Population Growth and Reurbanization in the Spanish Inner Cities: 
the Role of Internal Migration and Residential Mobility

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Summary:
After 25 years of an intense population decrease, the central cities of Barcelona and Madrid have experienced a remarkable increase of population during the last decade. Less intense trends, but in the same direction, have been identified in the largest Spanish cities: population growth has started again in the inner city of Valencia, Sevilla’s urban core is still growing, and the population decrease experienced in the central city of Bilbao for the last two decades has come to an end. Thus, Spanish largest metropolitan areas have come to share the reurbanization processes that other Southern European cities like Rome, Milan, Turin and Marseille are currently going through, and that many other cities in Central and Northern Europe and in the United States underwent during the last two decades of the 20th century.

In the Spanish case, the arrival and settlement of foreign population in the urban centers have played a major role in this comeback. The total gains of population in these areas should not hide, though, the negative balance that central cities still have in the residential relation with their own metropolitan areas. However, a growing appeal of central areas for metropolitan residents has been stated. In some cases, a remarkable increase of the out-migration rates of the metropolitan municipalities with destination to the central city has been observed. Likewise, the proportion of movements leaving the central areas with destination to their metropolitan areas is decreasing year after year.

This paper aims at analyzing the back to the city movements in the largest Spanish metropolitan areas, mainly from a geo-demographic perspective. The excellent temporal and geographic coverage of the Spanish Register of Residential Movements — a 100% microdata dataset including each residential movement occurred in Spain and the migrant’s demographic characteristics — enables the research to analyze the territorial areas of residential relation of the city center, its temporal evolution, and the demographic structure of the individuals participating in these residential flows.

Keywords: Urban demography, reurbanization, residential mobility, central cities, Southern Europe.
1. The comeback of the central city

The two largest central municipalities in Spain, Madrid and Barcelona, have recently experienced a period of population growth, which has stopped the intense population decrease that was registered during the last quarter of the 20th century. This whole process has been widely followed with some delay by the rest of the major cities in Spain. Positive growth in Valencia has started again after a remarkable decrease of population during the 90s. In Seville the demographic growth has become more intense and in Bilbao the population decrease known since 1981 has recently arrived to an end.

Other Southern cities in Europe have experienced similar processes in the recent past. Rome’s central municipality lost more than 200,000 inhabitants between 1981 and 2001, and it has already recovered almost the same amount during the last decade. Milan and Florence inner cities have never reached the population counted in 1971, but the population increase experienced during the last years ends three decades of negative growth. Marseille also shows a similar pattern, while in Athens it is expected to see a population increase in the current census round. On the other hand, the population decrease continues in the main Portuguese inner areas. This trend has come to share the processes that many other cities in Europe and in the United States registered during the last two decades of the 20th century. In the U.S., the majority of the urban cores have experienced a population growth since 1990 (Frey, 2006), and the same has occurred in London and Paris, where a long period of dramatic shortfall came to an end during the 80s (Atkinson, 2000; Odgen y Hall, 2000).

These processes fall in a highly accepted literature of reurbanization, the return of inhabitants to central city areas, a pattern that should be linked to a new functional specialization of the inner city (Musterd, 2006) and to its new emergence (Cheshire, 2006; Storper and Manville, 2006). In the case of the Spanish cities, it is essential to identify the demographic components that are behind the increase of population. A quick look into the data foresees the importance of the international migration in this comeback. It should be questioned, however, if an increase of the attractiveness of the central areas have simultaneously emerged in the context of the residential mobility and internal migration.
2. Data and methods

The small size of Spanish municipalities is an essential attribute for the development of this paper, since it allows to clearly distinguish the urban core from the rest of the metropolitan area. Central municipalities of each province are understood as the central city, and provinces have been used as a measure of metropolitan areas. However, there are some differences in the extension of these units among the major metropolitan areas in Spain, and they have to be taken under consideration in the analysis of the results.

