Farmland Exchanges: Selection of Trading Partners, Terms of Trade, and Social Capital

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Abstract

Fifteen hundred farmland owner-operators in Illinois, Michigan, and Nebraska were surveyed to determine the influence of interpersonal relationships in farmland transactions. Results support the conclusion that relationships alter the terms and patterns of farmland sales. Minimum-sell prices to friends and family members were discounted by 5.57 percent and 6.78 percent, respectively, and a premium of 18.4 percent was added to the minimum-sell price to unfriendly neighbors. Finally, as a result of premiums and discounts that depend on relationships, less than two percent of land sales were to unfriendly neighbors while up to 70 percent of land sales were to friends and family. The results of this study suggest that farmland market studies should consider the importance of relationships.

Introduction

Farmland is the single most important asset in the farm sector's balance sheet, accounting for 60 to 80 percent of the farm sector's assets. Because of its importance, agricultural economists have repeatedly examined the farmland market to determine farm policies (Weersink et al.); the influence on the price of land of com-

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modity prices; discounted cash flows (Lence and Miller); financial terms (Stam); taxes; inflation (Robison, Lins, and Venkataramam); speculative bubbles (Falk); and other factors (Falk and Lee). Common to each of these studies has been the assumption that farmland buyers and sellers act independent of each other's interests.

The social capital paradigm suggests an alternative assumption to the one most commonly employed in agricultural farmland market studies. Namely, that relationships between farmland buyers and sellers need not be "arm's length" nor symmetric (Robison, Myers, and Siles). The consideration of this alternative assumption immediately prompts an empirical question. If some relationships are sympathetic (antipathetic) rather than arm's length, do these influence the terms of trade and the selection of trading partners? In other words, are past farmland market studies that assumed arm's length relationships justified?

To answer the empirical question posed above, the authors of this report, scientists at three universities, cooperated in a survey of farmland owners and operators in Illinois, Michigan, and Nebraska. Our objective was to find out if relationships of sympathy and trust, social capital, influenced the terms and likelihood of farmland trades. In what follows, the farmland survey is described, characteristics of survey respondents reported, and survey results summarized and interpreted. The final section of this report concludes that the survey results reported here support the social capital hypothesis – namely, that

Table 1. Characteristics of Survey Respondents

		Illinois	Michigan	Nebraska	Tri-States
Mean Age (Number of Respondents)		56.8 years (195)	56.8 (239)	57.7 (168)	57.0 (602)
Percent of Respondents Who Have Sold Land (Number of Respondents)		30.4 (59/194)	24.3 (59/243)	24.6 (41/167)	26.3 (159/604)
Percent of Respondents Who Have Purchased Land (Number of Respondents)		82.2 (157/191)	88.7 (211/238)	89.0 (146/164)	86.6 (514/593)
Active Member of:					
Parent-Teacher Organization/ School Board	(%/n)	12.3/24	15.8/38	13.1/22	14.0/84
Church Organization	(%/n)	59.5/116	51.0/122	67.3/113	58.3/351
Service Club	(%/n)	27.2/53	18.4/44	33.3/56	25.4/153
Local Gov. Organization	(%/n)	30.8/60	25.1/60	22.0/37	26.1/157
Environ. Organization	(%/n)	5.6/11	10.8/26	5.4/9	7.6/46
TOTAL	(%/n)	264/195	290/239	237/168	791/602
Avg. No. of Organizations to Which Respondents Belong		1.35	1.21	1.41	1.31
Average Number of Financial Dependents (Number of Respondents)		1.84 (195)	2.13 (240)	1.87 (168)	1.96 (603)
Highest Educational Achievements:					
Middle School	(%/n)	3.6/7	8.6/22	9.5/15	7.2/44
High School	(%/n)	54.7/105	56.0/144	50.0/79	54.0/328
Community College/ Trade	(%/n)	17.2/33	14.8/38	8.9/14	14.0/85
College	(%/n)	21.9/42	15.6/40	27.2/43	20.6/125
Graduate School	(%/n)	2.6/5	5.1/13	4.4/7	4.1/25
TOTAL Number of Respondents	(n)	192	257	158	607
Percentage After-Tax Household Income Distribution:					
<$20,000		9.6	26.9	21.0	19.6
$20,000-$30,000		18.7	22.0	31.1	23.6
$30,000-$40,000		21.9	18.9	19.8	20.1
$40,000-$50,000		14.4	14.5	12.6	13.9
$50,000-$60,000		12.8	7.5	7.2	9.1
$60,000-$70,000		7.5	4.4	3.0	5.0
>$70,000		15.0	5.7	5.4	8.6
TOTAL		100.0	100.0	100.0	100.0
TOTAL Number of Respondents		(187)	(227)	(167)	(581)

relationships influence the terms of trade and the selection of trading partners in the agricultural farmland market.

A Farmland Survey

The survey summarized in this report intended to determine if relationships changed the prices at which farmland was purchased and sold, and if relationships altered the likelihood of farmland sales between particular individuals. To accomplish this research goal, 1,500 farm owner-operators in Illinois, Michigan, and Nebraska were surveyed in 1997. The farmland owner-operators surveyed (500 from each state) were selected by random sampling techniques designed to reflect the geographic distribution of farmland in each state. Respondents for the survey were qualified based on ownership of farmland and experience buying and/or selling farmland.

The survey method followed Dillman's Total Design Method (TDM), including a pre-survey post card describing the survey and its purpose to respondents, the survey mailing, a post-survey post card mailing encouraging respondents to mail in questionnaires, and a second certified mailing of questionnaires to non-respondents.[1]

Approximately 600 usable questionnaires were returned, representing a 40 percent overall response rate. The response rates by state were 38.8 percent, 48.6 percent, and 33.4 percent for Illinois, Michigan, and Nebraska, respectively. Of the respondents in Illinois, Michigan, and Nebraska, 82.2 percent, 88.7 percent, and 89.0 percent, respectively, reported that they had purchased farmland, and 30.4 percent, 24.3 percent, and 24.6 percent of the respondents in Illinois, Michigan, and Nebraska, respectively, reported that they had sold land.

