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## Moving from the central city: features, destinations, causes and consequences of city dwellers' flight

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## Moving from the central city: features, destinations, causes and consequences of city dwellers' flight

### Introduction

Cities are historically places of innovation, in economic, social and cultural terms, but at the same time places where the problems correlated to the overcrowding of economic activities, social conflicts and environmental damage are concentrated. Thanks to industrial development, urban economies and diseconomies have made a leap in scale: cities have enlarged their physical presence in the territory, increased their role as drivers of development, but in addition their problematic aspects have also grown.

More recently cities seem to have been increasingly losing a feature which was traditionally thought a 'genetic trait', that is, the spatial concentration of people and activities. Scholars' opinions about the consequences of the new urban form differ greatly, but we can roughly distinguish between an 'optimistic neo-free market' approach and a 'pessimistic neo-reformist' one (Gibelli 1999). In the mainstreaming European literature, the prevailing idea is that the dilution of urban functions over a bigger and bigger territory risks compromising both the static and dynamic efficiency of the city (cf. UE 1999, Camagni et al. 2002, EEA 2006, Gibelli and Salzano 2006, Calafati 2009, Gordon and Richardson 1997, Downs 1999, Brueckner 2000, Glaeser and Kahn 2004, Brueckner and Largey 2006, Bullard 2007).

As for the static approach, the social costs of the new urban form risk exceeding the corresponding benefits. Low-density settlements involve higher costs for the building and management of public infrastructure services (the energy network, water and drainage system, road network, etc.), higher costs in terms of the consumption of scarce natural resources (land consumption, energy consumption and air pollution), higher individual costs in terms of commuting time and the reduction of opportunities for interaction. Higher social urban costs can significantly reduce the city's ability to turn individual income into well-being, because they can prevent the supply of many public services. As for the dynamic approach, spatial proximity is considered the necessary condition for a high level of interaction between individuals and businesses, which in turn is considered the necessary condition for creating innovation. In other words, since there seems to be a strong relationship between the spatial organisation of human activities and economic performance, the changes in the form of the city also risk provoking negative changes in its capability to create income and well-being for the present and future generations.

The phenomena of sprawl, that is the city expansion in the surrounding agricultural areas with low-density pattern is not new; it began to be analysed during the seventies in the USA (RERC 1974,

Altshuler 1977) and it became an important issue in the European context too since the nineties, on the wake of the formulation of the EU territorial policies (UE 1999). The links between residential choice and urban sprawl are numerous: the residential function is usually the first urban function to be decentralized because it demands important portions of urban land, but it does not turn the same profit as the productive function by urban centrality, so becoming a 'residual use, consigned to the lowest level of Alonso's bid-rent curve' (Kivell 1993, 18); furthermore the important improvements made in the provision of transport infrastructures and the spread of private car ownership contributed to enlarge considerably the area of accessible decentralization. The suburbanization of dwellings is therefore an important driver of the urban sprawl.

As for the reasons for residential decentralization, the existing literature distinguishes between push and pull factors (Camagni et al. 2002, EEA 2006); the first group includes all the economic, social and environmental negative characteristics of the inner city which drive people to move, like too expensive houses, unsafe and noisy environment, poor quality of facilities and public spaces, crime and social problems; on the contrary the second group gathers all the positive aspects of suburbs which attract new inhabitants, which are not only the opposite of the inner city problems; the dwellings in the suburbs are not only cheaper thanks to the lower price of agricultural land, but they often meet the need of a more individualist and opulent lifestyle, since they are mainly detached houses with gardens and sometimes they meet also the need for a lifestyle closer to nature since they are located in less urbanised areas. A part of the reasons for urban sprawl lies therefore in the changes happened in the process of residential choice, due to the general increase in income level and to the rediscovery of 'natural life'. Differently from the past, current residential moves aim less at reducing the commuting distance from home to job, while they more and more shoot for a satisfying residential choice, that means a less expensive house, but also a peculiar kind of dwelling, a specific type of tenure, a location with well-defined characteristics in terms of facilities supply or natural environment. In other words, the changes happened in transport modalities and costs and those happened in the preferences and value system made the logic underlying decisions in residential location more and more different from the one included in the Alonso's access/space trade-off model and in its successive versions (Alonso 1964, Muth 1969, Evans 1973, Fujita 1989), according to which rich should live in large detached houses in the suburbs and poor in small and crumbling dwellings in the inner city because they cannot pay for high transport costs. The residential mobility pattern in reality seems to be more complicated than those described by the bid rent model, because households which differ for income level, age, education, composition and cultural value system move for different reasons and along different directions. Empirical researches identified some strong regularities in residential mobility, for example, young adults in the age 20-35 are everywhere the most mobile segment of the population, but they mainly move from the suburbs to the city centre if they are single or divorced, while they move on the opposite direction if they are in couple; differences in tenure compositions, price level and turnover rate of housing stock increase the mobility from the inner city to the suburbs; moves to

the city are more often undertaken for work reasons while moves to the suburbs are undertaken by people in employment but for reasons different from work; high skilled people are most likely to live in the inner city in certain contexts and in the suburbs or in the rural areas in others and so on (cf. Clarck and Dieleman 1996, Dieleman 2001, Bottai and al. 2006, Feijten et al. 2008), but a clear comprehensive theory about the current model of residential location, its drivers and its consequences is still far away, even if some attempts has been made (cf. Phe and Wakely 2000).

Finally, also the consequences of sprawl seem to be an issue that needs further analysis. The dispersal urban growth creates important effects on the three dimensions of the sustainability, which are ecological, social and economic aspects, because the pattern of human settlement is closely related to the consumption of natural resources, to the modes of social interaction and to those of production.

The most investigated matter refers to environmental and social costs: although the scientific debate is often marred by ideological visions (Camagni et al. 2002), many empirical analysis demonstrated the strong correlation existing between a diffused pattern of urban development and the daily mobility by private vehicles and its consequences in terms of pollution and congestion, as well as the correlation between sprawled pattern and land consumption and infrastructure costs (cf. TCRP 1998, OECD 2000, Ewing et al. 2002). The crucial question seems to be the missed internalisation of community costs in the individual ones as regarding the reduction of open space, the congestion of public areas and the public resources needed for further infrastructures (cf. Brueckner 2000).

