

Title	The impact of gated communities on property values: evidences of changes in real estate markets (Los Angeles, 1980-2000)
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THE IMPACT OF GATED COMMUNITIES ON PROPERTY VALUES: EVIDENCES OF CHANGES IN REAL ESTATE MARKETS (LOS ANGELES, 1980-2000)

Abstract:

The paper focuses on how gated communities, as private means of provision of public infrastructure and security, real estate products and club-economies, produce changes in housing market patterns. Based on an empirical study of Los Angeles (California) data, it aims to trace to which extent gates and walls favor property values and if the presence of gated communities produces over time (1980-2000) a deterrent effect on non-gated properties abutting the enclave, or close to it.

Resulting of a demand for security, gated communities are a leading offer from the homebuilding industry. But their sprawl emerges from a partnership between local governments and land developers. Both agree to charge the homebuyer with the cost of urban sprawl (construction and maintenance costs of infrastructures within the gates). Such a structuring of residential space is then particularly desirable on the urban edges, where the cost of urban sprawl exceeds the financial assets of local public authorities. New private developments provide local governments with new wealthy taxpayers at almost no cost. As compensation, the homebuyer is granted with a private and exclusive access to sites and amenities (lakes, beaches, etc.). Such exclusivity favors the location rent, and usually positively affects the property value within the gated enclaves.

But it is also assumed that operating cost of private governance are paid for by the increase of property values. Market failure nevertheless occurs when costs are raising above a sustainable level compared to property values.

Changes produced by gates lead to at least two outcomes. At first sight, residential enclosures produce a price premium, thus being a smart investment. Furthermore, gated communities might well be able to generate enough property value to pay off the price of private governance. But the analysis stands on a short term basis. Larger and wealthier gated communities are successful in shielding their property values and generate enough revenue to pay for a cost of private governance, whereas a majority of average middle

class gated enclaves do not succeed in creating a significant price premium, and / or did not maintain significant growth of price during the last decade. Such gated neighborhoods are at risk of a market failure in the private provision of urban infrastructure, leading to potential decay.

THE IMPACT OF GATED COMMUNITIES ON PROPERTY VALUES: EVIDENCES OF CHANGES AND OUTCOMES FOR LOCAL GOVERNANCE (LOS ANGELES, 1980-2000)

Are gated communities and their private governance effort at risk because of market failures in the private provision of collective goods ? Though abrupt, this question overlaps all concerns about property values behind the gates of secure and privately operated communities. Homeownership inside a gated community shall be seen first as a real-estate investment ; second as a private attempt to gain local control over the neighborhood in order to maintain the tidiness of the environment through a property owners association (Newman, 1972; Newman, 1996) ; and finally to secure behind gates a composite desire for status exhibition, security of the relatives, a certain kind of exclusive lifestyle, and a warranty of a life-time investment in an American context where mortgages are running during several decades (Low, 2003; Bjarnason, 2000; Blakely & Snyder, 1997).

But gated communities have a cost, and homeowners must sustain both the cost of building infrastructure and collective goods (roads, streets, sidewalks, water / communication networks) that are usually bear by public governments; and the cost of maintaining these collective goods. In a “Tieboutian” city where location of homeowners is in part an arbitrage between the best level of public services and the lower cost (i.e. : the lower property taxes) (Tiebout, 1956), this assumes that a homeowner association which favors consensual decision might be more effective than a public central government in providing collective goods up to the best level of satisfaction for the residents. Nevertheless, the efficiency of a gated community is subject to its capacity to satisfy its residents ; as a market-based solution, if residents and prospective buyers are unsatisfied with the level of security, and the maintenance of common property, a gated neighborhood can also be stricken by urban decay and a sensitive loss of property values, thus failing to reach its goal.

This paper aims at assessing the impact of gates and walls on property values over time (1980-2000) ; and if gated properties generate enough value to compensate the cost of private governance. Previous researches based on case studies and hedonic prices modeling have clearly demonstrated that gating a private neighborhood is more efficient than regular private governance (non-gated homeowner association) in protecting property values (Bible & Hsieh, 2001; Lacour-Little & Malpezzi, 2001). Instead of focusing on case studies, this paper addresses the issue of prices at the scale of the whole metropolitan Los Angeles area, in a systemic analysis of price determination in gated neighborhoods, given a complex chaining of positive and negative externalities that might affect them, through multiple scales of interactions.

1 A systemic analysis of gated communities: property values as a key issue.

Analysing gated communities in the real-estate market requires considering the broader context of how property rights and property values interact with other land-use.

1.1 Property values in gated communities vs. potential spill-over effects

On the one hand, private firms, developers and homeowners, operating optimal location decisions, produce social costs and generate spillovers effects, such as pollution, sprawl, congestion, competition for land uses, land speculation, free-riding (Scott, 1980). Interpreted as a market failure (Bator, 1958), such externalities represent a cost for the society as a whole. Following this thread, gating a neighborhood can be conceived in a first instance as a private pre-emptive solution of market failures. It supplies the residents with their own private governance effort to avoid the spillovers of urban residential and industrial developments (crime, traffic, congestion and decay). In so doing, gated communities also produce spillover effects on their neighbors. The reciprocal is true: land-uses abutting the walls, which might be Planned Unit Developments, as well as non-residential developments (commercial, leisure, industrial activities, etc.) also produce spillovers, in what seems to be a complex pattern, a field of positive and negative externalities produced by the interaction of land-use and the intricate property rights in urban regions.

Furthermore, as property rights are not a simplistic opposition between public and private realms, the latter encompasses a vision of the capitalist production of city space as fragmented into small, local consumption clubs (Webster & Lai, 2002) addressing the specific needs in collective goods of a locality. Government, real-estate developers as well as community action can “*effectively assign property rights over shared neighborhood goods, and in so doing create a set of included 'members' and a set of excluded 'nonmembers'*” (Webster, 2002). In these schemes, property rights and membership attached to some collective goods (like in gated communities) are collectively producing externalities over the outsiders and ‘nonmembers’; as might individual properties within the walls also be stricken by diseconomies and costs endured by the community as a whole, ultimately producing decay and loss of property value.

On the other hand, a strong assumption argues that the public provision of collective goods and services is inefficient, because of the diseconomies of bureaucracy and the economies of scales allowed by private management and competition between firms. This was demonstrated in several case studies (Spann, 1977; Davies, 1971; Kristensen, 1983). Rejecting the market-failure hypothesis, Foldvary (1994) argues that private communities can provide collective goods by consensual agreement. He rejects the assumption of free-riding being a diseconomy that private communities would be unable to overcome ; as a consequence, private communities might be more efficient in providing public goods than public governments. He furthermore argues that private communities (like the private Streets of Saint Louis built in 1867) are actually financing their own collective goods according to the cost/benefits paradigm, whereas public government determines

infrastructure investment according to the tax base, thus being inefficient. In this cost/benefits analysis, infrastructures are financed by the homeowners association, and paid for by the location rent which is said to generate for each homeowner enough property value as benefits of the neighborhood improvements (Foldvary, 1994).

