

Titles without Development: Empirical findings on the results of land titling policies in Lima's *pueblos jóvenes*

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1. INTRODUCTION

Supporting grassroots organisations and formalising the individual property of land are two alternative policy options which governments face when dealing with young human settlements' consolidation. This paper investigates whether the introduction of individual registered land titles was able to improve upon the results of grassroots organization-based urban development in the *pueblos jóvenes* of Lima, Perú. The measurable outcome on the base of which the question will be approached is the level of physical consolidation of settlements. Issues relating to security of tenure and transaction costs will receive some consideration as well. Furthermore some suggestive evidence will be presented as to whether titling has affected attitudes towards grassroots organization and levels of participation in it.

Proponents of urban land titling tend to argue that property formalisation is not only a policy for the legal consolidation of ownership, but also an instrument to foster various aspects of urban development, such as dwelling consolidation, access to public utilities and availability of credit (ILD, 2007). Up to the mid 90s, Peru has significantly relied on grassroots organisations, known as the *organizaciones vecinales*, for the management of informal urban settlements, producing, especially among older settlements, interesting examples of grassroots provision of public goods and urban planning. If the supporters of formalisation are right about the quick wins readily available with titling efforts, the model of urban development which relied mainly on grassroots organisation should be seen as institutionally inefficient- free agency within well-defined markets is to be preferred to collective action and coordination. A new light would be cast on what had so far been considered as a relatively successful experiment (Riofrio 1991).

Evidence presented in this paper tends to give a skeptical assessment of the results of the titling program and thus confirms the thesis of the second-best optimality of grassroots structures during the first phases of the consolidation of informal settlements.

Lima's urban growth in the past 50 years has been driven by the explosion of informal settlements, known as the *barriadas*, which have been gradually consolidated and are always more integrated with the rest of the city. In the mid 90s a massive program of land titling was launched, reaching a substantial number of households in the whole country. This paper uses data collected in the *pueblos jóvenes*, the newer settlements which suffer from quite specific problems. In particular, a natural experiment has been identified in one of these settlements, where allocation of titles to land was not determined by households' unobservable characteristics, but by some external event. This allows to address the concerns for endogeneity in the independent variable which are so common in the literature assessing land-titling programs (Galiani, Schargrotsky, 2005).

The research was completed as part of an internship in the Observatorio Urbano division of Desco's Programa Urbano. Desco is a peruvian think-tank and ngo with a long and outstanding experience in the study and promotion of local urban development in Lima¹. Much of the information about the workings of Lima's *barriadas* contained in the present research has been obtained through the constant dialogue with Desco's professionals during the months of my stay. In particular, Gustavo Riofrio, Juan Tokeshi, Mario Zollezi, Laura Soria, Guillermo Takano Cesare Orejòn and Teresa Cabrera should take much of the credit for it. Without them, my research would not have been possible.

Section 2 of this works describes the model of urban development in Lima before the beginning of the land titling program. Section 3 discusses the arguments for titling, and mentions the worry that formalisation may adversely affect the legitimation and strenght of grassroots organisations. Section 4 describes the methodology of the study. Sections 5,6 and 7 present the results in terms of external and internal physical consolidation, security of tenure and transaction costs. Section 8 concludes.

2. INFORMAL PROPERTY AND GRASSROOTS URBAN DEVELOPMENT IN LIMA

Lima was first built as colonial town in the valley of the river Rimac, surrounded by desartic coastal land, the Pacific Ocean and the steep hills marking the beginning of the Andean mountain. Like many other important cities in developing countries all around the world, it has witnessed a spectacular demographic expansion in the past half century².

During this period of impressive growth, real estate markets have not been the only mechanism to accommodate the need for housing. Indeed since the 50s, the number of new homes being built has almost constantly fell short of demand³ and many of the city's new or young inhabitants have simply not being able to afford buying or renting a dwelling through the formal market. A substantial part of the city's expansion had then to take place through different means: the

¹ Visit www.urbano.org.pe and <http://www.observatoriourbano.com/> for more information

² Peruvians from all over the country have been pouring in the capital as a result of import-substitution industrialization in the 50s and 60s, escaping political violence in the 80s or, more recently, looking for a share in the growing market economy. Its rates of vegetative growth, that is, that part of demographic expansion accounted for by urban fertility rates and not by migration, have also been considerable. As a result of these, in the 52 years between 1945 and 1997 its population increased by a factor of ten, from 573.600 to about 5.9 millions; including the constitutional province of *El Callao*, it now houses about 8.5 millions people on an area as large as 800 km².

³ "Pronto se advirtió que la edificación de viviendas no se efectuaba con la misma velocidad que la demanda. A pesar que el tema era de pública discusión y que se edificaba para los sectores medios y hasta populares, las viviendas de alquiler empezaron a tugarizarse, como claro indicador del déficit". Riofrio, 1991

informal settling of peripheral land, which resulted in the creation of populous neighborhoods known as the *barriadas*. The extent to which people resorted to this alternative mode of urbanization has been more than significant, as it is testified by the rising shares of total population which *barriada*-dwellers have accounted for⁴. A sort of dual-real estate-economy thus developed, with the formal sector providing middle-to-high income housing and the *barriadas* receiving shelter-needing families from poorer socioeconomic groups (Riofrio, 1991)- the latter sector showing dynamism and accounting for a significant percentage of total urban expansion⁵. The economic rationale for the choice of opting out of the formal real estate sector has generally been twofold. First, land in the informal sector has an extremely low cost of access, especially compared with renting or buying property in the formal market. Lima's many credit-constrained households with insecure incomes and little to no savings may simply not be able to afford availing themselves of the latter. Second, the insecure risky sources of income of the poor and their economic vulnerability give a special value to private ownership and the informal sector may offer the only affordable route to attain it⁶.

State authorities gave an early acceptance to this dual mode of urban growth. Indeed, informal urban expansion in Lima happened mostly on the base of a certain degree of *security of tenure*, guaranteed both by the customary official tolerance of invasions, and later through specific legislation. The former produced the perception that the government was aware of and sympathetic to the problems of the informal city- forced evictions have rarely been attempted and are definitely unlikely for the older and more established informal neighborhoods⁷.

Confirming this, current surveys show that there are high levels of perceived security of tenure among people who do not possess any title certifying their property (Webb et al.,2006:15). Moreover, municipal authorities found that they could rely on the *barriadas* as an effective mechanism to confront, with relatively little effort, the rising demographic pressure and demand for housing and had no interest in changing this status quo (Riofrio, 1991). Concession of state

⁴ Matos Mar, 2004: 70 This author estimates that people living in informal settlements constituted 9.5% of the total population of Lima in 1956, a percentage which grew up to 36.5% by the end of 1984.

⁵ Hernando De Soto estimates that "the value of extralegally held rural and urban real estate in Peru amounts to some \$74 billions. This is five times the total valuation of the Lima Stock Exchange before the slump of 1998" (De Soto, 2000: 31). He also colourfully describes how "once we went into the streets to look around and listen, we began stumbling across surprising facts. For instance, the Peruvian construction industry was in a slump. Building was down, workers were being laid off. Curiously, however, at outlets for construction materials the cash registers were still ringing and sales of cement were up; bags of cement, that is. After further investigation, we discovered that the poor were buying more cement than ever for their construction projects- houses, buildings and businesses that were not legally registered or titled and therefore never made it on to the computer screens of the government economists and statisticians" (De Soto, 2000: 77)

⁶ A household which manages to pay the rent today may not be able to do so in the future: inability to pay leads to eviction and the risk of homelessness. It is thus rational for vulnerable households to sacrifice the quality of housing for the security of owning, even if only "defectively", the land where they live.

⁷ State authorities formally recognized the issue of illegal settlements as early as 1961, as testified by the famous Ley 13517 de Barrios Marginales, which was to be the first in a series of legislative actions concerning this problem. And a few other examples are worth mentioning: in 1968 the government of Fernando Belaunde, confronted with mounting popular pressure, allowed in principle that untitled, informal areas of land had the right to access basic public services such as water or electricity, a provision which is still valid and relevant nowadays. Moreover, in 1988 the government of Alan García established the Registro Predial Urbano (henceforth RPU), which tried to introduce a system of property rights registration on a cadastral basis, with simplified forms and procedures (Calderón Cockburn,2006:181-182). Furthermore, cases in which the municipality assisted groups of neighbors in the planning of a settlement have not been uncommon.

land seemed sufficient to resolve the problem of *housing*. A mix of custom, legislation and a variety of provisional land-titles constituted this policy of land concession⁸.

In most cases, and still nowadays, the occupation involves *some degree of planning or regulation*, usually provided by organized groups of settlers and, in some cases, municipal authorities⁹. Grassroots organizations, known as *organizaciones de vecinos* or *organizaciones vecinales*, have thus a fundamental role in the life of the *barriada*. A group of people, organized along participatory lines and with some form of power delegation, often exists *before* the occupation itself. This group will choose the site, realize the first occupation, carefully divide the occupied land in plots and parcels of similar dimension and assign a parcel to each of the invading households. Eviction may be attempted early on if the land has private owners or had been reserved for some particular use; otherwise, the representatives of the organization are usually recognized by municipal authorities as legitimate interlocutors to negotiate tenure. The settlement gains then status of *asentamiento humano*¹⁰ (human settlement) and if its *perimeter plan* gets official approval it acquires a first level of legal recognition and protection¹¹. Nevertheless, a universally accepted register of property is not in place at this stage and problems may arise especially with respect to disputed parcels or to the transfer of land¹².

