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Cyberge

**Systemic impacts and sustainability of gated enclaves in
the City, Pretoria, South Africa, Feb.28-March 3, 2005**

Renaud LE GOIX

The impact of gated Communities on property values: evidence of changes in real estate markets -Los Angeles, 1980-2000

L'impact des gated communities sur les valeurs immobilières : mesurer
les évolutions dans le marché immobilier (Los Angeles, 1980-2000)

article 375

ABSTRACT/RÉSUMÉ

The paper focuses on how gated communities, as private means of providing 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 what 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 from a demand for security, gated communities are a leading offer from the homebuilding industry. But their spread 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 infrastructure within the gates). Such a structuring of residential space is 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 private and exclusive access to sites and amenities (lakes, beaches, etc.). Such exclusivity favors the location rent, and usually positively affects the property values 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 rise above sustainable levels compared to property values. Changes produced by gates yield 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 this analysis holds only on a short term basis. In the long term, larger and wealthier gated communities are successful in shielding their property values and generate enough revenue to pay the 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 price growth 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.

Les gated communities sont généralement décrites à la fois comme des moyens privés de financement d'infrastructures collectives et de sécurité, des produits immobiliers et des économies de clubs. L'article se penche sur la manière dont elles produisent des fluctuations dans le marché immobilier. Partant d'une étude empirique de données relevées à Los Angeles (Californie), il s'agit d'évaluer comment les enclosures (portails et enceintes) favorisent les valeurs immobilières de propriétaires ; et si la présence de gated communities dans un voisinage influe sur son évolution dans le temps (1980-

2000), du fait d'une déprédation de la valeur des biens immobiliers non protégés par une enceinte, mais situés à proximité de celle-ci. En raison d'une forte pression sécuritaire, les gated communities marquent fortement l'offre immobilière contemporaine. Mais leur diffusion émerge aussi d'un partenariat entre les gouvernements locaux et les lotisseurs. Chacun en effet s'accorde à faire financer les coûts de l'étalement urbain (construction et entretien des infrastructures et équipements urbains situés derrière l'enceinte) par le propriétaire d'une habitation. Cette forme d'espace résidentiel s'avère particulièrement intéressante sur les fronts d'urbanisation, où les coûts de l'étalement excèdent les capacités financières des autorités publiques locales. Les nouveaux lotissements privés fournissent ainsi aux collectivités locales de nouveaux contribuables, sans que celles-ci n'aient à en financer l'installation. En compensation, le propriétaire résidentiel se voit garantir un accès exclusif et privé au site et à ses aménités (lacs, plages, etc.). Une telle exclusivité favorise généralement la rente de site, et en générale joue en la faveur des valeurs immobilières des propriétés intra muros. Ceci suppose que les frais liés à la gestion privée de la copropriété (entretien...) soient compensés par une augmentation substantielle des valeurs immobilières. Une défaillance du marché peut se produire si les coûts du lotissement augmentent trop pour être compensés par les gains de valeur immobilière. Des évolutions observées, on dégage deux tendances. A court terme, les enclosures résidentielles génèrent une surévaluation des valeurs immobilières. De plus, les gated communities semblent pouvoir générer suffisamment de surcroît de valeur pour compenser les coûts de la gouvernance privée. A long terme, alors que les enclaves les plus aisées et les plus grandes parviennent à générer un surcroît de valeur suffisant, la majorité des gated communities de la classe moyenne n'y parviennent pas, et / ou ne connaissent pas de hausse significative de leurs prix dans la dernière décennie. Ces lotissements fermés courent alors le risque d'une « défaillance du marché » dans la gestion d'équipements collectifs, et sont menacées par le déclin.

PLAN

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TEXTE

- 1 Are gated communities and their residential 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 residential communities.
- 2 Gated communities have been defined in two major ways: either as sub-units within more general territories, or as independent spatial units. Some consider GCs as a facet of large planned communities or Common Interest Developments (CIDs) (McKenzie, 1994, 2003; Kennedy, 1995; Gordon, 2004). Alternatively, others argue that the existence of fences and walls, and security features (guards, surveillance cameras) distinguish GCs as residential settings that are significantly different from non-gated enclaves (Blakely and Snyder, 1997; Le Goix, 2002; Low, 2003).
- 3 The latter definition will help to get a better understanding of how gates, walls and security features interact with property value and changes in the residential patterns in urban America. Homeownership inside a gated community shall be seen at 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 one's relatives, a certain kind of exclusive lifestyle, and a warranty of a life-time investment in an American context, where mortgages run for several decades (Low, 2003; Bjarnasson, 2000; Blakely & Snyder, 1997).

- 4 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 borne 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 homeowners association which favors consensual decision-making might be more effective than a public central government in providing collective goods that best satisfy 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 be struck by urban decay and a sensitive loss of property values, thus failing to reach its goal.
- 5 This paper aims to assess the impact of gates and walls on property values over time (1980-2000), and whether gated properties generate enough value to compensate the cost of private governance. Previous research 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. Based on evidence raised in the literature, a first section proposes a systemic analysis of price determination in gated neighborhoods (price premium hypothesis), given a complex chaining of positive and negative externalities that might affect them, through multiple scales of interactions. Next, the price premium produced by the enclosure is empirically tested, by the means of price patterns comparison at the metropolitan area level for a database of 219 GCs. While in a majority of cases, the price premium hypothesis is verified, the last section specifically focuses on GCs which does not succeed in shielding their property values behind gates and walls.