Characteristics of Survey Respondents

Respondents on average were 57 years old, supported 1.96 dependents financially, and belonged to 1.31 organizations including parent-teacher organizations or school boards, church organizations, service clubs, local government organizations, and/or environmental organizations. The highest level of educational achievement for 54 percent of those surveyed was a high school degree. Nearly one-quarter of those surveyed had completed a college degree or graduate degree. Forty-three percent of those surveyed had after-tax household income of less than $30,000. Over eight percent of the population earned after-tax household income of $70,000 or more. Other descriptions of respondents to the survey are included in Table 1.

Survey Results

The survey began by describing a farmland tract that respondents were asked to assume they owned and might offer for sale. The farmland described to survey respondents had the following characteristics:

- The land is average quality non-irrigated crop land and is being offered for sale in either 20-, 40-, or 80-acre units.
- There are no buildings or other improvements on the land.
- The land is located near serviceable roads and within five miles of a town of nearly 5,000 persons. The land is not considered to have residential site value.
- The buyer intends to use the land for farming and will provide his/her own financing.
- The seller will pay five percent of the farmland's sale price for commissions and other legal fees associated with the sale.
- Payment for the sale of the land will be provided to the seller in the form of a cashier's check at the time of the land sale closing.
- The land is not adjacent to where the seller lives.
- Finally, the buyer's agent will arrange for and guarantee that the terms of the sale are fulfilled.[2]

Table 2. Average Land Values Estimated by Professional Appraisers, Tax Assessors, and a Seller's Minimum-Sell Price to a Stranger

	Illinois	Michigan	Nebraska	3-State Average
Professional Appraiser	$2594.66	$1366.59	$1035.88	$1676.69
(Number of Respondents)	(193)	(232)	(159)	(586)
t-Statistic	41.48	17.14	17.74	34.14
Tax Assessor	$1984.22	$1088.18	$817.70	$1295.74
(Number of Respondents)	(181)	(228)	(159)	(566)
t-Statistic	29.43	17.54	22.50	32.49
Stranger	$2793.42	$1413.69	$1086.00	$1785.88
(Number of Respondents)	(195)	(227)	(160)	(582)
t-Statistic	35.32	18.05	17.89	33.64

Benchmark prices

The first part of the survey intended to establish a benchmark farmland price not influenced by relationships – in essence, an arm's length price. The second part of the survey was designed to measure how farmland price might be influenced by relationships and to compare these to the benchmark price. To establish the benchmark price, respondents were asked to list the values which professional appraisers and tax assessors would estimate the land described in the report to be worth. Then, they were asked to list the minimum-sell price they would accept if a complete stranger offered to buy their land. Farmland values expected by respondents to be placed on their land by professional appraisers' and tax assessors' values and their own minimum-sell price to a stranger are reported in Table 2.

Farmland values reported in other studies led the authors of this study to expect that farmland prices in descending value would be Illinois, Michigan, and Nebraska, respectively. The minimum-sell price to strangers was expected to be higher in all three states than the value respondents expected that professional appraisers or tax assessors would place on their farmland. Finally, it was expected that respondents on average would indicate that professional appraisers would value farmland higher than tax assessors. The survey results reported in Table 2 were consistent with our expectations.

Relative Land Prices

As previously noted, the main purpose of this study was to determine if relationships influence terms of trade in the farmland market. To determine if relationships alter farmland prices, respondents were asked to compare the minimum farmland sell price to a complete stranger, a price they reported in the first part of the study, to the minimum-sell price they would accept from others with whom they had a relationship. The respondents were asked to assume that several other potential buyers, in addition to the complete stranger, approached them with an offer to buy their land. The interested potential buyers included a friendly neighbor, an unfriendly neighbor, an influential person in their community, and a friendly relative. The respondents were asked to indicate their minimum-sell price to each of the potential buyers. A summary of the respondents' minimum-sell prices to the different potential buyers, the principle find-

Table 3. Average Minimum-Sell Prices When the Buyer Is a Friendly Neighbor, an Unfriendly Neighbor, an Influential Person, or a Friendly Relative

	Illinois	Michigan	Nebraska	3-State Average
Friendly Neighbor	$2644.71	$1334.22	$1011.29	$1686.45
(Number of Respondents)	(194)	(223)	(159)	(576)
t-Statistic	34.76	17.04	17.28	32.63
Unfriendly Neighbor	$3174.17	$1782.66	$1315.17	$2114.81
(Number of Respondents)	(178)	(209)	(149)	(536)
t-Statistic	17.88	14.66	13.74	24.39
Influential Person	$2826.41	$1542.48	$1166.73	$1876.63
(Number of Respondents)	(194)	(220)	(156)	(570)
t-Statistic	34.50	16.23	14.08	31.78
Friendly Relative	$2603.49	$1315.27	$993.06	$1664.77
(Number of Respondents)	(195)	(222)	(157)	(574)
t-Statistic	35.06	16.84	17.10	32.55

Table 4. Percentage Premium (Discount) Associated with Land Sale Prices Influenced by Relationships Compared to the Arm's-Length Sale Prices Available to a Stranger

	Illinois	Michigan	Nebraska	3-State Average
Friendly Neighbor	-5.32%	-5.62%	-6.88%	-5.57%
Unfriendly Neighbor	13.63%	26.10%	21.10%	18.42%
Influential Person	1.18%	9.11%	7.43%	5.08%
Friendly Relative	-6.80%	-6.96%	-8.56%	-6.78%

ings of this study, is reported in Table 3.

