

Propertyless in Peru, Even with a Government Land Title

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ABSTRACT. This article investigates the ability and process of government land titling as a method to achieve secure property rights institutions. Specifically, we analyze the impact of government land titling in rural Peru. Our findings suggest that land titling does not achieve the positive benefits associated with secure property, such as access to credit. We also find that individuals prefer private enforcement methods of securing property to public means. This suggests that government land titling is not always a channel through which countries can achieve secure property rights institutions.

I

Introduction

"[I] trust in the [community] president, but [I] don't trust in the government."

—*Personal Interview*

RECENT LITERATURE ILLUSTRATES THE STRONG, positive, and robust connection between secure property rights and economic development (Scully 1988; Boettke 1994; Besley 1995; Knack and Keefer 1995; Leblang 1996; Hall and Jones 1999; de Soto 2000; Acemoglu, Johnson,

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Table 1
Security of Property and Income per Capita

Property Rights Index by Quartile	Average Income per Capita
Top 25 Percent	\$32,994
2nd Quartile	\$15,679
3rd Quartile	\$7,665
Bottom 25 Percent	\$4,294

Source: International Property Rights Index (2007).

and Robinson 2001, 2002; Landau 2003; Acemoglu and Johnson 2005; Kerekes and Williamson 2008). Table 1 shows this relationship between the security of property and the level of a country's income. The difference between the top 25 percent and the bottom 25 percent based on the property rights index is remarkable, a difference of over \$28,000 per capita. This basic table suggests that the security of property translates into real economic effects.¹

Although there is relative consensus on the importance of property rights for economic growth and development, the question remains as to how to achieve secure property rights institutions. Economists understand that property rights are important for economic growth, but a large portion of the developing world fails to establish and maintain well-defined and secure property rights. This is partly due to a lack of understanding of how to achieve secure property rights institutions.

One method of achieving secure property rights is through government land titling, as advocated by Peruvian economist Hernando de Soto (2000). He emphasizes the importance of a written, formal, legal property rights system and the need to incorporate the informal, or extralegal, sector within the established legal sector. He argues that to best facilitate economic growth, an integrated system of standard legal titles is necessary. In short, de Soto believes that government codification of unarticulated, informal property rights is needed in order to realize the positive benefits associated with secure and well-defined property rights that promote economic development. Property titling is increasingly considered one of the most effective forms of

government intervention (Binswanger, Deininger, and Feder 1995; Baharoglu 2002).

Specifically, de Soto (as well as other scholars) argues that a formal land titling system can generate the positive outcomes associated with secure property rights as formally outlined in Besley (1995). One mechanism, or channel, emphasized through which land titles provide the groundwork for property rights institutions is through the ability of owners to utilize their titled property as collateral to secure financing for investments. In addition, in order for a land titling program to achieve these positive effects, the complementary enforcement mechanism must exist to secure the rights; therefore, a legal government land title should be enforceable through public institutions, such as a court system. We view this argument as providing a specific hypothesis to examine the ability of land titling to achieve secure property rights. If secure property is achieved via land titling programs, then land titling should provide access to credit markets not previously attainable and access to enforcement of these rights as defined by the land titles.

Building from these theoretical predictions, we examine the ability and process of government land titling to achieve well-defined and secure property rights institutions. We specifically focus on the capacity for titles to provide access to credit to finance investments, and the public, as well as private, enforcement mechanisms that exist to define, establish, and enforce property rights. We recognize that land titles may influence other aspects important for development; however, we focus on the aforementioned channel and test this theoretical prediction as it is most emphasized in the literature. In order to undertake this investigation, we focus on Peru as a case study and utilize original survey data collected from fieldwork.

Peru is ideal for analysis for several reasons. First, Peru lacks secure property rights. According to the International Property Rights Index (Horst 2007), Peru's property rights score is 3.7 on a scale of 0 to 10, with 10 representing the highest security level. The average score worldwide is 5.3, placing Peru in the bottom 25 percent category and among the world's poorest countries.² Secondly, over the past 25 years, the Peruvian government has undertaken land titling in order to

improve its property rights institutions. Many of de Soto's ideas were adopted by the Peruvian government in shaping land reform; therefore, we explore these specific programs of government land titling and compare their intended effects, namely, access to credit, with actual outcomes.