Participation is key in these early stages of the settlement history, and it retains this vital importance all along the various stages in the process of neighborhood consolidation. A system of self-sanction ensures that all members of the settlement put their share for the attainment of common goals: all neighbors are in fact required to attend settlement's meetings and public actions of protest. They have to pay fines if they fail to participate, or if they do not contribute their work in the *faenas*, where settlers coordinate their efforts to realize work of common interest. High participation produces a certain legitimacy and thus municipal authorities and companies for the provision of basic services often recognize the representatives of these organized groups as legitimate counterparts in policy and business-making, to be consulted on relevant questions of local urban development and planning (Riofrio Ramirez, 2006: 14). The elected representatives of the settlement have in fact a variety of important responsibilities. They regulate access to parcels of land which have been abandoned by their original occupiers; they organize the *faenas*; they coordinate and lead the community's efforts to get provision of basic services such as electricity, water and sanitation; in the early stages of the occupation, they try to get the perimeter plan approved and thus legitimize the settlement's existence.

In short, whereas on the one hand government's policy has been mainly focused on the concession of state land for human settling purposes, grassroots associations of settlers have been performing the function of regulating and promoting urban consolidation, replacing what elsewhere is the role of formal state authorities. Grassroots organization has been planning a

⁸ Settlers could count on various types of *unregistered* titles such as municipal titles or certificates of sale; these had a certain value in certifying tenure and de facto ownership, but were not recorded in a official, universal, up-to-date registry. More about the implications of this later.

⁹ Ramirez and Riofrio refer to this as "invasión con plano" (invasion with planning)

¹⁰ More precisely, it can be classified as *Centro Urbano Informal* (informal Urban Centre) or Urbanización Popular (Popular Urbanisation) [Ley 28687, Artículo 5]

¹¹ Ley 28687, Artículo 8. The approval of the perimeter plan basically consists of the settlements' boundaries being accepted by the municipal authorities.

¹² It is to be noted that, in spite of this, there often exists an active market for informal land. Especially in the first years after settling, plots are exchanged frequently, until the occupying household happens to be one which decides to stay permanently.

relatively efficient use of the urban space, regulating access to plots of land, coordinating the efforts of all neighbors to realize work of common interest, working in partnership with government agencies for the provision of public utilities. It thus important to underline the *collective* dimension of the process of settling and the crucial role that this characteristic played in determining the growth of the informal areas of Lima. In the words of Ramírez and Riofrío:

*“Una suerte de “ciudadanía del barrio” en al que hombres y mujeres cabeza de hogar eran considerados iguales siempre que sean titulares de un lote, fue la base para el proceso de socialización en la ciudad” (Riofrío Ramírez, 2006:15)*¹³

The *results* obtained by this model of urban expansion have been mixed, with the relative success of early settlement’s consolidation being followed by the deteriorating quality of the urban space in newer occupations. In fact, up to the 70s occupiers used to find available land in plain, unused and uninhabited areas in the close outskirts of the city. There, settlements could be given an ordered structure, space could be left for the future construction of service buildings such as hospitals and schools or for squares and parks, and, importantly, utilities such as water and electricity could be installed relatively easily and cheaply. In other words, the premises for a smooth consolidation process were present. The *organizaciones vecinales* of these settlements were then able to coordinate neighbors efforts and negotiate service provision with government agencies, so that the creation of a livable urban environment went alongside individual dwelling improvement¹⁴.

Despite these early successes, the limits and perhaps short-termism of this model became evident in the 80s, when the quality of available land began to deteriorate, as settlers began to occupy unsafe areas on the sides of sandy hills, or marginal areas, which up to that point had been deemed not adapt for human settlement. In these areas the premises for successful consolidation are often lacking, as ordered urban planning becomes harder and public utilities are difficult and costly to install. In other words, government policy, which was essentially centred on the concession of state land for urban uses, entered a crisis when suitable land became scarce. Furthermore, some of these new settlements were located on areas which either have a private owner or had been reserved by local authorities for different use. The action of the *organizaciones de vecinos*’ representatives becomes in these cases rent seeking, that is, the attempt to lobby local authorities to change the use of a portion of urban space for the benefit of a limited group of people, harming the community at large¹⁵. A famous example of this rent-seeking comes from a large neighborhood known as Villa el Salvador: the area where a polythenic school was to be built was occupied by a group of settlers, generating tension among the local population and leading to forced eviction.

A further problem, common to settlements of both periods, is the insufficient safety of buildings. The pattern of growth and consolidation of the informal city is one where provisional and precarious arrangements are slowly substituted with unalterable, more solid constructions as the prospect of the family staying becomes more certain, as small amounts of savings become available and as events in family life such as births, sickness, or the arrival of a member of the

¹³ “A sort of “neighborhood citizenship” in which male or female heads of household were considered as equals, in so far as they owned a title on a plot of land, was the basis for the process of socialization of the city” [my translation].

¹⁴ If one walks around, for example, the large avenues of Villa el Salavador, a famous old settlements, one can see both a certain degree of dwelling consolidation, with many multi-storey buildings built with bricks, and the development of public spaces and services: hospitals, schools, squares, parks for children, football fields, etc...

extended family make it necessary. Regretfully, most of this process happens without adequate technical supervision- settlers themselves design and provide the manual labor for the construction of their houses¹⁶. A chronic lack of capital forces settlers to sacrifice security in order to earlier satisfy the need for housing, or to satisfy it all. The un-assisted building technology of the *barriadas* thus often results in the production of architecturally hazardous urban areas, a situation which will be difficult to reverse in the future¹⁷.

Lima's experience does thus shed some lights on both some merits and limitations of grassroots organization. In particular it highlights its short term efficiency in promoting urban development, especially in terms of the provision of several important public goods, whilst suggesting that long-term sustainable planning of urban space should be responsibility of state authorities and that regulation on the safety of buildings be best implemented through government legislation.

3. AN ALTERNATIVE APPROACH TO URBAN DEVELOPMENT: LAND-TITLING POLICIES

It is in the context that has just been outlined that a massive programme of formalization and titling of property was launched by the Fujimori government in cooperation with the World Bank in 1996. An appropriate commission, called *Comisión de Formalización de la Propiedad Informal* (henceforth COFOPRI), was instituted, which later in early 1998 promoted the *Proyecto de Derechos de la Propiedad Urbana* (henceforth PDPU). COFOPRI would first choose a target neighborhood, whose legal status, physical consolidation and level of environmental risk it would check¹⁸. It would then proceed with the assignment of registered titles to heads of the household living on the plot. This means that a formal document would be issued and given to the household, but also that property would be registered in the public registry. De facto owners of a parcel of land became official proprietors under a universal system of property record.

Under this institutional framework, by the year 2000 about 1,050,000 individual ownership titles on plots of urban land were assigned to settlers in Lima and some of the other main cities of Peru¹⁹. The number increased to a million and half in the current year and is still growing²⁰. These figures speak for themselves: the size of the project has been considerable- it is indeed regarded as the biggest ever titling experiment of its kind worldwide. Costs have been fairly considerable as well and the project enjoyed substantial World Bank co-financing. Given these

¹⁶ Foundations for a one floor dwelling, for instance, should be laid with future floors-addition in mind, but often are not; stronger foundations should be made over weaker soils; columns and supporting walls are not always adequate; areas which are not suitable for construction are settled nonetheless, especially since the late 80s, and inadequate works are carried out to make these safer.

¹⁷ Indeed with no system of formal registration of dwellings, there is little scope for state authorities to enforce regulations on safety standards, especially with respect to the looming seismic risk in the whole urban region. At the time of writing the final draft of this document the coastal area of central Peru was hit by a severe earthquake which destroyed 70% of the buildings of the town of Ica, not many kilometers south of Lima, and damaged numerous houses in the capital itself. About 500 people lost their life in this tragic event, which gives further proof of the need for adequate construction technology to be used.

¹⁸ This is known as *Saneamiento físico y legal*.

¹⁹ It is important to note that this estimate includes those households which formerly possessed some title, under the RPU or of some other kind of certification. Thus the number of households to whom COFOPRI was effectively assigning the **first title** of land-ownership is more modest.

²⁰ COFOPRI's website reports that a total of 1,588,471 titles have been given in the urban areas targeted by the programme. It also estimates that the total number of plots of lands in these targeted areas amounts to 2,162,797. In Lima alone out of 818,680 plots, 662,256 have been titled. (Website consulted on 20/02/2006)

premises, expectation have been and still are very high as to what kind of effects this capillary distribution of formal titles will deliver.