A systemic analysis of property values and gated communities

- 6 Analyzing gated communities in the real-estate market requires considering the broader context of how property rights and property values interact with other land-uses in the specific case of gated enclaves. As a consequence, this paper does not aim to provide a comprehensive review of more than a decade of literature defining, describing and analyzing gated communities in different national contexts **1**.
- 7 This section focuses on how empirical and theoretical findings about property value patterns and gated communities interact in intricate threads of property rights, management issues, planning policies, and in the nature of a real-estate product. The terminology of "property values" refers to the property price paid for by the owner of land and built property, and does not make reference to the assessed value used by the county tax assessment **2**.
- 8 This systemic analysis of complex interactions impacting the property prices requires us to consider gated enclaves as an independent system, everything being equal in terms of location within the system of property prices in the urban area, which depends on location, job patterns, polycentric patterns, etc. It aims at sorting out the respective effects on property values of (1) private urban

governance and (2) the enclosure in the specific case of gated communities. Figure 1 summarizes the system governing property values in the realm of private governance in a gated community, and their interactions with other local communities and public bodies of government. It illustrates the discussion and review of empirical and theoretical literature in the following sections, and how gating a private communities purposely impacts property values.

Property values in gated communities vs. potential spillover effects

- 9 On the one hand, private firms, developers and homeowners, each operating optimal location decisions, produce social costs and generate spillover effects, such as pollution, sprawl, congestion, competition for land uses, land speculation and 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 to market failures. It supplies the residents with their own private governance effort to avoid spillovers from urban residential and industrial developments (crime, traffic, congestion and decay). In so doing, gated communities also produce spillover effects on their neighbors. The reverse is also true: land-uses abutting the walls, which might be Planned Unit Developments as well as non-residential developments (commercial malls, recreational areas, industrial activities, etc.) also produce spillovers. In what seems to be a complex pattern, a field of positive and negative externalities is produced by the interaction of land-use and intricate property rights in urban regions.
- 10 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 individual properties within the walls might also be stricken by diseconomies and costs endured by the community as a whole, ultimately producing decay and loss of property value.
- 11 On the other hand, an important assumption of some studies is that 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 as a diseconomy that private communities would be unable to overcome ; as a result, private communities might be more efficient in providing public goods than are 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 from the libertarian political-economy viewpoint (from another point of view, the cost of public provision should nevertheless not be seen as a diseconomy when considering the equity arguments of wealth redistribution). In this cost/benefits analysis, infrastructure is 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 from the neighborhood improvements (Foldvary, 1994).

Gated communities, property values and local governments

- 12 Another level of analysis focuses on the interface between private governance and public authorities. Most analysts argue for a “cash-cow factor” hypothesis, namely, that gated and, generally speaking, private neighborhoods enable public authorities to manage growth with greater fiscal resources. It is well known that the regional diffusion of gated communities is related to suburban growth, an endemic anti-fiscal posture, and municipal fragmentation : the following section reviews some of the arguments sustaining this idea, and further developed and empirically based in Dilger (1992), McKenzie (1994), Ben Joseph (2004) and Le Goix (2005a). These three conditions have frustrated local planning efforts: although urban sprawl has generated an increased need for infrastructural development, property tax limits (Proposition 13) and fragmentation have reduced local governments’ financial resources **3**. As a result, gated communities, which bring wealthy taxpayers at minimal cost, have become the perfect cash cow for local municipalities (McKenzie 1994).
- 13 Gated communities now represent a major share of the market in the fastest growing parts of the Los Angeles region, especially in Orange and Riverside counties where the population has boomed since the 1960s. Since 1990, the growth rate has remained high, averaging 14% between 1990 and 2000 (Le Goix, 2005a). By providing their own security, infrastructure and services, these developments reduce public financial responsibility. The difference between private and gated communities is that public governmental bodies will never have to pay for street maintenance in gated streets, whereas private un-gated streets can easily be transferred to the local government if used by the general public. As compensation, in private and gated neighborhoods homeowners are granted exclusive access to their neighborhoods, a condition which theoretically enhances location rent and positively affects property values (Lacour-Little and Malpezzi 2001; Le Goix 2002). Thus, these developments are instrumental in transferring the cost of urban sprawl from public authorities to private developers and homeowners.
- 14 Also, to the extent that gating increases property values, a municipality’s or county’s property tax revenues also increase **4**. Not only are cities exempt from paying for most of private communities’ security, service and infrastructure, but also rising property values increases funds to pay for enhanced public programs and goods.
- 15 From the developer’s point of view, gating a neighborhood is also instrumental in avoiding regulations on streets and areas open to the public. Although some developers are able to maintain profits while producing environmentally sustainable and affordable developments, the vast majority perceive that planning regulations, such as requirements for open space, land dedications, and water systems layout and hookup fees, are excessive (McKenzie, 2003; Ben-Joseph, 2004). Indeed, private and gated communities proliferate under several interesting dynamics, involving on one hand, public governments enlarging their tax-base and on the other hand, developers seeking to offset the burden of public planning regulations through flexible design within private subdivisions (Ben-Joseph, 2004).
- 16 Gated communities are indeed instrumental in accompanying urban sprawl for counties and municipalities seeking new revenue to finance their development. As a backlash, GCs as well as non gated CIDs might politically be involved as public actors and push for a political autonomy as incorporated municipalities. In 13 locations, gated enclaves played a determining role in cities’ incorporation since Bradbury and Rolling Hills did it according to the Lakewood scheme in 1957. Considering some empirical findings on how newly incorporated municipalities are instrumental in transferring some cost from the private realm to a public body of government, I have argued that this particular process ultimately leads to a predation of tax revenues by gated private enclaves in order to protect one’s real estate investment (Le Goix, 2005a).

