CYCLICAL MIGRATION PATTERNS

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Introduction[1]

Since the mid-1990s, and coinciding with a period of strong economic expansion, the flow of immigrants into Spain has been very high, amounting to more than 600,000 persons per annum between 2006 and 2008. Thus, the foreign population has risen from just over 1% of the total 15 years ago to 12.2% at the start of 2010, prompting strong population growth – verging on 2% – throughout the period.

In recent quarters, however, there has been a notable slowdown in immigrant inflows, against the backdrop of a sharp deterioration in economic activity that has had a severe impact on the labour market. In particular, INE[2] estimates show that monthly immigrant inflows have more than halved, from around 75,000 persons at end-2007 to just over 35,000 at the start of 2010 (see Chart 1). Accordingly, since 2009, the number of immigrants entering Spain has been similar to those leaving, resulting in a net change close to zero. In this setting, it would be interesting to know the factors behind the decline observed in migration flows and, in particular, to endeavour to ascertain the role played by the cyclical position.

This article aims to analyse these questions. The next section presents the results of estimating the effect on migration flows of economic conditions in the countries of origin and destination. It also includes, on the basis of these estimates, a series of simulations of the possible development of inflows of immigrants to Spain, under different economic growth hypotheses. There follows a similar analysis of outflows of immigrants from Spain, although in less detail given the comparative lack of data available. The last section presents a series of conclusions.

Immigrant inflows and the economic cycle

The decision to emigrate may depend on a wide range of factors, but clearly economic factors are of key importance. The impact of each of these factors may be approximated using an estimated econometric model, in which bilateral migration flows between countries depend on different economic variables of each country, with account also taken of other kinds of political and social factors[3] that may play a part in the decision to emigrate. Using this kind of analysis it is possible to quantify the relative impact the different factors, and especially the cyclical position of the economy, have on migration flows.

In this case, to conduct an empirical exercise of this kind, a database has been used with information on annual flows of immigrants from the main countries of origin to the OECD countries between 1980 and 2004, together with data from other series of variables on each country's economic and social position.

The main findings of this estimate are presented in Table 1, which shows that economic situation is a key determinant factor in the decision to emigrate. Specifically it is estimated that for

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1. This article summarises the key findings presented in Lacuesta & Puente (2010), *El efecto del ciclo económico en las entradas y salidas de inmigrantes en España*, Documentos de Trabajo, No. 1016, Banco de España, forthcoming.   **2.** See http://www.ine.es/metodologia/t20/t2030259.htm.   **3.** In particular, the additional variables included are: geographical distance; a common language; indicators of political freedom and of conflicts; inequality and fiscal pressure indices; range of public expenditure; and degree of development of the immigrant community in the host country.
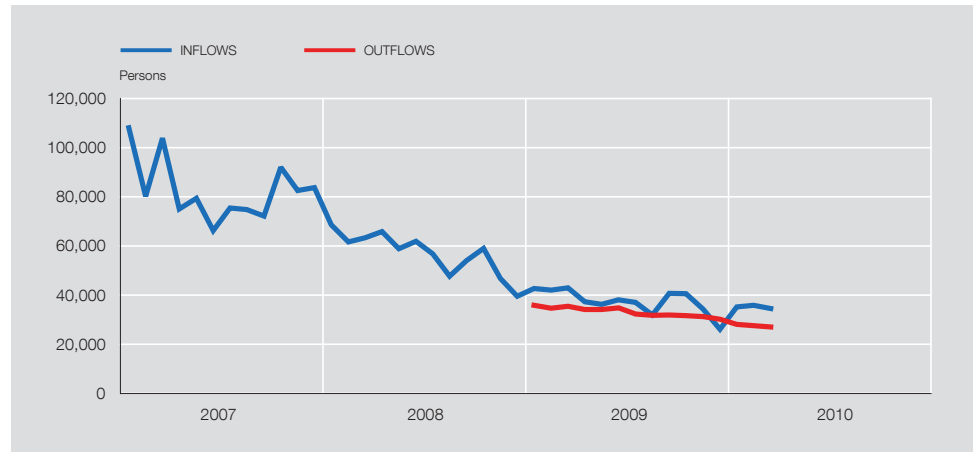
SOURCE: INE, current population estimates.

every additional percentage point of economic growth in the country of destination, immigration to that country rises by more than 10%. This would suggest that, once the decision to emigrate has been taken, the choice of the specific country of destination is closely connected to the economic growth of possible host countries. In principle, the importance of the cyclical position in the choice of host country would appear more justifiable in the case of short-term temporary migration, while decisions to emigrate on a permanent basis should have a lower correlation to the economic situation. But the uncertainty associated with all migration processes, together with the fact that the first years in the country of destination are generally the most difficult ones, will tend to raise the importance of the host country's cyclical position in migration decisions.