Five major cities have been included in the study: Barcelona, Bilbao, Madrid, Sevilla and Valencia. Barcelona and Madrid are the biggest metropolitan areas in the country, with a remarkable difference compared to the rest of the major cities (Table 1). Although both provinces occupy a similar area and have analogous population (approximately 6 million people in 8,000 km²), there are significant differences in the area of both central municipalities. It has to be considered that Barcelona’s central municipality is six times smaller than Madrid. Nevertheless, the attributes that literature assigns to the central cities of metropolitan areas are clearly distinguished in both units. Valencia and Sevilla have similar characteristics in terms of area and population of the central municipality and the rest of the province. In both cases the central municipalities occupy an area slightly bigger than Barcelona’s, and far smaller than Madrid. Bilbao is included in the research mainly due to the small area of its central municipality; in consequence, centrality processes may be more powerful in this case.

Table 1: Geographic characteristics of central municipalities and provinces

<table>
<thead>
<tr>
<th>Central municipality</th>
<th>Province (metro area)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Population</td>
</tr>
<tr>
<td>Barcelona</td>
<td>1,619,337</td>
</tr>
<tr>
<td>Madrid</td>
<td>3,273,049</td>
</tr>
<tr>
<td>Sevilla</td>
<td>704,198</td>
</tr>
<tr>
<td>Valencia</td>
<td>809,267</td>
</tr>
<tr>
<td>Bilbao</td>
<td>353,187</td>
</tr>
</tbody>
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Source: National Statistical Institute of Spain. Populations updated at 1-1-2010

The study mainly relies on data from the Spanish Register of Residential Mobility. This is probably one of the world’s most reliable sources of information tracking residential changes. It registers all the residential movements crossing
municipal borders in the entire territory of Spain. Besides the municipalities of origin and destination, the microdata dataset provides the migrant’s demographic information. The wide coverage of this source allows the research to analyze the territorial relationships of the urban cores in the context of reurbanization, its temporal variations, and the demographic structure of individuals participating in residential flows with the central city involved. Using this data source, two main types of movements have been identified. On one side, residential movements that have been generated in the central cities with destination the rest of the province and the rest of Spain. These movements have been grouped in different categories according to the straight line distance. On the other side, flows generated in the rest of the province with destination to the central municipality have been grouped under the same categorization.

3. Geo-demographic dynamics of the Spanish urban areas: concentration, suburbanization and reurbanization

Spanish urban centers have known demographic processes of opposite sign in the last decades. The concentration of population in the urban cores that characterized the Spanish urban and demographic systems since the Industrial Revolution was followed by an intense period of metropolitan dispersion and decrease of population in the urban centers. This phase has been recently interrupted by the demographic recovery of those central areas.

Demographic concentration in urban centers has been the predominant process in the largest Spanish cities until 1970. In the case of the two most populated inner cities, Barcelona and Madrid, a remarkable increase in the number of inhabitants and households is identified in the period 1950-1970 (Figure 1). In Barcelona, the relative growth of the two analyzed variables during the 50s is higher than in the 60s, while in Madrid the highest growth is reached during the 60s. This situation is caused by the smaller surface of Barcelona’s central municipality, which anticipated the saturation of its urban fabric and, as a consequence, the arrival to its population peak. The rest of the large central cities in Spain, significantly smaller than Barcelona and Madrid, experienced their urban explosion during the 60s and the 70s. This is also the period of the formation and extension of the metropolitan areas in Spain, with the growth of its functional areas and the consolidation of the metropolitan networks (Nel-lo, 2004). Thus, the areas located close to the inner cities also experienced an intense increase of population and households. The demographic and urban growth of this period is mainly
explained by the existence of intra and inter-regional migrations, associated to the labor market and the transfer of active population from the primary sector to the industry, construction and services (Nel·lo, 2004; Terán, 1999).