How does the enclosure affects property values ?

17 This section finally examines how the enclosure differentiates gated communities from non-gated CIDs in the valuation of properties by the real estate market actors. Gates and walls are indeed usually argued to yield a significant price premium on properties located in gated communities when compared to other non-gated private communities, and *a fortiori* compared to other neighborhoods. This section reviews the literature developing several arguments, all based on sound and clear empirical and theoretical findings. in the specific case of gated communities

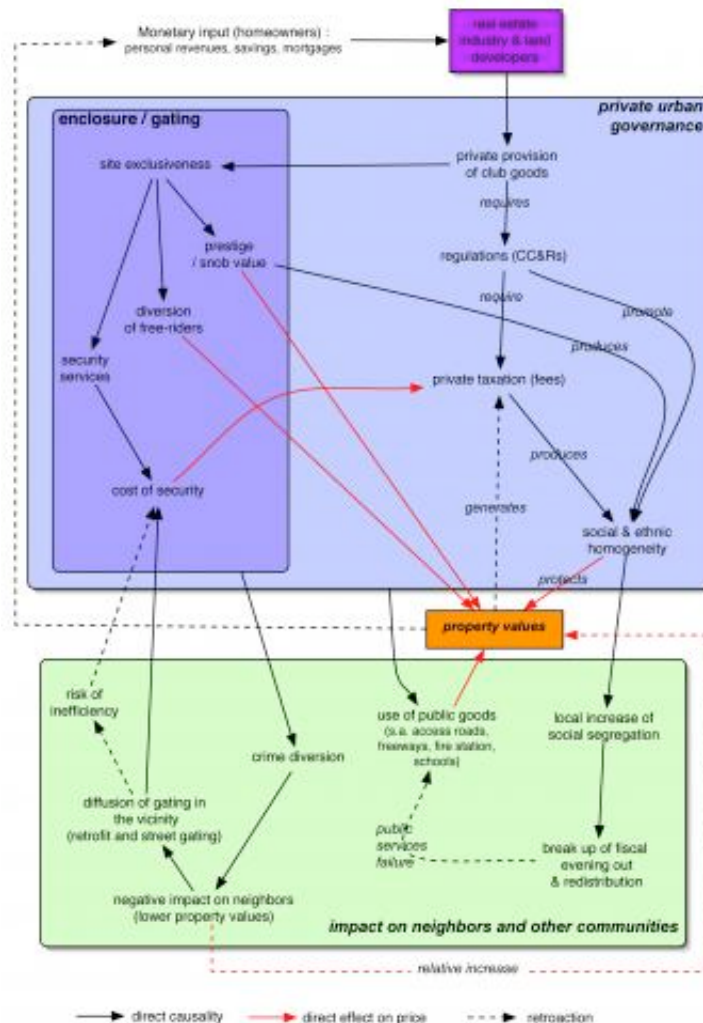


Figure 1 : The protection of property values in a systemic approach to gated communities.

Operating costs

18 The private operations of both a manufactured community and a real-estate product directly connect to the structuring of private governance. This structures gated communities as local quasi-governments in terms of the provision of collective goods (McKenzie, 1994), acting as local consumption clubs of urban services (Webster & Lai, 2002; Webster, 2005). As previously discussed, the short term apparent cost/benefits market efficiency in providing collective services (Foldvary, 1994) match the risks of long-term spill-over effects; the inefficiency of decision making processes and residents' 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). The risk of obsolescence has a strategic impact in gated communities, as it is therefore not possible to transfer the maintenance cost of streets to the municipality. On the other hand, any non-gated CID may very well ask for a public dedication of its streets if it does not wish to go on with the risks and cost of private governance of amenities and infrastructures that are not closed to the general public.

Supply and demand for security features

- 19 The real estate industry appears as a major intervening actor in generating property value. A supply-side analysis allows a better understanding of the nature of the “gated community” product, a package deal of cookie-cutters and glamorous properties along with a set of services (recreation and security) that generate a significant added-value (at least 10 % according to interviews with real estate agents in 1999 in Los Angeles). A large diffusion of gated communities among social classes and ethnic categories has been widely observed, signaling a shift from the traditional upper-class golden-ghetto toward a middle-class real estate product for mass consumption (Blakely & Snyder, 1997; Le Goix, 2002; Le Goix, 2003; Sanchez, Lang & Dhavale, 2003).
- 20 A demand-side hypothesis also assumes 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 the long-term efficiency of private governance to satisfy residents with ever increasing security and community concerns at a reasonable cost by creating and maintaining club-houses, parks, gathering places and security features.

Space matters : interactions with the vicinity

- 21 Both in theory and practice, impact and spill-over effects of public vs. private interactions often favor gated communities residents and property values, and disfavor 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.