For ease of comparison, the results of Table 3 are converted to percentages. The percentages compare the differences in minimum-sell prices offered to persons known to the seller with minimum-sell prices offered to a complete stranger. To calculate the percentages, we first found the difference between minimum-sell prices the seller was willing to accept from a complete stranger versus the minimum-sell price the seller would accept from buyers who are viewed by the seller as friendly (unfriendly) neighbors, friendly relatives, or persons of influence. Then, the differences are divided by the prices the seller would accept from a complete stranger. The resulting calculations describe the percentage discount or premium offered to buyers depending on their relationship to the seller compared to the minimum-sell price accepted from a complete stranger. These premiums and discounts are reported in Table 4.

On average, friendly relatives would be offered the largest average discount equal to 6.78 percent followed by a 5.57 percent discount to a friendly neighbor. In contrast, an average premium of 18.42 percent would be required of an unfriendly neighbor and a 5.08 premium would be required of an influential person.[2] Since discounts would encourage a sale and premiums would discourage a sale, the results suggest that a sale to an unfriendly neighbor would be unlikely while a sale to a friendly neighbor or relative would be likely.

Since our primary goal in this study was to determine if relationships or social capital altered the terms of trade, we calculated differences

Table 5. Paired Sample t-Tests of Differences in Minimum-Sell Prices to Selected Buyers (row minus column) with t Statistics in Parentheses

	Unfriendly Neighbor	Influential Person	Friendly Relative	Stranger
Combined Data for Illinois, Michigan, and Nebraska				
Friendly Neighbor	$-423.07	$-179.03	$23.67	$-99.94
t-statistic	(-6.54)	(-8.98)	(3.12)	(-11.95)
Unfriendly Neighbor		241.26	445.47	323.79
t-statistic		(3.78)	(6.84)	(5.05)
Influential Person			202.46	79.02
t-Statistic			(9.34)	(3.97)
Friendly Relative				-124.57
t-Statistic				(-11.70)
Illinois Results				
Friendly Neighbor	$-506.63	$-163.66	$43.26	$-145.07
t-Statistic	(-3.26)	(-6.96)	(2.91)	(-8.01)
Unfriendly Neighbor		338.71	546.22	361.52
t-Statistic		(2.21)	(3.50)	(2.34)
Influential Person			208.43	18.50
t-Statistic			(6.38)	(.75)
Friendly Relative				-189.93
t-Statistic				(8.03)
Michigan Results				
Friendly Neighbor	$-433.39	$-205.55	$7.19	$-81.28
t-Statistic	(-4.98)	(-5.01)	(.631)	(-6.43)
Unfriendly Neighbor		221.44	442.48	353.43
t-Statistic		(2.72)	(5.07)	(4.08)
Influential Person			214.86	126.08
t-Statistic			(5.28)	(3.11)
Friendly Relative				-88.82
t-Statistic				(-6.79)
Nebraska Results				
Friendly Neighbor	$-293.93	$-148.24	$22.64	$-70.85
t-Statistic	(-4.31)	(-4.19)	(1.77)	(-7.38)
Unfriendly Neighbor		149.15	312.67	222.65
t-Statistic		(2.01)	(4.47)	(3.35)
Influential Person			164.52	76.92
t-Statistic			(4.27)	(2.22)
Friendly Relative				-93.95
t-Statistic				(-5.78)

between alternative pairs of minimum-sell prices. In other words, for each seller offering the same land, we calculated differences in his/her minimum-sell prices depending on the buyer's social capital. We then calculated whether or not these differences were statistically significant based on a t-statistic. These differences and t-statistics are reported in Table 5.

All of the differences were statistically significant at the one percent level of significance, even when calculated for the individual states. The evidence strongly supports the conclusion that relationships alter the terms of trade in farmland sales as measured and described in our surveys.

The most significant difference in minimum-sell prices was between minimum-sell prices offered by sellers to friendly relatives and unfriendly neighbors. These results were expected. The least significant difference was between minimum-sell prices offered friendly relatives and friendly neighbors. Again, this result was expected. In other words, we assumed that the magnitude of paired differences in minimum-sell prices would correspond to differences in social capital or the strength of relationships. This assumption was confirmed.

To assist the reader in interpreting the differences in strength of relationships and differences in minimum-sell prices, we constructed Figure 1. Buyers are ordered according to their strength of relationship to the seller as indicated by their average discounts or premiums. Thus, the strongest relationship and level of social capital is a friendly relative who compared to the price offered a stranger receives a discount of -$124.57. Next in strength of relationship or social capital is that owned by a friendly neighbor who compared to the minimum-sell price offered a stranger receives a discount of -$99.94.

Negative or competitive feelings toward a potential farmland buyer represent negative levels of social capital. The least negative level of social capital was owned by persons of influence who compared to the price offered a stranger were charged a premium of $79.20. Finally, the most negative level of social capital was owned by unfriendly neighbors who compared to the price offered a stranger were charged a premium of $323.79, over three times the magnitude of the discount offered friendly neighbors.

Past surveys lead us to expect stronger responses to negative relationships than positive relationships (Robison and Schmid). Thus, ex ante, we expected the difference in social capital reflected in price differences between a stranger and a friendly neighbor to be less than the difference in social capital reflected by price differences between a stranger and an unfriendly neighbor.