As such, Peru is ideal for micro-level analysis to examine the question of how countries may achieve secure property rights. We attempt to answer this question by conducting individual interviews in rural communities surrounding Cusco.³ Due to a lack of quantitative data specific to this region, we rely on purely qualitative analysis. From these interviews, we attempt to further our understanding of the ability for land titling to provide access to credit and to enforce property rights institutions.

Several recent papers examine the impact of land titling in Peru but focus on the urban areas within the country, including Lima, Peru's capital (Field 2003, 2005; Field and Torero 2004). These studies show a positive impact from government land titling in Peru's urban areas, for example, by providing access to credit and increasing investment. Our article is unique in that we examine rural areas in Peru in order to determine the impact of government land titling. From this examination we are able to compare these results with studies that analyze the impact of Peruvian land titling in urban areas. We also compare our results to studies that investigate the impact of land titling in rural areas from other countries. These comparisons can provide specific insight into the ability of a formal property rights institution, government land titling, to achieve positive, significant, and consistent results. In our study, we also distinguish between defining property rights and enforcing property rights, a clear distinction that is currently lacking in the literature.

Our findings suggest that land titling in rural Peru does not achieve its intended effects. Specifically, we find that a government land title is not sufficient as collateral to guarantee a loan. In addition, we also find that in the presence of government land titles the enforcement of property rights is not achieved through public institutions. Rather, private mechanisms arise for the enforcement of property rights. This suggests that government land titling may not be the guarantee to achieve secure property rights institutions.

The remainder of the article is organized as follows. Section II presents a theoretical framework in order to analyze the implications and provide predictions of land titling programs. Section III focuses on Peru's experience with government land titling. This section includes a brief overview of Peru's titling programs and a detailed analysis of both the ability to use a title for collateral to secure a loan and the enforcement methods used to secure property. Section IV concludes.

II

Theoretical Framework

BEFORE WE CAN ANALYZE THE IMPACT OF LAND TITLING, we briefly outline the conceptual link between land titling, access to credit, and secure property rights institutions. The underlying reasoning for titling programs stems from the evolutionary theory of property rights where customary land rights transform into a formalized system as a result of relative price changes (Demsetz 1967; North and Thomas 1973). It is commonly viewed that the state can facilitate these changes through a titling system. More specifically, titling can protect agents' economic rents and bring previously excluded households into the formal credit markets. Therefore, titling may generate the positive outcomes associated with well-defined and secure property rights institutions through increasing access to collateral and providing an avenue for the security and protection of property.

De Soto (2000) presents a specific mechanism for which property rights lead to increases in capital and thus increases in economic development. The lack of secure, formally titled land impedes the poor from collateralizing the land to obtain a loan to undertake investments. A formal titling system can reduce the costs of knowing the economic quality of assets, as well as inform banks about the lenders' potential risks. For de Soto, the process of transforming "dead capital" into capital accumulation is only possible if the government reduces the costs of formal titling.

Holden (1997) also argues that the lack of formally documented property in the developing world is a significant cause of the widespread inability of the poor to access formal credit markers due to insufficient collateral. The untitled property cannot be used as

adequate collateral to offer the lender as a warranty for their loan (Hoff and Stiglitz 1990). Besley (1995) and Feder (1985) provide a formal outline between credit access and property rights where titles reduce transactions costs between the lender and the borrower by lowering the risk of loss and the costs of ownership verification. This increases the net value of the land, generating its ability to be used as collateral for a loan. It should be emphasized that in order for the full benefits of land titling to be realized the state must not only define the land through issuing titles, but also enforce these newly defined rights.

Recent papers examine these effects of land titling programs on economic development, without the emergence of a general consensus as to the effectiveness of these programs. Several studies conclude that land titles positively influence the level of investment (Feder, Onchan, Chalamwong, and Hongladarom 1988; Banerjee, Gertler, and Ghatak 2002; Do and Iyer 2003; Field 2005). On the contrary, Kimuyu (1994), Place and Migot-Adholla (1998), and Firmin-Sellers and Sellers (1999) find that land titling does not significantly increase the level of investment and capital formation. This claim is also supported by Atwood (1990), Brasselle, Gaspart, Platteau (2002), and Place and Otsuka (2001). These articles conclude that informal, local mechanisms of order do provide basic incentives for small-scale investment. In addition, these local rights may be less costly and wasteful than formal land titling;⁴ hence, no need for state intervention.