The policy of urban land titling has indeed attracted a lot of attention during the past decade, prompting government of several developing countries such as Peru to undertake various experiments with it. Scholars identify several potential disadvantages which an informal and thus incomplete definition of ownership may bring about and which titling may be able to correct.

Informal arrangement with respect to the ownership of land can make the position of the tenant insecure²¹. Indeed, one interesting measure of the consolidation of property rights is given by the degree of *security of tenure*, that is, the likelihood for the current tenant of a plot of land of maintaining, expanding or losing his current endowment of ownership rights. Threat of eviction, for example, makes the tenant's position terribly insecure, for it brings about the prospect of the complete reversal of the condition of tenancy. It has been documented, on the other hand, that close to satisfactory levels of security of tenure may be achieved under informal property²². Nonetheless, even if quantification of the change in security brought about by formalization remains an open question, we can expect this change to be positive, that is, towards more security.

The economic significance of this is threefold. Insofar as external conditions affect the *perception* of security, they add a factor of risk to the future and, according to specific risk-preferences, modify incentives, especially with respect to long term investment. People will invest less in an asset which might cease to be theirs or whose use they might not be able to enjoy in the future. The cut-off level of payoffs, which makes it worthwhile to undertake an investment, accordingly rises and percentages of investment in the insecure good- in this case, housing- fall. Moreover, to the extent that security is built on legal or economic "facts", these come to shape and negatively affect economic institutions, such as those of the markets for property and credit²³. Risk premiums may for example affect the price of loans and real estate and some markets may become incomplete or missing. Finally in an influential paper Field argues that under insecure tenure households have an incentive to keep an adult member constantly on the premises so as to discourage eviction- titling should relieve households from this time-consuming task and allow greater participation in the labor market (Field ,2003).

On the other hand, some scholars prefer to focus on the problem of transaction costs. Informal property is in fact not universally recognized and its transfer is not as well-codified and guaranteed by law. On the other hand, a system of individual titles registered in a public cadastre makes property claims fairly unequivocal and easy to verify: either people are registered as legitimate owners of a certain piece of land, or they are not. Universality brings about a state of ordered formality, which, at least allegedly, minimizes the transaction costs involved in buying, selling, renting or making any other economic use of the owned land.

²¹ Besley, 1995 seminal article makes this link. So does Erica Field in Field, 2003 and Field and Torrero, 2005. Kagawa, 2001 quotes Durand-Lasserve on the point that land regularization generally has two main objectives: setting up of basic infrastructure and guaranteeing security. Her own analysis focuses solely on the security aspect. On the other hand, Hernando De Soto does not believe the theme of security to be of great importance: "Formal property contribution to mankind is not the protection of ownership; squatters, housing organizations, mafias and even primitive tribes manage to protect their assets quite efficiently. Property's real breakthrough is that it radically improved the flow of communication about assets and their potential" (De Soto, 2000: 58).

²² This is indeed the case of Peru, where current surveys show that there are high levels of perceived security of tenure among people who do not possess any title certifying their property (Webb et al, 2006:15).

Besley, 1995 proposes a formal model of the effects of land titling which has proved quite paradigmatic for most of the successive literature. He hypothesizes that titling lower transaction costs, increasing gains from trade in real estate markets, and that it better codifies collateral value, enhancing access to credit. In particular, this last issue of credit has become the central pillar of the argument for titling, to such an extent that Field and Torrero talk of “an era of land-titling reforms motivated by credit market improvements” (Field Torrero, 2005: 02).

Through both increased security of tenure and lowered transaction costs, the formalization of property is generally credited with positively affecting urban consolidation, whilst promoting access to credit and expanding settlers’ participation in the labor market.

The model of urban development which is presupposed by this policy is one of atomic households taking rational decisions in an impersonal market. Social structures and organizations, such as Peru’s *organizaciones vecinales*, are taken out of the list of elements which successful urban development of informal shanty-towns requires. But it may not be only a question of emphasizing one route as opposed to another. Some scholars have in fact introduced the suspicion that titling programs actively weaken those grassroots structures which had been so far relied upon for settlements’ consolidation. The un-intended reversal of these mechanisms of urban development, which we may consider as second-best responses to a lack of government presence, may be harmful and cause perverse effects if the virtuous cycles associated with titling fail to take off for whatever reason. In other words, there is a worry that titling may weaken grassroots structures coordinating urban development without immediately setting in motion a better system. In particular, there are two ways in which Peru’s *organizaciones vecinales* and their likes can be negatively affected by the programs of formalization.

The first has to do with incentives for participating in the communal consolidation efforts. As Di Tella et al. suggest: “It is possible [...] that after property rights are obtained there are lower gains to collective action and a family can undertake the challenges they face on their own (saving, improving their houses, etc...)” (Di Tella et al., 2007: 211). Alongside lower gains to collective action there may also be higher incentives for free riding and speculation: some of the owners may leave their parcels empty, live elsewhere and refuse contributing to the communal consolidation efforts, whilst planning to benefit from the positive effect which settlement consolidation will bring upon the price of their private land. This phenomenon is known as the *lote ausente*²⁴ and has been documented in Peru (Riofrio Ramirez, 2006). The equilibrium of widespread participation in grassroots organizations, whose importance for the consolidation process was extensively argued for in section 2, may as a result be jeopardized.

A second channel of harmful influence is psychological. Recent work by Di Tella, Galiani and Schargrotsky suggests that the formalization of property influences the beliefs that people hold. In particular, one of the beliefs that they found to be more widespread among titled households is that of individualism, which they have tried to capture asking the question: “do you believe that it is possible to be successful on your own or a large group is necessary to be successful?”. They find that the proportion of household’s heads which thinks that it is possible to be successful without the support of a large group is 10% higher among titled households, which represents a 30% increase over the percentage of untitled respondents which share the same belief. These are significant results and interesting evidence suggesting that people holding property titles tend to have more individualistic beliefs, and thus probably a more individualistic

²⁴ “the absent parcel”

type of behavior. Grassroots organization may be weakened by these changing attitudes, through lower participation and trust.

4. METHODOLOGY: A NATURAL EXPERIMENT IN THE *PUEBLOS JÓVENES*

There are at least two problems of measurement complicating assessments of land titling programs: heterogeneity in the parameters²⁵ and potential endogeneity²⁶ in the independent variable.

The current study addresses the above concerns through its *choice of sample*. In particular, it purports to exploit a **natural experiment** occurred in the *pueblos jóvenes*²⁷ of the municipality of Villa El Salvador, in southern Lima, where the achievement of a title was not linked with any socio-economic variable, but determined by exogenous circumstances unknown to settlers at the time of occupation. Differences in dependent variables can thus be quite safely explained with ownership status. Support for this kind of methodology comes from the highly quoted studies by the Argentinean economists Galiani and Scharfgrösky, who exploited a partially similar natural experiment from Buenos Aires' shanty-towns.

The settlements of Los Laureles and Los Jardines de Pachacamac²⁸ were simultaneously founded in early 95 on the top of a sandy dune which separates Villa El Salvador from the Pan Americana Highway and the ocean's shore. The area had been used for the disposal of urban solid waste and occupiers had to coordinate a series of works before it really became ready to be settled upon. Once the settlement became a concrete reality, neighbors' representatives obtained municipal authorities' approval for the perimeter plan. During the course of a personal interview, one of the current representatives recounted that this was the moment when

²⁵ This refers to the fact that the parameters which one is trying to estimate through statistical inference may be significantly *heterogeneous*. If the social group which one is studying is substantially homogenous, average values will outline a picture which is relevant for most members of this group. It follows that policy prescriptions derived from the average case will be significant for a good number of cases. But if the social reality investigated is heterogeneous, the average case will basically be a statistical fiction, which does not shed much light on the dynamics characterizing specific sub-groups. As argued in section 2, there seems to be significant heterogeneity between old and new settlements, of a geographic, legal, social and economic nature. From this follows that to research the particular dynamics at work in poorer, newer settlement is part of a pending and urgent research agenda. Policy prescriptions based on estimations of average values may not be relevant to all socio-economic classes of the Peruvian informal world and, most importantly, they may overlook significant constraints for people living on lower levels of income, consumption and provision of social services. Context specific empirical evidence provided in this paper covers some ground towards addressing this lack of knowledge.

²⁶ The second problem is the potential endogenous generation of the independent variable. Ownership of a title may require various types of investment, including payment of a formality-premium on the value of the land or the time and resources needed to title property through often cumbersome bureaucratic channels. De Soto reports the finding that in Lima "to obtain a legal authorization to build a house on state-owned land took six years and eleven months-requiring 207 administrative steps in 52 government offices. To obtain a legal title for that piece of land it took 728 steps" (De Soto, 2000: 18). To the extent that variables such as access to credit and hours of employment affect a family's ability to undertake these kinds of investment, the causal interpretation of the correlation between titling and these very variables becomes a difficult matter. Are titles allowing a better access to credit? Or is it that families that can access credit are more likely to be able to afford the costs involved in achieving formal ownership? Quantification of the strength of these different relationships is thus hard and on many econometric studies lingers the suspicion of an overestimation of the effects of formal ownership due to the endogenous production of the latter.

