

# Has international immigration counteracted suburbanisation? Differences in residential mobility patterns between national and foreign populations within the Barcelona Metropolitan Region (1998-2007)<sup>1</sup>

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**Abstract** - One of the main changes which Spanish large urban areas have experienced in the last decade is the massive arrival of international immigrants. This process has been very intense and concentrated in time, and has modified suburbanisation dynamics. This paper explores the specific case of the city and the metropolitan region of Barcelona (RMB), where the number of foreign nationality residents rose in more than half a million between 1998 and 2007, implying a 14% population growth. This increase puts an end to the previous period (1981-1996), in which population size was stable. However, there are remarkable territorial differences within the metropolitan region: foreign immigrants prefer to settle in specific areas of the RMB and these settlement trends have had an impact on the Spanish population's residential mobility patterns, which in the previous period were characterised by a strong suburbanisation process. How has international immigration modified Spaniard's residential mobility patterns in Barcelona? Is suburbanisation presently still the predominant process? Have national and foreign populations got similar or opposite settlement and mobility patterns? The paper will try to answer these issues by focusing on three dynamics which have been affected by the arrival of foreign immigrants and have had obvious consequences on housing trends: population growth and distribution of both the Spanish and foreign populations within the metropolitan area; the impact of both populations on residential mobility patterns; and the consequences on the age-and-sex population structure and family composition of each urban/suburban concentric rings (which are defined on the basis of the distance from Barcelona).

**Key words** - Foreign nationality population, international immigration, residential mobility, suburbanisation, Barcelona Metropolitan Area.

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## 1. Introduction

The size and composition of the Spanish population, and that of other Mediterranean countries, has deeply changed in the last years of the 20<sup>th</sup> century and the first ones of the 21<sup>st</sup> one due to the arrival of millions of foreign immigrants from diverse countries (Domingo and Gil Alonso, 2007). Spain has therefore past from being one of the EU counties with fewer foreigners (1.6% in 1998, Eurostat data) to one leading this indicator. According to the most recent *Padrón* (local continuous registry), on January the 1<sup>st</sup> 2008 foreign residents living in the country represented an 11.4% of the total population, and the country had received over the last years the biggest immigration flows within Europe (Ribas-Mateos, 2004; Vidal, Gil Alonso and Domingo, 2006). This phenomenon has had important consequences on many demographic parameters, as the Spanish population, which was facing stagnation or even diminution, is now strongly increasing, has been rejuvenated and the male ratio, grown. Moreover, its impact has not been the same throughout the territory. While it has, for example, slowed down certain aging and depopulation processes in rural areas (Bayona and Gil, forthcoming) and old urban centres (Valero, 2008) it has also boosted urbanisation dynamics generated within metropolitan areas (suburbanisation, counter-urbanisation).

This paper intends to analyse the effect of foreign immigration on urban dynamics, particularly in the *Regió Metropolitana de Barcelona* (Metropolitan Region of Barcelona or RMB from now on) between 1998 and 2007. Geographically speaking, the RMB is a densely populated area that holds the city of Barcelona and the surrounding municipalities which are functionally dependant on the capital, particularly from the economic point of view and in terms of the labour market. It is made up of 164 municipalities, has about 1249 square miles (3,236 km<sup>2</sup>) and 4.8 million inhabitants. This paper will analyse three specific metropolitan dynamics which are directly affected by the arrival of foreign immigrants. In the first place, it will study population growth and distribution within the RMB (section 2). Then, it will look at the characteristics of foreigner's residential mobility patterns and their impact on the general trends (section 3). Finally, it will focus on its consequences on the age and sex structures within the territory (section 4).

### Statistical sources

Three statistical data sources, collected and published by the Spanish National Statistical Institute (INE), have been used: stock data on the evolution of Spanish and foreign nationality population with reference to January the 1st of each year, coming from the continuous local register (*Padrón continuo*); statistics on flows determining natural growth (births and deaths) obtained from the natural population movement (*Movimiento Natural de la Población* or MNP); and flow data determining the migratory growth (immigration and emigration), found in the residential change statistics (*Estadística de Variaciones Residenciales* or EVR) collecting municipality residential moves.

The INE's *Padrón continuo* comes out as a result of coordinating and crosschecking municipal registers or *padrones*. These are administrative records where all the people living in a municipality are allowed to be registered. Since 1998, the official population figure on January the 1<sup>st</sup> of each year is obtained by updating it. The padrón also gives numbers on the population's sex and age crossed by their place of residence and nationality. Foreigners register in the padrón independently from their legal situation as, according to Spanish law (*Ley de Bases de Régimen Local*), everyone living in Spain is

obliged to be in their local padrón. Most foreigners, including recent immigrants and irregular ones are in the padrón as this gives them access to free public health and education. With time, the number of foreigners effectively living in Spain got overestimated, as, at the beginning, it was impossible to control the number of people returning to their country of origin or moving to a third one. Therefore, there were many doubts on the validity of foreign population data. From the December 2003 (14/2003) reform of the Foreigners' Act (*Ley de Extranjería*) on, all foreigners from outside the EU and without a permanent residence permit are obliged to re-register in the padrón every two years, or otherwise they are eliminated from it. This is probably the reason why, the number of foreigners registered in the padrón grew at a lower pace between 2006 and 2007. However, there are still doubts on whether EU citizens are over-represented, as their data seem to overestimate their real volume.

The number of births and deaths comes from the *Movimiento Natural de la Población*. It collects births, marriages and deaths that have taken place within the Spanish territory. It is produced by the INE with the birth, marriage and death bulletins it receives from the diverse *Registros Civiles* (Civil Registers) that there are throughout the territory. Our interest is not on foreigner's births and deaths, but on the total population volume, and therefore be able to calculate natural growth. Migratory growth in the RMB can be estimated by comparing the natural growth with the total population one between January the 1<sup>st</sup> of two successive years (obtained with Padrón data), or in other words, by the so called compensatory equation method.

The *Estadística de Variaciones Residenciales* (EVR) collects migratory flows of Spanish and foreign people between Spanish municipalities or between one of these and another country. The INE elaborates it annually by exploiting the information it obtains from the new registrations and deletions from the municipal padrones due to changes in the municipality of residence. Even though the number of movements between Spanish municipalities can be considered as reasonably reliable (Recaño, 2002), the new registrations from foreign locations and deletions due to out-migrations to other countries, are not well registered (Devolder, Gil Alonso, Forte, 2006). Therefore, while the EVR will be used to estimate internal flows between municipalities within the RMB, the compensatory equation will be used to calculate the evolution of external migratory flows between the RMB and other areas.

## **2. Foreign immigration's impact on the RMB's demographic growth**

### **The initial situation (1981-1996): a stagnant population**

The city of Barcelona has based its urban growth on immigration throughout the 20th century, peaking during the 1920's and 1930's and during the 1950's and 1960's. In the 1970's the city reaches it's saturation point and enters a negative migratory dynamic which leads to population loss due to sub-urbanisation, trend which continues up to the mid 1990's. Therefore, in the years preceding the international migratory boom, Barcelona had a decreasing, already low, birth rate together with relatively increasing mortality rates due to population aging. Interurban mobility becomes the main component in the city's demographic dynamics, from the mid 1970's, as the population starts leaving the central city towards other surrounding towns in the urban region. As a result, Barcelona had a net loss of about 250 thousand inhabitants in the 15 years between the 1981 Census and the 1996 Padrón. On its part, the population of the whole RMB did not vary much, loosing 10,000 residents, in the same period. The situation for Catalonia as a whole was quite similar, as it grew in 135,000 people. Therefore, the

weight of the RMB within Catalonia as a whole decreased from a 71.2% in 1981 to a 69.4% in 1996 (Cabr  and M denes, 1997). Barcelona's loss was even higher, going from representing a 28.7% in 1981 to a 24.8% in 1996.

