COLUMBIA
BUSINESS
SCHOOL

At the End of the Beginning: The Formalization of Property Rights in Emerging Markets

J. Michael Graglia MBA/MA '03

Columbia Business School

School of Advanced International Studies (SAIS), The Johns Hopkins University

With Contributions from Elena Panaritis

© 2002 by The Trustees of Columbia University in the City of New York. All rights reserved.

Acknowledgments

I would like to thank the Chazen Institute for the opportunity to publish this paper, Robert Wegner for countless peer revisions and Shao Ping Yu for all of her work. I am also grateful to Professor Joseph Stiglitz, for whom this paper was initially written. He asked many questions and pointed me to the answers. The paper would not have been possible at all, however, without the generosity of Elena Panaritis, who shared parts of her original work on fixed property rights and market reform.

What began as a conversation about her work at the World Bank and an innocuous question about if I could write a small economics of information paper based on her work evolved into a yearlong set of information exchanges, revisions, academic arguments, a new model and more revisions. When it was first described to me, I thought I would be able to summarize the concept in a few pages. Now I realize that what Panaritis did in Peru is an elegant solution to a profoundly complex problem—and after writing at least 20 versions of this paper, I have only just begun to understand how much work this must have been. It has been a privilege to have so many hours of conversation with and guidance from Panaritis. I am very grateful.

J. Michael Graglia
October 2002

J. MICHAEL GRAGLIA earned an MBA from Columbia Business School and an MA from the School of Advanced International Studies (SAIS) at the Johns Hopkins University. While pursuing graduate studies, he interned at the United Nations and worked as the interim country director for the International Catholic Migration Commission, the implementing partner for the UNHCR in Zimbabwe. Graglia spent two years with the U.S. Peace Corps in Namibia and founded Deep Roots, a 501(c)(3) corporation that funds the education of children in Namibia, Zambia and Guatemala. He holds a BA in mathematics from Gonzaga University in Spokane, Wash.

ELENA PANARITIS is a specialist in the creation of markets in illiquid assets, property rights and public services. She is a visiting lecturer on international housing finance at the Wharton School, University of Pennsylvania, since 2001 and coteaches with Dr. Francis Fukuyama at the Johns Hopkins School of Advanced International Studies (SAIS). For the last 11 years, she served as economist, private/public sector specialist, at the World Bank, where she worked on privatization, property rights, market development, registries and judicial reform. A key example of her work in several countries was her design and management of pioneering work on applying institutional reforms in the area of property. This has had notable success in Peru. She also worked for programs in the Middle East, Eastern Europe, Asia and Latin America. She has authored and coauthored articles on property rights and on public-sector reform. She holds a master's degree in international economics and European studies from SAIS and a BA in economics from the American College of Greece.

Contents

1. Introduction

True or false? Enabling citizens to have a secure claim to their fixed property—homes and land—by insightfully simplifying and thoroughly redesigning a formalization process will result in massive capital flows to the middle and lower classes from both domestic banks and foreign investors. If so, who should manage this transformation that will have such dramatic impact on capital markets and both the public and private sectors?

This paper provides the tools required to answer these questions. First, the process of securing fixed-property rights is briefly introduced and discussed. Further, a graphical supply-and-demand illustration is offered to explain, albeit inconclusively, how this process can liberate so much capital. Next, property rights are contextualized in terms of the economics of information—a discussion that will yield far stronger conclusions. Finally, some caveats that should always be kept in mind during conversations regarding land titling and fixed-property rights are included.

These analyses lead to the conclusion that the correct answer to the first question is unequivocally true. The answer to the second is that the public sector should lay the foundation of the transformation that the private sector will ultimately affect.

2. The Concept of Property-Right Formalization

Hernando de Soto's *The Mystery of Capital* called attention to the fact that five-sixths of the global population lives on property that is outside a formal legal system. Proper legal title to the land that they have lived on and the home that they have lived in—often for generations—would lead to a substantial improvement of their economic situation. De Soto contends that the poor may have more resources than conventional wisdom would suggest but that their capital is "dead." They are trapped in an extralegal realm where the cost of doing business far exceeds the taxes they would pay if they were inside a formal legal structure. Unfortunately, the cost of coming into the legal system is completely unattainable. De Soto calls for a revolution whereby those outside the system are brought in through the formalization of their rights to fixed property.

¡Viva la revolución!

3. Application of Property-Right Formalization: Panaritis and the World Bank's Work in Peru

One revolutionary, Elena Panaritis, made de Soto's call a reality while she was with the World Bank. Indeed, eight years *before The Mystery of Capital* was published, she helped to develop and implement an operational model for individuals to secure their property rights—a process she generally refers to as "formalization." Peru was the test case for the

model and serves as the case study in this paper. The next four paragraphs summarize the situation.

Problem: A vast majority of countries—not only in the developing world[1]—need to reform their land registration system. Peru was no exception. The Peruvian system was based on Spanish colonial norms, binding the institutions responsible for formalizing property to an age long since passed. How could a system created in a feudal age possibly be the vehicle for the just empowerment of an enfranchised poor? Someone intending to register his or her property in Lima would likely spend 15 years dealing with 14 different state agencies and passing through hundreds of bureaucratic steps. The out-of-pocket cost was at least U.S.$2,000 (Panaritis 2000), almost the same as Peru's per capita income of U.S.$2,100 (World Bank 2001). Sixty percent of all urban real estate—valued at U.S.$4 billion—was being kept outside the formal system by these unrealistic circumstances.

Solution: In the early 1990s, the government of Peru, with the help of Panaritis, sought to address the problem. The changes required to use the existing system were so numerous and expensive that it made more sense to create a new, streamlined system. Doing so was cheaper and simpler, as both explicit and corruption-related costs were thereby either substantially reduced or eliminated. A parallel system was created and ran in separate geographical jurisdictions from the existing system, so as to preclude any conflicts with the existing power structure. Finally, for the first time in the history of Peru, the boundaries and ownership of properties would be coupled with "an effective registry offering accurate, easily accessible and up-to-date information."[2] Appropriate legislation was passed, and the system was tested in 1992.

