Incomplete Property Rights and Farm Size:

Evidence from Haiti

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Abstract

We investigate the connection between incomplete property rights and plot size. Incomplete property rights create transaction costs in the land market, which should have two effects on plot size: transaction costs (1) decrease plot size and (2) increase the variation in plot sizes. We test these hypotheses using newly collected archival data from Haiti. We measure incomplete property rights using Haiti's tradition of families jointly owning land and find that the patterns in the data are consistent with these property rights creating large transaction costs in the land market. These results inform the discussion of small farms around the developing world and of Haiti's economic development.

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Throughout the developing world, there are two ubiquitous phenomena. First, farms are too small, leading to lower agricultural productivity (Adamopoulos & Restuccia, 2014; Foster & Rosenzweig, 2011). Second, property rights are incomplete; specifically, many landowners have limited power to transfer land without the permission of their extended family (Palsson, 2021), their tribe (Goldstein & Udry, 2008), or their government (Chari et al., 2020; Dippel et al., 2023). In this paper, we explore how incomplete property rights contribute to small farms.

The focus of this paper is how the organization of property rights affects the distribution of plot sizes in Haiti. In contrast to the rest of Latin America and the Caribbean, Haiti's agriculture is characterized almost exclusively by small farms. These small farms started early in the country's history when (after slaves successfully revolted and declared independence in 1804) the country's founding fathers redistributed plantation land. Despite many attempts to reestablish plantations over the next 150 years, Haiti remained in a small farm equilibrium. One of the most popular explanations for how small farms persisted is Haiti's property rights institutions. Landowners would inherit use rights to property, but transfer rights were held by an extensive kinship network. Any attempt to transfer the property had to be approved by this network, introducing significant transaction costs. We investigate whether these transaction costs created a misallocation in the distribution of plot sizes.

We answer this question by combining a theoretical model with new archival data. We use a model of transaction costs and farm size from Britos et. al (2022) to generate two testable predictions. First, farmers facing higher transaction costs will have smaller farms. Second, transaction costs will increase the variance of farm sizes. We then take this model to newly collected microdata from a 1950s cadastral survey. The cadasters contain information on over 7,000 plots and provide two distinct advantages for testing this question. First, the cadaster indicates whether the plot is owned by heirs, the primary source of transaction costs. Second, the plots are grouped in 227 "habitations" (contiguous land), which allows us to observe differences in transaction costs across neighboring plots.

We find evidence that inheritance patterns affect the distribution of farm sizes consistent with the hypothesis that they create high transaction costs. Our first finding is that farms owned by individuals—the ones facing the most transaction costs to expanding—are 25% smaller than farms jointly owned by heirs. Once we control for unobserved differences in land quality using habitation fixed effects, the difference increases to 32%. Since individual farmers will face higher transaction costs when surrounded by jointly owned land, we add an interaction term for the share of habitation land under joint ownership. This term's coefficient is also negative and statistically significant. These results confirm the first testable implication that transaction costs decrease farm size.

We then look at the model's second testable implication that transaction costs increase the variance of farm size. We show that the variance in farm size on a habitation is increasing in the share of farms under joint ownership. A one standard deviation increase in the share of farms under joint ownership is associated with a 25% increase in the variance of farm sizes. This is evidence that joint ownership creates misallocation: jointly-owned farms are too big while independently-owned farms are too small.

This paper contributes to our understanding of the relationship between property rights and misallocation. It is well established that property rights affect the efficient allocation of resources on a property, such that poor property rights reduce investment (Galiani & Schargrodsky, 2010; Goldstein & Udry, 2008; Hornbeck, 2010) and tie labor to the land (Agyei-Holmes et al., 2020; Chernina et al., 2014; De Janvry et al., 2015; Field, 2007). But most of this literature focuses on the property rights for the piece of land itself. We show that another important consideration is the property rights on neighboring plots.

But across the developing world, too much agricultural land is on small farms (Adamopoulos & Restuccia, 2014). Some of this is due to transaction costs in the labor market (Foster & Rosenzweig, 2011), but another problem is transaction costs in the land market (Bolhuis et al., 2021; Britos et al., 2022; Chari et al., 2020). We show that how property rights are organized affects farm size through its effect on transaction costs in the land market.

