

‘Colonia’ Land and Housing Market Performance and the Impact of Lot Title Regularisation in Texas

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Summary. This article analyses performance of the land market in several irregular settlements (*colonias*) outside Rio Grande City, Starr County, Texas. Specifically, it explores the impact upon land prices of a major title ‘regularisation’ initiative to clear property titles of very poor households undertaken by the Community Resources Group (CRG) Receivership Program at the behest of the Texas State government between 1995 and 2002. Land price data and trends are analysed using a major CRG database of over 1400 price records and files, complemented by a questionnaire survey of over 260 households applied by the research team as part of an evaluation of the CRG Program. The data show that prices are relatively ‘flat’ in real terms over time and that, while there was a spike in prices during the early 1990s, there does not appear to have been any significant increase since regularisation. The data suggest that prices appear to be shaped more by socially determined criteria associated with the developers themselves, rather than by settlement characteristics, location, etc. Regularisation of land title appears to make little difference to land market performance and, while *colonias* are a vehicle for investment for low-income groups, the rate of return compared with other segments of the (formal) property market is very low. These findings are compared with similar work for less developed countries and also challenge those theories that argue in favour of land regularisation as a means to improve land market performance and integration of the urban poor.

Informal Land Markets and ‘The Mystery of Capital’

Scholars and analysts who study rapid urbanisation in less developed countries are familiar with ‘regularisation’ programmes, understanding these as policy interventions to provide services and legal property titles to settlements that will often have developed illegally, either through squatting or by illegal land sales and development. In many

contemporary Latin American cities, rapid population growth in the second half of the 20th century led to anything between 25 and 60 per cent of the built-up area having originated as irregular residential settlement (Gilbert and Ward, 1985; Gilbert, 1996). Today, such regularisation policies have attained conventional wisdom status throughout the region and come in two forms: first, those that focus upon extending

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essential infrastructure (power, water, drainage, public lighting, street paving, etc.) to areas that lack them; while elsewhere a second approach is to accord priority to legalising the illegal by converting *de facto* ownership into full *de jure* legal title.¹ Sometimes the two programmes go hand-in-hand and, although full title has rarely been an absolute requirement in order to secure government intervention (Varley, 1985, 1987), it usually helps, if only because it brings people onto the property registry, providing a basis for on-going cost recovery of (service) consumption charges and for the levying of property taxes, albeit at low and modest rates, thereby making urban development programmes more sustainable (Ward, 2003a). Moreover, to the extent that planning controls can only be exercised effectively where the property market is formalised, title regularisation forms an increasingly important component in programmes to improve urban management and administration (Jones and Ward, 1994).

In Latin America, such policy scenarios are neither novel nor controversial, such that in the region today the principal questions usually hinge around two issues: first, how to recover the costs of regularisation without imposing an excessive burden upon the poor, inadvertently forcing their displacement. And, secondly, how best to prioritise programmes given the large backlog of service requirements in older settlements as well as more newly created ones that continue to proliferate, notwithstanding tighter government controls and greater political willingness to prevent developers from continuing their egregious land development and lot sales. Important background variables in the Latin American policy environment are democratisation, together with economic liberalisation and greater global integration. Political and economic opening have had a profound impact not only upon socioeconomic conditions, but also upon the housing process and the nature of land market performance. Time-worn practices of patron-client links between politicians and the urban poor whereby settlement services and legal

recognition were a *quid pro quo* for party political (or individual) support are largely a thing of the past; as is the existence of an overarching (patrimonial) state seeking to provide a broad range of social benefits to the poor. Today's government bureaucracies are slimmer and programmes are more carefully targeted to those that need them most. Social services may also increasingly be contracted out to privately organised enterprises and to non-government organisations that have become a virtual arm of the state (Ward, 2005). The prevailing orthodoxy is that, wherever possible, the market(s) should provide, such that the primary task of policy-makers is effectively to 'prime' the market, or at the very least to make it work more equitably by generating jobs, cutting out red tape that frustrates entrepreneurial spirit, engaging the private sector in home-building programmes for the lower end of the market and providing serviced lots at affordable levels, etc. Thus, from the 1980s onwards, the policy paradigm has changed: initially towards greater active sponsorship and support for self-help housing and informal settlement initiatives; and latterly to more effective regulation and improved administration that would reduce waste, enhance cost recovery and provide greater incentives for the poor to become a part of the market place and be better placed to fend for themselves (Ward, 2005).

Notwithstanding a growing recognition of some of the positive elements of informality (Roy and AlSayyad, 2003), for those wedded to the orthodoxy of formal urban land development, the very idea of informal title and property land markets remains anathema. Therefore, numerous arguments are rehearsed in favour of titling programmes. First, planners and public officials, for whom the formal legal system is the one that they know best and work towards, are often uneasy with 'plural' systems and alternative property rights that are unfamiliar and which threaten and jibe with the sanctity of private property. A second argument stems from the assertion that only within a formally organised property market can a true market

economy flourish (McLaughlin and de Soto, 1994). A third argument is the idea that legal title provides security against eviction and displacement, and provides the necessary incentives for home improvement and consolidation. As McLaughlin and de Soto argue

When people have formalized titles they feel their property is under their legal control and therefore have the incentive to invest their intelligence and work in improving it (McLaughlin and de Soto, 1994, p. 308).

They further add that when there is no formal title to provide security of tenure, planning horizons are shorter and there are no incentives to protect and improve property. Fourthly, it is argued that service providers cannot, or will not, introduce services until legalisation and full property entitlement are in place and secure. A fifth assertion is that tenure offers people a new source of collateral (legal property), thereby leveraging access to credit. Sixthly, there is an ideological component to regularisation, insofar as formal title 'integrates' the poor into the urban citizenry, inculcating a belief system that respects free markets, supports democracy and engenders respect for, and participation in, the tax and regulatory bases of city management.

In actual fact, research in less developed countries has revealed many of these arguments to be fallacious. Far from being excluded and sluggish, the informal land market is quite dynamic, with free exchange (sales) of land and dwelling units (Jones and Ward, 1994). This is because the very informality and poorly serviced nature of the land makes housing affordable in the first place. Moreover, far from being outside the market as some would argue, informal housing is actually firmly commodified within the market-place, albeit a less regulated one (Burgess, 1982). Nor is it axiomatic that only full legality and secure property titles prime the market-place as McLaughlin and de Soto argue: in both formal and informal land markets regulation and restrictions may also severely inhibit property development, as

well as preventing the creation of activities such as renting, the creation of jobs and income-earning opportunities, sometimes referred to by international aid organisations as 'urban productivity' (Ward, 1999). Indeed, greater regulation in the formal market often severely restricts its operation—hence the somewhat perverse and simultaneous argument by these same authors for the need to deregulate. Nor does it appear that legal title *per se* raises land prices significantly (Jones *et al.*, 1994), although some assert otherwise (see Legoretta, 1994). As for the poor using the property as collateral to secure credit for home improvements, this would appear to be primarily a middle-class projection, since most low-income households eschew formal credit (Riofrio, 1998). Even though NGOs and government departments have moved towards micro-credit support in recent years, they often do not require full legal title as a criterion for a loan (Jones and Mitlin, 1999; Cosgrove, 1999).

This research notwithstanding, within the US and elsewhere many still believe that clean property title is an essential element to effective participation in the market-place. Only by holding legal title to their land can homesteaders become true players and beneficiaries of the market: the nub of the '*Mystery of Capital*' extolled by de Soto and his adherents (de Soto, 2000; McLaughlin and de Soto, 1994). They argue that by having full legal title to their land and home, property values will no longer be depressed by illegality, and lots and homes can be freely traded in the market-place, making people more mobile. In short, regularisation and legalisation enhance bootstraps programmes, foster mobility, help to build wealth and allow people to leverage capital using their property as collateral. However, such broad-brush propositions beg many questions and there is a rising body of research that questions these assertions from both the perspective of theoretical logic, as well as empirical practice (Gilbert, 2002; Varley, 2002). At best such assertions are overdrawn and at worst they are gravely misleading.

This article analyses the intersection between land titling programmes and land market behaviour and performance. However, unlike other research that derives almost exclusively from less developed countries, this research reports on similar low-income land and housing markets that exist in the US, analysing specifically the phenomenon of peri-urban 'irregular' settlements outside Rio Grande City (RGC), located in Starr County, on the Texas–Mexico border. Drawing upon detailed land market research and survey data collected as part of a formal evaluation of a major land title programme in Rio Grande City, we analyse and track land price changes in several low-income self-managed housing neighbourhoods for the period 1970–2001. This allows us to evaluate the impact of land titling programmes upon a number of possible outcomes for market performance: land and home affordability; and the opportunity and extent of wealth creation among impoverished households. The article further explores the apparent determinants of land price differences and changes over time, and compares conventional explanations that attribute land values to variables such as location, level of servicing and settlement layout, with alternative explanations that give greater credence to what we will call 'social determinants' such as the nature of lot sale and development entrained by individual developers, and their social relations with low-income populations.

At this lowest end of the land market, we conclude that land prices are fixed socially more by the idiosyncrasy of the developer, and not by differences in location or level of servicing. And while it may still be too early to be definitive, the evidence and *prima facie* findings that we present here suggest that there is little positive direct relationship between land title regularisation, rising property values and turnover of lots through the market-place. For a raft of other reasons, the market is 'stunted' and, while land titling programmes do change the status of the way in which land is perceived and held by low-income residents, by itself title does little either to enhance directly valorisation and

wealth creation, or to shape demand and property transfers. The lack of demand and the minimal opportunities for selling one's lot and home in the market-place, effectively impede any significant opportunities for wealth creation. True, *colonia* residence offers important use value to the populations (i.e. as a place of residence albeit at high social costs), but to date the ability of low-income (and now) legal property owners to capture any significant increase in the exchange value is severely inhibited. And this bears little or no relation to whether or not the property is titled.

