education, and household status) and migration-related variables (duration, documentation status, prior migration experience, year of migration, and place of destination in the United States).

Dustmann and Weiss (2007), studying UK migrants' decisions about to return, found three different determinants: differences in relative prices between host and origin country, complementarities between consumption and location where this consumption is done, and the potential human capital accumulation enhancing the labour opportunities of returning migrants.

Regarding the structural approach, various authors (see Adda et al., 2006) focus on the importance of changing conditions in the country of origin to determine the potential return of immigrants. From this approach four types of potential returnees are defined: (i) those who are not able to adapt themselves to the country of destination (due to personal issues or social rejection) and who decide to return to their countries, (ii) those who seek to accumulate enough capital to buy "land" in their countries of origin and establish themselves as self-employed, (iii) those who simply believe in the return for retirement, and (iv) those returnees who employ physical and human capital acquired during their migratory journeys to invest productively in their country of origin.

In this approach, conditions in the country of origin, and the capacity of the immigrants to know them when they are outside, are determining factors in deciding on their potential return

Time plays a key role in the decision to return. Obviously, a very long stay would be linked with type (iii) (return for retirement), a very short stay with type (i) (non-adaptation) and a medium time of stay with types (ii) and (iv) (return using capital acquired outside).

In a sense, Dustman (2007) and Kirdar (2009) incorporated a partial measurement of this structural vision by introducing the variable of relative change in the PPP as a determinant of the return.

Contact maintained with the country of origin (strongly linked to the maintenance of family ties, short-stay holiday, sending remittances, etc.) is a determining factor in the intention to return from the point of view of this approach. In addition to these personal characteristics, to analyse differences in rate of return based on information on country of origin would be an effective way of capturing the collective vision of immigrants with regard to the factors for and against the return.

A fourth theoretical approach, known as transnationalism (Portes, 2001; Kirdar, 2004) reinforces the importance of links to the *culture of origin* as a strong determinant in returns. Certain immigrant communities become small cores of their nation even though they are not in its political territory. Among them,

there is a direct connection with the customs and events in their country of origin (these contacts may include a number of countries in different destinations, apart from the country of birth, where others immigrants communities of compatriots live). Some authors apply the concept of diaspora to label this type of behaviour. Chinese and Indian communities abroad, or the Ecuadorians from the SENAMI are good examples of this behaviour. Here, again, such links can be important determinants in estimating the probability of return.

Finally, a fifth approach to the subject of our research focuses on the role of social networks. In this context, the immigrant is an *economic actor* in a wide and maintained social network. From the beginning of the migration, this social network reinforces the immigrant's stay with the notion of temporary vocation and certain guarantees of return to the country of origin in order to incorporate human and physical capital acquired abroad (Martin and Widgren, 2002).

Cox regression for the estimation of the probability of return In the case of the immigrants in Spain

In this research, we have used information from the survey on migration conducted by INE in 2007. The variable of interest is named PLAN5: the respondent answers about his intention or not to return to his country in the next five years (PLAN5). This variable is evaluated for each immigrant conditioned by the current number of years of his migratory journey.

Unfortunately, using this variable there occur two possible biases: on the one hand, the variable contains a declaration of intentions, but not a real fact. On the other hand, the immigrants who remain in a host country at any point in time are not a representative sample of the cohort that originally entered, creating a potential bias whenever cross-sectional data are used to study patterns and processes of assimilation (Borjas, 1996). Precisely those immigrants who "erred in selecting their destinations", and saw this early, could be excluded in the analysed sample.

Despite being aware of these restrictions and because of the limitations of the statistical information available in the case of Spain, we use a Cox model to analyse the significance of the different available variables about the intention of returning in the next five years.

The role of time in the evolution of the intentions of return of immigrants is a clear fact (see Dustmann, 2007 for example). Longitudinal information available (Germany, United Kingdom or United States) has been used in various investigations already mentioned. A model of duration (or survival curves) with cross-sectional data is used like a technical optimum alternative in our research due to the lack of this longitudinal information in distinct waves of successive surveys for the Spanish case.