Figure 1: Total population and number of households in the provinces of Barcelona, Madrid, Sevilla, Valencia and Vizcaya, by distance to the central municipality, 1950-2001
Clear evidences of urban maturity and saturation are identified in Barcelona and Madrid during the 70s, when the central cities experienced a very low increase of population. Moreover, this weak increase was exclusively the consequence of a high natural growth that compensated the negative net migration that urban cores began to register. Inter-regional migratory flows stopped, and the demographic scattering, the urban dispersion and the expansion of the functional areas emerged as the main processes occurring in the urban territory (Recaño, 2004). Residential mobility became the key element to explain the demographic and migratory dynamics of Spanish metropolitan areas (Módenes, 1998). Adults and young adults (and their families) looking for a new residence in the suburban rings is the synthetic profile of many individuals participating in these processes. The chronology of the occurrence of these processes in the Spanish cities is not the same, since the cities that started earlier processes of population concentration are the first ones registering demographic losses.

In order to explain the negative demographic growth of central areas during the last decades of the 20th century, the following elements should be taken into account: i) pure demographic elements, with the arrival to the age of leaving home of the boomer generations, born between 1960 and 1975, that have significantly increased the housing demand in the urban areas, ii) the revalorization of the suburban spaces, either by the relocalization of the economic activity, the expansion of the transportation infrastructure, or by the new residential patterns, which give a high value to the characteristics of the dwelling and its environment, and iii) the housing market itself, with cheaper prices in the farther rings, and the evolution on people’s willingness to face longer commutes (López Gay, 2008). In all our studied cases, the relative growth of the population and the number of households in the metropolitan rings between 1981
and 2001 have always been higher than in the central city. In the cases of Barcelona and Madrid, the metropolitan extension to the second ring is clearly stated after 1981.

The evolution of the number of households and their size is an essential aspect to understand the process of urban dispersion from a demographic approach. The decrease of the population registered after 1981 in the central cities has never gone together with a decrease of the total number of households. Thus, the inability of central areas to increase the housing supply at the same speed that the decrease in the household size generated a new housing demand should be taken into account to understand the Spanish suburbanization processes. The arrival at the age of leaving home of the boomers living in the urban cores, with the subsequent creation of new households that did not find balance in the disappearance of households in the top of the pyramid, has played a major role in this process.

The total population of the central municipalities of Barcelona and Madrid reached the lowest levels in the late 90s. In the case of Barcelona, the inner city lost more than 250,000 inhabitants in 20 years and went under the 1.5 million. In Madrid, the decrease was similar in absolute numbers, and the total population went under the 2.9 million at the end of the 20th century. Valencia’s central municipality also knew a period of population decrease during the 90s, and Sevilla interrupted its demographic growth even having a large natural balance. The small municipality of Bilbao reached its urban and demographic saturation during the 70s; the total population has continually decreased since that moment, although a new period of population stabilization has been recently consolidated.

The largest increase of population during the last decade has been registered in Barcelona, Madrid and Valencia (Figure 2). The update of the Spanish Register of Population shows that the total population of Barcelona has been increased in almost 150,000 persons. Madrid and Valencia have reached a new maximum value. The largest extension of those central municipalities compared to Barcelona makes this situation possible, because a substantial number of new housing units has been recently added to their urban fabric. Sevilla and Bilbao are not experiencing the same increase of population; their overalls have remained around the same values during the last decade.
4. Demographic components of the population growth in central cities

But what is the demographic element that explains the population growth in the main central municipalities in Spain? After taking apart the components of the demographic growth\(^1\) from 1998 to 2010, there is a clear answer to the question (Figure 3). Four out of the five cities (Barcelona, Bilbao, Madrid and Sevilla) wouldn’t have experienced a population growth if it wasn’t for the contribution of the international migration. Only the municipality of Sevilla did not have a significant contribution of the international migration; actually, in this case the high level of the natural increase is the responsible for the fact that the city did not have a substantial loss of population. It should be emphasized the case of Sevilla as the only case in which the natural growth acquires very high positive values. In other cities like Barcelona, Bilbao or Valencia, the natural growth is negative or slightly positive.