Colonias in Texas and the Land Titling Programme in Starr County

Before analysing the specifics of land development and land market practices in the study areas, it is important to outline briefly the nature of irregular settlement development and self-help in Texas and elsewhere in the US, not least since few researchers are aware of the widespread existence of settlements that are so closely akin to their Latin American and Mexican counterparts. In Texas alone, an estimated one-half a million people, almost exclusively of Mexican origin, live in some 1600 plus settlements or *colonias* as they are more generally known (TWDB, www.twdb.state.tx.us; Ward 1999); while significant additional numbers of people also live in *colonia*-type sub-divisions in other border states such as New Mexico and Arizona (Ward and Koerner, 2004). While significantly different in many important respects from their Mexican counterparts (not discussed here, see Ward, 2003b, for further details), the formation of these settlements responds to a similar logic—namely, rapid urban and population growth, a context of little or no public housing supply and low state support for other low-income housing opportunities. Although illegal, they are effectively the only route that poor households have if they are to embark upon home-ownership, build a home and create a family patrimony, all within a context of poverty and low-wage economies, without access to

low-interest formal lending institutions (Ward, 2003b). Housing acquisition is made affordable primarily by cheapening the cost of the actual lots themselves through the sale of agricultural land in rural (peri-urban) areas without adequate service provision at the outset, and doing so in such a way as to make the process seller-financed but without any transaction costs, and on terms that are favourable to the seller (ease of repossession for non-payment, etc). Thus, lots are sold under a 'Contract for Deed' mechanism whereby purchasers defer receipt of any deed or title until the lot is paid for in full. Sometimes they are sold informally without any contract, just with receipts for payments. Modal lot prices range from \$6000 to \$10 000 in 2003 values, depending upon the county and lot size (Ward *et al.*, 2000, Ward, 2003b). Another important way to achieve affordability is by lowering the cost of the housing unit itself, either through self-help construction or by living out of a camper or trailer, at least until household finances improve so as to allow for the purchase of a better manufactured home that can be placed on site.² Services such as power and electricity are provided privately and, in the absence of county (public) capacity to provide water and wastewater removal services, these are also obtained privately from a number of possible sources including roving water tanker lorries. On-site septic tanks and evaporation fields are usually privately purchased and installed to deal with household effluent, although these are rarely adequate especially in the poorest settlements and regions.

Despite the hazards and difficulties associated with *colonia*-type housing, this supply system remains the only mechanism of entering home-ownership for low-income households earning less than \$25 000 a year (and many, in fact, earn only half this amount). Even compared with other very poor counties near the border, in Starr County incomes are especially low: the median household income in 1999 was \$16 504 (compared with \$39 927 for Texas as a whole) and 45 per cent of households earned below \$15 000 a year. Data for the other border counties are

also indicative of widespread poverty, albeit not quite as extreme as in Starr County. The following data are for other border counties in the same Lower Rio Grande Valley region and show the median household income and the proportion of households earning less than \$15 000 total per year (figures in parenthesis): Cameron \$26 155 (29.6 per cent); Hidalgo \$24 635 (32 per cent); Webb \$28 100 (26.9 per cent); Zapata \$24 635 (32 per cent), while Upper Valley El Paso County, although also poor, has a more bifurcated income distribution, with \$31 051 median and 20 per cent of households receiving less than \$15 000 per year. As one moves away from the border, so the median incomes usually rise, but there remain a significant proportion of the population in the very poor category, such that *colonia*-type sub-divisions are also widespread (see Ward and Koerner, 2004). Travis County in central Texas where the relatively well-off capital of Austin is located, has a median household income of \$46 761 (yet 12.2 per cent still receive less than \$15 000), while Lubbock in the north has a median income of \$32 198 (22.5 per cent below \$15 000). Both cities have *colonia*-type sub-divisions in their peri-urban hinterland and, although they are developed informally and are poor, the social conditions are rarely as extreme as one finds in the border area.

The current study location of Rio Grande City has particularly little going for it economically, with a median income of just under \$20 000, and 40 per cent of all households earning less than \$15 000. And as expected, within the specific settlements studied, incomes are even lower. Fairly typical (but not the poorest) is the *colonia* of Las Lomas where the median household income in 1999 was \$10 927 with 65 per cent earning below \$15 000. Most householders have at least one worker and employment spans a wide range of low-paid (usually) service jobs, sometimes supplemented by part-time service work for women and/or migrant agriculture and haulage jobs among the men.

Two principal land developers controlled and oversaw most of the peri-urban settle-

ment outside Rio Grande City. They were Mr Blas Chapa—a local judge—and Mr. Elías López. Independently, but sometimes together, these two men accounted for most of the land sales in the RGC *colonias* that later would require title regularisation. As developers, these two men were not unlike others in Texas (Ward, 1999), selling unserviced land with vague promises of later providing services, at prices and on terms that were affordable. However, the actual process of land development is rather atypical since the Chapa- and López-developed *colonias*, unlike most others, are distinctive in that many lots were not sold legally under Contract for Deed (although some were), but instead were sold piecemeal in exchange for receipts and handwritten entries in a book of sales. Equally problematic was that not all settlements were properly surveyed and platted (sub-divided into individual lots), but instead lots were identified by a ‘metes and bounds’ survey system that references land parcels according to distance and direction from a compass point, or by reference to a prominent feature—a clump of trees, a rock outcrop, or even to another person’s property lines. Perhaps not surprisingly, therefore, many people ended up living on lots allocated and sold (but often not occupied) to someone else; others had homes that were actually in the street (which was poorly delineated and difficult to identify), while others lived unwittingly in the floodplain of an *arroyo* and only discovered the fact after a flashflood event. Finally, because relatively few people occupied their lots immediately and because the terms of default were so favourable to the developer, some lots were sold several times to different people.

These scenarios will surprise few researchers familiar with irregular settlement in Mexico (notwithstanding some important differences), but the extensive irregularity of lot titles is highly unusual in the US, so much so that an NGO—Community Resources Group (CRG)—was commissioned by the Texas Government to undertake the regularisation of the affected settlements. The CRG programme targeted 15 *colonias* outside Rio

Grande City and served over 2000 households and 2500 lots. Of these, some 1000 households and lots were the focus of land title regularisation, usually because claimants had defective papers, or where their lot ownership was challenged in some way—multiple claimants, living in the wrong lot, or in an *arroyo* floodplain. The CRG’s portfolio included the *colonias* and land that had been sequestered from the developers, and the agency’s brief was to carry out the title and servicing regularisation of these settlements. (However, the servicing component was soon dropped since there were no funds to carry it through.) Thus, the aim was to provide clear title to those with legitimate claims and to move some households to new lot sites particularly those living in dangerous locations, or where there were multiple claimants to the same piece of land.

Here is not the place to describe the details of the regularisation process or an evaluation of the agency’s performance (see Ward *et al.*, 2003). Suffice to note that the findings reported here were collected as part of a detailed analysis and evaluation of the CRG regularisation programme and its impacts for the period 1995–2002, with particular emphasis on the five years between 1997 and 2002 which was when the clearing of ‘clouded’ lot titles began in earnest. Data-gathering over a single year (2002) comprised a number of sources. It began with a systematic review of CRG files and documents; and a major household survey was undertaken primarily between January and June of 2002. The study embraced a range of methods of data collection: archival analysis, CRG database analysis, key informant interviews and focus groups, as well as the household survey of a total of some 266 families from a randomly pre-selected 436 households (i.e. 61 per cent were interviewed) living in 6 of the larger *colonias* that had been affected by the CRG intervention (of which there were 15 in all). The purpose-designed household survey was applied to 2 sample groups. First, those who had no titles or who had experienced major difficulties and challenges associated with their titles or

residence and who ultimately received titles as part of the CRG intervention. These were 195 of the 303 pre-selected cases and, in the following analysis, these households are referred to as the "Study Group". Secondly, we interviewed a sample of resident households who had not experienced serious title problems and who were therefore not affected by CRG intervention. Although they also lived in the same settlements (and especially in Las Lomas), they had received Contracts for Deeds or had completed the purchase of their lots such that they had been able to secure a warranty deed for their properties. Although they formed part of the CRG Receivership plan and hoped and expected to benefit equally from any later service provision, households in this group held secure title. We proposed to use them as a benchmark sample for comparative purposes and to help us assess the degree to which title provision made any significant differences to home improvement, land values, etc. Of the 133 households identified for pre-selection in this 'Control Group', 71 (i.e. 53 per cent) were eventually successfully interviewed. While open refusal rates were very low, notwithstanding multiple call-backs, it proved impossible to interview everyone in the pre-selection group. While we cannot be exactly sure of the degree of bias this reduced sample may have introduced, we have no reason to suspect that it was important, or that it detracts significantly from some of the findings reported below.

The detailed questionnaire was conducted in Spanish and covered information about housing trajectories, land market transactions, the 'meanings' attributed to titles by owners, property valuations in the area, the perceived impact of titles on *colonia* improvements and upon home improvements, as well as standard socioeconomic indicators information. It took about 25-30 minutes to complete.³

Land Price Analysis and Land Market Performance

The remainder of this article analyses land

price trends for a number of the CRG-intervened *colonias* in Starr County and seeks to define the main trends of prices over time. Two principal sources are used: first, we drew upon the detailed data contained in a database that had been generated by CRG contact with residents as the agency sought to examine individual claims of ownership as a precursor to the actual clearing of property titles. Secondly, we cross-checked these data with information that we had collected from the questionnaire survey and, in so doing, were able to tie the analysis to responses from the deeper set of questions, and to the independent variable data that were collected. Although the data come from the same broad constituency, the advantage of this dual approach is that it allows us to triangulate the larger CRG database as well as undertake a deeper level of analysis in relation to a smaller 'panel' of respondents whom we interviewed in greater depth. We were also able to compare some of the socioeconomic data from these two sources with that of the 2000 Census in those cases where these *colonias* coincided with census-defined 'places' (CDPs)—as in the case of Las Lomas—for example. In such cases, the coincidence of findings between the census and the sample data were reassuringly close, providing greater veracity to our sample survey findings.