²⁷ It is important to stress that, because of heterogeneity in informal settlements, any policy prescription following from these results will be relevant only for what this study calls *pueblos jóvenes*.

²⁸ Henceforth LL for Los Laureles and JdP for Los Jardines de Pachacamac

neighbors became feeling secure in their tenure of the land, and confident that the government would one day fully recognize their ownership through assignment of a registered title. All settlers thus entered the neighborhood with the expectation of becoming formal owners. Indeed COFOPRI arrived in this part of Villa El Salvador around the late 90s and began its standard procedures which are the preliminary step before titling. It was around this time that it was discovered that part of the settlement had a claim of private ownership. As it can be seen in FIGURE 1, the whole of JdP and about a quarter of LL are located on this disputed soil, whereas the remaining three quarters of LL lie on state-owned land.

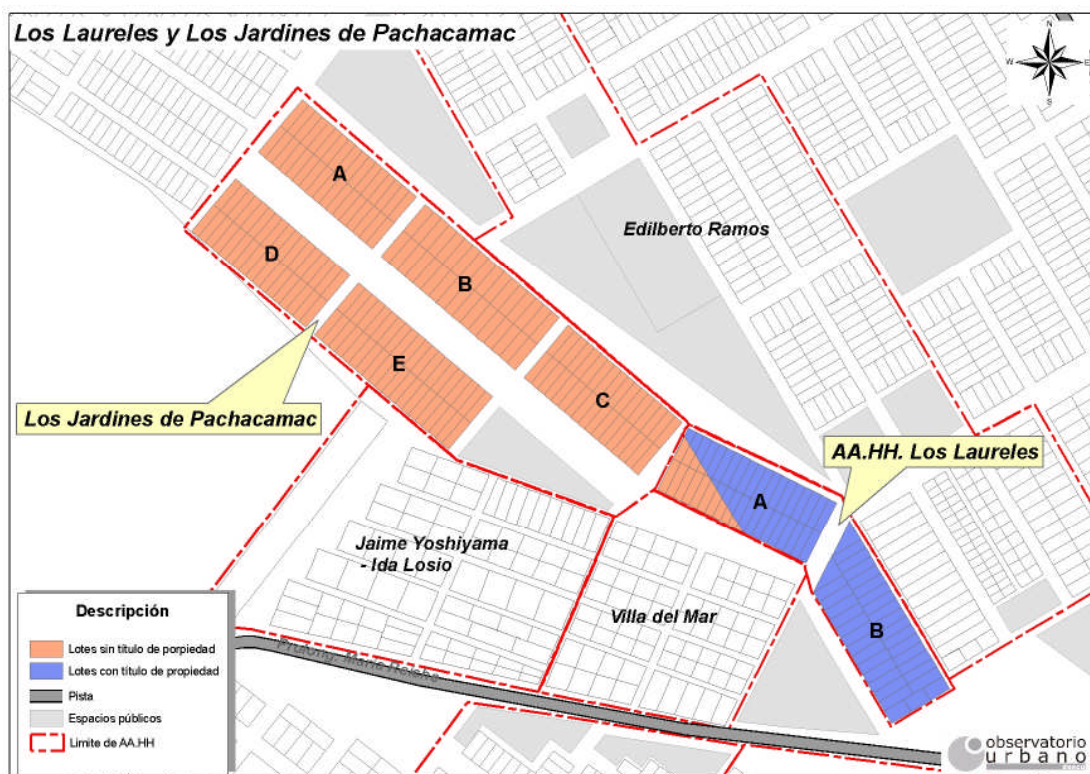


FIGURE 1

Plots on the undisputed part of the settlement were given a formal, registered COFOPRI title around the year 2000; the rest of the neighborhood is still waiting the resolution of the dispute and thus is still lacking a formal title. The information settlers have about the issue is often vague and imprecise²⁹. It is unclear when and if titles will be assigned. Municipal authorities decided nevertheless to grant to these untitled households a *constancia de posesión*- a document which is intended to certify de facto residence on the plot, with the purpose of allowing access to the provision of basic services such as electricity, water and sewage³⁰. Indeed, the whole area has been equipped with an electricity grid and any neighbor can pay for her individual connection to this system. Water and sewage are still lacking and neighbors' representatives are currently

²⁹ This emerged in the focal discussion groups. More about these discussion groups later.

³⁰ The wording of the document itself specified that this is the intended use of the document.

busy in the process of negotiating the provision of these services with the state agency responsible for them.

So, at the time of occupation, there was no way for settlers to know which plots of land would soon be titled and which were to be disputed. Indeed people thought all plots would have been titled together. It can thus be safely assumed the allocation of titles to be a *random exogenous variable*, not causally determined by any socio-economic variable of the settlements' households. Furthermore there are several reasons to consider the statistical universe on which this variable was applied to be *substantially homogeneous*. First, inhabitants of young settlements can be loosely thought to be part of a certain social class. Second, data gathered for this study shows a good degree of similarity in average values of various social indicators, some of which are summarized in TABLE 1.

	COFOPRI titled household	untitled household
average years living on the plot	9.63	9.93
average number of people living on the plot	4.24	5.43
average number of adults(over18)	2.32	2.93
average number of women	2.06	2.87
average age of household member	25.53	22.85
average education of adult (years)	9.16	8.58
average education of adult woman (years)	8.42	9.23

TABLE 1

The natural design of this experiment is thus such that we can make cautious but reasonable causal inferences from the finding of significant differences in the target outcomes associated with titling. If the treatment (titled) group is found to do significantly better than the control (untitled) group with respect, say, to access to credit, we have a strong presumption that at least part of the reason for this difference is due to land-titling.

Field work for this study included both *quantitative* and *qualitative* data gathering. Quantitative data was collected through the random sampling of 80 households out of the total population of both settlements. Household heads were asked to fill a *questionnaire* which asked both general data about the family and the expression of personal views and perceptions. Out of these households, 34 resulted to own a COFOPRI title and the rest to hold a *Constancia de Posesión*. With this base of data statistics have been constructed, which are widely used in the assessment of the effects of titling later on in this study.

Qualitative data, on the other hand, has been collected using the participatory interview technique known as *focus groups*. These consist in group discussion sessions, which are led by the researcher and follow an already prepared and well-ordered set of questions, called the *themes-guide*. Questions are chosen as to explore interviewees' perspectives on the topic of each session, in an attempt to obtain explicit statements of the *motivations* behind certain patterns of behavior and economic choices and of the *value judgments* made with respect to these. Two series of discussion groups were organized, one in each settlement. They involved between 6 and 11 people per session, of mixed gender and age. The issues to be discussed

were grouped into three main parts- security of tenure; housing consolidation; access to credit and general perspectives on titling- to be developed in three different sessions³¹.

5. INTERNAL CONSOLIDATION

For the purposes of this paper *internal consolidation* refers to the progressive improvement of dwellings- which includes, among other things, the substitution of provisional materials for definitive ones in roof, walls and floor; the construction of a further room or addition of a floor. *External Consolidation* refers to the expanding provision of those public goods which are used by the settlement's community, such as public utilities (water, sewage, electricity telephone), roads and pavements, public spaces or buildings.

Land titling is often credited with fostering internal consolidation. Improving one's house is a long-term irreversible investment, whose present costs are set against a stream of future benefits. A rational agent will choose to realize the amount of investment which maximizes this expected value. Besley, 1995 produces a formal model which introduces insecurity of tenure as a factor lowering the expected value of the future benefits of immobile assets. People simply value less an investment whose fruits may be seized by others in the future³² and imperfect security of tenure represents, in various forms and degrees, exactly this possibility. Threat of eviction, to pick an extreme example, is a likelihood of losing all rights to, and thus all benefits accruing from, one's immobile assets. In such circumstances, the expected value of future benefits coming from those assets will be, assuming normal risk-preferences, severely curtailed. It may thus be expected that private incentives to undertake irreversible investment will be negatively affected by insecurity of tenure, and that policies able to strengthen the sense of security will re-address this situation attracting more resources for improvement of immobile assets.

A second related point has to do with the transaction costs involved in selling or renting property. Insecurity and informational asymmetries due to informality may in fact raise transaction costs in real estate markets. As these costs rise, the profitability of selling or renting one's asset in the future diminishes, and thus what represents an additional source of value of the investment goes down as well. If people in urban slums attach a *transaction value* to land³³ and to the extent that land-titling policies succeed in reducing transaction costs, we may expect a further channel driving a positive correlation between private property rights on land and investment³⁴.

³¹ Support for the use of qualitative techniques comes from at least two different sources. First, it has been championed in the context of post-colonial theory, based on the belief that "participative techniques can make manifest what might have been hidden by the deployment of more conventional tools of social science", giving a "space for excluded voices" (Home and Lim, 2004: 4). Second, since the World Bank's publication of the Voices of the Poor report, "participatory poverty assessment have re-established themselves as a qualitative investigative technique by which we define the task of poverty alleviation- as it were, "from the bottom up" "(Home and Lim, 2004). That is, the method has been gaining credibility in economics' circles as well. Increasing acceptance is due to the substantial usefulness of the method, which is twofold: to the extent that actual motivations are unveiled, the descriptiveness of models is deepened and to the extent that value judgments are made explicit, normative social choice can be made more, as it were, democratic.

