

## **A Classroom Property Title Experiment**

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### **Abstract**

Economists such as de Soto (2000) posit that property titles are among the institutions that enhance human well being. Recent work by Field (2005) and Galiani and Schargrotsky (2010), among others, provides empirical support for this conjecture. This paper presents a classroom property title exercise, based on the events chronicled by Galiani and Schargrotsky (2010), in which players are faced with a series of rounds in which they must choose to build a low quality dwelling (shack) or a high quality dwelling (house). Players are initially titleless squatters, but some property titles are randomly distributed between rounds. In each round, players receive a payoff from their housing investment but untitled properties also run the risk of confiscation. In doing so, students are able to uncover for themselves the potential benefits of property titling on residential investment incentives. The paper concludes with a discussion of possible extensions.

**JEL Codes:** A2, K11

## Introduction

Institutions, according to Douglass North (1991, 97), are

the humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights). Throughout history, institutions have been devised by human beings to create order and reduce uncertainty in exchange.

Property titling has been cited as an institution conducive to beneficial economic outcomes (de Soto, 2000). For example, studies find strong evidence that property titles increase residential investment. Examining a property titling program in Peru, Field (2005) finds housing investment in urban slums increased with the strengthening of property rights. Similarly, Galiani and Schargrodsky (2010) analyze a natural experiment arising from Argentina and conclude that titles led to greater housing investment.<sup>1</sup>

In recent years there has been an emphasis on active learning approaches instead of sole reliance on “chalk and talk.” Indeed, there is a growing literature that suggests that these types of techniques promote deeper student learning of economic concepts (Frank, 1997; Hansen et al., 2002). This paper presents an active learning exercise that instructors can use to teach their students about the economic effects of property titling on housing investment. We’ve used the experiment in both a development and a law and economics course, but it would also be suitable for principles-level courses that include coverage of property rights topics. For reasons we will outline below, the activity is probably most suitable for classes of fewer than 30 students unless the instructor has teaching assistants or can have a colleague assist with running it. A single 50-

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<sup>1</sup> The literature is somewhat mixed with respect to other potential benefits of property titling. For example, Erica Field (2007) finds a positive impact of property titles on household labor supply, with substitution away from child labor toward the adults in a household. Additionally, a 2007 paper by Keera Allendorf suggests that land ownership by women is positively related to measures of women’s empowerment and a decreased likelihood of children in the household to be severely underweight. On the other hand, there is some evidence that the benefits of property titling may differentially accrue to wealthy households due to liquidity constraints (Carter and Olinto, 2003).

minute class should be sufficient to run the basic activity in class with time remaining for follow up discussion of Field (2005) or Galiani and Schargrotsky (2010), though the possible extensions that we suggest below might require additional time.

### **Setup of the experiment**

Students begin with an initial endowment of \$1 (in quarters) to purchase housing. Students can choose to build a shack for 1 quarter or a house for 2 quarters, but they must build a place to live (no homelessness or moving back in with their parents!) in each round of the game. (They are told the game will involve multiple periods but are not told a specific number.)

As in the Argentinian episode chronicled by Galiani and Schargrotsky (2010), students start out as squatters who do not have a formal title to their chosen dwelling in the first round of the game. Since property rights are insecure without a land title, there is a probability each round that their dwellings will be confiscated by the government or the rightful land owner. In each period, the payoff to a dwelling is determined by a coin toss. With equal probability, students have their dwelling confiscated or receive a payoff of equal to their housing investment (25 cents for shack dwellers, 50 cents for house dwellers). Hence, potential returns on the housing investment are as follows:

<u>Probability</u>	<u>Return</u>
50%	0, Lose Dwelling
50%	1x Investment

At the beginning of each round, students can “upgrade” to a house from a shack by paying the additional \$0.25 cost, but they may not “downgrade” from a house to a shack (i.e. – investments are irreversible). This allows the game to more closely mirror “real world” investment decisions. At the end of the last round, students sell back their dwellings (if they have not been confiscated) for the amount paid for them.

Students keep track of investments and returns each round of the game in the table below:

	<b>Title?</b>	<b>Investment Choice (House or Shack)</b>	<b>Lose Dwelling?</b>	<b>Return</b>	<b>Total of Earnings So Far</b>
<b>Round 1</b>	No				
<b>Round 2</b>					
<b>Round 3</b>					
<b>Round 4</b>					
<b>Round 5</b>					
<b>Round 6</b>					

The activity begins with each student deciding on building a shack (at a cost of \$0.25) or a house (at a cost of \$0.50). The instructor walks around the room collecting the payments from students and helping them to record “shack” or “house” in the investment choice column for round one. The instructor then asks students for a show of hands about which type of dwelling they chose

and record the results on a chalk or white board in the classroom. In our experience, the majority of students choose to start with a shack rather than a house.

Once the initial housing choices are recorded, the instructor tosses a coin to determine whether students keep their dwellings or lose their investments. For some variation among the students in class, we recommend doing separate coin tosses for each student if the class is particularly small or for various sections of the classroom for larger classes (e.g., by rows in the classroom or by sides of an aisle in the classroom). If there is only one coin toss for the entire class then all students will win or all will lose in the round. Based on the outcome of the coin toss, students then record their 100% gain or loss and the instructor walks around the room again, this time paying out student winnings. There is no need to collect student losses because all participants pay for their dwellings up front. (Of course, students who lose their dwellings in the initial round will need to purchase new ones before the second round.). Also, part of the rules of the game conveyed to students are that they must make some type of housing decision (they can choose between a house or a shack, but they cannot choose homelessness on their plot of land).