Conversely, according to these estimates, differences in the relative level of GDP per capita between the countries of origin and destination, which in theory should play a considerable part when it comes to explaining migration flows, have a much smaller and much less significant effect. There is only weak evidence to show that countries with lower GDP per capita produce higher numbers of immigrants. It should be noted, however, that the nature of the database used may condition these findings, at least in part, since all the potential host countries are OECD members. This means that the differences in GDP per capita are very high in all country pairings, thus reducing the explanatory power of this variable in the regression.

The other determinants included as control variables, which aim to approximate the political and social situation of the countries concerned, give the expected results. Of particular note is the effect of the size of the immigrant community in the host country: considering both the numbers of immigrants from the same country of origin and the size of the immigrant community overall, there is a very clear positive impact on migration flows. This could be interpreted to mean that persons are more likely to decide to emigrate if there is already a network of immigrants in the country of destination, whether or not of the same nationality. However, this effect becomes negative when the proportion of foreign population rises above a certain level, suggesting the existence of elements of saturation. In the case of Spain, the estimates show that the impact of the presence of immigrants already established in the country remains positive.

Migration elasticities with respect to the economic cycle estimated using the model described can be used to simulate immigration patterns under different economic growth hypotheses. Thus, a first exercise is to attempt to assess the extent to which the large flows of immigrants

DETERMINANTS OF GROSS IMMIGRATION FLOWS (a) (b) (c)

TABLE 1

	Estimator	Standard deviation	Significativity
Log (GDP per capita in country of origin)	-0.0374	(0.0205)	at 10%
Log (GDP per capita in country of destination)	0.0650	(0.1250)	
GDP per capita growth in country of origin (pp)	-0.0073	(0.0062)	
GDP per capita growth in country of destination (pp)	0.1013	(0.0209)	at 1%

SOURCE: Banco de España (Documento de Trabajo, No. 1016).

a. Migration flows and stocks are obtained from the OECD, and in the case of Spain, as from 1998, from the municipal registers, as these are deemed a more appropriate source.
b. The observations are weighted by the square root of a geometric mean of the population of the countries of origin and destination.
c. The regression includes other controls: geographical distance; existence of a common language; indicators of political freedom and of conflicts; inequality and fiscal pressure indices; range of public expenditure; and degree of development of the immigrant community in the host country.

ESTIMATED CHANGE IN THE FLOW OF IMMIGRANTS TO SPAIN IN A LOWER GROWTH SCENARIO (a)
(thousands per annum)

CHART 2

SOURCE: Banco de España.

a. The scenario is built by replacing actual GDP per capita growth rates in Spain between 1998 and 2004 with the average of the European OECD member countries.

to Spain in recent years are connected with the country's strong economic growth. Specifically, Chart 2 depicts the change that would have been seen in immigration to Spain had Spanish economic growth equalled average growth in the European OECD member countries between 1998 and 2004. The pink bars in the chart show the total effect of this lower growth scenario on immigration flows. It is estimated that immigrant inflows would have been 14% lower in the period, representing some 461,000 fewer immigrants. These estimates indicate that the decrease would be due not only to the lower economic growth, but also to the lower degree of development of the immigrant community associated with this lower level of immigration. The blue bars in Chart 2 permit a distinction to be drawn between these two effects, as they represent only the direct impact resulting from lower economic growth. Thus, excluding the effect of the size of the immigrant community, the decline is substantially smaller (247,000 fewer immigrants in the period overall). These findings suggest that a large number of the immigrants coming to Spain in recent years did so attracted by the country's strong economic growth, and that this effect was reinforced by the associated development of immigrant communities. Conversely, in the event of prolonged low economic growth, any substantial decrease in immigrant inflows could be exacerbated by the smaller size of the immigrant communities.