³² "An owner, by virtue of his power to exclude others, can generally count on realizing the rewards associated with [working the land]. This concentration of benefits and costs on owners creates incentives to utilize resources more efficiently" (Demsetz, 1967).

³³ See Desco, Uni, HDM Lund, Curso de densificaciòn habitacional and also Calderon, 2006 for a distinction between *transaction value* and *use value*.

³⁴ There are studies in the literature, such as Dearcon, 2005 for the case of rural Ethiopia, which give evidence that this second channel may be a stronger driver of the security of tenure-investment correlation than the first one about

In this section we ask whether titling has made a difference in the outcome, that is, whether it has improved levels of internal consolidation of dwellings in Lima's *barriadas* and, more specifically, *pueblos jóvenes*. In the next section we ask whether there is evidence of a security effect and a transaction cost effect, in other words, whether the model of urban development which relies significantly on grassroots organization produces inefficient levels of security of tenure and transaction costs. In section 7 we discuss the topic of external consolidation, which calls for separate treatment.

Empirical studies on the Peruvian case tend to conclude that a positive relationship exists between ownership of a title on land and higher levels of consolidation and investment in housing. Apoyo's 2000 Baseline Survey reports that titled households have better levels of physical consolidation, greater access to services and seem to have been investing more in improving their dwellings³⁵. Kagawa, 2001, using a different sample, similarly finds that titled households have exterior walls and roofs constructed with better material. Clearly, it may not be that meaningful to compare absolute differences without taking properly into account a standard set of regressors, including socioeconomic and demographic households' characteristics. In fact, both Apoyo's and Kagawa's samples show titled households to be consistently better off with respect to a variety of socioeconomic indicators, possibly explaining the differences in consolidation and investment. It is in fact no mystery that richer people live in better houses and invest more in them- what we need to know is whether, having accounted for differences in income, titled households still tend to invest more. Field, 2005 attempts a more rigorous analysis of this question. Using data from the BaseLine Survey, she chooses three groups of households. The first group is constituted by households to whom COFOPRI has given their first title of ownership; the second by title-less households who still had not been reached by the program; the third group by households in neighborhoods already reached by the program who already owned a title. She first regresses the rate of investment³⁶ of the years 1994-95 and 1999-2000 on a set of households' characteristics, and then obtains the difference between the two rates. What she finds is that for the first group the rate of investment has grown more than for the remaining two. Quantifying this difference, she states that titling is associated with a 68% rate of housing renovation within only 4 years of receiving a title. This represents a good piece of evidence confirming the existence of a positive correlation between titled ownership of urban land and investment in housing improvements. Reflecting on the further findings that most of the investment above has been financed without credit, and that investment levels are similar among borrowing and non-borrowing households, she excludes a credit linkage, and argues that the reason behind the uncovered positive correlation must be a change in the incentive structure linked with increased security.

Empirical evidence collected for this study shows on the other hand that no positive relation between titling and housing consolidation or investment in housing is found among sampled households. This result starkly contrasts with findings of national-level surveys and may reveal an important case of parameter heterogeneity. *Pueblos jóvenes'* settlers seem to suffer from a

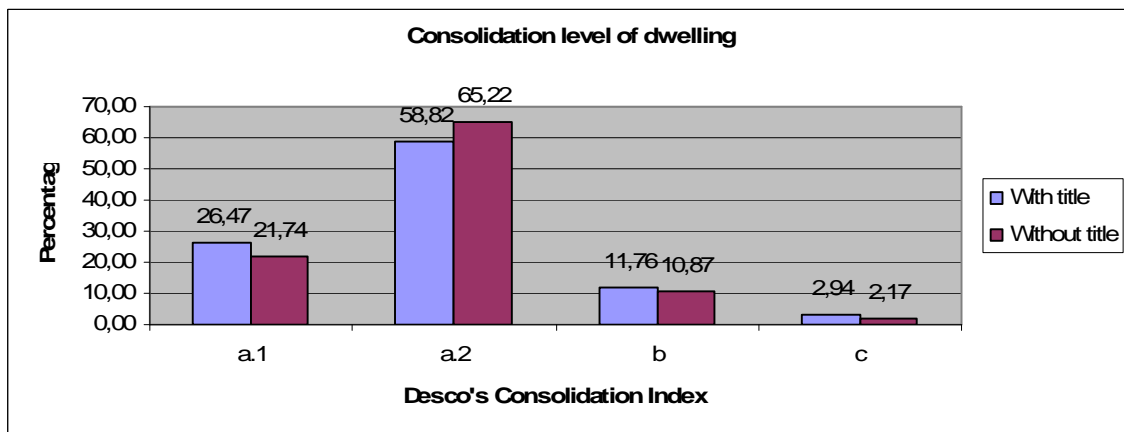
other people enjoying the benefits of one's effort. The rural setting of this example needs though to be stressed and its "lesson" may thus not be applicable to an urban setting.

³⁵ The Base Line Survey finds that among sampled households, those owning a title (I) have roofs and walls constructed with better materials; (II) have higher rates of connection with services of electricity, water, sewage; (III) show a higher likelihood of reporting having carried out some improvement work in their dwellings. Note that these are households that possess some title, not necessarily a COFOPRI one.

³⁶ Measured in different ways: number of renovation carried out per year, binary indicator of whether any renovation has been made, etc...

very simple microeconomic constraint- lack of capital and of means to acquire it, producing a bottleneck-situation where substantial improvements in housing consolidation cannot be attained.

To measure internal consolidation a 5 categories index has been constructed. Dwellings are classified as *a.1* or *a.2* when they are still provisional and precarious, as *b* when they have concrete foundations and brick-walls, but still provisional roof, and as *c* when the consolidation of the first floor of the house is completed³⁷. According to the theory above and the findings of Apoyo, Kagawa and Field one would expect titled households' dwellings to be more widely distributed in higher consolidation categories, but this prediction is not confirmed by data. The proportion of titled households falling in the *a.1* category is in fact higher than proportion of untitled households in the same categories (Graph 4 and Table 4). On the other hand, a higher proportion of untitled households live in dwellings classified as *a.2*. If *a.1* and *a.2* dwellings are aggregated, it can be seen that a great majority of households (above 85%) in both settlements still lives under very provisional housing arrangements and that the difference in the proportion of dwellers of either *a.1* and *a.2* houses is small and not significant.



GRAPH 1

Futhermore, investment rates in dwelling improvement are higher among untitled households, but insignificantly so. The latter group does in fact report a higher number of improvement works

³⁷ The classification rule used to construct this index is as follows:

- a.1 either if there is no floor or if mat is still a predominant material in walls or roof;
- a.2 if there is some floor, walls are made of wood, roof is made of metal such as calamine;
- B if there are foundations and brick walls, but the roof is still made of metal such as calamine;
- C if there are foundations and both walls and roof are made with bricks;
- D if C has been achieved and the house has at least two floors.

a-type buildings are still completely provisional, that is none of the structure or material currently in place will be used in the final house. In particular a.1 buildings are extremely precarious, as mat or a ground floor are not at all adequate to fulfil the shelter-function of the dwelling. Both JdP and LL are located on the top of a dune in front of the ocean and Lima's climate is renowned for its extremely humid winters. People living in a-type dwellings have only partial shelter from this moderately harsh climate conditions and during the discussion groups anecdotal evidence was gathered about a high incidence of climate-related diseases among dwellers, especially children.

carried out in the past year and has a higher percentage of households declaring to be planning to realize some works next year³⁸.

		<i>With title p1</i>	<i>Without title - p2</i>	H0: p1 = p2 (H1: p1 > p2)
internal consolidation (frequency in brackets)	% of households in a.1 dwelling	26,47 (9)	21,74 (10)	cannot reject H0 (NB H1: p1 < p2)
	% of households in a.2 dwelling	58,82 (20)	65,22 (30)	cannot reject H0
	% of households in a.1 or a.2 dwellings	85,29 (29)	86,96 (40)	cannot reject H0
external consolidation	% with Electricity	88,24 (30)	67,39 (31)	H0 rejected at 5% significance level
	% with telephone	29,41 (10)	34,78 (16)	cannot reject H0
investment rate	Average number of dwelling improvements in last year	0,97	1,13	cannot reject H0
	% of households planning to carry out dwelling improvement next year	58,82 (20)	63,04 (29)	cannot reject H0

TABLE 2

Sampled households were asked to report what they think is the strongest impediment for increasing investment in housing. Among untitled households, only 13% thought that lack of title is the strongest impediment. Above 80% of respondents in both groups indicated instead "lack of economic means", which is consistent with the fact that more than 60% of households has no savings at all³⁹. Nevertheless about 45% of households in both settlements consider dwelling-improvement to be the principal reason to save. In both JdP and LL incentives for housing investment thus seem to be already quite high: people would like to save to improve their house, and are not discouraged to do so by lack of title. What is really lacking instead is the capital with which to finance such an investment, either through savings or through credit. As long as this necessary condition is unsatisfied, people in young settlements are effectively facing a **microeconomic bottleneck**: title does not increase investment in dwelling improvement, what would do so would be increased availability of capital.