Methodology and the Database Samples

The first database that we analyse below is the one generated by CRG employees who gathered specific data from *colonia* residents as part of the individual files created to verify that they were eligible to benefit from the titling scheme, and to create a paper trail about who owned what land, how much they had already paid and what papers they had to prove 'ownership'. Thus, households were asked: to document the types of papers that they had received originally from the vendor, and which established their claim of ownership; to state the price they had paid at that time; to provide the name of the previous owner(s), or more usually the developer, who

Table 1. Mean and median (2002) real price of land per square foot, 1972–99

Year	Frequency	Trimmed mean (2002) real price	Median real price (¢ per sq ft)
1972	1		0.943
1975	1		0.999
1976	1		0.662
1978	6	0.937	0.601
1979	13	0.761	0.689
1980	14	0.796	0.701
1981	13	0.761	0.481
1982	33	0.492	0.513
1983	103	0.442	0.436
1984	76	0.461	0.476
1985	86	0.500	0.489
1986	95	0.501	0.478
1987	95	0.466	0.464
1988	90	0.577	0.499
1989	128	0.478	0.432
1990	120	0.705	0.578
1991	118	0.705	0.591
1992	105	0.739	0.653
1993	95	0.864	0.744
1994	91	0.874	0.833
1995	44	1.084	0.866
1996	32	0.827	0.600
1997	21	0.864	0.736
1998	18	0.522	0.497
1999	7	0.563	0.573
Total	1406		

Note: these are 2002 values (compared with 1983 values in the survey database). *Source:* CRG database.

sold them the lot; to describe the state of the lot at the time of purchase and whether or not there was any house or construction already on the lot at the time; and to outline what, if any, problems they had encountered when making their payments. This generated an overall database of some 1790 records, with data stretching over some 17 years from 1972 to 1999. However, although the information dates as far back as the earliest purchases in the 1970s and includes records up to the late 1990s, in fact most people bought lots during the 1980s (see Table 1). The database includes information for all 15 of the sub-divisions included in the CRG programme, from which data for the following variables were extracted: the sub-division name; the purchase date (year); the price paid; from whom it was bought; and, whether or not the lot was sold with or

without a Deed (a Contract for Deed usually). As well as analysing the general trend for all records, we were also able to disaggregate data for a number of specific *colonias*—4 of which had a good sample size (Table 2). These 4 *colonias* represent 64 per cent of all records in our usable CRG database.

Our first task in the analysis was to convert all data from nominal prices (i.e. unadjusted for inflation) into constant land prices using standard deflators.⁴ Due to occasional flaws detected in the CRG records, after cross-checking we omitted any case where there was uncertainty, or where there was missing information. This reduced the total number of cases from the original 1790 to a ‘working database’ comprising 1406 records that are shown in Table 1. These data are used to undertake the first phase of our land price analysis and, compared with other simi-

Table 2. Selected *colonias* and number of records

<i>Colonia</i>	Number of records
B & E	92
Mikes	158
Share 52	163
Las Lomas	491
Total sample	904

lar surveys, they represent a relatively large data-set (Jones and Ward, 1994; Ward *et al.* 2000). Not only is it relatively large, but we are confident that the information had been consistently and accurately collected and recorded.

Real land prices were computed for each lot but, because lot size sometimes varied, it was important to calculate in unit-price terms, as the real cost per square foot. Although most people recalled how much they had paid, or the deal that was struck at the outset, there was less certainty about the exact size of their lots, so in each case this was cross-checked with the data at the CRG office which were based upon plat information and were known to be accurate. Also, in Starr County, we were greatly helped by the fact that most of the lots sold were of a uniform size— 50×100 sq ft—which is small by *colonia* standards in Texas. This largely obviated any possible inaccuracies by having to rely solely upon the size as reported by respondent. Thus, from both the questionnaire survey and the CRG database, we had the nominal and real price paid for the lot, and the same for unit prices per square foot, all matched to the year of purchase. These form the basis for the following graphs. Moreover, in aggregate data presentations, wherever possible the 'trimmed' mean value was adopted since this automatically excludes the outliers that would distort the average and mislead the analysis.⁵ Thus, the median and trimmed mean values offer the most accurate picture of lot prices in any single year.

Occasionally, nominal price data on lot prices were taken directly from the CRG

database (as were lot-size data since these were always more accurate than the self-estimates offered by respondents). The CRG data were checked against that provided by survey respondents in order to gauge accuracy and consistency of the survey data and they proved a reasonably close match—especially the medians—although the average lot price in the survey was almost \$300 higher. Upon further investigation, it transpired that this was because some respondents had, in fact, purchased two adjacent lots, but considered the purchase as a single (larger) lot. Where this was known to be the case, the survey data were recalculated in order to reflect a single lot price, but just in case we have not caught all of those cases we occasionally prefer to use the median value (as in Table 3). Generally, though, we are comfortable using the survey data and we are confident that they are sufficiently accurate to warrant further analysis.

One assumption that we do make here is that, at the time of purchase, these were unimproved parcels of land—i.e. they did not have any dwelling on them. This was almost always the case, even though some lots have been resold (*traspasos*) and, in these cases, it was possible that they may have included a dwelling structure of some sort (although these would probably be excluded by using the trimmed mean). In addition, we were able to control for two variables in order to exclude lot sales that might have contained a dwelling structure: first to focus only upon those cases where the vendor was either Blas Chapa or Elías López since they never sold lots with structures; and, secondly, in the more recent cases that were likely to be

Table 3. Colonia lot and square foot (1983) prices and self-valuation of lot and residential values in 2002 prices

Colonia (N)	Lot value in 1983 prices (\$)		Value per square foot in 1983 prices (¢)		Estimated median lot values, 2002		Estimated median property values, 2002
	Trimmed mean	Median	Trimmed mean	Median			
Las Lomas (94)	2189	2026	0.44	0.41	6000 (31)		36 500 (34)
Mike's (89)	3628	2783	0.52	0.50	5000 (5)		20 000 (26)
B & E (32)	1773	1734	0.36	0.35	7000 (3)		40 000 (11)
Share 52 (27)	1957	1911	0.39	0.38	6250 (6)		32 500 (6)
West Alto Bonito (94)	2493	2564	0.50	0.51	5000 (6)		30 000 (5)
All in 1983 prices	2553	2346	0.50	0.44	6000 (51)		30 000 (82)
Equivalent in 2002 prices	4429	4070	0.86	0.78	4250 ^a		31 450 (82)
Control Group (54)	2224	2122	0.45	0.42			
Study Group (165)	2690	2486	0.47	0.45			

^a Calculated as 0.497¢ per square foot, assuming 5000 sq ft X 1.735 (inflater).

traspasos, to exclude regular-sized lot sales costing more than \$15 000 in real terms since this price was considerably over the odds and would indicate the presence of a dwelling. (Similarly, we excluded the extremely low reported prices, since these were probably misinformed prices placed on the record by CRG officials in those cases where the person had paid very little, or was receiving the lot through the CRG.)

Most residents (72 per cent overall) declared that they had bought their lot from Blas Chapa and/or from Elías López. This has two important implications for our analysis: first, these would have been 'first-hand' buyers, as both men were the original developers of these *colonias* and did not deal in anything other than unimproved lots; and, secondly, it meant that it was *they* who had set the asking price—according to their own criteria—rather than these being prices set in the (open) market-place (although one could assume that the two would be closely interrelated), or by another private third-party individual. But other studies have shown that it is not uncommon for 'non-market' criteria to enter the equation particularly where the sale is made by a friend or relation of the developer (Ward *et al.*, 1993).

Land Price Trends over Time

In our first model of land-price changes over time, we calculated yearly real average land prices per square foot for the whole period covered in the CRG database. The mean and median real sq ft land prices range from 0.475¢ in 1983 to a high point of \$1.296 in 1995 (see Table 1).⁶ Examining the curves in Figure 1, first for vacant lots and secondly for all lots combined, one can see that there is little difference between the two indicators: the same general trend is replicated in each curve. At first sight, 'real' prices appear to have been around the 0.70¢ per sq ft mark in the late 1970s through to 1982, dropping to 0.50¢ and then remaining flat for the remainder of the decade, before rising steadily from 1991, rising sharply in 1993 through to 1995, and declining thereafter (see Figure 1).

What can be said about the overall trend depicted in the figure? First, it seems to us that, once adjusted for inflation, land prices in the long term are relatively 'flat' throughout—as indicated by the log curve, which shows no perceptible upward slope. The two-year moving average (which tends to 'smooth' any one particularly high or low year in the date), also shows this same mod-

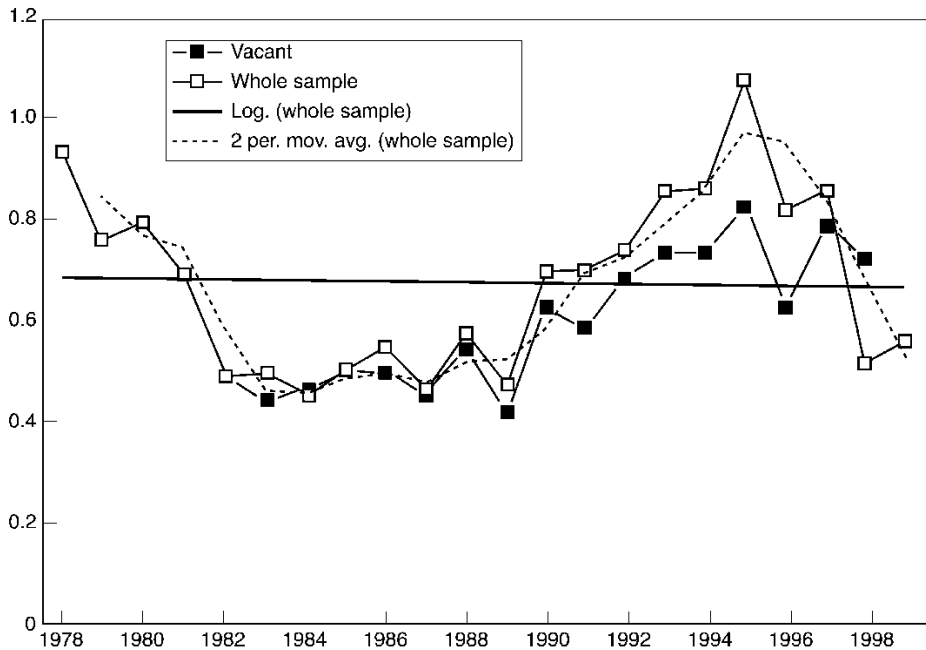


Figure 1. Real price per square foot, 1978–99 (trimmed mean).

est 'cyclical' movement, with a clear sense of prices declining in the late 1970s, rising again in the late 1980s/early 1990s to a high(-ish) point mid-decade, before declining again thereafter. Secondly, there appear to have been two notable 'spikes' in higher land prices, in 1990 and again in 1994. Thirdly, lot prices appear to have declined significantly in real times since 1995/96.

It should be remembered that most *colonia* residents bought into these settlements during the 1980s (even if they did not occupy immediately) and that they did so at a time when no services were provided or promised and before major state-wide concerns began to be raised about the existence and nature of *colonias*. Concern and government intervention really only kicked-in as a result of the 1989 and 1991 sessions of the state legislature, and then again in 1995 which came to represent a major defining moment in legislative intervention (Ward, 1999). While this latter session led to the creation of the CRG Receivership intervention, the programme did not truly begin until 1997 and quickened

from 1999 through to 2002, when most titles began to be systematically cleared.