In the literature about returns of migrations, there are few occasions where duration models have been used. There are some exceptions such as Bijwaard (2007), Detang-Dessendre and Baer (1999), Longva (2001) or Constant and Zimmermann (2003).

As Bijwaard (2007) points out, the models most commonly used in the estimation of the probability of return (Probit or Logit models) present a static treatment in the differentiation of the characteristics determining returns. Cox regression is an optimum solution to include the dynamic characteristic driving these decisions. On the one hand, with this technical approach, we model the likelihood of return conditioned on the time of stay, seen by various authors as fundamental to determine the return decision (Lancaster, 1990; Van der Berg, 2001). The characteristics of each person are observed at the time when the new decision is adopted. On the other hand, the survival models capture interesting information about censored and truncated data: we know who opted to return, but we do not know whether individuals who have not done so yet, may do so in the future. The duration models are specifically designed to exploit this kind of partial information. An additional advantage of using this type of model is that it is not constrained by an arbitrary distribution of probability (as in the case of a Probit or Logit model).

The proposed model is:

$$h(t, X) = h_0 * e^x \quad \text{Eq.7}$$

$$X = \beta_1 + \beta_2 \text{ARRIV_AGE} + \beta_2 \text{CURR_AGE_} + \beta_3 \text{SON_DAU} + \beta_4 \text{AREA_ORIG} \\ + \beta_5 \text{REMITTANCES} + \beta_6 \text{EMPLOYED} + \beta_7 \text{LEG_SIT} + \beta_8 \text{SEX} + \\ \beta_9 \text{EDUCATION} + \beta_{10} \text{PPP} + \beta_{11} \text{RES_TEN} + U$$

The model sets up the hazard of return of each migrant. H_0 is the number of years of residence in Spain, ARRIV_AGE and CURR_AGE represent how many years old the immigrant was when he arrived in Spain and is now, respectively. SON_DAU is a dichotomous variable showing if the immigrant maintains sons and daughters in his country of origin. AREA_ORIG shows the area of origin of the immigrant (Europe, Africa, Latin America, or Asia). REMITTANCES is a dichotomous variable showing if the immigrant sends or does not send remittances to his original country. EMPLOYED shows if the immigrant has or has not employment in the time of the survey. SEX is a dichotomous variable reporting the sex of respondent. LEG_SIT shows the legal situation of the immigrant (permanent residence, temporal residence, asylum, student or other). EDUCATION reports the maximum skill of education retained. PPP shows the increase in the parity purchasing power of Spain against the

immigrant's country of origin since his arrival in the host country. Finally, RES_TEN reports the house tenure of his residence (tenure, rented, other).

Connecting these variables with the theories previously commented, we can elaborate the following table:

Table 1. Variables and previous works

Variable	Theoretical frame	Previous works	Simple
Sex	NE	Reagan and Olsen, 2000.	Immigrants in USA
		Reyes, 2001	Mexicans in USA
Sons and daughters in origin	Social networks	Steiner and Velling, 1994	Mexicans in Germany
Legal situation	NELI	Reyes, 2001	Mexicans in USA
Remittances	Transnationalism	Lindstrom, 1996	Mexicans in USA
		Adda et al., 2006	
Employment situation	NELI	Steiner and Velling, 1994	Immigrants in Germany
Maximum skill of education retained	NELI Structural	Steiner and Velling, 1994	Immigrants in Germany
		Reagan and Olsen, 2000	Immigrants in USA.
		Barrett and Trace, 1998	Immigrants in Ireland.
		Bauer and Gang, 1998	Returned egyptians.
		Reyes, 2001	Mexicans in USA.
PPP	NE/NELI	Dustmann, 2003	Turkishs in Germany
		Kirdar, 2009	Returned Turkishs
		Dustmann and Weiss, 2007	Immigrants in UK
Residence Tenure	NELI	Steiner and Velling, 1994	Immigrants in Germany
		Constant and Zimmermann, 2003	Circular migration in Germany
Current age	Structural	Reagan and Olsen, 2000	Immigrants in USA
		Reyes, 2001	Mexicans in USA
Age arriving to Spain	Structural	Reyes, 2001	Mexicans in USA

The sample, discarding the non-economic migrants, totalled 8,819 observations, summarized in Table 2.