Location rent plays in favor of gated CIDs, as it is obvious that gates and walls will favor property values in GCs, for at least three reasons. First, gating a neighborhood maximizes the location rent in the cases of scenic settings (mountain and hill areas), nested location in valleys or privatized access to a beach. Second, it enhances the perceived value (i.e. “snob value”) of the local environment (natural settings, private golf course, private ranches and horse trails, etc.). Finally, it guaranties the residents against free riders who might use GCs’ facilities. Travel behavior, for instance, is diverted by gates and walls (Burke & Sebaly, 2001; Burke, 2001), thus protecting the tidiness and the quietness of properties. Many GCs on the Pacific Coast Highway were indeed private CIDs retrofitted with gates and barbed wire in order to avoid the obnoxious parking of water-sport addicts (surfers and others) in the private streets of the neighborhoods. Great scenic location for gated communities are quite often also great surf spots, such as Dana Point in Orange County, Malibu, or Rincon Point in Venture County (Le Goix, 2003).

Regulations for members and legal impact on non-members also clearly favor property values, as Covenants, Conditions and Restrictions (CC&Rs) are designed to protect the physical characteristics and social homogeneity of the CID and to promote social exclusion under certain circumstances (McKenzie, 1994; 1998). Indeed, the Association has the jurisdiction to impose consensual decisions

on members and their property, and on non-members—a power governed by contractual agreement. (Brower, 1992; Kennedy, 1995). Once again, compared to non gated CIDs, gates and walls have a specific impact on some of the basic rights of residents (notably the issues of public rights of way, individual property rights and freedom of speech, all of which are subject to special jurisprudences in GCs) in order to protect the quietness, the exclusiveness and the tidiness of the place (Le Goix, 2003 ; 2005c).

Regarding crime, the enclosure has a positive impact for gated community residents and contributes to a decrease in burglaries and larcenies (Atlas & Leblanc, 1994). But the deterrent effect of gates and walls probably leads 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 by 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, creating more a sense of fear and isolation than really protecting the properties.

Finally, social homogeneity and segregation patterns produced by the enclosures also shield property values. But, the inverse is also true: high property values help select 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 high level of social homogeneity within gated communities, and a vicinity where more complex social patterns remain vivid. The enclosures aggravate local segregation, especially on socio-economic factors and age-criteria. Furthermore, preferential location of gated communities obeys buffer zones strategies within homogenous areas regarding ethnic criteria (Le Goix, 2003; Le Goix, 2005b).

- 22 According to this systemic approach, prices in gated communities result from multiple strategies enacted by developers, homebuyers and local governments favoring gated enclaves, providing a tax-base in faster sprawling areas. Property prices in gated communities are not only the product of square footage, number of rooms, features and services delivered along with the real estate product (i.e. cable TV, DSL Internet and security services). Rather, property price reflects a complex mix of local effects (social homogeneity, place and strategies of private governance) and the interrelated consequences 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). The respective effects of private urban governance (the structuring of gated communities as CIDs) and gating may nevertheless be sorted out. Governance, by the means of CC&Rs and contractual regulation, impose on pricing the effects of strategies of actors in the private / club realm, whereas gates and walls tend to impact property values by means of the location rent as well as subsequent effects of exclusiveness, security, and increased social selection of the residents.

Inside the walls: price premium and homogeneity

- 23 In this section, the hypothesis previously developed of a price premium produced by the enclosure is empirically tested. By analyzing price change during the last decade (1990-2000) in some gated and non-gated neighborhoods, a first insight is discussed regarding how prices in GCs better resist annual change and price crises.
- 24 In order to draw general evidences from these empirical findings —findings which are based on case studies — a subsequent section will generalize the results, comparing price patterns in GCs with price

patterns observed in the Los Angeles area in 2000, at the geographical level of census tracts.

Protecting property values

- 25 In the first instance, gated communities seem efficient in protecting property values over a 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 ; by way of comparison, a regular non-gated private neighborhood produced only an estimated 9 % price premium (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). Figure 2 shows some of the findings when studying the evolution of property prices in large gated communities and within the limits of nearby neighborhoods (the locations of the communities described are given on Figure 3). Data 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. Raw data were originally extracted from the *Home Price Check Database* once these were made available online (Realtor.com) 5. Prices are labeled in 1990 US\$ and were corrected for inflation according to OECD and US Government standards.
- 26 Although neighborhoods and properties are different in nature and might not be comparable *per se*, the charts are fair indicators of the good standing of property values in gated communities during the real-estate crisis in Los Angeles (1993-1996). The method is suitable for testing the effect of gates vs. the effect of CID's private urban governance, as all the case studies in Figure 2 are indeed surrounded by non-gated private neighborhood, subject to the same kind of regulation (CC&Rs).



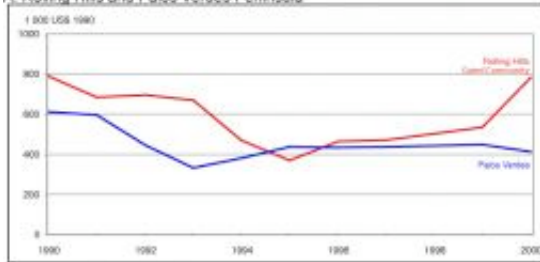
Source: Authors from California Employment Development Department and Real Estate Research Council of Southern California data.

Figure 2a : Price change in the Los Angeles area (1989-2000).

