Personal Relationships: Do They Influence the Sale Price of Land?

By

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The last decade has seen the rise of research in an area commonly called social capital. The social capital paradigm recognizes that social as well as economic goals motivate human behavior. Moreover, the paradigm assumes that social and economic goals are pursued rationally and can be studied using many of the same tools traditionally used in neoclassical economics. The intellectual foundation for the social capital approach in economics can be traced to Adam Smith (1759). He recognized the interdependence of preferences and that they varied according to the strength of the relationship.

Social capital models have been introduced to agricultural economics by Hyden, Robison and Schmid (1991, 1994), Robison and Siles (1997), Siles, Hanson, and Robison (1994) and Schmid and Robison (1995). Woolcock has provided the most exhaustive description concerning the development of the social capital concept. To date, the empirical studies in agricultural economics have consisted of posing hypothetical situations to particular groups to determine whether they would make decisions based in part on personal relationships. These studies of hypothetical situations do provide important insight into the importance of social capital in decision making.

For some, however, "Thought experiments in used cars, catastrophic risks and bank loans, rather than actual trades where prices and opportunity costs can be assessed are not very convincing." (Gardner, pp. 82-83). Farm land transactions provide a good setting to evaluate the impact of personal relationships on market prices. Many farm properties are sold between members of the same family. However, substantial sales also occur between neighbors, tenant and landlord, or between total

strangers. Thus a whole range of personal relationships can be examined to see if they do have some influence on farm sale price.

The primary objective of this study is to quantify the impact that personal relationships have in the market for farm land in a portion of Oregon's Willamette Valley. The hypothesized impact of various relationships will be outlined in the theoretical portion of the paper. These impacts will then be tested in an econometric analysis of farm land sold in Linn County, Oregon between June 1992-December 1997.

Theoretical Model and Previous Research

The underlying assumptions of social capital theory applied to economics are that (1) relationships between two persons alter the level and terms of trade; and (2) that the strength of relationships vary and can be altered by persons. This paradigmatic social capital framework is expected to produce the following results. First, increases in social capital are expected to alter the terms of trade and increase the likelihood of trades between friends and family; and second, increases in social capital are expected to operate in favor of the economically less well off agent in trading arrangements between social capital rich traders[2].

Many research studies have been conducted to identify factors influencing land value. A number of these studies relied on average land value data for counties, states or a nation (see Moss; Pope and Goodwin; Sandrey et al. as examples), ruling out the inclusion of variables to reflect personal relationships. There were, however, over a dozen hedonic agricultural land studies conducted during

[2]See Robison and Siles for a discussion of how social capital can operate in favor of the economically less well off agent.

the last three decades using actual sales data for individual farms. Included in this list are papers by Faux; Xu et al.; Featherstone et al.; Torell et al.; Palmquist and Danielson; Crouter; Chicoine; and Jennings and Kletke.

The specific set of variables included in each hedonic land value model was influenced by the research question being addressed in each study. Nevertheless, there were a number of variables commonly encorporated into most models, including agriculture income or productivity, a variable for time-related trends, total acreage, the value of improvements, the sale location, and distance to the nearest town or highway. What is striking in this review is the complete absence of personal relationship variables. In some cases, authors stated that they only used sales that reflected "arms length transactions." In practice, family sales and forced sales were apparently the only sales omitted from these studies. In other words, personal relationships were painted with a very broad brush. If sales occurred between family members, they were presumed to not be arms-length. Sales between friends, enemies and strangers, however, were assumed to be arms-length.

Empirical Analysis

Study Setting

The setting for this study is Linn County, located in the middle of Oregon's Willamette Valley. The county contains about 300,000 acres of cropland, of which about 30,000 acres are irrigated. The Willamette Valley is a world leader in the production of a number of grass seeds, such as annual and perennial ryegrass. Grass seed has traditionally been produced on nonirrigated NRCS Soil Classes III-IV. Strong grass seed markets in the last decade have prompted expansion of production onto nonirrigated soils in Classes I, II, as well as irrigated Classes III and IV and even some nonirrigated

Class V soils.

Irrigated production of high value row crops, berries and fruits is located on the Class I and II bottomland soils adjacent to major rivers in the county. Acreage in these crops has remained fairly stable in the past decade. Classes V, VI and VII land are generally used for timber production, although some pasture is produced on land in categories V and VI.