The problem of the correlation between dispersed housing and social interaction remains a less explored question, probably because of the widespread opinion about the social desirability of the new individualistic residential model. In many scholars' conviction, living in private-owned detached home with garden, placed in the suburbs meets better today's consumers' needs and the current residential lifestyle is nothing but a natural consequence of rising incomes and car ownership diffusion; in other words less dense cities are typical of opulent countries (Chalais and Dubois-Taine 1997, Glaeser and Kahn 2004); furthermore, empirical evidences about negative social effects like segregation by income level and loss of social interaction remain uncertain (cf. Putnam 2000, Brueckner and Largey 2006), as well as the relationship between urban density, agglomeration economy and productivity level and dynamics. Finally, even the critics of sprawl for social reasons have often concentrated their attention more on the problems of the inner cities (e.g. ageing process of population, rising presence of poor and minority ethnic groups) than on the ones of the suburbs (e.g. loss of social interaction, reduced mobility for children and old, high time-consuming mobility) and, above all, they too often assume that individual preferences for single family houses in the suburbs are universally shared, without considering that the residential choice is the result of the adjustment process between households desires (rather than individual ones) and environmental conditions, which are made up of two main components: the attributes of the dwellings stock (availability, age, size, type, tenure, price) and those of the location (architectural quality, availability of public spaces and facilities, environmental quality, potential for social interaction, commuting necessity, travel modes, transport costs in terms of money

and time). In other words, it is worth to note that for some households the choice of the suburbs can represent a second best choice, induced by the characteristics of the context, the family needs and the budget constraints.

In the end, the literature on sprawl consequences is rather poor as for the aspects concerning the changes provoked in terms of functional mix and architectural and landscape features.

For all the above listed reasons, the authors of the present paper think the issue of the causes, the manners and the consequences of residential mobility requires further analysis. In particular we propose to investigate the matter using an existing administrative database and to infer the determinants of the residential mobility crossing the characteristics of households and locations. The main goal of the analysis is to distinguish and quantify the moves from the inner city caused by two different reasons, the search for less expensive houses and the search for more pleasant locations, in the conviction that if the flight from the inner city depends on different causes, its control requires different policies. Furthermore, the paper aims to enlarge the analysis of the consequences of urban sprawl, organizing them in four different fields, which are the most remarkable in the authors' opinion: the land requirements, the social and functional mix, the commuting pattern and modes, the landscape aspects. The analysis is just sketched for the moment, but it seems offer ample scope for new insight especially in the less studied aspects of the phenomena, like the social and functional composition and architectural and landscape features.

Finally, the reflection about the issue of residential mobility from the central city is carried out through the analysis of the case of Florence and its surrounding area because of the access to suitable data, but it can be widened to other contexts. Anyway, if local features can affect the analysed issue, the considered area is characterised by a traditional polycentric structure, which underwent important transformations beginning from the period of the industrial take-off (especially from the sixties onwards), because some centres experienced a strong depopulation process while others benefited from significant demographic and economic growth, which involved a corresponding extension of the urbanised land area. This evolution process often generated a growing overlapping and merging of centres which were originally separate, thus changing the regional urban structure. It is a much discussed question whether the pre-existence of a polycentric fabric has or has not acted as a check on the recent trend towards urban sprawl (Becattini, 2001; Salzano 2002; Bonomi, Abruzzese, 2004), but there is no doubt that polycentric systems have recently been affected by the process of urban scattering too (Camagni, 2003). It is worth to note that in the described context too, as well as in monocentric areas, short-range moves experienced a switch in the direction between the period of the industrial take-off and nowadays: then they arose from the country and went towards the different medium-size cities (instead of towards a single big city), now they spring from the most urbanised area and go towards the suburbs.

## 1. The population's departure from the urban cores in Tuscany

After a period of demographic stability, in the decade 1998-2008 both the inhabitants and families of Tuscany experienced vigorous growth. The inhabitants increased by 215 thousand units (+6%), and families by 250 thousand (+19%). It is important to point out that the numbers of individuals and of families increase for different reasons. The population total is potentially determined by two different components, the natural increase (deriving from the difference between births and deaths) and the migratory increase (deriving from the difference between people arriving and people leaving), but in Tuscany, like in many developed countries, today the number of inhabitants only grows in the presence of a positive migratory balance, due to the arrival of people from abroad. The amount of households can be affected by different phenomena such as population ageing and changes in lifestyle, the growth in the number of separations and divorces and in young people leaving the parental household without getting married. In developed countries the number of families is growing more than the number of inhabitants and the phenomenon is interesting in that the number of families is strictly connected to the demand for houses. This is one of the reasons why developed countries can also be affected by the problem of housing shortages, in spite of their sizeable housing stock (Iommi, 2008).

In the period under consideration both the amount of inhabitants and families and their territorial distribution changed. The most important phenomenon at the local scale is the demographic decrease in the urban cores (which in the case of Tuscany are the ten provincial capitals) to the advantage of the first and even the second urban ring, in the case of the regional capital, Florence. Analysis of the demographic balance by geographic area (balance to and from foreign countries, balance to and from other Italian regions, balance among Tuscan local districts) points to different types of residential behaviour. On the whole, the main cities lose inhabitants, but they have a positive migratory balance in terms of those leaving to and arriving from foreign countries and other Italian regions: they can be considered a sort of 'entrance door' to Tuscany (40% of all the people arriving from abroad and 37% of those arriving from other Italian regions choose capital cities). Meanwhile, small and medium-sized towns generally undergo a significant population increase, attracting new inhabitants from foreign countries, from other Italian regions and from the main Tuscan cities: they are at the same time an 'entrance door' to Tuscany and a 'place of re-location' for local inhabitants. On comparing places of origin and places of destination, it is reasonable to think the different populations move for different reasons: probably local populations mostly move for reasons connected to housing conditions, in search of less expensive houses, a more pleasant natural and social environment or both characteristics together (78% of local people who move choose smaller towns), while people arriving from abroad and a part of those arriving from other Italian regions mostly move for reasons connected to job opportunities, hence an important share head to the main cities. The first and the second kind of residential moves have different potential effects too: in the first case, the result is a growing separation between houses and workplaces and therefore an increase in commuting; while in the

second case, living and working places should be nearer and the new inhabitants could have an important role in revitalising many decentralised areas.