Finally, we contribute to the growing literature on Haiti's economic history. Haiti is an extreme example of the reversal of fortune phenomenon, going from one of the most productive regions in the West in the 18$^{\text{th}}$ century to one of the least productive today. While political instability (Palsson, 2022) and low state capacity (Palsson, 2023) have contributed to Haiti's poverty, a large factor has been Haiti's land policy and property rights (Lundahl, 2011; Palsson, 2021). Addressing these issues has been tough. A program to privatize state-owned land through homesteading failed due to onerous requirements (Palsson & Porter, 2023). This paper shows that improving property rights would also require negotiating with extensive networks.

Theoretical Framework

Since transaction costs are not directly observable, we rely on a model of transaction costs in the land market to generate testable implications. We follow the theoretical framework in Britos et al. (2022). There are two main results. First, transaction costs decrease the size of plots. Second, transaction costs increase the variance of plot size.

We assume the agricultural good (y_i) is produced by farmer i on a farm (l_i) using his managerial skills (s_i). His production function is

$$y_i = s_i l_i^{\alpha}$$

where the parameter $\alpha \in (0,1)$ captures the land elasticity. When the farmer determines his plot size, he considers two costs. First, there is the rental price r, which he takes as given. Second, the farmer might have to pay a transaction cost on top of the rental price. The transaction cost comes from negotiating with other farmers to expand his plot. Since expanding the plot further means negotiating with more farmers, we assume transaction costs are increasing with land size. Thus, we assume the cost is a function of the size of the farm, $\tau_i(l_i)$, with $\tau_i'(.) > 0$.

The farmer chooses the size of farm that maximizes profit. His problem is then

$$\max_{l_i} \pi_i(s_i) = \{s_i l_i^{\alpha} - r l_i - \tau_i(l_i)\}$$

with non-negativity constraint $l_i \geq 0$. The optimality condition yields,

$$\alpha s_i l_i^{\alpha-1} = r + \tau_i{}'(l_i)$$

Without loss of generality, Britos et al (2022) assumes a quadratic transaction cost, $\tau_i(l_i) = \frac{\tau_i}{2} l_i^2$.

While we could solve this model to get the full characterization of the market, we are most interested in the implications for individual farms. To get those, we assume the farmer operates in a market. There are N farmers cultivating the amount of land L in the area. The market clearing condition for aggregate land is

$$L = \sum_{i=1}^{N} l_i$$

The market clearing condition combined with the farmer's optimality condition imply the equilibrium land choice for individual farmer i is

$$l_i = \left(\frac{s_i}{r + \tau_i l_i}\right)^{\frac{1}{1-\alpha}} \frac{L}{\tilde{S}} \tag{1}$$

where $\tilde{S} = \sum_{i=1}^{N} (s_i/(r + \tau_i l_i))^{\frac{1}{1-\alpha}}$.

Testable Implication #1: plot size is decreasing in transaction costs. This shows up in Equation (1), but it is a natural result of our assumption about transaction costs. We assume that transaction costs increase as the size of the plot increases, and therefore, all else equal, this will push plots to be smaller.

We can apply a log transformation to Equation (1) to get

$$\ln(l_i) = \frac{1}{1-\alpha}\ln(s_i) - \frac{1}{1-\alpha}\ln(r + \tau_i l_i) + \ln(L) - \ln\left(\tilde{S}\right)$$

Since L and $\tilde{S}$ are constant for all plots in the same market, this implies the variance of land size is

$$Var(\ln(l_i)) = \frac{1}{(1-\alpha)^2}\left(Var(\ln(s_i)) + Var(\ln(r + \tau_i l_i)) + 2Cov(\ln(s_i)\,, \ln(r + \tau_i l_i)\right) \tag{2}$$

Note how this compares to the variance in plot sizes in an efficient economy without transaction costs. In this case, since there is no variation in land prices across individuals, the equilibrium plot size for farmer i becomes

$$l_i = \frac{s_i^{\frac{1}{1-\alpha}}}{S} L$$

where $S = \sum_{i=1}^{N} s_i^{\frac{1}{1-\alpha}}$. We can apply the logarithmic transformation to this equation to get

$$\ln(l_i) = \frac{1}{1-\alpha}\ln(s_i) + \ln(L) - \ln(S)$$

Then the variance of the land size is proportional to the variance in skills

$$Var(\ln(l_i)) = \frac{1}{(1-\alpha)^2} Var(\ln(s_i)) \tag{3}$$

Testable Implication #2: transaction costs increase the variance in plot sizes. When we compare the variance of plot sizes in markets without transaction costs—Equation (3)—to the market with transaction costs—Equation (2)—we can see that equation two has two extra terms: the variance of transaction costs and the covariance of transaction costs and skills. Even if transaction costs and skills are independent, such that their covariance is zero, the variance of plot sizes will still be greater on account of the variance in transaction costs.