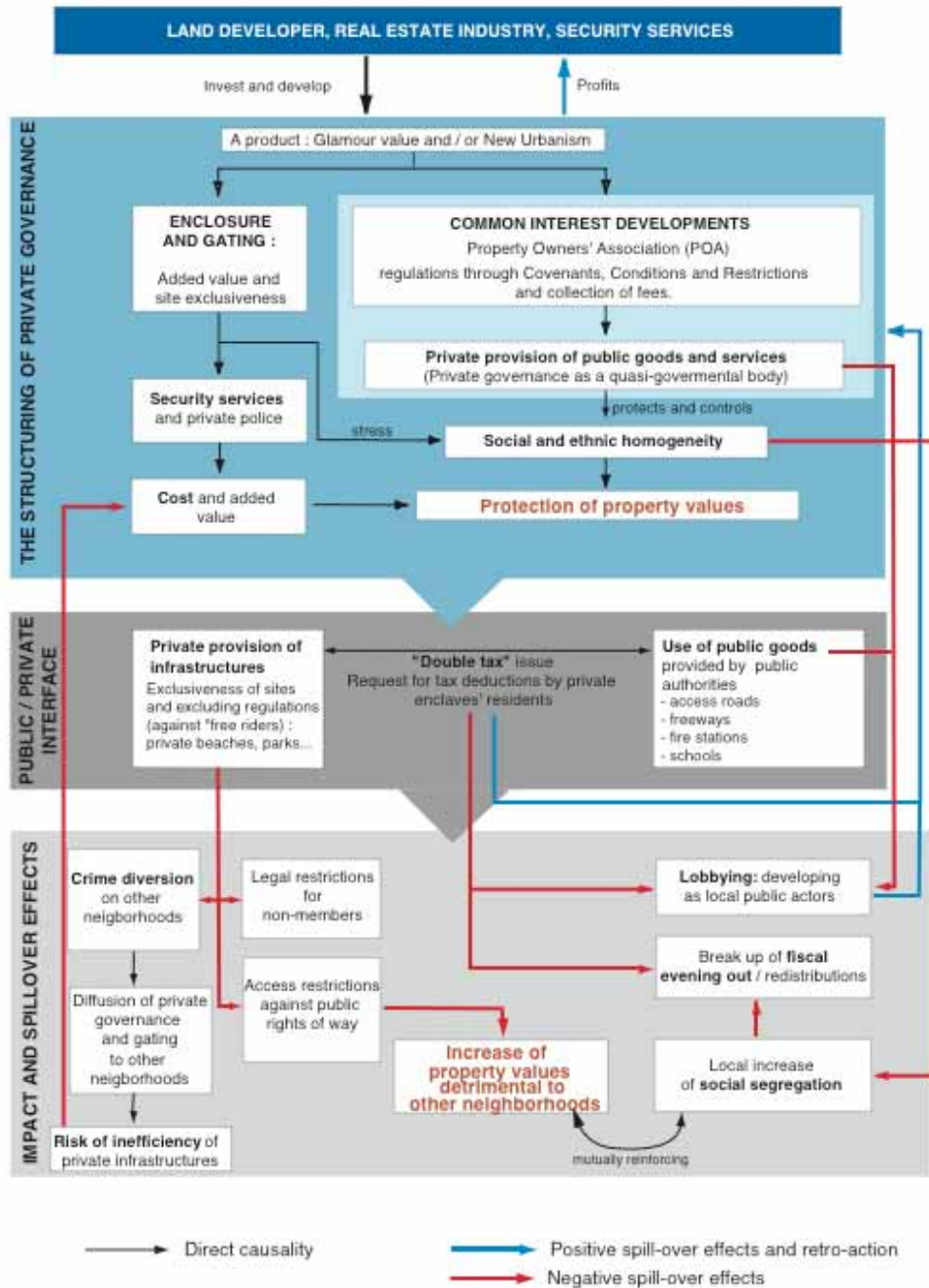
1.2 The outcomes of the enclosure on property values

Figure 1 summarizes the system of private governance in a gated community, and interactions with other local communities and public government. All are issues that ultimately impact property values. This discussion refers to previous researches, most of them conducted in the Northern and Latin America contexts. Assertions were verified for a set of 219 gated communities in southern California, sample upon which analysis shared in this paper are based.

The real estate industry appears as the first intervening actor in creating property value. A supply-side analysis led to a better understanding of the nature of the “gated community” product, a package deal of cutter-cookies and glamorous properties along with a bunch of services (leisure and security) that generate at least a 10 % added-value (according to interviews with real estate agents in 1999). A large diffusion of gated communities among social classes and race has widely been observed, meaning a shift from the traditional upper-class golden-ghetto toward a middle-class real estate product of mass consumption (Le Goix, 2002; Blakely & Snyder, 1997; Sanchez, Lang & Dhavale, 2003; Le Goix, 2003). A demand-side assumption also considers that homebuyers consider security, social cohesion, fear of the others and sense of community as key motivations for living in gated communities (Carvalho, Varkki George & Anthony, 1997; Bjarnason, 2000; Caldeira, 2000; Low, 2003). From this derives the issue of long-term efficiency of private governance to satisfy residents with ever increasing security and community concerns at a reasonable cost in creating and maintaining club-houses, parks, gathering places and security features.

Figure 1.

The protection of property values in a systemic approach of gated communities.



The private operations of both a manufactured community and a real-estate product directly connects to the structuring of private governance. This structures gated communities as local quasi-governments in terms of provision of public services (Mckenzie, 1994), acting as local consumption clubs of urban services (Webster & Lai, 2002). As previously discussed, the short term apparent cost/benefits market efficiency in providing collective services (Foldvary, 1994) must be match up to the risks of long-term spill-over effects, inefficiency of decision making process and resident's lack of involvement (discussed by Blakely & Snyder, 1997 ; McKenzie, 1994) and the risks of obsolescence and inflating maintenance costs undermining the tidiness and reputation of a neighborhood, and ultimately its property values (Berding, 1999)

Another level of analysis focuses on the interface between private governance and public authorities. It is well known that Common Interest Developments (CIDs) and gated communities are fiscal "cash-cows" for local public government enlarging the tax-base at barely no cost, and are efficient in privately funding urban sprawl in the fastest growing areas (Mckenzie, 1994; Dilger, 1992). Gated communities are indeed instrumental in accompanying urban sprawl for counties and municipalities seeking new revenue to finance their development. As a backlash, CIDs might politically be involved as public actors, and push for a political autonomy as incorporated municipalities leading to a predation of tax revenues by private enclaves in order to protect one's real estate investment (Le Goix, due to be published in 2005; Le Goix, 2003).

