The Value of Social Capital in Cropland Leasing Relationships

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Introduction

In the U.S. economy, informal bargaining between persons for services or assets of relatively high value is common (e.g. used cars, houses). One example, encountered frequently in agriculture, is the cropland lease. Many farmers rent at least a portion of their cropland and typically no formal markets exist for pricing rental rates. This reliance on informal bargaining for the primary capital asset in farming suggests lease rates and the relationship between landowner and tenant may have significant economic implications.

Leasing relationships may be as long as a generation, with some land passing to the next generation of both owner and tenant without interruption. Over such long time horizons, the landowner can observe the behavior of the tenant and assess their ability to maximize returns to farming as well as care for the land by conserving soil, maintaining water conserving terraces, and other actions that maintain or improve the value of the land. The existence of long-term leases, suggests that leasing relationships may be extremely stable and both parties can become very familiar with each other.

Does the existence of such a long-lived and close relationship affect the rates at which the land is leased? If so, cropland leases offer a unique test of the theory of social capital. Social capital, as defined by Robison, Myers, and Siles (1999), is "a person or group's sympathy or sense of obligation for another person or group." This definition allows for the possibility that relationships may alter the terms of trade between people. Becker and Murphy (2000) introduced the idea of social markets, where outcomes are a result of the interaction between traditional market behavior and social customs or norms. By characterizing the social aspects of cropland leasing relationships and their corresponding rental rates, this study aims to determine if the market for cropland is consistent with the theory of social capital.
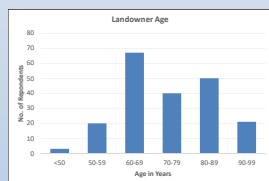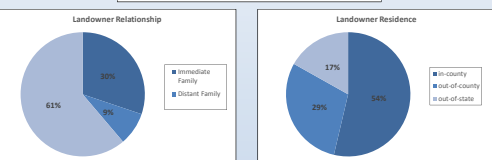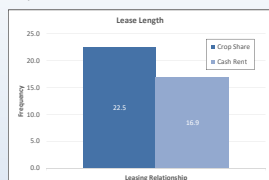

Figure 1. Summary Statistics of Survey Responses

Empirical Model

The landowner's choice of tenant may be modeled as utility maximization of the following
(1) $\max U = U(r, l(m))$
where r is the market rental rate for cropland, l is the intrinsic productivity of the cropland, and m is the cost of monitoring a tenant's behavior with respect to conservation of the soil and other aspects of the land that affect its long-term productivity and value. There is a risk that the tenant will offer a high rental, but abuse the land to maximize yields. Therefore, the landowner will maximize utility by trading off higher rental rates against monitoring costs to protect the value of their land.

An alternative to monitoring may be social capital or trust, s, that is built between two parties who have been in a lease for many years. This social capital is positive for the current tenant and equal to zero for a potential tenant who is unknown to the landowner. The landowner would incur non-zero search costs, n, in the process of vetting a potential tenant. These search costs are zero for the current tenant.

The landowners decision of which tenant to choose, the current tenant (a) or potential tenant (b), in order to maximize the returns to the land, R, may be written as
(2) $R_a = r - [s_a + n_a] \geq R_b = r - [s_b + n_b]$.
The current tenant will be chosen if $s_a \leq n_b$. The existence of search costs for a new tenant, may allow the current tenant to pay less than the market rental rate and still retain lease rights to the land. This study tests the hypothesis that greater social capital, measured as the length of the leasing relationship, negatively affects rental rates.

Table 1. Empirical Model Specification

Explanatory Variables	
Leasing relationship:	Years
Landowner characteristics:	Residence, age, gender, related to tenant
Farmland characteristics:	Productivity index, parcel size, location fixed effect
Dependent Variable: Rent received ($/ac)	

Data

The data used in this study were collected from a survey of Kansas Farm Management Association members in 2015. Farmers were asked to describe the terms of their "most economically important" cropland lease including the rental rate, their assessment of the productivity of the land, and other aspects of the contract. They were also asked to describe their landowner by answering questions about the number of years they had been renting from this person(s), where the landowner lives, the landowner's age and gender, and whether or not they are related to the landowner. The number of surveys returned totaled 189, with 77 reporting a fixed cash lease and the residual reporting the use of a crop share lease.