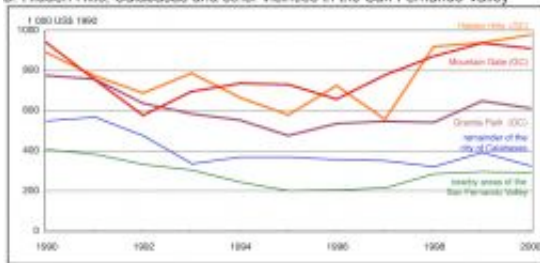
Source : Jaffee, D.M. and Kroll, C.A., 2001

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

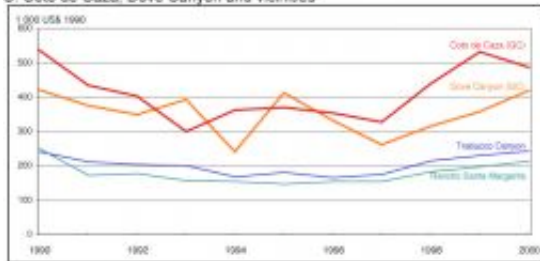
A. Rolling Hills and Palos Verdes Peninsula



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 Géographie-cités 8504 Le Goux 2003.

Figure 2b : Compared change of property values (annual mean) in gated communities and in nearby non-gated communities (1990-2000).

- 27 Two main trends affect property values through the period. Between 1990 and 1995, the average transaction lost half of its value. This drop is consistent with the real market crisis in Los Angeles. It stems mainly from an economic crisis which, in turn, resulted from a deflating employment market and an increased rate of unemployment, thereby bursting the speculative bubble (Jaffee, D. M. and Kroll, C. A., 2001), as well as the 1992 riots, 1993 earthquake and 1994-95 floods and fires (Figure 2a).
- 28 Generally speaking, gated prices showed better strength to real estate market fluctuations than did prices for regular residential neighborhoods and non-gated CIDs. In the Palos Verdes Peninsula, Rolling Hills resisted better than did neighboring communities, but a sudden drop occurs in 1995, before prices rapidly recover their former value. In Calabasas and Hidden Hills, prices decreased as fast as in the vicinity, but the increase was faster after 1995 in every gated community (except Calabasas Park / Granada). Such change patterns are not exclusive to upper-scale and well established developments (Rolling Hills was built in 1935 ; Hidden Hills, 1950), and are quite comparable to the more recent and upper-middle class gated communities of Dove Canyon (1986) and Coto de Caza (1987).

Are gated communities more expensive than their neighbors ?

- 29 Another step consists in comparing values inside gated communities, and values in their neighboring areas, in order to ground a comparative analysis. All further analysis in this paper are based upon a database of 219 gated communities in 7 counties (Los Angeles, Riverside, Orange, Ventura, San Bernardino, Santa Barbara and San Diego) which were built before 2000. The database has been implemented within a GIS with 1980, 1990 and 2000 US Census Data ⁱⁱ .
- 30 In order to get a better understanding of property patterns in GCs, some evidence regarding the social patterns in GCs must be reviewed. Resident filtering occurs when restrictive covenants and property values limit potential candidates for homeownership. The result is neighborhood homogenization by wealth, age, race and status. Whether the homogenizing effects of privately governed communities are greater than those of conventional neighborhoods is an empirical question, the answer to which depends on local context. Yet Los Angeles gated communities are available within every market segment. While the majority are located within upper- or middle-class white areas, 20% of the surveyed communities are located within middle- and lower-income Asian or Hispanic neighborhoods, which proliferate in the northern parts of Orange County and the San Fernando Valley (Le Goix 2003, 2002). This illustrates the diversity of the gated community phenomenon, as Sanchez and Lang also document (2003, 2005) using a nationwide sample of census data. Contrary to popular conceptions, gated communities are not solely composed of wealthy, white and retired residents; buyers of various classes seek to purchase homes in clubbed neighborhoods.
- 31 The way in which gated communities differentiate themselves from abutting neighborhoods is indeed a complex issue. Although developers try to assure that prospective buyers will feel comfortable in the broader neighborhoods, they also provide them with the 'snob value' of a status exhibition. Following these practices, social patterns inside gated communities should be generally consistent with abutting communities. However, where development sites are in short supply, this may not always be possible, and where the gated development is large enough the area effect may not act as a disincentive to buyers. In addition, it is more likely that a large, high-end CID development would locate near lower-income neighbors than upper-class single-family homes. Municipalities often encourage these gentrifying actions, which increase the local tax base. Consequently, gated developments have a powerful ability to sort people into preference-related groups and to intensify income-related and status differentiation. All are complex interactions, putting the issue of the differentiation of property value patterns between GCs and abutting neighborhood in a special perspective: the evidences are likely to be determined by the variety of contexts, ranging from the small in-fill development in a gentrifying area to the upper-scale GC on the urban edge, close to agricultural land-use.
- 32 Figure 3 renders the distribution of property values in the Los Angeles area, 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 roughly describing lower, middle-class, and wealthiest neighborhoods according to property values. 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 and census tracts profiles requires building an index of discontinuity **6**. This index, where 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.