Although we are confident that these trends are an accurate portrayal of land price fluctuations since the late 1970s, explaining them is less straightforward. We propose three tentative conclusions: first, that overall land prices have remained consistently low because, up until 1995 at least, unimproved lots were always sold without any firm expectation that services would be provided or that local governments would subsequently intervene one way or another to improve housing conditions. Secondly, it seems likely that the emerging publicity about *colonias* from 1989 onwards and the beginnings of the State's commitment to intervene in order to prevent their further proliferation, combined with the stated intention to explore financing means that would provide services to *colonias*, probably provoked a rise in the asking price from the developers and led to a more systematic (i.e. less discretionary) setting of sale prices to interested potential buyers.⁷ As Table 1 clearly shows, this was the high point of lot sales.

Our third proposition arising from the data is that, although the actual number of lot sales began to decline in 1994, and did so sharply in 1995, the 1994/95 'spike' was also motivated by a growing awareness among potential buyers (and developers) that the supply of lots was about to decline or be severely limited altogether. It was widely known that the Texas State government was preparing to intervene in a major way, providing water and wastewater regularisation to *colonias*; but that the government was also about to get serious and curtail for good any further unserviced platted or unplatted development by developers. Correctly or not, many would-be *colonia* owners probably saw this as their last chance to break into *colonia* ownership, but now with the added expectancy that services would come on-line shortly thereafter. Of course, developers had even better information than did the average buyer and for them by 1994 the storm clouds were firmly on the horizon with the threat that some developers were about to be prosecuted and might have their land developments sequestered. It was becoming apparent that major legislation would be considered in 1995 (to come into effect in September that year) that would tie developers' hands from further lot sales (without approved platting and servicing) and restrict their ability to sell lots under the Contract for Deed arrangement. (This is precisely what happened through House Bill 1001 and Senate Bill 336 in that year.) Therefore, prior to enactment, developers may well have been tempted to offload their remaining lots and get out before they were prevented entirely from engaging in further lot sales.

However, the decline in prices that we observe post-1995 requires some explanation since, if there was a general expectation that services would come on-line and that *colonias* would become legitimate and enter the formal land market, then one would expect prices to rise—not fall. By itself, the fact that there was a sharp actual decline in sales is not surprising since after 1995 developer sales were largely prohibited. Therefore it must be assumed that most sales in the 1996–

99 period were resales (*traspasos*) by earlier residents/buyers.⁸ The lower prices during the later 1990s may, therefore, reflect one or more of the following factors: an oversupply relative to demand after the spate of last-minute sales in 1993/94 (described above); the moratorium on lot sales, and uncertainty about what was going to happen in Starr County *colonias* generally, and specifically in the CRG-intervened Rio Grande City *colonias*; and, the switch from a relatively consistent price-setting system on the part of one or two very experienced developers, to a more individualised price-setting by individuals who were less experienced in negotiating land sales than their developer counterparts. Specifically, 'absentee' lot owners living nearby (see Ward *et al.*, 2000) and residents who had purchased more than one lot in the *colonia*, may have been inclined to sell their vacant lot holdings for fear that they would be dispossessed—if and when the CRG or government formally intervened. Whatever the reason, our data suggest a sharp decline in land prices during the period 1996–2002.

Our interpretation is that this decline was due to the post-1995 uncertainties in the land market, rather than the anticipated impact of CRG intervention. Given the lack of data for 2000–02 when our survey ended, we cannot say how CRG involvement and the titling programme from 1997 onwards actually affected the operations of the land market in terms of land prices. However, we can note that the expectancy that clear title would be provided, of itself, did not appear to trigger a rise in lot values. But it may simply be too soon to tell. At the very least we do now have good baseline data against which to measure land price changes from 2000 onwards.

Figure 2 shows the mean real price per square foot. The data indicate that there is some variation over time between settlements in average prices. Las Lomas is the oldest *colonia* and shows generally lower prices (compared with the other selected subdivisions) during the 1980s (when prices were low), with a moderate increase in the

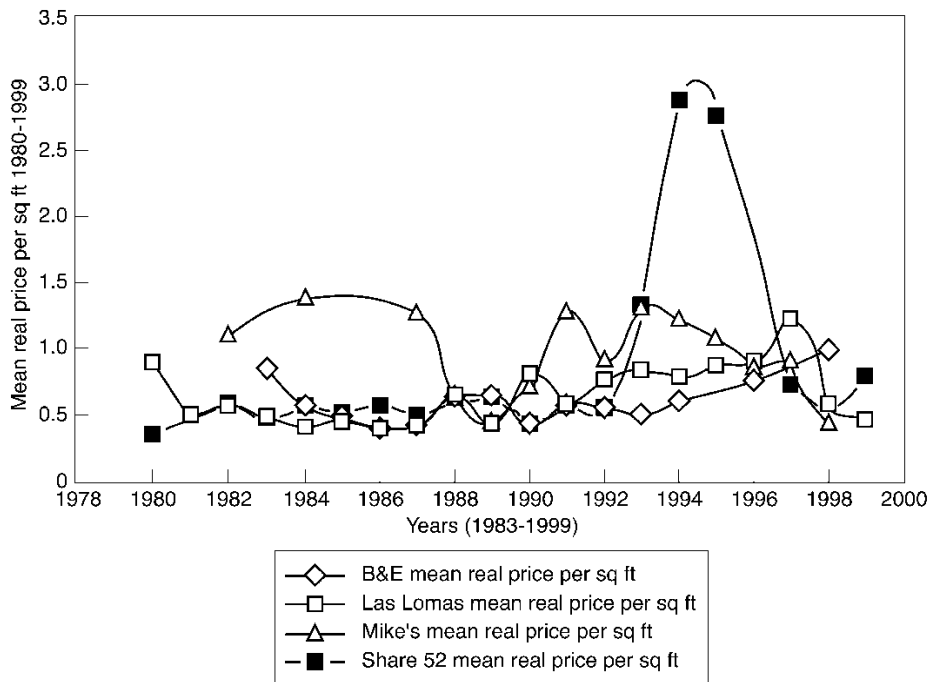


Figure 2. Land price trends in four *colonias*, 1980–99 (mean real price per square foot).

1990s and a drop at the end of the period. Mike's *colonia* has consistently higher land prices than most settlements throughout, but also shows an increase in the mid 1990s, while Share 52 *colonia* has the most dramatic 'spike' of all in the mid 1990s. This alerted us to the possibility that the upward peak noted earlier in Figure 1 for the mid 1990s may have derived from the Share 52 data entering the data-set at that time, but further analysis in the *colonia* revealed that this represented only 5 cases for 1994 and 1995, and that excluding Share 52 data from the overall trend did not change the curve significantly.

Local Survey Data and the Determinants of Land Prices

Thus far, the analysis has focused exclusively upon the larger CRG records, and we now turn to the more detailed data-set derived from the questionnaire survey. However, because of the limited sample size, these data are usually analysed for the whole

sample, occasionally broken down either by *colonia* or into two groups—the 'Control Group', most of whom live in Las Lomas, and the 'Study Group' which comprise the other *colonias* and some (23 cases) from the unplatted area of Las Lomas (Santa Cruz 1 and NW Industrial Park).

We will not repeat the findings from the household survey; suffice to say that the household data show an almost identical cyclical pattern in real (1983) prices (see Figure 3, pecked line) to that described above for the larger CRG database with a similar sharp peak in 1994/95. (The full line indicates nominal or unadjusted prices.) Overall, taking the real price of lots and land units from the late 1970s through to late 1990s, prices remained fairly 'flat' over time. Statistically, no correlation was found between rising prices and the progression of years through the 1980s and 1990s, either for all cases combined, or differentiated between the 'Control' and the CRG-intervened 'Study' Groups. However, Control Group lots do appear to be slightly lower in price

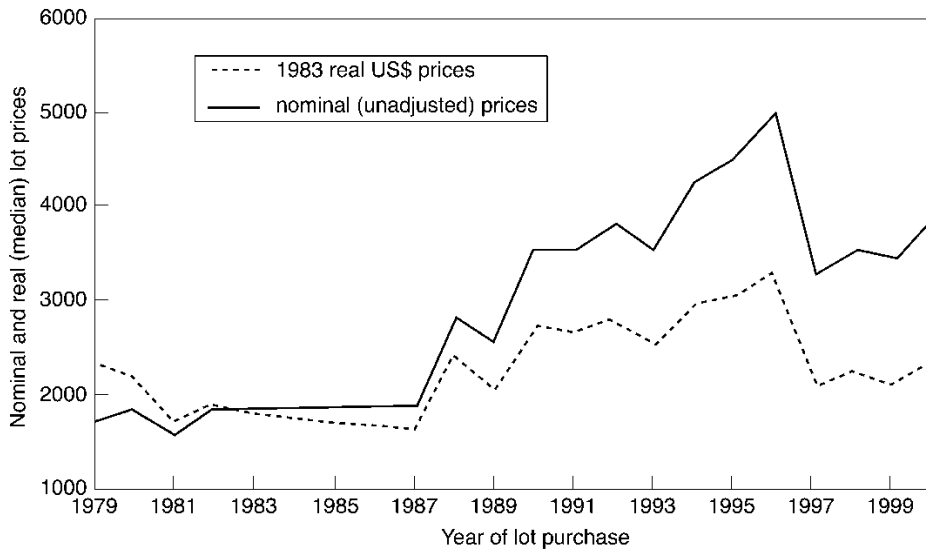


Figure 3. Real and nominal lot prices, 1979–2000.

than those of the Study settlements and this is consistent with the generally lower price of land in Las Lomas (where most Control Group households lived) and the earlier period of that cluster of *colonias*' development (see also Table 3). Differentiating between the two groups continued to show a lack of any clear relationship between price and yearly progression and, although the correlation coefficient is positive (0.114), it is not statistically significant. Moreover, disaggregating the data by cohort or period of purchase does not seem to make any difference either: there is a low negative correlation for the 1989–94 period, and only if one takes the 1979–94 period does one observe a positive correlation of +0.157 (significant at the 5 per cent level).

