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# **A decade of property price and social change in Ile-de-France western suburbs (1996-2006). - working paper -**

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## **RÉSUMÉ**

Ce papier propose une analyse des trajectoires acquéreurs-vendeurs dans le périurbain des Yvelines, en Ile-de-France, entre 1996 et 2006. Les données désagrégées (base BIEN, Chambre des Notaires) ont été analysées et recomposées au niveau municipal, de manière à produire d'une part une typologie de l'évolution des valeurs immobilières, et d'autre part une typologie des trajectoires socio-professionnelles des couples acquéreurs-vendeurs occupant les propriétés localisées dans des lotissements ou ensembles groupés. Cet article développe les aspects méthodologiques (combinaisons de lissages et d'analyses multivariées), et livre les résultats d'une typologie des trajectoires des contextes acquéreurs-vendeurs locaux (stabilité locale, gentrification périurbaine, reproduction locale des élites, refuge des ouvriers et employés.). Cette contribution vise à introduire un premier niveau d'analyse des contextes locaux du changement social, notamment quand il s'agit de planification de lotissements et de production résidentielle périurbaine.

## **ABSTRACT**

This working paper aims at analyzing the sellers-buyers trajectories of Paris' western suburbs (Yvelines), between 1996 and 2006. Disaggregated data from the Paris Chamber of Notaries (1996-2006) have been analyzed in a GIS at the municipal level, in order to produce a typology of value change and of trajectories of social and occupational status of sellers and buyers pairs in properties located in single family housing located in subdivisions and planned developments. The paper focuses on methodological issues (using smoothing and multivariate analysis) and results, the typology of sellers-buyers pairs trajectories clearly discriminating local contexts (local stability, gentrifying suburbs, local reproductions of the "elites", refuge for the working class...). This paper introduces an analysis of the local contexts of change, that will be useful in order to get a better understanding of local land-use policy making, especially in terms of residential planning and production of suburban residential subdivisions.

## **MOTS CLÉS**

Production résidentielle, pavillonnaire, périurbain, valeurs immobilières, trajectoires socio-professionnelles, residential production, suburbs, property values, social and occupational trajectories.

## **INTRODUCTION**

This paper focuses on ongoing socio-economic changes in the suburban areas of Paris metropolitan region, under the pressure of new developments and subdivisions on the urban edge, with a special focus on single family housing planned developments and subdivisions. Such an inquiry is often considered under three dominant assumptions. First, private firms are preeminent contributors in the production of suburban areas (land

developers, managers of commercial spaces, individual housing developers and planned-unit developments builders) (Topalov, 1974, Pollard, 2009). The impact of operators of the finance industry has recently been preeminent in the dynamics of urban renewal and urban sprawl (Renard, 2008, Renard, 2003). Second, local public authorities also play key roles, imposing regulations and control on land-use, restricting the land availability, allowing means of social selection of the residents, and regulating urban sprawl or slow-growth policies ; all this being determinant in terms of control of property values and social change (by the means of social selection of residents) (Donzelot and Jaillet, 2000, Jaillet, 1999, Comby, 2010, Charmes, 2009). Third, publicly-owned and managed areas tend to disappear, yielding a private urbanism in which planned developments are key features : they are building morphologies of privatism through their morphology (Charmes, 2010) with strong and implicit references to Newman's principles (Newman, 1996, Newman et al., 1974) ; they are privately controlled common interest developments, as homeowners associations (HOAs) are the dominant legal form in a majority of planned developments, not only in the US but also in France where different types of HOAs are commonly used (Webster and Glasze, 2006, Glasze, 2005).

As a consequence, these three considerations all assume that, incidentally, suburban morphology of planned subdivisions of individual detached housing have an impact on socio-economic stratification of population. On the one hand, the development of new subdivisions would either reproduce the existing social patterns, or attract population of different socio-economic background in suburban, neo-urban and exurban communities. On the other hand, the obsolescence of older subdivisions has often been considered as detrimental to the local equilibrium of socio-occupational stability, attracting lower-income profiles in former "upscale" neighborhoods. Data from the Paris Chamber of Notaries (1996-2006) have been analyzed in a GIS at the municipal level, in order to produce a typology of value change (using smoothing and multivariate analysis) and of trajectories of social and occupational status of sellers and buyers pairs in properties located in subdivisions and planned developments.