The analysis was based on sales of Exclusive Farm Use (EFU) land for the period July 1992 - December 1997, as reported by the Linn County Assessor's Office. The assessor's office also provided estimates of total acreage by land class, assessed value of improvements, number of homesites, and location of the property. Virtually all farm land located outside Urban Growth Boundaries is designated as EFU. This designation, which was implemented some 25 years ago, makes it very difficult for land owners to develop the land for any use other than farming.

The base data contained limited information about relationships between buyers and sellers. To obtain further information, a single page survey was sent to buyers involved in 364 land transactions during the June 1992-December 1997 period. The survey instrument solicited information about the buyer's relationship to the seller(s), special conditions surrounding the sale and how they learned about the sale. Surveys were received for 216 transactions. Of this number, 56 were dropped from the data set because the property was less than 40 acres in size, there was significant commercial timber on the property, or simply because the respondent refused to complete the survey.

The property transactions were first grouped into three categories: (1) Sales between strangers, (2) sales between relatives, and (3) sales between people who knew each other but were not relatives. Summaries for each group are provided in Table 1. Consistent with social capital theory, relatives paid

substantially less per acre for land than individuals from the other two categories. Strangers paid roughly the same per acre for land without improvements as individuals who knew the sellers. The quality of land purchased by strangers was lower than that purchased by relatives or those in the other category. Although strangers represented 38 percent of all transactions, they purchased 75 percent of the Classes III and IV irrigated land, 65 percent of the Class V land and 49 percent of the Class VI land.

Further insight into the mechanics of the Linn County land market is reflected in the source of information that a particular parcel was "on the market". Nearly 80 percent of the transactions between strangers were either advertised through a public forum or were brokered through a realtor. In both cases, the availability of the parcels involved would probably be well known to other buyers seeking to purchase land. As might be expected, many of the land sales between relatives were the result of family relationships or came about when the buyer approached the seller. These transactions likely occurred without the knowledge of others potentially interested in purchasing these properties. More surprising was the fact that over two-thirds of the land transactions between friends or acquaintances occurred as the result of one party approaching the other.

These results suggest personal relationships play a powerful role in transmitting information about the availability of properties. Over half of the parcels evaluated in this study apparently never went through formal market channels where they could be purchased by the highest bidder in the market. This point is particularly true for the better land parcels considered in the study. One can presume those in the stranger category turned to advertisements or realtors to help identify purchasable properties because they did not have sufficient numbers of personal relationships to help them identify

the kind of farm land they desired.

Econometric Model

Our econometric model of land values can be represented by the simple function

$$(1) \quad PRICE = Z(K \cdot X) + \beta_0 IMP)$$

where

$$(2) \quad Z = \exp(\beta_3 SUMMER)\exp(\beta_4 DIST)\exp(\beta_5 PARENT) \exp(\beta_6 SIB)\exp(\beta_7 GRCHILD)\exp(\beta_8 OTHREL)\exp(\beta_9 NEIGH) \exp(\beta_{10} TENANT)\exp(\beta_{11} STRANG)\exp(\beta_{12} AD)\exp(\beta_{13} REALTOR)$$

$$(3) \quad K = \exp(\beta_1 TMTH) ACRES^{\gamma_2}$$

$$(4) \quad X = \beta_1 LC1 + \beta_2 LC2 + \beta_3 LC3 + \beta_4 LC4 + \beta_5 LC5 + \beta_6 LC6 + \beta_7 LC7 + \beta_8 ILC1 + \beta_9 ILC2 + \beta_{10} ILC3 + \beta_{11} SITE$$

PRICE is per acre sale price, LC1-LC7 are the proportions of non-irrigated land in the seven NCRS land classes, ILC1-ILC3 are the proportions of irrigated land by NCRS land class, IMP is the per acre value of improvements, SITE indicates the presence of a home site, SUMMER indicates whether the property sold during the summer months, DIST is the distance to the nearest town, TMTH captures the monthly time trend, ACRES represents the total parcel size, PARENT indicates a sale between parents and a child, GRCHILD indicates a sale between grandparents and grandchildren, SIB is a sale between siblings, OTHREL is a sale between other relatives, STRANG indicates a sale between strangers,

NEIGH is a sale between neighbors, TENANT is a sale from landlord to tenant, REALTOR represents a sale in which the buyer found the seller through a realtor, and AD is a sale in which the buyer found the seller through an advertisement.