This exercise enables to identify another crucial element to understand the demographic systems of the central cities that have been analyzed throughout the last

\(^1\) The factorization of the demographic components have been developed using the basic demographic equation. In this case, and taking into account that the registers from the Vital Statistics and from the Register of Residential Mobility offers a high degree of reliability, the difference between the total growth of the municipality and the addition between the natural increase and the internal net migration has been assigned to the international net migration.
decade: the whole population growth in the central cities hides a negative internal net migration. Although the analyzed cities have gained population in the recent years, they still show a loss of population due to internal migration. All the analyzed cities show a negative internal net migration that is particularly noticeable in the relation with the municipalities of their own metropolitan areas. Thus, the results point at the fact that the pattern of the metropolitan residential dispersion is still going on in the Spanish largest cities.

Figure 3: Demographic components of population growth in central cities. Annual average, 1998-2010


However, in four of the five analyzed cities (Barcelona, Madrid and Sevilla), the negative rates of internal net migration during the last period shows a decrease compared to the values at the beginning of the decade. The annual analysis—which includes a territorial approach—leads to develop these arguments (Figure 4). In general, the migratory balance of the central cities has lost the negative intensity that showed in the mid 2000s. This relation became especially strong in the territorial relation of the central cities with the municipalities of their own province.

Barcelona is one of the cases where the negative net migration has significantly decreased. On the one hand, the absolute number of residential movements generated in the central city with destination to the second metropolitan ring has shown a continuous
decrease since 2003. On the other hand, the number of residential changes moving into the central cities from the first and second metropolitan rings shows a clear raising trend. Consequence of these divergent trends between the two flows, internal net migration has been remarkably reduced. In 2003, the central city of Barcelona lost 25,000 individuals in the migratory relation with the rest of its province. In 2010, the city lost 6,500 individuals in the same migratory relation, one fourth of the 2003 value. The reduction of the negative net migration has been experienced by both Spanish and foreign nationals. This second group of population also showed a important process of metropolitan dispersion during the first half of the decade (Bayona and López Gay, 2011), that have lost intensity in the most recent years. In the last observed year, net migration of foreign nationals has been very close to zero.

In Madrid, it seems clear that there is a moderate reduction of the negative net migration from the year 2006. In this case, and due to the large area of the central municipality, most residential flows takes place in connection with the municipalities located beyond the 15 km distance. The number of departures towards these areas has decreased from more than 55,000 movements per year to 45,000 since 2006, while the number of arrivals from the same municipalities has remained steady. In Valencia, the number of movements leaving the central city to its province has decreased from 22,000 in 2006 to 17,000 in 2010. Reproducing the pattern of the largest cities, an increase has been experienced in the flows moving into the urban core: from 10,000 in 2005 to 14,000 in 2010. In the case of Valencia, the reduction has been specially remarkable in the migratory relation with the closest municipalities. Sevilla also shows a similar pattern: the number of residential movements generated in the urban cores towards their own provinces have significantly decreased from the year 2006, whereas the arrivals from the same areas have experienced a slightly increase. Bilbao is the only city among the studied in this research that does not show the same pattern. In this case, both the arrivals and departures to/from the central city have experienced an increase during the last years, and the net migration seems to remain stable.