Tracking prices since CRG intervention (1995 onwards). In summary, the survey data reveal some small hint of a real price increase over time, but only for the overall period 1979–94 and not for the rush of lot sales during 1989–94. Between 1995 and 2001, there is a negative correlation between prices—when they actually decline quite sharply (see Figure 3)—as we saw earlier. However, the number of cases is rather

small: examining the price paid for land in the last few years (1995–2001) embracing the period of CRG intervention (1997–2002) we have a total of 35 cases, but with only 3–4 cases each year in the most recent period. Our conclusions are tentative, therefore. The results (not displayed here) show a sharp decline in 1997, picking up again from 2000 onwards, but not getting back to 1995 and 1996 levels. While it is possible that CRG intervention actually drove prices downwards, it must be stated this is likely to have been in combination with a number of factors, some of which were alluded to earlier (i.e. less well articulated price-setting, the reduction of scarcity by title clearance and the opening up of a supply of lots that were somehow previously impeded from being sold), but it is not possible to be conclusive.⁹ Further research is required to track prices for a much larger number of cases since 1997 and to analyse in detail whether the resulting changes are related to CRG intervention and titling. *Prima facie* it appears that the promise, or the likelihood of title transfers being provided by the CRG, *has not* had an inflationary impact upon land values: indeed, the trend is in the opposite direction. But in order to be sure, it is necessary to analyse

more cases exclusively for the post-intervention period since 1997 and to conduct further follow-up studies for the period 2001–05. Put simply, although it is probably too soon to ascertain definitively whether title provision has had a significant direct impact upon land prices, our initial assessment is that it has not had a significant effect.

The costs and affordability of land acquisition in Rio Grande City. Earlier in this article, we observed that Starr County is among the poorest in Texas and we were interested to know how far the land market was constructed in such a way as to ensure that even here land for self-help housing remained affordable. Lot prices and square foot prices are shown in Table 3. The overall trimmed mean (1983) price is \$2552 (median = \$2122), equaling 45¢ and 42¢ per square foot respectively.¹⁰ (In order to express in 2002 values, multiply by 1.735—see Table 3). These costs of land are broadly comparable in unit price terms with other Texas *colonias* studied using an almost identical methodology (Ward *et al.*, 2000, p. 109). Where those other study *colonias* showed significantly lower unit prices, it was usually due to their much larger average lot sizes (reducing the overall bid prices). For example, Pueblo Nuevo *colonia* in Webb County (outside Laredo) had a trimmed mean price of 13¢ per square foot (exceptionally low), but these were for average lots of almost 1 acre in size; while Sparks *colonia* in El Paso County had a median cost of 35¢ per sq ft on lots that averaged twice the size of those in Starr County (around 11 000 sq ft compared with 5000 sq ft). Cameron Park in Cameron County—a better point of comparison, given its Lower Rio Grande Valley location and similar land properties—had a median of 39¢ per sq ft, with average lot sizes of 7000 sq ft. Thus, we are confident in concluding that Starr County unit land prices are broadly similar to equivalent *colonia* lots found elsewhere in the border area.

The data show that overall lot prices in Starr County are 'cheaper' (or more affordable) than those of most other counties and

cities due in large part to their smaller unit lot size. For example, compared with Sparks and Cameron Park where the median cost of a lot (in 1983 prices) was \$3744 and \$3362 respectively, the corresponding median for all the survey settlements in the Rio Grande City study was \$2346—more than one-third less. Moreover, as we saw in Figure 2, there is often considerable settlement variation between the survey settlements. In our questionnaire data, the higher prices charged in Mike's *colonia* have the effect of inflating the overall average considerably (especially given the larger number of data points in that settlement). The averages and median vary somewhat between those in the Control and Study Groups respectively, with Study Group *colonias* usually being somewhat higher (by \$300–400 or 2–3 cents per sq ft). But, as Table 3 shows, prices vary markedly between *colonias*, with the outliers being Mike's which has a higher trimmed mean ($T_x = \$3628$), and West Alto Bonito, especially if one takes sq ft costs in that *colonia* (around 50 cents per sq ft). In conclusion, while unit land prices are more or less the same in Starr County as in other border counties, the actual cost of purchasing a lot is *considerably less*. Selling smaller-sized lots in Starr County was the way in which developers sought to adjust supply to the potential demand, ensuring affordability in a region that, as we observed earlier, is an exceptionally poor part of the Texas border.

The determinants of land price differentials.

The comparison between the 'Control' and 'Study' Groups suggests that neither the presence or absence of title deeds, nor the provision of clear land titles, makes any appreciable difference to land prices. Thus, one might reasonably ask, what does make a difference? As an important sidebar analysis, we are interested, therefore, in trying to explain why settlements seem to vary so much in average lot prices. Is it 'location, location, location'—the classic assertion; or is it location in combination with other physical site characteristics? Alternatively, given that these are poorly serviced communities, does

the actual level of infrastructure provision or community-generated improvements shape the price of land?

On the face of it, location and proximity to RGC do not appear to play any role at all since prices are highest in Mike's and West Alto Bonito, which are the most distant, while Las Lomas, which is much closer in, has lower lot prices. Nor did any of the *colonias* have any particular servicing advantage at the outset that could explain higher prices, although the expectancy that services might come on line more readily from the mid 1990s might have affected land prices as discussed earlier, but this would only be reflected in those settlements in which lots were sold primarily during this phase. Physical conditions might help to explain the lower cost in B & E, which is steep and relatively inaccessible, tucked away as it is behind another *colonia* La Puerta No. 2. But West Alto Bonito also has a major negative externality of a (sometimes) flooding *arroyo* running through it, although buyers would almost certainly not have known this when they purchased, so it probably did not affect the asking price.

Thus, we need to explore other variables in order to try to explain what influences land price-setting in *colonias* and we turn here to explanations that are sometimes referred to in the academic literature as 'socially determined' (Ward *et al.*, 1993; Varley, 2002). Interestingly (and unexpectedly for the study researchers), the single best explanation of the variation on lot and unit prices appears to relate to *who* developed the *colonia* in the first instance, and the period of development. As we observed earlier, responsibility for developing these *colonias* rested primarily with two men—Blas Chapa and Elías López. According to the CRG database, Blas Chapa developed almost half (682) of the total lots in the 15 settlements, while Elías was responsible for 18 per cent (254) and they sold 91 lots (6.5 per cent) in partnership. Some 27 per cent of lots were recorded as having been sold by 'others'—either smaller developers or by individuals (re)selling their lots (as *traspasos*). Moreover, while both Blas Chapa

and Elías López were actively engaging in lot sales from the late 1970s, either individually or in combination, Elías' major involvement only truly kicked in between 1989 and 1994. After 1995—the prohibition on developer sales of this nature—sales are exclusively by 'others' (largely *traspasos*).

Like most *colonia* developers, Blas Chapa and Elías López were intimately engaged in the planning and sale process, and yet unlike most formal real estate developers they retained very close day-to-day ties with the residents, so much so that despite their illegal lot-sale shenanigans they continued to be quite well regarded by those to whom they had sold lots (Blas Chapa especially). Both men felt close personal ties to the settlements, so much so that they often named the settlements for themselves or their relatives: B & E (for "Blas and Elías"), Mike's (for Elías' son) and Amada Acres (for Elías' wife). West Alto Bonito and Mike's were developed primarily by Elías López who almost always sold lots through Contract for Deed and, while both Blas and Elías developed B and E jointly, Blas undertook the actual business side of the development.¹¹ Blas Chapa was much more involved in the remaining *colonias*, but he was less likely to offer purchasers a Contract for Deed, but sold lots much more informally, keeping an accounts' book and giving out receipts. He was also known to be more amenable to making more casual deals, taking into account other criteria—such as the buyer being a personal friend or coming recommended by friends and relatives whom he knew and liked. Perhaps he was just softer: certainly, people seem to have fonder memories or enjoyed better relations with Blas Chapa than they did with Elías López—a point that came through strongly in focus group discussions that also formed an important part of the study methodology (see Ward *et al.*, 2003, ch. 3).

Several interesting and important findings emerge from Figures 4 and 5. First, the histograms show quite clearly that lots sold by Blas Chapa were much cheaper than those sold by Elías López; indeed, they were under

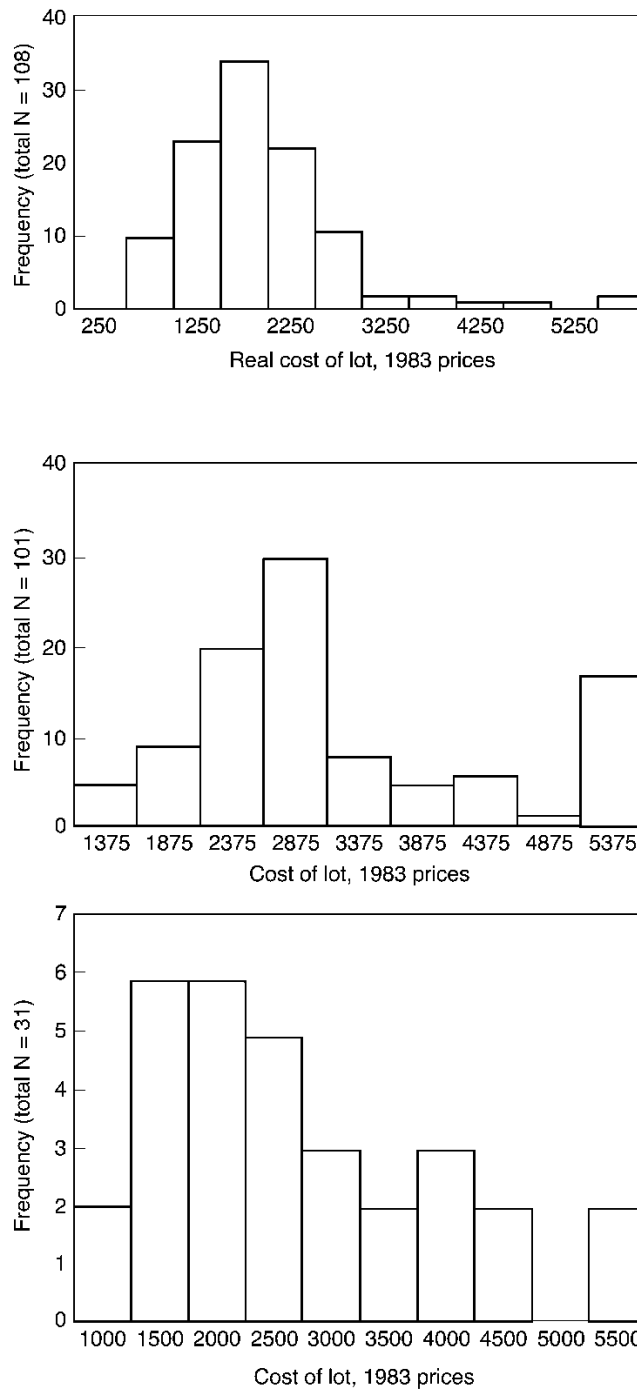


Figure 4. Comparative cost of lot sales for different developers: *above*: lot prices charged by Blas Chapa (mean = \$1944, 1983 prices); *centre*: lot prices charged by Elías López (mean = \$3274, 1983 prices); *below*: lot prices charged by others (mean = \$3188, 1983 prices). *Source*: Household Survey.

