Reducing Depopulation in Rural Spain: The Impact of Immigration

Keywords: depopulation; rural Spain; immigration; impact on population

ABSTRACT

The attraction of foreign-born immigrants to rural areas in developed countries has aroused growing interest in recent years. The central issue in this study is the demographic impact of immigration in rural Spain, focusing on depopulated areas. The economic and demographic consequences of depopulation have become major concerns, and the arrival of international migrants has come to be seen as a possible solution. The aim of this study is to add to a literature in which qualitative research and local or regional perspectives predominate. The present research draws on quantitative findings for a significant part of Spain. The evidence in this study is principally based on population figures for the last years of the 20th century, a period of low immigration to Spain, and the early years of the 21st century, when the inflow of foreign migrants gathered intensity. We also explore the early consequences of the present economic crisis, which began in 2008. The analysis is based on estimates of native and foreign-born population growth for a range of territorial aggregations. Counterfactual techniques are also used. The results show that the arrival of immigrants has so far contributed substantially to reducing and even halting or reversing depopulation. A further series of analyses concentrates on the potential of rural areas to retain immigrants in the long run. The study also recommends a comprehensive policy approach in this regard.

INTRODUCTION

Large numbers of out-migrants left rural areas in Western Europe in the 19th and 20th centuries in response to 'pull factors' such as non-agricultural job opportunities and relatively high urban wages in their own countries, as well as better conditions abroad. 'Push factors' such as declining demand for agricultural labour, the scant growth of industries in rural areas, and the existence of a rural penalty on services and infrastructure (i.e. health, education, transport) also contributed to this phenomenon. Migration and its impact on the demographic system through the decline in the number of young men and women resulted in intense depopulation in some rural areas.

The main change to have occurred in the last two decades is that previously depopulated rural areas have increasingly begun to attract foreign-born immigrants in considerable numbers. This process has drawn the attention of academics and politicians alike in recent times. A new field of research is now gradually taking shape around the spatial distribution of immigrants in rural areas, the reasons for their arrival, their effects on the host society, the implications for immigrants, and the design of policy. The result is a growing and varied literature of recent books, papers and monograph issues of academic journals (e.g. Hugo and Morén-Alegret, 2008; Massey, 2008; Wulff *et al.*, 2008; Jentsch and Simard, 2009; Perrons, 2009; see also Simpson and Finney, 2009; Stillwell and Hussain, 2010).

Research into the effects of immigration on host societies tends to show that the foreign-born play an active demographic and socio-economic role (e.g. Stockdale *et al*., 2000; Fonseca, 2008; Green *et al*., 2008; Hugo, 2008; Kasimis, 2008; Wulff *et al.*, 2008; Jentsch and Simard, 2009; Labrianidis and Sykas, 2009). Thus, immigrants have rejuvenated aging demographic structures in a number of rural areas. At the same time, immigrants have gained access to a range of jobs in labour-intensive industries like tourism, intensive agriculture, construction and domestic service (particularly care services for the elderly), replacing locals who had left the labour market or retired. Immigrants also help to revitalize local markets, creating jobs as consumers and entrepreneurs.

This paper focuses on the demographic impact of immigration in depopulated rural areas. Socio-economic aspects of immigration are also considered. Rural

depopulation is a major policy issue in some countries and regions given the threat it poses to local societies, limiting the opportunities for economic growth, complicating the provision of public services, causing environmental problems and endangering the very existence of villages (e.g. Faus and Higueras, 2000; Hoggart and Paniagua, 2001; Woods, 2005; Mooney, 2006; Carr and Kefalas, 2009).

This study extends the literature on the effects of immigration in rural areas by examining the situation in Spain, which provides an important case study. Spain has been one of the European countries most affected by rural depopulation, especially in the second half of the 20th century (for a review, see Collantes and Pinilla, 2011). However, the country became one of the major world destinations for international migration flows in the early years of the 21st century (International Organization for Migration, 2008; OECD, 2009), and only the USA and Germany received more immigrants (in absolute terms) between 2000 and the beginning of the economic crisis in 2008.

A number of studies at different spatial levels have been published, focusing on various aspects of immigration in rural areas (e.g. Morén-Alegret and Solana, 2004; García Sanz, 2006; Pumares *et al*., 2006; Pedreño and Riquelme, 2007; Morén-Alegret, 2008; Roquer and Blay, 2008; Ayuda *et al*., 2009; Camarero *et al*., 2009, 2012; López Trigal *et al.*, 2009; Bayona and Gil, 2011; Miguélez *et al*., 2011). These studies suggest the importance of immigrants' roles in sustaining communities. Though research has provided valuable insights, exhaustive estimates of the demographic effects of the foreign-born are still lacking for a significant part of Spain.

The main purpose of this paper is to provide estimates of the impact of immigration on population growth in rural areas of Spain. The term 'rural' can have different meanings. In the context of *demographics* it will refer to small towns and villages, and to areas with low population densities, while in *occupational* terms it usually denotes specialization in agriculture and *culturally* it signifies homogeneity and attachment to traditional values. Finally, the term may refer to a *social construct* represented by rural inhabitants themselves or by other social groups (Cloke, 2006; Falk and Lyson, 2007; on Spain, see Reher, 1994). In the research described here, we adopt the demographic criterion.

We use population figures for the last decade of the 20th century, when immigration to Spain was relatively low, and the early years of the 21st century, the period of mass immigration, to construct estimates of population growth. We also propose a counterfactual case and examine supplementary demographic and socio-economic data to support our findings. Finally, we extend our core analysis to explore the early consequences of the current economic crisis, although the period of high immigration that ended around 2008 remains at the centre of our study.

Immigration to Spain has not only halted but has to some extent reversed rural demographic decline. The research reported in this paper provides evidence, however, that it has not been demographic decline that has been the stimulus to immigration. Instead, our central hypothesis is that the extent of immigration in contributing to the halting of rural demographic decline is not determined by the depth of population decline, but by two other factors, namely proximity to immigrant gateways and the economic prosperity of a province.

RURAL DEPOPULATION IN EUROPE AND SPAIN

Rural areas in some parts of Europe played the role of a 'demographic reserve' during the industrialization processes of the 19th and 20th centuries. Out-migration, and its impact on fertility and ageing, resulted in the depopulation of some rural areas. In some countries, counter-urbanisation and the spatial dispersion of population in the late 20th century failed to diminish depopulation processes to any significant degree. Rural depopulation in European countries varied depending on the timing and intensity of development processes. The phenomenon was particularly intense and fast in Southern Europe (Collantes and Pinilla, 2011).