Figure 1. Premiums (Discounts) that Depend on Buyer's Relationship to the Seller or the Buyer's Social Capital

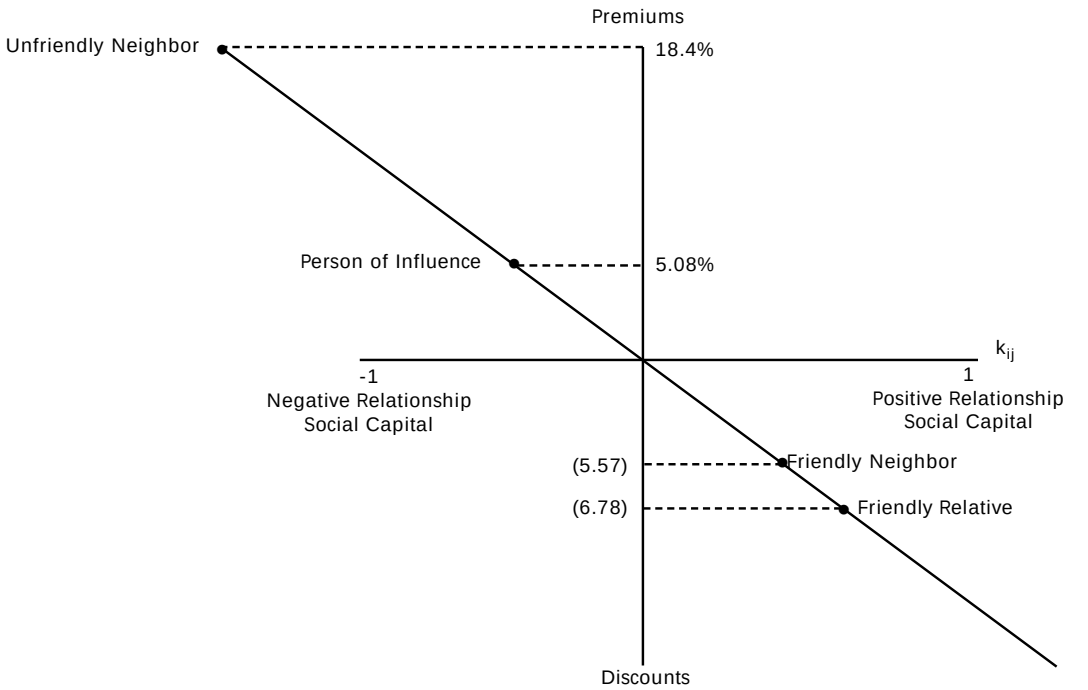

Table 6. The Percentage of Farmland Sales to Buyers Who the Seller Viewed as a Friendly (Unfriendly) Neighbor, a Complete Stranger, a Relative, Influential Persons, or a Legal Entity

The farmland sellers viewed the farmland buyer as a:	Illinois	Michigan	Nebraska	3-State Average
Friendly Neighbor	30.19%	29.23%	39.13%	32.32%
(Number of Respondents)	(16)	(19)	(18)	(53)
Unfriendly Neighbor	0.00%	0.00%	6.52%	1.83%
(Number of Respondents)	(0)	(0)	(3)	(3)
Stranger	43.40%	43.08%	26.09%	38.41%
(Number of Respondents)	(23)	(28)	(12)	(63)
Relative	15.09%	20.00%	26.09%	20.12%
(Number of Respondents)	(8)	(13)	(12)	(33)
Influential Person	1.89%	3.08%	2.17%	2.44%
(Number of Respondents)	(1)	(2)	(1)	(4)
Legal Entity	9.43%	4.62%	0.00%	4.88%
(Number of Respondents)	(5)	(3)	(0)	(8)
Percent	100.00%	100.00%	100.00%	100.00%
TOTAL	53	65	46	164

Table 7. The Percentage of Farmland Purchases from Sellers Who the Buyer Viewed as a Friendly (Unfriendly) Neighbor, Complete Stranger, Relative, Influential Persons, or Legal Entity

The farmland buyer viewed the farmland seller as a:	Illinois	Michigan	Nebraska	3-State Average
Friendly Neighbor	32.93%	45.30%	34.78%	38.64%
(Number of Respondents)	(54)	(106)	(56)	(216)
Unfriendly Neighbor	3.05%	1.28%	2.48%	2.15%
(Number of Respondents)	(5)	(3)	(4)	(12)
Stranger	18.90%	15.81%	17.39%	17.17%
(Number of Respondents)	(31)	(37)	(28)	(96)
Relative	29.27%	27.78%	29.20%	28.62%
(Number of Respondents)	(48)	(65)	(47)	(160)
Influential Person	1.83%	2.14%	3.11%	2.33%
(Number of Respondents)	(3)	(5)	(5)	(13)
Legal Entity	14.02%	7.69%	13.04%	11.09%
(Number of Respondents)	(23)	(18)	(21)	(62)
Percent	100.00%	100.00%	100.00%	100.00%
TOTAL	164	234	161	559

Table 8. Minimum-Sell Average Prices Assuming the Seller Has Already Promised to Sell the Land to a Stranger

	Illinois	Michigan	Nebraska	3-State Average
Friendly Neighbor	$2727.18	$1621.36	$1175.19	$1841.00
(Number of Respondents)	(129)	(184)	(111)	(424)
t-Statistic	32.68	14.26	15.66	27.95
Unfriendly Neighbor	$3005.01	$1916.05	$1340.00	$2103.20
(Number of Respondents)	(122)	(176)	(101)	(399)
t-Statistic	29.06	13.73	14.83	26.44
Influential Person	$2859.03	$1759.10	$1271.01	$1978.16
(Number of Respondents)	(129)	(183)	(104)	(416)
t-Statistic	30.85	13.17	15.24	26.37
Second Stranger	$2957.69	$1791.72	$1289.13	2022.06
(Number of Respondents)	(125)	(180)	(103)	(408)
t-Statistic	26.51	13.81	15.19	26.25
Friendly Relative	$2702.80	$1554.32	$1170.86	$1802.67
(Number of Respondents)	(127)	(183)	(109)	(419)
t-Statistic	29.81	13.59	15.25	26.77

