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Ageing and population imbalances in the Spanish regions with demographic challenges

The *Foro de Regiones Españolas con Desafíos Demográficos* (FREDD), composed by Autonomous Communities —NUTS 2— from Asturias, Aragón, Cantabria, Castilla y León, Castilla-La Mancha, Extremadura, Galicia and La Rioja, has the aim of addressing three of the main problems that affect Europe, Spain and even more particularly to the signatory regions: loss of population, demographic ageing and depopulation. They are a manifestation of a structural demographic crisis derived from external and internal migratory flows, with repeated negative balances, which affected to the young adults since the middle of the 20th century. The expansion phase of the first decade of the 21st century, which is derived from the foreign immigration, was only a slight rejuvenation of those areas, and it was unable to provide the inherited imbalances, giving way to an acceleration of the ageing process. All this in a territorial framework where a population model is especially opposed in the cities, main river valleys and coastlines to the rural interior emptying, where there are a lot of small disperse entities which are unable of establishing residents. Such a problem requires further consideration at regional, national and European scales, because it involves a differential and a very high cost of resources, both for the maintenance of essential services and facilities. Therefore, Aragón, Asturias, Castilla y León, Extremadura and Galicia also belong to the Demographic Change Regions Network, as well as Aragón, Galicia, Castilla y León and Castilla-La Mancha are members of the consortium of Local and Regional Cooperation for the Demographic Change of the European Committee of the Regions of EU.

The first step to analyse this problem is mapping the territory affected by ageing and depopulation, which basically includes the so-called deep rural areas, whose delimitation is carried out by considering the small number of residents, their long-term demographic slope, the adverse natural and migratory balances, the high ageing index and the low population density. Using the municipality as the spatial unit—the local administrations—, the proposals to set limits to each variable are multiple, both by the interest towards the rural development programmes of the European Union and the statistical agencies and institutes. In this article the results of a multivariate analysis will be assessed and the importance of each of those main variables will be explained, including as well other variables that are demonstrated to be secondary at the present, such as the agricultural sector workforce, which is minority against the progress of the diversification of functions. After analysing the entire Spanish municipalities, the results show a considerable higher surface area than the extension affected by mayor demographic challenges in the eight Autonomous Communities of FREDD. The larger territories are included in them, but they also grow over their limits, although even the differences among both groups are significant at the NUTS 3 scale.

The decrease of population is a common occurrence at FREDD and non-FREDD territories, as well as the negative net migratory balances, which are sustained at national scale by the rapid increase of the foreign emigration and the stop to labour immigration, which is replaced by a smaller family reunification. Internal migra-

tory flows marked the large historic divergences which continue today, affecting population age structures and natural dynamics. By contrast, the natural balance is held in the non-FREDD space, although the difference between births and deaths is shortened quickly (it became negative in Spain in 2015). Consequently, and despite the progressive extension of recessive demographic tendencies to the other regions, all indicators based on population pyramids report the existence of huge contrasts. Population density in FREDD territory is 37 inhabitants per square kilometre, while it reaches 182 in the rest of the nation; the average age achieves 45.0 years against 41.6, and natural balances are -2.1 and +2.5 per inhabitant respectively, to cite just the most significant variables.

Local level imbalances, are of course, much larger. The largest population concentration in coasts, urban and periurban settings is accompanied by the inland regions of the Peninsula where irrigated agricultura is the main activity, maintaining densities over 50 inhabitants per km². Population is also established in the larger centres, with more diversified equipments, but it is retained a younger population structure there and a greater female presence in active age groups. The impact of Madrid is intense in closer regions of nearby provinces with the capital, in particular where a broad residential and tourist offer is concentrated. Administrative boundaries of Autonomous Communities devaluate when facing a strong reality, rising the importance of other economic and geographic considerations that reduce, in some cases, the surface concerned inside the FREDD territory due to the depopulation and ageing problem. The opposite happens in other territories, expanding the same problems further on, particularly in mountain regions, so municipalities, which may or may not be located in the Forum regions, are in similar situations. But over and above the obvious coincidences, it cannot be forgotten that a 75% of these municipalities own less than 20 inhabitants per km² and the 58% do not even reach 10 inhabitants per km², when those same percentages are reduced to 31% and 17% in the rest of Spain.

The natural balance at municipal level also confirms the existence of own guidances in FREDD territories, in line with the guidances seen through other variables. Only a 9% of municipalities remained the positive sign over the five-year period from 2010-14 in contrast to the generalized high negative rates. Except for some reduced populations, where slight variations in the numbers of births or deaths can change the final balance sign, the scarce positive results concentrate in the urban area, but they do not even reach the half of municipalities with

more than ten thousand inhabitants. Peri-urban belts own the most positive natural dynamics, with average birth rates and reduced mortality, thanks to the relocation of residents, particularly young couples, from the cities. But they are exceptions to a general rule and their trend also points towards the reduction of natural growth: the 59% of the population of the eight regions lives in municipalities where the growth is already negative and their losses exceed widely the gains obtained previously.