Thus, the model provides two testable implications that can be analyzed with minimal data. The first implication is that plot sizes are decreasing in transaction costs, and the second is that the variance in plot sizes is increasing in transaction costs. For both, the only data required are plot sizes and a measure of transaction costs. To understand more about how we measure transaction costs, we rely on Haiti's history.

Haitian Property Rights and Transaction Costs

Haiti is unique among Latin American and Caribbean countries for its preponderance of small farms. This unique difference began with Haiti's unique origins. In 1790, Haiti, then St. Domingue, was an incredibly profitable French colony where 90% of the population was enslaved. During the 1790s and into the early 1800s, the slaves revolted and gained their freedom. One of their primary strategies through the revolt was to directly attack the plantation system, destroying mills and burning fields (Gonzalez, 2019). Despite many early attempts to preserve the plantation system, the freed were determined to forsake large-scale agriculture in favor of subsistence farms.

Two institutions arose to reinforce this move to smaller farms. First, in 1806, the Haitian government began dividing and redistributing the plantation land. Initially, the government used the redistribution to pay fighters who had helped during the war for independence (Murray, 1977, pp. 76–77). Later, when tax revenues were scarce, it sold the land to finance itself (Murray, 1977, p. 102). This redistribution started the process that led to Haiti's agriculture being characterized by widespread ownership of small farms with few large landowners. It has been cited as one of the most decisive events in Haiti's economic history (Lundahl, 2011).

The second institution that led to small farms was inheritance patterns. Many Haitian landowners divide their land among their children (Bastien, 1985), both because there is legal protection for such divisions (Force, 2016, p. 41; Lundahl, 1979, p. 278) and because of cultural pressure to avoid the return of plantation agriculture (Dubois, 2012, pp. 109–110). Thus, each generation, the plots are subdivided, leading to smaller plots over time (Palsson, 2021). Furthermore, while use rights are passed to individuals, transfer rights are retained by the whole family. A landowner in this system can choose how he wants to farm the plot, but if he wanted to sell it, he would have to get approval from everyone who received a veto right. These veto rights were allegedly kept in the family to impede investors from restoring the plantation economy through aggregating individual purchases.

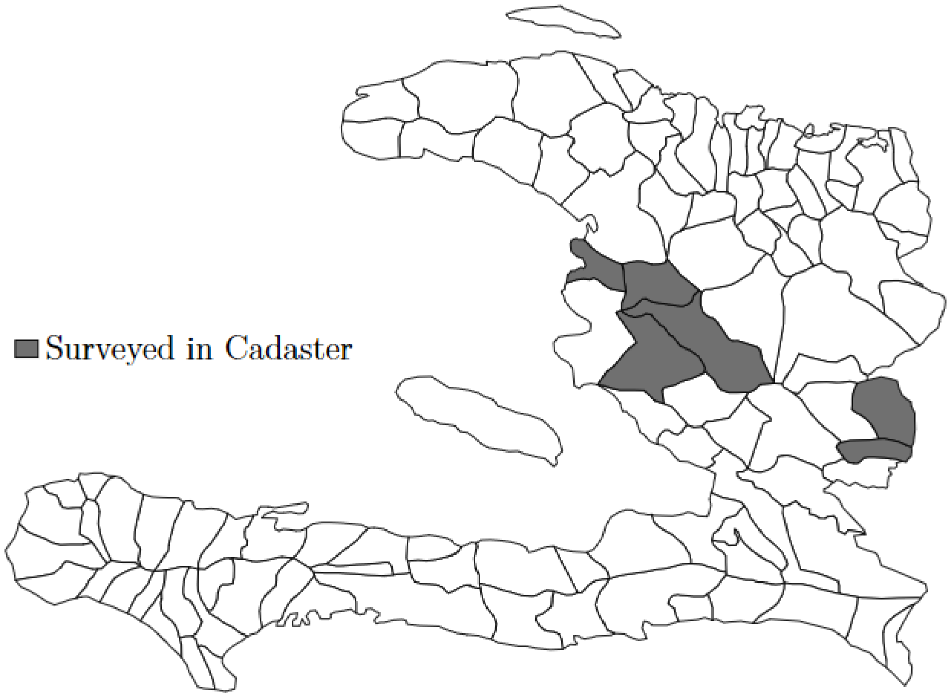
For this paper, we are interested in these inheritance patterns as a source of transaction costs. There are many examples of how these veto rights cause problems for acquiring land (Palsson, 2021). A notable anecdote is how one company trying to acquire 20 hectares had to negotiate with 180 property holders over three years (Moral, 1961, p. 185). When extensive family owns the land, not only does each transaction require talking with multiple parties, the opportunity for hold-up problems expands rapidly. These transaction costs have been blamed for misallocation in previous work (Palsson, 2021), but there were limitations to the data for exploring the hypotheses. The data in this paper allow us to go further.