In Spain, municipalities with a population of less than 10,000 inhabitants may be considered rural (as explained in the data and methods section). According to this criterion, the population censuses reveal that Spain's rural population peaked in 1950. It then declined slowly for the rest of the decade, only to accelerate from 1960 onwards. By 1991, Spain's rural inhabitants numbered only 8.3 million (21 per cent of the total population). Table 1 reports the compound annual rural population growth rate (year-

on-year growth) for intercensus periods. To avoid problems of time inconsistency stemming from the possible urbanization of large rural communities, a municipality is treated as rural if its population remained below 10,000 inhabitants *throughout* the twentieth century (the results of the 2011 census are not yet available). One interesting finding from this data is that rural population growth turned positive again at the end of the 20th century, rising at an annual rate of 0.4 per cent in the 1990s.

[Insert Table 1 here]

RECENT IMMIGRATION TO SPAIN

A New Magnet for Immigrants

Spain was a country of emigration from the late 19th century until the late 20th century. By the 1990s emigration from Spain had fallen to a minimum (Venturini, 2004; Bover and Velilla, 2005). Meanwhile, the total stock of foreign-born immigrants remained low (e.g. Izquierdo, 1996). However, immigration from Latin America, North Africa, Eastern Europe and, to a lesser extent, Asia, increased enormously in the early years of the twenty-first century, and Spain became a key destination in Europe (e.g. King, 2000; Arango, 2004; Cachón, 2006). While relatively high wages, labour shortages and moving costs go some way to explaining recent mass immigration to Spain, family reasons have also increased significantly in recent years (e.g. Cebrián, 2009; Lacuesta and Puente, 2009; Reher and Requena, 2009a; Vono-de-Vilhena and Bayona, 2012). In 2009, in the early stages of the current economic crisis, there were nearly 6.5 million foreign-born immigrants in the country, accounting for nearly 14 per cent of the total population (Reher *et al.*, 2011).

Rural Spain shares with other Southern European countries a number of features that acted as a draw for international migrants until recently (e.g. Ribas-Mateo, 2004; Fonseca, 2008; Kasimis; 2008). Opportunities in agriculture, tourism and construction were plentiful, as steady economic growth in these (and other) industries generated rising, flexible demand for international labour. These sectors offered an abundance of

temporary and part-time jobs, and high levels of activity outside the formal economy. Moreover, the Spanish government proved incapable of managing migration flows (e.g. Arango, 2004; Solé, 2004). A part of the new immigrants settled in rural areas, some of which had suffered severe depopulation leaving a predominantly elderly native population.

Spatial Distribution of Immigration in Rural Areas

In 2000, when Spain's foreign-born population was still low, immigration was highly concentrated in geographical terms (as indicated by data from the 2000 and 2008 Spanish Register of Inhabitants).[1] This pattern reflected, firstly, the settlement of relatively high-income migrants from Northern Europe in tourist enclaves along the Mediterranean coast and in the islands. Secondly, the metropolitan areas of Madrid and Barcelona became not only gateways but magnets, attracting large numbers of skilled and unskilled migrants. Finally, the labour-intensive and export-oriented agriculture found in provinces like Almeria and Murcia in south-eastern Spain also acted as a magnet for migrants.

The stock of foreign-born residents in rural Spain increased from 1.8 to 9.3 per cent of the total rural population between 2000 and 2008 (168,044 and 915,695 people, respectively, according to the Register of Inhabitants). This growth brought about a significant dispersion of the immigrant population, which spread to a number of Spanish provinces that had previously had only tiny numbers of foreign-born residents (see also Recaño, 2002; García Coll, 2005; Lamela, 2006; Recaño and Domingo, 2006). Figure 1 shows the Spanish provinces, distinguishing between those in which the foreign-born population in rural areas is above the national average of 9.3 per cent and those where it is below the average (the Appendix contains a list of the Spain provinces and *Comunidades Autónomas* or regions). The provinces with the highest rural immigrant populations (shaded) are predominantly located in the east, as well as the province of Madrid and its immediate neighbours, all areas that offered plenty of job opportunities before the present crisis (e.g. Dolado and Vázquez, 2007; López Trigal, 2008; Amuedo-Dorantes and De la Rica, 2010).

[1] The Register of Inhabitants is available on the Spanish Statistical Office website (http://www.ine.es).

[Insert Figure 1 here]

DATA AND METHODS

Our purpose is to examine the impact of immigration on the evolution of Spain's rural population. The data used refer to 'non-natives' (6 million people in 2008) rather than 'foreigners' (5.3 million).[2] We have adopted this criterion because many immigrants, in particular from Latin America, have acquired Spanish citizenship, and their exclusion would severely understate the actual immigrant stock. The implication is that those born in Spain to non-native parents are not included in our estimates (we address the matter of fertility among foreign-born women below).

We distinguish principally between the periods 1991-2000 and 2000-2008. Based on the data used, 2000 was the watershed year when growth in Spain's immigrant stock took off, while 2008 marks onset of the present crisis, which has sharply curtailed immigration. According to the Register of Inhabitants, the stock of immigrants increased by an annual average of 78,310 people between 1991 and 2000, which then shot up to an average of 571,509 new arrivals per year between 2000 and 2008 (reaching a high of 794,535 in 2007). To compare these findings with the annual figures for the period 2008-2011, the number of immigrants increased by only 137,903 in 2009, falling to 73,658 in 2010 and 60,094 in 2011.

The data for the 1990s (when the stock of foreign-born residents was low) is drawn from the 1991 Population Census, but we used the Register of Inhabitants for the latter two periods.[3] The unit of analysis is the province. We first selected the twenty-two

[2] The descendants of Spanish emigrants who were born in other countries but have returned to their parents' country of birth are therefore included.

[3] The Register of Inhabitants is a better source to account for recent mass immigration, because residents in Spain are required to register in their municipality, and registration itself may bring benefits. For the Spanish sources, see e.g. Arango (2004); Domingo (2004); Ródenas and Martí (2006, 2009). Recent research suggests that the Register of Inhabitants tends to overstate the immigrant population, especially males (Rosero-Bixby *et al*., 2011). The precise extent of this problem, however, will not be known until the 2012 census results become available.