Field (2005) detects increases in housing investment due to land titling, but the majority of this investment is financed without credit. We interpret this finding as an indication that government land titling does not necessarily increase access to credit. However, several other papers find that a land title does improve access to agricultural credit by the ability to use land as collateral (Carter and Wiebe 1994; Lopez and Romano 2000; Alston, Libecap, and Mueller 1999). In addition, Field and Torero (2004) conclude that land titling in Peru is related to increases in loan approval rates from the public sector bank for housing construction materials. However, they find no increases in loan approval rates from private financial institutions. In our view, this suggests that land titles do not provide sufficient collateral to increase the loan approval rate from a private institution, and therefore do not provide adequate access to credit. These inconclusive results are

sometimes accredited to the complexity of addressing and controlling for the endogeneity of property rights.

In addition to investment and credit effects, the enforcement mechanisms of titles are of equal importance. Field (2003) finds no evidence that public enforcement costs (i.e., police expenditures) increase with additional legal titles. We believe this indicates that land titling may define the land legally, but it does not induce individuals to rely on the government to enforce their property rights. Instead, individuals find it more beneficial to rely on informal, private enforcement methods.⁵ We build off of this existing literature to further investigate the impact of land titling on access to credit and the enforcement of property rights in rural Peru.

III

Peru

TWO MAIN ORGANIZATIONS WERE RESPONSIBLE FOR LAND TITLING IN PERU, the Comisión de Formalización de la Propiedad Informal (COFOPRI) and Proyecto Especial de Titulación de Tierras y Catastro Rural (PETT). COFOPRI originated in 1996 and its purpose was to facilitate the conversion of urban squatter settlements into nationally registered property. COFOPRI was created to expedite the process of acquiring legal land titles and to decrease the associated costs.⁶ By December 2001, approximately 1.2 million urban residents received legal land titles (Field 2003). Whereas COFOPRI focused on urban areas, PETT was created to convert rural settlements into nationally registered property. Recently, PETT was absorbed by COFOPRI and they now operate as one organization.

A. Methodology

Most studies investigating the impact of land titling concentrate on urban settlements. Our article investigates the impact of land titling by focusing instead on rural communities. In the analysis that follows, we attempt to weave together general information regarding the ability of land titling to establish secure property rights institutions in rural Peru. The focus of our analysis is twofold. First, we want to examine the

ability of land titling programs to enable property to be used as collateral and to provide access to credit. Secondly, we are interested in the enforcement mechanisms used to secure private property. In addition, we also inquire as to the demand for individual land titles. Due to the lack of specific quantitative data specific to rural Peru, we rely on original data gathered from fieldwork to examine the ability of land titling to achieve property rights institutions. This approach is similar to previous work undertaken by de Soto (1989, 2000), who examines the informal sector in Peru, and Coyne and Leeson (2004), who study entrepreneurship in Romania.

We conducted fieldwork in July 2007 and interviewed individuals in indigenous communities surrounding Cusco, Peru. These communities are located in the province of Urubamba and include Piñancay, Wila Wila, and Pucamarca. We conducted five different in-depth, face-to-face interview sessions for a total of approximately 20 interviewees. Both males and females were included in the sample and ages ranged from 30 to 55 years of age. All of the interviewees rely on agricultural production, primarily at a subsistence level. Individuals were chosen based on availability, relevance, and potential to provide useful insight to the research agenda. Of the individuals interviewed, some possess individual land titles. Others do not possess an individual land title but are members of communities possessing community land titles. All individuals interviewed live within a community, including those possessing an individual land title. In conducting our interviews it was important to us to include within our sample individuals who do possess an individual land title as well as individuals who do not. In determining the overall impact of land titling in rural areas, our interview questions center on the demand for land titles, the ability to use the land title as collateral, and the enforcement mechanisms of securing property. Our interviews were conducted on an informal basis, although a specific series of questions provided the framework and guided each of our interview sessions. Appendix 1 provides the list of research questions used to guide our interviews.⁷ Appendix 2 provides a summary of our descriptive statistics and the results from our interviews.