In conclusion, although a significant relation between titling and increased incentives for investment in dwelling improvement has been found in nation-wide surveys, such findings are not confirmed for the *pueblos jóvenes* under analysis. This suggests a possible important case of parameter heterogeneity: for these socio-economic groups there exist significant microeconomic bottlenecks impeding consolidation work which would probably be undertaken

³⁸ Actually, with respect to the number of improvement works realised in the past year, if we take the alternative hypothesis H1 to be $m_1 < m_2$, then the null hypothesis can be rejected at a 20 % significance level. That untitled household have invested more in the past year seems *almost* satisfactorily significant.

³⁹ Data has not been collected with respect to average amount of savings of the remaining 40%, but it results clear from the focus discussion group that these are quite small.

even under informality. For sampled households, titling seems not to have been conducive to increased dwelling quality

6. SECURITY OF TENURE AND TRANSACTION COSTS

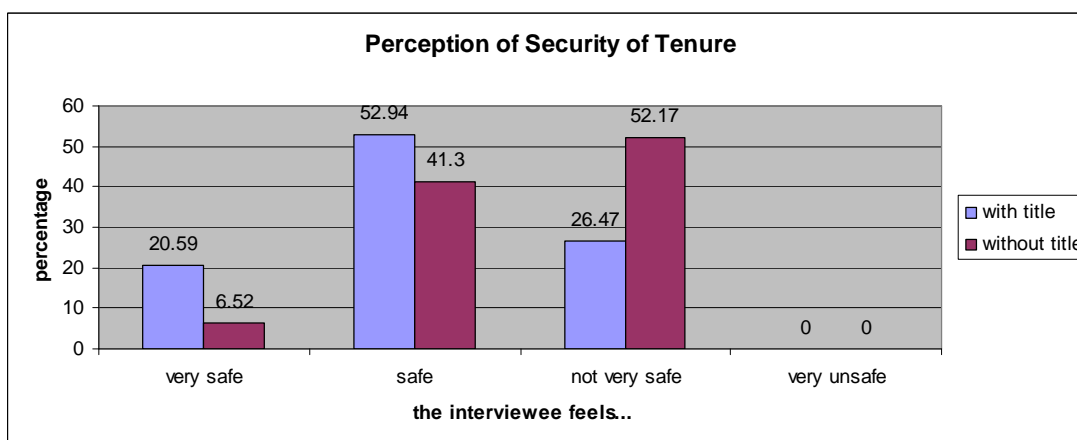
Given the divergence between the results of our sample and those of national level surveys, it is worth looking directly at the two mechanisms which are supposed to drive the correlation between titling and physical consolidation. Does grassroots-based urban development produce deficient levels of security of tenure and transaction costs, which can be readily improved upon by the introduction of private property titles to urban land?

Data available concerning the Peruvian experiment gives some evidence on the importance of titling, but also highlights how substantial levels of security of tenure had been achieved in Peru through alternative channels. Looking at reported levels of perceptions of security, as gathered by the Base Line Survey in 2000, we see that households owning any type of title have a markedly higher perception of security of tenure than their title-less counterparts. Households owning a COFOPRI titled reported to feel “safe” or “very safe” with respect to their tenure in a percentage twice as large as that reported by title-less families. Among titles owners differences are small, with possessors of COFOPRI titles reporting the highest levels of security, followed closely by owners of a “municipal” title. Field, 2003 points that there seems to be a marked improvement in perceptions of security for the group of COFOPRI beneficiaries who previously did not enjoy formal ownership of land, which is greater than the improvement experienced by beneficiaries who already had some title. On the other hand, Webb et al, 2006 argue, on point of interpretation, that it is also striking to see relatively high levels of perceived security among title-less households⁴⁰.

Data collected for this study shows indeed a marked difference in perception of security between titled and untitled households. As graph 1 shows, the percentage of households feeling “very safe” in their tenure is higher in the group which has received COFOPRI titles, and the same holds for households reporting to feel “safe”. Furthermore, if one aggregates these two categories together⁴¹, as it is done in TABLE 2, one finds the difference to be wide and significant: the null hypothesis that values for both groups are equal can be rejected at the 2% significance level. Households belonging to the two groups definitely have *different perceptions* with respect to the security of their tenure and titling is the most likely explanation for this.

⁴⁰ About 47% of households without any titled reported to feel very safe or safe with respect to their tenure.

⁴¹ Following the procedure used in Webb et al 2006



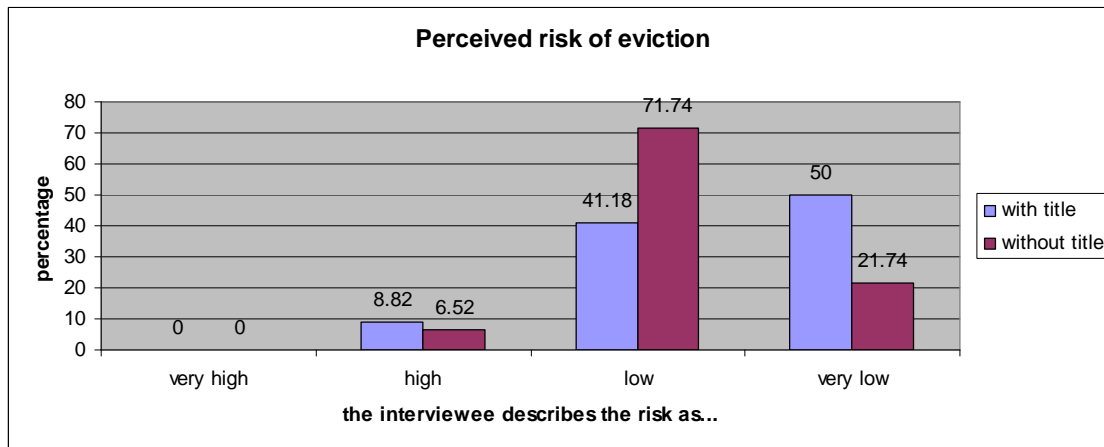
GRAPH 2

	with COFOPRI title - p1	Without COFOPRI title – p2	Ho: p1=p2 (H1: p1>p2)
% feeling safe or very safe (frequency within brackets)	73.53 (25)	26.47 (22)	H0 rejected at 2% significance level
% perceiving low or very low risk of eviction	91.18 (31)	93.48 (43)	no evidence to reject at 10% s.l.
% feeling risk of eviction has lowered (last 7 years)	64.71 (22)	56.52 (26)	no evidence to reject at 10% s.l.
% feeling high or very high possibility of selling the land	41.18 (14)	47.83 (22)	no evidence to reject at 10% s.l.
% feeling possibility of selling has improved (last 7 years)	35.29 (12)	21.74 (10)	H0 rejected at 10% s.l.

TABLE 3

An indirect approach to measure security of tenure has also been attempted, using “perceived risk of eviction” as a proxy for security. Interestingly, the results of indirect measuring of security perception do not unequivocally confirm the strong conclusion suggested above.

Risk of eviction is generally perceived to be very low by both groups. The pattern of answers is summarized in graph 2 and the aggregated figures are included in table 2. No one describes the risk of eviction as very high and only a tiny minority thinks it is high. When one aggregates people who report the risk to be low and very low, the percentage is about 90% for both groups, and actually slightly higher among untitled households. In the latter case, the null hypothesis cannot clearly be rejected. Admittedly, this aggregation obscures the fact that titled households have a higher tendency to define the risk as “very low” rather than “low”, whereas for untitled households the contrary holds. Lastly, a majority in both groups thinks that risk has lowered in the last 7 year, and the difference between the group’s percentages is not significant.