Both in theory and practice, impact and spill-over effects of public vs. private interactions are often in favor of gated communities residents and property values, and in disfavor of neighborhoods and non-gated residential communities adjoining a gated community. Among the complexity of interactions outline, some of them have direct links with property values.

- Travel behaviors, for instance, are diverted by gates and walls (Burke & Sebaly, 2001; Burke, 2001), thus protecting the tidiness and the quietness of properties.
- Regulations for members and legal impact on non-members also clearly favor property values, as CC&Rs are designed to protect physical characteristics and social homogeneity of the CID, and to promote under certain circumstances social exclusion (Mckenzie, 1994; Mckenzie, 1998). Governing by contractual agreement is formal guarantee that the Association has jurisdiction to impose consensual decision on both members and their property, and on non-members (Brower, 1992; Kennedy, 1995).
- Regarding crime, the enclosure has a positive impact for gated community residents and contributes to decrease burglaries and larcenies (Atlas & Leblanc, 1994). But the deterrent effect of gates and walls probably lead to a diversion of crime to other adjacent non-gated communities (Helsley & Strange, 1999). This positive effect for the residents is a massive spill-over for non-resident, and nearby communities might react through the means of building their own gates. The diffusion of security features by mimesis of neighbors is in many cases a diseconomy, hampered by unnecessary security expenditures with regards to the real location of crime in cities,

and indeed creating more sense of fear and isolation than really protecting the properties.

- At last, social homogeneity and segregation patterns produced by enclosures also shield property values. Relationship is reciprocal : high property values help selecting residents and create more social (and ethnic) homogeneity . It has also been demonstrated that gated enclaves promote a selection of residents, and that fear of others and social heterogeneity contribute to the development of enclaves (Jürgens & Gnad, 2002; Townshend, 2002). Significant differences are measurable between gated communities high level of social homogeneity, and a vicinity where more complex social patterns remain vivid. The enclosures indeed contributes to stress local segregation, especially on socio-economic factors and age-criteria ; furthermore, preferential location of gated communities obeys to buffer zones strategies, within homogenous areas regarding ethnic criteria (Le Goix, 2003; Le Goix, 2004, in press in press).

2 Inside the walls: price premium and homogeneity.

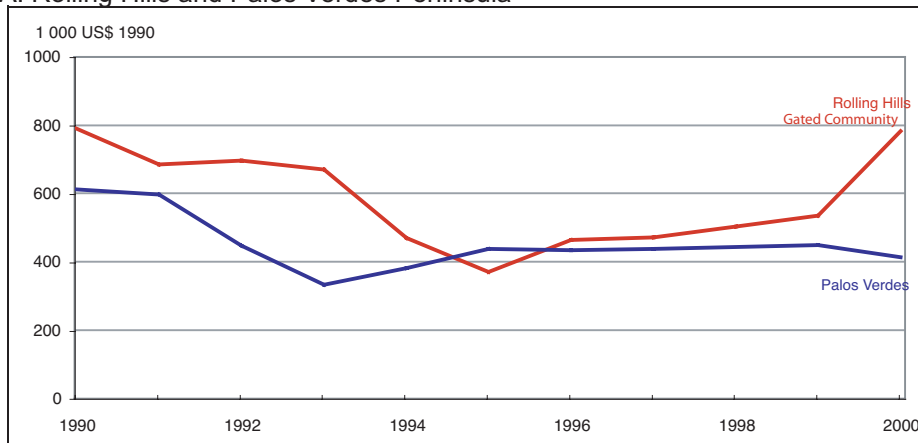
According to this systemic modeling, price in gated communities are resulting of multiple strategies enacted by the developers, the homebuyers, and local governments favoring gated enclave providing tax-base in faster sprawling areas. Property prices in gated communities is not only the produce of square footages, number of rooms, features and services delivered along with the real estate product (i.e. cable TV, DSL Internet, and security services). Property price is a rather complex mix of local effects (social homogeneity, place and strategies of private governance) and the interrelated effects of spill-over effects, which might as well be positive externalities protecting property values, or external costs (like crime spill-over, decline or urban decay in nearby communities).

2.1 Protecting property values

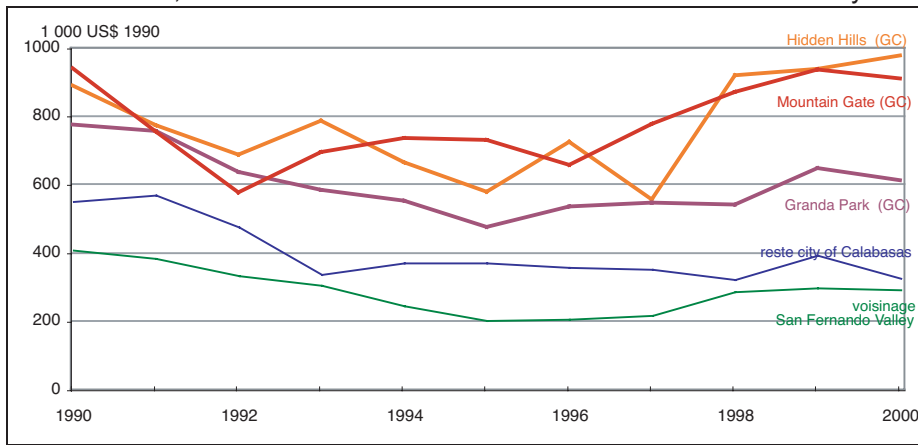
Figure 2.

Compared change of property values (annual mean) in gated communities and in nearby non-gated communities (1990-2000)

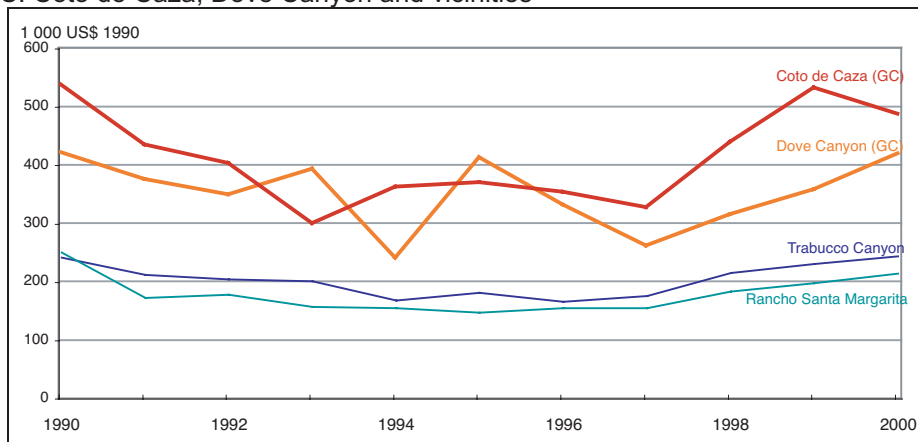
A. Rolling Hills and Palos Verdes Peninsula



B. Hidden Hills, Calabasas and other vicinities in the San Fernando Valley



C. Coto de Caza, Dove Canyon and vicinities



Sources : Realtor.com
Gated communities database / UMR Geographie-cités 8504 Le Goix 2003.