The reliance on qualitative data for our analysis has both its advantages and disadvantages. Admittedly, one must be careful in

generalizing results based on a relatively small sample size. We also recognize the potential for individual biases to enter into individuals' responses. However, our fieldwork provided us with important insights regarding the ability of land titling to secure property not available when examining strictly quantitative data. For example, our interviews enabled us to examine the demand and motivation for obtaining land titles.

Of the individuals we interviewed, the expressed demand for obtaining legal land titles stemmed from a desire of individuals to be able sell their property, pass it on to other family members in the event of their death, and to use as a warranty to ask for government loans. Of those individuals not possessing a land title, several responded that their communities saw no benefit in individual land titles because within communities individual property and limits were currently respected through traditions, customs, and respect. Also, even with legal land titles communities would still fear government expropriation of property. In the following sections we summarize the remainder of the results of our interviews.

B. Property as Collateral

"[I] don't trust in the government because [I] think that in the future there could be some problems . . . and because the interest is very high and banks ask for many warranties."

—Personal Interview

One of the stated benefits of secure property rights is the ability to use private property as collateral in order to secure loans. For example, 70 percent of new business credit in the United States comes from using titles to other assets as collateral (de Soto 2000). Secure property rights enable assets to be transformed into resources that can be used to obtain additional credit. The access to credit, in turn, promotes increases in long-term investment. This process provides the incentives and means to stimulate capital formation and facilitates economic development.

During our interviews we investigate the effects of land titling on the ability of individuals to use their property as an asset to obtain credit. When inquiring as to the benefits of a government land title,

the primary answer of our respondents was the ability to ask the national banks for loans. However, many of the individuals we interviewed were fearful that they would not be able to repay such loans, due to the agricultural nature of their income. Further questioning revealed that private institutions are currently willing to lend to individuals in these communities, but at higher interest rates. This is the primary reason that individuals seek government land titles: to have the ability to get national loans at lower interest rates. In addition, even with a government land title, private institutions still required higher rates of interest than the national banks. This suggests that government land titles are not sufficient to guarantee property as collateral for a loan for private banks. Although a government land title enables individuals to ask for government loans, it does not guarantee that these individuals will receive these loans. Also, in some cases, even with a government land title, the national bank requires additional co-signers and more collateral than the loan is worth.

In summary, the national bank requires a government land title; private banks do not. However, private institutions charge higher rates of interest to compensate for the lack of secure collateral, with or without a land title. This leads individuals to seek a government title in order to receive a loan at a lower rate of interest from the national bank. Even with a land title, the national banks often require additional collateral as a warranty. These findings indirectly suggest that both public and private institutions do not fully believe in land titling programs as securing property. The full benefits of private property are still unavailable to the individuals that reside in rural Peru. Our research suggests that government land titling may not enable individuals in these rural communities to use their property as collateral to secure a loan.⁸

C. Methods of Enforcement

"Each problem that [we] have . . . [we] solve everything inside the community; [we] don't need to ask for the government."

—Personal Interview

In addition to obtaining property rights, enforcement mechanisms are necessary to ensure the security of property. The ability to enforce

property rights is paramount to capture the full benefits of property rights institutions. In order for property rights institutions to function in a manner consistent with economic development, mechanisms must exist that provide individuals with security and allow them to realize the beneficial aspects of private property. Such security can come either from public institutions (i.e., government) or private institutions. Private institutions include culture, customs, and social norms. To better examine how secure property rights are achieved, we investigate the different types of enforcement mechanisms used to secure property in the rural communities surrounding Cusco.

We first asked individuals how secure they felt regarding their property rights. The general consensus that emerged from our interviews was that individuals feared government expropriation of property, but were not significantly threatened by expropriation by other individuals. We believe that the increased fear of government expropriation of property over private expropriation can be partially understood by these individuals' reliance on private enforcement mechanisms to secure property, as illustrated below.

We questioned individuals about the role of government in enforcing land titles. We received several interesting responses, including, "[I] trust in the [community] president but [I] don't trust in the government." Other individuals responded in a similar manner. During one interview, when asked, "Does the government protect your property?" our respondent replied concisely, "No." This was the general response received from all other individuals interviewed. They indicated that government enforcement of property titles is prohibitively costly and that these costs would not outweigh any potential benefits. Widespread corruption of public officials and the court system create disincentives for public enforcement.