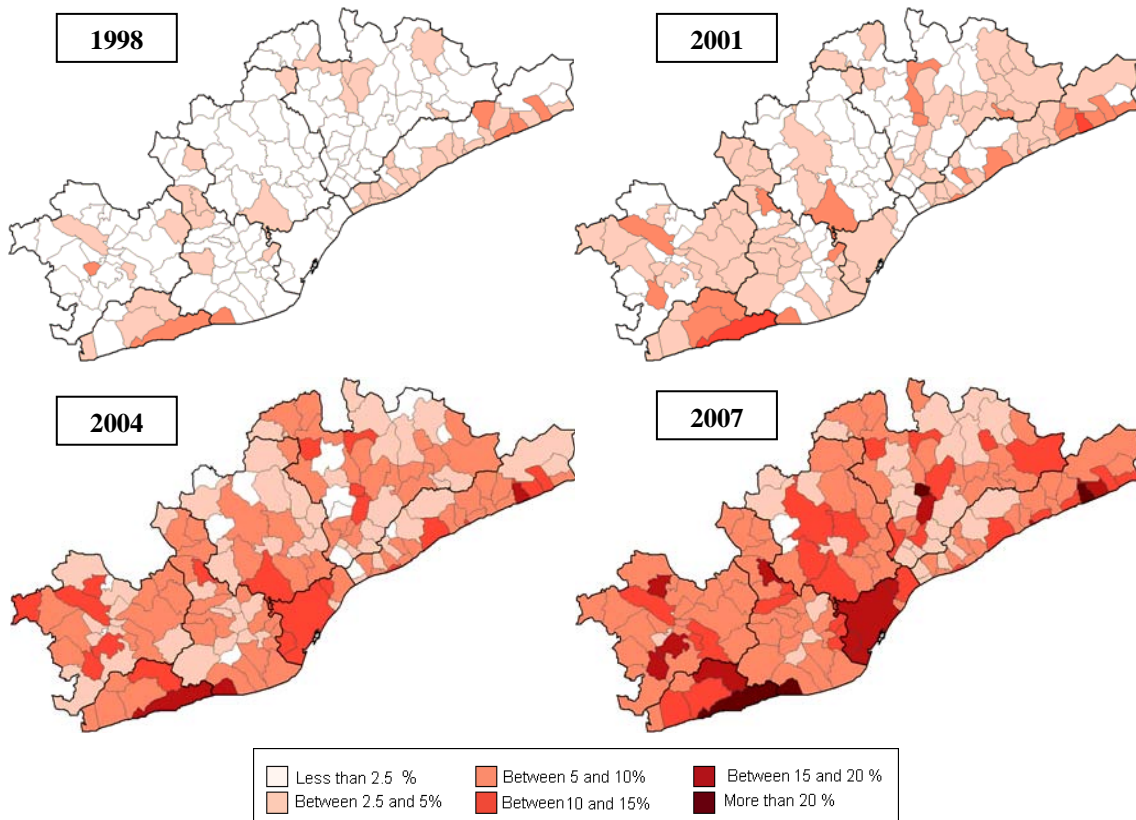
This stagnation was mainly caused by the lack of migratory growth, as the RMB was losing 156,286 residents due to emigration, while it was gaining 145,447 new inhabitants due to natural growth; that is to say a total loss of 10,829 people in this period. In summary, it could be said that the RMB population remained invariable between 1981 and 1996, with about 4.25 million inhabitants, although internal flows within it were strong. Most of these flows had their origin in the central city, Barcelona, and the big towns of the inner metropolitan ring (continuous urban area), while the municipalities situated in the most exterior suburban rings and the rest of Catalonia were the destination points. Residential mobility also started to grow at the beginning of the 1980's (Pujadas, 2005 and 2009; M denes, 1998). Therefore, research on the RMB population was based on its redistributive dynamics up to 2001 (Mendiz bal, 1992; M denes and Pascual, 1998; Miret, 1998). The irruption of international migration in the mid 1990's can be considered a turning point, as Barcelona's population, as well as that of the RMB as a whole, started to increase once again.

### **The arrival of foreign nationality population (1998-2007): volume and demographic characteristics**

Before the explosive foreign population increase in the last years of the 20<sup>th</sup> century and the first ones of the present decade, the number of foreigners living in the RMB was relatively small. In the 1991 census there were only 47,591 foreigners and in the 1996 padr n 66,758, this is to say, they respectively represented a 1.1% and 1.6% of the total population. However, as it was difficult to register in the padr n without a legal residence permit before 1996, and foreigners were probably not very interested in appear in the 1991 Census, the real percentage could be slightly higher. Numbers started to quickly grow from the last years of the 20<sup>th</sup> century. According to the 2001 census, that year there were 214,028 foreigners, representing a 4.9% of the population. In 2005, they were more than half a million, and in January 2007 there were 621,666 foreign inhabitants who represented a 12.8% of the RMB population. According to last padr n of January 2008 they were 690,009, or in other words, a 14% of the population.

As it is shown in figure 1, the impact at the municipal level is even greater and differences between them grow. In 1998, only some coastal municipalities had a significant proportion of foreigners, reaching a maximum of 6.6% and a minimum of 0.1%, while the majority had around 1%. Even though, in 2007, the percentage of foreigners had generally grown, situations at the local level were vary diverse, with a maximum of 23.1% in the coastal touristic municipality of Calella and a minimum of 1.6% in Puigd lber, in the outskirts of the RMB, basically dedicated to agriculture. It should also be noted that the proportion of foreigners in the central city of Barcelona was also increasing, particularly in the years with more immigration, as it was acting as the main foreigner's gateway into Catalonia (Bayona, 2007). This central role has been presently expanded to other contiguous municipalities due to immigrants' residential mobility.

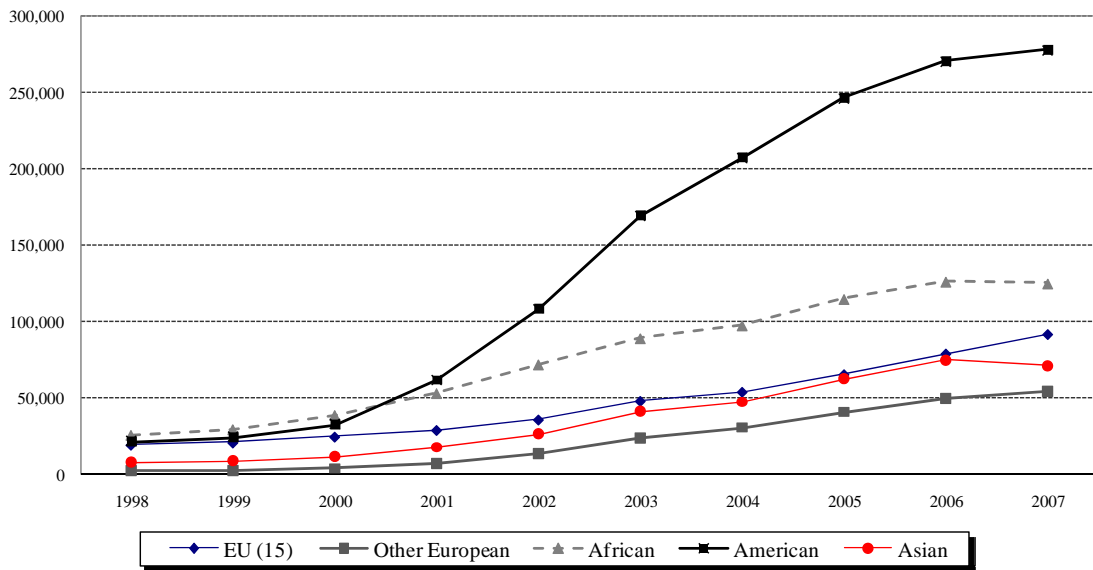
**Figure 1. Proportion of foreigners in the Metropolitan Region of Barcelona's municipalities 1998, 2001, 2004 and 2007**



Source: 1<sup>st</sup> January 1998, 2001, 2004 and 2007 Padrón data provided by Idescat.