Finally, it is interesting to observe the residential behaviour of a peculiar social subject, young couples looking for their first home (aged 20-39 years), because they represent an important share of residential mobility. The geographical areas which show a significant positive balance for this part of the population are the second urban rings and the areas between the main cities and the marginal countryside. In other words, young couples tend to live immediately out of the city, not too far from the workplace, in a more pleasant environment and a less expensive house.

## 2. Residential mobility in the main regional urban area: Florence and its rings

The residential movement described mainly concerns the most urbanised regional area, that is, Florence and the small towns in its urban rings, which nowadays form a single conurbation. This area shows the typical phenomena described by the city life cycle theory (Van den Berg et alii, 1982), with a phase of dis-urbanisation which is now involving the central city (Florence) and its first ring, to the advantage of the second and sometimes even the third ring.

It is important to notice that the territories around Florence present clear differences. The urban ring can roughly be divided into two parts: the north-western area which is mainly flat, crossed by important lines of communication and densely urbanised; and the south-eastern area which is mainly hilly and less urbanised. These two parts have experienced different demographic trends: the former continues to attract new inhabitants, even Italian inhabitants, while the latter is losing population in the same way as the urban core. In the places where the population has grown this positive result is due to the Italian inhabitants' behaviour, since the foreign component has continued to increase everywhere.

In the decade from 1998-2008 about 100 thousand inhabitants moved from Florence out of an average population of around 370 thousand inhabitants. At the same time, about 80 thousand people moved from a town in the first urban ring, out of an average population of around 230 thousand. The yearly moving-out rate for the central city is 2.3%, while for the first ring it is slightly higher (2.8%), compared to the regional mean of 2.1%.

A first step in the comprehension of the causes behind residential mobility is to compare the individual characteristics of the inhabitants who leave and the inhabitants who stay.

As for Florence, among the people who decided to move away there are relatively more young adults (aged 20-39 years), having a medium-low education level, who are often not Italian. It sounds reasonable to think they are mainly young individuals or couples coming from the medium-low classes and looking for their first home. As for the first ring, the situation is not very different, apart from the educational level: out of the total inhabitants it is relatively more frequent for young adults, for foreigners and for people with a degree to move. Anyway, it is important to say that territorial

mobility generally concerns younger people, so the characteristics of the people leaving Florence and its first ring can be considered as in line with the average regional data.

A second step in comprehending the territorial mobility phenomena is to analyse the places of destination, because their features can indicate the reasons for the choice to move.

Analysis of the destination reveals that proximity is an important issue. About 50% of people leaving Florence settle in one of the towns in the first urban ring, especially in the north-western side. This fact leads us to suppose that the main cause for choosing to move concerns the desire to improve residential conditions rather than working conditions, because the places of destination are near to the urban core, but have the advantage of lower real estate values and, sometimes, a more pleasant living environment. In other words, it sounds reasonable to think that these ex-inhabitants will continue to have important links with the central city, which will continue to be their place of work and, probably, of leisure. It is easy to imagine that the described moves will have an important effect on daily commuting and traffic congestion, as will be analysed below. Finally, it is important to notice how the strong attraction wielded by a part of the urban ring can be explained by the local planning policy: a high housing supply can be advantageous for local communities for several reasons, because it gives important tax revenues to local administrations during the building phase and because the arrival of new inhabitants can represent an opportunity for future development.

So empirical data confirm the features of the residential mobility described in literature: young adult are more likely to move, the most part of moves happen at the metropolitan scale, variations in the housing stock influence the moving direction.

### 3. The causes of residential mobility from central urban areas: who goes where

Generally speaking, residential mobility can be traced back to three main reasons: a) the necessity to move near to the workplace, b) the necessity to move where houses are cheaper, c) the desire to move where living conditions are more pleasant (better quality natural and social environment, a more satisfactory housing supply, thanks to the presence of bigger houses, detached or semi-detached homes, etc.).

As regards the demographic fluxes coming out from the central urban areas, which are the places for work opportunities by definition, it is reasonable to think that the two last reasons prevail. So, to draw a rough outline, it can be assumed that people leave the inner city in order to find either a cheaper or more gratifying house and living environment. The only exception could be the city of Prato, which is near Florence, and has cheaper houses and a labour market of its own based on the manufacturing industry. The territorial distribution of real estate values and the main characteristic of the places of destination can therefore be used as a criterion to separate the fluxes of residential mobility. It is important to bear in mind, in fact, that there is no data available about the reasons for mobility, so it has to be deduced from individual characteristics (age, level of education, kind of



family) and from the characteristics of the place of destination (real estate values, distance from Florence).

A first way to establish the relationship between residential choices, housing prices and distance from Florence is to put together a map representing the variables. The figure (Figure 1) clearly shows how both house prices and new inhabitants coming from the central city decrease as the distance from Florence increases and the 'distance' factor seems to be more important than house prices in determining the residential choices. In fact the coefficients of correlation between the number of new inhabitants and the distance from Florence, and between this and the saving in housing expenditure, are both negative (respectively  $-0.688$  and  $-0.680$ ), while the coefficient of correlation between the distance from Florence and the saving in housing expenditure is positive, as expected ( $0.739$ ).

In order to better investigate the question, it would be useful to gather the destination areas in groups on the basis of their characteristics (applying a cluster analysis), but there is not enough information available about the territories to achieve a satisfactory clustering. For this reason we have chosen an alternative solution: to cluster people coming out of the central city on the basis of their individual characteristics and those of the places of destination.