On a first instance, gated communities seem efficient in protecting property values on period of time. Hedonic modeling demonstrated the measurable effect of the location of the property within a gated community (Bible & Hsieh, 2001). In the case of legacy gated enclaves built circa 1920 in Saint Louis, Missouri, hedonic analysis demonstrated a 26 % price premium where gates have been erected between 1979 and 1998 ; as a comparison, a regular non-gated enclave produced an estimated 9 % price premium only (Lacour-Little & Malpezzi, 2001). In the Los Angeles region, the price premium created by gates for property within an enclave compared to properties in contiguous non-gated neighborhoods was also demonstrated (Le Goix, 2002). For the need of the demonstration, Figure 2 summarizes some of the findings when studying the evolution of property prices in large gated communities, and within the limits of nearby neighborhoods (locations of the communities described are given on Figure 3). Results given here are extracted from a database of property prices in and around gated communities compiling a total of 8553 transactions realized both in gated communities and in their vicinities between 1990 and 2000. Data were extracted from the *Home Price Check Database* once available online (Realtor.com)¹. Prices are labeled in 1990 US\$ and were corrected of the inflation factor according to OECD and US Government standards.

Although neighborhoods and properties are of different kinds and might not be comparable *per se*, the charts are good indicators of the good standing of property values in gated communities during the real-estate crisis in Los Angeles (1993-1996). Two main trends affect property values through the period. Between 1990 and 1995, the average transaction lost half of its value, in a drop which is consistent with the real market crisis in Los Angeles, mainly resulting of the burst of a speculative bubble (Jaffee, D. M. and Krull, C. A., 2001), as well as the 1992 riots, 1993 earthquake and 1994-95 floods and fires. Generally speaking, gated communities prices showed a better strength to real estate market fluctuations than in regular residential neighborhoods. In Palos Verdes, Rolling Hills better withstand than neighboring communities, but a sudden drop occurs in 1995, before prices rapidly recover their former value. In Calabasas and Hidden Hills, prices are decreasing quite as fast as in the vicinity, but the increase is faster after 1995 in every gated community (except Calabasas Park / Granada). Such change patterns are note exclusive of upper-scale and well established developments (Rolling Hills was built in 1935 ; Hidden Hills (1950), and are quite comparable in the more recent and upper-middle class gated communities of Dove Canyon (1986) and Coto de Caza (1987).

¹ 3949 transactions describe the prices in 97 small and medium gated communities were a significant number of transactions have been made available online ; 4064 transactions precisely describe property values patterns in large gated communities (Rolling Hills, Hidden Hills, Mountain Gate, Granada Park, Coto de Caza, Dove Canyon, Canyon Lake) and in adjacent non-gated communities. Full methodological discussion of data collection and implementation of databases is available online, in the doctoral thesis : LE GOIX, R. (2003), *Les gated communities aux Etats-Unis. Morceaux de villes ou territoires à part entière [Gated communities within the city in the US: Urban neighborhoods, or territories apart?]*, Doctorate Thesis, Université Paris 1 Panthéon – Sorbonne
[Available : http://tel.ccsd.cnrs.fr/documents/archives0/00/00/41/41/index_fr.html]

2.2 Are gated communities more expensive than their neighbors ?

Another step consists in comparing values inside gated communities, and values in their neighboring areas, in order to set up a comparative analysis. Previous researches gave evidences that gated communities do not locate randomly in urban areas. Such real estate products must ensure to provide the prospective buyer with a social environment that fits his desires. As a consequence, white and upper scales communities are located within mostly white and rich areas (Le Goix, 2002, 2003). All further analysis in this paper are based upon a database of 219 gated communities built before 2000 have thus been identified in 7 counties (Los Angeles, Riverside, Orange, Ventura, San Bernardino, Santa Barbara and San Diego) implemented within a GIS with 1980, 1990 and 2000 US Census Data².

Figure 3 renders the distribution of property values in the Los Angeles area, and the discrepancies observed between property values inside gated communities, and property values in the census tract the gated community belongs to (in the case of small gated communities not occupying a whole tract), or compared to adjacent census tracts (large GCs). Because of the census structuring of detailed property values data (frequency of owner-occupied housing units in 9 clusters, from less than 50,000\$ to more than 1 million \$), a first step consists in building a typology of property values both in gated communities and in census tracts. This multivariate analysis leads to 6 clusters describing lower, middle-class, and wealthiest neighborhoods. Some of them are very homogeneous, like the wealthiest census tracts, whereas middle-class census tracts are more heterogeneous in term of distribution of property values. Then, comparing gated communities property values profiles and census tracts ones requires building an index of discontinuity³. This index, when positive, describes a discontinuity which is in favor of the gated community (the property values profile is superior within the walls than outside). When negative, the community encloses properties of a lesser value than contiguous tracts.