There are more Americans (all nationalities mixed) and Asians in this region than in the rest of Catalonia. They respectively represent a 44.7% and an 11.5% of the foreign migrants living in the RMB while they are only a 22.7% and a 4.6% of those in the rest of Catalonia. However, there are relatively less Africans and non EU European citizens (in this paper we will consider the former 15 countries when referring to the EU, as immigrants from the new Member States have different socio-demographic characteristics) in the RMB than in the rest of Catalonia. The first represent a 20.1% in the RMB and a 36.5% in the rest of Catalonia and the second an 8.8% and a 22.2% respectively. These differences are even more extreme if we compare them with those of the city of Barcelona itself where Americans are a 48%, Asians a 15.8% and old EU-15 Europeans a 20.1%. According to Bayona and Domingo (2005) the difference in the numbers of nationals from each of the nationalities between Barcelona, its metropolitan region and the rest of Catalonia would be mainly related with work. For example, in Barcelona they would be people belonging to nationalities who mainly work in the service sector, whereas in the rest of Catalonia they would rather belong to nationalities working in agriculture, like Africans. The different weight of the diverse continental nationality groups in the RMB is also related with their arrival calendar (Figure 2). While Africans, basically Moroccans, were the biggest group at the end of the 20<sup>th</sup> century, that of Americans, basically Latin-Americans and particularly Ecuadorians, Colombians, Argentinean, Peruvians and later Bolivians, started to grow from the year 2000. Their numbers rose very quickly during the following years, and even though they are lately growing at less speed, and they have stabilized at around 280.000 people, they are widely the most numerous group. Finally, Europeans and Asians are the groups which have been increasing more in these last years.

**Figure 2. RMB foreign nationality population evolution by large nationality groups, 1998-2007**



Source: 1<sup>st</sup> January 1998- 2007 Padrón data provided by Idescat.

In summary, whereas male immigration widely predominates outside the metropolitan region because the percentage of African immigrants, mainly men, is higher there (Gil Alonso and Domingo, 2007), there are more Latino Americans, Europeans (mainly EU citizens) and Asian citizens in the RMB than in the rest of Catalonia, and therefore, there is greater equilibrium by sexes among them.

### Impact on the metropolitan population: a strong growth between 1998 and 2007

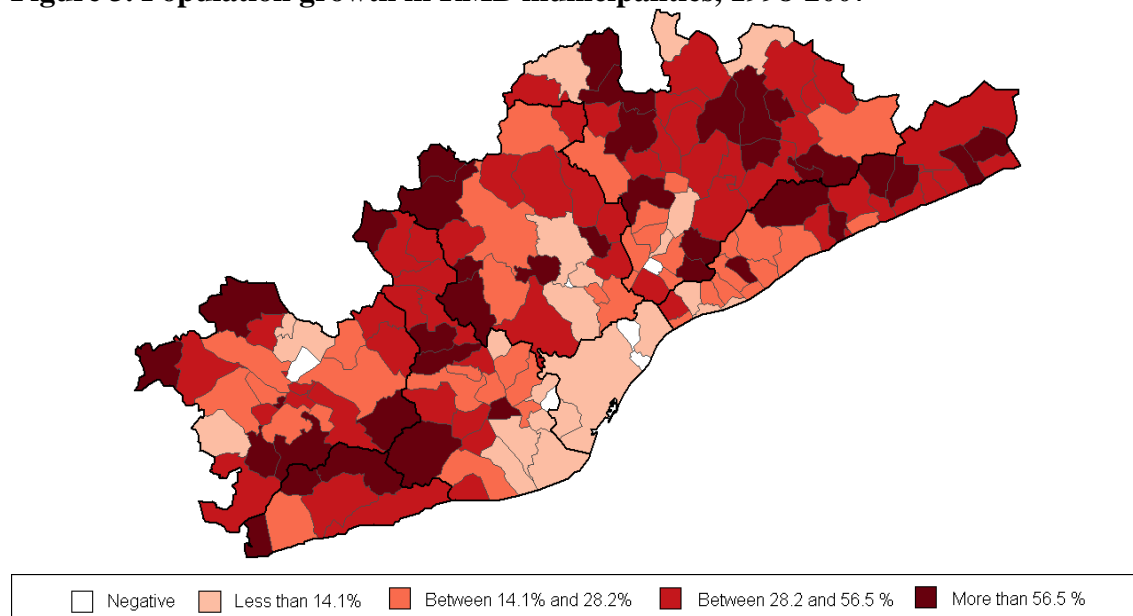
In this last decade, immigration has been once again, as it was during the 1950's and 1960's, the key factor determining the growth of Barcelona's population and that of its *hinterland*. Nearly all municipalities in the RMB have increased their population, though more moderately Barcelona itself and the closest neighbouring municipalities and more strongly those further away (see Figure 3).

Indeed, the central city has recovered about 100,000 residents (+6.4%). In other words, after 20 years losing population, it has once more a positive growth. Putting the present situation into context and relating it with Barcelona's growth during the 20<sup>th</sup> century, the arrival of current foreign migration flows implies the internationalisation of the city's secular demographic dynamics, where immigration, which came first from other parts of Catalonia and later from other Spanish regions, has become the determinant factor in the city's population change (Domingo, Bayona, López, 2004).

The impact of foreign immigration in the metropolitan region's dynamics as a whole is equally important. While its population did not vary much between 1981 and 1996, and maintained itself around 4.25 million inhabitants; from 1996 onwards it has had an important increase of 613,000 people, that is to say a 14.5% population rise. According to the padrón, the population grew in 600,686 new residents during the period studied (Table 1). The main component in this growth is net migration, as the positive natural increase (87,441, resulting from 431,085 births and 343,644 deaths) is added to a higher positive migratory growth of 513,245 new residents. Therefore, net migration is responsible for 85.4% of the increase. Changing perspective and focusing on the

evolution of the nationality of origin between 1998 and 2007, we observe that, without taking account the effect of the acquisition of Spanish citizenship, the number of foreigners has increased in 543,772 people, which means a 90.5% of the growth. The latter number is higher than the former due to a rise in foreign nationality births.

**Figure 3. Population growth in RMB municipalities, 1998-2007**



Source: 1<sup>st</sup> January 1998 and 2007 Padrón data, provided by Idescat.

**Table 1. Relative and absolute change in the population size by nationality and distance to Barcelona, Metropolitan region of Barcelona, 1998-2007**

	TOTAL		SPANIARDS		FOREIGNERS	
	Absolute Change	Relative Change	Absolute Change	Relative Change	Absolute Change	Relative Change
Barcelona	95,774	6.4	-118,118	-8.1	213,892	666.2
Less than 10 km	15,950	1.9	-99,909	-12.0	115,859	1115.6
Between 10 and 20 km	166,337	18.4	81,234	9.1	85,103	725.3
Between 20 and 30 km	164,894	26.3	86,707	14.2	78,187	552.9
Between 30 and 40 km	78,479	44.1	57,328	33.1	21,151	453.9
Between 40 and 50 km	56,217	36.4	33,461	22.2	22,756	665.2
More than 50 km	23,035	45.7	16,211	33.1	6,824	471.6
<b>RMB</b>	<b>600,686</b>	<b>14.1</b>	<b>56,914</b>	<b>1.4</b>	<b>543,772</b>	<b>698.1</b>

Source: 1<sup>st</sup> January 1998 and 2007 Padrón, data provided by Idescat.