The preferred method of securing property that emerged from our interviews was a reliance on private mechanisms, the most important of which are trust and respect among individuals. In the cases in which there are community land titles, individuals still maintain and work specific parcels of land, the limits of which are respected by other members within the community. In some instances, individuals maintain particular plots of land through agreements or a type of "leasing system" from the community. Again, the limits established by these

“leases” are enforced by respect and trust among community members. This is consistent with research conducted by Andre and Platteau (1998), who show that when formal titles are unavailable individuals rely on local, informal means of recording land transactions.

We also inquire about methods used to resolve conflicts when disputes regarding property limits do arise. Each community elects its own local president. When disputes arise between individuals within a community, all interviewees responded that they rely on their local presidents to make a decision regarding property limits. Each member within the community respects the local president’s decisions. For instance, one respondent replied: “The president has the most authority here inside the community, so he has to solve the problems inside the community.” When these decisions are not respected by a community member, he or she is ostracized. If disputes arise between communities regarding property limits, the same reliance on local presidents is the preferred method of resolving conflicts. In these situations, the local community presidents meet to make a decision about the property limits that is acceptable to all parties involved. Again, these decisions are accepted and enforced through local social norms. This method of resolving disputes, arbitration, is an example of a private enforcement mechanism that exists to accommodate the need to secure property.

In summary, the results of our interviews indicate that individuals in these rural communities fear government expropriation and do not trust public enforcement mechanisms to secure their property. Instead, individuals rely on private enforcement mechanisms and the community is viewed as more important to secure property than public institutions. Private enforcement mechanisms include faith and confidence in verbal agreements between individuals due to culture and social norms, respect, and arbitration conducted by local presidents. In addition, failure to respect local decisions regarding property limits results in punishment, discrimination, and/or ostracism.

D. Implications of Results

Our findings are somewhat unique and require further investigation. Since there is no general consensus on the impact of land titling,

comparison of our results with previous studies provides useful insight. From our investigation, we draw two main implications regarding land titling in rural Peru. First, we find no evidence that land titling provides sufficient collateral to obtain access to credit. Secondly, even if a government land title defines property, the security of this property is mainly achieved through private enforcement mechanisms. From these two results, we cannot support the claim that government land titling is an automatic avenue for obtaining successful property rights institutions.

In our analysis, we find that a government land title does not ensure access to credit. With or without a title, private institutions are willing to lend to the individuals we interviewed, but at a higher price. This higher price indicates that private banks view these loans as risky, even with a title. This finding supports that of Field and Torero (2004), where government land titling did not increase loan approval rates from private institutions. Their paper also finds increases in loan approval rates from public banks. However, from our investigation, we cannot support this claim. We find that the national banks do not necessarily believe in the security of the land title, as evident from the request for additional collateral. Hence, government land titling is not providing access even to government credit.⁹

A possible explanation for this phenomenon is related to our second finding. Although the government is now defining property rights, it is not enforcing these rights. The enforcement of these rights becomes vital to securing the asset as collateral. Since private means are still relied on for enforcement of property rights, government land titling is not effectively changing anything. Land is now legally defined, but not legally enforced. Hence, government land titling does not impact access to credit by enabling land to be used as collateral due to its lack of enforcement. Our conclusion is counter to that of articles arguing that land titling increases access to credit (Carter and Wiebe 1994; Lopez and Romano 1997; Alston, Libecap, and Mueller 1999; Field and Torero 2004). From our analysis, it does not. Obtaining access to credit goes hand in hand with increases in investment. Field (2005) states that government land titling increases the level of investment, although most of this investment is done without credit. The second half of her conclusion supports our previous finding above;

however, our findings do not suggest that government land titling would necessarily increase the level of investment.

Our second main implication is that securing property is primarily achieved through private mechanisms.¹⁰ This implies that relying on government to enforce property rights is too costly. Even if the government defines property, the means by which individuals secure property is obtained through private institutions. This finding is indirectly supported by the work of Field (2003). In this paper, it is footnoted that the additional land titles did not increase enforcement costs. From this, we draw the conclusion that enforcement costs did not increase due to the reliance on private versus public mechanisms. Individuals still view legal, government enforcement as too costly and choose to enforce their rights informally. Although, she does not make this argument, we claim that this finding supports our conclusion that public enforcement of land titles is not the primary means of securing property.