That operation produced six different groups of territories:

GROUP A) areas which can be considered parts of the central city, as they are near the inner city, they attract many people coming from the urban core and they have real estate values which are similar to those of the central city. On average they are 20 minutes away from Florence, they allow a 17% saving on housing prices and attract 20% of people coming out of Florence;

GROUP B) cheap suburban areas, as they are more distant from the central city, but their lower house prices compensate for the greater distance and explain their demographic attraction. On average they are 30 minutes away from Florence, they allow a 40% saving on housing prices and attract 12% of people coming out of Florence;

GROUP C) upmarket suburban areas, as they are not too distant from the central city, the real estate values are similar to (and sometimes higher than) those of the central city, they attract high-middle class people looking for high quality living. On average they are 20 minutes away from Florence, do not allow savings on housing prices and attract 15% of people coming out of Florence;

GROUP D) far-away country areas, as their main characteristics are the distance from the central city and the pleasantness of the natural environment. The quality of housing stock can vary from pleasant detached country houses to cheap houses in small towns, but real estate values are generally lower compared to those of the central city thanks to the distance factor. On average they are 40 minutes away from Florence, they allow a 30% saving on housing prices and attract 25% of people coming out of Florence;

GROUP E) the nearby manufacturing district (Prato district), which is characterised by a medium distance from Florence, cheaper houses and a higher demand for manufacturing labour. On average

this area is 40 minutes away from Florence, it allows a 35% saving on housing prices and attracts 13% of people coming out of Florence;

GROUP F) is simply a residual cluster which contains all the remaining destinations chosen by people going away from Florence.

Once the territories had been clustered, a multinomial logistic regression model was developed to estimate the effect of some individual characteristics (more precisely, age, nationality, educational level and kind of family) on the odds of settling down in one territorial cluster rather than another (Table 1).

The three territorial clusters which show more evident features are the cheap suburban areas (group B), the upmarket suburban areas (group C) and the far-away country areas (group D).

The odds of moving from Florence to the cheap suburban areas increase as the presence of young and foreign people, with a low educational level, forming couples without children increases. Young couples with a middle-low income looking for their first home belong to that group, their decision to leave the central city is probably strictly connected to the difficulty in finding an affordable house in the city, in other words their residential mobility is enforced by the high central real estate values, so they are to some extent expelled by the urban core. Among them foreigners are numerous. This kind of residential mobility can potentially create a problem of social segregation.

On the contrary, the odds of moving from Florence to the upmarket suburban areas increase as the presence of Italian people, with a high educational level (university degree and higher) and children increases. The people belonging to this mobility group are probably looking for a higher quality natural and built environment, because the real estate values in this part of the urban ring are the same or higher than those of the urban core. It concerns high-medium income families both because the higher level of education can be taken as a proxy for highly skilled and remunerative jobs and because the age of about 40 and the presence of children indicate individuals and families in a mature phase, when they also have a higher amount of savings. The main cause of this kind of mobility is the search for amenities; so the flight of this part of population could be reduced by policies targeted at the upgrading of the environmental quality of the inner city.

Finally, people moving from Florence to far-away country areas are more frequently Italian and older. These 'mature' families are probably driven by the desire for a higher quality living environment in the same way as the families belonging to group C, but have lower incomes (the incidence of high-level education is lower). They are forced to pay for a more satisfactory quality of life in non-economic terms (i.e. through a longer distance from the city centre, which involves a longer commute), rather than in economic terms (real estate values). Thanks to their higher age, some of these people do not probably need to commute every day to reach the workplace.

The remaining areas are less typified.

People moving from Florence to a portion of the urban ring which can be considered a part of the central city have average characteristics: the proximity to the city centre and the mixture of flat, cheap,

urbanised areas and hilly upmarket areas attract both low- and high-income families, that is, people looking for cheaper housing and those looking for a higher quality of living. However, the social mix is one of the traditional components of the city. Being Italian and about thirty years old increases the odds of moving from Florence to these areas.

Finally the odds of moving from Florence to the manufacturing district are slightly higher for single people aged about thirty and families with young children with a low educational level: these people probably move to be nearer to their workplaces.

The influence of the age and educational level factors on the residential choices is summed up in graphs 8 and 9. They clearly show younger people prefer to move to the other parts of city and to the cheap suburban areas, while older people choose the upmarket suburban areas if they are rich and the far-away areas if they are not wealthy enough.

The data analysis clearly points out that people go out of the central city for at least two different reasons: because urban living is too expensive and because the quality of the urban environment is not satisfactory enough, in terms of building features, the presence of facilities, levels of pollution and traffic congestion. This means that the two different segments of ex-inhabitants demand two different kinds of public policies inside central cities: income support programmes in the first case, and upgrading of the urban environment in the second.

#### 4. The consequences of residential mobility

The inhabitants' mobility described can have important consequences from many points of view. The increasing spreading of the suburban rings involves questions such as the intensity of land use, maintaining the social mix, optimising the mix of urban functions, the transport and communication pattern, etc. Some introductory considerations about these items are reported below.

##### *4.1 The use of land*

As for land use intensity and features, in the last decade the territories around Florence have experienced a moderate increase both in the urbanised areas and the number of houses. In absolute terms, the territories which have experienced higher growth are still the main cities (that is, the regional and provincial capitals, like Florence and Prato, and the bigger towns in the first urban ring; for example, in Florence the number of houses, which nowadays count about 176 thousand, grew by 19 thousand - +11% - in the period considered). However, in relative terms the suburban areas and the smaller towns in the second and third urban ring stand out. In spite of this, a large part of the central urban areas in Tuscany show a significantly lower ratio between the number of houses and the number of householders – close to 1 - than the regional average: in these areas the number of houses (and the level of urbanisation, as a consequence) keeps on increasing because there is a strong (and increasing) demand for permanent living, in other words there are many people who continue to ask to live in the

most urbanised part of the region. Where there is either a natural limit to the growth of urbanisation or planning restrictions, the pressure of the demand provokes a widespread increase in real estate values.

The question of the form of urbanisation requires a shift from quantitative to qualitative considerations. The map representation of the urbanised territories during the period of construction shows that Tuscany has followed a relatively virtuous urbanisation process. In fact, the modes of urban expansion which are considered more harmful by the literature (small and large scattered settlements) are generally avoided, while there are many cases of urban expansion resulting from the saturation of the green areas originally situated between two different urban poles and, therefore, from the merging and overlapping of the pre-existent towns (Camagni et al. 2002, Iommi 2009). Even though the worst consequences seem to be avoided, the evolution described is not without its problems, as it tends to create long urbanised ribbons along the main roads, thus making use of a private car inevitable for daily mobility.