Spanish provinces which lost population in rural areas in the 1990s, when rural Spain as a whole had already embarked on a new cycle of population growth. By excluding the provinces in which the new population growth cycle started in 1991 or earlier, we can focus on those where the demographic situation is most delicate and the arrival of immigrants may be decisive to prevent or mitigate a problematic demographic future. The chosen group of twenty-two provinces makes up 55.3 per cent of Spain by area.

The municipalities were treated as rural when their population was less than 10,000 people (throughout the period 1991-2008). We are aware that this is far from the perfect solution. From an international perspective there are huge variations in the official definition of what is a rural area (e.g. Woods, 2005; European Commission, 2010). As explained above, the demographic or quantitative criterion does not take into account the occupational structure, or the degree of economic integration with nearby urban areas. In a country like Spain, moreover, settlement structures may differ significantly from region to region. For example, administratively urban municipalities in some northern provinces may in fact be made up of several small villages and hamlets (Reher, 1994). Nonetheless, the 10,000-inhabitant threshold seems to offer a reasonably safe perspective, providing a strict overall definition of rural that excludes clearly urban settlements (alternative criteria may fit for some provinces or regions, but not for others). Furthermore, it is the definition used in the main sociological studies of Spain's rural population (e.g. Camarero, 1993; García Sanz, 1997). The study thus embraces 3,836 municipalities (47.3 per cent of the total). Fourteen new municipalities segregated from urban areas in 1991 or 2000 were excluded, along with twenty-nine others for which all or part of the necessary data was missing.

The analysis consisted of three parts. To begin with, we considered the entire group of twenty-two provinces, and we then split the group into two sub-groups. The first group comprised the thirteen provinces with the least dynamic demographics, in which the rural population decreased *despite* the arrival of immigrants. The second group consisted of the nine provinces that displayed rural population growth between 2000 and 2008, even though they lost rural population over the whole of the period studied (1991-2008). These provinces are therefore recovering from depopulation. The compound annual growth rate was then estimated for two periods (1991-2000 and 2000-2008) and for the two populations of native and foreign-born residents (the formula is

given in the Note to Table 1). We also proposed a simple counterfactual of the rural population *that might have been* in the absence of immigrants (for a discussion of counterfactuals, see Gilbert and Lambert, 2010; Sicsic, 1994). The second part of the study consisted of an appraisal of immigration's effects in both groups of provinces, comparing impacts in the context of the size of the municipality of arrival and the characteristics of immigrant populations, including age and sex structures, fertility and other demographic and socio-economic attributes. Finally, we again applied the main procedure, obtaining population changes in the period 2008-2011.

THE DEMOGRAPHIC IMPACT OF IMMIGRATION, 1991-2008

Depopulation in Rural Spain

The twenty-two provinces that lost rural population between 1991 and 2008 are shaded in grey in Figure 2, which shows that the provinces affected by rural population decay are mostly in the interior and northwest of Spain (as the pattern reflected in Figure 1 would in fact suggest).

[Insert Figure 2 here]

Table 2 presents our initial results for the twenty-two provinces that lost rural population over the entire period (1991-2008). As may be observed, the total population loss in the first decade of the 21st century was significantly smaller than it was in the 1990s, as the year-on-year decay declined from -0.8 per cent to -0.2 per cent. Moreover, the main cause of this phenomenon appears to be the dramatic growth in the foreign-born population (compound annual growth of 15.8 per cent between 2000 and 2008). However, native residents remain much more numerous than the foreign-born, and the total rural population has therefore continued to decline.

[Insert Table 2 here]

Classification of Depopulated Rural Areas

We divided the group of twenty-two provinces into two sub-groups. Figure 3 distinguishes between the provinces (shown in dark grey) where the rural population continued to decline in the period 2000-2008 despite the arrival of immigrants, and the provinces (shown in light grey) where the rural population increased over the same period.

[Insert Figure 3 here]

Table 3 reports precise figures and confirms that the arrival of immigrants has been decisive in reducing, or even reversing, the process of rural depopulation. Thus, the totals show a decrease in the rate of decline from -1.0 to -0.6 in the group of provinces that did not achieve demographic recovery and an increase from -0.5 to 0.4 in the group that did. We may also observe that the native population declined at similar rates in both periods, while the foreign-born population increased in both sub-groups, but much faster in 2000-2008. Furthermore, comparison of the rates of population growth or decay in the two periods suggests that the gap between the two sub-groups of provinces has widened over time.

[Insert Table 3 here]

There are two features of the group of provinces with demographic recovery that help to explain their greater ability to attract immigrants. First and foremost, as shown (in light grey) in Figure 3, the provinces in this group (which form a continuum along a north-south axis with the sole exception of Salamanca, No. 16) are mainly adjacent to the prosperous provinces along the Mediterranean coast and Madrid, which were already attracting large numbers of immigrants in 2000. A mean distance index is used as a measure of proximity. We estimated the distance between each of the provinces in the two sub-groups and each of the most economically dynamic provinces, which also

tend to be the main points of entry.[4] The mean distances calculated for the groups of provinces with and without demographic recovery were 406 and 690 km, respectively. Alternative weighted indices according to immigrant populations and/or gross domestic product led to similar, or even greater, distance gaps between the two groups of provinces. In fact, research has confirmed the existence of a spill-over of the foreign-born population from the main gateways to other, usually nearby, provinces which were not initially chosen as a first place of residence —until the present crisis at least (e.g. Recaño and Domingo, 2006; Reher and Silvestre, 2011).

Secondly, economic conditions in each group of provinces throw some light on their attractiveness for immigrants. Data from the Spanish Regional Accounts show that the group of provinces displaying demographic recovery was 8.4 per cent more prosperous in 2000 than the group of provinces in decline (gross domestic product per capita was €13,208 and €12,188, respectively). Moreover, the situation in the first group of provinces in 2000 was more conducive to economic growth than it was in the other group. Data from the Labour Force Survey suggest that the greater attractiveness of the first group may have also been based on their more diversified economic structure. For example, 13.1 per cent of the population was employed in agriculture, not a main driver of economic growth and (as explained below) not the immigrants' preferred sector, compared to 16.1 per cent in the group of provinces with shrinking rural populations. The unemployment rate was also lower, at 14.4 compared to 16.0 per cent.