GRAPH 3

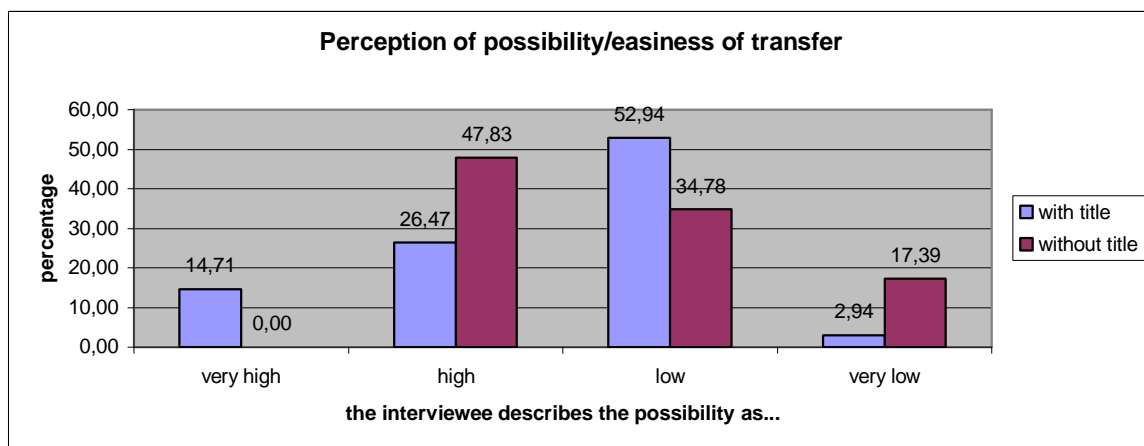
If risk of eviction is probably the single most important dimension of security of tenure, and surely one of the most influential with respect to incentives for dwelling consolidation, how can there be a marked difference in perception of security without a corresponding difference in the perception of the likelihood of eviction? Two possible answers suggest themselves. It can be that when untitled households report lower levels of perception of security they are focusing mainly on the last stages of the process of consolidation. When eviction is basically out of question, the first step of consolidation is taken for granted, and the relative importance attached to the security to transfer the house or to use it as collateral grows. Titling may be affecting perception of security by positively affecting the last two channels. Alternatively, some authors have suggested that massive distributions of registered titles have negative external effects on the perception of security of untitled households which are not targeted by the program⁴². Lack of a formal title may not worry settlers too much when it is a condition common to all members of the community and authorities have customarily signaled a policy of tolerance. But lack of title can be perceived as a precarious condition if a substantial group of next-door neighbors has been assigned them. Settlers' discussions in the focus groups suggest that both interpretations may co-exist. Neighbors in JdP do make explicit links between the lack of title, investment incentives and the inability to sell the plot or use it as collateral. They do indeed focus on dimensions of security of tenure which go beyond risk of eviction. On the other hand, they seem distressed by the dispute and they tend to blame lack of titles disproportionately⁴³, which suggests that LL's titling may probably have had a negative external effect on the *feeling* of security.

Let us now move to transaction costs and concentrate our attention on the case of real estate sales. It is indeed striking that in both group a (tiny) majority of households reports the possibility/easiness of selling their plot as "low" or "very low". This is indeed consistent with the

⁴² Indeed consistent reference in the economic literature to the problem of positional goods may go hand in hand with such an explanation. Perception may not be influenced by the absolute measure of what one has, but by the relative standard of what one has with respect to other people. The *locus classicus* of the literature on positional goods is Hirsch, 1976

⁴³ *Disproportionately* in the following sense. After the issue of titling is mentioned, untitled settlers' do identify it as the main obstacle in matters of consolidation and access credit; but after deeper exploration of these dimensions, other at least equally important obstacles emerge.

fact that the average number of years of residence in the neighborhood is very high: almost 10 years of average tenure against about 12 years since land occupation. Residential mobility seems thus low and this was more than confirmed during the focus group discussion. In the latter, people clearly evidenced that they “do not have anywhere else to go” and that “[they] want to stay” and “leave this plot to [their] children”. Ownership of title seemed not to influence the quality of these answers. Moreover, it can be noticed that the percentage of people reporting the possibility of transferring the plot to be high or very high is only insignificantly different between the two groups⁴⁴. Lastly, as reported in the last row of table 1, a significantly higher proportion of titled households feel that the possibility of selling their plot has improved in the last 7 years. This is consistent with the focus group finding that settlers report a strong preference for buying titled property.



GRAPH 4

Although titling may have had a positive impact on the reduction of transaction costs for property sale, it remains the case that, in absolute terms, both possibility to transfer real estate and residential mobility are quite low for all settlers in the sample. The informal market for real estate has not yet been substantially improved upon. Adverse selection problems may account for this. In fact, although solved with respect to the legal status of land, these may persist as a result of pervasive environmental risk and poor soil conditions, which are particularly relevant among Lima’s *pueblos jóvenes*, where plots are located on extremely marginal portions of land. Los Laureles and Los Jardines de Pachamac are not exceptions in this respect, both being located on particularly marginal terrain.

But a second candidate explanation is definitely the issue of *vulnerability*. People who decide to live in informal settlements are often trading lack of formality for (de facto) ownership- a trade off which results convenient when vulnerability is high and there exists a higher-than-average likelihood of homelessness. In other words, renting a flat in the formal city is not only expensive, but also a very risky arrangement for a class of people with volatile incomes and who lack safety nets or substantial social insurance: inability to pay the rent is a looming possibility and would put the household in the position of “having nowhere to go”. Demographic data collected in the sample and presented in table 3 broadly confirms this. Most households come to the settlement

⁴⁴ Again, it is to be noticed that whereas among untitled households all answers are in the high category, among titled households about a third of answers are in the “very high” category.

either from relatives' houses or from rented dwellings and the single most important reason for leaving these is reported to be the desire "to live in own dwelling". The average family, which arrived in the settlement almost 10 years ago, before titling had taken place, was indeed trading lack of formality for assuring a de facto ownership which was lacking before, and which importantly reduces the housing vulnerability of this social class.

		With title	without title
where household used to live before? (% of households)	House of relatives	44.12	52.17
	Rented house	41.18	39.13
	own house with title	5.88	4.35
	own house without title	5.88	2.17
why did the household move to this settlement? (% of households)	wanted to live in own dwelling	52.94	58.70
	could not afford old dwelling	14.71	10.87
	lack of jobs in old area	17.65	13.04
	other	14.71	15.22

TABLE 4

Now, to the extent that conditions of severe economic vulnerability persist, it may not be sensible to enter again the market for low-income real estate, a market which is incomplete and often characterized by adverse selection. The economic rationale for staying out of the formal market still persists. Vulnerability makes risk- a constant in real estate transactions in these settings- an unbearable transaction cost. More specific research on this issue is clearly needed and understanding of the dynamics of failures in the market for marginal real estate- its patterns of supply, demand and rationing- must be deepened. It equally stands clear though that these failures exist and that titling has not yet been able to make land efficiently transferable in Lima's *pueblos jóvenes*, or, in other words, that transaction costs for real market transactions are still prohibitively high⁴⁵.

Summing it all up, direct measurement shows that titled families enjoy a significantly higher perception of tenure security than their untitled neighbors. This is consistent with previous findings of the national level Baseline Survey. It suggests that relying on grassroots organizations for urban development without an adequate register of individual private property produces inefficiently low levels of security of tenure. This findings is on the other hand moderated by the further finding that perceived risk of eviction, which is probably the most influential dimension of security with respect to incentives for dwelling consolidation, is quite low even among households reporting to feel "insecure". Low security among untitled households must then come from different and perhaps less obvious reasons. Furthermore, transferability of land still appears very low across both groups, suggesting that transaction costs for sale are still quite high.

⁴⁵ There is a last possible explanation, which has to do with the particularly marginal quality of the studied settlements' land. As described in section 5, Los Laureles and Los Jardines de Pachacamàc are located on the top of a sandy dune in front of the ocean, where the soil is not solid enough for safe construction and where the cold and humid winter wind continuously creates health problems for its inhabitants. Thus, demand for land in this type of area may simply be below-average and any eventual positive effects of titling made invisible by an exogenously depressed local real estate market.

Considering that perceived risk of eviction is low for both groups and transaction costs with respect to real estate sale may be generally high, it is not surprising that levels of physical consolidation and of investment in consolidation have not been improved by titling for the sampled *pueblos jóvenes*, as shown in section 5. The channels supposedly driving the titling-consolidation correlation have simply not been positively affected in sufficient degree. Grassroots organization-based development is thus not obviously inefficient. The reasons for a depressed consolidation effort probably lie not in low security of tenure and high transaction costs produced by an allegedly inadequate, partly collective system of urban land management

7. EXTERNAL CONSOLIDATION

It is sometimes objected that the argument linking individual property rights to greater investment in immobile assets rests on a *critical assumption*: that *the nature of the goods households are investing in is fully private*, that is, has a high degree of excludability and rivalry. Now, whereas some of the goods involved in dwelling improvement, such as building materials or tools, clearly show these properties, others do not. In particular, access to basic services such as electricity, water and sewage undoubtedly make up an important part of the quality (and price⁴⁶) of a house. These services exhibits low levels of rivalry and can be therefore considered as *public goods*⁴⁷. Standard microeconomic theory suggests that uncoordinated markets will not provide these at the desired quantities (Varian, 1992). In the absence of routine state provision of these public goods, grassroots organization seems like a second best mechanism to organize settlers for self-provision, when possible, or to lobby local authorities. If, as suggested in section 3, titling may weaken these organizations by giving incentive for free riding and discouraging participation, the second best solution for the provision of public goods may be jeopardized without having in place a viable alternative. As before, we first look at whether there are differences in outcome between titled and untitled households and then look for evidence of the underlying driving mechanisms.

National or international evidence with respect to a possible (negative) correlation between titling and public goods provision is surprisingly scarce. Even authors approaching the theme of physical consolidation of dwellings seem to focus primarily on what we have defined here as internal consolidation. Kagawa, 2001 is an exception. She reports that titled households in Lima have better access to electricity, but finds no difference with respect to access to water. This leads her to hypothesize that owning a title may enhance only access to super-terra, and not sub-terra infrastructure.