Table 9. Premiums Required to Break a Promise Computed from Minimum-Sell Prices Reported in Line 4 of Table 8 and Line 3 of Table 2

The seller views the buyer as a:	Illinois	Michigan	Nebraska	3-State Average
Second Stranger	5.55%	26.74%	18.70%	13.22%

If differences in social capital are reflected in differences in discounts and premiums accepted from potential farmland buyers, then we can describe the results of our survey graphically. In Figure 1, farmland buyers viewed by the seller as being strangers, friendly (unfriendly) neighbors, or friendly relatives are ordered according to the discounts (premiums). The graph suggests that friendly relatives have the highest level of social capital followed by friendly neighbors, strangers, persons of influence, and unfriendly neighbors.

Figure 1 also depicts that differences in relationships are not symmetric between the different types of buyers. For example, social capital reflected by -5.57 percent discount that separates the minimum-sell price offered to friendly neighbors and strangers is less than one-third of the 18.47 percent premium that separates the minimum-sell price that would be accepted from an unfriendly neighbor and a stranger.

Social Capital and Likelihood of Trades

One would expect that the presence of farmland price premiums or discounts would also affect the likelihood of trades. To determine if relationships and resulting premiums or discounts affected the likelihood of transactions from the farmland seller's perspective, survey respondents were asked if they had ever sold farmland. If the respondents answered that they had sold farmland in the past, they were asked to identify their relationship to the buyer in their most recent sale. The results are described in Table 6.

The results were expected. Only 1.83 percent of the respondents had ever sold land to an unfriendly neighbor and only 2.44 percent of the respondents had ever sold land to an influential person. In contrast, respondents reported that 32.32 percent, 20.23 percent, and 38.41 percent of their most recent sales had been to friendly neighbors, relatives, and strangers, respectively. The results strongly suggest that farmland sellers are unlikely to sell land to buyers with whom they have a negative relationship.

To determine if relationships and resulting premiums or subsidies affected the likelihood of trades from the perspective of farmland buyers, survey respondents were asked if they had ever purchased farmland. If the respondents answered that they had purchased farmland in the past, they were asked to identify their relationship to the seller in their most recent purchase. The results are described in Table 7.

The results were expected. Only 2.15 percent of the respondents had ever purchased farmland from an unfriendly neighbor and only 2.33 of the respondents had ever purchased farmland from an influential person. In contrast, 38.64 percent, 28.62 percent, and 17.17 percent of the most recent purchases had been from friendly neighbors, relatives, and strangers, respectively. Here again, the results strongly infer the significance of relationships; in this case suggesting that farmland buyers are unlikely to buy land from sellers with whom they have a negative relationship.

The above results are consistent with our expectations, that because of the presence of premiums or discounts, farmland sales to friendly neighbors and friendly relatives dominate in the farmland market. But, even the sale of farmland to complete strangers is not surprising. There is no reason to expect strangers to be excluded from the farmland market as long as they are willing to pay more (receive less) for the farmland compared to that of friendly neighbors or relatives. Furthermore, the population of buyers (sellers) of farmland who are strangers is expected to represent the largest class of potential farmland buyers and sellers. Finally, increasing the importance of strangers is this anonymous purchase made through agents.

The results of Tables 6 and 7 must be interpreted cautiously. To support the hypothesis implied in the social capital paradigm, namely, that sales (purchases) to (from) unfriendly neighbors and influential persons are unlikely, would require the following. One would need to compare the population of potential farmland buyers (sellers) considered to be unfriendly neighbors with the percentage of actual sales (purchases) to unfriendly neighbors reported in this study. If only one or two percent of the total population of potential farmland buyers and sellers were considered to be unfriendly neighbors, then the results of the study would not confirm the social capital paradigm, namely, that relationships have influence on who trades.

Social Capital and Keeping Promises

A further area of interest in this study was the influence of values on the terms of trade. Values represent qualities individuals admire and seek to incorporate into their lives. Such values may originate from a variety of sources including qualities of relatives, sports heroes, and political or religious figures. A composite of these values is included in what is referred to here as the ideal self.

Every individual is expected to have a relationship with his/her ideal self, which like other relationships, may command preferential treatment. Thus, an ideal self who keeps promises may have the potential to cause the individual to not take advantage of a profitable sale because it requires the individual to break a promise. Alternatively, the ideal self may require a premium for actions taken that reduce one's social capital with one's ideal self.

To examine the influence of the ideal self who keeps promises, respondents were asked to consider the following situation. They were asked to assume they had accepted an offer to sell their land to a complete stranger at the average price reported in Table 2. However, the respondents were

Table 10. Percentage Premiums (Discounts) Associated with Land Sale Prices Influenced by Relationships to Others Compared to the Arm's-Length Sale Prices Available to a Second Stranger (Each sale requires a promise to the first stranger be broken.)