\$2000 per lot (in 1983 prices) compared with all means). Quite how Elías López managed to sell lots at much higher prices is hard to

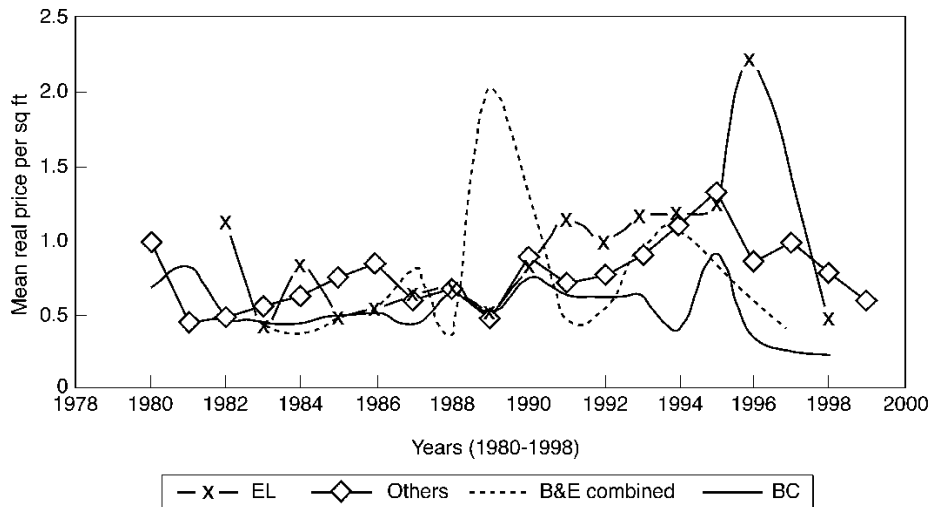


Figure 5. Prices of land sold by different developers, 1980–98: CRG database (1046 cases).

explain, but the fact that he did offer formal Contracts for Deed (unlike Blas' preference for more informal receipts) and the fact that he had overall control of the development process in two distant settlements quite remote from Las Lomas where Blas Chapa had his base, may have been two key factors. Overall, it looks as though Elías López was the more business-oriented and profit-seeking of the two developers and this concurs with the fact that, unlike for Blas Chapa, the residents never held him in much affection. His recent death—if not celebrated—went relatively unmourned by most, as the focus group discussions revealed.

Another feature suggesting that it is the development process more than location that shapes *colonia* prices is the fact that the trimmed mean purchase price of lots varies significantly by period (Table 4, col. 2). Lots sold during the early 1990s were considerably more expensive than those sold during the 1980s and were even higher than those that have come on line since 1995. This also suggests some differential price setting by certain actors—the developers, in this case. While both men were actively selling lots throughout the two decades, the bulk of Elías López' developments were in the late 1980s to mid 1990s, so to the extent that he

and others were charging higher rates at this time, so the overall curve of land price changes could also be expected to rise in those years. As Figure 5 shows, Blas Chapa regularly 'undersold' lots during that period (his price curve actually declines), apparently only catching on to the opportunity of charging higher and more competitive prices in 1994. Interestingly, Blas must have known that he could have charged more for lots in the developments that he controlled, since the joint sales that he and Elías undertook together were usually at the higher rate (with some notable peaks and troughs, see Figure 5). Thus, to the extent that different developers are engaging in differential price-setting procedures at different periods, the overall price curve will also reflect their operations. In part, therefore, the upward price trends that we have observed, especially in the 1990–95 period, at least in part reflects the impact that Elías López and others had in driving-up prices, rather than signifying an overall market change. Had it not been for Blas Chapa's continued activity of selling lots at lower prices, the increase would probably have been even more significant.

These findings are important since they tend to confirm other research for low-in-

Table 4. Comparative real unit cost of land for different periods of development, 1983 constant cents and self-estimated values (compare with Table 3)

Purchase period (<i>N</i>)	Median		Estimated property and lot values combined (2002 prices)		(Percentage real increase) and percentage annual rate of return assuming land sale price in 2002 of standard 5000 sq ft lot	
	Trimmed mean (1983 ¢ per sq ft)	(1983 ¢ per sq ft)	Trimmed mean	Median	\$4250	\$6000
1970-89 (116)	0.38¢	0.36¢	35 689	35 000	(35 per cent gain over 17 yrs) = + 2.1 per cent	(91 per cent gain over 17 yrs) = + 5.3 per cent
1990-94 (105)	0.54¢	0.51¢	33 760	32 500	(1 per cent loss over 10 yrs) = -0.1 per cent per annum	(27 per cent gain over 10 yrs) = + 2.7 per cent per annum
1995-2002 (35)	0.49¢	0.47¢	16 670	14 500	—	—

come (irregular) settlements that land prices are often 'socially determined', rather than being shaped primarily by more orthodox and conventional factors such as location, scarcity, amenity, etc. Future studies of land price changes in Texas *colonias* should analyse carefully the role that developers play in setting prices and, in those cities where there are several different developers, it will be important to disaggregate the extent to which they work individually or in concert with one another. In Rio Grande City, Blas Chapa's somewhat aberrant (non-market) behaviour had a significant impact in offering lots at sharply different (lower) prices from those of his competitor developers. However, now that the developers' influence has been removed, we may expect other land market factors such as location, level of services, and physical characteristics to come more to the foreground and the pricing of lots in *colonias* will more closely reflect orthodox market factors, displacing the 'aberrations' borne of personal relations between developer and clients that we have described here.

Colonia Property: a Good Investment?

As well as asking people how much they paid for their lots, we also asked them to estimate the value of their lots—either their own, or those derived from recent sales that they knew about. Table 3 shows the residents' estimated lot values in 2002. Looking over the data in Table 3 (col. 2, row 7), we see that a median lot cost was \$4070 or 0.78¢ per square foot of land in 2002 prices. Inflating the 1983 values and trimmed mean of 0.50¢ (Table 4, col. 3) to 2003 values gives us a lot cost today of around \$4250 which is the figure we use as our comparator to estimated current values in Table 3. Interestingly, however, estimates made locally by the residents themselves are considerably higher—a median of \$6000 as estimated by 51 (valid case) respondents. While this varies somewhat between settlements (Table 3), the \$6000 lot sale value is not unreasonable or inflated.¹³

Adopting a \$6000 estimated lot value as

the comparator, then the total gain in 2002 values would come out at between \$1500 and \$2000 per lot, although this return on the investment will depend heavily the period in which the householder bought the lot. Taking the data in Table 4 above, an individual buying a regular-sized lot at 36¢ per square foot would, in real terms, have made around \$1350 on the investment assuming that upon resale the vendor was able to get the average increased value recorded across the settlements—\$4250 (Table 3) in 2002. That same householder would earn a considerably higher gain of \$2850 if, as respondents suggested, lots were selling for \$6000. Calculating these capital gains in terms of percentage annual yield of these two estimates over a 17-year period (for someone buying in 1985) comes out at 2.1 per cent and 5.3 per cent respectively. If we extrapolate the average purchase price of the next cohort of buyers (1990–94) at 54¢ per square foot (Table 4 above) and similarly compare the net return in real terms, then someone buying in 1993 would have experienced an overall *loss* of 1 per cent (on a \$4250 valuation) and a gain of 2.7 per cent per annum on a contemporary \$6000 resale.

What this tells us is that, unless lots are selling today for \$6000 or more, people would not be making any significant gains on their investment and some would even be losing value in real-price terms. However, if a \$6000 resale price was realised in the market in 2002, then those lot vendors would have made a profit of something in the order of \$1250–2000—a sizeable equity gain for most people. But whether they can actually get that amount in the market-place is another matter. Assuming that they can, and depending upon when they bought, the gains range from 25–100 per cent in equity value.

We also asked respondents to estimate the value of their properties (i.e. the lot and dwelling combined). Measured against what people now self-assess their property's worth, we see a substantial development of equity in Rio Grande City *colonias*. Some 82 respondents were able to estimate their own property's worth, with a median value of

\$30 000 (varying between \$40 000 for B & E and \$20 000 in for Mike's; see Table 3). Not surprisingly, these higher values are generated among those who bought their lots a longer time ago: those buying their lots before 1989 valued their property at \$35 000, whilst those purchasing since 1995 valued at less than half that amount—at \$14 500.¹³ Although these data are hypothetical self-assessments and are, perhaps, somewhat inflated coming out as they do at an overall average of \$30 000, we believe that they are probably quite close to reflecting the *cumulative costs* of land purchase and housing improvements that many people have made, in particular those related to building or placing a dwelling on the lot.¹⁴

However, as we have underscored, estimating the current value or worth of one's property and actually getting that on the open market are very different matters. In Starr County *colonias* today, it is even more difficult to sell a lot with a dwelling on it than it is to *traspasar* a vacant lot. The reasons for this are actually quite obvious: there are very few potential buyers who would be willing or able to pay such a (relatively) high price on the open market. Thus, there is no effective demand, but assuming that such a sale could be realised—either now or in the future—then *colonia* populations would be moving from being equity-poor, to a position of being able to make a relatively sizeable net gain. Currently, however, given the real difficulty in realising those gains, and as long as the land market is 'stunted' with little or no effective demand for purchase at the \$30 000–40 000 level, we are obliged to conclude that for *colonia* residents today it is the use value rather than exchange value that remains paramount. For many *colonia* residents this is not a problem, unless they are motivated or obliged to sell. But theoretically it is important insofar as low-income minority populations (in this case Hispanics) are less likely to be successful in building real wealth than better-off Whites, accentuating social stratification and segmentation akin to the arguments of William Julius Wilson (1999). Investing in

low-income real estate is not a particularly good investment deal for the very low-income segment of the market—a point that confirms the finding of a broader *colonias* study in Texas (Ward *et al.*, 2000, p. 112). Nevertheless, one must also recognise that it is probably the *only* arena in which low-income people in Starr County can invest and hope to gain from their 'sweat' equity.