The form of urbanisation lastly depends on the types of building (e.g. detached houses, semi-detached houses, small or large blocks of flats), as different amounts of land are required for extensive and intensive types of building, leading to different urban landscapes. If the priority is to restrict the amount of urbanised land, the intensive typologies are certainly preferable, and of these vertical buildings (blocks of flats) are better than horizontal ones (terraced or row houses). In this case, the most recent developments in construction should only be considered partially satisfactory, in that row houses are the type of building which have experienced the most considerable growth in the last decade (+25% against +12% of total buildings). But we could be more optimistic and consider row houses as a good compromise between the most recent family living preferences (people seem to prefer semi-detached houses with a private garden to large blocks of flat) and the necessity to control the use of scarce natural resources on one hand, and between traditional country and city housing models on the other hand. As will be analysed in more detail below, the aesthetic question is more complex, in that so far the new shapes of housing have run into difficulties in blending into both country and traditional urban landscapes.

#### *4.2 The social and functional mix*

The territory's social and functional composition can alternatively be a factor of appreciation or deterioration of living spaces. Generally speaking, maintaining the mix is considered a priority, in that excessive specialisation always has negative consequences, that is, social segregation in the case of the loss of social mix and increasing commuting distances in the case of the loss of functional mix. As for the present work, the research question is whether the residential mobility from central urban areas to the rings can trigger vicious circles both in the areas of departure and in those of arrival. The residential mobility data obviously shows a non-perfect social identity among people going to different destinations. As widely described before, younger and older, richer and poorer choose different living areas. In this part of the work, the analysis concerns the composition and final balance

(in terms of individuals' characteristics) in the places of destination rather than the size and direction of flows going out from the central city. The composition analysis helps to understand the existing structure, while the balance analysis can be useful to point out the future one. The data analysis is carried out using the six types of territory outlined by the previous multinomial logistic regression with the addition of the regional capital, in other words: 1) the central city, 2) other parts of the central city, 3) cheap suburban areas, 4) upmarket suburban areas, 5) far-away areas, 6) the nearby manufacturing district and 7) other destinations. The most interesting topics are the territorial concentration of foreign people, and its consequences in terms of possibilities of social integration; the territorial concentration of low- and high-income families for the same reason and the risk of losing opportunities for social interaction; and the territorial concentration of young and old people for its consequences on the labour market and on daily commuting for work reasons. Finally, the supply of local facilities is important too as an indicator of whether a satisfactory level of functional mix is maintained.

As for the presence of foreign people at the beginning of the decade under analysis, the seven areas had rather different characteristics: the central city had the highest concentration of foreigners in a context where foreign inhabitants were not so numerous. Ten years later, not only had the presence of foreign people significantly increased in the whole region, but its territorial distribution had changed too with the central city, the cheap suburban areas and the nearby manufacturing district showing the same percentage of foreign people out of the total inhabitants. (Table 2). A synthetic measure like the coefficient of variation and Gini Index clearly shows that in the period considered the territorial concentration of foreigners has decreased. As for the presence of foreign people, today the different areas are more similar than ten years ago. By breaking down the variation that took place during the period studied using a shift and share analysis, it is possible to explain the reason for the described change. Compared to an average growth of total inhabitants in the whole region (that is, the sum of the seven quoted areas) of about 6%, the areas which experienced a significantly higher or lower growth rate did so either because of a favourable/unfavourable mix of foreigners and Italians at the beginning of the decade (structural effect) or because of a gain/loss in the local area's power of attraction (local effect). The analysis clearly shows that areas which experienced strong demographic growth (that is, cheap suburban areas, far-away country areas and the nearby manufacturing district) had a negative or null structural effect and a strong positive local effect. This means that these areas grew thanks to their capacity to attract new inhabitants, both foreign and Italian, and not because they had a higher incidence of the most dynamic demographic segment, namely foreigners. Their attractiveness is probably due to housing affordability and job opportunities, but the shift and share analysis is not able to shed light on this.

On the contrary, the central city, which experienced a demographic decrease, shows an important positive structural effect and a strong negative local effect: the structural mix between foreigners and Italians was favourable because the percentage weight of the most dynamic component was high at the

beginning of the decade, but the expulsive local power was strong enough to cancel it out. High housing costs and unpleasant environmental conditions could be the causes of this result, but the shift and share analysis cannot help confirm this. The result of the different territorial demographic dynamics, as set out above, is that today foreigners are more widespread in the territory in comparison to ten years ago, therefore the risk of their residential segregation is lower and the possibilities of their social integration are higher, at least according to the territorial scale used.

As for the percentage incidence of graduates and young adults out of the total population, the dynamics are more or less the same (Tables 3-4). The areas which experienced demographic growth did so thanks to their positive migratory balance or, in other words, thanks to their territorial attractiveness, because their demographic mix had either a null or a negative effect. On the contrary, areas which underwent a demographic decline did so in spite of their favourable social mix and because of their negative migratory balance. The final result is that both graduates and young adults appear less concentrated in the territory in comparison with the situation ten years before. The presence of young adults is the least concentrated phenomenon in the territory (the Gini index in 2008 was 36.0%), the presence of foreign people accounts for a similar percentage (Gini index in 2008 was 43.4%), while the presence of graduates is the most concentrated (Gini index in 2008 was 60.7%). In terms of evolution over time, the presence of foreigners is the phenomenon which has spread in the territory fastest and strongest: the Gini Index lost ten points in ten years. In the other two cases the index only lost one point.

On the whole, the demographic trends during the decade 1998-2008 seem to have improved the territorial distribution of the population, at least for the territorial scale used. The risk of social segregation is lower in 2008 in comparison to 1998, but it is not clear if less concentration of 'urban characteristics' (above all, the incidence of graduates) only has positive effects.