The No Immigration Scenario

We use a counterfactual technique to complete the picture of immigration's contribution to reversing or slowing the most intense rural depopulation processes by simulating rural population growth for the period 2000-2008 *had there been no immigration*. Columns A and B in Table 4 reflect year-on-year total rural population growth rates (native plus foreign-born) for 1991-2000 and 2000-2008, both for the basic group of twenty-two provinces and for the two sub-groups (as displayed in Tables 2 and 3

[4] We used the National Immigration Survey (ENI-2007) referred to below to obtain the main immigrant gateway provinces in 2000, as well as the information provided by Recaño (2002), García Coll (2005), Lamela (2006), Recaño and Domingo (2006) and López Trigal (2008).

above). Column C shows year-on-year growth rates assuming that the foreign-born population does not vary, which is to say the counterfactual demographic scenario in which there is no immigration. Finally, column D is the contribution of foreign-born rural residents to the *change* in the demographic trend in the second period (2000-2008) compared to the first (1991-2000) (the formula is given in the Notes to Table 4). A contribution of 100 per cent would mean that the entire change in the rate of rural population growth between the two periods was due to immigration.

According to column D, 79 per cent of the reduction in rural population decline (from -0.8 to -0.2) in the basic group of twenty-two provinces was due to immigration (consequently, the remaining 21 per cent of the improvement would have been due to changes affecting the native population —that is, net migration and natural increase). Meanwhile, 69 per cent of the reduction in the depopulation rate affecting the group of provinces with the less dynamic demographics was caused by immigration, compared to 90 per cent of the change in the population trend in the more dynamic provinces. Thus, almost all the change from depopulation to population growth in the latter group was caused by the arrival of immigrants (and the remaining 10 per cent was caused by changes in the native population).

[Insert Table 4 here]

FURTHER ASSESSMENTS

The highly aggregated figures used so far reveal the demographic contribution made by immigration. The key issue, however, is to gauge its long-term impact. Any projection will inevitably be subject to uncertainty, and even more so in the present context. However, some kind of evaluation is surely possible. In this section, we delve into the differences between immigrants' places of arrival and characteristics to see whether they point to different possible immigration paths.

Municipality of Arrival

Immigration may produce different impacts on the evolution of population depending on the characteristics of the town or village where they arrive. Table 5 shows estimates based on a classification of municipalities in terms of size. In the group of provinces with population recovery, medium-sized and large rural municipalities (2,000-5,000 and 5,000-10,000) were able to attract significantly more immigrants than small rural municipalities (<2,000). The attractiveness of size, however, is less evident in the group of provinces suffering population decay. Interestingly, the fact that the foreign-born are drawn to medium- and large-sized towns may actually help provinces that are already demographically successful to consolidate their position in the future. Key features helping municipalities of this kind retain immigrants are their role as district hubs, their generally more active and diversified labour markets, and their larger housing stocks (as shown by a number of data sources from the Spanish Statistical Office (INE) —data are available from the authors upon request; for the specific cases of Aragon, and Castille and Leon, see Pinilla *et al.*, 2008; Consejo Económico y Social, 2012).

[Insert Table 5 here]

Age Structure, Sex Ratio and Fertility

It is not only the number of immigrants that is important, but also their demographic profile. The potential impact of immigration on long-term population growth is conditioned first and foremost by its age structure. Table 6 shows that foreign-born populations were on the whole much younger than native populations in 2000, which were even older in 2008. Meanwhile, the relative size of younger cohorts (aged<40) among female and male immigrant populations decreased over time in the group of provinces that had not achieved demographic recovery. In contrast, the relative size of these age groups tended to increase or remain at a similar level in the group of provinces with demographic recovery, in particular in the case of women (the predominance of natives implies that the effect of immigration on the total population will be small). With regard to the sex structure, Table 7 indicates a surplus of males, especially in provinces with demographic recovery. Finally, the demographic description of immigrants would not be complete without considering fertility. Based on

data from the National Immigration Survey (ENI-2007) we estimated the total fertility rate for immigrant women in our aggregations of municipalities. However, the resulting number of observations was too small to draw totally reliable conclusions.[5] Even so, fertility rates appear to be somewhat lower in the group of provinces with demographic recovery.

In short, the data suggest a trend towards the rejuvenation of the rural population in areas that achieved growth, but also ongoing masculinisation continuing a process already begun before the arrival of immigrants and lower fertility rates compared to other areas. These findings are in line with recent research based on different sources (Camarero *et al*., 2009; 2012).

[Insert Table 6 here]

[Insert Table 7 here]

Selected Demographic and Socio-Economic Characteristics of Immigrants

Table 8 describes various characteristics of foreign-born residents of rural municipalities based on data obtained from the National Immigrant Survey (ENI-2007). Though a cross-sectional snapshot, this retrospective source provides a large amount of information on recent immigrants (Reher and Requena, 2009b). The results presented are based on unweighted data (see Rosero-Bixby *et al.*, 2011), and the number of observations may vary for each item. Immigrants from 'the rest of Europe', that is to say Eastern Europe (in particular Romania), tend to predominate in rural municipalities in the most successful group of provinces. The immigrants who arrived in these provinces tend to be younger (as mentioned above) and married to other immigrants, and to have less family ties than foreign-born residents of the less successful provinces.

[5] Following Reher (2008) and Reher and Requena (2009b), we estimated the number of children ever born to women who have reached the end of their reproductive period (50-54 years of age) and the number of children per woman by the year of birth of mothers. The small number of observations (less than twenty in some cases) is explained by the focus of this paper on depopulated rural areas and methodological problems related to the source (as explained in Reher and Silvestre, 2011).

They are also less likely to be homeowners and have generally lived a shorter time in Spain (average years since arrival is 9.2, compared to 20.6 in the group of provinces without demographic recovery). Though somewhat better educated (especially at the secondary level), they are predominantly employed in unskilled manual jobs, tend to earn lower wages and are more likely to have been unemployed for some time since arriving in Spain, although the unemployment rate was lower among these immigrants in 2007. Also, their rate of economic activity is higher.