Conclusions: Comparing Informal Housing Market Operations in the US and Elsewhere

This paper has argued that, for Texas *colonias* and low-income sub-divisions, the rate at which land is valorised is relatively modest and that the provision of formal property titles as part of a policy to 'regularise' clouded land titles appears to have little or no direct influence upon market performance or upon land prices. Instead, it is sweat equity by the people themselves, along with housing improvement, that raises the property value and which gives rise to some equity creation and to (rather modest) potential wealth creation. But in Texas and elsewhere in the US, an overarching problem remains: namely, the low viability of the property (sales) market, such that unless the market is 'primed' to allow for greater mobility and sales, then there is little prospect that low-income (*colonia*) residents will be able to benefit financially from home-ownership, and certainly not to anything like the same extent experienced by middle- and upper-income groups. Despite these modest gains and equity growth through land acquisition and participation in *colonia* housing markets, the higher gains accruing to the formal middle and higher ends of the property market are leading to greater, not lesser, social segmentation between those income-groups and the poor. We recognise that the 'bootstraps' approach and the self-managed opportunities for home-ownership in *colonias* and similar sub-divisions in the US do offer important positive outcomes as place of residence as well as providing a mechanism for saving and for creating equity. This is particularly

true if one compares peri-urban *colonia* owners with their equity-poor renter and inner-city peers. But there also seems little doubt that the formal land and property markets are much more favourable to middle-income America, for whom homesteading generates better medium- and long-term growth in equity.

In this article, we have observed that informal *colonia* land markets function poorly and that there is evidence for only very modest increases in real land values from one decade to the next. In essence, real land values appear to be 'flat' over time. Nor does intervention to provide clear title to lot owners appear to make much difference, although it is arguably still too soon to use the data to hand to gauge accurately the impact of CRG's intervention in the *colonias* outside Rio Grande City. When it comes to informal *colonia* property markets, the level of servicing provision and relative location are not good explanatory variables of land price differentials either. Instead, our data suggest that it is the price-setting behaviour by land developers and supply-side variables that best explain land prices and land price changes over time. This is an important finding and suggests that more orthodox explanations and theory about land pricing do not work well at the lower and informal end of the market, raising caveats about the veracity of de Soto-type arguments of land market behaviour and regularisation. 'Social' explanations of price setting such as those outlined here corroborate findings elsewhere (Jones *et al.*, 1993; Varley, 2002) and further emphasise the functionality of informality in providing access to land for low-income self-build or self-managed housing. In addition to these 'social' variables, lot affordability to the very poor is achieved through the nature of supply by three principal mechanisms: first, by offering poor-quality land without services; secondly, by lowering front-end transaction costs through informal vendor financing and through informal contractual arrangements; and, thirdly, by reducing the size of lots to a bare minimum such that the overall lot price is just within the reach of

very low-income buyers. Average *colonia* lot prices in Rio Grande City and Starr County are generally lower than in many other border counties, but the unit price per square foot is about the same, the lower prices in Rio Grande City coming through smaller lot size.

While there is substantial evidence that *colonias* offer an important medium for creating home equity, this is achieved primarily through improving the land by engaging in self-help house construction or, as is more usual in Texas sub-divisions, by placing a manufactured home on the lot, perhaps with self-help extensions. However, the ability to realise this property investment through sale in the market-place (i.e. mobilising the 'exchange value' of the property) is severely limited by the lack of demand. This is because other poor people cannot afford to buy properties at this lower end of the market, where, as we have observed, homes average \$30 000 or more. Unless financing mechanisms are put in place to facilitate home sales, there is little prospect that low-income populations will be able to find buyers that will allow them to cash-in on their sweat equity investments.

These findings run in the same direction as recent work in Mexico and elsewhere in Latin America. Title regularisation *per se* appears to have little impact upon land prices or, for that matter, upon the upgrading process, although it may have broader significance in those situations—such as in Texas—where the tradition of formal and full property title is strongly engrained. Elsewhere (Ward *et al.*, 2003, 2005) we have analysed what land title *means* for residents in the same study settlements examined in this article and we show how the clearing of titles by the CRG was indeed important for these *colonia* populations in Rio Grande City, particularly in so far as it gave householders greater self-esteem and assertiveness in dealing with the local authorities, and in empowering their political participation. However, receiving full title from the CRG appears to have made little difference in the extent and rate at which households made

home improvements; nor does it enhance their propensity to use the homes as collateral against leveraging credit. Low-income Mexican-origin populations in Texas, like their counterparts in Mexico, are extremely cautious about taking on debt that might endanger losing their homes (Varley, 2002; Ward *et al.*, 2005).

Previous research in Mexico and elsewhere has demonstrated that determinants other than title are invariably more important in shaping people's sense of security of occupancy in irregular settlements (Varley, 1985; de Souza, 2001; Ward, 2003a). Such determinants include the size (weight of numbers) of the settlement, its age, the level of services already installed and the political contacts of local leaders. In Rio Grande City, however, these determinants did not apply for a number of important reasons: the settlement size is much smaller; there is the generalised context and expectancy of full legality of property titles in Texas and the US; and, city or county governments are largely unresponsive to informal settlements (for different reasons). These three factors combined to generate a sense of vulnerability among residents, such that those without clean title welcomed the CRG's intervention. The point to underscore is that the significance of gaining title did not translate into an enhanced functioning of the land market, nor did it translate into a quickening of dwelling improvements or a newfound opportunity to leverage credit against property titles (see Ward *et al.*, 2005).

An important difference between Texas *colonias* and their irregular settlement counterparts in Mexico and elsewhere is that in less developed countries the processes of illegal land capture and self-build housing and mutual aid community programmes generally have a much greater impact upon overall land valorisation (i.e. increasing property values and growth of equity). This is largely because the initial costs of land acquisition are non-existent or very low and because state intervention to provide services offers significant 'windfall' gains to low-income households that complement their sweat eq-

uity and self-help dwelling consolidation efforts. In these contexts, the (informal) market works quite well—at least, it does in the earlier phases of irregular settlement development—and it is common to find lots 'for sale' in the incipient stages of settlement and dwelling improvement. However, as in Texas *colonias*, homesteaders confront a rising lack of demand, once the settlement is established and 'consolidating', and there appears to be relatively little outward mobility by first-generation homesteaders. Fortunately for them, most owner households in Mexico and elsewhere do not wish to move and it is the 'use' value of the lot as a place to live and raise a family that is more important than the exchange value. But those that do need to move out will be hard-pressed to find a buyer, since the increased value of their (now) consolidated properties places the total cost beyond most of the effective demand. Thus property prices are depressed and/or transactions will move back into informal exchanges creating potential further downstream title 'irregularities'.

Other researchers who are also sceptical of de Soto's views about the merits of title and its benefits in bringing people into the formal market-place have shown that *immobility* is the rule, not the exception, and that the effective demand is extremely limited (Gilbert, 2002; Varley, 2002). In Mexico, for example, only those former irregular settlements that are particularly favoured in their location are likely to attract buy-outs from better-off working-class or lower-middle-income residents. Similarly, prime lots such as those on block corners or along main streets may be attractive to commercial establishments and here the full lot value may be realised. But, for most first-generation homesteaders, a dwelling is for life (Gilbert, 2002), and the lot and home are likely to be recast and remodelled to take account of second- and third-generation households or kinsmen sharing the lot or dwelling space. Texas *colonias* are similarly disadvantaged for the same reasons—a lack of effective demand—although to date, at least, there is little or no discernable densification even though this

will almost certainly occur as future generations grow to adulthood (Ward, 1999).

Thus, at the meso-level analysis of *colonia* land markets in Texas that has been our focus in this paper, there is not much cause for optimism or for any indication that land titling is likely to have a significant impact in improving the operation of the (now) formal land market. Provision of legal title does not appear to unlock the 'mysteries' and benefits of capital and offer participation to the poor in *colonia* land markets. Supply-side policies related to regularisation and clearing of 'clouded' lot title will have little or no effect without broader initiatives to enhance effective demand. And even though policies to install essential services and to provide greater opportunities for purchaser financing are urgently required and will undoubtedly help, real effective demand is not likely to change without improved incomes and local economic opportunities. Researchers in Texas and elsewhere are unlikely to find much 'mystery' in that.

Notes

1. There is an extensive literature here: Abrams, 1966; Varley, 1987; de Souza, 1999; Gilbert, 2002, and the various articles in two major recent edited collections: Fernandes and Varley, 1998, and Jones, 2003.
2. Usually a trailer home or a low-cost core-unit dwelling unit that is partially or totally unfinished inside (called a *cascarón*). See Ward *et al.*, 2003.
3. Full details of the methodology, sample protocol, copies of the questionnaire, as well as the copies of the data files and codes are available on a CD-ROM by request from the Community Resources Group, 512 E. Riverside Drive, Suite 211, Austin, Texas, 78704 (www.crg.org) or from the lead author.
4. Two different deflators were used. The GDP implicit price deflator was adopted for the CRG database for each year; while the Consumer Price Index CPI for South Texas was applied for the data gathered from respondents through our questionnaire surveys (1983 prices). The fact that different deflators were used does not make a difference to the analysis, although, of course, the real unit prices are not directly comparable between the two data-sets relating as they do to different base-level years—1983 in the survey, and 2002 in CRG database analysis. In order to convert 1983 constant prices to those of 2002, one should multiply by 1.735.
5. The 'trimmed mean' is the average in which the highest and lowest 5 per cent of values are excluded. These 'outliers' often significantly distort the overall mean and can lead to misleading conclusions. It is safe to use the trimmed mean so long as there is a sufficiently large number of data points. Where that is not the case, one should use the mean with caution or, better still, take the median value.
6. In terms of real median for the whole period (excluding the very limited data-point years of the early 1970s), the lowest price was 0.43¢ per sq ft in 1993 with the highest being that of 0.87¢ in 1995.
7. Before that date, other considerations appear to have influenced price setting, especially to Blas Chapa, such as whether the person was known personally to the developer or came strongly recommended by kinsmen in the *colonias*. Such practices are not unusual in low-income self-help settlements (Varley, 2002). We return to this point further below.
8. Elsewhere (Ward *et al.*, 2000), we have identified ways in which developers may have continued to sell lots despite the prohibition under House Bill 1001, but this did not apply in the Starr County *colonias* that we are considering here.
9. Equally, and as mentioned before, the stagnation in prices since 1995 might also reflect the strong controls placed upon developers by House Bill 1001 of that year, which prohibited lot sales without plat approval and without services. In effect this should have 'killed' further sales and stymied the market even further, although one would have expected the dip in prices to occur in 1996, rather than in 1997.
10. See note 5 for an explanation of the 'trimmed mean'.
11. This is why in the survey both men appeared to have had an almost equal responsibility for lot sales, even though in the CRG database Blas Chapa was much more important.
12. Several others as well as CRG officials said that they knew of lots selling in 2002 for around \$6000.
13. It appears to us that most people self-estimated the value of their property largely by the amount that they have invested in the lot and dwelling, rather than based upon a judicious assessment of the market and the going rate for similar lots and properties. Tax appraisals also tend to underestimate *colonia* property values and do not usually provide

residents and owners with a good indication of the property's real worth (see Ward *et al.*, 2000). See also note 14.