Data on Haitian farms

We collect data on Haitian farms from a cadastral survey performed in the 1950s. In October 1954, the National assembly passed a law to survey the Artibonite Valley, Haiti's most fertile region. After surveying the region, the Cadastral Office published the lists in the government's official gazette, *Le Moniteur*. We collect all lists published between 1955 and 1959 using issues of *Le Moniteur* made available through the Digital Library of the Caribbean and the Bibliothèque Haïtienne des Spiritains. The government published 227 lists detailing over 7,000 plots. After 1959, there were no more lists published.

The lists cover 4,981 hectares across six districts. The six surveyed districts are highlighted in Figure 1. About 35% of the area surveyed is in Dessalines, followed by Verrettes with 22%. The next three areas have similar representation: Lascahobas (14%), Petite Riviere de l'Artibonite (13%), and Grande Saline (12%). Finally, only 2% of the area surveyed was in Belladere. The cadasters are clearly incomplete: the 4,981 hectares surveyed only covers 2.5% of the six districts' area.

Figure 1. Districts that had cadastral surveys



Notes: District is highlighted if it had any properties surveyed in the cadasters.

The lists do not provide much information, but they report two key pieces of information. First, the lists name the plot's owners. Frequently this is a single person, but they will also report whether the plot is jointly owned by the heirs of a particular person. Second, the lists document where the owner lives. If they do not live on the same habitation as the property, we identify label that plot as an absentee owner.

Table 1 reports summary statistics for the farms and habitations. The average farm in the data is 0.70 ha (1.7 acres). Not only is the average farm small, the largest farms do not get bigger than 10.3 ha (25.5 acres). The smallest farm in the data is 0.022 ha (0.05 acres). These 7,130 farms are spread over 227 habitations. These habitations are in the range of average farms in rich countries. The average habitation is 21.9 ha (54 acres) which is just below half the average farm size of the richest 20% of countries in 1990 (Adamopoulos & Restuccia, 2014). The largest

Table 1. Summary statistics for plots and habitations

	Mean	Min	Max
Farms (N = 7,130)			
Area (ha)	0.70	0.022	10.311
Joint-Ownership	0.48	0	1
Habitation (N = 227)			
Area (ha)	21.90	0.19	181.177
Share of Hab. Area in Joint Ownership	0.42	0	1
Share of Hab. Farms Joint Ownership	0.37	0	1

habitation is 181 ha (447 acres), but it is divided across 322 farms, so the average farm is only 0.6 ha, which is smaller than the average farm.

Table 1 also shows how prevalent joint ownership is. Across the 7,130 farms, 48% are jointly owned by a family. At the habitation level, there are two ways to measure the intensity of joint ownership. The average habitation has 42% of its land under joint ownership, but only 37% of its farms. This implies that jointly-owned farms are larger, on average, from individually-owned plots. There are 13 habitations where all farms are jointly owned, but for 10 of them the habitation is a single small farm ranging from 0.3 to 2.74 ha.

Empirical Framework

The model provides two testable implications that guide our empirical work. The first testable implication states that transaction costs decrease farm size, and the second testable implication states that transaction costs increase the variance of farm size. In this section, we outline our strategy for testing these hypotheses.

First, we proxy for transaction costs using the information on who owns the farm. Because jointly owned farms require the approval of all veto holders to transfer the property, we assume this is the greatest source of transaction costs. An individual farmer faces greater transaction costs to expanding land the more he has to negotiate with jointly-owned land.