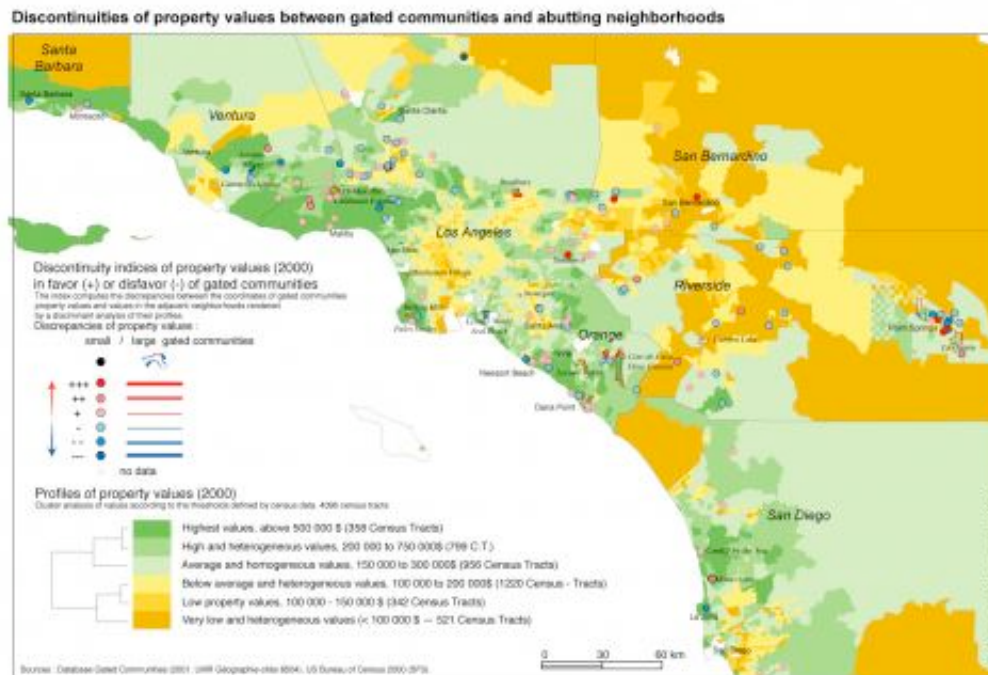


Figure 3 : Discontinuities of property values between gated communities and abutting neighborhoods.

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

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 found to favor gated communities. In 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. The greatest discrepancies are located within the wealthiest gated neighborhoods: Coto de Caza, Dove Canyon, Olympiad Park, as prestigious products 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. As well, it has been an autonomous municipality since 1957, which 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 the strong homogeneity of these tiny gated enclaves (20-50 unites), made up 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 or more

modest properties. This is nevertheless significant than the more heterogeneous the urban environment is, the less price premium the gated community generates.

Price change vs. increasing cost of private governance

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

Comparing gated communities and their contiguous neighborhoods, 1980-2000

- 36 A change of focus is required, 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. Even though the results related in this section are valid for the whole metropolitan area in Los Angeles, mapping specifically focuses on the southern part of the Los Angeles county and Orange county, where numerous case studies demonstrate the variety of situations.
- 37 In brief, a price premium identified in one gated community might as well be an artifact, being a price premium for a specific location within the metropolitan area, which is indeed profitable to the gated community's residents and other residents living within the area. It must be ensured 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, irrespective of other factors, and everything being equal at the metropolitan level.
- 38 Subsequent analyses are based on a simple comparative methodology :

Property values changes are analyzed during two decades, 1980-1990 and 1990-2000, for which data were available at a comparable geographical level (census tracts). 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 peer-to-peer comparison of change in values between (1) census tracts where at least one gated community is located, and (2) adjacent census tracts (tables 1 and 2).

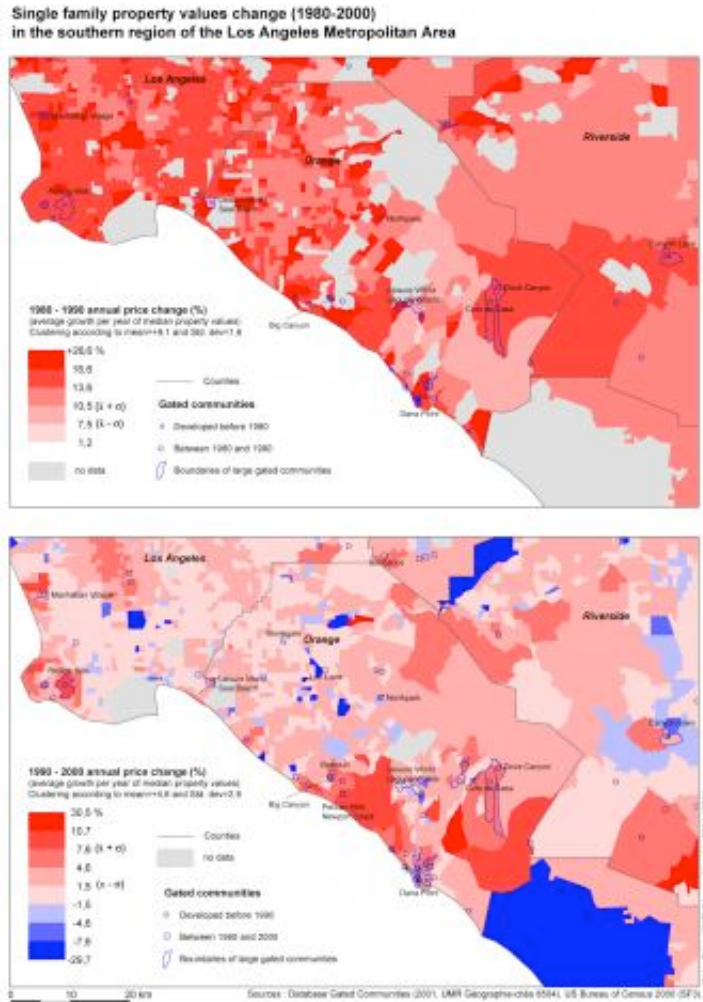


Figure 4 : Single family property values change (1980-2000) in the southern region of the Los Angeles Metropolitan Area

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%

Table 1

39 The average change in median price in the L.A. area between 1980-1990 was 13.6 %. In census tracts where one or more gated community (GC) had already been developed, the average change was only 12,32 %. At first glance, GCs are not located in the fastest changing areas (Table 1).