Once observed the impact of foreign immigration on Barcelona and the whole RMB population growth, in the following pages we intend to explore their role on the underlying mobility dynamics in greater detail as well as the differences in the settlement patterns of both the Spanish and foreign populations.



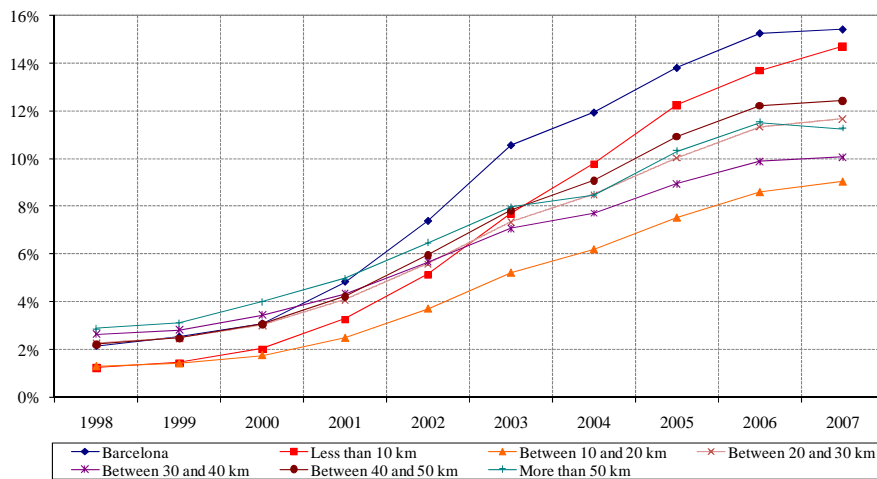
### 3. The impact of migration on the settlement and mobility patterns in the Metropolitan Region of Barcelona

#### Variations in the territorial distribution: distance to Barcelona

Having another close look on the absolute and relative change of the Spanish population according to the distance to Barcelona (considering the distance between the two city centres) in table 1 it can be stated that the central city and its nearest municipalities have lost autochthonous population and that municipalities further away are winning it. In other words, Barcelona lost an 8% of its Spanish population between 1998 and 2007, and the municipalities nearest to it (less than 10km from it) a 12% of it, in the same period. Between both, they lost 218,027 Spanish residents, in nine years. At the same time, the rest of the RMB municipalities won 274,941 new Spanish nationality residents. Moreover, even if the absolute increase in the number of foreigners living in the municipalities situated at more than 20 km away from the central city is relatively large, it is smaller than the increase of Spanish people living there. Finally, the around 40% population rise in municipalities situated at more than 30km from the central city was mainly due to a growth in Spanish population (+107.000 compared to +50.731 foreign citizens).

Foreign population increased everywhere, but particularly both in the capital city, which had the highest growth in absolute terms, with nearly 214.000 new foreign residents, and in municipalities less than 10 km away from it, which have multiplied their foreign population by 12 since 1998. Therefore, they had the greatest relative increase, followed by those situated between 10 km and 20 km from the capital. Even though foreigners moved less to the more distant municipalities (more than 20 km) they still had a significant growth.

**Figure 4. Evolution of the proportion of foreigners in the RMB, according to distance to Barcelona, 1998-2007**



Source: 1<sup>st</sup> January 1998- 2007 Padrón data provided by Idescat.

In summary, the RMB internal population distribution between 1998 and 2007 continued with the previous de-concentration and sub-urbanisation trends. Barcelona and the nearest municipalities –those situated in the first metropolitan ring (less than 10 km) lost relative weight while those furthest away, gained it. However, there are great differences by nationality. Indeed, this de-concentration trend can be particularly observed among the Spanish nationality population, while foreigners followed their own



or even the opposite trend, with a higher growth in the central city and in the closest municipalities to it. Therefore, to a certain extent, it can be stated that the arrival of foreigners to the RMB attenuated and disguised the central city de-concentration process (López, 2008), as Barcelona even recovered population.

As a result of these opposite settlement trends between the autochthonous and foreign populations, the highest proportions of foreigners with respect to the total population, are found in Barcelona and municipalities situated at less than 10km from it. Funnily enough these were the municipalities with less foreign population before 1998 (figure 4), but the departure of 100.000 Spaniards and the net arrival of 115.000 foreigners has reversed the situation. This can be explained by the primary role of Barcelona, and the neighbouring municipalities to a certain extent, as the migrants' main gateway to the RMB and to Catalonia in general. This would be particularly the case for Ecuadorians, Chinese or Pakistani migrants which have especially high concentrations in this city. Therefore, the weight of foreigners living in Barcelona and the municipalities nearest to it has passed from being a 54.6% in 1998 to a 59.9% in 2007. Migratory growth in the inner metropolitan ring has been fuelled by its geographical proximity to Barcelona and the fact that it shares the housing market with the central city within a continuous urban area which surpasses municipal limits. This proportion is presently decreasing, after reaching a maximum of 62.4% in 2003 and this would consequently mean that the foreign population has also started to be under a de-concentration and sub-urbanisation process.

The role of foreign immigration as a catalyst of the RMB's population spatial dynamics can be more clearly observed by analysing mobility flows.

### **Internal and external residential mobility: Barcelona's essential role**

In the first place, the authors intend to relate internal mobility with global RMB mobility. Theoretically, the use of the *Estadística de Variaciones Residenciales* (EVR) should be enough to do it, as it holds all the new registrations and deletions from the padrón due to residential movements, both within Spain and outside it. But given that exit flows to other countries are under-registered in the EVR (Devolder, Gil Alonso and Forte, 2006) it is not possible to use it as a source. Therefore, as it can be seen in table 2, the option of calculating net migration by subtracting the natural growth (births minus deaths, which we do know thanks to the MNP) from the total growth, for all the metropolitan municipalities aggregated by distance to Barcelona, has been taken. The share of the migratory growth originated inside the RMB (residential mobility, which has been obtained from the EVR) and that which has come from outside it, either from the rest of Catalonia, the rest of Spain or other countries, has also been calculated.

Firstly, it should be underlined that the central city has a negative natural growth, losing 24,693 residents for this reason. In the rest of the municipality groups this indicator is always positive and particularly significant in the municipalities situated between 10 km and 20 km from the city centre. However, the behaviour of the migratory component is different. It is always positive except in municipalities situated at less than 10 km from Barcelona, where there is a slight loss of 602 inhabitants. Here, the growth is only basically due to the difference between births and deaths, while in the case of Barcelona we find the opposite case: net migration is responsible for all the growth, and therefore would otherwise lose population. Net migration represents 70% of the growth in municipalities situated between 10 km and 20 km from the central city

and stands for a 93.4% of the growth in municipalities located between 40 km and 50 km from Barcelona.