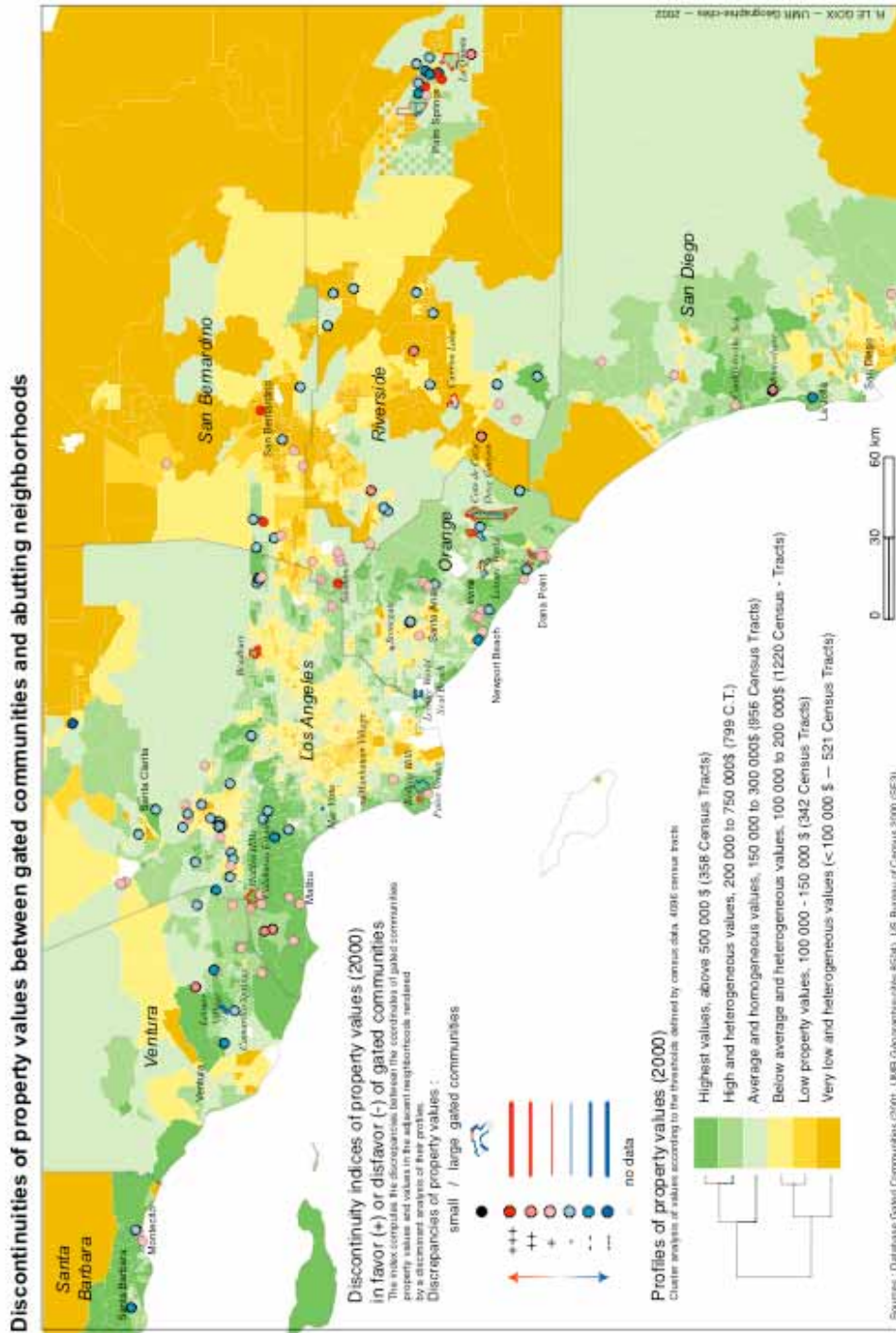
Major findings are mapped on Figure 3, and can be summarized as follows :

² Methodological aspects discussed in Le Goix, 2003 and Le Goix, 2004. Refer to endnote #1.

³ The discontinuity index involves two successive multivariate analysis, conducted on a table which contains both values for the 4096 census tracts and the 178 gated communities sampled. This table is made of 9 variables, describing the profiles of property values (in % of the total housing units), as data are structured in 2000 census tabulations. The cluster analysis (hierarchical multivariate analysis) has built 6 classes, each of which describing the profile of property values for each census tracts and gated communities. This typology explains 63% of the total variance. The index of discontinuity is based upon a principle component analysis (PCA), which extracts the most significant variables from a set of data, helping to explain the main part of the total variance. In this case, a first axis opposes the variables describing the lower property values to the upper property values, summarizing 30,5% of the total variance. The second axis explains the diversity and the heterogeneity of the middle-class. Both axis account for 51 % of the total variance. The discontinuity index computes the distance of the coordinates on the first axis for gated communities and census tract. If a census tract is closer from the lowest property values, and the community close to the higher values, then the discontinuity will be the difference between them. A positive index thus indicates a discontinuity in favor of the gated community, a negative index a discontinuity in disfavor of the community. For mapping purposes the index was distributed in 6 clusters, according to its standard deviation.

- A strong majority of gated communities often produce a low price premium compared to abutting neighborhoods. In 75 % of the cases, the discrepancy revealed by the index of discontinuity are of poor significance (lesser than the standard deviation).
- Nevertheless, a majority of positive discrepancies are in favor of gated communities. For 56 % of gated communities for which data were significant, there is a strong relationship between the level of the price premium and property patterns of the gated community. Highest levels of discrepancies are located within the wealthiest neighborhoods: Coto de Caza, Dove Canyon, Olympiad Park, as prestigious product for the upper-middle class in the southern Orange county for instance. Bradbury, founded in 1938, takes profit of its location rent on the hills of the Los Angeles Mountains. Also an autonomous municipality since 1957, this probably contributes to the protection of property values. Less manifest but nevertheless noteworthy, prestige enclaves like Hidden Hills, several Calabasas enclaves, and Newport Beach communities of Belcourt, Big Canyon or San Miguel also take profit of a price premium compared to a adjacent communities of yet extreme property values.
- But some gated communities do not manage to create a sensitive differential in property values compared to their neighbors. Indeed, 35 gated enclaves (12.5 % of the sample) are even obviously disadvantaged in their values patterns compared to their contiguous non-gated communities. First, they are often located within middle class heterogeneous areas, and strong homogeneity of these tiny gated enclaves (20-50 unites) made of townhouses on small properties can be a bias compared to a census tract where high property values (on large piece of land) are adjoining smaller on more modest properties. This is nevertheless significant than the more heterogeneous the urban environment is, the less price premium the gated community generates.

Figure 3.



3 Price change vs. increasing cost of private governance

The latter demonstrates that in a large majority of cases (75 %), values inside the walls are slightly above or close to the profiles of those in adjacent neighborhoods. Important price premium are rare, exemplified by a few prestigious and well publicized communities. This premium is not only connected with the “enclave” status, but also with environmental data: autonomous incorporation as a city (Bradbury, Hidden Hills), recent enclave still developing (Dove Canyon, Coto de Caza), prestigious status of the location (Rolling Hills), heterogeneity of the environment, etc.

In this context, the average gated enclave does not spectacularly generate property values compared to its neighbors. A last step consist in addressing whether price change over the last 20 years might nevertheless generate enough value to pay off the cost of private governance.

3.1 Comparing gated communities and their contiguous neighborhoods, 1980-2000.

A change of focus is a requirement, as property values must be apprehended not only locally (comparing a gated community to contiguous non-gated communities) but also globally, given that several communities at a local scale often reflect the same socio-economic preferences and the same market segment. In brief, a price premium isolated for a specific gated community might as well be a price premium for a specific location within the metropolitan area ; we must ensure that a positive price change identified for a specific gated enclave is consistent with the pattern of price change in a metropolitan area, in order to determine whether a gated enclave is more efficient in generating property value than non-gated neighborhoods, everything being equal.

Subsequent analysis are based on a simple comparative methodology :

- Property values changes is analyzed for two decades, 1980-1990 and 1990-2000. Inflation effects are corrected according to US Government standard price index, and prices are expressed in equivalence with 2000 US \$. Price change is computed for each of the 4096 census tracts (Figure 4)
- a pear to pear comparison of change in values between (1) census tracts where at least one gated communities are located in, and (2) adjacent census tracts (tables 1 and 2).

Figure 4.