## **1. INCREASED PROPERTY VALUES, AND INCREASED INEQUALITIES**

### **Property data geocoded at the street address level.**

The main data source used to analyze single family houses in subdivisions (detached or semi-detached) has been extracted from a database of real-estate transactions in Ile-de-France provided by the Paris Chamber of Notaries (BIEN database). The extraction contains 7936 transactions between 1996 and 2006 in the Yvelines department, along with many variables describing the price, the characteristics of the sold property, and some information on sellers and buyers (age, description of his place of residence, social and occupational status). It is of importance to mention that some information in this database are based on voluntary feedback from the local notaries. If the quality of variables fluctuates, but it has considerably improved over the 10 years covered by our sample: as a consequence, the number of transaction per year has expanded from 463 in 1996 to 913 in 2006, and describes on the one hand the improving quality of the database and on the other hand the raw increase in transactions in the area and the dynamism of this suburban market. In addition, the geocoding of the original database has been found to be imprecise; new geocoding with accurate location information down to street address precision has been performed for the aim of this research (Huet, 2009).

### A typology of property price growth.

In order to produce an analysis of price trajectories, it has been necessary to produce a consistent image of property price growth between 1996 and 2006: we focus on the full property price, as property acreage and built surfaces introduce too much heterogeneity in the dataset to accurately compute property prices. Smoothing Inverse Distance Weighting has been used on a grid to produce an image of the unequal distribution of property value growth. These techniques are designed to convert discrete spatial information (property prices) into tendency surface, thus allowing to extrapolate the potential price for each cell on a grid. As in Figure 1, the waves of valorization throughout the decade thus appear to be structured by the core-peripheral price gradient. Another step of the analysis therefore consists in summarizing the local trends at the municipal level, in order to generalize the price information at the proper geographical level for subsequent analysis. This has been realized by the means of a cluster analysis of average property values at the municipal level for each year (average weighted mean of cells contained or intersected by municipal boundaries). The resulting typology (Figure 2 and Figure 3) summarizes the most significant trends of property values by municipalities: very slow growth (indeed relative decline), slow growth, fast growth and very fast growth of values. This typology will be used to analyze the local context of property value increase in which the different kinds of subdivisions are located in.

Figure 5 . The unequal distribution of property values growth

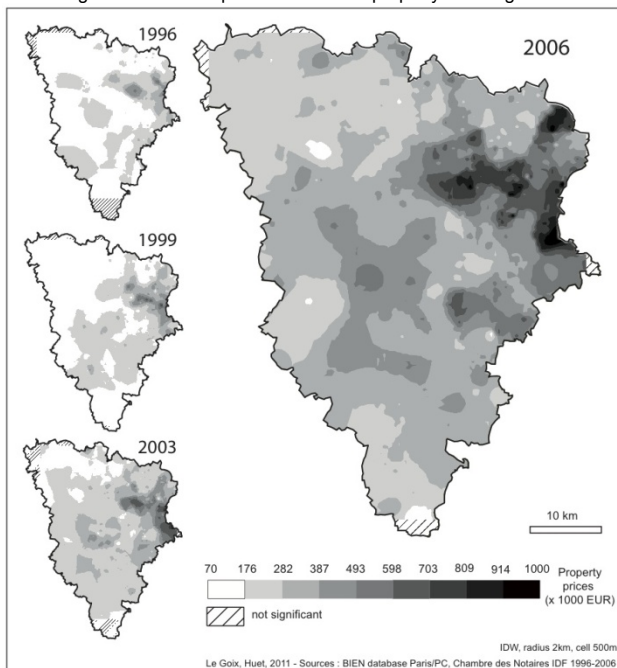


Figure 6. Cluster analysis of price trajectories 1996-2006

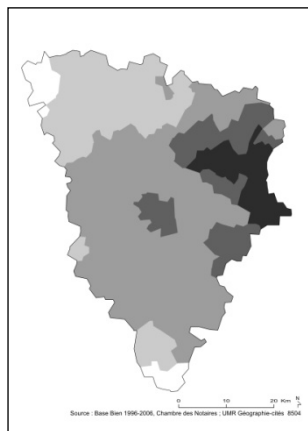
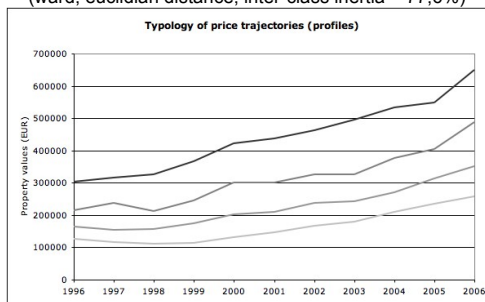


Figure 7. Cluster analysis of price trajectories 1996-2006: class profiles (B) (ward, euclidian distance, inter-class inertia = 77,6%)



A first area of fast increase of price corresponds to the eastern edge of the department, in the vicinity of the western “beaux quartiers” of the western side of Paris, along with several amenities, such as the Chateau de Versailles and its park and forests (East), the national forest of Saint-Germain-en-Laye (NE). A bubble of valorization clearly emerges in the “Plaine de Versailles” and gets a considerable extension westward. Another area of valorization emerges from the semi-rural or exurban subdivisions located in the Valley de Chevreuse (ESE) and extends towards Montfort-l’Amaury, almost in the center of the department. Nevertheless, due to an industrial economical context, the northern perimeter of the Yvelines, along the Seine river, always get the lowest property values recorded in the department, therefore being affected by a trajectory of relative decline of values, everything else being equal.