**Table 2. Migratory growth by nationality and distance to Barcelona, Metropolitan region of Barcelona, 1998-2006**

	Natural Change	Total Growth	Net Migration	Internal Net Migration (RMB)	External Net Migration (to RMB)
Barcelona	-24,693	95,774	120,467	-163,717	284,184
Less than 10 km	16,552	15,950	-602	-62,383	61,781
Between 10 and 20 km	48,905	166,337	117,432	65,735	51,697
Between 20 and 30 km	32,494	164,894	132,400	67,121	65,279
Between 30 and 40 km	8,596	78,479	69,883	49,381	20,502
Between 40 and 50 km	3,723	56,217	52,494	29,230	23,264
More than 50 km	1,865	23,035	21,170	14,633	6,537
	<b>87,442</b>	<b>600,686</b>	<b>513,244</b>	<b>0</b>	<b>513,244</b>

Source: *Idescat data on flows (1998-2006 Movimiento Natural de la Población (MNP), Estadística de Variaciones Residenciales (EVR)) and stocks (1998-2007 Padrón continuo).*

**Table 3. Emigration, immigration and net migration rates within the RMB, 2003-2006**

	TOTAL POPULATION			SPANIARDS			FOREIGNERS		
	Emigration Rates	Immigration Rates	Net Migration Rates	Emigration Rates	Immigration Rates	Net Migration Rates	Emigration Rates	Immigration Rates	Net Migration Rates
Barcelona	26.1	13.6	-12.5	19.3	9.6	-9.8	68.3	38.6	-29.7
Less than 10 km	42.7	36.7	-6.1	32.4	21.0	-11.4	116.8	149.2	32.4
Between 10 and 20 km	32.1	38.2	6.1	27.9	32.9	4.9	83.0	103.5	20.5
Between 20 and 30 km	31.3	41.0	9.7	27.5	37.1	9.6	65.3	75.8	10.5
Between 30 and 40 km	39.7	63.3	23.5	35.6	60.0	24.4	82.1	96.1	14.1
Between 40 and 50 km	33.0	51.8	18.8	28.6	48.2	19.6	68.9	81.4	12.5
More than 50 km	35.7	65.1	29.4	31.9	62.7	30.7	68.5	86.2	17.7
	<b>32.4</b>	<b>32.4</b>	<b>0.0</b>	<b>26.4</b>	<b>26.4</b>	<b>0.0</b>	<b>80.3</b>	<b>80.3</b>	<b>0.0</b>

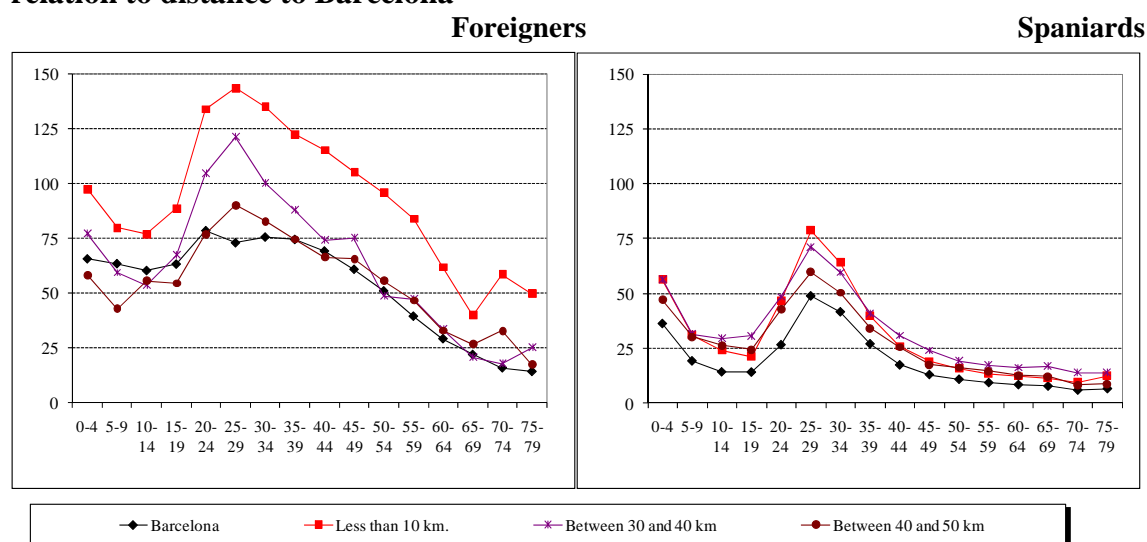
Source: *Elaborated with data from the 2003-2006 Estadística de Variaciones Residenciales, (INE).*

The difference between the total net migration and the RMB internal one, allows us to have an idea of the migratory growth with external areas. In this case, the city of Barcelona draws 55% of the positive net migration of the RMB with other areas towards itself. These numbers confirm the central city's attraction power: Barcelona attracts foreign immigrants and then it distributes them throughout the RMB. Hence, Barcelona has a negative internal net migration. The municipalities situated at less than 10 km from Barcelona also have a negative internal growth which is practically compensated with the arrival of migrants from outside the RMB.

Residential mobility within the RMB is also greatly outstanding. It is particularly fed by out-migration from Barcelona and municipalities nearest to it, which are responsible for more than 50% of the growth of municipalities situated at more than 10 km from the central city. However, we suspect that Spanish and the foreign people have different migratory patterns. Therefore, these two trends are analysed separately in Table 3 for the 2003-2006 period (in which mobility, and particularly that of foreigners, reached its maximum) to try to improve the knowledge of how territorial patterns are being re-configured by immigration.

Results show that municipalities situated at less than 10 km from Barcelona have the highest emigration rates for the whole population at large and especially high for the foreign one. However, the central city itself expels the lowest percentage of its population. That is to say, Barcelona's population loss, due to a negative net migration rate with the rest of the RMB, has more to do with a lack of power of attraction (in relative terms, as we are working with rates, which refer the migrants to the total population) than with the expulsion of population. This general trend is also observed among Spaniards. However, both foreigners' entry and exit rates to Barcelona are three times higher than those of Spaniards. This higher migratory intensity, reflecting a higher mobility of foreigners in the central city and also in the neighbouring municipalities coincides with the initial stages of their insertion in the RMB and a higher residential instability. Two characteristics differentiating foreigners' mobility behaviour from the general trend would be that: 1) they are particularly mobile in the municipalities situated at less than 10 km from Barcelona; 2) but they would have a lower net migration rate than Spanish people in municipalities situated at more than 30 km from the central city.

**Figure 5. Emigration rates (%) by nationality and municipality of residence in relation to distance to Barcelona**



Source: 2003-2006 data from the *Estadística de Variaciones Residenciales (INE)*.

The same results appear in figure 5, where Spanish people and foreigners emigration rates by age are compared. Foreigners move more at all ages. This can be to a certain extent explained by the fact that these flows are relatively new and residential mobility would be linked to the first stages of the migratory process, in which residential and labour instability is high at all ages. Moreover, the emigration ranking by distance to Barcelona among Spanish people and foreigners is quite similar. Even though there might be certain small differences in the order, the municipalities which have more emigration are always the same, independently from the nationality analysed. On its side, the outstandingly low emigration rates among young people living in the city of Barcelona could have two possible explanations, but the actual cause would probably be a combination of the two. On one hand, Barcelona has a certain international power of attraction for students or qualified workers drawn towards the central city, but who are less ready to move to other municipalities. On the other hand, these same people, mainly from the EU, do not delete themselves from the local register (*padrón*) when they return or move to a third country. Therefore, this young foreign population is

maybe over-represented in Barcelona and subsequently, as the denominator is exaggerated, have lower mobility rates.