Other land titling investigations do not adequately address the enforcement mechanisms of securing property. However, the existing literature on self-enforcing exchange documents the ability of private institutions to secure property (Anderson and Hill 1979; McChesney 1990; Benson 1989; Leeson 2006, 2007). These papers argue that informal institutions arise that enforce property rights through voluntary cooperation as individuals realize the value of respecting one another's property. The threat of boycott or ostracism can be sufficient to promote cooperation and protect property. In another paper, Williamson and Kerekes (2009) empirically find support for these arguments. Private property institutions are decoupled into formal and informal components to conclude that informal institutions, including trust and respect, positively and significantly secure property rights, while formal institutions do not. Our analysis casts doubt on the ability of government land titling to adequately secure property rights.

IV

Conclusion

WE INVESTIGATE THE IMPACT OF LAND TITLING IN RURAL PERU. From our investigation, we cannot support the general claim that government

land titling is a magic bullet that achieves secure property rights institutions. The findings that emerge from our fieldwork are: (1) a government land title is not sufficient collateral to secure a loan through either public or private institutions, and (2) the preferred method of property enforcement is a reliance on private mechanisms, including trust, respect, and social norms.

These findings suggest that government land titling is not necessarily the best means of achieving secure property rights institutions in all locations across time. We acknowledge that government land titling, in theory, can lead to positive benefits; however, in practice these benefits may not emerge because of public choice concerns surrounding the incentives faced by government agencies. Also, a broad, one size fits all top-down approach may not be the best avenue for securing property due to insufficient local knowledge, especially in rural communities. This lack of knowledge may partially explain the difference in results between the urban versus rural areas in Peru. Given these results, we argue that a government land titling program should not be automatically preferred over utilizing the existing local institutions.

De Soto emphasizes the importance of incorporating the informals into the formal economy through government land titling in order to facilitate an increase in access to credit. However, he fails to acknowledge the complexity of other complementary institutions that may need to be present in order for land titles to translate into positive outcomes. For example, the financial markets may be underdeveloped and therefore serving as a constraint on access to credit regardless of property rights institutions. Also, it is possible that legally defining property does not necessarily translate into the ability to legally enforce property rights. In addition, the possible costs to government codification are often overlooked.

In examining the impact of land titling, Field and Torero (2004) conclude “. . . the growth implications of strengthening property institutions may be greatly overstated.” We disagree. Rather, our conclusion is that the importance of property rights institutions cannot be overstated. It is the method of government land titling that may fail to achieve secure property rights institutions that promote economic growth. It is not the institution itself that fails to spur economic

development, it is the process of “getting the institution right” that eludes developing economies. We now should consider the possibility that this process may be best facilitated by private, rather than government, solutions.

Notes

1. Theories on the ownership of property are becoming more focused in the economics literature. The ownership of property is the distinguishing factor between how societies organize their economies and is the defining characteristic in determining the success of an economic system. Property rights influence economic growth through the allocation of scarce resources by providing information and incentives. Private property encourages economic development by impacting incentives to invest, promoting access to credit, and by best allocating scarce resources. Property rights convey information through a system of profits and losses leading to a price mechanism. This price mechanism results in the transmission of information for efficient decision making of the allocation of resources (Mises 1920; Hayek 1945, 1960). Property rights also establish an incentive structure that guides investment to determine efficient resource allocation (Smith 1776).

2. Refer to Table 1.

3. This fieldwork was conducted by the authors with support from the Mercatus Center at George Mason University to examine property rights in developing countries.

4. Deininger and Castagnini (2006) argue that attempting to replace customary institutions that function reasonably well with so called better formal institutions could result in increased conflict.

5. This conclusion supports the arguments in Williamson and Kerekes (2006, 2009). These papers rigorously examine and conclude that informal institutions may be more important in securing private property than formal institutions.

6. For a detailed description of the process of land titling under COFOPRI, see Field (2003).

7. Our research design and questions were loosely modeled after the World Bank Living Standards Measurement Surveys.

8. This may suggest that the demand for government land titles is a product of the institutional structure, supporting the idea that property institutions are endogenous (Brasselle, Gaspard, and Platteau 2002; Field and Torero 2004).