The endogenous variable of the Cox model is the return hazard of each immigrant, conditioned by the number of years of residence in Spain. So, it is expected to obtain a direct effect (positive sign in regression) with ARRIV_AGE, SON_DAU, and REMITTANCES, while CURR_AGE, EMPLOYED, DOCU, EDUCATION, PPP, and RES_TEN should show an inverse relation (negative sign in regression). In the case of AREA_ORIG and SEX we cannot assume any preliminary sign.

Table 2. Variables description

		% of column	Average
Gender	Male	48.8%	
	Female	51.2%	
Area of origin	Europe	20.7%	
	Africa	23.3%	
	Latin-America	52.3%	
	Asia	3.8%	
	Oceania	0.0%	
Legal situation	Permanent residence	45.2%	
	Temporal residence	44.9%	
	Asylum	0.0%	
	Student	0.5%	
	Other (illegal)	9.3%	
Are you working now?	No	46.5%	
	Yes	53.5%	
Skill of education			
	Without studies	0.3%	
	Primary education not completed	2.1%	
	Primary education	18.5%	
	Secondary education (first cycle)	17.5%	
	Secondary education (second cycle)	41.1%	
	Tertiary education (first cycle)	18.1%	
	Tertiary education (second cycle)	1.7%	
	Other	0.8%	
Do you send remittances?	No	50.3%	
	Yes	49.7%	
Ownership of residence	Tenure	26.8%	
	Rented	56.5%	
	Other	16.7%	
Number of years in Spain			10.42
Current age			37
Years when arriving to Spain			28
PPP Increase/decrease 2001–2007			6.43

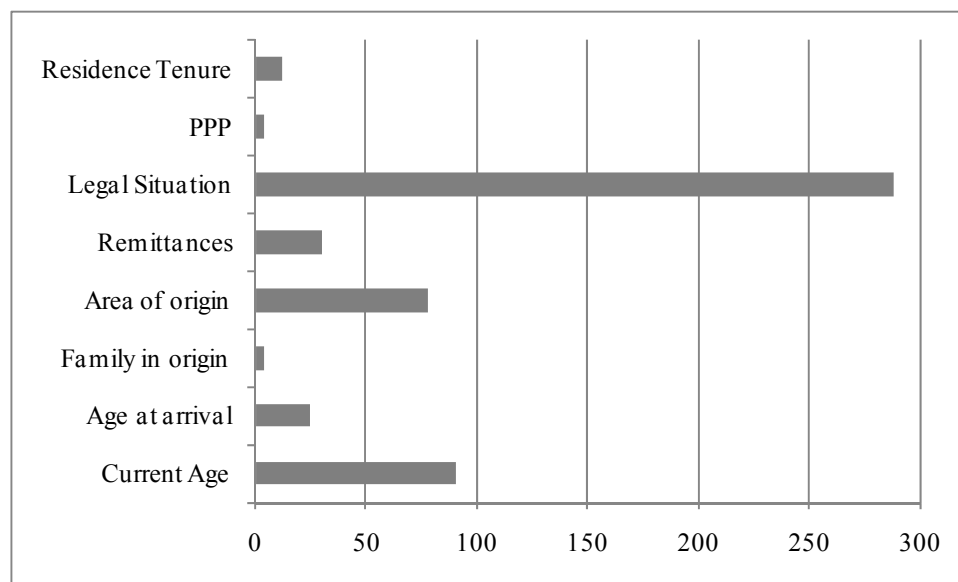
Source: Encuesta sobre Inmigración, INE 2007.

Empirical findings

In our results (see Table 3), we do not find statistical significance for the variables TRAB, MNIV, and SEX. The other variables in the model show statistical significance and the sign of the coefficients in the regression as previously expected.