For the first testable implication, we run the following regression

$$Size_{ih} = \beta_0 + \beta_1 Individual_{ih} + \beta_2 Individual_{ih} \times ShareAreaJoint_h + \delta_h + \varepsilon_{ih} \tag{4}$$

where $Size_{ih}$ is the size of farm i on habitation h; $Individual_{ih}$ is an indicator for whether the farm is owned by an individual; and $ShareAreaJoint_h$ is the share of area on habitation h that is jointly owned by heirs. We also include a habitation fixed effect (δ_h) to account for unobserved heterogeneity that could affect plot size across habitation (e.g. land quality). Since farms within habitations are not independent, we cluster standard errors at the habitation level.

The parameters of interest are β_1 and β_2. We hypothesize that since individually-owned farms face higher transaction costs, they will be smaller ($\beta_1 < 0$). We also hypothesize that as more land on a habitation is jointly owned by heirs, transaction costs get larger, and therefore the individual-owned farms get smaller ($\beta_2 < 0$).

The second testable implication is that transaction costs increase the variance of log farm size. To test this hypothesis, we use the following regression

$$Var(\ln(Size_{hd})) = \alpha_0 + \alpha_1 ShareFarmJoint_{hd} + \Gamma_d X_d + \varepsilon_{hd} \tag{5}$$

where $Var(\ln(Size_{hd}))$ is the variance of log farm size on habitation h in district d; $ShareFarmJoint_{hd}$ is the share of farms on habitation h under joint ownership; and X_d are district-level controls that may affect the variance of farm size.

The parameter of interest is α_1. We hypothesize that transaction costs on a habitation are increasing in the number of farms under joint ownership. Thus, we hypothesize that $\alpha_1 > 0$.

A crucial assumption to the second testable implication is that the distribution of skills is constant across habitations. Unfortunately, we have no habitation-level measures of the distribution of agricultural skills. In Appendix Table A1, we show that literacy rates across districts are comparable, and in some specifications, we will add these literacy rates as controls. But in these cases, we still have to assume that the distribution of skills across habitations within a district is constant. Thus, we have to assume that the distribution of skills is orthogonal to the prevalence of joint ownership on a habitation.

Results

First, we test for whether individually-owned farms are smaller due to transaction costs. Table 2 reports the results from comparing individually-owned plots to the jointly-owned ones. Column (1) shows that individually-owned farms were 0.16 ha smaller on average. Table 1 shows that the average farm was 0.70 ha, which means the individually-owned plots were 23% smaller. This is consistent with the results in column (4), which use log farm size as the dependent variable. Smaller plots are consistent with higher transaction costs, but it could be that individually-owned plots are more likely to be on habitations with unobserved features that also contribute to smaller farms. For example, maybe they are on habitations with lower quality land. In columns (2) and

Table 2. Farm size and joint ownership

	Area			Ln(Area)		
	(1)	(2)	(3)	(4)	(5)	(6)
Individually Owned	-0.16***	-0.24***	-0.22***	-0.26***	-0.38***	-0.36***
	[0.026]	[0.020]	[0.019]	[0.037]	[0.028]	[0.025]
Individually Owned x Share Jointly Owned			-0.14***			-0.18***
			[0.024]			[0.027]
Habitation FEs		X	X		X	X
N	7,130	7,130	7,130	7,130	7,130	7,130
R^2	0.016	0.207	0.213	0.02	0.207	0.212