Results: One hundred and fifty thousand informal properties entered the formal economy in approximately *a year and a half.* Comparing this number to historical precedents in Peru is difficult, as few official statistics exist. Considerable research by Panaritis, however, revealed that the *total* number of properties formalized under the previous system—since the end of the 19th century—was only 180,000. The program could unequivocally be considered a success. Its mandate was expanded to formalize all urban properties in 1998. To date,[3] more than one million properties have been successfully integrated into the formal economy. The potential exists for billions of dollars in assets to eventually enter the capital markets.

---

[1] For instance, Nova Scotia finished a complete overhaul of its registry in 2000. www.gov.ns.ca/snsmr/property/registry/objective.stm

[2] Interview with Panaritis, 2000.

[3] This paper was initially written in early 2001, so numbers reflect end-of-2000 data.

4. Why Did It Work?

There are many reasons that the new system accomplished in less than two years what the previous system failed to achieve in more than a century. The reasons for the success are best described in the document—written by Panaritis and her associates—proposing the project loan to the World Bank. Once the project was implemented, they proved to be correct in their prescriptions.

> This system . . . is underpinned by three sets of principles, which relate to the project's three components.
>
> First, under the legal and institutional framework: laws should adapt, where possible, to reality on the ground . . . which requires a participatory/consultative approach to designing rules; procedures should be simple; and property information in the new system is best administered through a universal [property right indexing system.][4] Conflict resolution mechanisms through development of arbitration and mediation, as well as land administration and a strategy to avoid further invasions, are addressed under this principle.
>
> Second, under new organizational arrangements: new, independent titling (COFOPRI) and registration (RPU) agencies overcome the resistance to change encountered in Peru's traditional system and channel strong political support for formalization.
>
> Third, under a national formalization program: area-wide titling (i.e., mass, rather than sporadic, titling) generates, through community participation and education, a demand for formalization, reduces the unit cost of formalization and rapidly generates a minimum critical mass of beneficiaries (Burki et al. 1998).

Some key points need to be highlighted. First, Panaritis had the foresight to use an institutional framework that mirrored the informal system already in place. Learning exactly what that framework looked like was the result of painstaking research by Panaritis and her Peruvian legal counterparts. Second, the new titling company COFOPRI[5] was coupled with the previously mentioned new registry, Registro Predial (RP), which had the ability to resolve conflicting claims. Third, with each new participant in the program—or *formalization beneficiary,* in the parlance of the World Bank—the per capita fixed costs, and therefore average costs, were reduced. This made the program more inviting for an increased number of citizens. Finally, the universal property right indexing, which allowed properties to be referenced numerically—instead of the previous archaic and unnecessarily complex system—was critically important, not only for the obvious reduction in paperwork and precluded confusion, but also because it allowed the registry to be far more accurate.

---

[4] The amendment to this text was made by the original author, Panaritis.

[5] COFOPRI is the Spanish acronym for Commission to Formalize Informal Property. It is a temporary entity that provides all technical support for the formalization of property to RP.

5. Supply-and-Demand Economics

The basic economic value of formalizing property claims can be illustrated with the fundamental economic concepts of supply and demand and their graphical representations. The first graph to be discussed is taken from the World Bank proposal for the Peru project described above; it should be credited to Panaritis and Belli, another World Bank economist who contributed to the original model. It will be referred to as the Panaritis-Belli model (PBM). In support of his alternate hypothesis to their model, the author offers a set of six graphs that were formulated in the process of writing this paper. The alternative model will be called the Graglia-Panaritis model (GPM), as it is a derivative of and response to the PBM. The goal of the GPM—a work in progress—is to better understand the basic economics behind property-right formalization. Both sets of graphs can be found in the appendix.

5.1. The Panaritis-Belli model (PBM)

The PBM, as explained in considerable detail in the appendix, seeks to discuss only the cost of formalized property, leaving informal land aside. There is no supply curve for informal land.[6] Two parallel demand curves, however, are offered. The formal demand curve being further from the origin seems valid given the assumption that for the same quantity of land, formal land would command a higher price than informal. The supply curve is vertical because the supply of land is fixed. As land is formalized, the supply curve for formal property moves to the right, and prices fall while volume increases.

The net effect is positive, but the owners of already formalized land actually lose value as the average price drops. From the perspective of Pareto optimacy, this is disturbing, as it implies that property-right formalization is not Pareto efficient—that is, some people are being made worse off. A Pareto improvement—where some people are made better off and nobody is made worse off—is the ideal solution. Another unclear point is what the total quantity of land available for property-right formalization is.

5.2. The Graglia-Panaritis model (GPM)

The GPM attempts an integrated consideration of the relationships between the supply, demand and price of all land. In figure 1—time zero—there are two supply lines, one for all land and the other for formalized property. The difference between all land and formalized property is the quantity of informal land. There are also two demand curves, as in the previous model.

Figure 2 makes the assumption that as land is formalized not only will supply change but demand will also. That is, when a person is able to formalize his or her land, the

[6] Informal land can be thought of as land that does not have enough documentation to permit transfer of ownership and/or collateralization.

demand for informal land evaporates as the demand for formal land suddenly materializes. Of course, everyone has demand for formal land, but the difference here is that in the same moment a person's land becomes formalized, he or she actually has the means to fulfill that demand. Formalization causes the two demand curves to shift along the Y-axis in the same proportion, the "formal" going up and "informal" down. In this figure, the curves remain fixed at the same point on the X-axis for the sake of simplicity.

Figure 3 illustrates that the supply curve moves out at the same moment that the demand curves shift, holding the price of formal land constant.[7] Informal land, however, loses value. This is because while the two formal curves both moved—supply out and demand up—only the informal demand changed—down. As the supply of formal land approaches total supply, the demand for informal land will be forced to a horizontal line resting on the X-axis. Both implied supply—distance between formal and total—and price will be driven to zero. In effect, the manner of altering price for informal land represents only a slower loss of value of informal property than the gain in value of formal—a net-positive result that lends more credence to de Soto's call for formalization.

Figures 4 and 5 illustrate the gain in value of total formal property and loss of informal. Figure 6 graphically illustrates the previously stated intuition that the net effect is clearly positive.

A fundamental difference between this model and the previous one is that if we can ignore the ostensible change in value of informal properties—which were omitted from the Panaritis model—this model implies that property-right formalization is a Pareto improvement. Nobody is made worse off, but many informal property owners are in a far better position with their property rights formalized. As for the shift in the value of informal property, we must recall that the inherent assumption behind property-right formalization is that informal land "trades" on an incredibly thin market where it suffers from prices that are ambiguous but certainly too low. Given that this is the case, this shift only amounts to a small change in a number that has been roughly approximated to begin with. It is that very ambiguity that makes purchasing informal land undesirable and makes any conversation about price little more than theoretical.