Considering the total score of the Wald test for each variable, we can approximate the relative importance/weight of each determinant to explain the hazard of return. Observing our empirical findings, the *Legal situation* is the most important variable defining this hazard. With a clear minor weight in the decision-making process, the area of origin and the current age are as well important variables. The remaining variables show a clear significance, but their impact on the endogenous is very limited.

Figure 1. Relative weight of each variable explaining the hazard of return



We note the huge differences found in the hazard function controlled by the origin area of the immigrant⁶. Latin-American and European migrants are the most likely groups to return, and Asiatic and African people show a low probability to return. This fact is clearly observed from the shape of the survival curve. The trend of each group is maintained for the different time points along the curve. Focusing on 20 years of residence, the return intention in the next five

⁶ Table 6 shows the statistical contrasts of this difference.

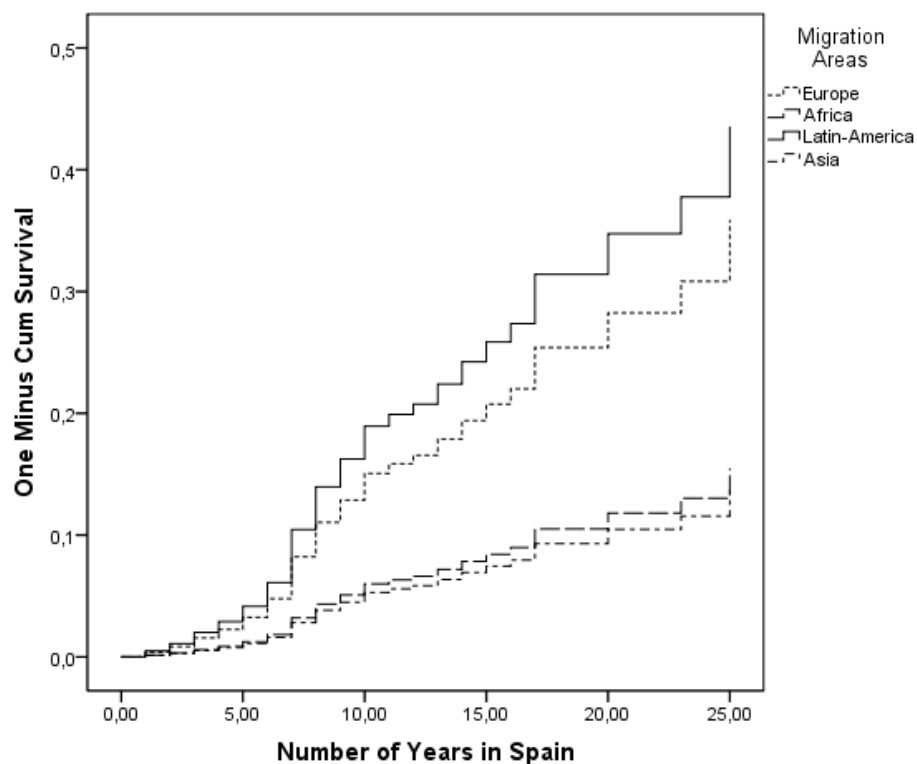
years is close to 33% for the Latin American population, 25% in the case of the Europeans, 9% in the case of Africans, and only 7% for the Asiatic group.

Paying attention to some of the variables for each group, we can highlight the wide differences in the number of years of residence and in the increase of the PPP for each area.

Table 3. Characteristics of each group by area of origin

	Areas of origin			
	Europe	Africa	Latin-America	Asia
Years of residence	5,36	15,20	10,09	13,46
Current age	34	39	38	40
Age at arriving date	29	25	28	27
PPP increase 2001–2007	10,56	1,91	7,07	3,12

Figure 2. Hazard of return depending on time and residence



Controlling the model by the labour and economic characteristics (employment, remittances, tenure of residence), the individual characteristics (family in origin, education skill, gender, legal situation), and the dynamic wage difference between the host and the origin country (PPP), we suggest that the variable *area of origin* can take into account the characteristics postulated in the theories of the structural approach, transnationalism, and social network. Probably, this variable is capturing idiosyncratic characteristics of the countries of origin (culture, family relationships, social networks facilities, preference for national location...).