This unequal increase of property values change has been fueled by the changes in the local polycentricism of metropolitan activities. Whereas the Seine valley remains a powerful cluster of manufacturing and automotive industries, as well as a cluster of logistic activities (transportation, warehousing...), the rest of the department has been highly transformed under the influence of the La Défense high-rise business district and nearby clusters of businesses, headquarters, schools and university, and activities in the Saint-Quentin-en-Yvelines New Town. These poly-centric locations of TIC, business and management activities, financial and BtoB services, associated with post-industrial changes, have considerably modified the socio-economic profile of residents on the western side of Paris metropolitan region.

## 2. AN ASSESSMENT OF SOCIAL CHANGE

In order to test whether the global but unequal growth of property values yield a substantial transformation of the socio-professional status of dwellers in subdivisions, an analysis of social and occupational status has been conducted, by the means of variables describing the status of sellers and buyers of 4291 individual houses in subdivisions between 1996 and 2006.

### Social and occupational status of sellers and buyers pairs in subdivisions

The western side of the metropolitan area of Paris is far wealthier from the eastern and northern areas. Not surprisingly, among a total of 70 sellers-buyers pairs between the relevant occupational categories, 12 of them represents the top 55% of transactions (Table 1), with a dominant share of professionals, intermediate occupations, retirees, employees and legal entities. The position of professionals (executives, managers, intellectual occupations) as dominant actors structure the market in this western area : as buyer, they interact with other professionals, with intermediate occupations, with employees, with legal entities for existing home sales (realtor, investors) and new housing market (developers).

Table 1. Top sellers - buyers pairs, 1996-2006 (55% of total)

	N	%
Professionals -> Professionals	326	7,6
Intermediate Occ. -> Professionals	270	6,3
Intermediate Occ. -> Intermediate Occ.	268	6,2
Professionals -> Intermediate Occ.	257	6,0
Employees -> Intermediate Occ.	172	4,0
Employees -> Professionals	167	3,9
Retirees -> Professionals	165	3,8
Legal entitie -> Professionals	164	3,8
Professionals -> Employees	155	3,6
Retirees -> Intermediate Occ.	154	3,6
Intermediate Occ. -> Employees	150	3,5
Legal entitie -> Intermediate Occ.	141	3,3
...	...	...
Total	4291	100

Source : Base BIEN, Chambre des Notaires IDF, 1996-2006

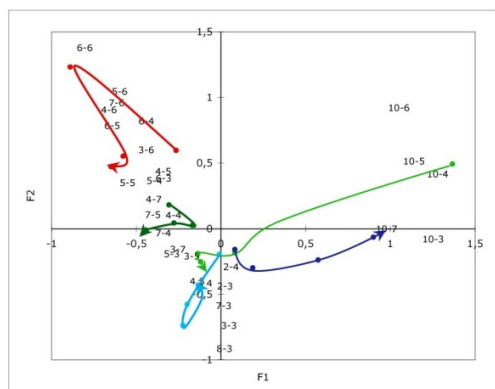
### **A typology of sellers - buyers trajectories (1996-2006)**

Aiming at describing the main axis of social transformations in subdivision housing, multivariate analysis has been applied on aggregated information on buyers-sellers characterization at the municipal geographical level. The analysis is two-folds : in a first step, a contingency table the top 30 pairs (87% of transactions) of sellers-buyers pairs is compiled according to 4 time-frames (1996-1999, 1999-2001; 2002-2004; 2005-2006). Considering the inertia of social change, the transactions on 2 or 3 years period of time has been aggregated, so as to improve the quality of the sampled data for several municipalities. The dataset has been analyzed by the means of a correspondence analysis. As on Figure 4, a cluster analysis has been used to characterize municipalities according to their profile on factors 1 and 2 for each of the 4 period of time (cluster analysis over factors 1 and 2 of a correspondence analysis of sellers-buyers pairs for 4 periods of time 1996-98, 1999-2001, 2001-02, 2002-03 inter-class inertia = 44%).