5.3. Demand elasticity

In both scenarios, straight lines are used for the demand curves. The slope of a demand curve is price elasticity of demand. Does it stand to reason that this elasticity is constant? Probably not, but what alternate assumption would be correct? In the PBM scenario, the demand curves are parallel—they have the same elasticity. It is unlikely, however, that

[7] This may seem like little more than a simplifying assumption, but as we will see it actually creates a major difference between the two models.

elasticity is equal for both formal and informal property. The GPM scenario implies that as more property is formalized the demand curve for formalized property becomes steeper, that is, inelastic. This makes sense, because when all property is formalized people will all need housing, so demand would be considerably more inelastic. The informal curve, however, becomes flatter. The same simple logic that justified the steepening formal curve calls this result into question. Regardless of a growing formal market, those living in the informal sector will still need homes, so demand elasticity falling seems erroneous. This is left as an open question. But what if informal land was not fixed?

As with almost all theoretical models, practical considerations cast severe limitations on the veracity of conclusions drawn from the model. One such problem would be the assumption that total supply is fixed. Obviously, the total amount of land in a region/state/country is fixed, but can all that land be classified as formal or informal? What about the empty field or desert that begins just beyond the last squatter's tin shack? What is happening to the borders of informal areas in the time it takes to significantly shift the supply of formal land? Are immigrants and citizens arriving from other regions—or rural areas not included in the informal zones—squatting on previously unused land and thereby increasing the total quantity of informal land? The experience of Soweto and Katatura[8] would support this suggestion, not to mention the demographic impact of the high birth rate and population growth often found in poorer communities. Allowing the total supply of land to increase would shift the total supply curve and both demand curves. In contrast, both the PBM and GPM models assume that total supply of land is fixed and therefore do not enable the analysis of a situation in which the total supply of land increases.

6. The Economics of Information

6.1. Framing property rights within the economics of information

The logistics of reforming a country's property system are complex and have been the subject of considerable research. Once such a process is executed—and matters of boundary disputes and cultural appropriateness are overcome—larger and arguably further-reaching processes begin to unfold. A universal index-based system generates information that is readily available, accurate and enforceable.[9] Each indicator references a clearly delineated quantity of a finite resource, which can—now that its ownership has

[8] Katatura (meaning "where we stay" in Oshiwambo) is the Namibian equivalent of Soweto. During apartheid it was a location just outside the capital, Windhoek. Now it is where the vast majority of Namibians in Windhoek stay. It is also where any new arrivals from rural areas begin by virtue of family connections and/or low cost of living. The author served in Namibia for two years with the U.S. Peace Corps and witnessed considerable growth in both Katatura and Soweto.

[9] Interview with Panaritis.

been formalized—be bought, sold and used as collateral. The economics of information offers the best tools for understanding the magnitude of these new developments.

6.2. A survey of relevant concepts

6.2.1. Economics of information

A brief summary of economic terms is required to understand the analysis. There are different types of goods: public, club, pure, global and regional. *Pure public goods* must meet two criteria: nonrivalry in consumption and nonexcludability. Nonrivalry in consumption means that a person consuming the good must be able to do so without precluding someone else's consumption. Nonexcludability means it must be extremely difficult to exclude an individual or group from the use of that good (Kaul, Grunber and Stern 1999, 4). Indeed, Kaul et al. raise a good point in suggesting that the more users of public good there are, the more useful it becomes (network effects). When a good only partially meets the requirements of a public good, as is often the case, it is considered impure. *Club goods* offer nonrivalrous consumption opportunities to more than one person but not to the whole population (Buchanan 1968). A good with a price tag, but equally consumable to all payers, is a club good. The fixed cost of such a good is high, and the variable cost is either zero or negligible. The final distinction is that of *regional* versus a global good. Kaul et al. offer the key insight that for a good to be *global,* it must not only affect many countries, but also touch a broad spectrum of populations (11). This prevents something classified as a *global public good* (GPG) from serving only one socioeconomic group. If a GPG were to benefit only one population—usually the wealthy, as they are more integrated into society—it would basically be giving a value-adding service at the public expense to a population that does not need handouts. This would exacerbate the global wealth disparity.

Some argue that "there is no good reason to disregard the private sector in public goods provision nor even to consider it as a special case" (Shmanske 1991, 4), while others contend that "the central public policy implication of public goods is that the state must play some role in the provision of such goods; otherwise they will be undersupplied" (Stiglitz 1999, 311). This dispute lies at the heart of the second question raised in the introduction of this paper. Both goods—the process of formalization and the registry—it will be argued, should be provided by the government.

6.2.2. Property markets

Titles transfer land from the government to an agency or entity. The agency or entity then sells or distributes that large parcel of land in smaller pieces. A *registry* is the public record that shows current land ownership. It is updated as landowners resell the land over time.

An accurate registry makes ownership enforceable by eliminating ambiguity about who owns what.

Mortgage markets in developed countries—where formal property rights are widespread—efficiently connect investors with current and potential homeowners and productively employ vast sums of capital. To put this in perspective, one need only look at the U.S. asset-backed market in 2000. An *asset-backed security* (ABS) is a security that transfers the payments—and risks—from a group of loans or other relatively predictable cash flow to the buyer. The size of the ABS market in the United States for 2000 was $5 trillion. Mortgage-backed securities made up a full three-quarters of that market, $3.8 trillion. By way of comparison, capital markets are "nascent at best" in such developing countries as Peru (IFC 2001).

Funds secured with mortgages can be reinvested in property, directed to educational expenses or used to support private businesses. "In more advanced economies . . . individual entrepreneurs often start their businesses with funds raised by borrowing against their homes" (de Soto and Litan 2001, 9). An economic environment that favors entrepreneurs is far more likely to experience growth than one that frustrates their ambitions, ultimately precluding innovation or sending the entrepreneurs to another region. The Organisation for Economic Co-operation and Development (OECD) calls entrepreneurs "essential agents of change who accelerate the generation, application and spread of innovative ideas and in doing so . . . not only ensure efficient use of resources but also expand the boundaries of economic activity" (OECD 1998). The importance of mortgages as venture capital, therefore, cannot be underestimated.