The econometric analysis was carried out using the PROC MODEL routine in SAS/ETS (SAS Institute). The estimated base model is provided in Table 2. An informal analysis of the regression residuals suggested the presence of heteroskedastic disturbances related to the dependent variable (PRICE). A weighted least squares model was estimated using PRICE as the weighting variable. These estimates are also reported in Table 2.

The value of a home site in December 1997 was around $25,000 in the base regression model and $35,000 in the weighted regression model. Both values are much higher than Faux's $6,200 estimate for homesites in more rural Malheur County, Oregon. Improvements were valued in the marketplace at just over 90 percent of their appraised value.

The time trend variable was positive and very significant in both models. Based on this estimate, land values more than doubled during the 5 ½ year time period considered in the regression model, a clear indication of a strong market for farm land in Linn County. Properties that sold in the summer brought a 6.2 percent premium over those sold during the other nine months of the year. The coefficients for both ACRE and DIST were of the correct sign but insignificant. The distance variable, in particular, was very close to zero, suggesting travel distance didn't have much impact on farmland values in the Linn County area.

The influence of the various relationship and information variables in the model are summarized in Table 3. As expected, family relationships did, on average, have a negative impact on the price paid

for farmland in the study area. The impact was particularly noticeable for sales between parent and child, which were discounted by almost 31 percent. Discounts between grandparents and grandchild were a distant second, with the discount in both models being 13-14 percent. The estimated coefficients for all relationships other than parent-child were not statistically significant. One should note that the standard deviations for these other relationships were larger than that for the parent-child relationship, suggesting that the depth of relationships between siblings, grandparents and grandchildren, and cousins can greatly influence any discount given to the family member buying the land.

Sales between neighbors who were not related were discounted by 11-14 percent, which was statistically significant at the 90 percent confidence level. This result could indicate neighbor relationships generate bonds between individuals that are, on average, as strong as those outside parent-child relationships. Sales between landlords and tenants generated a premium of about 10 percent. Sales between strangers generated up to an 11 percent premium, although the estimated coefficient was not statistically different from zero.

A surprising result was in the area of information. Individuals who purchased land they learned about through an advertisement or a realtor paid a substantial premium over those who used other means to learn about land availability. Those buying as a result of an advertisement paid 30-40 percent more and those using a realtor paid 6-12 percent more.

Those responding to the survey were asked whether they thought the price they paid for their property was at, above, or below the going market rate for this type of property. Seventy eight percent of those who found out about their property through an advertisement thought they paid market value, with the remainder evenly split between the above and below categories. About three-fourths of those

buying through a realtor thought they paid the market rate for their property, but another 17 percent thought they paid more than the market rate.

Concluding Thoughts

The major objective of this study was to quantify the effect of personal relationships on land sales in Linn County, Oregon. The results presented here confirm the earlier experimental research results concerning the impact of relationships on economic transactions, as well as offering new insights. Family relationships, particularly between parent and child, do result in substantial price discounts on farm land. Other family relationships, on average, result in a smaller price discount, but the amount varies much more than in the parent-child relationship. Sales between neighbors also are discounted in the marketplace.

Strangers seemed to be at a decided disadvantage when entering the Linn County land market. These individuals apparently turned to advertisements and realtors to purchase farm land because they did not have enough personal relationships to find the kind of land they sought. The relatively hot market for land during the study period may well reflect the fact that there were many more buyers than sellers in the marketplace. In these situations, relationships provide a real advantage to buyers because they help identify purchase opportunities before they become more widely known. That purchases between strangers tended to be for poorer quality land is probably because those insiders aware of these tracts weren't interested in them.

Purchases through advertisements or realtors occurred at a substantial premium over other sales. Certainly some of this premium represented the higher transaction costs associated with exposing a property on the open market. Yet the fact that those buying through advertisements thought they

were, on average, paying market price also suggests a great deal of ignorance about market conditions in the Linn County land market. It also underscores how important personal relationships are not only in setting a market price, but finding out about the availability of farm land and avoiding many of the transaction costs associated with going through a third party. Simply assuming that farmily sales should be excluded from a hedonic land price model while ignoring all other types of relationships is simplistic and perhaps in error. In fact, perhaps the most important take-home message from this paper is this: *When considering arms-length transactions, remember that some arms are longer than others*.