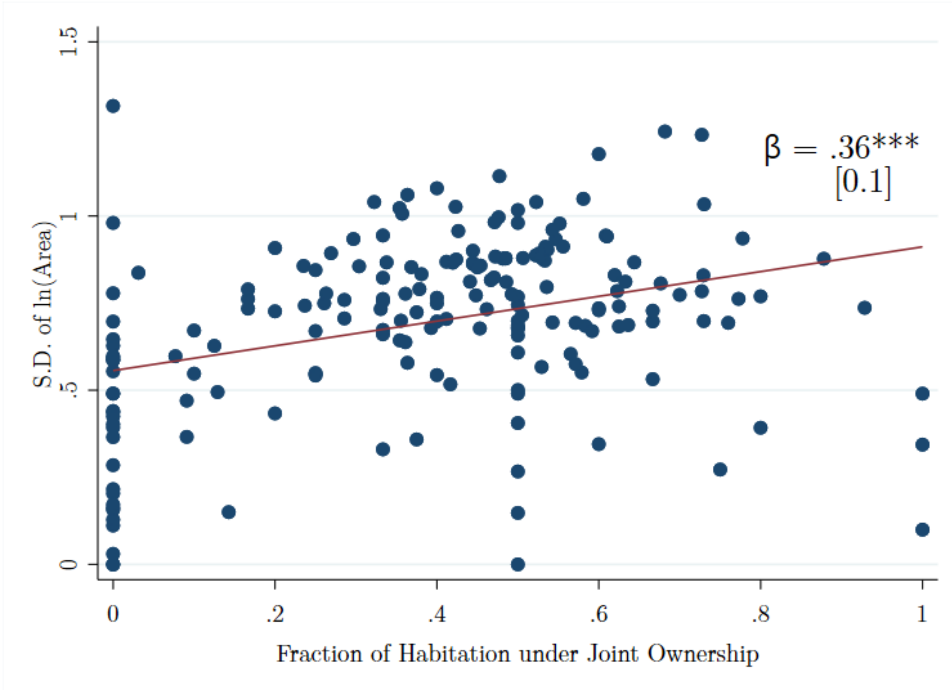
Notes: Standard errors clustered at the habitation level. *** p<0.01

(5), we control for this unobserved heterogeneity by adding habitation fixed effects. The gap grows to 0.24 ha, a 34% difference in farm size.

Columns (3) and (6) report the results from Equation 4. These regressions interact the indicator for individual ownership with the share of the habitation that is jointly owned. The share has been demeaned and standardized. The hypothesis predicted that, if transaction costs are significant, both the main effect (β_1) and the interaction term (β_2) would be negative. Not only are individually-owned plots 31% smaller, a one standard deviation increase in the share of habitation under joint ownership widens that gap to 51%. These results provide strong evidence for the transaction cost hypothesis.

Next, we explore the hypothesis that transaction costs affect the variance of farm sizes. The model predicts that in the absence of transaction costs, the variance in the log farm size across habitations will be a function of the variance in skill. Assuming that the distribution of skill is

Figure 2. Variation in farm size and joint ownership



Notes: The β comes from a regression of the standard deviation of log area on the fraction of the habitation under joint ownership. The regression has 189 observations. Robust standard error reported in bracket.

constant across habitations, there should be no relationship between the distribution of farm sizes and the share of farms under joint ownership. But if joint ownership introduces transaction costs, then we should see the variance increase with more joint ownership. In Figure 2, we present a visual inspection of this hypothesis by plotting the standard deviation of log farm size across habitations against the share of farms under joint ownership. The scatterplot shows a strong positive association, supporting the transaction costs hypothesis.

We explore this hypothesis further through the regression analysis outlined in Equation 5. We report the results in Table 3. Column (1) estimates that α_1 is 0.36, an estimate that is statistically significant at the 1% level. Since some of the variance in farm size will be driven by the total

Table 3. Testing for transaction costs

	(1)	(2)	(3)	(4)
Share of Farms Jointly Owned	0.355***	0.220**	0.220**	0.0745
	[0.0968]	[0.0849]	[0.0853]	[0.110]
log(Habitation Area)		0.0886***	0.0885***	0.0587**
		[0.0180]	[0.0186]	[0.0236]
District Literacy Rate			-0.112	
			[1.662]	
District Fixed Effects				X
Observations	189	189	189	189
R-squared	0.115	0.273	0.273	0.336

Notes: The unit of observation is the habitation and the dependent variable is the standard deviation of log farm size on the habitation. Robust standard errors in brackets. *** $p<0.01$, ** $p<0.05$

habitation area, column (2) adds a control for the habitation area. The point estimate falls to 0.22, statistically significant at the 5% level. Finally, since the model predicts that the variation in farm size is determined by the variation in skill, in column (3) we control for the district-level literacy rate, but it has no effect on our main results. This evidence provides further support for the transaction cost hypothesis.

There is a concern that variation in plot size could be related to some other unobservable factors within a district that affect the land market. Column (4) adds those fixed effects, and the point estimate falls to 0.075. While it is still positive, it is no longer statistically different from zero. Given the amount of evidence in favor of the transaction cost hypothesis, we are reluctant to point to this one result to reject it. It does, however, caution that transaction costs may be strongly correlated within district. For example, both Britos et al. (2022) and Bolhuis et al. (2021) proxy for transaction costs using how active the local level rental market is. In this case, district fixed effects may control too aggressively for heterogeneity.