In a total of 42.8 % of the census tracts (highlighted in red), important change in areas where there is a GC is quite the same as in nearby communities sharing comparable locations. During the 1980s, GCs were developed in areas in dynamic markets on the margins of urban areas.

In locations where price change is below the average, there is no significant premium in census tract

with GCs (27 % of the cases, highlighted in light blue).

There is a significant discrepancy, thus a price premium for areas with one or more GCs, in only 16,3 % of the studied census tracts (highlighted in orange)

- 40 As a consequence, during the 1980s, when galloping growth occurred and price skyrocketed in the whole metropolitan area (Figure 4), gated communities only participated in a significant local increase in property values in a minority of cases. In a general context of a strong and positive market trend, gated communities are not specifically favored at their local level.
- 41 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.

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%

Table 2

- 42 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 (59 %, values highlighted in red) : census tracts with gated communities do not produce more or less value than neighboring non-gated areas.

In locations where global price change is positive, there is a price premium for areas with GCs in 8.3 % of the cases (orange).

In locations where global price change is negative, there is a significant and sometimes dramatic premium for areas with GCs in 14.5 % of the cases (green). It is indeed instructive that gated communities operate well in protecting values in areas affected by urban decay.

Change in disfavor of tracts with GC happens in 13.3 % (light blue) of the cases,

Change in disfavor of both is quite rare (a total 4.8 %, in deep blue), proving that positive as well as negative spillover effects in property values often occur between adjacent census tracts in the vicinity of gated communities.

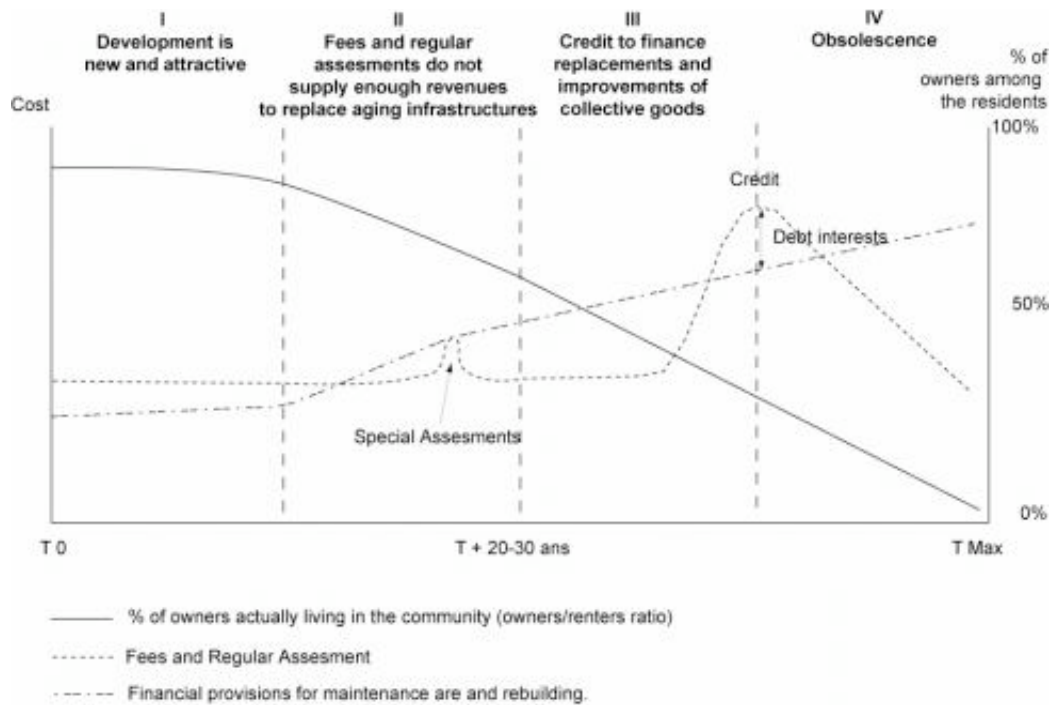
- 43 There is considerable evidence of spillover effects on property prices between adjacent neighborhoods: either winner/winner (in more than half of the cases, positive change affects both areas with gated communities and adjacent non-gated neighborhoods), or winner-looser (price premium for gated communities in about 23 % of the cases in the 1990s ; in 16,3% in the 1980s).
- 44 Some evidences yield to a better understanding of GCs: in a depreciative market and decaying areas, gated communities tend to succeed in protecting property values. This is the result of developers'

strategies, promoting gated enclaves as pragmatic solutions for in-fill developments or upgrading older neighborhoods in decaying areas. Nevertheless, in some cases, tracts with gated communities gain property values slower than do their neighbors during the last decade (13.3%), 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)

- 45 These are major results, demonstrating that discrepancies in price change may happen in a short range of distance. During the 1990s, more complex patterns are 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 efforts to maximize site rentals.

Price change and risks of market failure

- 46 According to classical analysis of real-estate price structuring (c.f. *supra*), it is surprising that a significant share of enclaves — 13 % — do not succeed in maintaining their values above the level of other adjacent non-communities in the 1990s. As a result, such gated communities 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 many census tracts 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 in property values, market failure occurs when costs rise above a sustainable level compared to property values.
- 47 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 approach it 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 easy approval of fee increases. Special assessments and credit can pay for emergency expenditures. Furthermore, aging infrastructures, unsatisfied owners who leave the neighborhoods and are replaced by renters, etc. yield slower growth or decreasing values and a lethargic or decaying neighborhood (Berding, 1999).