Finally, as for the local facilities supply, for the moment the only information available refers to a poor range of facilities for one year only (Table5). The limited data only shows a larger supply of facilities in the central city in terms of retail trade, but not in terms of social/educational services for children. To use a slogan, one could say today the central city differs from the rest of territory most of all in commercial variety.

#### *4.3 The commuting pattern*

The increasing separation in the urbanised areas between places of residence and places of work results in an increase both in the number of commuters and the length of the commute. The territorial hierarchy tends to change too, because the traditional centripetal role played by the central city is now substituted by a more complex system of intense interchange among the different poles of the larger urbanised area.

As for the aim of the present work, it is important to point out how the reason and the length of the daily commute affect the means of transport used. The use of public transport and means with a low

environmental impact only peaks in correspondence to very short and very long distances, while in the case of commuting between the central city and the urban ring and between the different poles of the urban ring, the private car, often only carrying the driver, is the most usual means of transportation (39% of people commuting inside the inner city walks, rides a bike or goes by bus; 52% of commuters from the urban rings drives a private car; 49% of commuters from longer distances goes by train). This circumstance provokes high costs in terms of congestion, pollution and risks of accidents for people living along the commuting route. In the case of Florence, it is estimated that the cars coming daily from the urban rings double those already moving inside the central city, thus provoking a strong negative effect on urban mobility. It is well known that traffic congestion and the correlated pollution are among the worst effects of the suburban development and among the main causes of the central city's depopulation.

The data on commuting deriving from the last census (2001) and from more recent surveys on inhabitants' habits (2008) shows increasing integration between the central city and some poles of the urban rings, based on strong fluxes from the inner city to the ring and in the opposite direction which do not show significant differences in terms of social characteristics (i.e. education level). Furthermore, the increase in daily mobility, regarding both the number of people moving and the length of the journey, not only concerns commuting for work and study reasons, but also for shopping and leisure activities. Regardless of the reason for commuting, nearly 80% of the movements which happen in the larger urban area (central city and its ring) are based on the private car.

While an important share of the described daily mobility is made out of choice, as a result of the size of the goods and services supply in the considered area, it is clear that a big share can be considered a sort of 'obliged' mobility, deriving from the localisation of houses compared to workplaces and facilities. The main problem is represented by the fact that individual choices concerning the place of residence and daily mobility provoke costs at the expense of different people to those who produce them (i.e. the presence of negative external effects). Indeed, damage to health connected to traffic pollution and the waste of time connected to congestion represent collective costs paid by the local inhabitants in terms of quality of life and development opportunities (Lattarulo, 2003). It follows that public policies concerning spatial planning and mobility regulation need to be closely integrated in order to promote an efficient territorial distribution of houses and to allow the development of public transport for movements towards and within the main urban areas.

#### *4.5 The landscape blend*

As described before, the more recent urban development (since the industrial take-off in the sixties) has largely taken place in the green areas between the traditional urban poles. This phenomenon has been particularly strong in central Tuscany, because of the propelling force of the main city (Florence) on one hand and of the main industrial district (Prato) on the other hand. For these reasons the north-western urban ring of Florence, between the main city and the main industrial

district, can be considered a preferential observation post for analysing the level of aesthetic blend of traditional and present-day urbanisation. But this paragraph can also have a more ambitious aim, which is to understand whether the urbanisation due to 'increasing overlapping among pre-existent urban poles' has a regulating power which allows the worst effects of urban sprawl to be avoided.

The urbanisation process described, which peaked in correspondence with the industrial boom in the '60-'70s, and which therefore preceded the sprawl phenomenon, has been labelled by local development economists as 'urbanised country' (Becattini, 1975). The term indicates a specific model of economic growth, which is based on small-sized enterprises working in the traditional 'made-in-Italy' sectors (the footwear, textile and furniture industries) and localised in small-sized towns, which are characterised by strong social relations and a strong sense of community. In the specific case, the 'urbanised country' has to be seen as countryside which has grown in importance and gained some urban peculiarities (i.e. the presence of the manufacturing industry), rather than the place of delocalisation for urban functions, as happens in the case of sprawl. Probably because it happened when mobility by private car was not yet a mass phenomenon, this light industrialisation or industrialisation in districts partially brought the new industrial workplaces to the existing houses, therefore weakening both the depopulation process in the country (only the most distant parts of the countryside and mountainous areas experienced great depopulation) and concentrated growth in the city (the demographic growth affected both the main cities and the industrial district areas). This is probably the reason why the 'urbanised country' still looks tidier than countryside affected by sprawl, in that the widespread urbanisation of the 'urbanised country' does not mean completely scattered construction but rather construction concentrated in historically small-sized poles near to one another.

Even through the 'urbanised country' is less problematic than sprawl, it is not without its problems. Two aspects are particularly remarkable: it is the upshot of the sum of individual choices instead of planning rules, and the additional buildings are situated on the pre-existing road system rather than creating a new pattern. These peculiarities are the causes of some current problems concerning public areas and mobility (Zetti, 2010). The following considerations are essentially qualitative and only a sketch. As a result, they could be improved, but they are important all the same in that they open a new analytic perspective.

The first item concerns the shapes of settlements during the industrial take-off. In the light industrialisation phase, the places of production were small enough to easily become part of the traditional fabric of the town. In this sense they are very different to the places of the large-scale retail trade and to those set aside for recreational activities since the '90s. The last two kinds of building cause a break in the pre-existing urban pattern, they represent a sort of 'foundation event' which create 'islands' with their own architectonic shape and their own pace, generally remote from that of the traditional town. Going back to the mode of urbanisation during the light industrialisation period, it happened in small consecutive portions, widely left to individual initiative. This involves three kinds of problems: a) individual buildings have a disorderly effect when they are not regulated by an overall



general plan, so even if they have planning permission, as is mainly the case in Tuscany, they are uncoordinated, so that residential and productive places are mixed up, each building has potentially its own architectural style, and even the single building can consist of unregulated consecutive additions; b) when the building of private places is left to individual initiative it follows that public areas are completely residual, so in other words they are places which are free from private buildings rather than places set aside for collective use, such as green areas, car parks, facilities, etc.. For this reason, since they do not have a specific public function, the residual green areas are easily considered suitable for further building, thereby increasing the problem; c) finally, small-sized buildings have the shortcoming of showing their final effect only later, when the sum of single events have reached a sizeable mass; in other words, individual buildings have long been considered innocuous because of their small dimension, without calculating that their sum could have a remarkable effect.