Unlike the findings of Dustmann et al. (2007) and Kirdar (2009) for immigrants in Germany, the increase in the PPP plays a negative role in the hazard of return for immigrants in Spain. This fact could be in line with the relative youth of the migration process with destination Spain, where the accumulation of capital in the country of origin is still small (the average number of years in Spain is around 10, much reduced in comparison to other countries with greater tradition in the reception of immigration).

A regularized documentary situation (permanent residence documentation against other situations, variable DOCUM) plays a decisive role in determining the probability of return to the country of origin. The probability of return is up to 2 times higher when an irregular documentary situation is maintained.

The probability of return when the immigrant has family living in the country of origin (wife/husband and/or children) is 1.2 times higher than the opposite situation. The reduced impact of this situation (whose confidence interval ranges from 0.98 times to 1.5 and with 90 per cent significance) can be related to the expectations of family reunification of a still immature migratory process (recall that the number of years of stay in Spain is low compared with other countries with greater tradition of the reception of immigrants).

Finally, tenure of housing property in the Spanish territory or not and the sending of remittances abroad produces a similar effect with regard to alternative situations: the risk of return is a half of that of the opposite situation.

Conclusions

The analysis carried out sheds light on the temporary versus permanent immigration debate in the economic literature. The widely used static approach to migration theories is not compatible with the statistical evidence on returns. While the logic and theoretical work that underpins these theories is beyond doubt, it is imperative to consider not only the time of the first decision on migration, but points throughout the migration process. The variable *number of years since the time of departure* is a crucial factor in the analysis of the decision on returns in a

proactive approach that makes it possible to observe the entire process of formation of the decisions of individuals with changing information in time.

The debate on immigration in regard to permanent or transitory intention to stay focuses in a manner that is clearly consistent with a variant decision-making process on time. The survival curve analysis is a useful tool to reproduce this phenomenon.

From the observation of the estimated Spanish survival curve, we can conclude that data on the intention of return in the next five years will account for a significant proportion of returns to country of origin, growing with the number of years of stay in Spain. Such probability varies considerably depending on the country of origin of migrants; in a bandwidth that moves from figures close to 30% expected return in the case of Latin Americans and Europeans and around 9% for Asians and Africans (this in reference to a horizon of 20 years of stay). In this sense, we can speak of an immigration-minded majority of permanence, although the expected number of returns is not negligible.

The relative newness of the phenomenon of migration in the case of Spain, with an average number of years of stay around 10, explains the low, and sometimes surprising, impact of some of the variables related to the probability of return. The Spanish case can be defined as an immature migration process (there is still an outstanding large number of processes of family reunification or obtaining of papers for period of stay). This characteristic could be behind the impact estimated in the variables that were significant to explain the returns.

Appendices

Table 4. Cox Regression Output (endogenous: hazard of return)

	B	ET	Exp(B)	95.0% CI for Exp(B)	
				Lower	Upper
EDAD_ACTU	-0.045 ***	.005	.956	.947	,965
EDAD_LLEG	0.022 ***	.005	1.022	1.013	1,032
HIJOS PAÍS ORIGEN	0.205 *	.111	1.228	.987	1,527
AREA_INMIG (Ref. Asia)	0 ***				
Europe	0.927 ***	.177	.396	.280	,560
Africa	-0.261 **	.108	1.298	1.051	1,602
Latin-América	1.1 ***	.372	.333	.161	,689
REMESA (Ref. Yes)	-0.571 ***	.109	.565	.457	,700
TRAB (Ref. employed)	-0.081	.087	.922	.777	1,095
DOCUM (Ref. Permanent Docs)	0 ***				
Temporal Doc.	0.758 ***	.109	2.133	1.724	2,639
Asylum	2.247 **	1.024	9.458	1.272	70,338
Student	3.046 ***	.267	21.040	12.458	35,534
Illegal	2 ***	.141	7.392	5.603	9,751
SEX (Ref. Female)	0.039	.086	1.039	.879	1,229
PPP	-1.158 **	.555	.314	.106	,933
EDUCATION (Ref. Univ)	0				
Without studies	0.234	1.055	1.264	.160	9,996
Primary education not completed	0.288	1.007	1.333	.185	9,589
Primary education	0.376	1.007	1.456	.202	10,486
Secondary education (first cycle)	0.375	1.004	1.456	.203	10,420
Secondary education (second cycle)	0.524	1.008	1.689	.234	12,177
Tertiary education (first cycle)	0.792	1.055	2.208	.279	17,474
Tertiary education (second cycle)	0.456	1.156	1.577	.164	15,208
TENV (Ref. other)	0 ***				
Tenure of property	-0.342 **	.149	.710	.531	,950
Rented residence	0.067	.117	1.069	.851	1,344