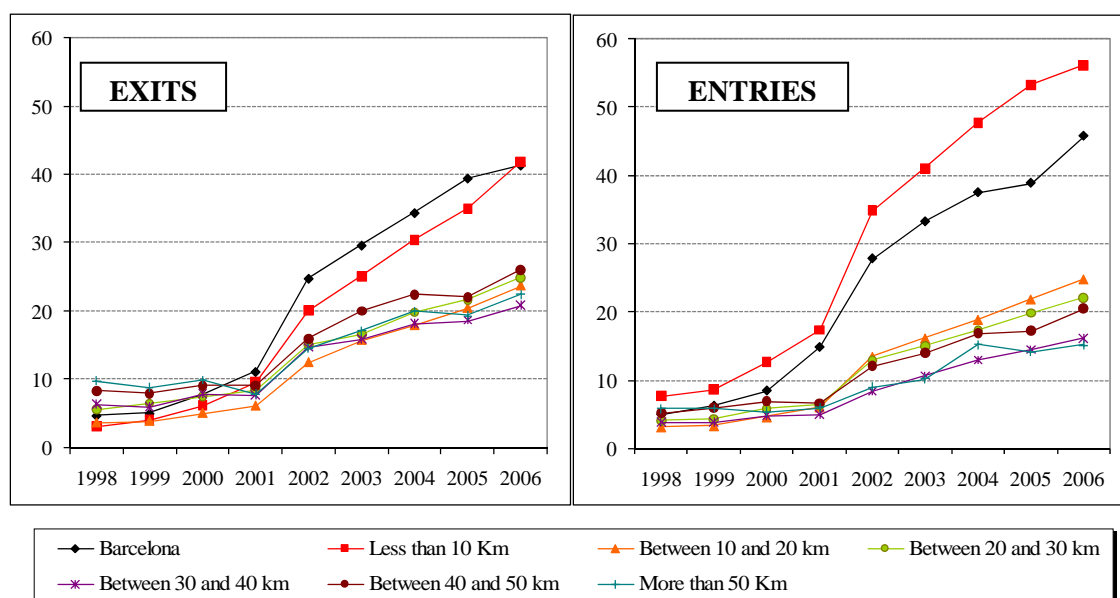
### The increasing share of foreigners in metropolitan residential mobility

Recent studies have analysed the importance of the foreign population in residential mobility, underlining its growing relevance both in mobility between Spanish regions (Recaño, 2002; Pumares, 2005; Recaño and Domingo, 2006) and within the big metropolitan areas (Bayona and López, 2006; Bueno, Casanova and López, 2007).

Focusing once more on our case study, as population growth became stagnant between 1981 and 1996, the main element re-configuring the territory in the RMB became internal population mobility. As it can be seen in the *Estadística de Variaciones Residenciales* (EVR) this trend was reinforced in the following nine year period: Out of the 1,157,041 movements done between RMB municipalities between January the 1st 1998 and January the 1st 2007, 220,201 were carried out by foreigners. Though this represents one fifth of the total mobility, 19% to be more exact, in 1998 they only meant a 4.5% and they do not start to be significant until 2002, when it reached an 18%. Their share has not stopped gradually to grow since then up to the 32.8% they represented in 2006. That is to say, one in three movements of the metropolitan area in that year was carried out by a foreigner. Movements have grown a 60% in this nine year period as they have gone from being 100,115 in 1998 to being 159,811 in 2006. However, while those of Spanish people have grown less (from 95,622 to 107,391), those done by foreigners have been multiplied by 12 growing from 4,493 to 52,420.

Figure 6 clearly shows this trend. In 2006, more than 40% of the exits from Barcelona and nearby municipalities due to residential mobility were carried out by foreigners and, unlike in the rest of the metropolitan territory, they also were responsible for more than 50% of the entries.

**Figure 6. Evolution of the proportion of foreigner’s entries and exits by distance to Barcelona**



Source: 1998-2006 data from the *Estadística de Variaciones Residenciales* (INE).

The weight of foreigners in metropolitan internal migration (residential mobility) is very high at local level. In 2006, the last year analysed, they represented 47% of the exits

from L'Hospitalet de Llobregat, 44.6% of those from Santa Coloma de Gramenet, and 43% of those from Badalona, all municipalities in the inner metropolitan ring (less than 10 km from Barcelona) with the highest number of exits. In the case of the city of Barcelona itself, the proportion reached a 41.3%. The proportions for other municipalities near Barcelona like Esplugues o Cornellà (both a 39%), are also high. Other big cities of the RMB have lower but also significant percentages of foreigner exits. This is the case of Sabadell (28%), Terrassa (23%), Mataró (29%) o Granollers (32%). Figures on the arrival of foreigners show even higher percentages. A 68% of the intra-metropolitan migrants reaching Santa Coloma de Gramenet are foreigners, and so are a 65% of those arriving to L'Hospitalet de Llobregat. The numbers for Barcelona are 45% and around 30% in other big more distant cities like Sabadell, Terrassa or Granollers. In conclusion, residential mobility of foreigners is a very important part of the total metropolitan residential mobility. However, at this point, we should ask ourselves whether they follow the same patterns as Spanish movers or new relocation ones.

Taking only the internal mobility point of view and calculating migratory growth according to distance to the central city (table 4), it can be observed that both Barcelona and cities at less than 10 km from it, have lost population due to intra-metropolitan emigration, as new registrations due to a change of municipality of residence within the RMB do not outnumber deletions. Net migration between Barcelona and the rest of the RMB is negative for both Spanish people and foreigners. However, even though net migration in the inner metropolitan ring is positive for foreigners, it does not counteract the loss of Spaniards in it. In the rest of municipalities (more than 10 km from the central city), net migration is positive both Spanish people and foreigners, , though the Spanish component is higher.

**Table 4. Internal net migration by nationality and distance to Barcelona, RMB, 1998-2006**

	<b>Spanish Nationality</b>	<b>Foreign Nationality</b>	<b>Total Growth</b>
Barcelona	-129,485	-34,232	-163,717
Less than 10 km	-80,106	17,723	-62,383
Between 10 and 20 km	57,041	8,694	65,735
Between 20 and 30 km	62,998	4,123	67,121
Between 30 and 40 km	47,942	1,439	49,381
Between 40 and 50 km	27,621	1,609	29,230
More than 50 km	13,989	644	14,633

*Source: 1998-2006 data from the Estadística de Variaciones Residenciales (INE).*

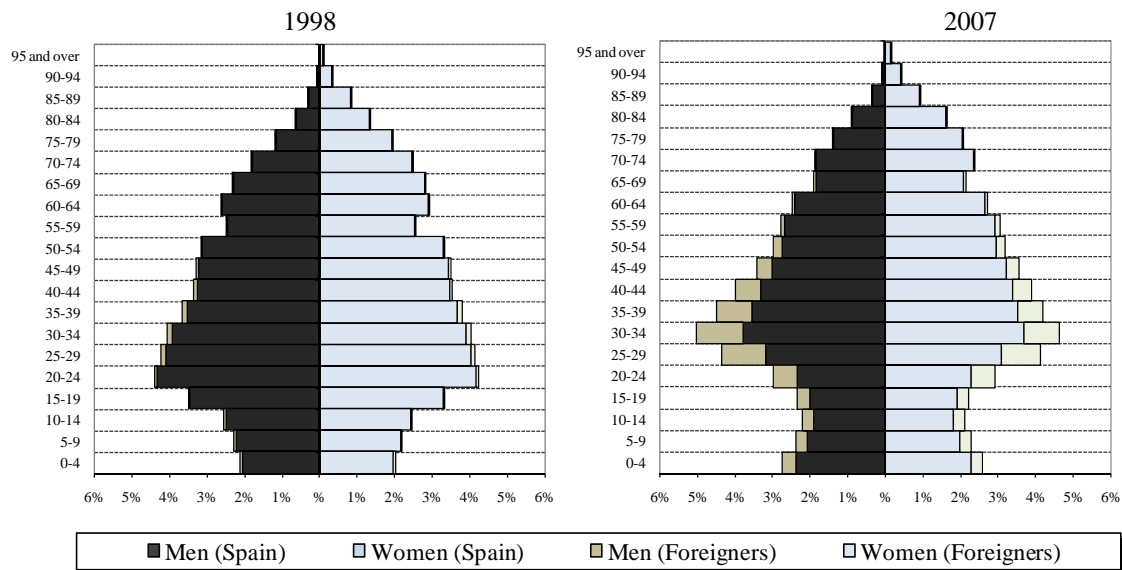
In other words, data confirm that the city of Barcelona is not only the gateway for international migration, but also the main de-concentration and suburbanisation point as it expels both Spanish and foreign people to other point of the metropolitan area. Foreigners mostly go to the nearest municipalities, particularly those situated at less than 10 km from Barcelona, which are in fact those receiving most of the foreigners “expelled” from the central city. It is these foreign migrants, and not so much those coming from outside the RMB, the ones who are partially compensating the large volume of Spanish people leaving these municipalities situated in the inner metropolitan ring, while the latter, together with Spanish people from Barcelona itself, settle in municipalities at more than 10 km from it. These sub-urban municipalities have both a positive intra RMB foreign and particularly Spanish net migration.