As for the second item, the transport system, it suffers from the same problem as building, that is, the absence of planning. The pre-existing road system has become progressively blocked because of the increase in buildings and the movement of private cars, so new roads are built to be used as ring roads, but further urbanisation soon congests them too and so on. The process described shows how the present communication system is not the fruit of a general plan but rather the attempt to correct some critical points *a posteriori*. For the same reasons, investments in infrastructure have mainly concerned the road system rather than the railway network.

The qualitative analysis sketched above can already give some useful suggestions. Even though the 'urbanised country' may be more virtuous than urban sprawl, it has some critical aspects too, which mainly concern the public rather private places and the urbanised rather country areas. The public areas suffer in terms of functional and qualitative characteristics: they are functionally poor, in most cases they are only areas where people pass through rather than socialise and, consequently, they are qualitatively poor. This could be an important reason for families' residential choices, in particular for the decision to leave the most urbanised areas.

## 5. Conclusions

Urban areas have always been the territorial contexts exposed to the strongest demographic, social, economic, functional and environmental pressures. As they are the living places of an important portion of the population, their 'state of health' can provoke important social consequences. At the same time, as they are the places where the economic activities are concentrated and the points of connection between the international and local networks, their strengths and their weaknesses can have important consequences on future regional development.

In this work attention has been paid in particular to people going out of the main regional city in the decade 1998-2008. The data analysis, which is innovative in terms of how the data on territorial

residential mobility is explained, aims to pin the causes of the choice to move to the people's individual features and to the characteristics of the places of destination.

Similarly to other central urban areas, Florence, the regional capital, lost population a long time ago and this trend has only partially been offset by the arrival of immigrants from abroad, who are often only urban inhabitants for a short time. In the long term, in fact, the foreigners also acquire the same habits as the autochthonous population and prefer suburban residence.

The functional change in the central urban area, in a word less residential functions and more productive ones, brings about important consequences both for real estate values and for the quality of the urban environment, thereby altering its power of attraction. As the data analysis has shown, people leave Florence in search of both less expensive houses and a more satisfactory living environment. Proximity to the central city, which is still the place where the jobs are concentrated, remains an important issue: only a small share of the population going out from Florence settles beyond the second urban ring, where the differential in real estate values is sizeable.

The residential mobility causes consequences both in the places of origin and in those of destination.

As for the latter, the arrival of new inhabitants can have important quantitative and qualitative effects. The demographic growth generally involves an increase in urbanised areas. In Tuscany, the most recent urbanisation has taken the form of the merging and overlapping of the pre-existent urban poles, thus provoking moderate land consumption. Probably the tradition of small towns and the presence of many prestigious natural and built-up areas has acted as a check against the worst forms of territorial dispersal, but the urban merging has some problematic aspects too, especially concerning the matter of daily commuting which is largely dependent on private means of transportation. Besides, urbanisation by progressive additions generally involves a lack of planning of public places, which become residual spaces, thus leading to a fall in the urban quality.

Finally the arrival of new inhabitants involves changes in the population's social and cultural composition in the places of destination. The risk, in this case, is connected to an excessive territorial concentration of homogeneous social groups, which means residential segregation and its negative consequences in terms of social integration and the building of new social capital. The lack of public facilities can make things worse. A first exploration of the issue shows to date the absence in Tuscany of serious problems of social segregation and dormitory towns.

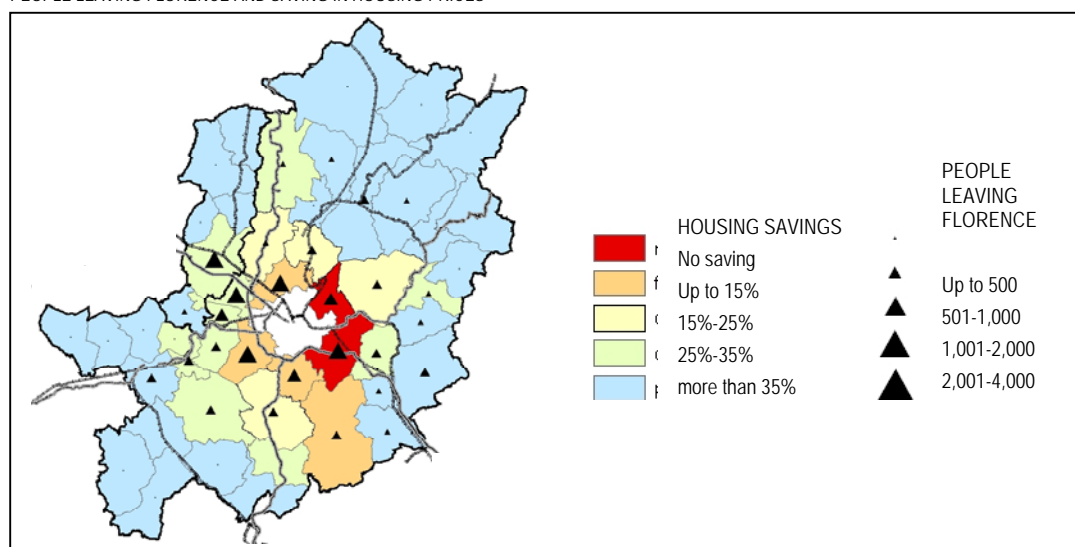
Finally, the analysis described can give some preliminary guidelines for a regional urban policy. The first recommendation concerns the necessity to deal with planning strategy and management of the transportation system together; the second concerns the fact that in order to reduce depopulation in the central city and to control urban sprawl there needs to be action in at least two different areas, that is, increasing housing affordability for low and medium-income households and improving urban quality (e.g. less traffic congestion, less pollution, more green and public areas, more facilities, etc.).