The absolute number of movements arriving to the central cities with origin in other Spanish provinces has also experienced an increase during the second half of the decade. As a consequence, the net migratory balance in the relation with the rest of Spain has became positive in all the studied cities. In all cities but Bilbao, trends of both Spanish and foreign nationals have contributed to this new scenario.
Figure 4: Internal net migration of the central municipalities by type of movement, 1998-2010

Source: Register of Internal Migration, 1998-2010
5. Intensity and demographic structure of the migratory flows involving the central cities

Thus, the largest Spanish central cities have been priority destination of the international migratory flows. Observing the results of the previous chapter, we could ask ourselves if, moreover, the attractiveness of the central areas has also increased in the context of the internal migration and the residential mobility. To answer this question, total mobility rates have been calculated by area of destination and origin. The total mobility rate is an accurate indicator to compare the evolution of the intensity of migration during the last years (Figure 5).²

A global lecture of these results states two divergent trends: in most cases, the residential movements originated in the central city with destination to the rest of the provinces have significantly lost intensity in the last years, while the residential movements generated in the rest of the province moving into the central cities, either have increased the intensity or have not decreased.

The case of Barcelona is a good example to illustrate this process. The Total Mobility Rate of the residential movements originated in the central city with destination to the metropolitan municipalities located farther than the 10km ring was 1.30 in 2003. Seven years later, in 2010, the indicator has experienced a 30% reduction. This decrease has specially been registered in the flows moving into the farther metropolitan locations. On the other hand, the residential movements originated in the rest of the province with destination to the central city have experienced a 50% increase in the same period, moving from 1.26 to 1.86. The case of Valencia is similar too: a decrease of the intensity of the movements leaving the central city (mostly since 2006), and, on the contrary, an increase of the intensity in the residential flows moving into the central city from the province. In this case, the TMR has moved from 1.08 in 1998 to 1.97 in 2010.

² Total Mobility Rate (TMR) indicates the number of residential movements a person would experience during his life if the current rates remain stable throughout his life. Although the interpretation could be slightly different, the elaboration of this indicator is identical to the Total Fertility Rate (TFR).
Figure 5: Intensity of the residential mobility originated or with destination to the central municipality by type of movement. Total Mobility Rate (TMR), 1998-2010

Source: Register of Residential Mobility and Register of Population, 1998-2010
The proportion of residential changes staying in the central city has been added to this analysis to evaluate the decrease of the flows moving out of the urban core (Figure 6). Is this a consequence of a decrease in the intensity of the mobility generated in the urban core or has the inner city improved its capacity and attractiveness to retain the residential mobility that is being generated there? To answer this question, registers of residential movements within the central city is needed. This type of movement is not included in the Spanish Register of Internal Migration, because there is no crossing of any municipal border. The availability of this data relies on each city council. Barcelona, Madrid and Valencia publish this information by citizenship, but not Sevilla and Bilbao. Some degree of risk is assumed when two different sources are combined to create this indicator, but there is no evidence that the quality of each type of data has suffered substantial changes during the analyzed period. Thus, strong trends on time should be interpreted as meaningful. This is the case of Barcelona for Spanish and Foreign Nationals. In 2004, almost 40% of the movements generated by Spanish Nationals in the central city crossed the municipal border (only in the context of intra-provincial mobility). In 2010, less than 30% of movements crosses this border. This is also valid for Foreign Nationals, who are more willing to remain in the central city when starting a residential change. Series in Madrid and Valencia are shorter, but an increase of the intra-municipal movements is also stated.

Figure 6: Proportion of residential changes staying in the central municipality (out of all the flows moving within the province) by citizenship, 2000-2010

Patterns in Madrid are not as illustrative as the ones in Barcelona or Valencia. On the one hand, there is a clear decrease of the flows moving to the farther metropolitan rings, but the intensity of the mobility with destination to the nearest municipalities has remained stable in the last years. On the other hand, the intensity of mobility with
destination the central city coming from the metropolitan suburbs is higher during the second half of the decade, but the differences are not as remarkable as in the previous two cases. Finally, Bilbao and Sevilla do not show a decrease on the mobility generated in the central city, although a slight increase of the attractiveness generated by the central areas could be stated.

The shape of the curve resulting of representing the age and sex structure of the residential flows is aligned with the classic curve of internal migration in Spain (Figure 7). In a context of very low mobility compared to the countries of Western and Northern Europe, the peaks of higher intensity are associated with the main changes in the individual and familiar life cycles (Clark and Onaka, 1982; Módenes, 1998). Most of the movements are concentrated around the age of leaving home, a period that is followed by a stage of higher residential stability.