	Illinois	Michigan	Nebraska	3-State Average
Friendly Neighbor	-7.79%	-9.51%	-8.84%	-8.95%
Unfriendly Neighbor	1.59%	6.94%	3.95%	4.01%
Influential Person	-3.34%	-1.82%	-1.41%	-2.17%
Friendly Relative	-8.62%	-13.25%	-9.17%	-10.85%

Table 11. Paired Sample t-Tests of Differences in Minimum-Sell Prices to Selected Buyers that Require a Broken Promise (row minus column) with t Statistics in Parentheses

	Unfriendly Neighbor	Influential Person	Friendly Relative	Stranger
Combined Data for Illinois, Michigan, and Nebraska				
Friendly Neighbor	$-255.28	$-127.02	$30.02	$-171.39
t-Statistic	(-8.11)	(-5.96)	(-2.72)	(-6.42)
Unfriendly Neighbor		126.91	287.91	85.38
t-Statistic		(5.52)	(8.84)	(4.36)
Influential Person			158.06	-43.13
t-Statistic			(6.89)	(-2.06)
Friendly Relative				-202.01
t-Statistic				(-7.27)
Illinois Results				
Friendly Neighbor	$-287.75	$-131.85	$31.50	$-225.25
t-Statistic	(-8.13)	(-5.51)	(1.43)	(-5.39)
Unfriendly Neighbor		156.52	325.25	71.07
t-Statistic		(6.25)	(8.10)	(2.22)
Influential Person			164.44	-94.97
t-Statistic			(5.00)	(-3.06)
Friendly Relative				-258.04e
t-Statistic				(-5.55)
Michigan Results				
Friendly Neighbor	$-288.67	$-151.44	$41.85	$-171.49
t-Statistic	(-4.49)	(-3.38)	(2.15)	(-3.38)
Unfriendly Neighbor		132.44	331.70	116.94
t-Statistic		(2.82)	(5.07)	(3.21)
Influential Person			194.75	-17.19
t-Statistic			(4.24)	(-.42)
Friendly Relative				-214.04
t-Statistic				(-4.05)
Nebraska Results				
Friendly Neighbor	$-157.55	$-78.30	$8.06	$-104.55
t-Statistic	(-4.84)	(-5.11)	(-.99)	(-5.05)
Unfriendly Neighbor		81.05	166.56	47.07
t-Statistic		(3.24)	(5.04)	(2.31)
Influential Person			86.08	-25.20
t-Statistic			(5.82)	(-2.03)
Friendly Relative				-113.21
t-Statistic				(-5.63)

asked to assume that at the time the agreement was made, nothing was written down and no one witnessed the agreement. Thus, the respondents were informed that the agreement could not be legally enforced. Then, after the agreement to sell the farmland was made, the seller (the respondent) was asked to assume that other buyers expressed an interest in purchasing his/her farmland. The respondents were then asked to indicate the lowest price per acre they would accept from each of the buyers knowing that the sale to any one of the buyers would require he/she to break their agreement they made earlier with the stranger.

The survey did not list as a possible response, "I would not break my promise," though some respondents still wrote on their survey that they would not break a promise. Other respondents simply refused to complete the question; we assume because they felt even responding to this question was a challenge to their own integrity ("keeping one's promise is not negotiable"). However, for the others who responded, average prices were higher in each case than when the sale did not require the seller to break a promise. The minimum-sell prices that required a broken promise are reported in Table 8.

To indicate the influence of relationships to the ideal self on minimum-sell prices, we calculated the premium a seller would require to break a promise holding the relationship to potential buyers constant. So, we calculated the percentage increase in minimum-sell prices to a second stranger that required that a promise to sell to a first stranger be broken. Percentage premiums required to break a promise to a first stranger to sell to a second stranger are reported in Table 9.

The percentage premiums reported in Table 9 reflect the compensation required for the loss in social capital with the ideal self when a promise is broken. Since the relationship to the buyers is held constant and both potential buyers were strangers, there should be no increase in the minimum-sell price to the second stranger unless in the process of breaking his/her promise created a negative experience for the seller. Of course, one might interpret the possibility of retaliation by the first stranger, but in this case the questions were designed to eliminate that expectation. It seems to us the best explanation to the results in Table 9 is that breaking one's promise reduces one's social capital with one's ideal self.

Establishing a minimum-sell price to a second stranger establishes a new benchmark price against which other minimum-sell prices requiring the seller to break his/her promises must be compared. So, we used the minimum-sell prices reported in Table 2 and those prices reported in Table 8 to calculate percentages premiums (discounts) compared to the minimum-sell price offered the second stranger. The results are reported in Table 10.

The discounts and premiums are in the same order in Table 10 as they were in Table 4. However, the magnitudes have changed. Generally, discounts offered friendly neighbors and relatives are generally larger and the premiums required to sell to unfriendly neighbors are smaller. Indeed, instead of requiring premiums, sellers were now willing to sell to influential persons at a minimum-sell price less than the second stranger. There is no easy answer that explains the changes in discounts and premiums relative to strangers before and after a promise is broken.

One explanation for the differences in Table 4 and Table 10 is that the set of respondents completing Table 10 is a subset of those completing Table 4. Indeed, the subset includes only those sellers willing to break a promise. These were willing to express a premium at which they would break a promise and apparently feel less compelled to preclude a sale to an unfriendly neighbor assuming the price is right.

To test if the differences in minimum-sell prices were significantly significant, we calculated paired t-statistics as before, only now all of the prices included compensation for breaking a promise. The results, reported in Table 11, as before, are all very significant. Finally, we calculated paired t-tests holding relationships constant while varying the relationship to the ideal self. The results are reported in Table 12 and with the exception of prices charged unfriendly neighbors are significant.

The percentage of respondents willing to break a promise are reported in Table 13. It is interesting to note that respondents in Michigan were much more willing to break a promise than those in either Illinois or in Nebraska. However, Table 9 reports that these same Michigan respondents also required the highest premium to break a promise.

Other Influences on the Price of Farmland

The final section of this report details the influence of several factors on the price of farmland. These include the influence of experience selling farmland, education levels, income levels, and relationships. For ease of comparison, only mean values are reported here.