6.2.3. Mortgage finance

Mortgage-backed securities (MBS), or "pass-throughs," have uniquely challenging characteristics when compared to other fixed-income products, mainly because unpredictable changes in duration need to be accounted for. *Duration* is the average time taken by a security, on a present-value basis, to pay back the original investment—the discounted time-weighted cash flow of the security divided by its price. Said differently, and bringing the concept into the realm of economics, duration is not just a measure of the life of a bond, it is price elasticity.[10] The duration of a fixed-income asset indicates the price risk of the instrument with respect to the interest rate environment. Leaving calculus aside, the practical formula used by practitioners is

$$\% \Delta P \approx - D \times \% \Delta (1 + y)$$

where P is price of the product, D is duration and y is yield to maturity of the product.

[10] Course notes, Debt Markets, Professor Charles Jones, fall 2001, Columbia Business School.

Fixed-income portfolio managers pay close attention to durations, constantly balancing the duration of their fixed-income assets and liabilities. For instance, assume that the present values associated with an asset and liability net out to zero on a balance sheet. If the duration of the asset is 20 years, but that of the liability is 5 years, then the cash flows provided by the asset will not be able to meet the obligations of the liability. Further, if there is a change in the yield curve—the rate environment—then the changes in present value of the liability and asset will not be equal. Changes in duration are not welcome. Unexpected life events (referred to as the five Ds: divorce, departure, death, destruction and default)[11] can cause a home to be sold, resulting in prepayment of the mortgage and a change in duration.

In addition to these complications, both sides of the United States mortgage market are highly sophisticated. American homeowners are comfortable refinancing their home when rates change by as little as 25 basis points. Some churn through mortgages with regularity, taking advantage of "sweeteners"[12] for the initial year(s) of a mortgage.

Citizens of developing countries who have just had their property rights formalized are highly unlikely to consider their home as a component of their personal financial portfolio and therefore manipulate the system in this manner. They are also considerably less mobile. It is exactly the lack of this sophistication that makes non-U.S. markets so important.

> Mortgage borrowers in non-U.S. markets perform far better both on a credit and a prepayment basis, which means securities backed by such mortgages would be of much more stable duration and should attract more investors than is currently the case.[13]

This quote from Bolton gives an indication of promising investment opportunities with the words "than is currently the case."

7. Securing Property Rights: A Regional Club Good

A registry full of accurate and enforceable information—maintained by the state—is tremendously valuable. When someone has formal property rights, their lives are improved in a number of ways. Often the improvements also benefit their societies. In general, people with a legal title to their property

- invest more in their property (de Soto and Litan 2001, 14)
- develop demand for electricity and insurance (14)
- enjoy more public services and security from the state

---

[11] Course notes, Advanced Derivatives, Professor Suresh Sundaresan, fall 2001, Columbia Business School.

[12] A sweetener is some sort of financial incentive that benefits the consumer for the first year or so of the mortgage but that will presumably be recouped by the lender over the lifetime of the repayment.

[13] Maureen Bolton, principal financial officer, IFC, in *Global Outlook* 2001, 18.

- are brought into the "system" of capitalism and are therefore less likely to resent and/or rebel against it (13)
- have the opportunity to borrow against their property, which creates a legitimate source of capital for entrepreneurs (12)
- are not physically tied to their land. With their property rights secure, they are free to enter into long-term rental or lease agreements and enjoy greater mobility of labor (Panaritis 2001b).

Panaritis's work provides empirical support for these conclusions. Her studies in Peru illustrate that more than two-thirds of property owners with recently formalized titles have improved their land, and 45 percent have solicited loans (Panaritis 2001b, 20 and 22). The good—in this case the service of property-right formalization—meets the needs of people who previously did not enjoy an enforceable claim to their property. This is an increasingly large group that includes both the poor and the middle class.[14] Indeed, the last three of the effects listed in the preceding paragraph benefit the entire community.

The service of property-right formalization is *nonrivalrous in consumption*. Indeed, it generates positive network effects as more and more properties become formalized, making it a desirable standard and causing markets to thicken. Certainly, as demand increases there could be logistical limitations to the rate at which applications are processed. This may compromise the purity of the public good, as it would not be completely nonrivalrous.

The program in Peru, however, was designed to be time efficient. That was a critical part of the problem to be solved. The travel time—the total amount of time it takes a Peruvian to complete the formalization process—varies from as little as a few hours to up to five days, instead of a few years. Systemic congestion has not surfaced as an issue to date.[15]

The service is a club good since it is technically excludable, insofar as there is a small fee and one needs to have the property that one has been living on to formalize. Considering, however, that a large percentage of society falls into this category and that the fee is one-fiftieth of per capita income versus the more than 95 percent that was the case under the old system, the degree of excludability is minimal. While an argument for impure instead of club could be made for the same reason, club is a more appropriate description. This is because one must occupy land prior to taking part in the process. Finally, given the limited geographic scope of the program,[16] it is clearly a regional good.

---

[14] Rural to urban migration often takes place well ahead of a legal system developed to address the problem. "Most urban properties remain outside the formal title and registration; . . . urban areas in Africa will double in size over the next fifteen years," observes William Cobbett, senior urban upgrading adviser, United Nations Centre for Human Settlements (Habitat)/The Cities Alliance (*Global Outlook* 2001, 17).

[15] Interview with Panaritis, October 16, 2001.

[16] At the national level, the program is not fully implemented, and globally it is obviously a state affair.

In summary, the provision of property-right formalization is accurately categorized as a regional club good.

8. Information about Parcels from the Registry: A Global Public Good (GPG)

Another result of such successful programs as that of the World Bank in Peru is even more interesting. Offering information to all audiences—buyers, sellers and banks—at no cost, the registry passes the tests of nonrivalry in consumption and nonexcludability and is therefore a public good. Its impact on society may be considered in comparison with another well-known registry, that of intellectual property (IP). Imagine how different science and society would be without IP protection. Of course, fixed-property-right formalization differs from IP in two major dimensions: First, there is a finite quantity of fixed property, and second, the "lifespan" of fixed property is infinite, whereas patents expire. For both of these reasons, a registry facilitating (or permitting) the trading of this property is at least as crucial as the regulation of IP rights (Panaritis 2001b, 10). When viewed in such a comparative manner, it becomes easier to understand how property-right formalization programs are capturing the attention of the global financial system, aid workers and economists.