The second component of the demographic growth, the migratory balance, maintains the contrast between the two groups of Autonomous Communities with regard to interregional flows, although it is blurred in an analysis at municipal scale due to the multiplicity of factors involved. The changes of residence from the rural to the urban environment and from smaller municipalities to service centres boost the concentration of population throughout Spain. The economic crisis also caused flows in the opposite direction and demographic revenues obtained by peri-urban spaces decreased quickly, but the losses in the urban centres are still dominant, affecting the 75% with more than thirty thousand residents in FREDD regions, with notable exceptions. Regardless the causes, only a third of those with more than ten thousand inhabitants achieved a positive migratory balance between 2010 and 2014, a proportion slightly over the amount obtained in the rural municipalities. The 68% of all the municipalities of FREDD had adverse balances, in contrast to the 58% in the rest of Spain.

The consequences of this long depopulation process in age and sex structures have been reinforced by a selective emigration that affects the younger generation, they are more evident when comparing populations of Autonomous Communities by their membership or not to the FREDD ones. The average age of men is 3.2 years higher in those who form part of the Forum and 3.5 years for women. It is also higher the percentage of population with more than 50 years old in these areas. The temporary increase of births, due to the arrival of foreign families with minor children, during the first decade of this century, favoured all Spain, but the amount of the new generations increased a 17% between 1995 and 2009 in the most favoured areas and only a 8% in FREDD ones, where the ageing is shown. The elderly population over 65 years is bigger than people under twenty, which is more visible between women, whose greater longevity produces female indexes of 1.8 among those over eighty years and of 3.2 among those over ninety-five.

Sex and age structures, in the defined group of municipalities affected by severe depopulation and ageing

problems, show much more extreme situations, but ageing is more intense between those belonging to FREDD, by both the top of the pyramid—the elderly— and the bottom—the less young—. The average age in these groups rises to 50.8 years against 46.6 in other regions and the ageing index—the ratio between people older than 65 and children under 15— is 3.5. The current accumulation of inhabitants on the top of the pyramid is not still higher due to the emptying of people between 60 and 79 years, who are affected by the rural exodus and foreign emigration since the 1950s to the mid of 1970s. Elderly generations also had an initial reduced size, because they are hollow generations who appeared during the Civil War and the first post-war years. These events explain particularly that the current accumulation of people on the top of the pyramid is not even bigger, delaying the ageing process. The amount of inhabitants greatly conditions the age structures and, therefore it is even more significant that the ageing reaches higher intensity in FREDD territories than in the rest of Spain when identical thresholds are compared. The 80% of municipalities with demographic problems with less than two thousand inhabitants belong to this group, with an ageing index of 4.5 and average age of 52.7 years, while the values descend to 2.5 and 48.4 in the rest of Spain. The same differences between regions are repeated independently of the population thresholds chosen, because all them present superior values in FREDD space, including larger municipalities. Added to all that are the damages for the labour market of an average age population who keeps growing potentially. At regional level, the number is 41.7 in FREDD and 42.8 in the municipalities of the demarcated area, reaching 43.3 in those with less than two thousand inhabitants. And all this is within the framework of a populations whose dependency ratio is already too high (54.2%).

This situation will continue to worsen in the future, based on population projections carried out by the Spanish National Statistical Institute. The average age of population living in FREDD territory will be 49.4 years and 43.1 outside it in 2031, in a scene where life expectancy will continue an upward trend and, therefore the top of the population pyramid will have a greater relative weight. An outstanding rise of fertility is expected, at best, it would be of 1.37 children per woman in Spain in those regions. The progressive reduction of fertile women will mean a tightening of the bases of both pyramids. Official forecasts have taken into account the presence of migra-

tory flows that, outside FREDD, would mean a light reinforcement for all population under 40 years old, although these flows would rise people over 80 due to the return of retired migrants. Young adult population would grow thanks to favourable balances recovering in international migrations, negative at this time, although they would be cancelled by the negative balances of domestic migrations. In short, the population loss, the demographic ageing and the depopulation, the three problems which led to FREDD formation, not only will continue growing to medium term, but also the demographic gap would increase between them and the rest of national territory.

In conclusion, the Autonomous Communities included in *Foro de Regiones Españolas con Desafíos Demográficos* possess populations whose dynamics, structures and population models, though they are not exclusive, they are present with maximum intensity, affecting to a wider surface than in the rest. The variables used offer a Cartographic image that coincides with other earlier studies, although the total extension of the affected area is extended to include in it not only the deep rural areas, but also population centres with more than ten thousand inhabitants that when they finish the expansive phase associated to foreign immigration have adopted a recessive trend. However, population models are far from homogeneous and, therefore the spatial approach of the problem neither is it. More than three-quarters of the territory in Asturias, Castilla y León and Galicia are included in the established delimitation, it is around the 60-65% in Aragón and Cantabria, it declines to 56% in Castilla-La Mancha and to 51% in Extremadura and La Rioja. The presence of equipped areas with also a recessive dynamic in other regions, such as those of mountainous interior in contrast to coastlines, should not be forgotten. The problems which caused the creation of FREDD are more urgent among its members, but they are not limited to them, so the policies aimed at palliating them neither should establish on a strictly regional administrative basis —NUTS 2— or provincial —NUTS 3—, being necessary a reform of the cohesion policy and support for sparsely populated areas of the European Union. And at national level, it is needed the implementation of consensual demographic and territorial strategies between the autonomous and central administrations as well as elaborating a migration policy extending beyond interim measures, resulting from a short term view.