Source: authors estimates.

*** significance 99%, ** significance 95%, * significance 90%.

“Ref.”: Variable of referente to explain the coefficients.

Table 5. Wald Test for each variable

Variable	Wald Score
Current Age	90.67
Age at arrival	24.49
Family in origin	4.27
Area of origin	78.28
Remittances	30.12
Legal Situation	287.59
PPP	4.19
Residence Tenure	11.91

Table 6. Test of differences between areas of origin

	Chi-cuadrado	gl	Sig.
Log Rank (Mantel–Cox)	171.484	3	.000
Breslow (Generalized Wilcoxon)	165.288	3	.000
Tarone–Ware	175.141	3	.000

References

- Adda, J., Dustmann, C. and Mestres, J. 2006. “A Dynamic Model of Return Migration”, Preliminary version march 2006, Manuscript.
- Arce, R. de and Mahía, R. 2010. "An Estimation of the Economic Impact of Migrant Access on GDP: the case of the Madrid Region", *International Migration Journal*. Article first published online: 5 October 2010 | DOI: 10.1111/j.1468-2435.2010.00641.x.

- Arce, R. de and Mahía, R. 2009. "Determinants of Bilateral Immigration Flows between the European Union and some Mediterranean Partner Countries: Algeria, Egypt, Morocco, Tunisia and Turkey", *LAP Lambert Academic Publishing*, Germany 2009.
- Barrett, A., and Trace, F. 1998. "Who is coming back? The educational profile of returning migrants in the 1990s", *Irish Banking Review*, (summer) pp. 38–51.
- Bauer, T., and Gang, I. N. 1998. "Temporary migrants from Egypt: how long do they stay abroad?". Institute for the Study of Labour, Bonn University, Germany, Discussion paper no. 3.
- Bellemare, C. 2006. "A life-cycle model of outmigration and economic assimilation of immigrants in Germany", *European Economic Review*, 51, pp. 553–576.
- Bijwaard, G. 2007. "Modeling Migration Dynamics of immigrants: The Case of The Netherlands", *Forschungsinstitut zur Zukunft der Arbeit (IZA)*, Discussion Paper, No. 2891, June 2007.
- Bijwaard, G., Schluter, C. and Wahba, J. 2011. "The Impact of Labour Market Dynamics on the Return–Migration of Immigrants", *Norface Migration Research Program on Migration*, Discussion Paper No. 2011-7.
- Borjas, G. J. 1985. "Assimilation, changes in cohort quality, and the earnings of immigrants", *Journal of Labor Economics*, 3, pp. 463-489.
- Borjas, G. J. 1987. "Self-Selection and the Earnings of Immigrants", *American Economic Review*, 77(4), pp. 531–553.
- Borjas, G. J. and Bratsberg, B. 1996. "Who leaves? The outmigration of the foreign-born", *Review of Economics and Statistics*, 78, pp. 165–176.
- Budnik, K. 2011. "Temporary Migration in Theories of International Mobility of Labour", *Bank of Poland*, Working Paper N. 89.
- Cassarino, J. P. 2004. "Theorising Return Migration: The Conceptual Approach to Return Migrants Revisited", *International Journal of Multicultural Societies*, Vol. 6, 2004, pp. 253–279.