9. An alternative explanation for this relationship is that titling may reduce banks' perceptions of their ability to foreclose.

10. See Lesorogol (2005) for an interesting discussion on the emergence of informal customs that reinforce land value and the process of informal institutional changes resulting from formal land titling programs.

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Appendix 1: Interview Research Questions

Our general research question is: Does land titling achieve secure property rights institutions in rural Peru?

Our specific research questions can be classified according to three categories:

1. Demand for land titles.
Do you have an individual land title?
If answered "yes":
 - When did you receive your land title? How?
 - Did you want a land title? Why?If answered "no":
 - Do you want a land title? If so, why?
 - Have you tried in the past to obtain a land title? If so, why were you unable to receive one?
 - What would you do with a land title if you received one?
2. Ability of land titles to enable property to be used as collateral/ provide access to credit.
If you possess an individual land title, what effect has it had on your ability to use your property as collateral?
 - Could you obtain a loan from a government institution prior to receiving your land title? Can you obtain one now?
 - Could you obtain a loan from a private institution prior to receiving your land title? Can you obtain one now?
 - Is your land sufficient, or do you need additional collateral to receive a loan from a public or private institution?
 - What will you/would you do with a loan?

3. Enforcement mechanisms of securing property.

Do you feel secure in your property? Why or why not?

Do you fear that your property may be expropriated? If so, by government? By private individuals?

Do you rely on public (i.e., government) mechanisms to protect your property?

– Do you feel your property is protected by your land title?

– Does government/police provide adequate protection?

– Do you rely on courts to enforce contracts?

Do you rely on private mechanisms to protect your property?

– Are local associations relied on to protect property?

– How do local associations protect property?

– Do you rely on social norms to protect property?

– What types of social norms are used to protect property? How?

Appendix 2: Descriptive Statistics and Summary Results

Sample Size:	20
Gender:	Male: 50 percent Female: 50 percent
Age Distribution:	30–55
Occupation:	Agriculturally based

Do you have an individual land title? Forty percent of respondents answered yes.

Of the respondents who did not possess an individual land title, over 50 percent wanted one.

Primary reasons given for wanting an individual legal land title:

Ability to sell land.

Ability to leave land to heirs.

Ability to use as a warranty to ask for a loan from the government bank.

Primary reasons given for not wanting an individual legal land title:

Respect within communities concerning individuals' property limits.

A distrust of government's ability to respect property limits.

What will you/would you do with a legal land title?

Use as a warranty to ask for a loan from the government bank.

Several respondents replied that a land title would increase their incentive to invest more in their property and to work harder, as they would be able to reap more of the benefits.

Could you obtain a loan from a government institution prior to receiving your land title?

One-hundred percent of respondents answered no.

Can you obtain one now?

Our respondents replied that now they had the ability to *apply* for a loan, but none had received one.

Could you obtain a loan from a private institution prior to receiving your land title? Can you receive one now?

Our respondents replied that private banks were willing to lend to them with or without a land title, but at higher rates of interest.

Is your land sufficient, or do you need additional collateral to receive a loan from a public or private institution?

More than half of our respondents replied that they would need additional collateral to receive a loan.

What will you/would you do with a loan?

Purchase seeds.

Purchase water.

Lease farming equipment.

Do you feel secure in your property?

One-hundred percent of our respondents indicated that they feared government expropriation of their property, with or without a legal land title.

One-hundred percent of our respondents indicated that they did not fear expropriation of their property from other individuals, with or without a legal land title.

Do you rely on public (i.e., government) mechanisms to protect your property?

One-hundred percent of our respondents answered no.

Do you feel your property is protected by your land title?

One-hundred percent of our respondents answered no.

Does government/police provide adequate protection?

One-hundred percent of our respondents answered no.

Do you rely on courts to enforce contracts?

One-hundred percent of our respondents answered no.

Do you rely on private mechanisms to protect your property?

One-hundred percent of our respondents answered yes.

Are local associations relied on to protect property?

One-hundred percent of our respondents answered yes.

How do local associations protect property?

Arbitration involving local presidents.

Do you rely on social norms to protect property?

One-hundred percent of our respondents answered yes.

What types of social norms are used to protect property? How?

Trust

Mutual respect

Arbitration

Ostracism