Once the payouts to winners in the initial round are complete, each student receives a sealed envelope. Approximately one-fourth of the envelopes contain property titles, while the other three-fourths contain notes indicating that they did not receive titles (see the examples in Figures 1 and 2 below). This random distribution of titles is intended to resemble the natural experiment described in Galiani and Schargrotsky (2010).

After the random distribution of titles and titleless envelopes, students must decide what sort of dwelling to purchase for round 2 for the activity. Students who lost their dwellings in the initial round must decide on investing in a shack or a house. Students who constructed shacks in the first round and did not lose them must decide to keep their shacks or upgrade (at a price of \$0.25) to a house. (Recall, students who chose houses in the initial round and did not lose them may not downgrade to a shack.) Once all students have made their dwelling choice and indicated it on their sheets, the instructor then asks students with and without titles to indicate their housing investment choice and records the results on the board. Note that there are now four categories: people with titles who purchase houses, people with titles who choose shacks, people with no titles who choose houses, and people with no titles who choose shacks. In our experience, most of the students with land titles will choose houses while most those without titles will continue to choose shacks.

At this point, the instructor tosses the coin to determine students' returns in round two. (Again, for variation in student outcomes we recommend coin tosses for individual students or for different areas in the classroom.) As before, students without titles can reap 100% gains or losses. However, students with titles cannot lose their dwellings so they reap a 100% reward regardless of the coin toss. Once again the instructor pays out winnings based on the coin toss and asks students to record their gains/losses on their tally sheet.

At this point, another round of envelopes is distributed with about one-fourth having property titles and three-fourths containing notes saying that the recipient does not receive a title. Students must then decide on dwelling choice for round 3 with the instructor coming around the

room to collect payments for new dwelling purchases or upgrades. The instructor asks for a show of hands about students' choice of housing and records the results on the board. The instructor then conducts another coin toss, pays out any student winnings, and helps students record their earnings or losses on their tally sheets.

After three rounds, approximately one half of students should have property titles. In our experience a clear trend should have emerged at this point—students with titles tend to invest in houses, while students without titles choose shacks. This result parallels Galiani and Schargrodsky's finding that people with secure titles invest in larger and more expensive houses. However, instructors do have the option of conducting additional rounds of the exercise if they think that doing so will help students see the effect of titles on housing investment.

### **Teaching tips**

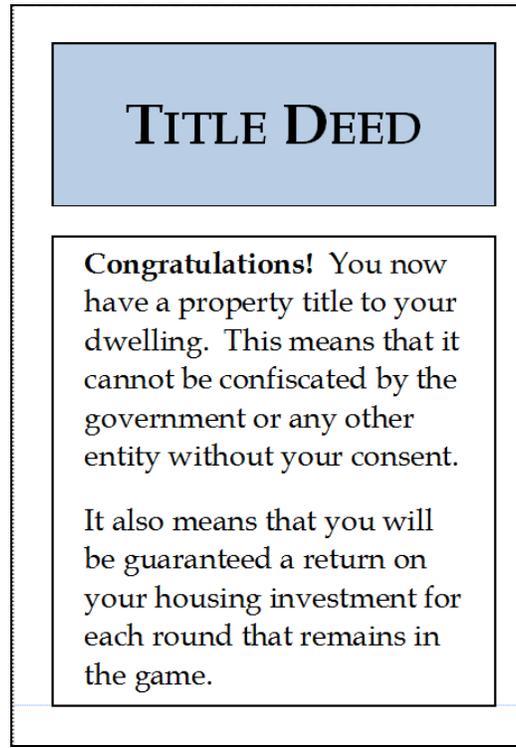
In this section, we'll offer a few tips that in our experience make the activity run more smoothly. First, it is helpful to explain to students that the experiment will consist of an unknown number of rounds but that they will have the opportunity to sell back their dwelling at the end of the activity. Thus, students should have no concerns about end-period behavior. (Relatedly, the table for recording gains and losses should have several more rows than the number of rounds that the instructor anticipates including in the game. When starting the fourth round of the activity, we once had a student proclaim in class that that round had to be last since there were no more rows on the sheet.)

Second, paying out student winnings and taking student payments for dwellings is somewhat time intensive for the instructor so, as noted above, the exercise probably works best in classes smaller than 30. In order to expedite matters, instructors might want to have a teaching assistant or a colleague help with the activity. Alternatively, instructors might have their students play in groups rather than as individuals.

Third, in our experience the cost of the activity is about \$2 per student. An alternative that would reduce the cost would be running the experiment using dimes rather than quarters (an initial endowment of four dimes with shacks costing \$0.10 and houses costing \$0.20). Another option is to frame returns in terms of extra credit points, and use “tokens” that students can redeem for small amounts of points on an upcoming assignment or exam in lieu of cash (we have found that sometimes extra credit is a particularly strong incentive!).

### **Possible Extensions**

Although we have not yet had trial runs with students, we can envision at least two extensions. One would be to have students purchase property titles rather than receiving them via random allocation. A second extension would be the introduction of eminent domain after a few rounds of the activity. In this scenario, students with titles might still lose their dwellings if there is an eminent domain proceeding initiated against their property. This version of the game would probably have students receiving a payment for their dwelling that is below what they paid for it in order for eminent domain to be costly to students. The game could then proceed for additional rounds; the expected result would be a reduction in the incentive to invest in housing since eminent domain would reduce housing’s rate of return.

**Figure 1 - Sample Title Deed Card**

**Figure 2 - Sample Card for No Title**



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