	GDP per capita	Actual inflows	Forecast inflows (a)	Actual outflows	Forecast outflows (b)
2007	1.74	920,534			
2008	-0.75	679,172	691,137	406,617	
2009	-4.40	466,378	353,455	398,309	377,410

SOURCES: INE and Banco de España.

a. Based on the model in Table 1.
b. Based on the model in Table 3.

The estimates may also be used to approximate how much of the slowdown observed in immigration in recent quarters may be explained by the economic crisis. These findings are presented in Table 2, which shows that immigrant inflows fell considerably between 2007 and 2009, from more than 900,000 immigrants per annum to approximately half that figure. The decrease in inflows resulting from application of the estimated elasticities would be very similar to that seen in 2008, but higher than that recorded in 2009. This suggests that the present decline in immigrant inflows is closely connected to the economic recession and, therefore, that as the economic situation improves, these inflows could be expected to recover somewhat. However, it should be emphasised that the empirical model used is a relatively simple one and that it is unable to explain the intensity of migration flows in Spain in recent years.

Cyclical pattern of immigrant outflows

Just as inflows of immigrants are affected by relative economic opportunities between their countries of origin and the rest of the world, outflows of immigrants resident in host countries also depend, in principle, on these same factors. In this case, however, the effect of the economic cycle on the percentage of immigrants who finally leave their country of destination after a period of residence is less clear. First, because the cyclical economic component may affect the numbers of groups interested, a priori, in temporary residence[4] abroad. Specifically, if the economic situation in the country of destination deteriorates, temporary migration flows will shrink with respect to permanent ones. And second, because cyclical developments may also make it more likely that persons who emigrated with the intention of staying in the host country will decide to return, when faced with an economic situation that is much worse than expected.

The lack of systematic records of outflows of foreign nationals means that it is not possible to apply the analysis used in the case of inflows. Accordingly, outflows of foreign nationals from Spain may only be analysed using the information considered to be most appropriate for this purpose to date. In the case of Spain, the main difficulty arises from the fact that immigrants do not generally remove themselves from municipal registers when they decide to leave the country, whether to return home or to move to a third country. Given these limitations, in its current population estimates the INE (2008) supplements the information on deregistrations with data on non-renewals of municipal registrations, following implementation in 2005 of Organic Law 14/2003, and with the results of a pilot population survey. The aforesaid Law requires that foreign non-EU nationals without a permanent resident permit renew their municipal registration every two years.[5] These data provide the basis for the following analysis.

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4. Immigration may be temporary or permanent; temporary immigrants include, in particular, seasonal immigrant workers, immigrants in transit to another country and those who plan to return to their home countries.   **5.** The last compulsory renewal of data held in the municipal registers was in 1996. These registers were previously governed by Law 7/1985, whereby each municipality was required to renew its register every year ending in 01 and 05. Since May 1996 the new legislation (Law 4/1996) simply requires that local authorities inform of inflows to and outflows from their municipalities.
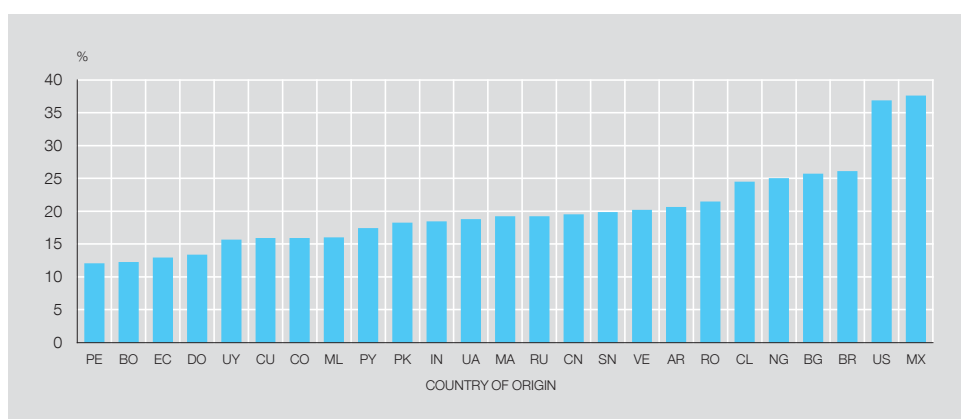
SOURCE: Non-renewals of municipal registers (INE).