Differences between immigrants in demographically declining and recovering provinces may be explained firstly by the presence of numerous individuals from certain countries. Our database confirms research showing that the prevalence of people from two immigrant groups, Developed Europe and Latin America, in the less successful provinces is partly due to the ability of the north-western provinces to attract Portuguese immigrants and the descendants of Spanish emigrants who were born in other European and American countries, such as Argentina. (López Trigal, 2008; Morén-Alegret, 2008; Camarero *et al*., 2009; Kuehn, 2009; Reher and Sánchez-Alonso, 2009; Gil *et al*., 2012). The association between having spent more time in Spain, the creation of contacts with the majority population through intermarriage (endogamy is particularly low among Latin-American women and among men and women from Developed Europe), family regrouping and homeownership suggests that immigrants settled in the less successful group of provinces are better integrated with the host society (Requena and Sánchez-Dóminguez, 2011; Cortina and Esteve, 2012; Sánchez-Dominguez *et al*., 2011).[6]

Eastern Europeans predominate in the group of provinces with demographic recovery. As meticulously reported by Stanek (2009), the characteristics of migrants from Rumania and Bulgaria, the two main countries of origin, tend to overlap with those of all immigrants in the group of more dynamic provinces. They are younger, came to Spain more recently during a period of strong economic growth and for mainly work-related (rather than family-related) reasons. Consequently, they tend to be more economically active than immigrants from other groups (see also Reher and Requena, 2009b; Camarero *et al*., 2012). Their high concentration in unskilled manual jobs is

[6] Homeownership rates are nonetheless high in the other group. For a number of reasons, many immigrants have recently become homeowners in Spain (e.g. Vono-de-Vilhena and Bayona, 2012).

often associated with occupational downgrading when compared to their situation in their countries of origin. Meanwhile, periods of joblessness may provide a spur to more active job seeking (see also Silvestre and Reher, forthcoming). In short, work-oriented immigrants seem to predominate in the more successful group of provinces.

It is also noteworthy that the characteristics of immigrants who arrived in the rural municipalities of more demographically dynamic provinces tend to match those of the most mobile, often rural-to-urban, immigrants in Spain (Reher and Silvestre, 2009; Silvestre and Reher, forthcoming). Certainly, there has been an urban-to-rural redistribution of population. However, research has also shown that rural areas may be the preferred destination for some, but not all, types of immigrants (Morén-Alegret, 2008; Camarero *et al*., 2012). Moreover, a number of immigrants have used work in rural areas, particularly in agriculture and domestic service, as a way of obtaining information and accumulating financial resources, skills and contacts to undertake a subsequent move, often to an urban destination, and to seek better paying occupations (Pumares *et al*., 2006; Pedreño and Riquelme, 2007; see also Miguélez *et al*., 2011; Camarero *et al*., 2012).

[Insert Table 8 here]

THE DEMOGRAPHIC IMPACT OF IMMIGRATION, 2008-2011

We have focused on the concluded period of mass immigration. Using available official data, we can also explore the contribution of immigration to population change in the early years of the present period of economic downturn. Table 9 confirms a considerable drop in immigration flows, and growth rates have returned to levels not far from those of the period 1991-2000 (see Table 3). Meanwhile, the gap between the two groups of provinces detected for the period 2000-2008 has all but closed. As in the previous periods, however, the foreign-born population has increased faster in the group of provinces that have achieved demographic recovery. Moreover, recent immigration continues to offset the ongoing decline of the native population in this group, so that the total population is able to go on growing.

[Insert Table 9 here]

DISCUSSION AND CONCLUSIONS

After decades of high out-migration and the weakening of the demographic system, some rural areas of Europe suffer from intense depopulation. The existence of depopulated rural areas has become a serious socio-economic issue. The arrival of international immigrants has been considered one of the possible solutions to mitigate problems. This paper contributes to a very recent, but lively and growing, literature examining the patterns of immigrant settlement in host countries, and the causes and consequences of the phenomenon. The study described in this paper analyses the demographic impact of international immigration on rural areas in Spain. We have focused on depopulated rural areas where the survival of the local economy and society are at risk. We have applied different approaches to confirm our findings.

Our results show that recent mass immigration to rural areas (before 2008) contributed significantly to reducing depopulation. Indeed, the population trend has even been reversed in some rural areas, which have begun not only to retain but to gain population after decades of steady decline. The results also show that rural areas that have been able to attract immigrants more effectively tend to be in provinces located relatively close to the wealthiest regions and main points of entry into the country, two features that can be perceived as gains obtained from the spatial redistribution of immigrants within Spain. Economic conditions in these provinces also tended to be somewhat better at the beginning of the mass immigration process, another factor explaining differences in attractiveness.

Our findings also shed light on the potential of rural areas to retain immigrants. The most successful municipalities so far also seem to be well positioned to sustain long-term population growth, because their medium-sized and large size are generally associated with strong and diversified economies, larger housing stocks, and good communications, all of which increase their attractiveness. Moreover, the immigrants who settled in such areas tend to be young (i.e. in their reproductive period). However,

immigration has also intensified the existing numerical inferiority of females in the same areas, and a number of the foreign-born arrivals display a significant propensity to relocate (for example, those who are young and married to other immigrants, who perform worse in the labour market, and who have established weak ties). Moreover, the fertility of immigrant women settling in these areas may be low.

The net effect of these conflicting forces and the continued arrival of new immigrants, if at a reduced rate, seems to have been positive in the early years of the present deep economic crisis. However, in a broader context of rapidly declining immigration and accelerating remigration, either back home or to third countries, the long-term retention of immigrants in rural areas is not guaranteed.

This study has three main policy implications in trying to ensure the permanence of the stock of immigrants in rural areas. Firstly, in light of the characteristics of destinations chosen, work-related initiatives should allow for the possibility that agriculture may not be the preferred sector for immigrants once they begin to incorporate into the receiving society (see also Morén-Alegret and Solana, 2004; Camarero *et al*., 2012). Schemes should be designed, perhaps at the local level, to provide training and recognize professional skills to match demand from employers and promote self-employment in other sectors, with particular attention to women. Secondly, new or existing measures should deepen integration and facilitate the establishment of ties with host areas. These would include initiatives to promote family regrouping and settlement, ensure access to housing and healthcare, and channel the attitudes of natives (for example, looking at informal employment relations; see also Sáez *et al*., 2001; Camarero *et al*., 2009). Finally, regional development strategies promoting, for example, better communications may provide an incentive for new foreign-born settlement, especially in low cost-of-living areas that are farther from areas in which immigrants are already concentrated in large numbers.