14. Interestingly, Census data for 2000 for Las Lomas CDP tallied quite closely with these data: 14 per cent valued their properties at less than \$14 999; 25 per cent at between \$15 000 and \$24 999 and a further 55 per cent in the next two categories (\$25 000–34 999). This suggests that the self-assessment data may be somewhat inflated, although our sense is that it is not by much. Only 15 per cent of households reported having mortgages in Las Lomas, almost all of whom had monthly payments of less than \$300.

References

- ABRAMS, C. (1966) *Squatter Settlements, the Problem and the Opportunity*. Washington, DC: Department of Housing and Urban Development.
- AZUELA, A. and DUHAU, E. (1998) Tenure regularization, private property and public order in Mexico, in: E. FERNANDES and A. VARLEY (Eds) *Illegal Cities: Law and Urban Change in Developing Countries*, pp. 157–171. London: Zed Books.
- BARÓSS, P. (1990) Sequencing land development: the price implications of legal and illegal settlement growth, in: P. BARÓSS and J. VAN DER LINDEN (Eds) *The Transformation of Land Supply Systems in Third World Cities*, pp. 57–82. Aldershot: Avebury.
- BROMLEY, D. (1998) Rousseau's revenge: the demise of the freehold estate, in: H. JACOBS (Ed.) *Who Owns America? Social Conflict over Property Rights*, pp. 19–28. Madison, WI: University of Wisconsin Press.
- BURGESS, R. (1982) Self-help housing advocacy: a curious form of radicalism. A critique of the work of JOHN F. C. TURNER, in: P. WARD (Ed.) *Self-help Housing: A Critique*, pp. 55–97. London: Mansell.
- CALDERÓN, J. (1988) *Experiencias de regularización en Perú*. Paper presented to the "International Forum: Regularization and Land Markets: Experiences from Central and South America", Medellín, Colombia, March.
- COLE, D. and GROSSMAN, P. (2002) The meaning of property rights: law versus economics, *Land Economics*, 78(3), pp. 317–330.
- COSGROVE, S. (1999) Engendering finance: a comparison of two micro-finance models in El Salvador, in: G. JONES and K. DATTA (Eds) *Housing and Finance in Developing Countries*, pp. 213–226. Routledge. London.
- DAVIES, C. S. and HOLZ, R. (1992) Settlement evolution of 'colonias' along the US–Mexico border: the case of the Lower Rio Grande Valley of Texas, *Habitat International*, 16(4), pp. 119–142.
- FARVACQUE, C. and MCAUSLAN, P. (1992) *Re-forming Urban Land Policies and Institutions in Developing Countries*. Urban Management Program, The World Bank, Washington, DC.
- FERNANDES, E. and VARLEY, A. (Eds) (1998) *Illegal Cities: Law and Urban Change in Developing Countries*. London: Zed Books.
- GILBERT, A. (Ed.) (1996) *The Mega-City in Latin America*. New York: United Nations University Press.
- GILBERT, A. (2002) On the mystery of capital and the myths of Hernando de Soto: what difference does legal title make?, *International Development Planning Review*, 24, pp. 1–20.
- GILBERT, A. and WARD, P. (1985) *Housing, the State and the Poor: Policy and Practice in Three Latin American Cities*. Cambridge: Cambridge University Press.
- JONES, G. (Ed.) (2003) *Urban Land Markets in Transition*. Cambridge, MA: Lincoln Institute of Land Policy (CD-ROM).
- JONES, G. and MITLIN, D. (1999) Housing finance and NGOs in developing countries, in: G. JONES and K. DATTA (Eds) *Housing and Finance in Developing Countries*, pp. 26–43. Routledge: London.
- JONES, G. and WARD, P. (Eds) (1994) *Methodology for Land and Housing Market Analysis*. London: University College London Press.
- JONES, G., JIMÉNEZ, E. and WARD, P. (1993) Residential land price changes in Mexican cities and the affordability of land for low-income groups, *Urban Studies*, 30(9), pp. 1521–1542.
- JONES, G., JIMÉNEZ, E. and WARD, P. (1994) Snapshot analysis and the impact of public policy on land valorization, in: G. JONES and P. WARD (Eds) *Methodology for Land and Housing Market Analysis*, pp. 214–235. London: University College London Press.
- LARSON, J. (1995) Free markets in the heart of Texas, *Georgetown Law Journal*, 84(December), pp. 179–260.
- LARSON, J. (2002) Informality, illegality, and inequality, *Yale Law and Policy Review*, 20, pp. 137–182.
- LEGORETTA, J. (1994) *Efectos Ambientales de la Expansión de la Ciudad de México*. Mexico City: Centro de Ecodesarrollo.
- LINN, J. (1983) *Cities in the Developing World: Policies for their Equitable and Efficient Growth*. Oxford: Oxford University Press.
- MCLAUGHLIN, J. and SOTO, H. DE (1994) Property formalization: the PROFORM Solution. *Geomatica*, 48(4), pp. 307–314.
- RIOFRIO, G. (1998) *Why Have Families not Used Mortgages?* Paper presented at the research

- workshop "Comparative Policy Perspectives on Urban Land Market Reform in Latin America, Southern Africa and Eastern Europe", Lincoln Institute of Land Policy, Boston, July.
- ROBERTS, B. and WOOD, C. (2005) *Rethinking Development in Latin America*. University Park, PA: Pennsylvania State University Press (in press).
- ROY, A. and SAYYAD, N. AL (Eds) (2003) *Urban Informality*. Lexington/Center for Middle Eastern Studies, University of California, Berkeley, CA.
- SOTO, H. DE (2000) *The Mystery of Capital. Why Capitalism Triumphs in the West and Failed Anywhere Else*. New York: Basic Books.
- SOUZA, F. A. M. DE (1999) Land tenure security and housing improvements in Recife, Brazil. *Habitat International*, 23(1), pp. 19–33.
- SOUZA, F. A. M. DE (2001) Perceived security of land tenure in Recife, Brazil, *Habitat International*, 25, pp. 175–190.
- VARLEY, A. (1985) 'Ya somos dueños'. *Ejido land regularization and development in Mexico City*. Unpublished PhD Thesis, University of London.
- VARLEY, A. (1987) The relationship between tenure legalization and housing improvements: evidence from Mexico City, *Development and Change*, 18, pp. 463–481.
- VARLEY, A. (2002) Private to public: debating the meaning of tenure legalization, *International Journal of Urban and Regional Research*, 26(3), pp. 449–461.
- WARD, P. M. (1999) *Colonias and Public Policy in Texas and Mexico: Urbanization by Stealth*. Austin, TX: University of Texas Press.
- WARD, P. M. (2003a) Regularization in Latin America: lessons in the social construction of public policy, in: G. JONES (Ed.) *Urban Land Markets in Transition*. Cambridge, MA: Lincoln Institute of Land Policy (CD-Rom).
- WARD, P. M. (2003b) Informality of housing production at the urban–rural interface: the not-so-strange case of *colonias* in the US: Texas, the border and beyond, in: A. ROY and N. AL SAYYAD (Eds) *Urban Informality*, pp. 243–270. Lexington/Center for Middle Eastern Studies, University of California, Berkeley, CA.
- WARD, P. M. (2005). The lack of 'joined-up thinking' in social theory and public policy: four decades of marginality and rationality in the so-called 'slum', in: B. ROBERTS and C. WOOD (Eds) *Rethinking Development in Latin America*. University Park, PA: Pennsylvania State University Press (in press).
- WARD, P. M. and CAREW, J. (2000) Absentee lot owners in Texas colonias: who are they, and what do they want?, *Habitat International*, 24, pp. 327–345.
- WARD, P. M. and CAREW, J. (2001) Tracking land ownership in self-help homestead subdivisions in the United States: the case of Texas 'colonias', *Journal of Land Policy*, 18, pp. 273–286.
- WARD, P. M. and KOERNER, M. (2004) Informal Housing options for the urban poor in the south-west United States: towards a typology of colonias and homestead subdivisions (paper under review).
- WARD, P. M., JIMÉNEZ, E. and JONES, G. (1993) Residential land price changes in Mexican cities and the affordability of land for low-income groups, *Urban Studies*, 30(9), pp. 1521–1542.
- WARD, P. M., SOUZA, F. DE, LARSON, J. and GIUSTI, C. (2005) *El título en la mano*: the 'meaning' of full property titles, and the impact of titling programs upon low income housing improvements in Texas colonias (paper under review).
- WARD, P. M. with STEVENSON, R. and STUESSE, A. (2000) *Residential land market dynamics, absentee lot owners and densification policies for Texas colonias*. Policy Report, LBJ School of Public Affairs, University of Texas.
- WARD, P. M. with SOUZA, F. DE, GIUSTI, C. ET AL. (2003). *Final report being an evaluation of the community resource group (CRG) colonia lot titling program in Rio Grande City, Starr County, Texas*.
- WILSON, R. and MENZIES, P. (1997) The Colonias Water Bill: communities demanding change, in: R. WILSON (Ed.) *Public Policy and Community: Activism and Governance in Texas*, pp. 229–274. Austin, TX: University of Texas Press.
- WILSON, W. J. (1999) *The Bridge over the Racial Divide: Rising Inequality and Coalition Politics*. Berkeley, CA: University of California Press.