#### 4. The impact of international migration on the sex and age structure: international migration as a way of slowing down the aging process

The peculiar age structure of this new population has had strong impacts on the population's age structure as a whole, as most of the population which has reached the RMB in recent times, is very young and is strongly biased by sex, according to the diverse national migration strategies. Therefore, it has slowed down the aging process which had been the dominant trend up to then. Moreover, this trend has even reversed at the local level. This centre-periphery centrifugal residential mobility pattern, which has mainly affected young Spanish people forming a new home, has had, at this level, a particular impact on the age structure of municipalities situated furthest apart from the central city.

Figure 7 shows the sex and age structure of the Spanish and foreign populations living in the RMB in 1998 and in 2007. At first sight it can clearly be seen that there is a growth in the weight of foreigners between the two graphs, particularly between the age of 25 and 34, the central ages of migration. The largest age group gradually passes from being that of age 20-24 in 1998 to that of age 30-34 in 2007. Foreign residents are mostly precisely incorporating to this latter age group, that is to say, that of the Spanish baby boomers born in the first half of the 1970's. At the same time, there is a slight increase of the base of the pyramid, due to a small increase of both Spanish and foreign nationality births.

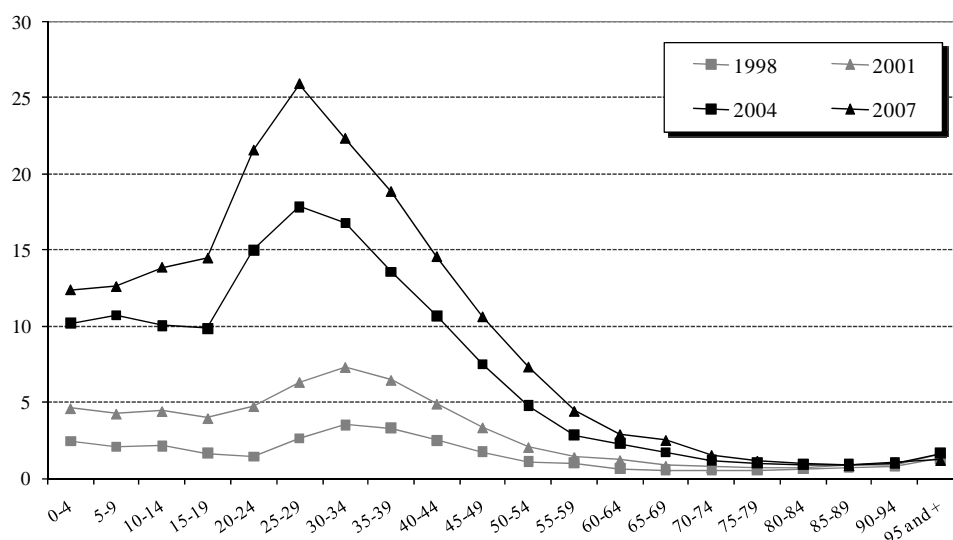
**Figure 7: Sex and age structure of the Spanish and foreign population living in the RMB in 1998 and 2007**



Source: January the 1<sup>st</sup> 1998 and 2007 Padrón data provided by Idescat.

The weight of men among the foreign population is higher (53.6%) than that of women, whereas there is a higher amount of women among the Spanish population (51.5%) due to the differential effect of aging by sex. The share of foreigners among the young and young adult age groups exceeds the 25%. This would be the case of those aged 25-29, where 26.7% of the men and 25.1% of the women are foreigners. However, in 1998 this percentage never reached more than a 4% (see Figure 8). The proportion of the foreign population above 50 living in the RMB is low and that above the age of 65 is only a 1.5%.

**Figure 8: Share of foreigners (%) in the RMB by age group, 1998-2007.**



Source: January the 1st 1998, 2001, 2004 and 2007 Padrón data provided by Idescat.

Even though aging is restrained by the incorporation of foreigners to the young and young adult age ranges, the RMB has a slightly higher mean age in 2007 than in 1998, going from 40.0 in 1998, to 40.7 in 2007. Therefore, the presence of foreigners helps to dilute a higher increase which can be observed when only looking at Spanish people, going from 40.1 in 1998 to 42.2 in 2007. On the contrary, the RMB foreign population, rejuvenates (passing from a mean age of 33.0 in 1998 to one of 31.0 in 2007) due to an the flow of young immigrants increases and the number of births caused by their progressive settlement as well. In summary, these two populations show opposite dynamics, increasing or diminishing their mean age in two years during the considered period.

This slowing down effect of the arrival of foreign immigrants on RMB aging can be illustrated with other examples. The share of the group 65 and over has kept stable over the analysed period: if it represented a 16.2% of the population in 1998, it held 16.3% of it in 2007. In the same period, those under 15 have passed from being a 13.6% to meaning a 14.4% of the RMB population.

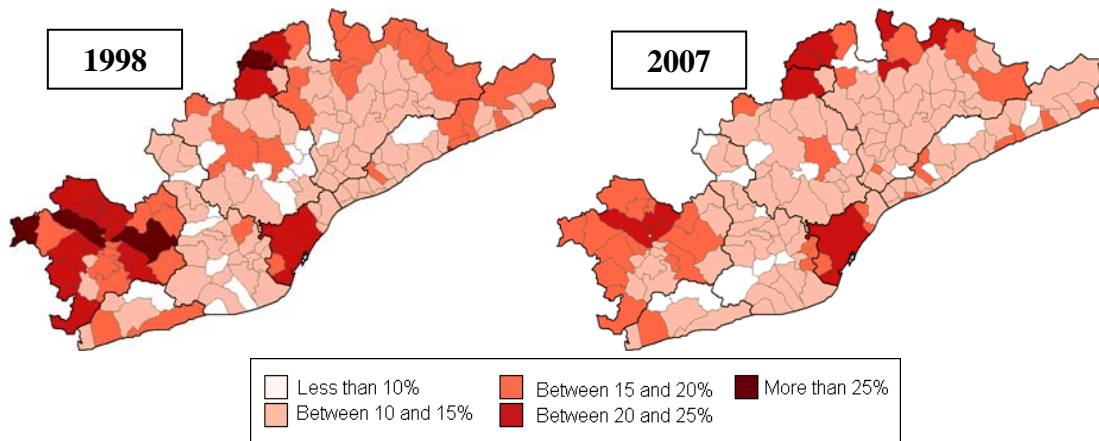
This process of slowing down aging can be also observed in most of the RMB municipalities. The 65 and over age group has been reduced in 94 out of its 164 localities. Moreover, the aging process has been homogenised throughout the territory. As it can be seen in figure 9, in 1998, there were very diverse situations, from this point of view. There were cases in which more than a 25% of the population belonged to this age group, reaching a maximum of 26%, while in others the percentage did not reach a 10%, with a minimum of 7.7%. Nine years later, differences had been reduced, as proportions went from 7.3%, to 23.7% and in most municipalities this group represented between 10 and 15% of the population.