However, some differences could be identified in the curve’s shape of each type of movement by taking close attention. Are the age and sex structure of the individuals participating in the residential flows generated in the inner city identical to the demographic structure of the individuals who are moving into the city center from the suburbs? Are we talking about different profiles that respond to different residential strategies? A first look to the residential mobility curves of the flows generated in the central cities points out the oldest age of the individuals moving into farther areas of the metropolitan area. Thus, in all capitals but Valencia, the age group 30-34 is, among men, the modal age in the movements with destination to the farther municipalities in the metropolitan area. Residential movements from the urban cores to the nearest locations normally show a younger age structure in all the studied cities. There are no significant differences between men and women in this type of residential movement, beyond the earlier age at which women moves.

As it was expected after reviewing the evolution of the Total Mobility Rates, the intensity of the residential movements generated in the metropolitan municipalities with destination to the central cities does not reach the levels of the movements originated in the urban cores. In Barcelona and Madrid, however, the intensity of residential flows generated in the nearest municipalities is remarkable. Generally, the shape of the curve of the residential flows moving into the city center does not show the same concentration in groups associated with the age of leaving home. Thus, it seems clear that the decision of including central spaces in the residential strategies of the metropolitan residents can be taken in a wide range of age groups. The case of males in
Madrid and Valencia is illustrative: residential rates moving from the suburbs to the central city are higher in the age group 40-44 than in the group 20-24. The attractiveness of central spaces seems to go beyond the age, mostly among the men.

Figure 7: Age and sex structure of the residential mobility with the central municipality as origin or destination, 2006-2010

Source: Register of Residential Mobility and Register of Population, 2006-2010
6. Conclusions. The future of the Spanish central cities: towards the inflexion of the sign of the internal net migration?

The arrival and settlement of foreign nationals in the urban centers have played a major role in the population increase of the largest central Spanish municipalities. The demographic growth of these areas should not hide that the net migration is still negative in the relation with their metropolitan areas. However, signs of a recent recovery of the attractiveness exercised by the central areas have been stated in this research. This trend converges with the reurbanization processes experienced in many other mature cities in Europe and North-America.

In most of the Spanish metropolitan areas analyzed in this research, a significant increase of the intensity of the movements with destination the central city has been registered during the second half of the last decade. Likewise, leaving the city movements have experienced a decrease of the intensity in most of the inner cities. For the first time in many years, trends in internal migration in Barcelona and Madrid suggest that the negative balance may have a deadline. However, this new scenario may not occur immediately, at least in the case of Madrid, where the decrease of population due to internal migration is still remarkable.

If that happened, it would mean the end of a period of more than 50 years in which these central cities have lost population in favor of their metropolitan areas. The moment seems favorable to achieve this milestone. Vinuesa (2005) points out the effect of the aging of central city households on the housing supply. Spanish central cities have a singular accumulation of households in the top of the pyramid, which are expected to disappear during the upcoming years. Blanes and Menacho (2007) announced a progressive reduction of the net generation of households caused by the effect of the structure of the population living in Barcelona. According to their projections, at the end of the 2010 decade a larger number of households will disappear because of mortality reasons than households will be created in the city due to the effect of its demographic structure. This would be the first time in the contemporary history of Barcelona under those circumstances. There is no doubt that the arrival of post-boomers generations at the age of leaving home, combined by the disappearance of households at the top of the pyramid is going to reduce the stress of the housing market in central locations and is going to introduce changes in the metropolitan residential dynamics. In addition, results showed in this research suggest that there is a remarkable amount of population that was forced to leave the central city in previous years that may consider
of moving back. The participation of foreign nationals in this process should also be taking into consideration, as well as the effect of the economic crisis on the housing market and on the residential behavior of the population.

References