More work should be done to verify these results hold in other parts of the country and in regular or depressed land markets. An important piece of information not gathered in this study was the strength of the personal relationships between buyer and seller. Social capital theory suggests that price will go down as the relationship becomes closer. Another issue not explored here is the relative wealth positions of the buyer and seller. Wealth and intensity of relationship may help refine the results given here and provide new insights not apparent in these estimates.

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Table 1. Statistical Summary of Land Data by Relationship Category

	Strangers	Relatives	Others
Number of Parcels	61	39	60
Average per Parcel:			
Total Sale Price	234,291.	195,967.	246,589.
Acres	110.0	111.3	128.0
Irrigated Acres	23.6	13.5	23.1
Price/Acre	2130.	1761.	1926.
Assessed Value of Improvements	48,825.	47,798.	26,960.
Land Quality:[a]			
Irrigated	2.60	1.83	1.59
Nonirrigated	3.62	3.20	3.33
Percent of Buyers Leasing this Parcel	6.	49.	51.
Information Source About Availability of Parcel (Percent):			
Realtor	71.	5.	7.
Advertisement	7.	5.	2.
Relative	3.	42.	2.
Buyer Approached Seller	12.	26.	28.
Seller Approached Buyer	1.	5.	43.
Other	6.	17.	18.

[a]Average land quality is the weighted average of the NRCS Land Class Categories (I-VII).

Table 2. Parameter Estimates of Land Value Model for Linn County, Oregon

Parameter	Variable	Base Model	Weighted Model
$1	TMTH	0.010672***	0.014550***
		(0.001518)	(0.001719)
$2	ACRES	-0.094525	-0.103310
		(0.06005)	(0.07257)
$3	SUMMER	0.074824**	0.067350
		(0.04302)	(0.04269)
$4	DIST	-0.000370	-0.004481
		(0.007690)	(0.007479)
$5	PARENT	-0.365348***	-0.365820***
		(0.08061)	(0.08980)
$6	SIB	-0.052634	-0.043305
		(0.09883)	(0.09800)
$7	GRCHILD	-0.134839	-0.155299
		(0.16364)	(0.20896)
$8	OTHREL	-0.069435	-0.149327
		(0.09122)	(0.07620)
$9	NEIGH	-0.116865*	-0.149327*
		(0.07064)	(0.07795)
$10	TENANT	0.109940**	0.087736
		(0.05140)	(0.05768)
$11	STRANG	0.003493	0.107364
		(0.07063)	(0.08066)
$12	AD	0.249657***	0.337676***
		(0.09183)	(0.09765)
$13	REALTOR	0.108877*	0.054851
		(0.06474)	(0.07620)
"0	IMP	0.900289***	0.928930***
		(0.13319)	(0.14278)
"1	LC1	1672.75***	1525.92**
		(613.28)	(676.10)
"2	LC2	1690.40***	1777.21***
		(534.77)	(668.17)
"3	LC3	1357.36***	1267.89**
		(445.66)	(497.44)
"4	LC4	1093.53**	1068.63**
		(428.03)	(498.15)
"5	LC5	912.61*	707.95
		(512.90)	(561.14)
"6	LC6	665.84*	1041.39*
		(389.35)	(557.12)
"7	LC7	538.53	255.09
		(696.29)	(656.46)
"8	ILC1	1910.89***	1691.56**
		(646.10)	(678.29)
"9	ILC2	1520.02***	1382.57**
		(521.23)	(572.46)
"10	ILC3	1485.80**	1290.63**
		(571.24)	(586.56)
"11	SITE	19340.50**	22947.32**
		(7890.2)	(9459.0)
R^3		0.7990	0.8401

Notes: The number of observations is 157, variables are as defined in the text, and standard errors are given in parentheses.
***Significant at the 99 percent confidence level.
**Significant at the 95 percent confidence level.
*Significant at the 90 percent confidence level.

Table 3. Percent Increases (Discounts) in Sale Price of Linn County Farm Land Based on Various Relationships and Information Sources

	Base Model	Weighted Model
Relatives:		
Parents to Children	(30.6)	(30.6)
Between Siblings	(5.1)	(4.2)
Grandparents to Grandchildren	(12.6)	(14.4)
Between other Relatives	(6.7)	(14.2)
Other Relationships:		
Between Neighbors	(11.0)	(13.9)
Landlord to Tenant	11.6	9.2
Between Strangers	0.3	11.3
Information Source:		
Advertisement	28.4	40.2
Realtor	11.5	5.6