The resulting analysis of the data of buyer-sellers permits to determine a typology of profiles by municipality:

- A first class describes the stability of social and occupational profiles with an over-representation of intermediate occupations, employees, retired and executive in transactions. The municipality of Elancourt, part the Saint-Quentin-en-Yveline New Town, exemplifies this category, in which the overall density and diversity of suburban type housing has led to a relatively mix socio-professional profiles among the middle and upper-middle class, structured by local employment clusters. This category is closer to the average profile of the typology (Table 1)
- A second category describes trajectories leading to suburban gentrification. This profile is structured by a first time marked by the sale of new constructions to intermediate occupations, employees home owners, then in a second time, due to growth of values, retired, intermediate occupations, executive take advantages in the trajectories of buyers-sellers. Villepreux, a typical suburban village, mostly built up with subdivisions in the end of the 1980s, is a typical example of these trajectories, which has been fueled by the growth of property values.
- The third category reaches another level of homogenization of socio-occupational profile: the rise of professionals is associated with a decrease of intermediate occupations and retired. In municipalities such as Montigny-le-Bretonneux (part of the New Town), at first the transactions are close to the standard profile (over-representation of transaction between executives and intermediate occupations, craftsmen business owner) ; after the year 2002 an overrepresentation of transactions between executives is observed, yield to an overrepresentation of executives to non-workers and at least from the retired to the executives (2005-06).
- In some cases new constructions specifically target the most affluent occupational profiles, in a local trend of “elites reproduction”. In municipalities such as Fontenay-le-Fleury, there is an overall stability of social and occupational profiles within the groups of independent workers, high-level managerial workers, managers. Nevertheless he target of new construction is executives and retired.
- The last category, often located in the area of the Seine rive, the sprawling subdivisions specifically target lower-income owners (refuge for workers). In municipalities such as Gargenville, there has been at first an over-representation of transactions between workers, executive, intermediate occupations, then of transactions targeting worker and amongst themselves (1999-2001), and more recently of transactions from intermediate occupations, employees and retired to worker (2002 2006).

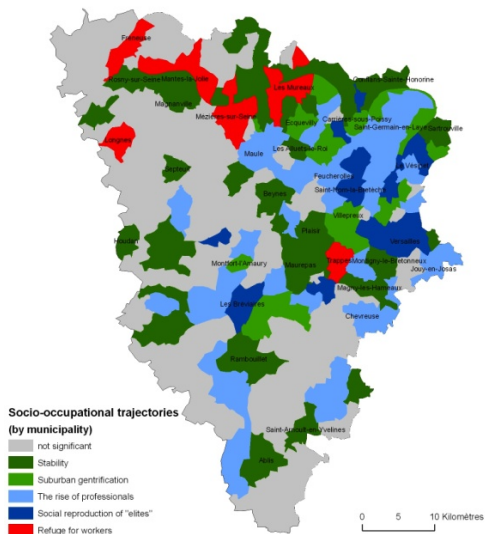
Figure 8. Social and occupational trajectories of sellers and buyers between 1996 and 2006 (factoral axis, scatterplot of sellers-buyers pairs and associated trajectories).



- Stability of social and occupational profiles  
(over-representation of intermediate occupations, employees, retired and executive)
- Suburban gentrification
- The rise of professionals associated with a decrease of intermediate occupations an retired
- Social-reproduction of «elites» :  
stability within the groups of independent worker, high level managerial worker, managers
- A growing over-representation of workers, employees and retired

1 - Farmers / 2 - craftsmen, business owners / 3 - professionals and managers /  
4 - Intermediate occupations / 5 - employees / 6 - workers / 7 - retired / 8 - non-worker / 10 - Legal entities

Figure 9. Typology of social and occupational trajectories of sellers and buyers (map)



Le Goix, Huet, 2011 - Sources : BIEN database Paris/PC, Chambre des Notaires IDF 1996-2006



## CONCLUSION

The typology of sellers-buyers pairs trajectories clearly discriminates local contexts (local stability, gentrifying suburbs, local reproductions of the "elites", refuge for the working class...). By doing so, this working paper is a first step towards a deeper analysis of the local contexts of change, that will be useful in order to get a better understanding of local land-use policy making, especially in terms of residential planning and production of suburban residential subdivisions. The line of inquiry that will be pursued aims at comparing these local contexts to a set of data describing the morphological patterns of subdivisions. There are some long-running hypothesis linking street patterns and residential morphologies (loops, lollipops, dead-ends, hierarchical street patterns) to social homogeneity and social change, analyzed in terms of seller-buyers characteristics, at the municipal level. This research should highlight the multi-scalar issues that are to be analyzed in order to get a better understanding of social and spatial change on the urban edge and its intricate context, geographical levels and strategies : residential morphology, rent-seeking strategies at different geographical levels, neighborhood street patterns and developers planning strategy. Prices and socio-occupational status are one dimension of this complex suburban land nexus.

## ACKNOWLEDGEMENT

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