APPENDIX

Table A1. Spanish Autonomous Communities and Provinces

Autonomous Community	Province	Autonomous Community	Province
Galicia	1-La Coruña	Valencia Region	28-Castellón
	2-Lugo		29-Valencia
	3-Pontevedra		30-Alicante
	4-Orense	Murcia Region	31-Murcia
Asturias	5-Asturias	Balearic Islands	32-Baleares
Cantabria	6-Cantabria	Madrid	33-Madrid
Basque Country	7-Vizcaya	Castile-La Mancha	34-Guadalajara
	8-Guipuzcoa		35-Toledo
	9-Alava		36-Cuenca
			37-Ciudad Real
Castile and Leon	10-León		38-Albacete
	11-Palencia		
	12- Burgos	Extremadura	39-Caceres
	13- Zamora		40-Badajoz
	14- Valladolid		
	15- Soria	Andalusia	41-Huelva
	16- Salamanca		42-Seville
	17- Avila		43-Cordoba
	18- Segovia		44- Jaen
			45-Cadiz
Navarre	19-Navarre		46-Malaga
			47-Granada
La Rioja	20-Logroño		48-Almeria
		Canary Islands	49- Las Palmas de Gran Canaria
Aragon	21-Huesca		
	22-Zaragoza		50- Santa Cruz de Tenerife
	23-Teruel		
Catalonia	24-Lerida		
	25-Gerona		
	26-Barcelona		
	27-Tarragona		

Note: The Spanish provinces are as listed in NUTS III (Nomenclature of Territorial Units for Statistics, level 3. The North African enclaves of Ceuta and Melilla are not included.

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TABLES

Table 1. Percentage change in Spain's rural population

	Compound annual growth rate
1900-1910	0.5
1910-1920	0.2
1920-1930	0.4
1930-1940	0.2
1940-1950	0.2
1950-1960	-0.3
1960-1970	-1.5
1970-1981	-1.0
1981-1991	-0.3
1991-2001	0.4

Source: Calculations are based on population censuses (available on the Spanish Statistical Office website http://www.ine.es) and the classification of municipalities prepared by García Fernández (1985).
Notes: Rural municipalities are as defined in the main text. Compound annual population growth rate = [(Ending Date Population/Starting Date Population)$^{1/n}$ -1] x 100; where n refers to the number of years from start to end.

Table 2. Percentage change in rural population, compound annual growth rate. Twenty-two provinces

	1991-2008	1991-2000	2000-2008
Native	-0.8	-0.9	-0.7
Foreign-Born	8.9	3.1	15.8
Total	-0.5	-0.8	-0.2

Source: Based on 1991 Population Census and data from the 2000 and 2008 Spanish Register of Inhabitants.

Table 3. Percentage change in rural compound annual population growth rate. Sub-groups of provinces

	1991-2008	1991-2000	2000-2008
Provinces without demographic recovery in 2000-2008			
Native	-1.0	-1.1	-0.9
Foreign-Born	5.7	2.4	9.6
Total	-0.8	-1.0	-0.6
Provinces with demographic recovery in 2000-2008			
Native	-0.5	-0.5	-0.4
Foreign-Born	16.5	6.4	28.9
Total	-0.1	-0.5	0.4

Source: Based on 1991 Population Census and data from the 2000 and 2008 Spanish Register of Inhabitants.

Table 4. No immigration scenario. Comparison of compound annual population growth rates

	1991-2000	2000-2008		Contribution of the foreign-born to the change in growth rates (%)
	Observed	Observed	Simulated	
	A	B	C	D
Provinces without demographic recovery	-1.0	-0.6	-0.9	69
Provinces with demographic recovery	-0.5	0.4	-0.4	90
Total of 22 provinces	-0.8	-0.2	-0.7	79

Notes: Column D = [(B-C) / (B-A)]) x 100 (figures are rounded). See main text for the meaning of columns.

Table 5. Percentage change in rural compound annual population growth rate, 2000-2008. Size of municipality

	< 2,000	2,000-5,000	5,000-10,000
Provinces without demographic recovery			
Native	-1.4	-0.8	-0.4
Foreign-Born	11.0	8.1	9.1
Total	-1.1	-0.5	-0.1
Provinces with demographic recovery			
Native	-0.7	-0.1	-0.3
Foreign-Born	25.8	30.3	33.1
Total	0.1	0.7	0.6

Source: 2000 and 2008 Spanish Register of Inhabitants.

Table 6. Age cohorts. Percentages

	2000					2008				
	<15	15-39	40-54	>54	Total	<15	15-39	40-54	>54	Total
Female										
Provinces without demographic recovery										
Native	10.9	30.7	15.8	42.6	100	9.7	27.3	19.0	44.0	100
Foreign-Born	12.3	58.2	12.9	16.6	100	11.4	55.0	21.7	11.9	100
Total	11.0	31.3	15.7	42.0	100	9.7	28.6	19.2	42.5	100
Provinces with demographic recovery										
Native	13.9	33.0	15.2	37.9	100	12.7	29.8	19.4	38.1	100
Foreign-Born	11.1	61.0	14.2	13.7	100	14.2	61.0	18.6	6.2	100
Total	13.9	33.2	15.2	37.7	100	12.8	31.7	19.4	36.1	100
Male										
Provinces without demographic recovery										
Native	11.6	34.2	19.0	35.2	100	10.2	29.9	22.4	37.4	100
Foreign-Born	12.7	60.4	13.6	13.3	100	11.1	56.5	22.8	9.6	100
Total	11.6	34.8	18.9	34.7	100	10.3	31.3	22.4	36.0	100
Provinces with demographic recovery										
Native	14.5	35.6	17.2	32.7	100	13.3	31.8	22.0	32.9	100
Foreign-Born	10.0	65.7	13.8	10.5	100	11.0	64.4	20.1	4.5	100
Total	14.5	36.0	17.1	32.4	100	13.1	34.4	21.9	36.0	100

Source: 2000 and 2008 Spanish Register of Inhabitants.

Table 7. Male/Female ratio

	2000	2008
Provinces without demographic recovery in 2000-2008		
Native	99.2	100.9
Foreign-Born	105.2	110.9
Total	99.3	101.4
Provinces with demographic recovery in 2000-2008		
Native	101.6	103.2
Foreign-Born	122.4	139.1
Total	101.8	105.4

Source: 2000 and 2008 Spanish Register of Inhabitants.