A year ago, an article that speaks directly to the tangible consequences the registry has brought about appeared in the Economist Intelligence Unit (EIU ViewsWire 2001).

> Alberto Gonzalez, product manager for Banco Sudamericano, expects mortgage portfolios to expand by 5 to 10 percent within the [Peruvian] banking system in 2001, with much of the growth generated among lower-income groups whose household income ranges from $200 to $300 a month. . . .
>
> Such customers tend to be less sensitive to political volatility than upper-income families, and better risk assessment "allows us to look at new kinds of clients," Mr Gonzales says. Sudamericano hopes to increase its mortgage business by 10 to 15 percent this year.
>
> Sudamericano will also be the first institution to issue mortgage bonds in the local capital market, which will help to lower its mortgage interest rates, currently pegged at 12.5 to 13.5 percent. The bank will issue $30m in mortgage bonds between 2001 and 2003, with the first issue scheduled for March 2001.
>
> *An accelerated government programme to issue property titles would also raise the number of households eligible for mortgage loans* [italics added].

At the end of 2000, U.S.$25.3 million was used for RP and COFOPRI; by the end of 2003, the total is budgeted to grow to U.S.$38 million. By that time, Banco Sudamericano will have released almost as much capital into the hands of Peruvian citizens who were previously unable to obtain such loans—and at a lower interest rate than was available before. It does not seem unreasonable to assume that by the end of 2003, with hundreds of thousands of other properties formalized, more mortgages will be granted, more bonds

will be issued and international capital will be flowing into Peru. A direct result of increased transaction volume, or thicker markets, is that the quality of information about parcel price will improve. Asymmetries of information between buyers and sellers will progressively diminish, and the poor will be able to use their resources at increasingly fairer prices. Their capital will be resurrected.

Other positive effects cascade through the imagination like dominos. An entire, relatively large, local capital market, the MBS, is only one year old. As that market increases in size and complexity, jobs will need to be created and the level of employee sophistication increased. Increased demand for services ranging from insurance to utilities will also contribute to favorable employment statistics. Entrepreneurs will have newfound capital sources and enjoy a higher degree of mobility. These are just a few examples that illustrate how the registry will touch and benefit many levels of society within the region.

Those multiple impacts, coupled with the benefit to global investors seeking stable, high-duration investments, are important to note when calling the registry a global public good. Recall that Kaul et al. insisted that for a good to be global it must not only affect many countries but also touch a broad spectrum of populations. These reforms and others like them in different countries around the world clearly affect a surprising number of populations.

9. Answering Questions

The empirical evidence and theoretical models discussed have shown that the answer to the first question raised in the introduction is true. Insightful simplification and thorough redesign of the fixed-property-right formalization process can result in massive capital flows and can improve millions of lives.

The second question as to which sector should manage the process is best responded to after acknowledging the potential perils of property-right formalization. To the extent that these reforms have an extremely positive impact on the lives of the poor, they could be equally destructive if not executed correctly, with the interests of the poor under constant consideration. Criticisms of previous property and land titling initiatives certainly exist.

For instance, some of the problems in Rwanda, it has been argued, stem from poorly thought out property-right formalization. Based on the colonial legal structure, the Rwandan land management system limited land ownership and inheritance to males. The traditional system, however, was matriarchal. This gave rise to countless conflicts and caused serious tension in Rwandan society.[17]

[17] Meeting with Professor Joseph Stiglitz, fall 2001.

The reasons for the success of the Peru program outlined in the "Why Did It Work?" section should all be considered critical components of future property and land titling-programs. If they are not incorporated, it is possible, if not probable, that future reforms would do more harm than good. The Rwanda example illustrates what happens when the principle of adopting a framework reflecting the reality of an informal system is overlooked. Neglecting either of the principles of new registry (RP) creation in order to avoid institutional resistance or resolution of overlapping claims would only succeed in creating change in one part of a larger system and ultimately replacing old problems with new.[18]

This is also known as "the problem of second best," which raises the question as to whether interventions directed at specific market imperfections will improve overall social welfare. According to the theory of second best, correcting specific market imperfections while leaving others untouched will not necessarily improve social welfare (Lipsey and Lancaster 1956). Taking a handful of the lessons from the Peru study will not necessarily result in improvements; all of the interrelations must be accounted for, and then the entire system must be redesigned.

Second-best problems more global in scope could arise if foreign capital is not accompanied by regulation and if newly formalized landowners consume their resurrected capital instead of investing it. Control over rapid foreign capital outflows and encouragement of local capital mobilization without deterring foreign investors are required to address the former problem.

The latter issue—consumption instead of investment—could result in the unintended consequence of people being drawn into the formal system only to quickly find themselves in a position where they are unable to repay their obligations without surrendering their land. If, as a result of such defaults, the property fell to foreign ownership, the government's credibility with its citizens would be compromised. If the defaulted property went to a wealthy elite, then the wealth disparity of the country would increase, again irritating the population to which the government is accountable. In order to avoid either of these scenarios, educating the owners of recently formalized property is crucial.[19] Three fundamental concepts need to be communicated. First, the landowners need to realize that their net wealth has just been increased significantly and that they can continue to enhance their private wealth or squander it. Second, they need to internalize

[18] Interview with Panaritis.

[19] It should be noted that the education of new formal property owners is also a public good. Once the fixed cost of educational materials is covered, the incremental cost of additional students is negligible. Further, the benefits of spreading these concepts—at a time when that are profoundly relevant to the audience—within a developing country striving to enhance its economy are numerous.

the fact that their asset is tradable and usable as collateral. Finally, they must realize that asset value can change, depending on how it is cared for or invested in.

Given the potential magnitude of these social and financial perils, the question of how to preclude their occurrence is an essential element of any conversation about property-right formalization. Fixed-property-right formalization is much more than the simple redesign of a bureaucracy; the process must be all-encompassing, as it requires both new laws and thinking. Land ownership and control are fundamental dimensions of people's lives, and significant changes require that the very fabric of a society be rewoven, both conceptually and—if one is looking at maps titled "Before" and "After"—literally. The entity that provides these goods must therefore be accountable to the population whose lives it most affects. This is the key reason that government should manage the titling process instead of leaving it to the private sector.