**Single family property values change (1980-2000)
in the southern region of the Los Angeles Metropolitan Area**

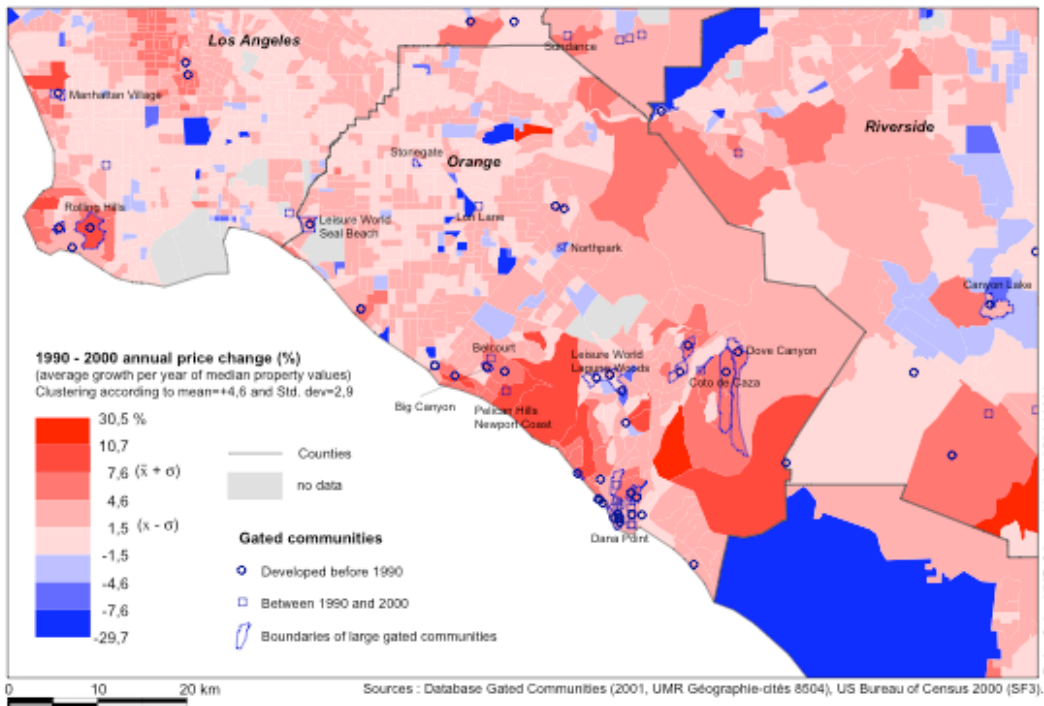
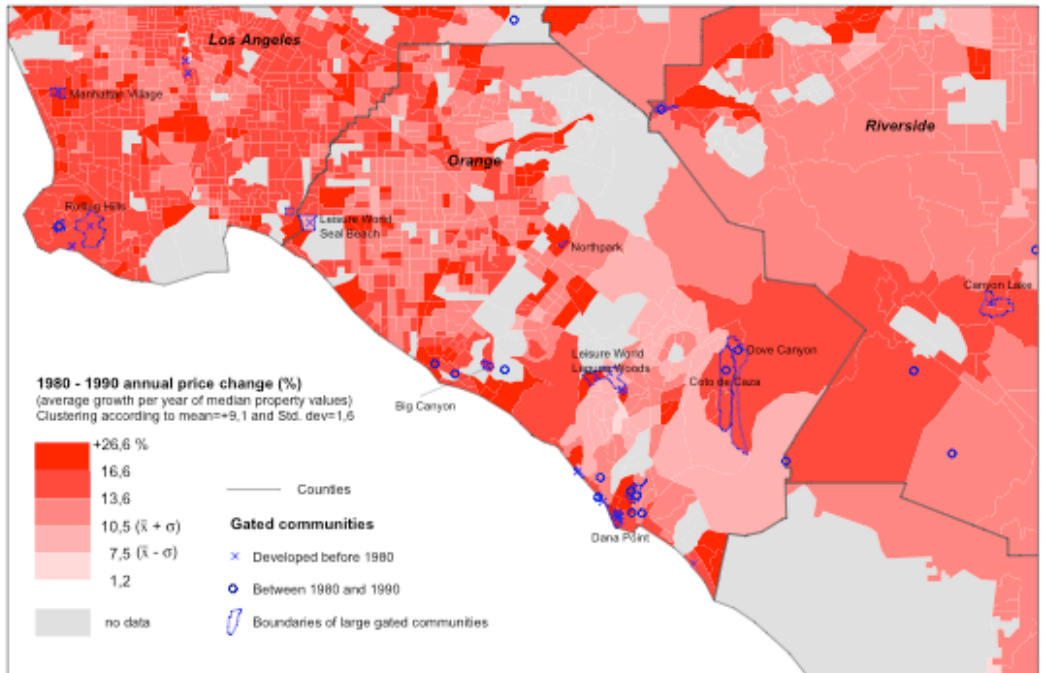


Table 1.
Annual estimated median home price changes for census tracts 1980-1990

Frequency per cluster in %	Census Tracts with 1 or more GC					Total
	0 to 6 %	+ 6 to 12 %	+ 12 to 18 %	+ 18 to 24 %	> + 24 %	
In adjacent Tracts						
> + 24 %	0.11%	0.06%	0.17%	0.11%	0.06%	0.51%
+ 18 to 24 %	0.57%	0.63%	2.91%	4.39%	0%	8.49%
+ 12 to 18 %	2.62%	6.55%	38.40%	3.30%	0.28%	51.17%
+ 6 to 12 %	3.36%	16.13%	4.44%	1.94%	0.06%	25.93%
0 to 6 %	3.87%	3.70%	5.13%	1.20%	0%	13.90%
Total	10.54%	27.07%	51.05%	10.94%	0.40%	100.00%

The average change in median price in the L.A. area between 1980-1990 was 13.6 %. In census tracts where one or more GC had already been developed, the average change was only 12,32 %. At first glance, GCs did not locate in the fastest changing areas.

- In more than one third of the census tracts (38.40 %), important change where there is a GC is quite the same than in nearby communities (between +12 % and + 18 %). During the 1980s, GCs were developed in areas of dynamic market on the margins of the urban areas.
- where changes are below the average, there is no significant premium in census tract with GCs (27 % of the cases).
- there is a significant discrepancy, thus a price premium for areas with one or more GCs, in only 16 % of the studied census tracts.

As a consequence, during the 1980s, when galloping growth occurred and price skyrocketed in the whole metropolitan area (Figure 4), gated communities only participate in a significant local increase in property values in a minority of cases. In a context of a strong and positive market trend, gated communities are not specifically favored in a local context.

A major shift has happened during the 1990s, considering the drop of prices and the crisis that occurred in the real estate market in the region.