- Cerase, F. P. 1974. "Expectations and reality: a case study of return migration from the United States to Southern Italy", *International Migration Review*, 8(2), pp. 245-262.
- Constant, A. and Massey, D. S. 2002. "Return Migration by German Guestworkers: Neoclassical versus New Economic Theories", *International Migration*, Volume 40, Issue 4, pp. 5-38.
- Djajic, S. and Milbourne, R. 1988. "A general equilibrium model of guest-worker migration: A source-country perspective", *Journal of International Economics*, 25, pp. 335-351.
- Dustmann, C. 1993. "Return intentions of migrants: theory and evidence", University of Bielefeld, Germany, Discussion paper no. 274.
- Dustmann, C. 2003. "Return migration, wage differentials, and the optimal migration duration", *European Economic Review*, 47, pp. 353-369.
- Dustmann, C. and Weiss, Y. 2007. "Return Migration: Theory and Empirical Evidence from UK", *British Journal of Industrial Relations*, 45, 2 June 2007 0007-1080, pp. 236-256.
- Herzog, H. and Schottman, A. M. 1982. "Migration Information, Job Search and the Remigration Decision", *Souther Economic Journal*, Vol. 50, No. 1, pp. 43-56.
- Hill, J. K. 1987. "Immigrant Decisions Concerning Duration of Stay and Migratory Frequency", *Journal of Development Economics*, Vol. 25, pp. 221-234.
- Kirdar, M. 2004. "An Estimable Dynamic Model of Asset Accumulation and Return Migration", Economic Research Center (ERC) Working Papers, 04/16. METU, December 2004.
- Kirdar, M. 2009. "Source Country Characteristics and Immigrants' Migration Duration and Saving Decisions", MPRA Paper No. 1332.
- Lindstrom, David P. 1996. "Economic Opportunity in Mexico and Return Migration From the United States", *Demography*, Vol. 33, No. 3, pp. 357-374.

- Martin, Ph. and Widgren, J. 2002. "International migration: facing the challenge", *Population Bulletin* 57(1). Washington: Population Reference Bureau.
- Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A. and Taylor, J. E. 1993. "Theories of International Migration: A Review and Appraisal", *Population and Development Review*, 19(3), pp. 431–466.
- Péridy, N. 2006. "Welfare Magnets, Border Effects or Policy Regulations: What Determinants Drive Migration Flows into the EU?", *Global Economy Journal*, Vol. 6, Iss. 4, Article 3.
- Portes, A. 2001. "Introduction: the debates and significance of immigrant transnationalism", *Global Networks*, 1(3), pp. 181–193.
- Reagan, P. B. and Olsen, R. J. 2000. "You can go home again: evidence from longitudinal data", *Demography*, 37(3), pp. 339–350.
- Raffelhhüschén, B. 1992. "Labour migration in Europe: Experiences from Germany after Unification", *European Economic Review*, 36, pp. 1453–1473.
- Reyes, B. I. 2001. "Immigrant Trip Duration: The Case of Immigrants from Western Mexico", *International Migration Review*, Vol. 35, No. 4, Winter, 2001, pp. 1185–1204.
- Rooth, D. and Saarela, J. 2007. "Selection in migration and return migration: Evidence from micro data", *Economics Letters*, 94(2007), pp. 90–95.
- Roy, A. D. 1951. "Some thoughts on the distribution of earnings", *Oxford Economic Papers*, 3, pp. 135–146.
- Steiner, V. and Velling, J. 1994. "Re-migration behaviour and expected duration of stay of guest workers in Germany", in G. Steinmann, and R.E. Ulrich (Eds), *The Economic Consequences of Immigration to Germany*, Physica-Verlag, Heidelberg.
- Todaro, M. P. 1969. "A model of labor migration and urban unemployment in less developed countries", *The American Economic Review*, 5(1), pp. 138–148.