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

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

- 48 The issue of obsolescence in Leisure World - Laguna Woods has recently acquired a striking amplitude. This retirement gated community of 19,500 inhabitants, created in 1964, was 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 infrastructures. This lack of involvement might be explained by the average age of residents (77 years old), and their average life expectancy in Leisure World (5 years) 7. Nevertheless, Leisure World now needs a long term strategy for its renewal and to 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 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 evolutions clearly disfavor Leisure World. As mapped on Figure 3, the annual change of 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 strong decay in values in the southern part of Orange county where growth of values often reach +7 to +10 % a year. In this context, there is no easy way to forecast the payment of 6,5 million dollars for the renewal of the gates and walls, 15 million for the sewage system, 10 millions for public lighting during the next 20 years. Out of a total annual budget of 26 millions dollars, investments account for 15 % (\$4 million), and operating costs account for 85 %. A comparison of the 1999 and 2000 operating expenses budgets highlights this issue : overall spending rose by 7 % a year (without the financial reserves), and maintenance costs rose by 5,8 %, while losing property value 8. Aging neighborhoods and infrastructure, in addition to the difficulties in the decision making process, are the first stages of decay, resulting in difficulties in 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, 2005a).

- 49 Canyon Lake, another 9500 inhabitant aging community, developed after 1968, offers a good example of a community in the early stages of market failures. Property values dropped from 15.93 % per year during the 1980s to 2.84 % during the 1990s. The rate remains positive, although in a context where major change has occurred. Ten years ago, it used to be an area of rapid price growth (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 was during the early years. It seems that decay in Lake Elsinore 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 +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* the “Future Replacement Cost” for Association properties and infrastructure, 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 interest 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 ; moreover, a tremendous increase of reserves after 1998 reflects serious worries about these costs (+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 (+2,84 % a year), putting the community’s private governance at risk in future years.

Conclusion

- 50 Several concurring evidences signal a risk of market failures in 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 environments.
- 51 On the one hand, larger and wealthier gated communities are successful in shielding their property values and generate enough revenue to pay the cost of private governance. Richer gated neighborhoods do not loose property values and stand as good investments, being the only ones to get 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.

- 52 On the reverse, a majority of average middle class gated enclaves, located within more diverse neighborhoods, with complex local interactions, do not succeed in creating a significant price premium and / or did not maintain significant price growth during the last decade.
- 53 Some of these, after more than 30 years of operations, might have reached the early stages of obsolescence. It is indeed 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, were nearing market failure in the provision of collective goods, with property value change far below the increase of operating and reserve costs. A municipal incorporation might have been for these private and gated communities a means to transfer some operating costs to a public body of government (Le Goix, 2005a), in order to maintain the financial sustainability of the neighborhood, in a context depreciating home prices.

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NOTES

1 The focus on gating residential neighborhood has grown up while every continent witnessed a proliferation of gated enclaves, including Latin America (Thuillier, 2002, Caldeira, 2000; Carvalho, Varkki George, Anthony, 1997), China (Giroir, 2002), South-East Asia, Australia (Burke, 2001), Europe, former communist Eastern Europe countries and the Arab world (Glasze, Alkhayyal, 2002). Gating is thus interpreted as a global trend drawn from U.S. models, but developed according to local political, legal and architectural traditions (Glasze, Frantz, Webster, 2002).

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2 Market property values provide a better evaluation of real estate patterns than do county tax assesment. When a change of ownership occur, the new assessed value is based on the recorded property transfer price, if a reappraisal is required under state law. For all other properties the annual assessed property value is modified according by the inflation value (Annual Price Index). Nevertheless, increases in assessed value are limited to 2% annually by Proposition 13 (1978). As a consequence, using assessed property value as a proxy for property values would assume that the change in property price is less than 2% a year. Such an assumption is obviously unreasonable in a context where quick changes in property values occur because of a speculative market.

3 In Los Angeles, the anti-fiscal posture has been associated with the incorporation of numerous cities – the first of which was Lakewood (1954). Incorporation is the legal process by which unincorporated land (under county's jurisdiction) becomes a city, through the approval of the State (in California, the LAFCO, Local Agency Formation Commissions are in charge of supervising the process) and 2/3 of the voters. A new municipality can either be granted a charter by the State as large cities are, or be incorporated under the general law, which is the common case. Localities incorporated to avoid paying costly county property taxes and attain local control over development and other municipal affairs (Miller 1981). A second step was the 1978 "taxpayers' revolt" – a homeowner-driven property tax roll-back known as Proposition 13 (Purcell 1997). Passed in 1978, the Jarvis Grann Initiative introduced a 1% limit on the assessed value for property taxes and a maximum annual increase of 2 per cent. This tax limitation increased the need for public governments to attract new residential subdivisions, especially those that would bring wealthy taxpayers into their jurisdiction. A third influence on the spatial diffusion of gated enclaves was the rapid growth of the Los Angeles area, sustained by massive population flows during the 1980s.

4 Up to now, Courts have rejected requests by gated community to opt out from municipal taxation (i.e. : the double-taxation debate). Some tax rebates have been granted, but these are exceptions (Kennedy 1995).

5 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]

6 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. For detailed methodology, refer to Le Goix, 2003 ; 2005b. This table provides 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.

7 Personal interview, November 2001.

8 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).

9 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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