In general, those who have purchased farmland are willing to accept lower minimum-sell prices than those with experience selling farmland. Those who have a high school education or less are willing to accept lower minimum-sell prices than those with some college education training. But the most significant factor that bounds all of the other responses is the influence of incomes. Those earning $30,000 or less are willing to accept the lowest average minimum-sell prices than any other sample group identified in Tables 14 through 17. In addition, those respondents earning $30,000 or more charged the highest average minimum-sell prices than any other sample group identified in Tables 14

Table 12. Paired Sample t-Tests of Differences in Minimum-Sell Prices Before and After a Sell Promise Was Broken in Order to Make the Sale with t Statistics in Parentheses for Three States (Illinois, Michigan, and Nebraska)

	Illinois	Michigan	Nebraska	3-State Average
Friendly Neighbors	$-141.66	$-237.77	$-145.23	$-183.99
t-Statistic	(-5.60)	(-3.47)	(-4.75)	(-5.81)
Unfriendly Neighbors	-66.40	-76.15	-31.10	-61.90
t-Statistic	(-1.95)	(-.71)	(-.84)	(-1.25)
Influential Persons	-95.36	-209.89	-58.79	-132.58
t-Statistic	(-2.34)	(-2.93)	(1.07)	(-3.62)
Friendly Relatives	-152.94	-215.11	-153.62	-185.08
t-Statistic	(-4.22)	(-3.13)	(-4.49)	(-5.62)
Between Strangers	-206.11	-329.61	-180.00	-258.92
t-Statistic	(4.71)	(-4.03)	(-5.21)	(-6.59)

Table 13. Percentage of Respondents Completing Table 10 that Assumed a Promise Was Broken Compared to Those Completing Table 3 and Line 3 of Table 2 that Did Not Assume a Promise Was Broken

	Illinois	Michigan	Nebraska	3-State Average
Friendly Neighbor	66.49%	82.51%	69.81%	73.61%
Unfriendly Neighbor	68.54%	84.21%	67.79%	74.44%
Influential Person	66.49%	83.18%	66.67%	72.98%
Second Stranger	64.10%	79.30%	64.38%	70.10%
Friendly Relative	65.13%	82.43%	69.43%	73.00%

Table 14. A Comparison of Mean Differences in Minimum-Sell Prices for Farmland Owners/Operators in Illinois, Michigan, and Nebraska, Depending on Experiences of Buying/Selling Farmland, Education Levels, and Income Levels

Sample Description	Unfriendly Neighbor	Influential Person	First Stranger	Friendly Neighbor	Friendly Relative
Entire Sample	$2114.81	$1876.63	$1785.88	$1686.45	$1664.77
(Number of Respondents)	(536)	(570)	(582)	(576)	(574)
Respondents Who Have Sold Farmland	2128.99	1970.82	1854.31	1748.70	1736.15
(Number of Respondents)	(144)	(152)	(154)	(154)	(152)
Respondents Who Have Purchased Farmland	2048.05	1857.94	1756.86	1651.67	1628.62
(Number of Respondents)	(458)	(488)	(499)	(494)	(492)
Respondents with a GS or HS Education*	2012.66	1828.62	1717.08	1628.49	1601.37
(Number of Respondents)	(321)	(341)	(347)	(343)	(343)
Respondents with Some College Education	2243.39	1926.06	1865.89	1747.40	1733.30
(Number of Respondents)	(208)	(221)	(227)	(225)	(223)
Respondents with Incomes of $30,000 or Less	1748.28	1604.04	1475.24	1384.74	1353.46
(Number of Respondents)	(212)	(225)	(234)	(230)	(228)
With Incomes of $30,000+	2335.14	2040.31	1980.46	1871.55	1854.44
(Number of Respondents)	(306)	(323)	(326)	(324)	(324)

* GS denotes Grade School; HS denotes High School

Table 15. A Comparison of Mean Differences in Minimum-Sell Prices for Farmland Owners/Operators in Illinois, Depending on Experiences of Buying/Selling Farmland, Education Levels, and Income Levels

Sample Description	Unfriendly Neighbor	Influential Person	First Stranger	Friendly Neighbor	Friendly Relative
Entire Sample	$3174.17	$2826.41	$2793.42	$2644.71	$2603.49
(Number of Respondents)	(178)	(194)	(195)	(194)	(195)
Respondents Who Have Sold Farmland	3124.07	2940.52	2877.37	2713.56	2653.81
(Number of Respondents)	(54)	(58)	(59)	(59)	(59)
Respondents Who Have Purchased Farmland	3077.48	2874.84	2833.06	2670.99	2624.04
(Number of Respondents)	(141)	(156)	(157)	(156)	(157)
Respondents with a GS or HS Education*	2925.67	2782.33	2721.77	2593.16	2551.40
(Number of Respondents)	(101)	(111)	(111)	(110)	(111)
Respondents with Some College Education	3550.14	2909.94	2912.50	2729.06	2690.94
(Number of Respondents)	(74)	(79)	(80)	(80)	(80)
Respondents with Incomes of $30,000 or Less	2841.48	2662.90	2588.03	2444.95	2395.74
(Number of Respondents)	(88)	(93)	(94)	(93)	(94)
With Incomes of $30,000+	3524.73	2986.82	2995.06	2841.05	2805.97
(Number of Respondents)	(83)	(93)	(93)	(93)	(93)

* GS denotes Grade School; HS denotes High School

Table 16. A Comparison of Mean Differences in Minimum-Sell Prices for Farmland Owners/Operators in Michigan, Depending on Experiences of Buying/Selling Farmland, Education Levels, and Income Levels