Table 8. Selected demographic and socio-economic characteristics of the foreign-born in rural areas, 2007

	Provinces without demographic recovery	Provinces with demographic recovery
World region of birth (%)		
Developed Europe	39.8	14.2
Rest of Europe	13.9	42.5
Africa	15.8	18.9
Latin America	28.9	24.1
Rest of the world	1.5	0.5
Total	100	100
Average age	41.5	35.6
Marital status (%)		
Never married	27.1	29.7
Married to a Spaniard	35.7	15.6
Married to a Non-Spaniard	28.6	47.6
Other marital status	8.6	7.1
Total	100	100
Family regrouping as the reason to immigrate (%)	35.3	24.5
Homeownership (%)	43.6	30.2
Date of arrival (%)		
Before 1991	43.6	14.6
1991-2000	24.8	22.6
2001-2007	31.6	62.7
Total	100	100
Education, completed (%)		
No education	17.4	7.1
Primary education	21.1	21.3
Secondary education	47.5	59.2
College or above	14.0	12.3
Total	100	100
Occupation (%)		
Unskilled, manual	24.8	41.8
Unskilled, non-manual	24.2	24.1
Skilled, manual	37.3	26.6
Skilled, non-manual	13.7	7.6
Total	100	100
Economic sector (%)		
Agriculture	13.0	13.3
Industry	16.0	15.8
Construction	19.1	18.4
Services	51.9	52.5
Total	100	100
Average monthly nominal wage (€)	977.5	897.6
Activity rate (%)	66.9	75.2
Unemployment rate (%)	15.5	13.9
Employment, since arrival (%)		
Employed since arrival	46.6	38.2
Unemployed for some time	53.4	61.8
Total	100	100

Source: National Immigration Survey (ENI-2007).
Notes: Immigrants 16 years and older. Developed Europe refers to Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, the Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom.

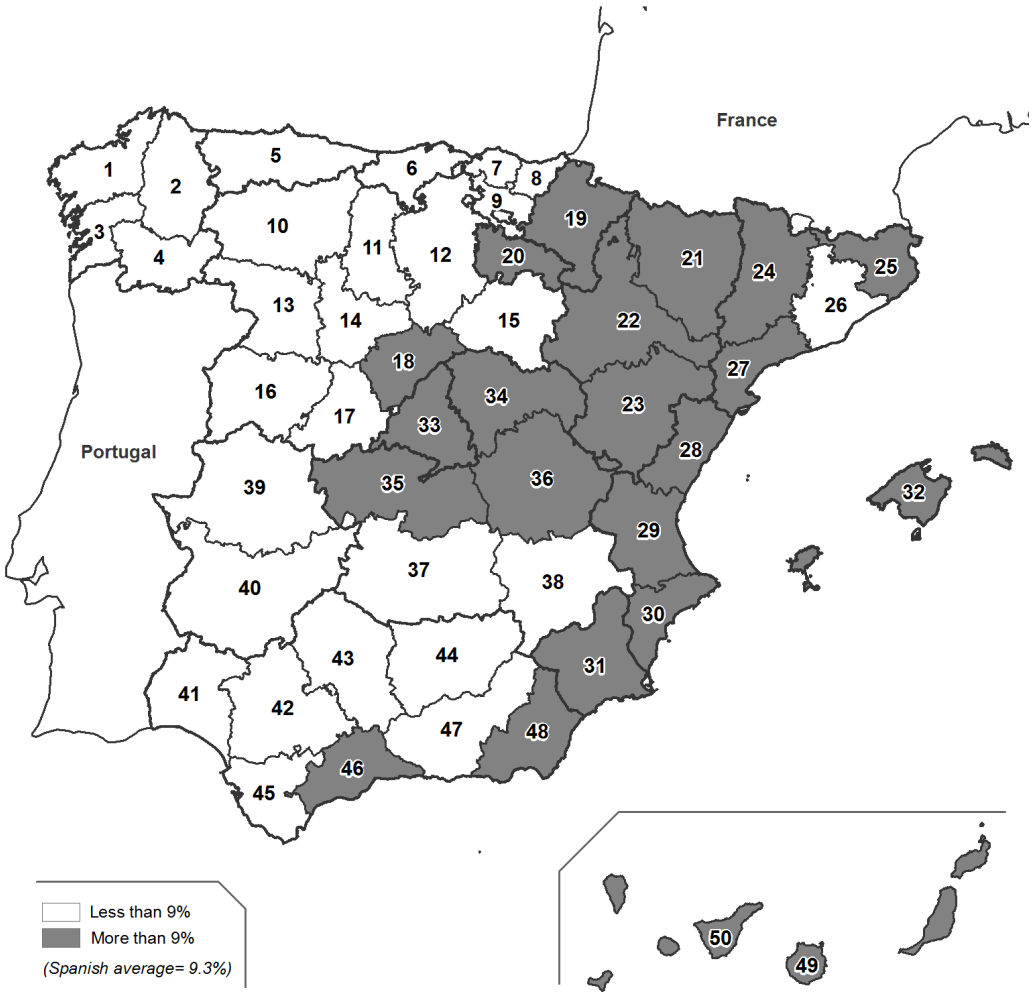
Table 9. Percentage change in rural compound annual population growth rate, 2008-2011

Provinces without demographic recovery in 2000-2008	
Native	-0.7
Foreign-Born	4.0
Total	-0.5
Provinces with demographic recovery in 2000-2008	
Native	-0.2
Foreign-Born	4.9
Total	0.2

Source: 2008 and 2011 Spanish Register of Inhabitants.