For the neighborhoods sampled for this study, levels of external consolidation are generally similar. There is only one paved road, which crosses both neighborhoods and, since is not very trafficked, works as a public space, where social interaction takes place, and where little shops sell basic goods. Each neighborhood furthermore counts on a public building, where meetings and other communal activities can take place. These were constructed by neighbors

⁴⁶ Calderón, 2006 reports that a study by the Cuanto Institute in 2001 found that access to public services determines significantly the market valuation of a plot of land in Lima.

⁴⁷ They are not perfectly non-rival, for a given system can only provide up to a certain fixed amount of service. But for normal levels of usage, say if a whole neighborhood is connected to an electricity grid, the marginal cost of extending supply to a new user is extremely low and thus almost negligible. The classic public good dynamic is thus produced: the consumer value of the infrastructure is given by the *sum* of all individual marginal valuations, for all individuals can benefit from the service at the same time, and the amount provided under free market is sub-optimal because of individuals' incentive to understate their valuation at the moment of paying. (Varian, 1992)

themselves. Moreover settlers have to contribute their work, in a similar fashion in both Los laurels and Los Jardines de Pachacamac, to keep the sandy soil firm, constructing basic contention walls and removing excess sand. Both settlements lack clean water and sewage and are cooperating to get access to these basic services. On the other hand, the basic infrastructure for electricity and telephone has been installed in the whole area. As reported in table 2, the percentage of households with a connection to the electricity grid is significantly higher among the titled group. This finding corresponds with that reported in Kagawa, 2001: titling seem to have an association only with super-terra infrastructure. This may be explained supposing that the electricity company's procedure to grant provision of this service may be in some way biased towards titled households. There are no statistically significant differences with respect to connection to the telephone network.

An appropriate sample to investigate the relationship between external consolidation and titling should include a good number of settlements, whereas ours only includes two and provides thus ground which is insufficient to draw strong conclusions. Nevertheless, it can be noted that, with the exception of rates of connection to electricity, levels of external consolidation are consistently similar for both neighborhoods. In other words, looking at outcomes, we have no evidence for a correlation between titling and the provision of public goods.

Let us now try to see whether titling has affected the *organizaciones vecinales* through the negative externalities mentioned in section 3, that is, by discouraging participation and increasing free riding. Interviews conducted with settlers' representatives and focus group discussions do highlight the importance which settlers attribute to grassroots organization with respect to the achievement of access to basic services. Settlers, for their part, show an *ethic of participation*⁴⁸ and defend the importance of "being united" in the process of physical consolidation of the neighborhood. This provides support and legitimacy for the structures of representation. Interestingly, participation levels are strikingly similar in both settlements, dismissing worries that titling may have had a negative impact on the strength of grassroots organization. As Table 5 shows, the percentage of households reporting high or very high levels of participations in assemblies and *faenas*⁴⁹ is slightly and insignificantly higher for titled households. The same holds for the average number of assemblies attended by the family in the last month. Trust in grassroots organization seems to be higher for untitled households, but again, insignificantly so. Patterns of participation appear thus to be quite similar- and quite strong- across titled and untitled groups. In this sample, formalization is not jeopardizing public good provision through a negative external effect on participation.

	with p1 or m1	title	without p2 or m2	title	H0: p1 = p2 (H1: p1 not= p2)
participation in assemblies high or very high (frequency in brackets)	70,59 (24)		65,22 (30)		H0 cannot be rejected
participation in <i>faenas</i> high or very high	85,29 (29)		84,78 (39)		H0 cannot be rejected

⁴⁸ That is, moral judgements are often made in connection with the theme of participation- such as "one ought to go to assemblies". Other people justified attendance to public assemblies with the settlers' desire "to know and express an opinion".

⁴⁹ *Faenas* are occasions in which all members of the community are expected to contribute with some labour towards the realisation of work of public interest, such construction of public buildings or environmental interventions.

average number of assemblies attended last month	2,97	2,76	H0 cannot be rejected
% of households with very high or high confidence in the neighbors' organisation	50 (17)	60,87 (28)	H0 cannot be rejected

TABLE 5

The second possible negative externality is a surge in speculative free riding associated with formalization. Titling loosens the requirement to live on the occupied parcel and may thus allow speculative patterns of behavior to develop. Indeed, if people are given a full set of property rights on land which has not yet been satisfactorily built upon, they may postpone consolidation and even abandon temporarily the parcel of land. This behavior would have resulted, under pre-titling custom, in the household losing its *de facto* claim on land and the parcel being reallocated to a different owner, but may be perfectly feasible and rational once full property rights are granted, under a logic of speculation on the value of real estate or as a risk-coping mechanism⁵⁰. In Lima this phenomenon has been called with the suggestive name *el lote ausente*- the absent parcel. During focus group discussions, the theme of the *lote ausente* was often mentioned by settlers, but more in connection with the issue of neighbors' mutual surveillance than with problems of speculation⁵¹. There seemed to be no particular differences across groups with respect to this issue. Unfortunately, data on the percentage of empty parcels is unavailable, whilst anecdotal evidence from focus groups suggests this to be a low figure. This is certainly not surprising, given the picture of scarce dynamism of the settlement's real estate market which emerged in the previous section. If exceptionally bad land quality depresses the land market, speculation on land-values will surely fail to be particularly profitable. Further investigation, possibly on the basis of samples including a number of settlements with different characteristics, should be undertaken to shed a clearer light on this hypothesis.

So it seems that levels of external consolidation are similar across neighborhoods and that the provision of this type of public goods has not been jeopardized in the formalized areas through a negative effect on participation and an incentive for speculative free riding. On the other hand, it may be that the particularly marginal situation of the studied settlements makes gains to collective action particularly high and speculation unprofitable, preventing the changes in attitudes towards grassroots organization documented by Di Tella et al, 2007. In absence of further data, this can only remain a supposition.

8. CONCLUSIONS

At the beginning of this paper, physical consolidation has been stipulated to be the yardstick against which to measure land titling policies' success in promoting urban development for Lima's *pueblos jóvenes*. Urban development is the goal, physical consolidation is its most tangible measure. The mechanisms through which this positive effect is supposed to flow are enhanced security of tenure and lower transaction costs following formalization of property in a

⁵⁰ It may not be contrary to rational behavior to leave a parcel of land abandoned, as long as the household owns a second dwelling. Owning an unused asset, without trying to sell it, may indeed be part of a risk-coping strategy. Restraining from selling the asset now, and doing so only in the eventuality of an income-shock allows in fact for consumption-smoothing in the absence of other saving instruments. A second reason for an household to have a *lote turista* may be speculation on an expected increase in the value of land due to the process of consolidation going on in the area.

⁵¹ Nevertheless, these were mentioned in a few occasions.

universal, up-to-date public cadastre. Empirical evidence from a natural experiment collected for this study shows that households in the sample have not benefited significantly from formalization. The lot of these urban dwellers has not been improved substantially. With the exception of a higher tendency to report a feeling of security with respect to their tenure, beneficiaries of the program exhibit very similar levels of internal and external consolidation. Furthermore, they both think eviction is quite unlikely and find that selling their property would be not be easy, reflecting a yet-to-be fully explained high incidence of transaction costs. Lastly, in this particular case, grassroots structures have not been negatively affected by introduction of private titles to land- participation and trust seem to be generally high across all households and speculative free riding is not very common.

This is important evidence for an institutional assessment of the potential of Peru's *organizaciones vecinales* to provide efficient initial levels of public goods provision and management of the urban space. The same may not be the case for older, more consolidated settlements, but it seems that state intervention concerning *pueblos jóvenes* should not prioritize early legal consolidation, especially if at the expense of other types of intervention. The *organizaciones vecinales* perform a large number of tasks and functions, constituting a valuable capital of urban management which individual agency in free markets cannot easily improve upon in the short run.

Policy should be formulated with an awareness of the importance of this institution in mind. In particular, it may be useful to find ways to codify the functions and responsibilities of the *organizaciones vecinales* and of their representatives, thus increasing accountability and legitimacy, and enhancing inclusion and representation. Regulation would in fact probably avoid much of the complaints of arbitrariness in representatives' decisions and help the smooth functioning of the organizations. Furthermore, funds and technical assistance could be made available for the *organizaciones'* main works, such as construction of maintenance walls and other safety-increasing interventions. These are of great importance and are thus worthy of all types of support. Lastly, titling could be made conditional on the settlement having passed a number of tests, including use of basic safety standards in construction and connection to public utilities such as water, sewage and electricity. This would give an additional incentive for consolidation to happen in a sustainable way, and it would promote neighbors' cooperation during the most delicate early phases of the settlement's life. On the whole, it may be advisable to take intelligent advantage of the possibilities inherent in the high levels of grassroots organization shown by Peruvian informal dwellers, rather than immediately introducing a free-market model which evidence shows is quite slow to properly take off.

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