Public goods are best provided by the public sector.

10. Conclusion

10.1. Summary

De Soto advocated for the need for property-right formalization and in doing so raised global awareness of its radical potential. Panaritis's practical application demonstrates the veracity of the theories he resurrected. Her first program registered more than 150,000 properties by the end of 1993 (Burki et al. 1998). In 1998, she set off with a relatively small $38 million budget and grew a regional model into a nationwide program. Two years later she had exceeded her goals, formalized more than one million properties and touched the lives of more than 6.5 million people (Panaritis 2002, 3). The regional club good of an effective registry is in place, and the global public good of the credible information about investment opportunities is just beginning to receive widespread recognition. As the realization becomes clearer, one cannot help but observe that the United States and other Western countries have pushed, encouraged and demanded intellectual property rights with an almost religious fervor, while the rights of fixed property remain, until recently, within the domain of academics and aid agencies.

Both goods—the registry and information—establish an environment that stimulates investment by either creating markets or enhancing their efficiency. Both require a registration system that is wholly controlled by government and "must be responsive to market demands and must be innovative in building adequate organizations and incentive structures" (Panaritis 2002, 4). Analyzing the rising storm of property-right formalization in the context of the economics of information is critical because in doing so we can begin to use the well-established and -respected term "global public good."

The best available resources need to be targeted for this endeavor. If done correctly, the formalization of property rights can leverage aid funds to help the poor in ways that would impress the founders of LTCM. If, however, the task is left to people accountable to shareholders instead of citizens and therefore more concerned with efficient delivery of tradable property than a more holistic set of concerns, then just as many lives could be further disrupted and drawn deeper into the mire of poverty. This would ultimately hurt markets instead of facilitating the wealth-creation activities that would eventually enlarge them.

10.2 Where are we in *la revolución*?

Urban populations are swelling everywhere, from Africa and Latin America to western and eastern Europe. Both the potential of and need for better property rights are taking on incredible importance. To list the countries in need of reform would be a waste of paper; it is far easier to list those that could not significantly help their poor with some thoughtful property-right reform: the G7.

Estimates of how much capital can be resurrected vary wildly, from billions to trillions. These numbers have definitely caught the attention of the private sector. As stated previously, however, in order to work, the process of formalization must be managed by the public sector. It is critical that the World Bank, U.N.-Habitat, academia and civil society—in partnership with sovereign governments—lead the charge. Once they have created a system that equitably formalizes property rights and results in underdeveloped and nonleveraged resources entering the formal economy, capital will arrive at the startling speed of which only the private sector is capable. The setting for a public-private partnership of global proportions is in place. Now is the time for action.

Where are we in this massive *revolución?*

At the end of the beginning.

References

Buchanan, James. 1968. *The demand and supply of public goods*. Chicago: Rand MacNally.

Burki, Shahid Javed, Isabel Guerrero, Guillermo Perry and Elena Panaritis. 1998. Project appraisal document on a proposed loan in the amount of USD$38 million equivalent to the republic of Peru for an urban property rights project. World Bank Report No: 18245 PE. July.

De Soto, Hernando, and Robert E. Litan. 2001. Establishing effective property rights for economic development. *Global Outlook: International Urban Research Monitor*. Woodrow Wilson International Center for Scholars. August.

Global Outlook: International Urban Research Monitor. 2001. Roundtable on homeownership and property rights. Woodrow Wilson International Center for Scholars. August.

International Finance Corporation (IFC). 2001. Annual Report. Washington, D.C.

Kaul, Inge, Isabelle Grunber and Marc Stern, eds. *Global public goods: international cooperation in the 21st century*. Oxford: Oxford University Press.

Lastarria-Cornhiel, Susana, and Grenville Barnes. 1999. Formalizing informality: The praedial registration system in Peru. Land Tenure Center Research Paper 131, University of Wisconsin-Madison. April.
http://agecon.lib.umn.edu/cgi-bin/pdf_view.pl?paperid=1389

Lipsey, Richard G., and Kelvin J. Lancaster. 1956. The general theory of second best. *Review of Economic Studies* 24: 11–32.

Organisation for Economic Co-operation and Development (OECD). 1998. Fostering entrepreneurship. Paris.

Panaritis, Elena. 2000. Peru's urban poor gain access to property markets. The World Bank Group DevNews Media Center. February 2.
http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:20019937~menuPK:34460~pagePK:34370~piPK:34424,00.html

———. 2001a. Real property: A basis for market development. World Bank Power Point Presentation. February.
http://wbln0018.worldbank.org/External/Urban/UrbanDev.nsf/f24f2b6a84aaea16852568930082bc6f/f008e5eaf6fbe80385256a0200757c73/$FILE/lecture-worldbank-february%202001.ppt

———. 2001b. Do property rights matter? An urban case study from Peru. *Global Outlook: International Urban Research Monitor*. Woodrow Wilson International Center for Scholars. April. http://wwics.si.edu/NEWS/support/glout0501.pdf

———. 2002. Property rights and market development. Working paper.

Shmanske, Stephen. 1991. *Public goods, mixed goods, and monopolistic competition*. College Station, Tex.: Texas A & M University Press.

Stiglitz, Joseph. 1999. Knowledge as a global public good. In Kaul, Grunber and Stern (1999).

World Bank. 2001. Annual Report. http://www.worldbank.org/annualreport/2001/pdf/tab8_1.pdf.

APPENDIX

The following graph and description are borrowed from World Bank Project Appraisal Document #18245. The document can be viewed in its entirety on the World Bank site:

http://www-wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000009265_3980901093233

Document of
The World Bank

Report No: 18245 PE

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US$38 MILLION EQUIVALENT

TO THE

REPUBLIC OF PERU

FOR AN

URBAN PROPERTY RIGHTS PROJECT

July 15, 1998

Poverty Reduction and Economic Management Unit
Bolivia, Paraguay, Peru Country Management Unit
Latin America and the Caribbean Region