NB: PE=Peru; BO=Bolivia; EC=Ecuador; DO=Dominican Republic; UY=Uruguay; CU=Cuba;
CO=Colombia; ML=Mali; PY=Paraguay; PK=Pakistan; IN=India; UA=Ukraine; MA=Morocco;
RU=Russia; CN=China; SN=Senegal; VE=Venezuela; AR=Argentina; RO=Romania; CL=Chile;
NG=Nigeria; BG=Bulgaria; BR=Brazil; US=United States; MX=Mexico.

Considering that compulsory renewal is not applicable to all immigrant groups, and that it takes time for local authorities to confirm deregistrations, the INE estimates that around 30% of immigrants entering Spain at any one time will eventually leave the country [INE (2008)]. Using the microdata provided by the INE on certain characteristics of persons who had not renewed their municipal registrations (year and province of last registration and nationality), an empirical estimate has been made of the relationship between outflows of immigrants and significant macroeconomic variables of the Spanish regions they leave and of their countries of nationality. For this purpose, the rate of departure of immigrants from Spain in their first years of residence was estimated, followed by analysis of the correlation with variables such as the level or rate of change of GDP per capita.

The rate of departure was estimated using data on all inflows of foreign nationals to Spain in 2003, based on the Estadística de Variaciones Residenciales (statistics on changes in residence), along with data on municipal registrations not renewed as of December 2005. The ratio between non-renewals and inflows may be taken as an approximation of the rate of departure, over the first two years of their residence in Spain, of immigrants who entered the country in 2003.[6] This limits analysis of the determinants of the rate of departure, as it rules out estimates, as made in the previous section, based on changes in bilateral migration flows over time. Accordingly, the correlations between outflows and the economic cycle obtained using these estimates should be interpreted with caution.

Chart 3 depicts the rate of departure by nationality for the main countries of origin of immigrants to Spain. The average rate of departure estimated on the data available is 18%, although there are considerable differences by nationality. In the case of immigrants from the United States and Mexico, departure rates are over 37%, while for those from the only two European countries whose nationals were required to renew registration in 2005 (Romania and Bulgaria) they are slightly above average. In contrast, a large number of Latin American countries appear in the lower part of the distribution: for instance, Ecuador, Bolivia and Peru, with

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6. The analysis is limited to immigrants entering the country in 2003, as those entering in previous years are less likely to be subject to compulsory renewal of registration, as they are more likely to have been granted permanent residence, to have taken Spanish nationality or to have moved within Spain.

	Estimator	Standard deviation	Significativity
Log (GDP per capita in country of nationality-2003)	0.0609	(0.0130)	at 1%
Log (GDP per capita in province-2003) (d)	-0.4267	(0.0572)	at 1%
GDP per capita growth in country of nationality 2005-2003 (pp)	0.0030	(0.0009)	at 1%
GDP per capita growth in province 2005-2003 (pp) (d)	-0.0112	(0.0091)	

SOURCE: Banco de España (Documento de Trabajo, No. 1016).

a. Includes only countries with more than 100 inflows whose rate of departure is between 0 and 1.
b. The observations are multiplied by the square root of the number of inflows.
c. The regression includes geographical distance.
d. Province of last residence in Spain.

departure rates of around 12%, and Uruguay, Colombia and Paraguay with rates of around 15%. However, the region's three largest economies – Argentina, Chile and Brazil – present rates over 20%, while those for the remaining groups from Africa and Asia are close to average (18%). Nevertheless, it should be noted that these rates of departure are calculated for the first years of residence, so the cumulative rate will be higher.

These data have been used to estimate a model that correlates the rate of departure with GDP per capita in the countries of origin and in the Spanish provinces in which the immigrants were resident in 2003. Moreover, average GDP per capita growth in both areas in the period 2003-2005 is used to approximate the cyclical situation. This permits analysis of whether or not there is a correlation between outflows of immigrants from Spain and the present economic situation. The model also takes into account the distance between the country of origin and Spain.

The results of these estimates are presented in Table 3, which shows higher outflows among immigrants from richer countries, possibly owing to greater mobility among more highly-skilled workers. This result is similar to that obtained in most international studies and is very robust to the inclusion of other variables in the specification. The table also shows that immigrants in Spanish provinces with lower GDP per capita present higher departure rates, possibly due to the weight of farming in these provinces, meaning that seasonal immigrant farmworkers may be over-represented. Moreover, the findings show that departure rates are sensitive to some extent to the economic situation in the country of origin. Specifically, countries of origin with higher economic growth rates attract more returning immigrants. This is not a very large impact, as a growth differential in GDP per capita in terms of PPP of 1 pp in the country of origin would boost outflows by 0.3%. However, the economic cycle in the region of destination does not present a significant negative correlation, although given the low variability of growth at provincial level this result should be taken with caution.