Table 2.
Annual estimated median home price changes for census tracts 1990-2000

Frequency per cluster in %	Census Tracts with 1 or more Gated Community(ies)				Total
	- 6 to 0 %	0 to 6 %	+ 6 to 12 %	+ 12 to 18 %	
Adjacent Tracts					
+ 24 to 31 %	0%	0.11%	0%	0%	0.11%
+ 18 to 24 %	0.11%	0.11%	0%	0%	0.23%
+ 12 to 18 %	0.06%	0.11%	0%	0.17%	0.34%
+ 6 to 12 %	0.85%	4.62%	4.05%	0.06%	9.57%
0 to 6 %	7.35%	54.81%	6.50%	1.71%	70.37%
0 to - 6 %	4.62%	10.94%	1.48%	0.23%	17.26%
-6 to -12 %	0.23%	1.54%	0.17%	0%	1.94%
- 12 to - 18 %	0%	0.17%	0%	0%	0.17%
Total	13.22%	72.42%	12.19%	2.17%	100.00%

Detailed results for 1990-2000 changes are given in Figure 4 and Table 2. With an average change of +4.6 %, the main outcomes are :

- comparable positive change is occurring in more than half of the cases (54.81 %) : census tracts with gated communities do not produce more value than neighboring non-gated areas.
- change is dramatically in favor of CT (census tracts) with GCs in 14.53 % of the cases.
- Where "global" change is positive, there is a strong premium for areas with GCs in 12.31 % of the cases.
- change is in disfavor of tracts with GC in 6.51 % of the cases (with minor or negative change for CT with GCs)
- change in disfavor of both is quite rare (4.85 %), proving that positive as well as negative spillover effects in property values often occur between adjacent census tracts in the vicinity of gated communities.

These are major results, demonstrating that discrepancies in price change may happen in a narrow range. During the 1990s, more complex patterns are to be observed than during the last decade. Nevertheless, real estate markets in the vicinity of gated communities are equally stressed, in a situation of sprawl, competition for land-uses and expecting a maximization of site rental. Spillover effects on property prices are noticeable : either winner/winner (in more than half of the cases, positive change affects both areas with gated communities and adjacent non-gated neighborhoods), or winner-looser (price premium for gated communities in 16 % of the cases during the 1980s, in only 12 % of the tracts during the 1990s). In some cases, tracts with gated communities gain property values slower than their neighbors during the last decade, as exemplified by the retirement community of Leisure World stricken by what seems to be an early stage of urban decay (very slow growth or loss of value)

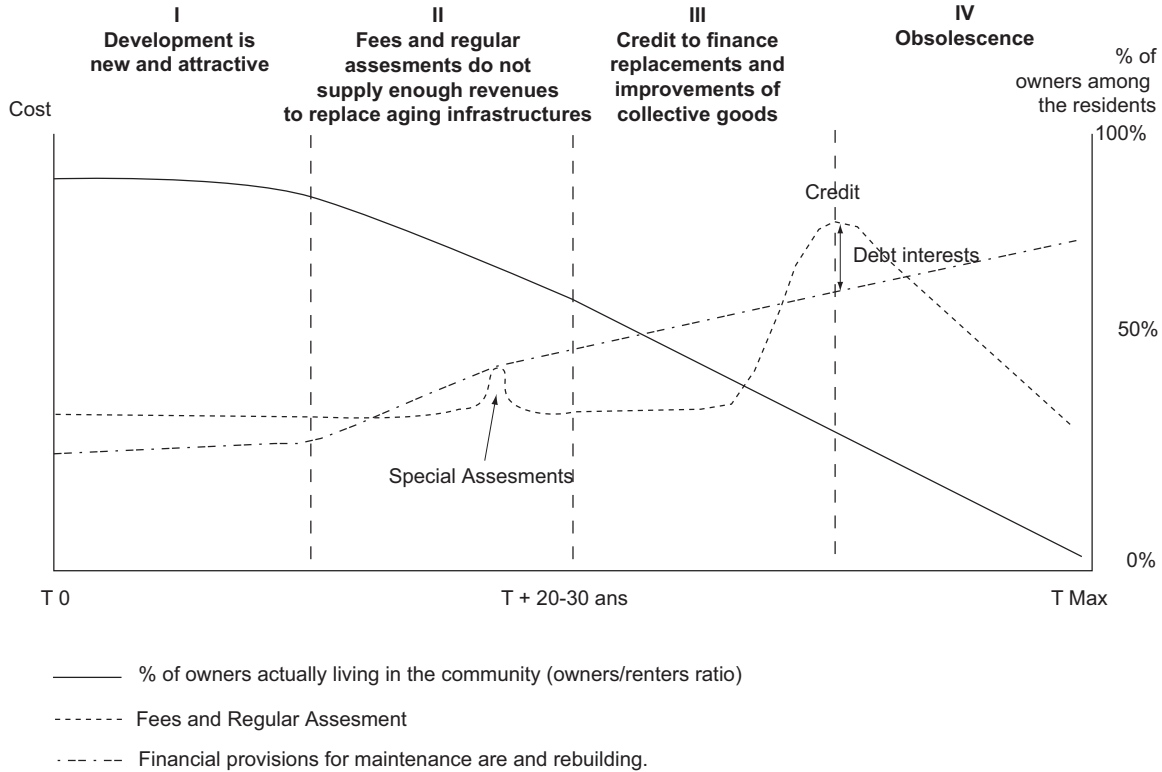
3.2 Price change and risks of market failure.

As a result, gated communities often do not manage to produce a significant price premium compared to contiguous neighborhoods and other local non-gated communities. This is not a market failure *per se*, given that a lot of census tract with gated enclaves have experienced an increase in property values. This nevertheless shall be compared to the rate of growth of the expenditures, and the capacity of private governance to manage increasing operating costs. As Foldvary (1994) assumes that operating cost of private governance are paid for by the increase of property values, market failure occurs when costs are raising above a sustainable level compared to property values.

Determining the level of the market failure in gated enclave is almost impossible without full access to associations financial statements over time. It is nevertheless possible to give an approach through the "obsolescence theory" as interpreted by Berding (1999), when studying the fate of homeowners associations (Figure 5). Assuming that HOA expenditures increase with the obsolescence of privately-operated infrastructures and services (roads, club-houses...), after a certain amount of time, it finally occurs that

regular assessments and fees do not manage to pay for the operating and investment costs. Decision-making processes often need a full majority of voters (2/3 of them in California according to the 1985 *Davis-Stirling Common Interest Development Act.*) and do not permit to easily pass a raise of fees. Special assessments and credit can pay for emergency expenditures. Furthermore, aging infrastructures, unsatisfied owners who leave the neighborhoods and are replaced by renters, etc. lead to slower growth or decrease of values and a lethargic or decaying neighborhood (Berding, 1999).

Figure 5.
The steps of obsolescence in a Common Interest Development.