However, this process has not evolved at the same pace at local level. Differences in ageing are mainly due to Spanish people residential mobility, while international migration only plays a minor role. As it can be observed in figure 9, the municipalities that were most affected by ageing in 1998 were those situated in the RMB periphery, where residential mobility was less present. The central city, at the same time, was under wearing a more severe aging process than the municipalities next to it, as so did some big towns like Terrassa or Sabadell. Though the 2007 general morphology is



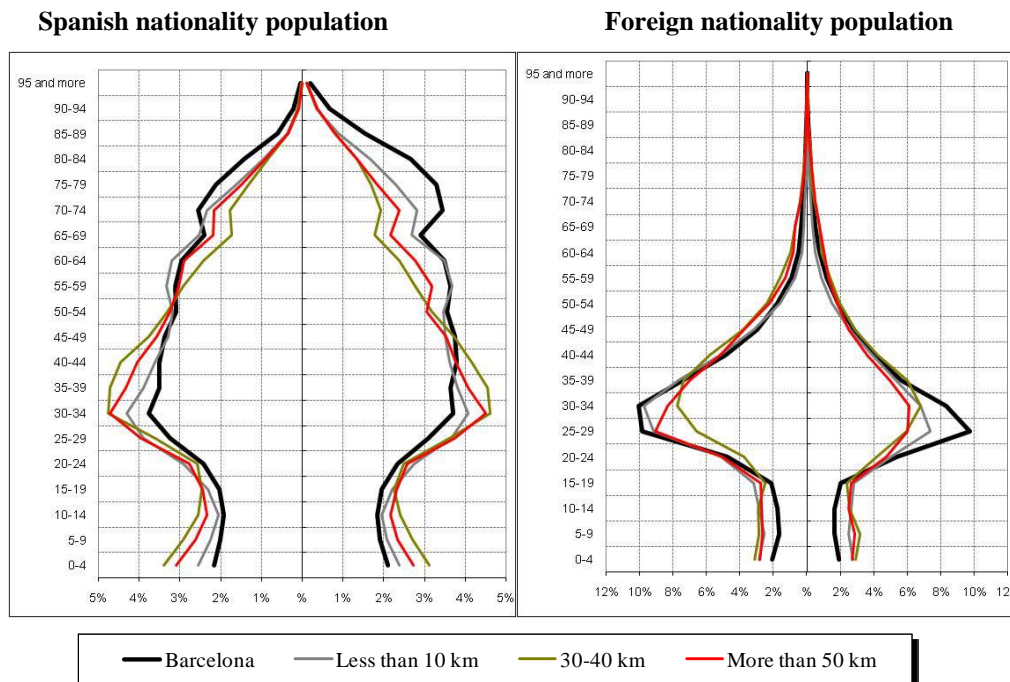
similar, there are some trends which should be underlined. The case of the Alt Penedès municipalities and those furthest away from the urban centre in which the proportion of the eldest group has strongly fallen would be a good example of the relevance of residential mobility. On the other side, municipalities situated at less than 10 km from the central city, have continued their aging process despite receiving a large volume of international migration flows. This has been both due to the Spanish population's ageing process and the exodus of the young Spanish nationally population. The quick increase of foreign population observed in figure 4, has only been able to partially compensate it.

**Figure 9. Proportion of the population over 65 by municipality, Metropolitan region of Barcelona**



Source: January the 1st 1998 and 2007 Padrón data provided by Idescat.

**Figure 10: Sex and age population structure by nationality and distance to Barcelona, 2007**



Source: January the 1st 2007 Padrón data provided by Idescat.

Globally speaking, the municipality with the oldest population structure is the city of Barcelona itself. If the foreign origin population is left aside, municipalities situated at

less than 10 km from it are added (figure 10). Municipalities with a highest proportion of children and young adults, at the other extreme, are those situated between 30 km and 40 km from Barcelona, as these age groups have migrated there in search of better and cheaper housing. However, as the residential mobility rejuvenation effect is weaker over 40 km from the central city (suburbanisation at this distance is still a recent phenomenon), there does not seem to be a continuous correlation between aging and distance to Barcelona.

Foreign population is in a different situation. That of the city of Barcelona shows up from others as the foreign population migrating to it is more concentrated in the central migration ages (25-34 particularly) and there are less children. This is maybe because their migration is more recent and these people have therefore had less time for family regroupings (also figure 10). Barcelona's foreign population age structure reflects again its central city role as an immigrant's entry gate, attracting them while young Spanish adults are "expelled" from it. This would be also the main reason explaining why there are more differences between Barcelona's Spanish and foreigner pyramids, than in other cases.

## **5. Conclusion**

Between 1998 and 2007, the RMB increased its population in a 14%, or in other words, it gained 600 thousand new residents. Most of this rise is due to the arrival of foreign immigrants, which presently represent 12.8% of the population, putting an end to the former stagnation population dynamics, which had lasted since the beginning of the 1980's.

The total population of Barcelona itself, which was decreasing since mid-1970's, has risen again due to international migratory growth. Therefore, this new phenomenon partly disguises the pre-existent residential dynamics –suburbanisation and de-concentration. Suburbanisation has however continued, and has been reinforced in the case of Spanish nationals, reaching even further territories and becoming the main RMB internal population redistribution agent. Therefore, Barcelona and the towns nearest to it have the highest proportion of foreign residents while they lose Spanish nationality population, mainly young people or young-adults who move to suburban municipalities.

Residential mobility has been the means through which the territory has been transformed. Foreigner's mobility trends have particularly and significantly modified the RMB general mobility patterns, fuelling and strengthening that of Spaniards. While the Spanish population tends to de-concentrate and move to sub-urban municipalities which are situated at more than 20 km from the central city, foreigners have tended to move from Barcelona to the neighbouring municipalities (inner metropolitan ring), where dwelling is cheaper and more abundant, both due to demographic aging and the fact that Spanish people are leaving.

Population structure by nationality reflects the above mentioned mobility trends. From this point of view, Barcelona and municipalities situated between 30 km and 40 km from it would represent the extreme cases. While, in the first case, the Spanish population is under an extreme aging process, it has been reversed in the second case due to the arrival of young families from Barcelona and the inner metropolitan ring.

Therefore, even though suburbanisation has been to a certain extent covered by the recent arrival of international migrants, it continues to exist. Moreover, it has gained

force and is presently involving the municipalities which are situated furthest away from the central city and continues to be the main agent modifying the population characteristics in most of the metropolitan municipalities. Spanish families are the main actors of these residential moves towards suburban areas, but their mobility is fuelled by the arrival of foreign immigrants to the RMB's central core. Indeed, the observing internal and external RMB migratory flows closely, reinforces the conclusion that international migrants are mainly attracted to Barcelona itself, which then centrifuges its population throughout its metropolitan area: foreign immigrants towards the first metropolitan ring (less than 10 km from the central city) and Spanish people further away.

Finally, as the construction sector has been one of the main factors explaining both residential mobility trends and the massive entry of foreign immigrants, we should pay attention to the impact of the current economic crisis could have on internal and external RMB migrations. The number of entering immigrants and internal mobility should fall due to poorer economic conditions and less jobs availability. Therefore, foreigners should be the most affected. In summary, this severe crisis might fix foreigners to the territory while seriously reducing Spanish people's mobility.

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