The model does not permit a direct estimate of the increase in outflows that may have been due to the recession, since the outflows correspond to just one generation of immigrants (those who entered Spain in 2003) who leave the country during their first years of residence. In fact, the pattern of outflows over time may be expected to heed two factors: the number of immigrant inflows in previous years and the corresponding rate of departure. According to the estimates in Table 3, the departure rate during the first years of residence in Spain is not significantly affected by the economic cycle of the host country. Therefore, outflows will be determined by previous years' inflows, with a slight time lag. On the basis of this hypothesis, Lacuesta & Puente (2010) conduct a simulation exercise of expected emigration to Spain, assuming that outflows in any one year relate to the inflows of the

previous two years.[7] The INE estimates that 406,617 immigrants left Spain in 2008 and 398,309 in 2009 (see Table 2). As the fifth column of the table shows, the above-mentioned simulation exercise may be used to explain this decline.[8] Specifically, fewer immigrants left Spain in 2009 as a result of the cyclical position, insofar as fewer immigrants entered Spain in 2008 than in 2007. However, the decrease was relatively small, as many of those leaving had entered the country in 2007, when inflows were higher. In accordance with these findings, the number of immigrants leaving Spain should continue to decline in 2010, since significantly fewer immigrants entered the country in 2008 and 2009 than in previous years.

Conclusions

Over the last decade, Spain has recorded demographic growth verging on 2% year-on-year. This has had a substantial impact on economic growth and on the functioning of the labour market and has prompted a very significant increase in the available labour supply. However, over the last two years this rate of growth has gradually decreased, to 0.6% in 2009 and 0.1% in 2010 Q1, due to a gradual decline in net immigrant inflows against a backdrop of severe economic contraction.

This moderation in the rate of growth of the foreign population could be due to fewer foreign nationals entering Spain, more foreign residents leaving the country, or a combination of both. The findings presented here show that, in the case of immigrant inflows, the rate of growth, rather than the level of GDP per capita in the country of destination, is the determinant economic variable. Different exercises show, therefore, that a large part of the moderation in immigrant inflows in 2009 may be explained by Spain's less favourable economic situation. Moreover, while the present slowdown continues, this purely economic effect may be exacerbated by the role played by the degree of development of the immigrant community.

In any case, it should be noted that the empirical model used is relatively simple and that it is unable to explain more than a relatively small portion of the large flows of immigrants to Spain in recent years. In this respect, it is particularly difficult to forecast the future pattern; a more complex model would need to be developed, permitting analysis of the fundamental determinants of the migration boom in Spain in the recent past, and of whether or not it may remain as intensive in the medium and long term.

Regarding immigrant outflows, data have been obtained following implementation in 2005 of Organic Law 14/2003, which requires that foreign non-EU nationals who are not permanently resident renew their municipal registration every two years. The estimates reflect significant outflows from Spain, possibly representing a rate of departure verging on 30% for non-EU and temporary immigrants, with considerable variations by country of origin. Immigrants from countries with higher GDP per capita present higher rates of departure, although the correlation with the economic cycle appears to be low. In this respect the fundamental determinant of outflows in the short term would appear to be the strength of inflows; accordingly, some moderation may be expected considering the decline in the number of immigrants entering the country in recent quarters. But this estimate is subject to a high degree of uncertainty, associated with the relative lack of statistical data available.

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7. According to the INE, 70% of immigrant outflows come within the first two years of residence. In its current population estimates, the INE (2008) conducts this exercise with greater precision, taking into account the complete time pattern of outflows.   **8.** Using these numbers from the INE and their assumed distribution over the years of residence, the implicit rate of departure would be 47%. This is quite high, compared with the 30% deriving from the previous estimates based on non-renewals for non-EU and temporary immigrants. Some of the differences may be down to the fact that, according to the estimates in Table 3, EU immigrants should post higher rates of departure, as they come from richer and less distant countries. Moreover, a lower figure is also obtained if more weight is assigned, when calculating the implicit rate, to the inflows of the past year in respect of those of previous years.

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