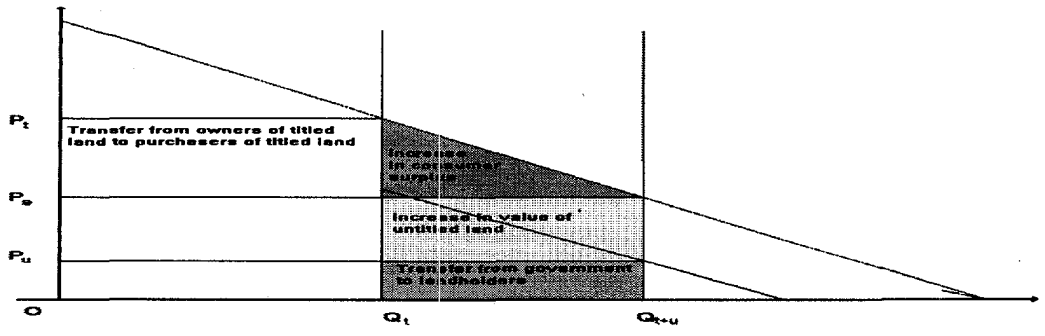
After titling, the supply of titled land will increase as shown in figure 1, from OQ_t to OQ_{t+u} and hence the price of titled land is likely to go down. At the same time, the demand for previously untitled land will go up, as titling will effectively remove the "tax." The net result will be to increase the price of untitled land and to decrease the price of titled land. The new equilibrium price of titled land will become P_e.

Owners of titled land will see the value of their land reduced by the difference in price (P_t - P_e) times the amount of land that they own. This will be a net loss for owners of titled land, but not a net loss to society because it will represent a gain to potential purchasers of titled land. The net gain to society from the reduction in the price of titled land will be the increase in consumer surplus. We did not attempt to measure ex ante this benefit, but will attempt to measure it ex post.

Holders of untitled land will receive two benefits, a transfer from the "owner" (i.e., the Government) of titled land and a benefit from the removal of the "tax." The transfer part of the benefit is given in figure 1 by the area $P_u(Q_{t+u} - Q_t)$ under the demand curve for untitled land. This benefit to the owners of untitled land will not represent a benefit to society because it will be obtained by the holders of untitled land at the expense of the Government of Peru. This amount will constitute a transfer from the Government to the project beneficiaries.

The other benefit to holders of untitled land will be the increase in the value of the land that they occupy resulting from the act of titling and the attendant reduction in the uncertainty of tenure. The benefits accruing to untitled landholders will be equal to the increase in price of untitled land (P_e - P_u) as a result of titling, times the amount of land that they own. Since this increase stems from the elimination of the "tax" on untitled land, it represents a true benefit to society. In the case at hand, this benefit will be enormous, given the tremendous transaction costs of obtaining a title in Peru. Based on econometric estimates of the increase in the price of lots after titling in a pilot project, the benefit can be expected to be on the order of $25 per square meter which, for an average-sized lot estimated at 100 square meters, will be on the order of $2,500. Considering that the market price of an average lot is about $2,500, titling is likely to double the value of the lots. It is important to realize, however, that this benefit will be a capital gain, not cash in the pocket, and the gain will not be realized until the beneficiaries sell or mortgage the lot.

Project beneficiaries fall on the borderline between the poor and the non-poor. The project, then, will improve the asset position of about a million families.



APPENDIX

The following six graphs are used to illustrate the Graglia-Panaritis Model as discussed in the third section of the paper.

The value of the formal property market is indicated in red.

The informal in blue.

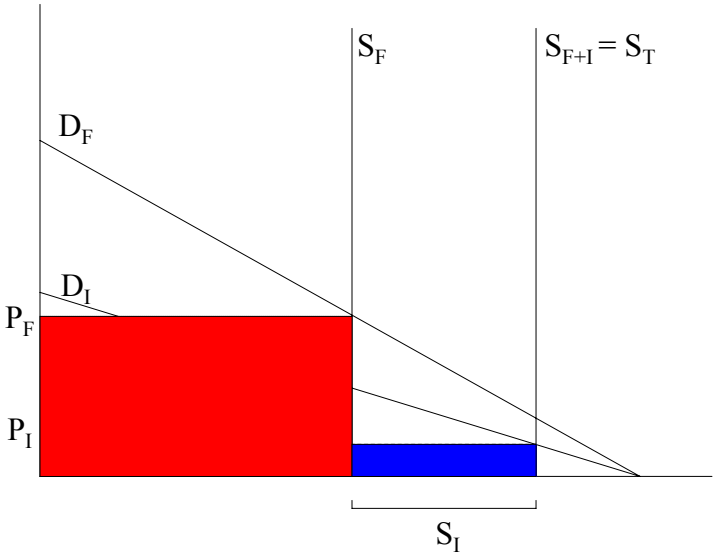


Figure 1

Demand for formalized property will increase in direct proportion to the decrease of demand for informal property since a certain number of informal land owners will become formal land owners in the course of a weeks time.

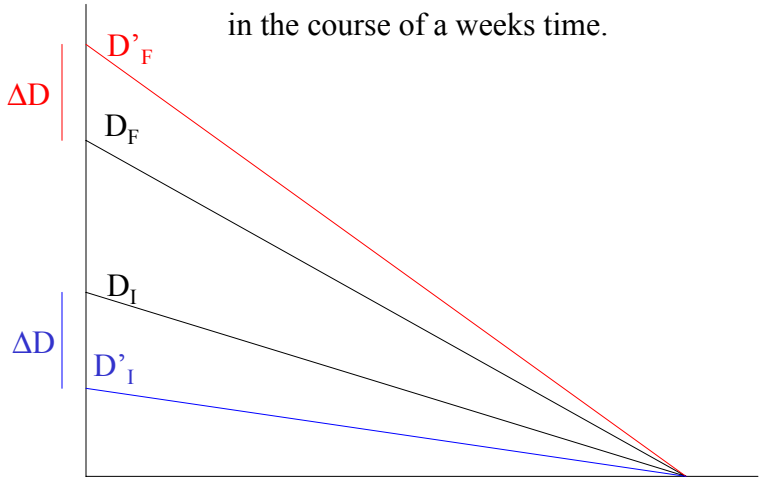


Figure 2

Supply of formal land will increase as informal land shrinks. Each parcel of formal land will be created with an owner and therefore will come into being with increased demand, holding P constant.