Table 2. Summary Statistics

Variable	Mean	Standard Deviation
Landowner Characteristics		
In-county residence, yes=1	0.58	0.50
Age	70.70	11.63
Related to tenant, yes=1	0.32	0.47
Female, yes=1	0.34	0.48
Farmland Characteristics		
Cash rent ($/ac)	63.9	26.3
Lease length (years)	15.9	13.0
Total non-irrigated acres	281.13	271.07
Productivity index, (1=best, 5=worst)	2.55	0.84
CRD 1 (NW)	0.04	0.19
CRD 4 (NC)	0.17	0.38
CRD 5 (C)	0.30	0.46
CRD 6 (SC)	0.04	0.19
CRD 7 (NE)	0.06	0.25
CRD 8 (EC)	0.30	0.46
CRD 9 (SE) – omitted	0.08	0.11

Results

The empirical model is a hedonic regression of the rental rate on the length of the leasing relationship, the age, gender, and residence of the landowner, a binary variable indicating if the landowner and tenant are related, the size of the leased land parcel, a productivity rating of the land, and county-level fixed effects. Preliminary results support the hypothesis of a negative impact on rental rates from longer-term leasing relationships. The model estimates a 13.9% discount relative to market rates when the leasing relationship increases from 11 to 22 years. At the sample average of $64 per acre, this is a $9 per acre discount.

Table 3. Empirical Model Results

Variable	Coefficient	Std. Error	t-statistic	p-value
Ln(lease relationship)	-0.14	0.05	-2.79	0.01
Ln(age)	-0.41	0.23	-1.81	0.08
Relative	-0.02	0.08	-0.24	0.81
Female	0.01	0.09	0.15	0.88
In-County	-0.16	0.09	-1.89	0.07
Ln(total acres)	0.05	0.05	1.08	0.29
Productivity Index	-0.14	0.05	-2.83	0.01
Constant	6.11	1.02	6.01	0.01
CRD – fixed effects	Yes		R^2	0.54
Dependent variable: Ln(cash rent)				

Implications

An example of the impact of longer leasing relationships may be shown by simulating a relationship that is 11 years long to one that is 22 years long, a 100% increase in the length of the relationship. This is in line with the observed leasing relationships as shown in figure 1. This increase would result in a 13.9% decrease in the annual rental payment. At the sample average of $64/acre, that is a $9/acre discount. When the landowner lives in the same county, the rent is 15% lower. This would translate to a $10/acre discount at the sample mean.
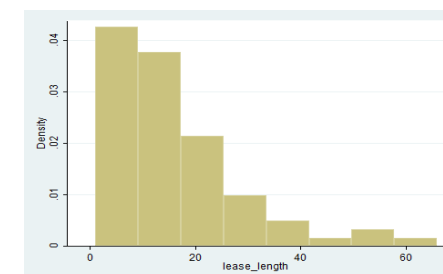

Figure 2. Histogram of Observed Leasing Relationship Length, Measured in Years

The implications of social capital on farmland leasing arrangements are far from negligible. Many Kansas farmland owners intend to pass on their land to the next generation, which may involve a complete reset of the leasing relationship and loss of the social capital discount for farmers. For beginning farmers, investment in their relationships with landowners may serve as an effective way to help overcome capital and credit constraints their more-established neighbors do not face. Starting and/or growing a farm is likely to require more acres and renting may be the most cost effective way to meet that objective.

Conclusion

There are several practical implications from this research. First, farmland is commonly handed down to the next generation and the social capital built up between the landowner and tenant may not transfer to the new owner. Farmers who depend heavily on leased farmland for their business may need to consider communication strategies to smooth intergenerational transitions of the land. Another implication of this research is emphasizing the importance of social capital (e.g. good communication, trustworthiness) for beginning farmers. These farmers are often unable to compete financially with well-established farmers for leased land, but may be able to obtain a discount in rent by investing in social capital with landowners.

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