Sample Description	Unfriendly Neighbor	Influential Person	First Stranger	Friendly Neighbor	Friendly Relative
Entire Sample	$1782.66	1542.48	1413.69	1334.22	1315.27
(Number of Respondents)	(209)	(220)	(227)	(223)	(222)
Respondents Who Have Sold Farmland	1645.37	1380.18	1280.05	1197.02	1207.41
(Number of Respondents)	(54)	(56)	(57)	(57)	(56)
Respondents Who Have Purchased Farmland	1750.54	1494.74	1360.51	1273.89	1255.38
(Number of Respondents)	(186)	(196)	(203)	(199)	(198)
Respondents with a GS or HS Education*	1794.29	1516.75	1351.08	1287.95	1251.13
(Number of Respondents)	(140)	(146)	(148)	(146)	(146)
Respondents with Some College Education	1686.51	1531.36	1474.28	1369.40	1381.51
(Number of Respondents)	(76)	(81)	(86)	(84)	(83)
Respondents with Incomes of $30,000 or Less	1620.92	1510.26	1331.29	1270.82	1261.89
(Number of Respondents)	(92)	(97)	(101)	(98)	(98)
With Incomes of $30,000+	1849.54	1511.16	1426.50	1325.35	1299.56
(Number of Respondents)	(108)	(112)	(115)	(114)	(113)

* GS denotes Grade School; HS denotes High School

through 17. We have no ready answer for the dominant influence of income levels on minimum-sell prices except perhaps those that earn the most income conduct business more as though each transaction were conducted at arm's length.

Implications

This study asked if relationships alter the terms and likelihood of trades. The conclusion of the study is a resounding "Yes!" Social capital or relationships of sympathy (antipathy) definitely influence the terms of trade and the likelihood of trades. These conclusions suggest that past efforts to understand farmland prices and trades need to be reexamined in view of the support for an alternative assumption set.

Other significant implications of the study follow. Relationships of antipathy such as might exist between unfriendly neighbors may produce failed economic opportunities because of the premiums required to complete trades. Thus, relationships of sympathy or goodwill have important economic value in addition to the beneficial social outcomes associated with feelings of sympathy.

Other implications of the study include the likelihood that these results can be duplicated to another setting. Work by Siles et al., demonstrated that the likelihood of loan approval can be significantly affected by relationships. Work by Robison et al., demonstrated customer retention is a function of relationships between service providers and their customers. Finally, work by Robison and Schmid suggest that used car prices depend on relationships between buyers and sellers. Thus, a logical next step in social capital research is to test the importance of relationships on other agricultural markets.

Finally, the important point has to be made about personal values. A significant number of farmland owner/operators were unwilling to break their promises to sell their land even when profitable opportunities existed and no legal requirements prevented the sale. Other farmland owner/operators were willing to break their promise but required significant premiums to do so. The existence of these premiums and the unwillingness in many cases to break a promise suggest the important role that personal values may play in any market.

Endnotes

[1] A copy of the questionnaire may be obtained by emailing the senior author at siles@msu.edu.

[2] In the survey, respondents were asked to report their minimum-sell prices in a hypothetical land sale. In other words, the respondents were asked to imagine the conditions surrounding a land sale and describe their response. The concern is, do responses to imagined conditions reflect responses to actual land sales? Our response is that all actions are based on imagined conditions not unlike those the respondents

Table 17. A Comparison of Mean Differences in Minimum-Sell Prices for Farmland Owners/Operators in Nebraska, Depending on Experiences of Buying/Selling Farmland, Education Levels, and Income Levels

Sample Description	Unfriendly Neighbor	Influential Person	First Stranger	Friendly Neighbor	Friendly Relative
Entire Sample	$1315.17	$1166.73	$1086.00	$1011.29	$993.06
(Number of Respondents)	(149)	(156)	(160)	(159)	(157)
Respondents Who Have Sold Farmland	1361.81	1361.18	1127.24	1078.16	1073.11
(Number of Respondents)	(36)	(38)	(38)	(38)	(37)
Respondents Who Have Purchased Farmland	1362.44	1214.93	1120.14	1048.53	1027.30
(Number of Respondents)	(131)	(136)	(139)	(139)	(137)
Respondents with a GS or HS Education*	1242.13	1110.42	1065.34	980.29	969.77
(Number of Respondents)	(80)	(84)	(88)	(87)	(86)
Respondents with Some College Education	1305.86	1175.98	1045.41	980.49	943.08
(Number of Respondents)	(58)	(61)	(61)	(61)	(60)
Respondents with Incomes of $30,000 or Less	1198.73	1009.41	953.69	873.35	841.88
(Number of Respondents)	(71)	(76)	(80)	(79)	(77)
With Incomes of $30,000+	1428.95	1325.26	1223.57	1151.30	1142.01
(Number of Respondents)	(76)	(77)	(77)	(77)	(77)

* GS denotes Grade School; HS denotes High School

were asked to consider in the survey. When someone is asked for their minimum-sell price in fact, the potential seller must imagine how the proceeds from the land sale will be used, and how life will be different without the land. Since the actual experiences associated with the land sale cannot be experienced before the sale, the minimum-sell price accepted will be based on the seller's opinion of what life will be like after the sale. Consequently, we believe the data from the survey accurately describe responses under actual land sale conditions because they are both created out of social constructs.

Supporting our assertation that actual land sales depend on relationships as the survey results here suggest is a recently completed study by Gregory Perry and Lindon Robison. They were fortunate to have access to actual land sales data collected in Linn County, Oregon. Based on their data, they concluded that, "Family relationships, particularly between parent and child, do result in substantial price discounts on farm land. Other family relationships, on average, result in smaller price discounts, but the amount varies much more than in the parent-child relationship. Sales between neighbors are also discounted in the marketplace. Strangers seem to pay the highest price for land."

[3] Evidence of a purchase of farmland by an influential person is Ted Turner's purchase of the 34,186-acre McGinley Ranch northeast of Gordon, Nebraska. Turner paid a total of $6.8 million, or a little more than $200 an acre for the land. The price was estimated to be ten percent higher than the recent purchases in the area (Hammel).

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