Sources : according to obsolescence theory of Common Interest Developments (Berding, 1999)

The issue of obsolescence in Leisure World - Laguna Woods as recently acquired a striking amplitude. This 19,500 inhabitants retirement gated community created in 1964 incorporated in 1999 as a city of its own, after 35 years under private management by the POA Golden Rain Foundation (GRF). According to R. Ring, former President of the Board of Directors of the POA, and city council member after 1999, residents “don’t buy green bananas”, meaning they do not care about long range planning and over-aging infrastructure. This lack of involvement might be explained by the average age of residents (77 years old), and their average life expectancy in the Leisure World (5 years)⁴. Nevertheless, Leisure World now needs a long term strategy for its renewal and attract a new generation of potential buyers : 86 % of housing units do not fit the safety requirements for heating and electrical systems ; 72 % do not provide enough square

⁴ Personal interview, November 2001.

footage compared to contemporary criteria. Major networks for electricity, water supply, telephone and sewage must be replaced, their age being between 25 and 36 years old. Although gated retirement communities are said to be a fashionable concept, property values evolution clearly disfavor Leisure World. As mapped on Figure 3, annual change of property values in Leisure World was 15.1 % during the 1980s (an evolution equivalent to adjacent tracts). Prices suddenly dropped below zero during the 1990s (—10.4 %), a sensible degradation of values in the southern part of Orange county were growth of values often reach +7 to +10 % per year. In this context, there is no easy way to forecast the payment of 6,5 millions dollars for the renewal of the gates and walls, 15 millions for the sewage system, 10 millions for public lighting during the next 20 years. In a total annual budget of 26 million dollars, investments account for 15 % (4 millions), and operating costs accounts for 85 %. Comparison between 1999 and 2000 operating expenses budget highlights this issue : overall spending rose by 7 % a year (without the financial reserves), and maintenance cost rose by 5,8 %, while losing property value⁵. In Leisure World, aging neighborhoods and infrastructure, added to the difficulties in the decision making process are the first stages of decay and difficulties in efficiently providing public goods more efficiently than in other non-gated developments in the vicinity. In such cases, gated communities tend to become public actors (municipalities) and can be expected to try and offset the burden of private governance by transferring costs to the municipal entity, where possible, using public funds and federal grants for the exclusive use of private enclaves. Accordingly, some costs have already been transferred to the newly incorporated city in Leisure World – Laguna Woods: the sewer system and the public transportation system for instance (Le Goix, 2003; Le Goix, due to be published in 2005).

Canyon Lake, another 9500 inhabitants aging community, developed after 1968, offers a good example of a community also nearing the early stages of market failures. Rate of growth of property values dropped from 15.93 % per year during the 1980s to 2.84 % during the 1990s. The rate remain favorable, although in a context where major change has occurred. Ten years ago, it used to be an area of rapid growth of value (an average of 15 % a year). Nevertheless, many communities of Lake Elsinore (east of Canyon Lake) experienced almost no change in values (+0.62 % a year, downtown Lake Elsinore losing an average -5% a year). But newer communities on the western edge of Canyon Lake seems to gain interest, with a price change rate raising above 7 % per year during the 1990s. Canyon Lake is located within a local environment where the market is less dynamic than it use to be during the early years. It seems that decay in Lake Elsinor and in the nearby area of Riverside county produces negative externalities over properties inside Canyon Lake, not as well protected by the enclosure than theoretical models would predict. The rapid growth of the upper-scale development (Tuscany Hills) on the western edge of Canyon Lake participates in this significant change in property value patterns. Furthermore, it is also noteworthy to balance the growth of operating costs and reserve funds of the Canyon Lake POA, the low growth of property values and the zero growth of its population (ceiling in 2000 at a level of 9952 inhabitants as in-fill development is now completed). According to the 2000 POA Annual Report, expenditures increased by

⁵ According to following reports : RING R. (2001). *Leisure World Housing*. Laguna Woods: Senior Citizens Advisory Council, Feb. 2d, 2001; *Leisure World Staff Report* Dec. 5th, 2000 ; *Leisure World / Laguna Woods. Golden Rain Foundation 1999-2000 Progress Report* (2000).

+4,9 % between 1997 and 1998; and by +14,4 % between 1998 and 1999. Expenses were almost steady during the 2000-2001 fiscal year. According to the *2000-2001 Pro Forma Budget*⁶ the “Future Replacement Cost” for Association property and equipment excluding common streets has been estimated to 13 millions dollars during the next 13 years, and the 36 miles of roads will cost an estimated 4,100,000 \$ (1999 estimation). It should be noted that the Association was fully aware of the increasing cost of maintaining the infrastructure, as an external consultant was hired in 1999 to conduct an audit to estimate the timing and the cost of future repairs and replacement. As a comparison, new projects (“Community Facility Development) represent 7 % of the 1392 \$ annual assessment paid by owners (in 2001), whereas reserves for repairs and replacement stand for 18.9 % of the annual regular assessment. Replacement funds (7 millions in 1999) are invested in long term Government bonds in California and generate interests for the POA. Although the budget states that management of the financial assets and future expenses is reasonable, replacement cost is under strong surveillance through the organization of an audit ; second that a tremendous increase of reserves after 1998 is significant of a worries about these cost (+94 % increase of reserves in the 1999 budget, not compensated by a -24 % decrease of this budget item in 2000). These budget increase and reserves skyrocketing seems nevertheless contradictory with the very low increase of property values previously discussed, putting the private governance at risk in future years.

Conclusion

Several concurring evidences overcast a risk of market failures on gated communities in the Los Angeles areas, once they are viewed within a systemic analysis of spill-over effects, negative and positive externalities, and interactions with their local environment. Larger and wealthier gated communities are successful in shielding their property values and generate enough revenue to pay for a cost of private governance. Richer gated neighborhoods do not loose property values and are rather good investments, and are the only one to get a significant price premium over contiguous developments ; to some extent, such affluent enclaves should not be concerned by urban decay and market failures as — according to Hidden Hills HOA officials interviewed in 2000, “money doesn’t matter” —. In such communities, residents do not hesitate to pass special assessments to fit the requirements for a tidy and properly maintained community. On the contrary, a majority of average middle class gated enclaves, located within more diverse neighborhoods, with complex interactions, do not succeed in creating a significant price premium, and / or did not maintain significant growth of price during the last decade. After more than 30 years of operations, it is nevertheless significant that the two oldest gated communities for the upper-middle class (Canyon Lake) and the middle-class of retired workers (Leisure World), which also are the largest private gated enclaves in southern California, are nearing the market failure in the provision of collective goods, with property value change far below the increase of operating and reserve costs.

⁶ 2000 POA Annual Report and 2000-2001 Pro Forma Budget are the documents for which access was granted during a winter 2001 field survey and interviews campaigns.

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