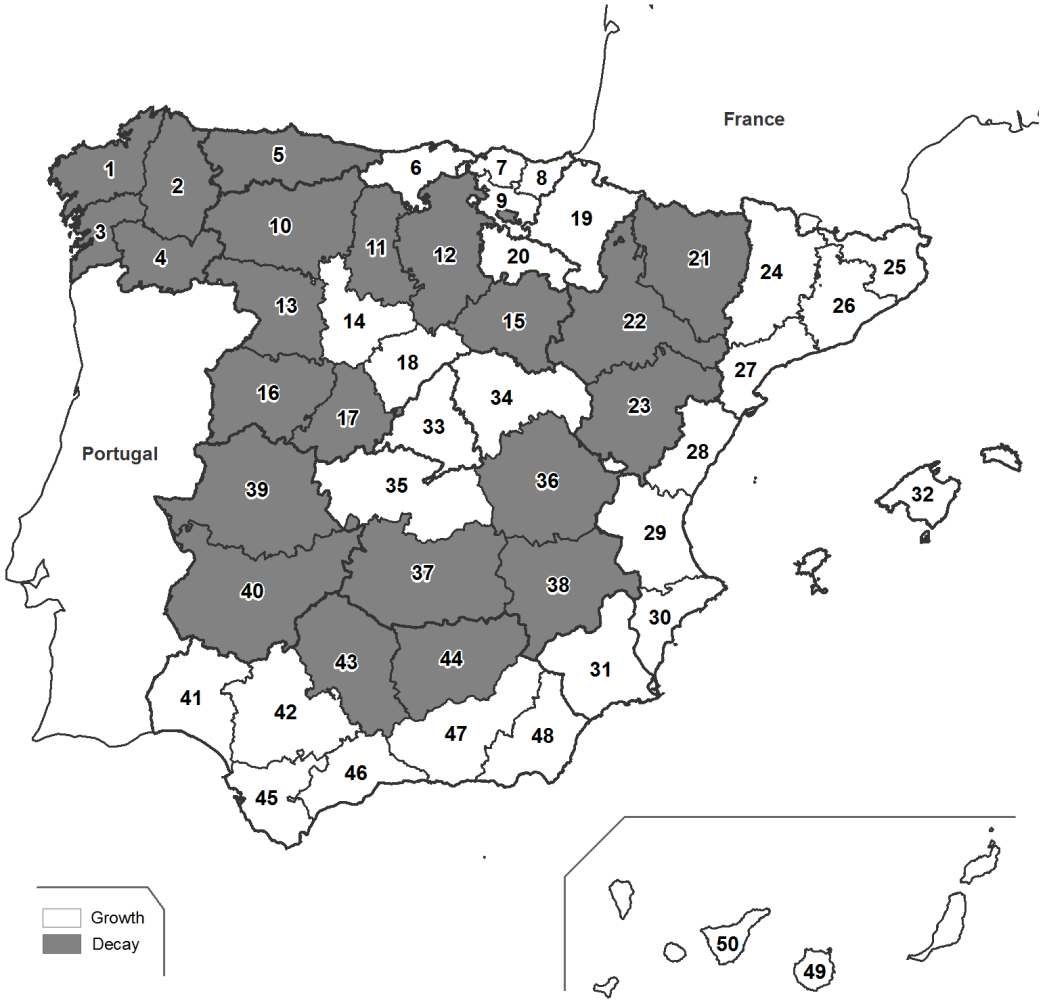
FIGURES

Figure 1. Stock of foreign-born population in rural areas in 2008. Spanish provinces



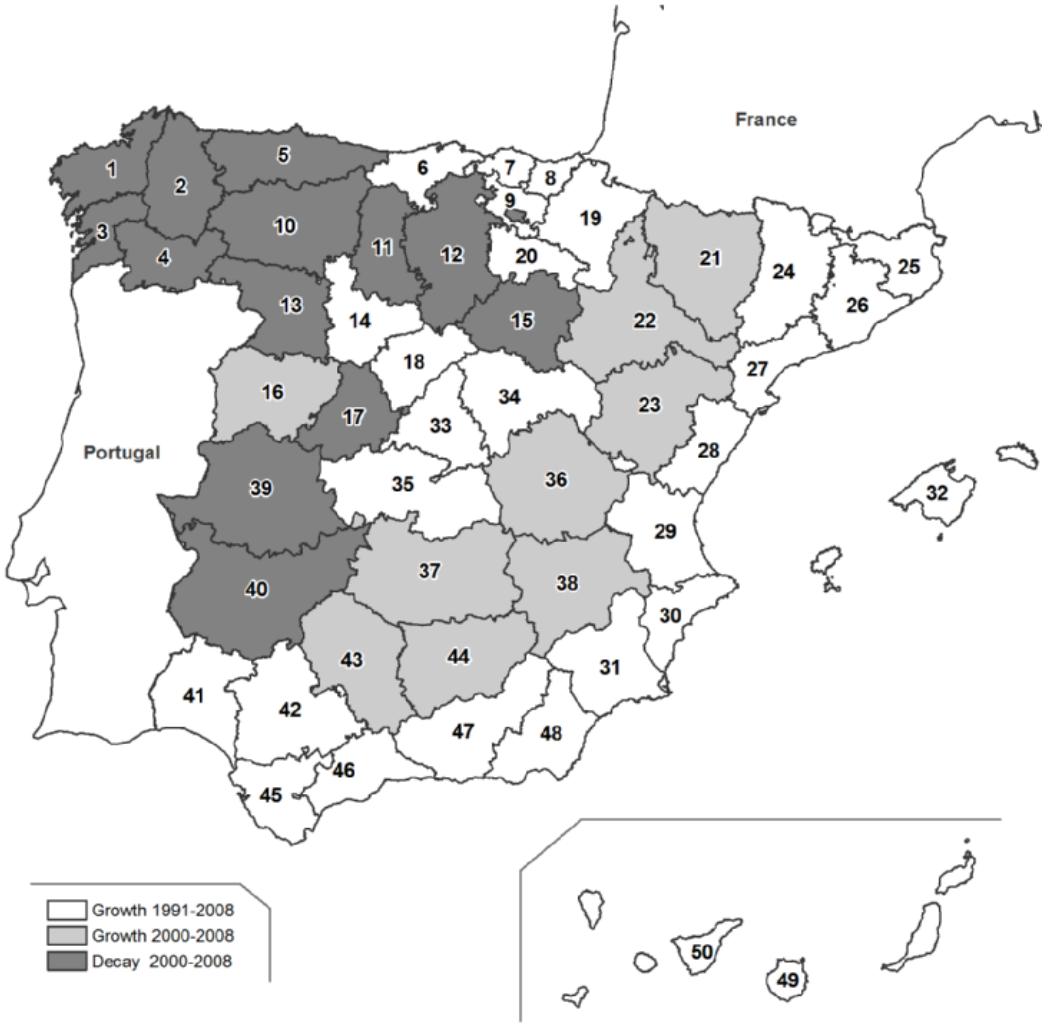
Source: 2008 Spanish Register of Inhabitants.

Figure 2. Rural population change in Spain between 1991 and 2008



Source: 1991 Population Census; 2008 Spanish Register of Inhabitants.

Figure 3. Rural population change in Spain between 2000 and 2008.



Source: 2000 and 2008 Spanish Register of Inhabitants.