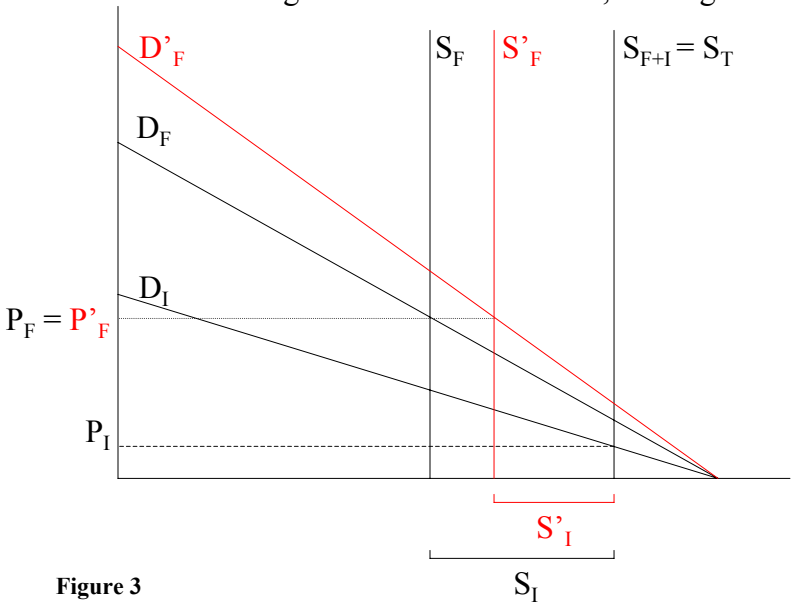


Figure 3

Significant value for the community is created by formalizing property rights.

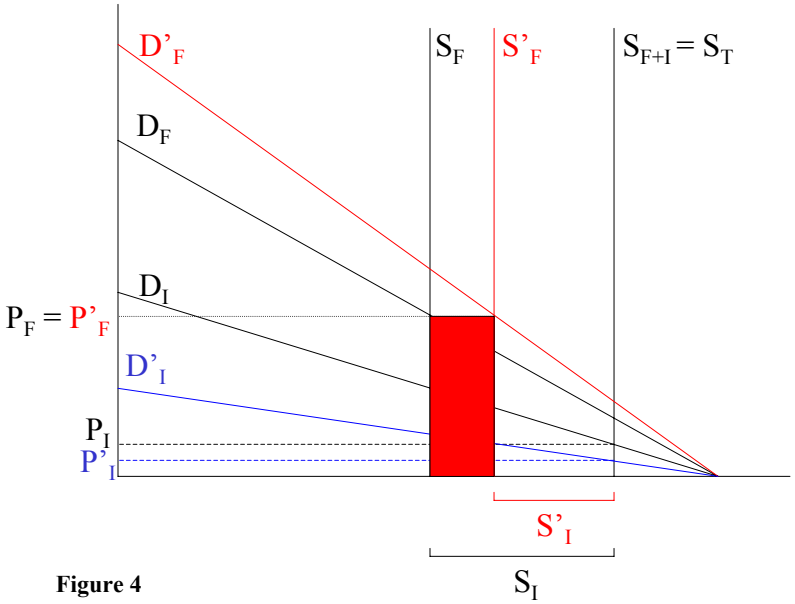


Figure 4

COLUMBIA BUSINESS SCHOOL

Some value for the community is also lost by formalizing property rights.

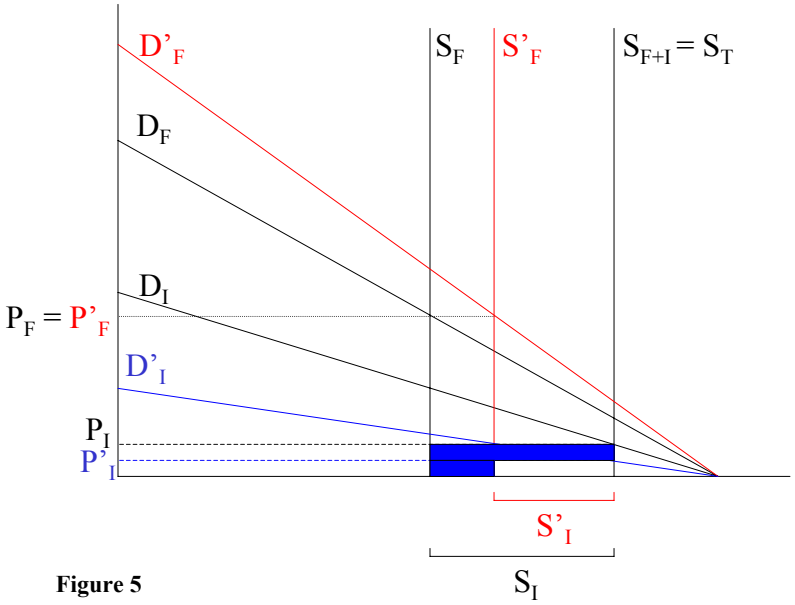


Figure 5

The net effect is the red less the blue which is clearly a net gain for society.

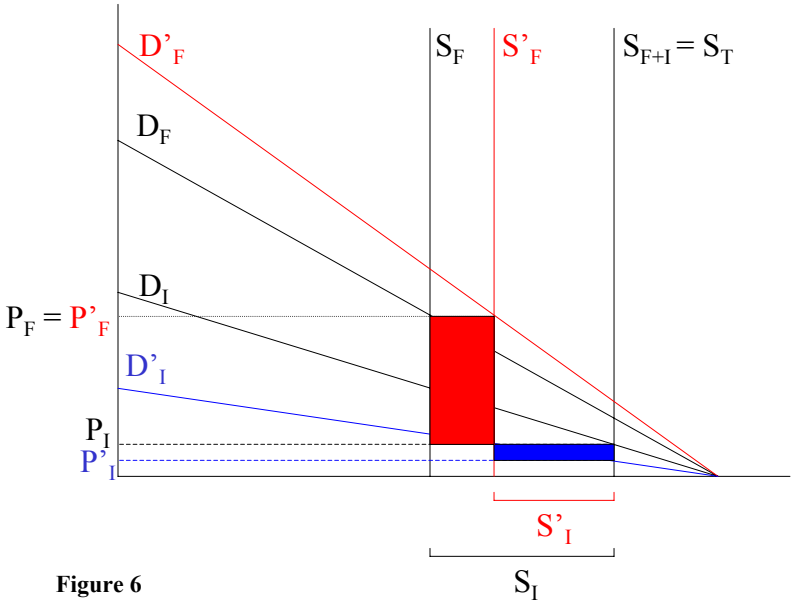


Figure 6