Discussion

The empirical analysis has provided evidence that inheritance traditions in Haiti have created significant transaction costs in the land market. In this section, we discuss the implications of these transaction costs for Haitian agricultural productivity, Haitian development, and development around the world.

This institution has created misallocation in Haitian agriculture. While we do not have plot-level measures of agricultural output, the distortions in the distribution of farm sizes should translate into distortions in output. Some high-skilled farmers are unable to get the land they need, and some low-skilled farmers, thanks to their ancestors, have too much land. We can see in other contexts that this distortion in the land market lowers productivity. In China, lowering transaction costs in the land rental market led to an 8% increase in output and a 10% increase in productivity (Chari et al., 2020). In Guatemala, land market imperfections lowered maize and bean output by 19%, and coffee output by 31% (Britos et al., 2022). In India, eliminating transaction costs would increase agricultural productivity by 33%, and in some states it could increase as much as 60% (Bolhuis et al., 2021). It is natural to conclude that the distortion in farm size is carrying through to output and productivity.

Even if we had data on agricultural output and productivity, it would miss the full picture because the transaction costs are likely preventing markets from happening. Palsson (2021) assembles evidence that transaction costs in the land market prevented investors from reestablishing sugar plantations in Haiti in the early 20th century. During this time, advancements in steam technology made cane sugar profitable again in the Caribbean, but the production process required controlling and coordinating cultivation on a large scale. If transaction costs impede this coordination, then investors will search for areas with lower transaction costs. For example, in Cuba, when transaction costs on the Western part of the island were too high to establish new mills, investors moved to the East where transaction costs were low (Dye, 1994). Despite its history of leading the world in sugar production, this paper provides evidence that Haiti missed out on these advancements in part because transaction costs were too high.

Of course, part of the reason these institutions developed was to stop sugar plantations, so losing them might not be a welfare loss. There are, however, many other reasons why this institution could have stunted Haiti's development. High transaction costs can prevent investment in productive infrastructure such as irrigation canals (Rosenthal, 1990). Similarly, these costs can prevent the land from shifting into more productive uses, such as urban development (Yamasaki et al., 2022) or alternative large-scale uses (Leonard & Parker, 2018). While losing sugar plantations might have not been a significant loss, these transaction costs might have obstructed other paths to economic development.

Conclusion

In this paper, we present evidence that transaction costs from property rights institutions are creating misallocation in Haiti's farms. We show that farms facing higher transaction costs to expanding are 30% smaller, and we show that areas with higher transaction costs have greater variance in farm size. Together, these results point to an underperforming land market that fails to get land to the most productive farmers.

These findings are an important step towards understanding the abundance of small farms in the developing world. While the problem has been documented, economists are still trying to understand what causes it. Adamopoulos and Restuccia (2014) point to institutions that are biased towards small farms, such as ceilings on farm sizes and programs that subsidize small farmers. Foster and Rosenzweig (2011) emphasize the importance of transaction costs in the labor market. The results in this paper point to another candidate: incomplete property rights, a widespread phenomenon in poor countries, create transaction costs in the land market that distort farm sizes. Future research should be oriented towards exploring how incomplete property rights contribute to small farms in other countries, and how countries have overcome these problems to improve the efficiency of their markets.

In Haiti, a path for future research would be considering how these property rights regimes and small farms contributed to Haiti's poverty. Small farms could be related to two of Haiti's problems. First, distortions in the land market can lower agricultural productivity, leading to lower household incomes. Second, small farms lead to overworked land, leading to low soil fertility and higher erosion. While erosion has been hypothesized to be a central part of Haiti's problems (Lundahl, 2011), we need better empirical evidence for the connection between erosion, small farms, and property rights.

Finally, moving forward, researchers and policymakers should also consider how to address these incomplete property rights. While the standard recommendation is to title land, that would not solve the problem if all of the veto holders were put on the title. Yet, not allowing them on the title would be an expropriation of their rights. A solution will have to weigh the tradeoffs of removing those rights with the gains from lower transaction costs in the market, whether that is consistent with the goals of the society, and whether it is feasible to compensate those who lose their rights.

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Appendix

Table A1. Skills across districts

	Literacy Rate
Belladere	0.048
Dessalines	0.044
Grande Saline	0.047
Lascahobas	0.061
Petite Riviere de l'Artibonite	0.067
Verrettes	0.067

Notes: Data come from the 1950 census.