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## Tables and figures

Figure 1  
PEOPLE LEAVING FLORENCE AND SAVING IN HOUSING PRICES



Source: own elaboration of ISTAT and Agenzia del Territorio data

Table 1  
PEOPLE LEAVING FLORENCE BY DESTINATION. ODDS

	PARTS OF CITY	CHEAP SUBURBAN AREAS	UPMARKET SUBURBAN AREAS	FAR-AWAY COUNTRY AREAS	NEARBY MANUFACTURING DISTRICT	OTHER DESTINATIONS
INDIVIDUAL OF REFERENCE						
Italian, aged 30-39 years, with low educational level, forming a couple without children	27.90%	18.10%	15.05%	19.14%	8.73%	11.00%
	Marginal effect					
AGE						
20-29 years old	0.6	4.1	-1.5	-1.7	-0.4	-1.0
40 years old and over	-4.1	-2.8	0.8	4.6	-1.3	2.7
NATIONALITY						
Foreigner	-3.8	12.8	-3.5	-6.1	0.5	0.1
EDUCATIONAL LEVEL						
Graduate	-3.9	-7.1	12.5	1.0	-1.6	-1.0
FAMILY TYPE						
Couples with children	-1.4	-2.7	3.5	-0.7	3.3	-2.0
Single or in other family type	-2.8	-4.8	1.3	1.6	3.0	1.7
	Significance indicators (*not significant)					
AGE						
20-29 years old	0.119	0.300	-0.009*	0.008*	0.052*	-
40 years old and over	-0.380	-0.386	-0.172	-0.005*	-0.381	-
NATIONALITY						
Foreigner	-0.152	0.526	-0.274	-0.389	0.050*	-
EDUCATIONAL LEVEL						
Graduate	-0.049*	-0.397	0.706	0.152	-0.098	-
FAMILY TYPE						
Couples with children	0.149	0.040*	0.412	0.162	0.524	-
Single or in other family type	-0.253	-0.457	-0.063*	-0.065*	0.150	-

Source: own elaboration of ISTAT data

Table 2  
THE EVOLUTION OF FOREIGNERS. 1998-2008

	% of foreign people out of total population		Shift and share analysis (% breakdown of total growth)			
	1998	2008	Total regional trend	Structural effect	Local effect	Total growth
Central city (Florence)	3.4	11.2	5.8%	4.2%	-12.6%	-2.5%
Parts of the central city	1.4	7.4	5.8%	-3.3%	-1.6%	0.8%
Cheap suburban areas	2.0	11.2	5.8%	-1.1%	17.9%	22.7%
Upmarket suburban areas	2.1	7.1	5.8%	-0.4%	-5.8%	-0.4%
Far-away country areas	1.7	8.1	5.8%	-2.2%	9.5%	13.1%
Nearby manufacturing district	2.0	11.8	5.8%	-0.8%	7.1%	12.1%
Other destinations	1.4	9.0	5.8%	-3.2%	6.4%	9.0%
<i>Coefficient of variation (<math>\sigma/\mu</math>)</i>	30.6	19.2	-	-	-	-
<i>Gini Index</i>	53.7	43.4	-	-	-	-

Source: own elaboration of ISTAT data

Table 3  
THE EVOLUTION OF GRADUATES. 1998-2008

	% of graduates out of total population		Shift and share analysis (% breakdown of total growth)			
	1998	2008	Total regional trend	Structural effect	Local effect	Total growth
Central city (Florence)	11.4	21.6	5.8%	4.5%	-12.9%	-2.5%
Parts of the central city	3.7	6.5	5.8%	-2.1%	-2.9%	0.8%
Cheap suburban areas	2.3	4.2	5.8%	-3.3%	20.2%	22.7%
Upmarket suburban areas	6.8	13.3	5.8%	0.5%	-6.8%	-0.4%
Far-away country areas	3.7	6.6	5.8%	-2.1%	9.4%	13.1%
Nearby manufacturing district	3.6	5.8	5.8%	-2.3%	8.6%	12.1%
Other destinations	3.2	5.7	5.8%	-2.5%	5.7%	9.0%
<i>Coefficient of variation (<math>\sigma/\mu</math>)</i>	51.3	55.6	-	-	-	-
<i>Gini Index</i>	61.8	60.7	-	-	-	-

Source: own elaboration of ISTAT data and IRPET estimates

Table 4  
THE EVOLUTION OF YOUNG ADULTS (AGE 20-39 YEARS). 1998 -2008

	% of young adults out of total population		Shift and share analysis (% breakdown of total growth)			
	1998	2008	Total regional trend	Structural effect	Local effect	Total growth
Central city (Florence)	28.0	23.4	5.8%	0.3%	-8.7%	-2.5%
Parts of the central city	30.2	23.3	5.8%	-0.2%	-4.7%	0.8%
Cheap suburban areas	31.8	27.9	5.8%	-0.7%	17.5%	22.7%
Upmarket suburban areas	27.9	21.9	5.8%	0.3%	-6.5%	-0.4%
Far-away country areas	29.2	24.2	5.8%	0.0%	7.2%	13.1%
Nearby manufacturing district	30.3	26.5	5.8%	-0.3%	6.6%	12.1%
Other destinations	29.2	25.0	5.8%	0.0%	3.2%	9.0%
<i>Coefficient of variation (<math>\sigma/\mu</math>)</i>	4.6	7.7	-	-	-	-
<i>Gini Index</i>	36.9	36.0	-	-	-	-

Source: own elaboration of ISTAT data

Table 5  
THE LOCAL FACILITIES SUPPLY. 2007

	Retail trade workers per 100 inhabitants	Babies aged 0-2 years	Children aged 3-5 years
		attending nursery school per 100 aged 0-2 years	attending nursery school per 100 aged 3-5 years
Central city (Florence)	6.2	13.9	78.0
Parts of the central city	2.7	15.0	96.3
Cheap suburban areas	2.3	15.0	70.4
Upmarket suburban areas	1.9	12.0	78.9
Far-away country areas	2.6	10.2	81.3
Nearby manufacturing district	3.9	16.5	31.9
Other destinations	2.6	11.9	78.3
<i>Coefficient of variation (<math>\sigma/\mu</math>)</i>	39.7%	15.0%	27.1%

Source: own elaboration of ISTAT and Tuscany Region data